North Bellevue Critical Areas Report

PSE ENERGIZE EASTSIDE PROJECT

CITY OF BELLEVUE

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Prepared for:
City of Bellevue
Development Services Department
450 110th Avenue NE
Bellevue, WA 98004

Prepared on behalf of (applicant):
Ryan Wieder
PSE Energize Eastside
PO Box 97034, EST 3W
Bellevue, WA 98009

Title-page image: *Transmission line corridor conditions in the North Bellevue Segment, February 2020*

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, WA 98033
p 425.822.5242
f 425.827.8136
watershedco.com

Reference Number: 111103.12

Contact: Katy Crandall, PWS
Ecologist and Arborist

Clover McIngalls, PWS
Environmental Planner

Nell Lund, PWS
Senior Ecologist

Executive Summary

PSE's Energize Eastside Project (the Project) proposes to build a new substation and upgrade two existing transmission lines between the Sammamish Substation in the City of Redmond and the Talbot Hill Substation in the City of Renton to increase transmission system capacity from 115 kV up to 230 kV. To facilitate this upgrade, PSE is constructing a substation (Richards Creek Substation) adjacent to the existing Lakeside Substation in Bellevue. The Project is needed to address electrical system deficiencies identified during federally required planning studies and to improve electrical supply and reliability to Eastside communities, including Bellevue, now and in the future. The Richards Creek Substation and transmission line upgrade located south of the substation were covered under the Land Use Permits issued by the City of Bellevue in 2019. The analysis in this report focuses on the northern portion of the transmission line upgrade within the City of Bellevue, from the Lakeside Substation site north to the Bellevue city limits at the Bridle Crest Trail (NE 60th Street) (North Bellevue Segment).

Regulated critical areas present in the North Bellevue Segment area include wetlands, streams, habitats associated with species of local importance, geologic hazard areas (steep slope and landslide hazard areas), areas of special flood hazard, and associated buffers. No impacts are proposed to streams, habitats associated with species of local importance, or areas of special flood hazard. The project has been designed to avoid and minimize impacts to wetlands, steep slope and landslide hazard areas, and associated buffers/setbacks.

Project impacts are classified as one of three types, permanent, vegetation conversion, or temporary. Permanent (fill) impacts are generated by the installation of proposed transmission line poles. These impacts are offset by removal of existing poles (which outnumber the number of transmission poles to be installed) from critical areas, resulting in a lower net fill impact. Vegetation conversion impacts result from removal of trees and large shrubs from the transmission line corridor due to limitations on vegetation height under federal regulations. Vegetation conversion impacts are characterized as a permanent change from one vegetation type to another, but do not include ground disturbance from fill or grading. Temporary impacts are generated from construction activities like access routes, pole construction work areas, and stringing sites.

In the North Bellevue Segment, six poles would be removed from wetlands and the number of poles in combined wetland and stream buffers would be reduced from 34 to nine. Similarly, the number of poles in geologic hazard areas and associated buffers/setbacks would be reduced from 48 to 16. The majority of permanent impacts to critical areas are generated by removal of trees and large shrubs that would be incompatible with proposed 230 kV transmission lines under federal regulations. Vegetation conversion impacts are minimized by utilizing the existing transmission line corridor that is currently maintained to 115 kV clearance standards.

Impacts to wetlands and combined wetland and stream buffers caused by the removal of an estimated 202 trees will be mitigated through on-site wetland enhancement (which includes stream buffer area) at the Richards Creek Substation site and through purchase of credits from the Keller Farm Mitigation Bank. Following Washington State Department of Ecology guidance, a reduced mitigation ratio is proposed for the on-site enhancement area because impacts are limited to vegetation conversion. Similarly, a vegetation conversion discount factor has been applied to the mitigation bank credit to impact ratio. Temporary impacts will be restored following construction. Impacts to geologic hazard areas will be mitigated though implementation of Best Management Practices and Temporary Erosion and Sediment Control measures and site-specific recommendations set forth in the geotechnical report.

This report is intended to satisfy the requirements of the Bellevue Land Use Code and support PSE’s Critical Areas Land Use Permit and Conditional Use Permit applications for the North Bellevue Segment of the Project in Bellevue.

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1 Introduction and Project Description

Puget Sound Energy, Inc. (PSE) proposes to build a new substation and upgrade approximately 16 miles of two, existing 115 kV transmission lines located within a 100-foot-wide regional utility corridor to be operated up to 230 kV (herein referred to as 230 kV lines) between Sammamish Substation in the City of Redmond and Talbot Hill Substation in the City of Renton. Within the City of Bellevue, the Richards Creek Substation is also being constructed to accommodate the 230 kV to 115 kV transformer required for the transmission line upgrade, which is necessary to address a deficiency in electrical transmission capacity during peak periods (collectively "the Project"). Combined with aggressive conservation, the Project will improve reliability for Eastside communities, including the City of Bellevue (City), and supply the needed electrical capacity for anticipated growth and development on the Eastside.

Within the City, the transmission line upgrade extends north-south for approximately 8.5 miles. The Land Use Permits for the first phase (the "South Bellevue Segment"), which included the Richards Creek Substation and upgrading approximately 3.3 miles of existing lines, were issued by the City of Bellevue in 2019 (Permit Nos. 17-120556-LB and 17-120557-LO). Impacts to critical areas in the South Bellevue Segment were documented in the *City of Bellevue Critical Areas Report: Puget Sound Energy – Energize Eastside Project South Bellevue Segment* (The Watershed Company 2017). This Critical Areas Report addresses the North Bellevue Segment of this line, which runs approximately 5.2 miles from Bridle Crest Trail at NE 60th Street, south to the existing Lakeside Substation (Figure 1). The North Bellevue Segment includes the removal of approximately 188 wood transmission poles (which includes two single poles, 81 two-pole H-frames, and eight three-pole H-frames) and the installation of 49, 230 kV capacity steel monopoles composed of eight single-circuit monopoles and 41 double-circuit monopoles. For these, 14 drilled pier foundations are planned along with 35 direct-embed poles. Existing and proposed pole locations are shown on the maps in Appendix A.

The existing 115 kV transmission lines are located in PSE's 100-foot-wide Sammamish-Lakeside-Talbot transmission line corridor, which was established in the late 1920s and early 1930s. Within the existing utility corridor, the proposed upgraded lines will replace poles in generally the same locations as existing poles. In some instances, poles will be moved to accommodate landowner preferences and easement considerations, and to minimize impacts to critical areas. During construction, selective tree removal will occur within the corridor to meet federal vegetation management requirements and PSE standards for 230 kV transmission line operation.

The purpose of this Critical Areas Report is to document critical area impacts that are expected to occur as a result of the Energize Eastside Project – North Bellevue Segment; and describe how those impacts will be compensated in accordance with City regulations.

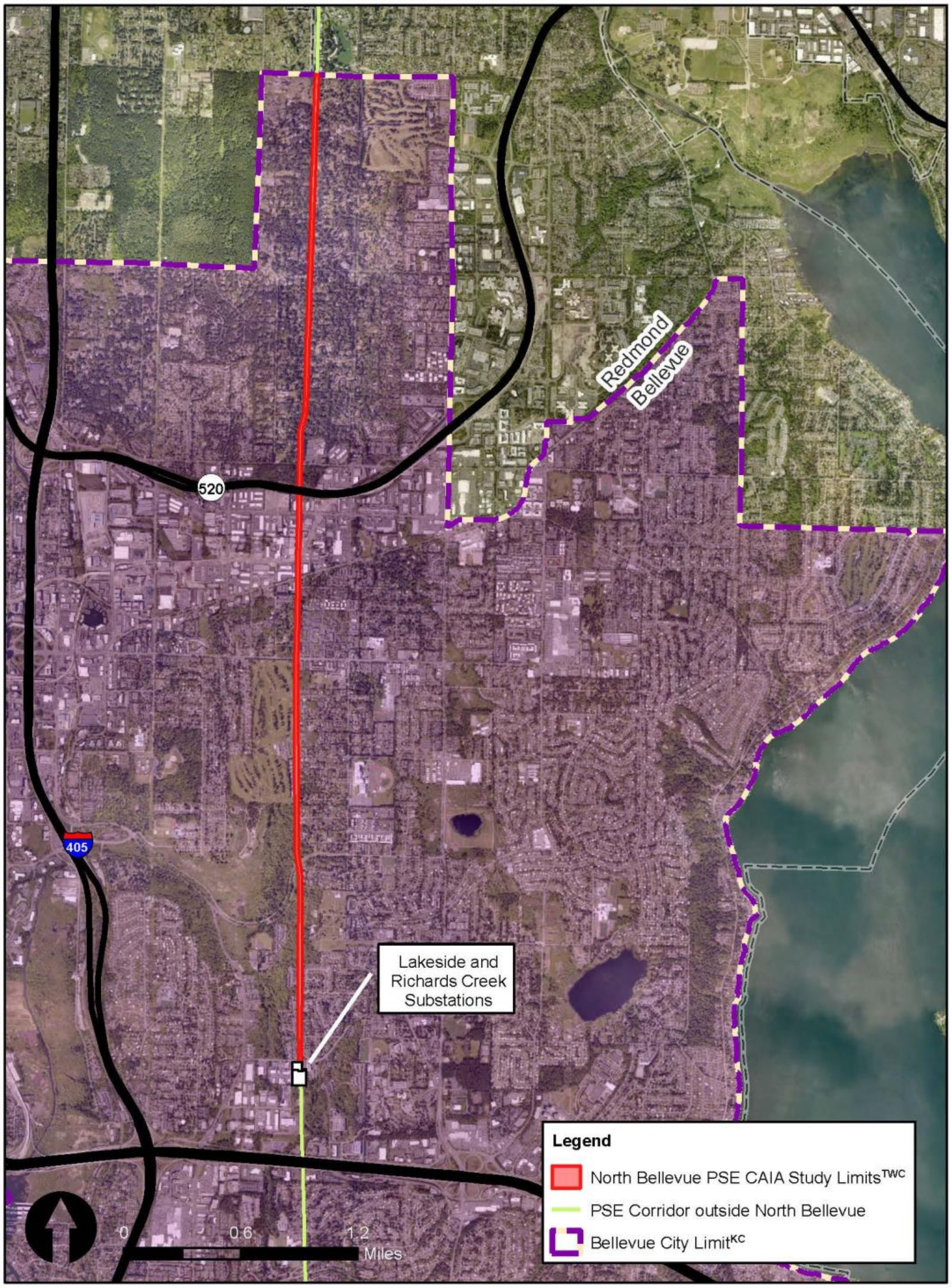

Figure 1. Vicinity map of North Bellevue Segment study area.

2 Methods

A Critical Areas Impact Assessment (CAIA) was conducted for the North Bellevue Segment of the Project. The analysis combined GIS-based assessment with field-verified conditions and evaluated proposed project elements in relation to existing land cover types and regulated critical areas. The location and type of each proposed activity was used to determine impacts and mitigation needs and is based upon site plans provided by PSE (Revision Y, received on 1/27/21). A detailed description of the CAIA process and methods is provided in Appendix B.

2.1 Study Area

For the purposes of this report, the study area is limited to the North Bellevue Segment, a segment of the proposed Energize Eastside corridor that spans approximately 5.2 miles from the Bridle Crest Trail at NE 60th Street to the Lakeside Substation. The study area includes the northern portion of the Lakeside Substation parcel and the existing approximately 100-foot wide regional utility corridor. The study area is depicted in the attached maps (Appendix A).

2.2 Data Compilation

Critical areas evaluated as a part of this analysis include wetlands, streams, habitats for species of local importance, geologic hazard areas, areas of special flood hazard, and associated critical area buffers. To facilitate the CAIA, the following data were compiled and reviewed: vegetation inventory, wetland and stream surveys, and other publicly available data as detailed below and in Appendix B.

Vegetation Inventory

Federal vegetation management criteria limit tree height in 230 kV transmission line corridors to no greater than 15 feet. In anticipation of this project, existing vegetation with the potential to reach a height greater than 15 feet located in the Project area corridor were inventoried between March and November 2015. Since 2015, tree data have been periodically updated. Tree inventory methodology, updates to the dataset, and results are available in the *Vegetation Inventory & Management Plan Report for North Bellevue* (The Watershed Company 2021b). Geospatial tree data used in this CAIA were obtained and compiled from surveys, GPS, and digitization using high-resolution imagery.

Wetland and Stream Surveys

Wetlands and streams were originally delineated and classified in 2015 or earlier at a few specific locations. Delineation findings were documented in the *City of Bellevue Critical Areas Delineation Report: Puget Sound Energy – Energize Eastside Project* (The Watershed Company 2016). Wetland boundaries and stream centerlines were verified or adjusted in February and May 2020. Wetland ratings were also updated in 2020 for consistency with revised City code and the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby

2014). Current wetland and stream conditions are documented in an updated delineation report, *Wetland and Stream Delineation Report Update for North Bellevue* (The Watershed Company 2021c, Appendix C). Geospatial wetland and stream data were compiled from GPS and survey data. Delineation study methodology is detailed in the previously referenced reports (The Watershed Company 2016; The Watershed Company 2021c, Appendix C).

Publicly Available Data

Publicly available City GIS Map Data were utilized for mapping the following critical areas: coal mine hazard areas, floodplains, and steep slopes. Data for geologic hazard areas were retrieved from King County's GIS Center, Washington State Department of Natural Resources (DNR) maps, and GeoEngineers, Inc. (GeoEngineers). The publicly available data indicate no coal mine hazard areas are located within the study area. Steep slopes and landslide hazard areas are the only geohazard areas present in North Bellevue. The City dataset for drainage basins was also utilized for characterizing impacts and determining compensatory mitigation needs for wetland and wetland/stream buffer areas. Drainage basin boundaries were adjusted as necessary to accurately depict field-verified conditions. Data used to map impervious surfaces and development include the King County Impervious and Impacted Surface data (King County 2009), supplemented with land survey data and high-resolution aerial photography provided by PSE.

2.3 Critical Areas Impact Analysis

The CAIA was conducted by placing tree points/polygons and critical area polygons on a georeferenced base map and overlaying preliminary site plans from PSE to determine impacts.

Where Project elements are located in undeveloped critical areas or their buffers, impacts are quantified based on area (square footage of impact) and the expected long-term condition of the area after construction restoration compared to the existing condition. Impacts include permanent impacts, vegetation conversion impacts, and temporary impacts (see Section 7). For more detailed methodology on the CAIA, refer to Appendix B.

2.4 Limitations

The Watershed Company's technical expertise encompasses wetlands, streams, and habitats for species of local importance, in the context of this report. The geotechnical assessments and interpretation of impacts within geologic hazard areas have been addressed by GeoEngineers in a separate report (Appendix D).

Limited availability of detailed site-specific topographic information makes it infeasible to determine top-of-bank adjacent to streams. Stream buffers depicted on the accompanying delineation maps are measured from the field-estimated ordinary high-water mark (OHWM).

Off-site wetland and stream features were identified, delineated and/or sketched where possible; access and permission to enter properties (or lack thereof) along the corridor were secured by PSE with prior notification to property owners. Where critical areas extended outside of the designated study area limits, boundaries were approximated (as shown in Appendix A) using aerial imagery, topography, field notes, and best professional judgment for the purposes of mapping and wetland rating. Generally, boundaries outside of study area limits have not been delineated or field verified. Similarly, trees located outside of study area limits have not been inventoried, assessed, or documented. Temporary impacts outside of the study area limits have been quantified based on approximate critical area boundaries (e.g., access route alignments in wetland or critical area buffers) (Appendix I). However, vegetation conversion impacts would not be captured if tree removal is required for access route construction outside of the study area.

This document represents a point-in-time analysis of the proposed scope of work for the North Bellevue Segment, potential impacts, and approach to critical area mitigation. Potential impacts were conservatively assessed and so refinements made as a result of ongoing design are expected to decrease Project impacts moving forward. For example, impact quantities have been rounded up. If design changes result in increased permanent or vegetation conversion impacts that cannot be addressed by proposed mitigation, a Critical Areas Report Addendum will be prepared to address those impacts and provided to the City for review.

3 Project Elements & Potential Impacts

Project elements that have the *potential* to impact critical areas are defined in this section and include the following:

- Pole replacement:
    - removal of old poles
    - installation of new poles
        - pole buffer (6-foot radius outside of pole footprint),
        - temporary pole construction work area (varies by pole type, see description below);
- Temporary access routes (approximately 20 feet wide);
- Temporary stringing sites; and
- Vegetation management requirements.

3.1 Pole Replacement

Existing H-frames (consisting of two or three wood poles) will be replaced with new monopoles (*i.e.*, a single steel pole). Existing pole sizes are two feet in diameter on average. The diameter of new poles ranges from four to six feet depending on pole installation type (direct embed or new concrete foundation). In general, new poles will be installed in close proximity to the existing H-frames, but some of the replacement poles will be moved to accommodate landowner preferences, easement considerations, and to minimize impacts to critical areas. PSE created construction scenarios specific to each type of pole being installed. Table 1 describes the scenarios applicable to the Project. These scenarios provide assumptions used to assess impacts.

Table 1. PSE construction scenarios.

Description
No Critical or Recreation Area Present
Direct embed-single pole • Temporary work area is generally 2,500 square feet • Create hole (hole will be larger than diameter of the new pole) • New pole and backfill delivered to site • Place pole in hole and backfill annulus • Stabilize site
Foundation-single pole • Temporary work area is generally 5,000 square feet • Create hole (hole will be slightly larger to accommodate foundation installation) • New pole and foundation materials delivered to site • Build foundation and install pole • Stabilize site
Critical or Recreation Area Present
Direct embed-single pole • Establish construction buffer from critical area using appropriate best management practices (BMPs) • Temporary work area is generally 2,500 square feet • Create hole (hole will be larger than diameter of the new pole) • New pole and backfill delivered to site • Place pole in hole and backfill annulus • Stabilize site
Foundation-single pole • Establish construction buffer from critical area using appropriate BMPs • Temporary work area is generally 5,000 square feet • Create hole (hole will be slightly larger to accommodate foundation installation) • New pole and foundation materials delivered to site • Build foundation and install pole • Stabilize site

While the work area for each pole type is defined as a consistent size to be conservative, the shape of the disturbed area will vary depending on the presence of critical areas or other sensitive features in the Project corridor, as well as construction needs and in all cases efforts will be made to minimize the size of the impacted area. During construction, critical areas or other sensitive features will be excluded from the pole work area. Pole replacement will potentially result in three types of impacts: permanent, vegetation conversion, and temporary.

- Permanent impacts will be associated with the installation of new poles, which will have a base diameter ranging from four feet to six feet depending on the pole installation type (direct embed, or new concrete foundation which has a larger base diameter). However, some existing poles (which currently contribute to permanent fill) will be removed from critical areas, resulting in a net reduction in critical area impact.
- Conversion impacts will result from the removal of incompatible transmission line vegetation in the pole construction work area and pole buffer. After construction, the pole construction work areas will be re-vegetated and left to rebound to preconstruction conditions or enhanced (using transmission line appropriate vegetation). The transmission line corridor and associated area surrounding the poles, experiences routine vegetation management consistent with 115 kV standards. Vegetation management along the corridor will continue during operation of the Project in compliance with 230 kV operating clearances. In most cases, vegetation in the transmission line corridor, when mature, will be 15 feet in height or less. During typical inspections and maintenance of the poles, vegetation is routinely disturbed; as such, no trees of any size will naturally grow within approximately six feet of the new poles.
- Where pole construction work areas and pole buffer areas do not require the removal of trees, the resulting impacts will be temporary. The majority of pole construction work areas and pole buffer impacts are expected to be temporary due to the existing use and management of the corridor (*i.e.*, lack of trees). After construction, temporarily disturbed areas will be re-vegetated according to the *Temporary Impacts Restoration Plan* (Appendix I).

BMPs will be used to minimize impacts resulting from pole replacement activities. In critical areas or buffers, mats will be placed over existing vegetation where possible to provide temporary access. Typically, crushed vegetation rebounds within one growing season resulting in only temporary impacts to vegetation. Post-construction, all disturbed areas will be re-vegetated, if necessary, or left to rebound to pre-construction conditions.

Project impacts are further analyzed and quantified in Section 7.

3.2 Access routes

Access to pole removal and installation sites in critical areas will generally occur using existing, unmaintained access routes (established during original construction and re-used over time to maintain the corridor). BMPs will be used to minimize ground disturbance in these areas, and in new areas of access. In critical areas or buffers, mats will be placed over existing vegetation where possible to provide temporary access. Typically, flattened vegetation rebounds within one growing season resulting in only temporary impacts. Where access route alignment requires tree removal within the Project corridor, impacts are characterized as conversion. Vegetation conversion applies because removed trees would be replaced with lower-growing shrubs and/or herbaceous vegetation. Post-construction, all disturbed areas will be re-vegetated in compliance with vegetation management requirements, if necessary, and left to return to their pre-construction condition. Based on the existing conditions and proposed construction BMPs , disturbance associated with access routes in the transmission corridor will predominantly be temporary. Temporary impacts will be restored according to the *Temporary Impacts Restoration Plan* (Appendix I).

3.3 Stringing Sites

In order to replace the transmission conductor (wire), stringing and tensioning equipment will be staged near the new poles at specific locations along the corridor in preparation for the stringing of new wire. Stringing sites are generally located by new poles where the conductor cannot be strung in a straight line (areas where there are turns or angles in the transmission line). The disturbance area associated with the equipment and materials to restring the conductor wire will avoid wetlands and streams to the extent feasible. In critical areas and buffers where access cannot be avoided, mats will be placed over existing vegetation where possible to allow temporary access to poles for stringing activities. Typically, flattened vegetation rebounds within one growing season resulting in only temporary impacts.

Tree trimming and removal activities necessary for the stringing of new wire (in the wire zone) will be performed in a manner to minimize impacts to underlying shrubs, groundcover and other trees, without disturbance to soil. For example, trees will be accessed by foot, stumps will be left in the ground, and debris will be chipped or dispersed as appropriate, preventing critical area disturbance by large heavy equipment. Various techniques will be utilized to string the wire to minimize surface disturbance (*i.e.*, shooting the wire past obstacles, pulling it along established guide wire, helicopter, etc.). Disturbance only occurs at the stringing sites from stringing and tensioning equipment near poles and in areas where tree removal is necessary to meet conductor clearance standards, as the wire is pulled aerially between stringing sites.

For this analysis, stringing sites have been identified as point locations and not polygons (Appendix A). However, each stringing site is estimated to result in approximately 7,500 square feet of temporary disturbance. Like pole construction work areas, the shape of the stringing site will depend upon the presence of adjacent critical areas, existing land conditions, and area needed for equipment staging based on the angle necessary to string the conductor. In many areas, this disturbance will overlap with various impacts quantified for proposed access, pole installation, and vegetation management. Critical area and buffer impacts have not been quantified for stringing sites because stringing sites are presumed to overlap other work areas and would not require additional tree removal. Any additional impacts resulting from stringing sites, not already quantified in Section 7 through other Project elements, will be temporary. Temporary impacts will be restored according to the *Temporary Impacts Restoration Plan* (Appendix I).

3.4 Vegetation Management

Vegetation in the existing corridor is routinely managed to 115 kV standards. The corridor was initially disturbed during original transmission line construction in the 1920s and subsequent upgrades and pole replacement activity has occurred over time, including soil compaction from large equipment. Disturbance is regular and ongoing due to maintenance and pole replacement activities, which has limited vegetation growth. The neighborhoods adjacent to the corridor have subsequently been developed with roads, parking lots, subdivisions, trails, and commercial development, with impervious areas intruding into the corridor. Except for a few small ravines (including Kelsey Creek), the majority of trees in the existing corridor are ornamental and associated with existing residential or commercial property landscaping.

Vegetation in a transmission line corridor that has an operational voltage of more than 200 kV must be managed in compliance with federal requirements. The transmission lines being installed for this project will be operated up to 230 kV. Vegetation management standards vary depending upon the location of vegetation management in relation to transmission wires (viewed horizontally, or plan view), including the wire zone, managed right-of-way (ROW), and legal ROW defined as follows (see also Figure 2):

- Wire Zone – Section of a utility transmission ROW extending to 10 feet horizontally from the transmission wire(s). Vegetation with a mature height of 15 feet or less is allowed in this zone.

- Managed ROW – The section of a transmission line ROW that extends six feet horizontally from the wire zone. Vegetation with a mature height of 15 feet or less is allowed in this zone.

- Legal ROW – The full width of the corridor easement. While PSE has vegetation maintenance rights within the full extent of the legal ROW, only a portion of the legal ROW is intended to be maintained; this area is described as the maintained legal ROW and generally extends 10 feet horizontally from the edge of the managed ROW. Maximum height of mature vegetation between the managed ROW and legal ROW is dependent upon tree species, tree health, and distance from the wires.

Consistent with federal standards for transmission lines operating over 200 kV, vegetation in the wire zone must have a mature height of no greater than 15 feet, unless the topographic relief is sufficient to allow a 20-foot vertical clearance between the power lines and the mature height of trees under the power lines. The same vegetation requirement is applied to the managed ROW zone. The legal ROW is composed of existing easements; its width is approximately 100 feet. The area outside of the managed ROW, but still within the legal ROW, is also subject to select clearing of trees that pose a risk to damaging the lines. To facilitate the CAIA trees with a maximum mature height of 70 feet or greater were presumed for removal in the maintained legal ROW. However, existing trees greater than 70 feet, or with a mature height of greater than 70 feet will not necessarily be removed. Impacts resulting from required vegetation management are characterized as conversion in Section 7.

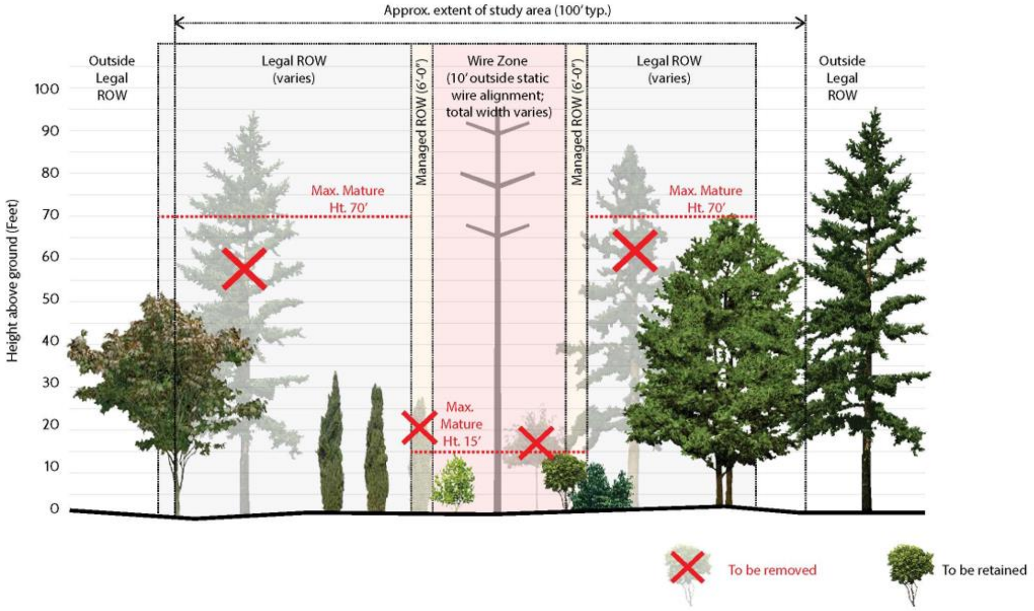

Figure 2. Vegetation impact analysis parameters illustration (cross section view).

4 Existing Conditions

4.1 Site Location

The North Bellevue study area is located in an urban and suburban setting. The majority of the corridor is zoned single-family residential at various densities; exceptions include the Bel-Red area, generally zoned commercial and office. In North Bellevue, the Project corridor passes through or adjacent to (from north to south) the Bridle Trails, Bel-Red, Wilburton, Crossroads, Woodridge, Lake Hills, and Eastgate neighborhoods. The corridor is located in the following public land survey sections: Sections 15, 22, 27, and 34 of Township 25N, Range 05E; and Sections 3 and 10 of Township 24N, Range 05E.

The North Bellevue Segment study area is located in the Cedar-Sammamish Watershed (WRIA 8), and spans three Bellevue-defined drainage basins, which include (from north to south) the Valley Creek, Kelsey Creek, and Richards Creek basins.

4.2 Site Description

When the corridor was constructed in the late 1920s and early 1930s, the entire corridor was cleared. Construction activities resulted in a compacted subsurface in those areas where poles were installed. Since that time, the corridor has been continually maintained by PSE through easement rights. Poles have been replaced and vegetation has been managed requiring vehicles and equipment to use existing access routes. Over time, development has occurred adjacent to and within the corridor, including residential development, roads, parking lots, commercial development, and the establishment of informal trails (using overgrown access routes).

Olympic Pipeline Company (OPL) also utilizes the North Bellevue Segment corridor for operation and maintenance of petroleum pipelines. In general, vegetation management requirements of pipelines are more restrictive than vegetation management requirements for the transmission line described herein. For example, trees and shrubs are expected to be mowed or removed on a more regular basis than for the transmission lines to prevent damage to the pipeline by large roots. In addition, a corridor of herbaceous vegetation is maintained both to keep the area free of large tree and shrub roots and to be able to easily, visually inspect the pipeline corridor from the ground and/or air. The OPL easement width averages less than half of the width of the PSE transmission corridor. It spans the length of the North Bellevue Segment transmission line easement but the location of the OPL easement within the 100-foot wide transmission line corridor varies. Maintenance activities associated with the OPL easement acts as a regular, contributing source of ongoing disturbance and vegetation management within the shared utility corridor.

Valley Creek Drainage Basin

The Bridle Trails neighborhood, at the north end of the North Bellevue Segment consists of developed single-family residential parcels and parks, including Viewpoint Park located on the north side of State Route 520. Residential parcels in this area were developed as early as the 1960s and, in many cases, contain a mix of managed low-growing vegetation in the Project area and large established trees located at the perimeter or outside of the corridor. A defining feature of the Bridle Trails community is the dominant evergreen tree canopy. The corridor through Viewpoint Park appears to experience routine maintenance and is dominated by invasive Himalayan blackberry, tree saplings and small shrubs, and herbaceous vegetation. Outside of PSE's transmission line corridor and OPL's easement, Viewpoint Park is forested.

Kelsey Creek Drainage Basin

The Bel-Red neighborhood is south of State Route 520 and contains commercial properties and businesses. The Project area through the Bel-Red neighborhood includes comparatively more impervious surface area (mainly parking lots) than other parts of the North Bellevue Segment corridor. At this location within the corridor, existing vegetation is often limited to invasive species and non-native commercial landscape screening and parking lot trees.

Between Bel-Red Road and the Lake Hills Connector, the Project corridor borders the Wilburton neighborhood to the west and Crossroads and Lake Hills neighborhoods to the east. Parcels in the vicinity include single- and multi-family properties. Glendale Country Club and Kelsey Creek Park are also defining landscape features in this area. Again, the corridor mainly consists of low, maintained landscapes or areas overgrown by invasive, weedy vegetation; established, native vegetation is located nearby. Beginning on the Glendale County Club property, a compact gravel trail is present in the Project area. This trail connects to the City's managed trails associated with Kelsey Creek Park, south of the Glendale Country Club and generally west of the Project area.

Richards Creek Drainage Basin

South of the Lake Hills Connector, the North Bellevue Segment corridor continues along the edge of the Lake Hills neighborhood and also borders the Woodridge neighborhood to the west. The compact gravel trail present to the north, continues south through a large undeveloped privately-owned parcel before it terminates in a Lake Hills neighborhood residential development. Unmaintained vegetation (particularly near the gravel trail) in the corridor through this area continues to be dominated by invasive Himalayan blackberry and young, weedy trees, while native forests are present in the immediate vicinity. The North Bellevue Segment terminates in the Eastgate neighborhood at PSE's Lakeside Substation property, where surrounding properties are zoned light industrial.

4.3 Critical Areas

This section defines the City's regulated critical areas per Part 20.25H Critical Areas Overlay District of Bellevue's Land Use Code (LUC) and describes the general location(s) of each critical area type in the proposed North Bellevue Segment of the Project corridor. The North Bellevue Segment does not affect lands within shoreline jurisdiction.

4.3.1 Wetlands

The City of Bellevue defines wetlands as follows (LUC 20.25H.095):

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.*

A total of 25 wetlands are located within or adjacent to the North Bellevue Segment corridor. Most wetlands are located south of Bel-Red Road and in the vicinity of the Lake Hills Connector, near Kelsey Creek Park. Wetland classifications and buffer widths are summarized in Section 5.1 (Table 2) and the *Wetland and Stream Delineation Report Update for North Bellevue* (Appendix C).

A detailed discussion of proposed Project impacts to wetlands is provided in Section 7 of this report.

4.3.2 Streams

The City of Bellevue defines streams as follows (LUC 20.25H.075):

> *An aquatic area where surface water produces a channel, not including a wholly artificial channel, unless the artificial channel is:*
> 1. *Used by salmonids; or*
> 2. *Used to convey a stream that occurred naturally before construction of the artificial channel.*

A total of 18 streams are located along the North Bellevue Segment corridor. Kelsey Creek, the most prominent stream in this segment, crosses the corridor south of Bel-Red Road and is the northernmost stream in the North Bellevue Segment. Stream channels are often co-located with wetlands, located in the vicinity of the Lake Hills Connector, near Kelsey Park. Stream classifications and buffer widths are summarized in Section 5.1 (Table 3) and the *Wetland and Stream Delineation Report Update for North Bellevue* (Appendix C).

Direct impacts to streams will not occur from the Project. Impacts to combined wetland and stream buffers are presented in Sections 7.2 and 7.3.

4.3.3 Habitat Associated with Species of Local Importance

The City of Bellevue designates habitat associated with species of local importance and naturally occurring ponds of under 20 acres as critical areas. Habitat, according to LUC 20.50.024,

> *Refers to an individual, species-specific use of a wildlife-habitat type. "Habitat" is the place, including physical and biotic conditions, where a plant or animal usually occurs and is fundamentally linked to the distribution and abundance of species. Species may depend on a Habitat or structural characteristics for part or all of its life history or may exhibit a high degree of adaptability using more than one Habitat. The relationship of species to Habitat is scale-dependent and varies from geographic range, home range, to local or site-specific Habitat components. "Habitat" includes areas of high relative density or species richness, breeding Habitat, winter range, and movement corridors. These areas may also include Habitats that are of limited availability or high vulnerability to alteration. Other examples include: remnant patches of mature mixed Puget Sound lowland forest, caves and cliffs, snag-rich areas and downed logs, riparian areas, lakes and ponds, wetlands and their buffers, and heron rookeries.*

Bellevue considers the following species as species of local importance (LUC 20.25H.150):

> *Birds – bald eagle, peregrine falcon, common loon, pileated woodpecker, Vaux's swift, merlin, purple martin, western grebe, great blue heron, osprey, green heron, and red-tailed hawk*
>
> *Mammals – western (Townsend's) big-eared bat, Keen's myotis, long-legged myotis, and long-eared myotis*
>
> *Amphibians and Reptiles – Oregon spotted frog, western toad, and western pond turtle*
>
> *Fish – Chinook salmon, bull trout, coho salmon, and river lamprey*

Each of these species are reviewed below except for Chinook salmon and bull trout which are addressed in detail in the *PSE Energize Eastside Project Biological Evaluation* (The Watershed Company 2019). As summarized in that document, the Project may affect, but is not likely to adversely affect Chinook salmon and bull trout. Chinook salmon may occur in Kelsey Creek. Bull trout are not known to occur in the North Bellevue Segment.

North Bellevue Habitat

No naturally occurring ponds of under 20 acres are present in the Project area. The Project area is in a developed, urban setting that contains light industry with dense residential development and some natural open spaces. The transmission line corridor is mostly vegetated with low-growing grasses, landscape plants and invasive plant species (Himalayan blackberry and reed canarygrass) typical of disturbed areas and generally offers little in terms of habitat value when compared to urban parks and greenspaces outside the corridor.

The North Bellevue Segment passes adjacent to and through Priority Habitats and Species (PHS) mapped Biodiversity Areas and Corridors identified as Kelsey Creek Open Space Areas (WDFW n.d.). Even at these locations, the corridor tends to lack native tree and shrub cover and is dominated by non-native herbaceous plants and Himalayan blackberry. Conditions within the shared utility corridor contrast dramatically with the native forested, wetland, and riparian habitats that compose most of the Kelsey Creek Open Space Areas. Existing maintenance activities associated with the transmission lines, established PSE programs and procedures (e.g., PSE's Avian Protection Plan described below), and the urban landscape setting reduces the likelihood that species of local importance (which require specific habitat features) will utilize the utility corridor for breeding.

PSE Wildlife Avoidance Strategies

PSE implements an Avian Protection Plan (Appendix E) to protect avian wildlife from harmful interactions with their utility equipment. The plan is consistent with best management practices for avian-safe construction; and includes nest management protocols if sensitive nesting areas are identified near construction activities, including coordination with Washington Department of Fish and Wildlife (WDFW).

Species of Local Importance Use

Of Bellevue's 23 species of local importance, coho salmon and Chinook salmon are the only species known to occur in the Project area, within Kelsey Creek. River lamprey have also been presumed to occur in Kelsey Creek, although this has not been confirmed. Project disturbance, including temporary construction impacts, will not occur below the OHWM of Kelsey Creek or any other regulated stream within the project area. Species that could breed in the Project area but are considered unlikely to do so based on site disturbance are pileated woodpecker, green heron, and red-tailed hawk. Bald eagle, pileated woodpecker, Vaux's swift, purple martin, merlin, green heron, red-tailed hawk, and Townsend's big-eared bat also have the potential to forage in the Project area. Justification for these assessments is provided in the species review summaries below.

Species of Local Importance Review

Professional knowledge and the following sources were utilized to describe preferred habitat for species of local importance in this section when not otherwise cited: All About Birds (Powell et al. 2010), BirdWeb (Seattle Audubon Society 2005), and *The Sibley Field Guide to Birds of Western North America* (Sibley 2003). The likelihood of species presence in the Project area was determined by comparing species' preferred habitat types to available habitat.

Bald eagles are known to nest near Lake Washington and Lake Sammamish, prime foraging habitat, located 2-3 miles from the corridor. They nest in tall, mature trees near large bodies of water. Nesting eagles in the vicinity are more likely to forage over the nearby lakes than on the corridor, although it is possible for bald eagles to utilize poles and corridor areas to forage for small mammals. The Project area does not provide suitable nesting habitat because it lacks tall trees adjacent to large waterbodies and is highly developed. On occasion, eagle flyovers were observed during field work activities; however, breeding or foraging behavior was not observed.

Peregrine falcons are fast-flying birds of prey that are known to nest in urban areas of central Puget Sound. Typical nesting habitat is on cliffs located near large bodies of water. In urban settings, peregrine falcons may nest on buildings and bridges located near large bodies of water such as the State Route 520 and Interstate 90 floating bridges on Lake Washington. Man-made edifices like electrical transmission poles in the Project area could act as a source for potential nesting sites, but are generally not used by peregrine falcons for nesting. Peregrine falcons or nests were not observed during field work activities.

Common loons and **western grebes** are waterbirds. They spend their winters in open lakes, bays, and ocean areas. Common loons prefer to nest on wooded lakes, while western grebes prefer to nest on lakes with marshy vegetation. Suitable habitat does not exist in the Project area. These species are not expected to nest in the vicinity of the Project.

Pileated woodpeckers most often nest in old-growth forest and mature forest stands. However, they are increasingly found in urban areas if there are large trees that can provide roosting and nesting habitat. In general, the Project area does not contain the appropriate vegetation to support this species due to the vegetation management requirements associated with the transmission lines; however, pileated woodpeckers have been known to use wood utility poles for nesting. Pileated woodpeckers were observed near the Project area in Bellevue during field work activities. Suitable habitat exists near the corridor in small residential patches with stands of mature evergreen trees or mixed forests in the Bridle Trails neighborhood, Viewpoint Park, and Kelsey Creek Open Space.

If pileated woodpeckers are observed excavating poles within the Project area, PSE avian biologists will be consulted to determine whether the pole is being used for nesting or foraging. If a pole is determined to be in use for foraging by pileated woodpeckers (which is unlikely as the transmission line poles are treated wood), the Project will have minimal effects by potentially causing temporary disturbance to foraging behavior. Although unlikely, if pileated woodpecker nests are found, depending on nest occupancy, a PSE avian biologist will develop and implement a strategy to prevent impacts to the pileated woodpeckers during the nesting season in coordination with the WDFW. The wood poles use treated wood, which are not good for foraging. Additionally, PSE has an Avian Protection Program that removes nests from poles along transmission lines (PSE n.d.) (Appendix E).

Vaux's swifts and **purple martins** are both small aerial songbirds that forage in open skies, most often over forest or aquatic habitats. Vaux's swifts are closely associated with old-growth forests requiring cavities in large snags or live trees for nesting and roosting, although they are also known to nest and roost in artificial structures like chimneys (Lewis, Whalen, and Milner 2002). Purple martins also historically nested in tree cavities, but more often nest in man-made structures over water near urban areas in the lowlands of western Washington (Hays and Milner 2003). The Project corridor generally lacks suitable nesting structures (man-made or natural) for these species; however, it is possible that they may use the corridor for foraging. Disturbances from Project-related activities would be temporary and would not impede the foraging of nearby habitats.

Merlins rarely breed in the lowlands of western Washington (Seattle Audubon Society 2005) but are increasingly nesting in urban areas. King County is generally considered part of the species non-breeding range; nearby merlin year-round range, where they would be more likely to breed, includes Whatcom, Skagit, and Snohomish Counties (Seattle Audubon Society 2005). Typical breeding habitat is forests with nearby openings, however, during migration and in winter, merlins may be found in a variety of habitats. The Project corridor does not provide suitable nesting habitat; however, it is possible that merlins could use the Project area for foraging particularly during migration and winter. Disturbances from Project-related activities would be temporary and would not impede the foraging of nearby habitats.

Great blue herons are large wading birds most often found near water. Great blue herons forage in a variety of habitats near streams, lakes, ponds, wetlands, saltwater shorelines, and upland fields. They nest in colonies, typically in trees near foraging habitat. There are no known great blue heron nest sites near the Project area, nor were any observed during site visits. If an active heron rookery is identified along the transmission line corridor, a PSE avian biologist will develop and implement a strategy to prevent impacts to the heron rookery during the nesting season in coordination with WDFW.

Green herons are small wading birds that prefer secluded foraging and nesting habitat that consist of good forest or shrub cover in or near wet environments. Green herons are solitary nesters. Wetlands in the Project area are generally small and disturbed and lack qualities like large areas of seasonal/permanent ponding and connectivity to fish-bearing streams that would provide ideal habitat. Streams like Kelsey Creek may provide nesting habitat in or adjacent to the corridor where vegetation structure is suitable. No green herons were observed during field work activities. If green herons are found nesting within the transmission line corridor, a PSE avian biologist will develop and implement a strategy to prevent impacts during the nesting season in coordination with WDFW.

Ospreys nest in dead trees or man-made structures located near large bodies of water where they forage for fish. Ospreys are fairly common in the greater Seattle area near lakes, rivers, and other large waterbodies. The Project area in the City provides suitable nest supports (utility poles) and while osprey typically prefer nest sites near large water bodies, they can nest a mile or two from water. As such, the study area may provide suitable osprey habitat.

No ospreys were observed during field work activities in the corridor in the City. If an osprey nest is observed within the Project area, depending on nest occupancy, a PSE avian biologists will develop and implement a strategy to prevent impacts to the osprey during the nesting season in coordination with WDFW. Additionally, PSE has an Avian Protection Program that removes nests from poles along transmission lines (PSE n.d.) (Appendix E).

Red-tailed hawks are quite common in western Washington and may be the most common hawk in North America. In western Washington nests are often built in large black cottonwood and red alder trees (Seattle Audubon Society 2005), but the species may also utilize artificial structures for nesting. Red-tailed hawks are often visible soaring over open areas or perching near roadsides. Red-tailed hawks are generally considered unlikely to nest in the corridor due to limited availability of nest trees, but they may nest in trees near or adjacent to the Project area. It is more likely that the species utilizes the Project corridor for perching or foraging. Disturbances from Project-related activities would be temporary and would not impede the foraging of nearby habitats.

Bats in Washington, including those listed as species of local importance, utilize a variety of habitats including caves and mines; cliffs, talus, and boulders; buildings and bridges; and trees (Hayes and Wiles 2013). Of the bat species considered by the City, only the Townsend's big-eared bat could potentially utilize habitat in the Project corridor. According to a Gap Analysis conducted for Washington State mammals, King County is not considered to provide core nor marginal habitat for Keen's myotis; this species is associated with old conifer forests. Furthermore, while long-legged and long-eared myotis species tolerate low-density development, mid- and high-intensity development are generally not considered good habitat (NatureMapping Foundation n.d.). All of the City is mapped as Townsend's big-eared bat core habitat. Their presence in the study area is expected to be limited by available roosts most likely to be vacant buildings or trees based on the landscape setting. The Project area does not provide suitable roost sites; few vacant buildings are expected to occur near the Project area and managed vegetation in the transmission line corridor is generally not considered to allow for the development of tree roost sites.

Oregon spotted frog habitat can be determined using the Oregon Spotted Frog Screening Model (Germaine and Cosentino 2004). The model lists five "Tier 1" criteria, which must all be satisfied for a site to be considered as potential habitat. An additional Tier 2 criterion must also be satisfied if all five Tier 1 criteria are satisfied. Wetlands that occur in the Project area and surrounding lands do not meet all the criteria necessary to support the presence of Oregon spotted frogs. Specifically, these wetlands do not meet the criteria for National Land Cover Definition landscape composition, which requires less than 9.8 percent development within a mile of the wetland's perimeter. On that basis alone, any wetlands within the Project area, or nearby, would not be considered potentially suitable as Oregon spotted frog habitat. Critical habitat has recently been designated for the Oregon spotted frog but does not include any portion of the combined Lake Washington and Sammamish or Cedar River watersheds. Based on a lack of documented presence and the failure to satisfy the required criteria for suitable Oregon spotted frog habitat, Oregon spotted frogs are not expected to be present in the corridor or impacted by the Project.

Western toad range spans much of Washington state including western Washington and the greater Seattle area. The species reportedly remains common throughout much of its range but has experienced population declines. Western toad can be found in many habitats including desert springs and streams, meadows, woodland, mountain wetlands, and agricultural land (IUCN SSC Amphibian Specialist Group 2015). Western toad habitat in the study area is generally limited to aquatic and terrestrial habitats associated with Kelsey Creek that could be used for breeding (*i.e.,* shallow slow-moving water). PHS on the Web (WDFW n.d.) documents western toad occurrences in King County, but none are documented in the vicinity of the Project area. The North Bellevue Project area is not considered core nor marginal habitat for western toad according to a Gap Analysis for Washington State amphibians and reptiles (NatureMapping Foundation n.d.). The likelihood of western toad presence in the Project area is low. Furthermore, wetland and stream impacts have been avoided in North Bellevue, including avoidance of vegetation impacts to the Kelsey Creek buffer. The Project is not anticipated to impact western toads.

Western pond turtle populations are known to occur in Klickitat and Skamania Counties; and recent individual sightings have been confirmed in Pierce and King Counties. One limiting factor in western pond turtle distribution is the availability of shallow water bodies that provide basking surfaces and vegetative cover (Nordstrom and Milner 1997). This habitat type is not present in the Project corridor. Therefore, use of the Project corridor by this species is not anticipated.

Coho salmon and **river lamprey** are species of anadromous fish that could utilize streams and rivers in the City as habitat. Historically, river lamprey likely occurred in most Washington rivers. Current species distribution is not well-known but is presumed to include Puget Sound rivers (WDFW 2015) and the Lake Washington basin (USFWS n.d.). River lamprey spawn in gravel substrates in riffle and side channel habitats of clear, cool streams. Larvae use fine silt and mud substrates and require good water quality year-round. Although not identified to species, lamprey have been observed in Kelsey Creek in Bellevue (City of Bellevue 2010). For the purpose of this study, river lamprey are presumed to occur in Kelsey Creek. Coho salmon are also known to occur in Kelsey Creek in the corridor (City of Bellevue 2010). No in-water work will occur as part of this Project and BMPs will be implemented to minimize the potential for sediment laden runoff; therefore, impacts to these species is not anticipated.

Summary

To summarize, Kelsey Creek is considered a Habitat Associated with Species of Local Importance. No Project impacts are proposed to Kelsey Creek or its associated buffer. No other Habitats Associated with Species of Local Importance have been identified at this time. While there is some potential for certain species to breed in the Project area, it is considered to be unlikely. The foraging habitat present in the Project area is not expected to change as a result of the Project and is not recommended for regulation as a Habitat Associated with Species of Local Importance.

4.3.4 Geologic hazard areas

Geologic hazard areas include landslide hazards, steep slopes, coal mine hazards and seismic hazards; City of Bellevue defines these as follows (LUC 20.25H.120):

1. *Landslide Hazards. Areas of slopes of 15 percent or more with more than 10 feet of rise, which also display any of the following characteristics:*
    a. *Areas of historic failures, including those areas designated as quaternary slumps, earthflows, mudflows, or landslides.*
    b. *Areas that have shown movement during the Holocene Epoch (past 13,500 years) or that are underlain by landslide deposits.*
    c. *Slopes that are parallel or subparallel to planes of weakness in subsurface materials.*
    d. *Slopes exhibiting geomorphological features indicative of past failures, such as hummocky ground and back-rotated benches on slopes.*
    e. *Areas with seeps indicating a shallow ground water table on or adjacent to the slope face.*
    f. *Areas of potential instability because of rapid stream incision, stream bank erosion, and undercutting by wave action.*
2. *Steep Slopes. Slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area.*
3. *Coal Mine Hazards. Areas designated on the Coal Mine Area Maps or in the City's coal mine area regulations, LUC 20.25H.130, as potentially affected by abandoned coal mines; provided, that compliance with the coal mine area regulations shall constitute compliance with the requirements of this chapter in regard to coal mines.*
4. *Seismic Hazards. Areas of known faults or Holocene displacement, based on the most up-to-date information, or areas mapped areas of "moderate to high" or "high" hazard liquefaction susceptibility by the Washington Department of Natural Resources Liquefaction Susceptibility Map of King County, Washington, 2004, as amended.*

The *Targeted Critical Areas Geologic Hazard Evaluation* (GeoEngineers 2020, Appendix D) evaluates landslide and steep slope hazards in the North Bellevue Segment; no coal mine hazard areas are present.

GeoEngineers assessed and described potential Project impacts to geologic hazard areas and associated buffers/setbacks along the corridor. The following five sections (listed from south to north) were areas of focus:

- the area between SE 26th Street and the Lakeside Substation;
- the area between SE 20th Street and Lake Hills Connector;
- the area between Lake Hills Connector and Main Street;
- the area just north of NE 24th Street (Pole 4/2);
- and the area just south of NE 60th Street (Overlake Farms).

4.3.5 Areas of Special Flood Hazard

The City of Bellevue defines areas of special flood hazard as follows (LUC 20.25H.175):

1. *Land Subject to One-Hundred-Year Flood. The land in the floodplain subject to the flood having a one percent chance or greater of being equaled or exceeded in any given year as determined by customary methods of statistical analysis defined in the City of Bellevue Storm and Surface Water Engineering Standards, January 2011, or as hereafter amended. Also referred to as the 100-year flood.*

2. *Areas Identified on the Flood Insurance Rate Map(s). Those areas identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for King County" dated April 19, 2005, with an accompanying flood insurance map(s) and any revisions thereto. The Flood Insurance Study and accompanying map(s) are hereby adopted by reference, declared part of this part, and are available for public review at the City of Bellevue.*

3. *Additional Areas. Other areas designated by the Director pursuant to this section shall be considered areas of special flood hazard.*

4. *Designation of Areas of Special Flood Hazard. Flood Insurance Rate Maps are to be used as a guide for the City of Bellevue, project applicants, and/or property owners to identify areas of special flood hazard. Flood Insurance Rate Maps may be continuously updated as areas are reexamined or new areas are identified. Newer and more restrictive information for flood hazard area identification shall be the basis for regulation.*

5. *Use of Additional Information. The Director may use additional flood information that is more restrictive or detailed than that provided in the Flood Insurance Study to designate areas of special flood hazard, including data on channel migration, historical data, high water marks, photographs of past flooding, location of restrictive floodways, maps showing future build-out conditions, maps that show stream habitat areas, or similar information.*

6. *Flood Elevation Data. When base flood elevation data is not available (A and V zones), the Director shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source, in order to administer provisions for the area of special flood hazard. In areas of special flood hazard where the BFE has increased due to remapping efforts, the new BFE will establish the regulatory limit. (Ord. 6013, 8-1-11, § 1; Ord. 5680, 6-26-06, § 3)*

The only area of special flood hazard in the North Bellevue Segment is associated with Kelsey Creek, to which no permanent or temporary impacts are proposed as poles and pole working areas will be located outside of areas of special flood hazard.

5 Local Regulations

As noted previously, critical areas are regulated under the Critical Areas Overlay District (Bellevue Land Use Code [LUC] 20.25H). This section of the report provides an analysis of the Project's compliance with the critical area regulations.

5.1 Wetlands and Streams

A summary of relevant wetland and stream critical area classifications and standard buffer widths provided in the *Wetland and Stream Delineation Report Update for North Bellevue* (Appendix C) are presented in Tables 2 and 3, below.

Standard buffer widths for wetlands are based upon the wetland category using the 2014 Rating System (Hruby 2014), whether the site is undeveloped or developed, water quality and habitat scores, and wetland size. Bellevue defines an "undeveloped site" for wetlands as follows:

> *An undeveloped site is any site where the wetland and wetland buffer have not previously been included within a Native Growth Protection Area (NGPA) or Native Growth Protection Easement (NGPE), regardless of whether the site contains a primary structure.*

None of the wetlands encountered in the study area occur on parcels with NGPEs, so associated properties are all considered undeveloped for the purpose of applying wetland buffers.

Standard buffer widths for streams are based upon the stream type, stream condition (open or closed), whether or not the Project site contains a primary structure, and whether or not the stream buffer has been approved and recorded in an NGPE or NGPA. Inventoried streams were reviewed by parcel and buffer widths were determined based upon the above criteria (Table 3).

Some buffer areas (i.e., where primary structures are located) are allowed to be excluded from the standard wetland and stream buffer under Bellevue's code (LUC 20.25H.095.D.1.b, LUC 20.25H.075.C.1.d) and this is reflected in the CAIA maps in Appendix A. Pursuant to LUC 20.25H.095.D.2.b and 20.25H.075.C.2.b, standard (or regulatory) buffers have also been modified to end at major roadways when the part of the regulatory buffer on the other side of the ROW provides insignificant biological or hydrological function in relation to the portion of the buffer adjacent to the wetland or stream. Thus, these buffers have been truncated to their functional width to the extent allowed by the LUC.

Structure setbacks have not been included in the CAIA as no structures are proposed.

Table 2. Summary of current wetland critical area classifications and buffer widths.

Wetland Name	Approx. Size (square feet)	HGM Class used for Rating	2014 Ecology Wetland Rating Scores (Water Quality | Hydrology | Habitat |Total)				Category	Standard Buffer Width (feet)
A (Overlake)	15,673	Depressional	5	6	4	15	IV	40
CB01	31,758	Slope	6	6	5	17	III	110
EB01	7,289	Slope	5	6	6	17	III	110
EB02	98,761	Slope	6	6	6	18	III	110
EB03	6,507	Slope	7	7	4	18	III	60
EB04	2,196	Depressional	7	6	4	17	III	60
EB05	3,904	Slope	6	7	4	17	III	60
EB06	1,067	Slope	5	6	4	15	IV	0
EB07	717	Slope	5	6	4	15	IV	0
EB08	497	Slope	6	5	5	16	III	110
EB09	420	Depressional	7	6	6	19	III	110
EB10	2,316	Slope	7	7	5	19	III	110
EB11	8,365	Depressional	8	7	5	20	II	110
EB12	12,823	Slope	6	6	5	17	III	110
EB13	3,658	Slope	6	5	5	16	III	110
EB14	7,322	Slope	6	6	6	18	III	110
EB15	31,090	Slope	5	6	6	17	III	110
EB16	6,792	Depressional	6	5	6	17	III	110
EB17	58,906	Depressional	7	6	6	19	III	110
EB18	4,317	Slope	6	6	6	18	III	110
EB19	4,296	Slope	5	5	6	16	III	110
EB20	11,595	Slope	5	7	4	16	III	60
EB21	2,258	Depressional	7	7	3	17	III	60
EE (Lakeside)	2,949	Slope	5	6	4	15	IV	40
I (Lakeside)	1,061	Depressional	6	6	4	16	III	60

Table 3. Summary of stream critical area classifications and buffer widths.

Stream Name	**Type[1]**	**Flow**	**Est. Width (feet)**	**Primary Structure?** (Y/N |Applicable Parcel Number)		**Buffer (feet)**
EB01 (Kelsey Creek)	F	Perennial	15	No	undeveloped ROW	100
				Yes	NGPA- 760580TRCT	NGPA edge
				Yes	0672100140	50
				Yes	0672100139	50
				Yes	0672100135	50
				Yes	0672100120	50
EB02	N	Seasonal	5	Yes	3425059010	25
EB03	N	Seasonal	2	Yes	3425059010	25
EB04	N	Seasonal	1	Yes	3425059010	25
EB05	N	Seasonal	3	Yes	3425059010	25
EB06	N	Perennial	2	Yes	3425059287	NGPE edge
				Yes	3425059016	25
EB07	N	Perennial	2	Yes	3425059017	25
				Yes	3425059016	25
EB08	N	Seasonal	2	Yes	3425059017	25
				Yes	3425059016	25
EB09	N	Perennial	2	No	0324059009	50
				No	0324059047	50
EB10	N	Seasonal	5	No	0324059122	50
				Yes	developed ROW	25
EB11	N	Seasonal	5	Yes	2077700036	25
				Yes	developed ROW	25
				No	developed ROW	50
EB12	N	Seasonal	2	No	0324059066	50
EB13	N	Seasonal	2	No	0324059066	50
EB14	N	Seasonal	2	No	0324059066	50
EB15	N	Perennial	2	Yes	0686050100	25
				No	0686050090	50
EB16	N	Seasonal	2	Yes	3425059219	25
				Yes	3425059010	25
EB17	N	Seasonal	2	No	0324059122	50
EB18	F	Seasonal	2	Yes	0324059025	50

1. Stream Type key: Type F = fish bearing stream. Type N = non-fish bearing stream.

5.2 Geologic Hazard Areas

Geologic hazard areas also require buffers per LUC 20.25H.035. According to this provision, landslide hazard areas and steep slopes require a 50-foot buffer from the top of the slope. In order to map top-of-slope buffers, steep slopes and landslide hazard areas were visually evaluated relative to 2-foot contour data provided by the City, and buffers were clipped to top-of-slope (Appendix A).

Steep slopes also require a toe-of-slope setback of 75 feet. Landslide hazards require a setback based on site-specific geotechnical studies. GeoEngineers notes that no new poles are proposed near toes-of-slope for landslide hazards, so no further assessment of structure setbacks is necessary. Additionally, PSE poles are not regulated as structures under City code (Appendix D).

5.3 Alteration of Critical Areas and Buffers

In general, the City code will not allow critical areas to be filled, graded, or altered. The LUC requires that an applicant adjust proposed site plans to avoid and/or minimize impacts to critical areas and their respective buffers. New or expanded utility facilities and utility systems are allowed within a critical area or critical area buffer if no technically feasible alternative with less impact on the critical area or critical area buffer exists and if certain other criteria are met (LUC 20.25H.055). See Section 9 for a review of how the Project meets these criteria.

No alterations are proposed to areas of special flood hazard in the North Bellevue Segment. Requirements associated with proposed alterations to wetland, wetland buffers and stream buffers; and geologic hazard areas and associated buffers are described in Section 9.

6 Mitigation Sequencing

Pursuant to LUC 20.25H.215, PSE seeks to avoid and minimize impacts to the critical areas and associated buffers located in the Project corridor to the greatest extent feasible.

Avoidance

Proposed new poles have been sited to avoid direct impacts to wetlands and streams. Completely avoiding pole impacts to geologic hazard areas and combined wetland and stream buffers is not feasible due to the prevalence of those features in the Project area. Furthermore, pole replacement activities associated with the transmission line upgrade must occur in specific locations for proper functioning of the electrical system due to complex engineering considerations making pole placement in some critical areas and their buffers unavoidable. Where avoidance was not possible, PSE worked with engineers to minimize impacts through design modifications; such changes reduced pole footprints and increased line heights to avoid geologic hazard area and buffer impacts to the extent feasible.

Temporary impact areas associated with construction access, pole construction work areas, and stringing sites also avoid critical areas to the extent feasible. For example, specific pole construction work areas have been adjusted to exclude critical areas on a pole-by-pole basis.

Poles were relocated out of wetlands and combined wetland and stream buffers for replacement, resulting in a decrease in pole-associated impacts to wetland and buffer areas in the North Bellevue Segment from existing conditions. However, completely avoiding impacts to all critical areas and associated buffers as part of the North Bellevue Segment is not achievable due to vegetation management and pole location requirements. Where avoidance is not possible, PSE worked with engineers to locate poles to minimize impacts.

Minimization

Minimization techniques were utilized during the design process in order to limit impacts to critical areas and their associated buffers. Minimization measures included the following:

1. Utilizing the existing transmission line corridor, which has experienced significant disturbance as a result of adjacent development and ongoing corridor maintenance by OPL and PSE. Alternative routes and options were evaluated in the Phase 2 Draft Environmental Impact Statement for the Project (ESA 2017), but not selected for the proposed Project.
2. Limiting the construction disturbance to the minimum practicable size around each pole and access point, and where impacts cannot be avoided, prioritizing avoidance of impacts to critical areas (including buffers).

3. Transmission lines will span above critical areas, minimizing ground disturbance, vegetation removal, and loss of critical area function. Poles have been located outside of wetlands and disturbance to buffers is limited.
4. Where vegetation removal is required in critical areas, trees will be accessed by foot, stumps will be left in the ground, and debris will be chipped or dispersed as appropriate, preventing critical area disturbance by large heavy equipment.

Mitigation

To off-set unavoidable critical area impacts associated with the Project, compensatory mitigation will occur.

A portion of Project impacts will be mitigated on-site at the Richards Creek Substation (Appendix F). This mitigation area will consist of wetland enhancement and will expand upon the *Approved Energize Eastside South Bellevue Mitigation and Restoration Area* (17-120557-LO). The new proposed mitigation will increase the total habitat patch size and functions by enhancing additional wetland area.

Impacts that cannot be adequately mitigated on-site or at other locations in the impacted drainage basins will be mitigated at the Keller Farm Mitigation Bank located in the City of Redmond as documented in the *Mitigation Bank Use Plan* (Appendix G).

7 Unavoidable Project Impacts

Impact types resulting from the Project have been quantified based upon the long-term condition of the proposed work areas and existing land cover types in the corridor. Quantified impacts have been characterized as one of three types using this analysis and include permanent, vegetation conversion, and temporary. A summary of the impact types based on proposed work and existing land cover is provided in Table 4.

Where no change is anticipated due to the existing land cover type in the Project area, no mitigation is required. Impact results categorized as no change have not been reported.

Permanent impacts are quantified based upon the approximate area of proposed transmission line pole footprint. Conversion impacts are quantified based upon the approximate tree canopy area to be removed as determined using the tree canopy radius recorded during vegetation inventory field work (The Watershed Company 2021b). Temporary impacts are quantified based upon the area of disturbance required for certain construction activities (e.g., access routes and pole construction work area) Impact quantities have been rounded up to the nearest 10 square feet (SF) to account for the coarseness of the GIS-based impact analysis, which likely overstates actual project impacts, but was adopted to conservatively assess potential impacts.

Table 4. Matrix used for determining impact types based upon long-term condition of proposed activities and existing land cover types in critical areas and associated buffers.

			Existing Land Cover Types					
			Forested to be Removed		Forested to Remain		Understory only	Other (mostly lawn)
	Impact Description	**Long-Term Condition[1]**	with understory	no understory	with understory	no understory		
Proposed Activities	Pole footprint (actual footprint of pole based on engineering drawings from PSE)	Developed	P	P	P	P	P	P
	Pole buffer (6-foot radius outside of pole footprint)	Mixed vegetation[2]	C	C	T	T	T	T
	Temporary access routes (20-foot width based on alignments from PSE)	Mixed vegetation[2]	C	C	T	T	T	T
	Pole construction work area	Mixed vegetation[2]	C	C	T	T	T	T
	Wire Zone	Mixed vegetation[2]	C	C	NC	NC	NC	NC
	Managed ROW	Mixed vegetation[2]	C	C	NC	NC	NC	NC
	Legal ROW	Mixed vegetation[2]	C	C	NC	NC	NC	NC

Type of Impact based on proposed activity, long-term condition, and existing land cover type:
P = Permanent, C = Vegetation Conversion, T = Temporary, NC = No Change

1. Long-term condition determined in coordination with PSE.
2. Subject to varying height restrictions described in Section 3.4.

7.1 Permanent Impacts to Wetlands

7.1.1 Permanent Fill Impact (Poles)

Permanent fill impacts are characterized as a change from a vegetated critical area to a transmission line pole foundation filling a wetland. No permanent impacts are proposed in wetlands (or streams). The Project avoids development, grading, or pole placement in wetland and stream critical areas. In fact, existing impact would be removed by relocating six poles from wetland to non-wetland areas, which will allow approximately 150 SF of wetland area to be restored (Table 5). Following pole removal, the holes will be filled in with dirt and restored with an appropriate native wetland seed mix and left to naturally regenerate.

Table 5. Approximate existing pole area to be converted back to wetland (net wetland improvement).

Drainage Basin	Wetland	Pole Removal Area (SF)
Kelsey Creek	EB02	120
Richards Creek	EB20	30
Total		150

7.1.2 Vegetation Conversion Impact (Tree Removal)

Impacts that result in vegetation conversion are caused by vegetation management activities resulting in a shift from large shrubs and trees to shrubby or herbaceous vegetation. These impacts will be limited to disturbance of vegetation; soils and root systems will remain intact. Vegetation conversion impacts require mitigation when they occur in wetlands or buffers, but since the magnitude of impact is less than permanent impacts and some functions are retained, a reduced mitigation ratio is proposed using interagency guidance (Ecology et al. 2006).

Vegetation conversion impacts occur in nine wetlands in the North Bellevue project area because the maximum potential height of existing vegetation is not compatible with the clearances required for the proposed overhead 230 kV transmission lines. The majority of vegetation conversion impacts occur in the Kelsey Creek drainage basin (Table 6).

Table 6. Approximate area of direct wetland vegetation conversion impacts and number of trees to be removed by drainage basin.

Drainage Basin	Critical Area Name	Area of Impact (SF)	Quantity of Trees to be Removed
Valley Creek (840 SF Total)	Wetland A (Overlake Farms)	240	1
	Wetland CB01	600	1
Kelsey Creek (8,160 SF Total)	Wetland EB11	2,900	11
	Wetland EB12	1,940	3
	Wetland EB13	1,460	7
	Wetland EB14	800	2
	Wetland EB16	500	3
	Wetland EB17	560	1
Richards Creek (840 SF Total)	Wetland EE	840	1

7.2 Permanent Impacts to Combined Wetland and Stream Buffers

7.2.1 Permanent Buffer Impact (Poles)

Permanent impacts to wetland and stream buffers are limited to nine new poles resulting in 63 SF of permanent impact in the Kelsey Creek sub-basin and 59 SF of permanent impact in the Richards Creek sub-basin. These impacts are offset by removing 34 existing poles (totaling 1,039 SF) from wetland and stream buffer areas. Following pole removal, the buffer will be restored by filling the holes with dirt and restored with native grass seed and left to naturally regenerate (Table 7).

Table 7. Approximate area of net change in wetland/stream buffer condition with respect to transmission poles.

Drainage Basin	Pole Removal Area (SF)	Pole Impact Area (SF)	Net Result, Rounded up
Kelsey Creek	704	63	+ 650 SF vegetated buffer area
Richards Creek	335	59	+ 280 SF vegetated buffer area
Total	1,039	122	930[1]

1. The total, rounded, net result does not equal the sum of the two columns to the left because of rounding.

7.2.2 Vegetation Conversion Impact (Tree Removal)

Vegetation conversion impacts from pole buffers, pole work areas, access routes, managed ROW, legal ROW, and wire zones are also proposed to wetland and stream buffers in the North Bellevue Segment corridor. The impact areas summarized in Table 8 are generated from the removal of approximately 172 trees total from wetland and stream buffers in the North Bellevue Segment.

Table 8. Approximate area of wetland and stream buffer vegetation conversion impacts by drainage basin.

Drainage Basin	Impact Type	Area of Impact (SF)
Valley Creek	Conversion	2,130 (6%)
Kelsey Creek	Conversion	29,460 (77%)
Richards Creek	Conversion	6,540 (17%)
Total		38,130

7.3 Temporary Impacts to Wetland and Wetland/Stream Buffer

Temporary impacts will occur during construction in wetlands and wetland/stream buffers as part of the following activities: pole installation and removal, and construction access route re-establishment/use (Table 9). These areas will be restored in-place after construction is complete in accordance with a temporary impact restoration plan which will be submitted as part of the Clear and Grade Application.

Table 9. Approximate area of temporary wetland and wetland/stream buffer impacts by drainage basin.

Drainage Basin	Location	Temporary Area of Impact (SF)
Valley Creek	Wetland	0
	Wetland/Stream Buffer	1,300
Kelsey Creek	Wetland	720
	Wetland/Stream Buffer	36,890
Richards Creek	Wetland	40
	Wetland/Stream Buffer	8,790
Total		Wetland: 760 Wetland/Stream Buffer: 46,980

7.4 Impacts to Geologic Hazard Areas

Impacts to geologic hazard areas and associated buffers have been reviewed by GeoEngineers based on PSE's proposed activities. GeoEngineers based their analysis on a review of geologic maps and geologic hazard maps, digital imagery, site visits, and PSE site plans (which included trees to be removed but not canopy loss). Impact quantities in Table 10 are intended to provide the reader with a comprehensive understanding of Project impacts; however, these impact quantities were not relied upon by GeoEngineers in their impact assessment.

In general, GeoEngineers determined that PSE's proposed work would be consistent with the management activities of the existing corridor and recommended implementation of BMPs and Temporary Erosion and Sediment Control (TESC) measures to mitigate potential impacts (see Section 8.2). Refer to the GeoEngineers Report for additional details (Appendix D).

Table 10. Approximate area of impact to geologic hazard areas in North Bellevue.

Geologic Hazard Area	Proposed Pole Removal Quantity	Proposed Pole Installation Quantity	Vegetation Conversion Area (SF)	Temporary Impact Area (SF)
Steep Slope Hazard Area	3 (1 is also in a Landslide Hazard Area Buffer)	2	8,980	4,850
Steep Slope Hazard Area Buffer/Setback	45	14	See note[1]	See note[1]
Landslide Hazard Area	1 (also in a Steep Slope Hazard Area)	0	0	1,820
Landslide Hazard Area Buffer	4 (all are also in Steep Slope Hazard Area Buffers/Setbacks)	1 (also in a Steep Slope Hazard Area Buffer/Setback)	0	See note[1]

1. Note: Buffer and/or setback areas from steep slope and landslide hazard areas commonly overlap another geologic hazard area, wetland, or wetland/stream buffer. Impact quantities in these areas often double count an impact already reported. Therefore, they have not been provided.

7.5 Cumulative Impacts

Impacts from past development activities have shaped the Project vicinity since the mid-19th century and continue to shape how Seattle and the Eastside are changing in response to development activities and trends. In general, landscape-scale and basin-level functions and processes are impacted by increased impervious surface, critical area and buffer vegetation removal, and buffer area losses. This is common to urban areas like the City of Bellevue which have experienced a general loss of upland forested, native meadow, riparian, and wetland habitat areas due to development. Urbanization tends to cause flashy stream hydrology, increased pollutant loads, sedimentation, and overall habitat loss, often resulting in few fragmented areas of high-value fish and wildlife habitat remaining in urban settings.

Other projects such as Sound Transit's East Link Light Rail overlapping with the proposed Project can contribute to these ongoing trends and cumulative impacts on high-value uplands and wetlands in the vicinity. These changes, along with additional urban development, continue to incrementally reduce remaining habitat areas and aquatic resources.

Although urbanization has resulted in an overall loss and degradation of available fish and wildlife habitat throughout the study area, current regulations and incentive programs have slowed the trend of habitat loss to a degree. In the case of fish passage, future permitted projects are likely to incrementally provide net benefit to habitat. Mitigation measures for these projects may include restoration or enhancement of degraded streams and wetlands and their associated buffers, thus providing water quality treatment for impervious surfaces that currently receive no treatment, removal of fish passage barriers, and planting of disturbed areas with native vegetation. These mitigation measures benefit fish and wildlife habitat when compared to existing conditions and improve conditions for federally listed threatened or endangered species, if present.

In the short-term, the Project will contribute to the incremental trend of degradation directly by removing trees and altering available habitat conditions, and indirectly by continuing to supply energy to support a growing, developing region. However, the Project will occur within an existing, managed utility corridor; therefore, Project impacts will be much more subtle than other greenfield developments that clear entire sites and replace with buildings and impervious surfaces. Mitigation is proposed to compensate for unavoidable Project impacts and replace associated functions and values in locations which will maximize benefit to critical areas. On-site Project mitigation will help to reduce cumulative impacts but will not immediately replace all habitat lost. In the short-term, replacing large trees with smaller planting-sized trees will not fully replace the habitat functions provided by the existing conditions. Including snags and large woody debris in mitigation plans will help to address the loss of forested habitat values in the short-term, and over time the loss of function will be further addressed as mitigation areas mature. However, as stated above, with mitigation the Project is anticipated to cause a net improvement of critical area functions in the Project area. Off-site mitigation, through the Keller Farm Mitigation Bank, will avoid some of the temporal loss effects associated with the on-site mitigation. This is due to the advanced installation of mitigation at the Keller Farm Mitigation Bank.

Project impacts will be appropriately mitigated in order to minimize the Project’s cumulative impacts to critical areas and buffers. No long-term impacts to water resources are expected as a result of the Project. Mitigation measures to compensate for impacts identified in this report are described in Section 8.

8 Mitigation

8.1 Wetland and Combined Buffer Mitigation

The Project went through a mitigation sequencing review as detailed in Section 6. Then, unavoidable impacts to wetlands and combined wetland/stream buffers were estimated and categorized as permanent vegetation conversion and temporary impact. Temporary impacts will be restored on-site and do not require additional mitigation. Potential mitigation area required to compensate for impacts using a permittee-responsible mitigation approach was then calculated to help develop the Project's overall mitigation strategy. The minimum mitigation area calculation used Ecology's mitigation ratios for wetland enhancement because wetland enhancement was determined to be the most feasible mitigation option given the landscape setting and would generate the largest, or 'worst case' potential mitigation area necessary to offset impacts (Table 11). Since the permanent unavoidable impacts to wetlands and combined buffers are from vegetation conversion from tree canopy to understory and shrubs (no fill), one-half the typical ratios for permanent impacts are proposed, consistent with the mitigation approach that was approved by the City for the South Bellevue Segment of the Project and interagency guidance (The Watershed Company 2016; Ecology et al. 2006).

Table 11. Summary of approximate minimum 'on-site' mitigation area required to compensate for Project impacts using a permittee-responsible mitigation approach.

Basin	Critical Area Name	Cate-gory	Type of Activity	Impact Quantity (SF)	Adjusted Impact Quantity (SF)[1]	Mitigation Ratio[2]	Mitigation Required (SF)[3]
Richards Creek (Wetland Total: 2,430 SF Buffer Total: 3,270 SF)	Wetland EB20	III	Pole Removal	-30	-	-	0
	Wetland EE	IV	Conversion	840	810	3:1	2,430
	Combined Buffers	na	Pole removal/ Installation	-280	-	-	0
	Combined Buffers	na	Conversion	6,820	6,540	0.5:1	3,270
Kelsey Creek (Wetland Total: 37,960 SF Buffer Total: 14,730 SF)	Wetland EB02	III	Pole removal	-120	-	-	-
	Wetland EB11	II	Conversion	2,900	2,900	6:1	17,400
	Wetland EB12	III	Conversion	1,940	1,820	4:1	7,280
	Wetland EB13	III	Conversion	1,460	1,460	4:1	5,840
	Wetland EB14	III	Conversion	800	800	4:1	3,200
	Wetland EB16	III	Conversion	500	500	4:1	2,000
	Wetland EB17	III	Conversion	560	560	4:1	2,240
	Combined buffers	na	Pole removal/ Installation	-650	-	-	0
	Combined buffers	na	Conversion	30,110	29,460	0.5:1	14,730
Valley Creek (Wetland Total: 3,120 SF Buffers Total: 1,065 SF)	Wetland A (Overlake Farms)	IV	Conversion	240	240	3:1	720
	Wetland CB01	III	Conversion	600	600	4:1	2,400
	Combined buffers	na	Conversion	2,130	2,130	0.5:1	1,065

1. The adjusted impact quantity incorporates square footage of pole removal (if any) as the removal self-mitigates for some of the pole installation.
2. In accordance with agency guidance for conversion impacts, mitigation ratio presented is one-half the standard Ecology enhancement ratio, based on wetland category.
3. The required mitigation area shown is based on on-site enhancement ratios.

8.1.1 Mitigation Site Selection

City code preference for mitigation of impacts to wetland or combined wetland and stream buffer areas is for on-site replacement or enhancement. When on-site mitigation is not available, the City code states a preference for mitigation in the same sub-drainage or drainage basin.

Drainage basins can be mapped at different landscape scales. The City is presumably referring to their 25 city-wide mapped drainage basins (City Drainage Basins Map: https://bellevuewa.gov/city-government/departments/utilities/conservation-and-the-environment/drainage-basins). The North Bellevue project area spans three Bellevue-defined drainage basins, Valley Creek, Kelsey Creek, and Richards Creek. In a larger context, the project is within the Cedar River/Lake Washington Watershed in WRIA 8.

The search for mitigation options followed the preference hierarchy defined in City Code (LUC 20.25H.085 (streams) and LUC 20.25H.105 (wetlands)). Options for mitigation on-site in-kind, on-site out of kind, and off-site in the same sub-drainage basin were considered first, ahead of off-site out of basin alternatives. Possible mitigation sites were considered for potential ecological functional lift and consistency with *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Hruby, Harper, and Stanley 2009), in accord with best available science.

First, mitigation opportunities within the transmission line corridor were evaluated. PSE-owned properties and easements in the vicinity were screened for in-corridor or on-site out of corridor mitigation opportunities in 2018 and 2019. Although degraded critical areas were identified in-corridor, they are small, disconnected features that may be difficult to access and maintain. Additionally, any in-corridor planting would be limited to vegetation that is compatible with overhead transmissions lines (which does not include many native tree species) and OPL easement restrictions, including routine vegetation management. Small, fragmented mitigation sites are often unsuccessful in outcompeting invasive vegetation and do not tend to provide significant habitat benefits. Mitigation on private property outside of the corridor would require easements and property owner support and cooperation to leave the mitigation site undisturbed in perpetuity. After The Watershed Company made some preliminary sketches of potential mitigation areas on private properties, easement potential was reviewed by PSE’s real estate department and determined to be not feasible.

Continuing to look at PSE-owned sites, the Richards Creek Substation was revisited to assess additional mitigation opportunities in the vicinity of the planned mitigation area approved by the City for Project impacts in South Bellevue. This effort identified additional mitigation area and a new mitigation plan was drafted (Appendix F). Mitigating in this location has several benefits, including a large continuous patch of wetland and stream enhancement, ease of access, greater likelihood of successful maintenance and a site under PSE’s ownership indefinitely. Additionally, native trees can be planted at this site because approximately 60 percent of it is outside of the transmission corridor and clearance requirements are not imposed.

Nearby sites on Bellevue Parks property were considered, specifically Viewpoint Park and Highland Park. Viewpoint Park is characterized by native upland forest, but Highland Park does contain critical area mitigation opportunities. Highland Park was determined to be a good mitigation option based on several factors, including large continuous degraded wetland, stream and buffer areas; good site access; and few restrictions, such as height clearances. The potential Highland Park mitigation area was also situated in a landscape position that could yield improvements to the ecological functions of the local watershed or drainage basin. Although preliminary coordination with the City suggested mitigation on a City Park-owned site may be feasible, further discussions indicate that this is not a viable mitigation option. PSE will continue to pursue mitigation options at City Parks.

Other properties along the corridor were considered, including the PSE-owned Westminster property north of SR-520 in the Valley Creek drainage basin and privately-owned Glendale Country Club in the Kelsey Creek drainage basin. The country club was found to lack mitigation opportunities in wetland buffers outside of lands actively managed as part of the golf course. The Westminster site contains vegetated critical areas dominated by a mix of native species and invasive plants. As a result, the Westminster site was unlikely to be determined 'significantly degraded' to justify mitigation through enhancement per City code. Regular disturbance from active homeless encampments at this site could threaten the success of potential mitigation activities in the short- and long-term.

Property acquisition was considered for several parcels of land within the affected drainage basins, including some near Kelsey Creek and Geoff Creek. However, further assessment would be necessary to verify mitigation opportunities necessitating access rights and the properties would be costly to acquire if mitigation was deemed viable.

Lastly, mitigation banking options were assessed. The North Bellevue Segment area is within the Lake Washington Service Area of the Keller Farm Mitigation Bank (KFMB) located within the City of Redmond, which was certified in 2019 and has credits available for purchase.

PSE proposes to mitigate for Project impacts through on-site wetland enhancement on the Richards Creek Substation property and through purchase of mitigation bank credits from KFMB.

8.1.2 Richards Creek Substation Mitigation Plan

A portion of the Richards Creek Substation site is planned to serve as mitigation for South Bellevue Segment impacts (reference City permit number 17-120557-LO, The Watershed Company 2016). Additional mitigation opportunity was identified during the mitigation site selection process and is now proposed to serve as compensation for some of the North Bellevue Segment impacts. The additional North Bellevue mitigation area—which encompasses approximately 9,930 square feet— currently consists of a Category III wetland (Wetland A) dominated by reed canarygrass and Himalayan blackberry. Wetland enhancement is proposed that would expand and complement the adjacent mitigation area approved for the South Bellevue Segment of the Project. The wetland enhancement activities are intended to increase native plant cover, decrease invasive species prevalence, improve native species diversity, and provide food and other habitat resources for wildlife. The mitigation plan includes a comprehensive five-year maintenance and monitoring plan including specifications and standards that will ensure the enhancement plantings will be maintained, monitored, and successfully established within the first five years following implementation (Appendix F).

Proposed mitigation adequately compensates for impacted wetland or combined buffer area in Table 12. As demonstrated in that table, the proposed mitigation for Wetland EE exceeds the mitigation area required, as calculated within Table 11. Furthermore, the mitigation activity is occurring in a larger and higher-functioning wetland (*i.e.*, the mitigation wetland rates as Category III and the impacted wetland rates as Category IV). Proposed mitigation for the combined buffers in the Richards Creek drainage basin exceeds the area necessary per Table 11 and the mitigation activity occurs within a wetland rather than buffer area and is anticipated to result in a greater functional lift as a result. Finally, the proposed mitigation area to compensate for impacts to Wetland EB14 in the Kelsey Creek basin exceeds the mitigation area shown in Table 11 to account for impacts occurring outside of the drainage basin where compensation is proposed.

Table 12. Richards Creek Substation mitigation summary.

Basin	**Critical Area Name**	**Wetland Category**	**Type of Impact**	**Adjusted Impact Quantity (SF)[1]**	**Proposed Mitigation Activity**	**Proposed Mitigation Area (SF)**
Richards Creek	Wetland EE	IV	Conversion	810	Enhancement of Wetland A (Category III) at Richards Creek Substation in the Richards Creek drainage basin	2,940
	Combined Buffers	buffer	Conversion	6,540		3,300
Kelsey Creek	Wetland EB14	III	Conversion	800		3,690
					Total	9,930

1. The adjusted quantity incorporates square footage of pole removal (if any) as the removal self-mitigates for some of the pole installation.

8.1.3 Mitigation Bank Use Plan

On-site mitigation opportunities were determined to be limited after a thorough review of potential mitigation sites available near the Project area (see Section 8.1.1). Therefore, impacts that could not be offset through the additional North Bellevue Richards Creek Mitigation Plan (Appendix F) are proposed to be compensated through the purchase of mitigation bank credits from the KFMB. The Mitigation Bank Use Plan (Appendix G) provides details on this mitigation approach. Table 13 summarizes the number of credits proposed for purchase to offset impacts.

Table 13. Summary of proposed KFMB credit to impact ratios with the applied vegetation conversion factor and total credit amount and cost.

Critical Area	Wetland Category	Vegetation Conversion Impact (SF)[1]	Permanent Impact Ratio	Vegetation Conversion Discount Factor	KFMB Credits
Wetland A (Overlake Farms)	IV	240	0.85 to 1	25%	51
Wetland CB01	III	600	1 to 1	25%	150
Wetland EB11	II	2,900	1.2 to 1	25%	870
Wetland EB12	III	1,820	1 to 1	25%	455
Wetland EB13	III	1,460	1 to 1	25%	365
Wetland EB16	III	500	1 to 1	25%	125
Wetland EB17	III	560	1 to 1	25%	140
Combined Buffer	buffer	31,590	0.3 to 1	25%	2,370
				Total Credit (SF) =	4,526 SF
				Total Credit (acres) =	0.103885
				Cost ($1,000,000 per acre) =	$103,885

1. Vegetation conversion impacts have been rounded and adjusted to incorporate square footage of pole removal (if any) as the removal self-mitigates for some impact.

8.2 Geologic Hazard Area Mitigation

GeoEngineers has proposed mitigation strategies to minimize impacts to geologic hazard areas in their evaluation report (Appendix D). Proposed activities are not expected to impact the geologic hazard areas along the North Bellevue Segment with implementation of these strategies; and proposed activities are consistent with the management activities of the existing corridor.

Conceptual impact mitigation strategies described by GeoEngineers for impacts to geologic hazard areas are summarized below.

Access Routes

- Employ BMPs as appropriate for establishing access routes including using site fencing on the downslope side of access routes, leaving stumps in place and covering with temproary fill or mats.

- Remove temporary fill materials associated with construction access when complete and apply TESC meaures such as mulching, placing erosion control nets and blankets, installing water bars, and reseeding, as recommended.
- Limited regrading may also occur to avoid concentrating runoff after construction.

Vegetation Management

- Access sites by foot to reduce equipment impacts.
- Hand-cut branches and trees with chainsaws.
- Leave stumps in place.
- Chip tree debris and scatter on-site. Where chipping is not feasible, reasonably sized unchipped tree debris may be scattered but should not interfere with public access and use or OPL maintenance.
- Apply erosion control BMPs where recommended, such as grass seeding, spreading straw or mulch, and/or planting native shurbs and small trees, to reduce concentrated runoff and minimize erosion.
- On private property, the appropriate impact mitigation measures listed previously will be coordinated with the property owner, and typically tree debris will be removed.

Pole Installation and Removal

- Employ TESC BMPs for areas disturbed for pole installation/removal activities.
- Limit clearing activities to the minimum necessary for each pole location.
- Scatter soil from new pole excavations into vegetation away from landscaped areas.
- Remove poles entirely or cut at approximately 1 to 2 feet below the ground surface.
- Where a temporary bench (work pad) is required for work on a steep slope or landslide hazard area, follow the recommendations for access routes described previously.
- Embed poles on slopes steeper than 2H:1V (horizontal to vertical) at least 3 feet deeper than the typical design embedment.

For additional information regarding mitigation for impacts to geologic hazard areas and site-specific recommendations, refer to the *Targeted Critical Areas Geologic Hazards Evaluation* report by GeoEngineers (Appendix D).

8.3 Functional Lift Analysis

8.3.1 Tree Removal Impact Characterized

The wetland and buffer functions impacted by the Project are associated with vegetation conversion (*i.e.*, tree removal; no fill). They are limited to removal of trees growing within and immediately adjacent to the existing managed utility corridor. The approximate impacted area, quantified based on area of canopy removal, has been provided previously in Tables 6 and 8. Details that characterize the trees to be removed are summarized in Tables 14 and 15 below.

Based on the Vegetation Impact Analysis (VIA), approximately 30 trees will be removed from wetlands in the Richards and Kelsey Creek drainage basins. One-third of the trees to be removed from wetlands are non-native, ornamental species (e.g., *Salix matsudana* 'Tortuosa' [corkscrew willow] and *Prunus domestica* [European plum]). The average stem diameter of trees to be removed from wetlands is 8.9 inches and includes some as small as 3-inches diameter at breast height (DBH) and others as large as 26-inches DBH. In most instances, the largest trees have experienced severe pruning or topping as part of existing vegetation management activities, often negatively affecting the tree's condition, particularly for conifers (Table 14).

Approximately 172 trees will be removed from wetland/stream buffers based on the VIA result. Similar to tree removal from wetland areas, approximately one-third of the trees being removed from buffers are non-native species. The size of trees to be removed from buffer areas ranges from 3- to 26-inches DBH; the average diameter is 8.5 inches. The larger trees to be removed have commonly been pruned or topped as part of existing vegetation maintenance activities along the corridor. Most of the trees to be removed from buffer areas are deciduous tree species (Table 15).

Table 14. Vegetation to be removed from wetlands.

Tree Tag	Scientific Name	Common Name	DBH (in)	Condition	Notes
1880	*Alnus rubra*	Red alder	5.7	4 - Poor	broken leader; new shoots low
1895	*Salix matsudana* 'Tortuosa'	Corkscrew willow	12, 10	4 - Poor	dead limbs; damage to trunk
1896	*Pseudotsuga menziesii*	Douglas-fir	26	4 - Poor	topped
1905	*Pseudotsuga menziesii*	Douglas-fir	21.8	4 - Poor	topped
1906	*Prunus domestica*	Plum	9	3 - Fair	
1907	*Prunus domestica*	Plum	6.8	4 - Poor	dead branches
1908	*Prunus domestica*	Plum	4.6	4 - Poor	dead branches
1909	*Prunus domestica*	Plum	9	3 - Fair	
1910	*Pseudotsuga menziesii*	Douglas-fir	18	4 - Poor	topped
1911	*Prunus domestica*	Plum	9.5	3 - Fair	
1912	*Prunus domestica*	Plum	9.5	4 - Poor	dead branches
1913	*Salix matsudana* 'Tortuosa'	Corkscrew willow	4	3 - Fair	
1927	*Salix scouleriana*	Scouler's willow	10	3 - Fair	
1929	*Salix scouleriana*	Scouler's willow	4.5	3 - Fair	
1931	*Salix scouleriana*	Scouler's willow	6.6	2 - Good	
1951	*Alnus rubra*	Red alder	3.4	2 - Good	
1952	*Alnus rubra*	Red alder	3	2 - Good	

Tree Tag	Scientific Name	Common Name	DBH (in)	Condition	Notes
1953	*Alnus rubra*	Red alder	8.6	3 - Fair	
1954	*Alnus rubra*	Red alder	12.4	2 - Good	
1959	*Alnus rubra*	Red alder	4.2	2 - Good	
1960	*Alnus rubra*	Red alder	3.6	2 - Good	
1961	*Alnus rubra*	Red alder	3.6	2 - Good	
1962	*Alnus rubra*	Red alder	3.5	2 - Good	
1963	*Alnus rubra*	Red alder	4.8	2 - Good	
2265	*Alnus rubra*	Red alder	10.9	2 - Good	
2266	*Alnus rubra*	Red alder	9	2 - Good	
2267	*Alnus rubra*	Red alder	12.6	2 - Good	
2289	*Salix lasiandra*	Pacific willow	5.5	3 - Fair	severe lean
4099	*Betula pendula*	European white birch	7	2 - Good	
5717	*Pinus nigra*	Austrian pine	17	4 - Poor	topped at 15 feet

Table 15. Vegetation to be removed from combined wetland/stream buffer areas.

Scientific Name	Common Name	Number to be Removed
DECIDUOUS		**108**
<Null>[1]	<Null>[1]	2
Acer macrophyllum	Bigleaf maple	3
Acer rubrum	Red maple	4
Alnus rubra	Red alder	81
Crataegus monogyna	Common hawthorn	1
Prunus domestica	Plum	1
Prunus emarginata	Bitter cherry	2
Rhamnus purshiana	Cascara	1
Salix matsudana 'Tortuosa'	Corkscrew willow	1
Salix scouleriana	Scouler's willow	11
Sorbus aucuparia	European mountain ash	1
EVERGREEN		**64**
×Hesperotropsis leylandii	Leyland cypress	37
Callitropsis nootkatensis	Alaska cedar	1
Calocedrus decurrens	Incense cedar	1

Scientific Name	Common Name	Number to be Removed
Picea sitchensis	Sitka spruce	8
Pinus nigra	Austrian pine	8
Pseudotsuga menziesii	Douglas-fir	9
Grand Total		**172**

1. "<Null>" values represent trees that were located by surveyors but not inventoried by Watershed and they therefore lack or have incomplete attribute data.

8.3.2 Functional Impact

Trees perform water quality and hydrologic functions through interception of rainfall and uptake of groundwater and nutrients. Trees also provide important breeding and foraging habitat functions to local wildlife, particularly native tree species. In general, tree removal without mitigation would diminish habitat, hydrologic, and water quality functions.

The habitat functions of trees to be removed are limited by several factors, including species composition (*i.e.*, approximately one-third are non-native or invasive); location within an existing, disturbed utility easement; and ongoing vegetation management activities.

As described by GeoEngineers in their geotechnical report (Appendix D), tree removal can affect hydrologic functions through reductions in canopy interception and evapotranspiration. Temporary impacts to evapotranspiration are expected to be limited (to much less than 50 percent from existing conditions) because tree removal will be selective and impacts to understory vegetation will be avoided to the extent feasible (GeoEngineers 2020). The greatest impact to evapotranspiration is expected to occur within a year of removal.

Any water quality impacts are anticipated to be sufficiently managed with application of the recommended TESC and BMP measures proposed by GeoEngineers. Proposed tree removal is selective, and removed trees are growing in an existing utility corridor which is subject to ongoing vegetation management activities. Organic matter from trees and tree debris will not be placed in water bodies which will prevent short-term depletion of oxygen levels. Furthermore, trees growing within the buffer of Kelsey Creek are to be retained and managed as necessary which will avoid water quality impacts to the stream (*e.g.*, from reduction in shade).

8.3.3 Functional Lift through Mitigation

Proposed critical area mitigation compensates for tree removal based on approximate area of canopy to be removed, as described in this report. Additional mitigation is proposed for trees to be removed, based on tree size (DBH), in accord with the *Vegetation Inventory & Management Plan Report* (The Watershed Company 2021b). Therefore, the impact of removing trees from wetlands and wetland/stream buffers will be mitigated through both critical area mitigation (based on canopy area to be removed) and tree replacement (based on DBH of tree to be removed), consistent with the approach approved for the South Bellevue Segment. While tree replacements based on DBH are not guaranteed to occur in critical areas, replacements will be prioritized in-corridor or nearby and will offset some of the loss in ecological functions occurring in wetland and buffer critical areas. Functions impacted by tree removal from wetland and wetland/stream buffers specifically, will be mitigated through on-site mitigation at Richards Creek Substation and at the Keller Farm Mitigation Bank. The functional lift anticipated with these mitigation approaches is described in the following sections.

Richards Creek Enhancement

A portion of the Project impacts in the North Bellevue Segment, within the Kelsey Creek and Richards Creek drainage basins, are proposed to be mitigated at the Richards Creek Substation site (Table 12). Richards Creek Substation is in the Richards Creek drainage basin and located immediately south of the North Bellevue Segment area. The site has been identified as a viable mitigation opportunity after an extensive evaluation of mitigation options. The Richards Creek Substation site best meets the City's preference for 'on-site' mitigation with a reasonable likelihood of success and is contiguous with the mitigation area approved for the South Bellevue Segment.

The proposed North Bellevue Segment Richards Creek Substation wetland enhancement area is approximately 9,930 SF dominated by reed canarygrass and Himalayan blackberry (Figure 3; Appendix F). It is part of a contiguous, vegetated patch of habitat that covers over 20 acres (bisected by transmission lines) and includes wetlands, streams, and upland habitat. Some parts of this habitat patch (like the area now proposed for enhancement) are degraded and dominated by invasive plants. Approximately two acres of wetland, stream and associated buffer area at this site will be restored as part of the South Bellevue Segment mitigation plan, which includes stream channel restoration.

Proposed North Bellevue Segment mitigation activities would enhance wetland area adjacent to the South Bellevue Segment mitigation area, in degraded Category III wetland on the PSE-owned substation site. Proposed mitigation activities would increase the habitat functions by decreasing invasive species prevalence, increasing native species cover and diversity, and increasing the quantity and quality of special habitat features present in the form of large woody debris (Figure 4). The plan incorporates installation of approximately 88 trees (that would be large when mature; see Figure 4) to offset the impacts from canopy loss associated with the tree removal of approximately 33 trees from within the transmission corridor. As stated previously, trees to be removed provide limited ecological functions because of species composition (*i.e.,* approximately one-third are non-native or invasive); they are located within an existing, disturbed utility easement; and they are subject to ongoing vegetation management activities. Trees planted as a part of the proposed wetland enhancement would be located outside of the existing shared utility corridor to prevent interference with the 230 kV vegetation clearance standards and consist of native species. Proposed mitigation activities would greatly improve the habitat resources for wildlife over existing conditions and contribute to a higher functioning native patch of habitat at the site long-term.

Hydrologic functions of the mitigation area are expected to increase over time as mitigation plants mature and their potential to intercept rainfall and rate of evapotranspiration increases. Immediately after invasive species removal and native plant installation, a minor decrease in hydrologic functions could occur associated with reduced plant biomass.

Long-term, significant changes to water quality are not anticipated at the Richards Creek mitigation site. This is primarily because reed canarygrass generally performs water quality functions well. Immediately after installation, a slight reduction in water quality functions may occur from reed canarygrass replacement with container-grown mitigation plants. The water quality functions associated with installed mitigation plants will improve over time. TESC and BMP measures recommended during installation of the mitigation site would prevent short-term erosion and sedimentation impacts to downstream water bodies.

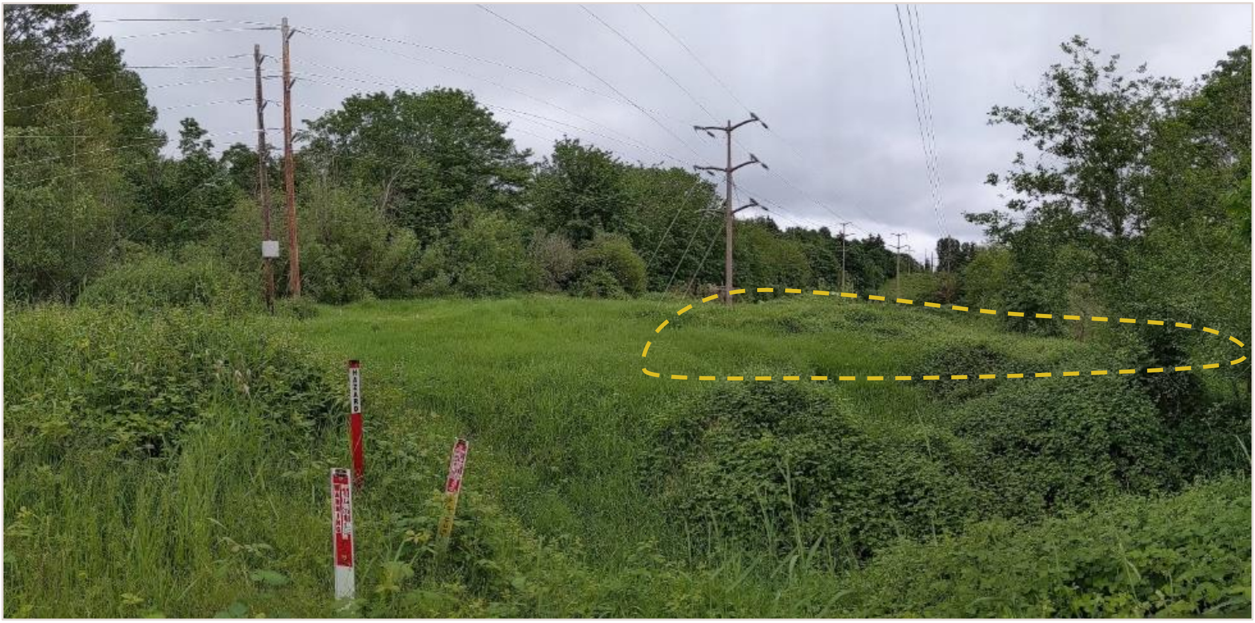

Figure 3. Approximate location and existing condition of the proposed wetland enhancement on the Richards Creek Substation site.

PLANT SCHEDULE

PLANT SPECIES / SPACING	PLANTING AREA QUANTITY				
	▩	▨			
	WETLAND ENHANCEMENT	WETLAND ENHANCEMENT (R.O.W)	*TOTAL QTY*	SIZE	REMARKS
SQUARE FEET	5,940 SF	3,990 SF	*9,930 SF*		
TREES / @10 FT O.C.					
ALNUS RUBRA	22		*22*	2 GAL.	
FRAXINUS LATIFOLIA	22		*22*	2 GAL.	
PICEA SITCHENSIS*	22		*22*	2 GAL.	SEE NOTE 2
SALIX SITCHENSIS	22		*22*	2 GAL.	
SHRUBS / @6 FT O.C.					
CORNUS SERICEA	48	32	*80*	1 GAL.	
PHYSOCARPUS CAPITATUS	48	32	*80*	1 GAL.	
ROSA NUTKANA	48	32	*80*	1 GAL.	
RUBUS SPECTABILIS	48	32	*80*	1 GAL.	
GROUNDCOVERS / @24-INCH O.C.					**ALL SPECIES TO BE SPACED TRIANGULARLY**
ATHYRIUM FILIX-FEMINA	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
CAREX OBNUPTA	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
SCIRPUS MICROCARPUS	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
TOLMIEA MENZIESII	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
TOTAL	*1,720*	*1,208*	***2,928***		

Figure 4. Proposed plant schedule for the North Bellevue Segment, Richards Creek Substation site from Appendix F.

Keller Farm Mitigation Bank

The KFMB has been designed to yield substantial improvements to water quality, hydrologic, and habitat functions at the watershed scale. The site is 75 acres of contiguous wetland, stream, and upland habitat areas in the City of Redmond. It is located at the confluence of two regionally significant salmon bearing streams, Bear and Evans Creek, and has been identified as a high priority restoration site located within the same WRIA as the North Bellevue Segment. Restoration activities will transform the site from ditched and drained farmland to a mosaic of forested upland, forested, scrub/shrub, and emergent wetland, and stream channel habitat. A net increase of 51.1 acres of wetland and 2.6 acres of stream channel/wetland will result from Bank implementation. The KFMB mitigation activities will yield significant improvements to water quality, hydrologic, and habitat functions in accordance with the bank's goals and objectives, including:

- Permanently protect ecosystem functions at the Bank by implementing the Bank Instrument and executing a conservation easement with permanent funding for site stewardship.
- Re-establish wetland hydrology and varying wetland hydroperiods across the site by disabling farm ditches, reconnecting Bear creek with its floodplain, and performing grading actions to re-establish wetland hydrology and riparian habitat across the Bank site.
- Create additional wetland habitat areas that support wetland-dependent organisms and anadromous fish species. Increase habitat structure and diversity on the Bank site over existing degraded conditions.

- Re-establish wetland vegetation and native plant communities across the site. Remove and control noxious and invasive plant species and reintroduce native vegetation to increase habitat complexity in the floodplain wetlands and adjacent upland areas. Plant native trees, shrubs, and herbaceous species to re-establish a mosaic of habitat communities within the Bank property.
- Improve access for aquatic organisms to floodplain wetland and aquatic areas. Enhance and create off-channel rearing and refuge habitat for salmonids within the floodplain streams and deeper backwater areas connected to Bear Creek.
- Reconnect Bear Creek to the floodplain and improve floodplain functions on the Bank site including attenuation of flood flows, reductions in peak flood flows, food web and organic material support and transport, and refuge habitat for fish and wildlife during flood events.
- Establish a connection point for the future relocation of Perrigo Creek through the adjacent parcel north of the Bank.
- Reestablish and rehabilitate stream channel habitat in the floodplain through grading and addition of large woody debris. Create pool habitat and increase channel habitat complexity.
- Increase shading and cover of streams through planting on the Bank site over existing conditions.

For more details on the KFMB site selection rationale, refer to the *Mitigation Bank Use Plan* (The Watershed Company 2021a; Appendix G, Section 7).

8.3.4 Summary

To summarize, 9,930 SF of degraded Category III wetland will be enhanced on the Richards Creek Substation site and 4,526 SF of KFMB credits will be purchased to compensate for the loss of ecological functions associated with removal of an estimated 202 trees from wetland and combined buffer critical areas in an existing utility corridor in the North Bellevue Segment (Table 16). Furthermore, in addition to compensation of ecological functions through critical area mitigation requirements, PSE has committed to replace removed trees based on size per the Project's *Vegetation Inventory & Management Plan Report* (The Watershed Company 2021b). Proposed mitigation activities are anticipated to more than compensate for North Bellevue Segment impacts. Wetland areas where pole removal will occur will be restored on-site and therefore, compensatory mitigation is not required or proposed for the temporary impacts.

Table 16. Summary of proposed North Bellevue Segment wetland and combined buffer area impacts and mitigation.

Basin	Critical Area Name	Wetland Category	Vegetation Conversion Impact Area (SF)[1]	Proposed Mitigation/Credit Ratio[2]	Proposed Mitigation Area or KFMB Credits (SF)
Richards Creek	Wetland EE	IV	810	3:1	2,940[3]
	Combined Buffers	buffer	6,540	0.5:1	3,300[3]
Kelsey Creek	Wetland EB14	III	800	4:1	3,690[3]
Total Mitigation Area Proposed at Richards Creek Substation:					***9,930 SF***
Valley Creek	Wetland A (Overlake Farms)	IV	240	0.21:1	51
	Wetland CB01	III	600	0.25:1	150
	Combined Buffer	buffer	2,130	0.075:1	160
Kelsey Creek	Wetland EB11	II	2,900	0.3:1	870
	Wetland EB12	III	1,820	0.25:1	455
	Wetland EB13	III	1,460	0.25:1	365
	Wetland EB16	III	500	0.25:1	125
	Wetland EB17	III	560	0.25:1	140
	Combined Buffer	buffer	29,460	0.075:1	2,210
Total Number of Credits Proposed for Purchase from KFMB					***4,526 SF***

1. Vegetation conversion areas have been rounded and adjusted to incorporate square footage of pole removal (if any) as the removal self-mitigates for some impact.
2. Proposed mitigation/credit ratios use reduced ratios for vegetation conversion.
3. The proposed area of wetland enhancement at Richards Creek Substation exceeds the minimum area required according to impact area and the proposed mitigation ratio.

9 Code Compliance

When a project proposes impacts to critical areas, compliance with applicable City code provisions (LUC 20.25H – Critical Areas) must be demonstrated. New or expanded utility facilities and utility systems, including all structures and improvements, are allowed within critical areas and their associated buffers pursuant to LUC 20.25H.055, provided applicable performance standards for new and expanded uses or development (LUC 20.25H.055.C.2) and for each critical area type to be impacted, are met. Specific critical areas code provisions applicable to this project are presented below (italicized), followed by a Project-specific description that documents compliance. Performance standards for landslide hazards and steep slopes are addressed in the *Targeted Critical Areas Geologic Hazards Evaluation* (GeoEngineers 2020) for the Project (Appendix D).

According to LUC 20.25H.085.A and LUC 20.25H.105.B, a proposal for stream buffer mitigation and wetland mitigation that is off-site and out of drainage basin shall only be permitted through a Critical Areas Report. Therefore, as the Project proposes use of a mitigation bank as well as permittee-responsible mitigation in the Richards Creek drainage basin to partially compensate for impacts within the Kelsey Creek drainage basin, compliance with the Critical Areas Report submittal requirements and decision criteria are also described below.

All specific mitigation and restoration requirements (LUC 20.25H.210 through 20.25H.225) and associated performance standards have been considered in the preparation of the mitigation plan and are addressed in the *Richards Creek Substation Mitigation Plan* design and notes, as applicable (Appendix F) which will be implemented under the Clearing and Grading Permit for the Bellevue North Segment.

9.1 LUC 20.25H.055 - Uses and development allowed within critical areas – Performance standards

C. Performance Standards.

The following performance standards apply as noted in the table in subsection B of this section. The critical areas report may not be used to modify the performance standards set forth in this subsection C:

2. *New and Expanded Uses or Development. As used in this section, "facilities and systems" is a general term that encompasses all structures and improvements associated with the allowed uses and development described in the table in subsection B of this section:*
    a. *New or expanded facilities and systems are allowed within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical*

area or critical area buffer exists. A determination of technically feasible alternatives will consider:

i. The location of existing infrastructure;

Response: The proposed route is within an existing corridor with 115 kV transmission lines. These lines are supported by H-frame wood poles, which are grouped in sets of two or three and generally are two to three feet in diameter. The location of the existing poles in the North Bellevue Segment can be seen on the Critical Area Assessment Maps in Appendix A. The new 230 kV steel monopoles will be replacing the existing 115 kV H-frames within the same corridor and so the project does not propose a new or expanded use or development.

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ii. The function or objective of the proposed new or expanded facility or system;

Response: The objective of the Project is to increase the capacity of the Eastside electric grid to keep pace with projected increases in electricity demands during peak periods, but this increase in capacity does not expand the use as the use as a high voltage transmission line corridor remains the same. This need was independently verified by the City (Utility System Efficiencies, Inc. 2015 and Exponent 2012). The Project will replace existing wood H-frame transmission line infrastructure with steel monopoles that will support a conductor that will operate at 230 kV. Regular maintenance will occur within the transmission line corridor, including vegetation management activities and pole inspections/maintenance.

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iii. Demonstration that no alternative location or configuration outside of the critical area or critical area buffer achieves the stated function or objective, including construction of new or expanded facilities or systems outside of the critical area;

Response: Given the location of existing facilities, legal ROW, and surrounding critical area encumbrances, impacts have been avoided and minimized to the extent feasible. Alternative routes were evaluated prior to selection of the proposed route. The alternative routes would also result in critical area impacts. No alternate routes were identified that could completely avoid impacts to critical areas. The chosen route utilizes the existing utility corridor which helps to minimize new impacts to critical areas, as the corridor is currently maintained to 115 kV vegetation management standards. Within the chosen route, the design was configured to avoid direct permanent impacts to wetlands and streams. Additionally, the Project design has been modified to remove impacts from other critical areas and buffers to the greatest extent possible. Due to other uses within the corridor and the tangential nature of transmission line engineering, relocating poles away from the current locations was not always feasible. Replacement poles for poles currently located within wetlands will be replaced within buffers for a net decrease in wetland fill.

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iv. *Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of proposed disturbance; and*

Response: To avoid the proposed critical area impacts and achieve the utility service improvement objectives, relocation of existing infrastructure and creation of new infrastructure would be required. This would be more expensive than the proposed Project; and critical area impacts would likely be incurred nonetheless given the regular distribution of critical areas in north Bellevue. As a linear project spanning 5.2 miles in North Bellevue, with specific siting requirements, total avoidance of all critical areas is not achievable. Use of the existing, maintained corridor, which is generally within urban/developed areas, helps to reduce both the cost of the Project and the environmental impacts. No feasible alternate routes were identified that could completely avoid critical area impacts.

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v. *The ability of both permanent and temporary disturbance to be mitigated.*

Response: Temporary critical area disturbance will be restored in place in accordance with the *Temporary Impacts Restoration Plan* (Appendix I), and permanent disturbance, including conversion from one vegetation community to another, will be mitigated in accordance with the City's code and methods supported by the best available science as described in Section 8 of this report and depicted on the *Richards Creek Mitigation Plan* (Appendix F) and in the *Mitigation Bank Use Plan* (Appendix G).

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b. *If the applicant demonstrates that no technically feasible alternative with less impact on the critical area or critical area buffer exists, then the applicant shall comply with the following:*

i. *Location and design shall result in the least impacts on the critical area or critical area buffer;*

Response: Impacts to critical areas and critical area buffers will be avoided and minimized through Project design (including pole siting) and engineering. For example, the PSE design has located all poles out of wetlands in order to avoid direct permanent wetland impact and temporary pole construction work areas will be adjusted to avoid critical areas on a pole by pole basis. Construction access has been planned to exclude critical areas and/or provide only temporary impact wherever feasible. In addition, although this report conservatively assumed that an area of impact, during construction efforts will be made to avoid these impacts with a priority given to avoiding impacts in wetland and wetland and stream buffers.

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ii. *Disturbance of the critical area and critical area buffer, including disturbance of vegetation and soils, shall be minimized;*

Response: Critical area and critical area buffer disturbances will be minimized through Project design and engineering. BMPs will be used to minimize temporary ground disturbance during construction. Access to poles which must be located in critical areas will generally occur using existing, unmaintained access routes (established during original construction and re-used over time to maintain the corridor, but overgrown with vegetation). Post-construction, disturbed areas will be re-vegetated and left to return to their natural state.

In critical areas, mats will be placed over existing vegetation where possible to allow temporary access for installation of new poles and removal of existing poles. Typically, crushed vegetation rebounds within one growing season resulting in only temporary impacts to vegetation. Tree removal activities are performed in a manner to minimize impacts to underlying shrubs, groundcover and other trees, without disturbance to soil.

Project equipment and vehicles will be staged and refueled outside of critical areas and critical area buffers. If this is not possible, a "safe area" within the buffer will be identified and used for staging and refueling. Containment measures will be included in the Project specific Spill Prevention, Control and Countermeasure (SPCC) plan.

Areas disturbed for temporary access and staging will be restored in place following completion of construction activities. Native seed mixes and/or native plantings will be installed in critical areas or critical area buffers in accordance with a temporary impact restoration plan.

> *iii. Disturbance shall not occur in habitat used for salmonid rearing or spawning or by any species of local importance unless no other technically feasible location exists;*

Response: No impacts are proposed to habitat used for salmonid rearing or spawning and the Project will not result in impacts to habitats associated with species of local importance (see Section 4.3.3). Proposed on-site mitigation will result in net habitat benefits following Project implementation by increasing native plant density and diversity, adding special habitat features such as large woody debris, and increasing native food sources for wildlife. Mitigation activities at KFMB also result in substantial improvements to fish and wildlife habitat; details provided in the *Mitigation Bank Use Plan* (Appendix G).

> *iv. Any crossing over of a wetland or stream shall be designed to minimize critical area and critical area buffer coverage and critical area and critical area buffer disturbance, for example by use of bridge, boring, or open cut and perpendicular crossings, and shall be the minimum width necessary to accommodate the intended function or objective; provided, that the Director may require that the facility be designed to accommodate additional facilities where the likelihood of additional facilities exists, and one consolidated corridor would result in fewer impacts to the critical area or critical area buffer than multiple intrusions into the critical area or critical area buffer;*

Response: No new permanent wetland or stream crossings are proposed and existing crossing are aerial only. Temporary access to poles in critical areas of the transmission corridor will generally occur using existing, unmaintained access (established during original construction and re-used over time to maintain the corridor, but overgrown with vegetation). BMPs will be used to minimize ground disturbance in these areas, and in areas of new access. In critical areas or buffers, mats will be placed over existing vegetation where possible to provide temporary access. When installing the new conductor, techniques will be used to avoid impacts to critical areas (*i.e.*, shooting the wire from pole to pole, using guide wires, or in some cases using a helicopter). Stringing sites will be located outside of critical areas where possible. Additional critical area impacts resulting from stringing sites, not already quantified in other Project elements described herein, will be temporary in nature. Temporary impact areas will be re-vegetated and left to return to preconstruction conditions or enhanced following construction.

Typically flattened vegetation rebounds within one growing season resulting in only temporary impacts to vegetation. Post-construction, all disturbed areas will be re-vegetated, if necessary or left to reestablish naturally. Based on existing conditions, proposed construction BMPs, and post construction methods; disturbance associated with access in the transmission corridor will be temporary.

v. All work shall be consistent with applicable City of Bellevue codes and standards;

Response: This Project will comply with applicable City codes and standards, as described in application documentation within the Project’s Critical Areas Land Use Permit and Conditional Use Permit application packages.

vi. The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod;

Response: The Project is not expected to have a significant adverse impact on critical area hydrology. In water work is limited to removal of poles from wetlands. No work in a floodplain is proposed. Appropriate BMPs will be employed to prevent temporary erosion from entering waterways adjacent to construction work areas and the siting of individual poles are not likely to result in changes in run off patterns due to their discreet footprint. The Final Environmental Impact Statement (FEIS) identified no significant adverse impacts to water resources and specific impacts identified in this CAR will be mitigated such that no long-term impacts are expected (ESA 2018). Project element impacts and associated mitigation measures will be designed to maintain or improve critical area hydrology and water quality to the extent possible (see Section 8.3).

vii. Associated parking and other support functions, including, for example, mechanical equipment and maintenance sheds, must be located outside critical area or critical area buffer except where no feasible alternative exists; and

Response: Project elements which must be located within critical areas or buffers are limited to some pole replacement. Associated temporary work areas and temporary access routes may cross critical areas and buffers. The Project has gone through multiple design revisions, and no other feasible alternative exists for the location of these features outside of critical areas or buffers. Other proposed critical area impacts are due to required vegetation maintenance activities in the vicinity of the transmission lines which, in some areas, will result in long-term changes to vegetation composition.

viii. *Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.*

Response: The mitigation approach includes an on-site mitigation plan that fulfills the requirements of LUC 20.25H.210, including mitigation goals, performance standards, monitoring and maintenance protocols, and contingencies for the duration of the monitoring period (Appendix F). Additional mitigation will be achieved through purchase of credits from KFMB (Appendix G). Restoration of temporary impacts will occur in accordance with the *Temporary Impact Restoration Plan* (Appendix I). See Section 8 for a discussion of the proposed mitigation approach.

9.2 LUC 20.25H.100 - Performance Standards for Wetlands

Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

A. *Lights shall be directed away from the stream (or wetland).*

Response: No lighting is proposed as part of the Project.

B. *Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the wetland or any noise shall be minimized through use of design and insulation techniques.*

Response: Noise generated from construction is temporary and noise from the Project operations is expected to be minimal. Transmission lines within the corridor will generate noise similar to the existing condition of the corridor and below ambient levels. As described in the FEIS, there would be no significant and unavoidable adverse noise impacts associated with the project, either during construction or operation (ESA 2018).

C. *Toxic runoff from new impervious area shall be routed away from the wetland.*

Response: No new impervious areas are proposed within wetlands. Rather, six poles will be removed from wetlands allowing for restoration of approximately 150 square feet of wetland area. Impervious areas in the North Bellevue Segment are limited to poles and pole foundations. Impervious areas are not pollutant generating and no toxic runoff will occur. The siting of individual poles is not likely to result in changes in run off patterns due to their discreet footprint.

D. Treated water may be allowed to enter the wetland critical area buffer.

Response: No treatment is proposed or required as no new pollutant generating impervious surfaces are proposed. Therefore, the project will not generate treated water.

E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use. Preference shall be given to native species.

Response: The mitigation approach includes an on-site mitigation plan that includes dense, native critical area plantings on the Richards Creek Substation site. The plan design complements the previously permitted mitigation and restoration work on the substation site, proposes only native species, and will limit human and pet intrusion into the mitigation areas. Public access is significantly limited and discouraged on substation sites. PSE has no control over private property owner access to buffers on their property within the transmission line corridor.

F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the wetland critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

Response: Generally, weed control efforts in wetland buffer will employ manual removal. If any persistent weed or pest problems require pesticide control, the City would be contacted to verify compliance with City BMPs and, if allowed, a licensed pesticide applicator would be hired. However, PSE cannot control how private property owners in the corridor manage the vegetation within their properties. Potential pesticide, insecticide, and fertilizer use for the Project will be applied consistent with the standards outlined in the *Pesticide, Insecticide, and Fertilizer Plan* (Appendix H) and permit conditions. PSE will submit written information identifying the pesticide, herbicide and/or insecticide to be used and written confirmation that the product used has been reviewed and approved by a consulting arborist. Work shall be done in accordance with the City of Bellevue's "Environmental Best Management Practices." Prior to any use of pesticides, herbicides, and/or fertilizers, PSE will receive approval from Land Use under the required Clearing and Grading Permit.

9.3 LUC 20.25H.080 - Performance Standards for Streams

LUC 20.25H.080.A- General

Development on sites with a type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

1. *Lights shall be directed away from the stream.*

Response: No lighting is proposed as part of the Project.

2. *Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the stream or any noise shall be minimized through use of design and insulation techniques.*

Response: Noise generated from the Project after completion is expected to be minimal. Transmission lines within the corridor will generate noise similar to the existing condition of the corridor and below ambient levels. As described in the FEIS, there would be no significant and unavoidable adverse noise impacts associated with the project, either during construction or operation (ESA 2018).

3. *Toxic runoff from new impervious area shall be routed away from the stream.*

Response: No new impervious areas are proposed within streams. Furthermore, six poles will be removed from wetlands allowing for restoration of approximately 150 square feet of wetland area. Impervious areas in the North Bellevue Segment area is limited to poles and pole foundations. Impervious areas are not pollutant generating and no toxic runoff will occur. The siting of individual poles is not likely to result in changes in run off patterns due to their discreet footprint.

4. *Treated water may be allowed to enter the stream critical area buffer.*

Response: No treatment is proposed or required as no new impervious surfaces are proposed. Therefore, the project will not generate treated water.

5. *The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use. Preference shall be given to native species.*

Response: The mitigation approach includes an on-site mitigation plan that includes dense, native wetland critical area plantings on the Richards Creek Substation site. A portion of the wetland enhancement area is also located within stream buffer. The plan design complements the previously permitted mitigation and restoration work on the substation site, proposes only native species, and will limit human and pet intrusion into the mitigation areas. Public access is significantly limited and discouraged on substation sites. PSE has no control over private property owner access to buffers on their property within the transmission line corridor.

Additional mitigation for stream buffer impacts is proposed through the Keller Farm Mitigation Bank.

6. *Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.*

Response: Generally, weed control efforts in stream buffer will employ manual removal. If any persistent weed or pest problems require pesticide control, the City would be contacted to verify compliance with City of Bellevue BMPs and, if allowed, a licensed pesticide applicator would be hired. However, PSE cannot control how private property owners in the corridor manage the vegetation within their properties. Potential pesticide, insecticide, and fertilizer use for the Project will be applied consistent with the standards outlined in the *Pesticide, Insecticide, and Fertilizer Plan* (Appendix H).

9.4 LUC 20.25H.085 - Streams, Mitigation and Monitoring – Additional provisions

In addition to the provisions of LUC 20.25H.210, mitigation plans designed to mitigate impacts to streams and stream critical area buffers shall meet the requirements of this section.

A. Mitigation Preference. Mitigation plans for streams and stream critical area buffers shall provide mitigation for impacts to critical area functions and values in the following order of preference:

1. *On-site, through replacement of lost critical area buffer;*
2. *On-site, through enhancement of the functions and values of remaining critical area buffer;*
3. *Off-site, through replacement or enhancement, in the same sub-drainage basin;*
4. *Off-site, through replacement or enhancement, out of the sub-drainage basin but in the same drainage basin.*

Mitigation off-site and out of the drainage basin shall be permitted only through a critical areas report.

Response: As detailed in Section 8 - Mitigation Approach, the Project team followed the mitigation preferences in the code and invested much time and effort in evaluating opportunities and feasibility of on-site in-kind mitigation, or off-site mitigation in either the same sub-drainage basin or drainage basin. Ultimately, justification for off-site out of drainage basin mitigation is detailed in this Critical Areas Report.

B. Buffer Mitigation Ratio. Critical area buffer disturbed or impacted under this part shall be replaced at a ratio of one-to-one.

Response: See Table 12 in Section 8.1.2 for a summary of impacts and proposed mitigation. Since the permanent unavoidable impacts to wetlands and combined buffers are from vegetation conversion (no fill), one-half the typical ratios for permanent impacts are proposed, consistent with the mitigation approach for the South Bellevue Segment of the Project and interagency guidance (The Watershed Company 2016; Ecology et al. 2006).

9.5 LUC 20.25H.105 - Wetlands, Mitigation and Monitoring – Additional provisions

In addition to the provisions of LUC 20.25H.210, mitigation plans designed to mitigate impacts to wetlands and wetland critical area buffers shall meet the requirements of this section.

A. Preference of Mitigation Actions.

  1. Mitigation for Impacted Wetland Critical Area. Mitigation actions that require compensation of impacted wetland critical area shall occur in the following order of preference, subject to the location requirements of subsection B of this section:

    a. Restoring wetlands on upland sites that were formerly wetlands.

    b. Creating wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of nonnative introduced species. This should only be attempted when there is a consistent source of hydrology and it can be shown that the surface and subsurface hydrologic regime is conducive for the wetland community that is being designed.

    c. Enhancing significantly degraded wetlands.

Response: Wetland impacts are limited to vegetation conversion and temporary impacts. Temporary impacts are often necessary to remove old poles. Previously disturbed wetland area (*i.e.,* old pole locations) will be restored along with areas that experience temporary construction disturbance, including staging areas and access routes. Mitigation will in part enhance significantly degraded wetlands at the Richards Creek Substation site. Furthermore, while the proposed purchase of KFMB credits does not perfectly align with the City's mitigation location preferences, the mitigation activities at the KFMB site include large areas of wetland restoration and creation, meeting the more preferred type of mitigation actions listed under this code provision.

The 2008 federal Compensatory Mitigation for Losses of Aquatic Resources Final Rule states a preference for mitigation banking over permittee responsible mitigation due to demonstrated success of banking and because banks help reduce the risk of failure inherent in many permittee responsible mitigation projects. The use of mitigation banks promotes consistency and predictability and improves ecological success of mitigation efforts through better site selection, use of a watershed approach for planning and project design, and use of ecological success criteria to evaluate and measure performance of mitigation projects (40 CFR Part 230, Subpart J).

2. *Mitigation for Impacted Wetland Critical Area Buffer. Mitigation actions that require compensation of impacted critical area buffer shall occur in the following order of preference and in the following locations:*
    a. *On-site, through replacement of lost critical area buffer;*
    b. *On-site, through enhancement of the functions and values of remaining critical area buffer;*
    c. *Off-site, through replacement or enhancement, in the same sub-drainage basin;*
    d. *Off-site, through replacement or enhancement, out of the sub-drainage basin but in the same drainage basin.*

Response: See Section 8.1.1 for a discussion of mitigation site selection.

B. *Type and Location of Mitigation for Wetland Critical Area.*

Compensatory mitigation for critical areas functions and values shall be either in-kind and on-site, or in-kind and within the same drainage sub-basin. Mitigation actions may be conducted off-site and outside of the drainage sub-basin when all of the following are demonstrated through a critical areas report:

1. *There are no reasonable on-site or in-sub-drainage basin opportunities or on-site and in-sub-drainage basin opportunities do not have a high likelihood of success, after a determination of the natural capacity of the site to mitigate for the impacts. Consideration should include: anticipated wetland mitigation replacement ratios, buffer conditions and proposed widths, hydrogeomorphic classes of on-site wetlands when restored, proposed flood storage capacity, and potential to mitigate stream fish and wildlife impacts (such as connectivity);*
2. *Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the impacted wetland; and*
3. *Off-site locations shall be in the same sub-drainage basin unless established watershed goals for water quality, flood or conveyance, habitat, or other wetland functions have been established and strongly justify location of mitigation at another site.*

Response: See Section 8 - Mitigation Approach, for a detailed description of the mitigation site selection process and a functional lift analysis of the proposed mitigation approach. The Project team followed the mitigation preferences in the code and invested much time and effort in evaluating opportunities and feasibility of on-site, in-kind mitigation, or off-site mitigation in either the same sub-drainage basin, or in the same drainage basin. Ultimately, justification for off-site out of drainage basin mitigation is detailed in this Critical Areas Report and the associated bank use plan (Appendix G).

C. *Mitigation Ratios.*

1. *Wetland Acreage Replacement Ratios. The following ratios shall apply to creation or restoration that is in-kind, is on-site, is the same category of wetland, is timed prior to or concurrent*

with alteration, and has a high probability of success. The first number specifies the acreage of replacement wetlands and the second specifies the acreage of wetlands altered.

Category I	*6-to-1*
Category II	*3-to-1*
Category III	*2-to-1*
Category IV	*1.5-to-1*

2. *Increased Replacement Ratio. The Director may increase the ratios where proposed mitigation will result in a lower category wetland or reduced functions relative to the wetland being impacted.*
3. *Critical Area Buffer Mitigation Ratio. Critical area buffer disturbed or impacted under this part shall be replaced at a ratio of one-to-one.*

Response: See Tables 11, 12, and 13 in Section 8.1 above for a summary of impacts and proposed mitigation. Vegetation removal impacts will occur within Category II, III, and IV wetlands and associated buffers. Since the vegetation removal results in conversion from tree canopy to understory and shrubs (but no fill), some habitat benefit is still provided, and one-half the typical ratios for permanent impacts are proposed. This is consistent with the mitigation approach that was approved by the City for the South Bellevue Segment of the Project and interagency guidance.

D. Wetlands Enhancement as Mitigation.

Impacts to wetland critical area functions may be mitigated by enhancement of existing significantly degraded wetlands. Applicants proposing to enhance wetlands must produce a critical areas report meeting the requirements of LUC 20.25H.110 and 20.25H.230 that identifies how enhancement will increase the functions of the degraded wetland and how this increase will adequately mitigate for the loss of wetland area and function at the impact site. An enhancement proposal must also show whether existing wetland functions will be reduced by the enhancement actions.

Response: The areas of wetland enhancement proposed on the Richards Creek Substation site will establish a native plant community in an area dominated by invasive reed canarygrass and Himalayan blackberry. This mitigation area directly abuts a previously approved stream and wetland mitigation plan. Connecting the new mitigation site to a larger enhancement area both improves the likelihood of success and yields a larger habitat patch. See Section 8.3 for a detailed discussion regarding the functional impact of proposed vegetation conversion and the functional lift anticipated through both on- and off-site mitigation.

9.6 LUC 20.25H.125 - Performance Standards – Landslide hazards and steep slopes

Compliance with applicable performance standards for geologic hazard areas has been described by the Project’s geotechnical experts (Appendix D).

9.7 LUC 20.25H.250 - Critical areas report – Submittal requirements

The Project proposes use of a the KFMB as well as permittee-responsible mitigation in the Richards Creek drainage basin to compensate for impacts within the Kelsey Creek drainage basin. As noted previously, according to LUC 20.25H.085.A and LUC 20.25H.105.B, any proposal for stream buffer or wetland mitigation that is off-site and out of drainage basin shall only be permitted through a Critical Areas Report process. Therefore, compliance with the applicable Critical Areas Report submittal requirements and decision criteria is described below.

A. Specific Proposal Required.

A critical areas report must be submitted as part of an application for a specific development proposal. In addition to the requirements of this section, additional information may be required for the permit applicable to the development proposal.

Response: This report is being submitted as part of a Critical Areas Land Use Application package for the PSE Energize Eastside Project – North Bellevue Segment.

B. Minimum Report Requirements.

The critical areas report shall be prepared by a qualified professional and shall at minimum include the content identified in this section. The Director may waive any of the report requirements where, in the Director's discretion, the information is not necessary to assess the impacts of the proposal and the level of protection of critical area function and value accomplished. At a minimum, the report shall contain the following:

1. *Identification and classification of all critical areas and critical area buffers on the site;*

Response: See Section 4.3 and 5.1 for discussion regarding the critical areas identified in the project area, their classifications and related buffers.

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2. *Identification and characterization of all critical areas and critical area buffers on those properties immediately adjacent to the site;*

Response: See Section 4.3 and 5.1 for discussing regarding identification and characterization of critical areas and associated buffers.

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3. *Identification of each regulation or standard of this code proposed to be modified;*

Response: The project does not propose modifications of any specific code standards. Rather, a Critical Areas Report is required because of the proposed off-site mitigation at KFMB. Section 9 contains a detailed Project-based review of applicable City Code provisions, including Critical Areas Report criteria.

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3. *A habitat assessment consistent with the requirements of LUC 20.25H.165;*

Response: Discussion of habitat, in accordance with the requirements of LUC 20.25H.165 (below), is discussed throughout this report and summarized below. The Project will not impact known habitats associated with species of local importance. Therefore, no modifications to the performance standards for habitat associated with species of local importance are proposed.

LUC 20.25H.165.A (Habitat Assessment):

1. *Detailed description of vegetation and habitat on and adjacent to the site;*

Response: See Sections 4.2 and 4.3 for a detailed description of the vegetation and habitat on and adjacent to the site.

2. *Identification of any species of local importance that have a primary association with habitat on or adjacent to the site and assessment of potential project impacts to the use of the site by the species;*

Response: See Section 4.3.3. To summarize, Kelsey Creek is considered a Habitat Associated with Species of Local Importance. No Project impacts are proposed to Kelsey Creek or its associated buffer. No other Habitats Associated with Species of Local Importance have been identified at this time. While there is some potential for certain species to breed in the Project area, it is considered to be unlikely. The foraging habitat present in the Project area is not expected to change as a result of the Project and is not recommended for regulation as a Habitat Associated with Species of Local Importance

3. *A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the site;*

Response: See Section 4.3.3. No impacts are proposed to Kelsey Creek or its associated buffer.

4. *A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality;*

Response: Sections 7 and 8 provide a description of impacts in relation to critical area functions. The functional lift analysis (Section 8.3) describes the expected net change in critical area functions overall once mitigation is considered. To summarize, 9,930 SF of degraded Category III wetland will be enhanced on the Richards Creek Substation site and 4,562 SF of KFMB credits will be purchased to compensate for the loss of ecological functions associated with removal of an estimated 202 trees from wetland and combined buffer critical areas in an existing utility corridor in North Bellevue. Furthermore, in addition to compensation of ecological functions through critical area mitigation requirements, PSE has committed to replace removed trees based on size per the Project's *Vegetation Inventory & Management Plan*

Report (The Watershed Company 2021b). Proposed mitigation activities are anticipated to more than compensate for Project impacts.

5. *A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed use or activity and to be conducted in accordance with the mitigation sequence set forth in LUC 20.25H.215; and*

Response: See Section 6 for a discussion of mitigation sequencing.

6. *A discussion of ongoing management practices that will protect habitat after the site has been developed, including proposed monitoring and maintenance programs.*

Response: See Section 4.3.3 for a discussion of standard PSE habitat protection practices. See also Section 8. The attached *Richards Creek Substation Mitigation Plan* (Appendix F) includes monitoring and maintenance provisions in accordance with LUC 20.25H.220.B.

LUC 20.25H.250.B (Minimum Report Requirements)

4. *An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development;*

Response: See Section 7.5 for a cumulative impacts assessment.

5. *An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this code, compared with the level of protection provided by the proposal. The analysis shall include:*
    a. *A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;*

Response: See Section 8.1 for a discussion of the functions and values currently provided by critical areas and buffers in the Project area.

  b. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development; and*

Response: The regulations and standards of LUC 20.25H allow the proposed Project to occur within critical areas and their associated buffers, provided certain criteria are met. In the North Bellevue Segment, six poles would be removed from wetlands and the number of poles in combined wetland and stream buffers would be reduced from 34 to nine. Similarly, the number of poles in geologic hazard areas and associated buffers/setbacks would be reduced from 48 to 16. The search for mitigation options followed the preference hierarchy defined in City Code (LUC 20.25H.085 (streams) and LUC 20.25H.105 (wetlands)). Options for mitigation on-site, in-kind, and in the same sub-drainage basin were considered ahead of off-site, out of basin alternatives as detailed in Section 8.1.1. Per LUC 20.25H.085A and LUC 20.25H.105.B, mitigation for stream buffer or wetland impact off-site and out of the drainage basin shall be permitted only through a critical areas report. Through the avoidance and minimization measures and the proposed compensatory mitigation discussed in this report, critical area functions overall will be preserved or improved in the Project area. Furthermore, without the proposed critical area alterations, and resulting proposed restoration, existing degraded critical areas and associated buffers on the Richards Creek Substation mitigation site would remain in their present condition with no enhancement.

c. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development;*

Response: See Section 8.3.3 for a discussion of the functional lift that will occur through the mitigation proposed for the Project.

Proposed on-site enhancement will maintain and improve wetland and wetland and stream buffer functions and values. Permanent wetland and wetland and stream buffer impacts will be mitigated through enhancement of “on-site” degraded wetland and buffer areas and purchase of credits from KFMB. See the *Mitigation Bank Use Plan* for a discussion of critical area functions provided through the bank (Appendix G).

6. *A discussion of the performance standards applicable to the critical area and proposed activity pursuant to LUC 20.25H.160, and recommendation for additional or modified performance standards, if any;*

Response: The Project will not cause impacts to habitat associated with species of local importance.

7. *A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any; and*

Response: See Sections 7.2 and 8.1 for a discussion of the mitigation requirements applicable to the proposal. Mitigation for the Project is being designed to be in compliance with LUC 20.25H.210 through 25.25H.225.

8. *Any additional information required for the specific critical area as specified in the sections of this part addressing that critical area.*

Response: Wetlands and streams were originally delineated and classified in 2015 or earlier at a few specific locations. Delineation findings were documented in the *City of Bellevue Critical Areas Delineation Report: Puget Sound Energy – Energize Eastside Project* (The Watershed Company 2016). Wetland boundaries and stream centerlines were verified or adjusted in February and

May 2020. Wetland ratings were also updated for consistency with revised City code and the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby 2014). Current wetland and stream conditions are documented in an updated delineation report, *Wetland and Stream Delineation Report Update for North Bellevue* (The Watershed Company 2021c, Appendix C).

C. Additional Report Submittal Requirements.

1. *Unless otherwise provided, a critical areas report may be supplemented by or composed, in whole or in part, of any reports or studies required by other laws and regulations or previously prepared for and applicable to the development proposal site, as approved by the Director.*

Response: This Critical Areas Report relies on two relevant environmental reports: *Wetland and Stream Delineation Report Update for North Bellevue* (The Watershed Company 2021c, Appendix C) and the *Vegetation Inventory & Management Plan Report for North Bellevue* (The Watershed Company 2016b).

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2. *Where a project requires a critical areas report and a mitigation or restoration plan, the mitigation or restoration plan may be included with the critical areas report, and may be considered in determining compliance with the applicable decision criteria, except as set forth in subsection C.4 of this section.*

Response: The *Richards Creek Mitigation Plan* is included in Appendix F and the *Mitigation Bank Use Plan* is included in Appendix G.

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3. *The applicant may consult with the Director prior to or during preparation of the critical areas report to obtain approval of modifications to the required contents of the report where, in the judgment of a qualified professional, more or less information is required to adequately address the potential critical area impacts and required mitigation.*

Response: PSE does not request modification of the required Critical Areas Report content but does note that mitigation potential is limited in the project area. PSE standards and federal regulations require vegetation management compatible with overhead 230 kV transmission lines. Where mitigation is proposed under transmission lines, the proposed mitigation plan will provide for species that will enhance existing buffers and wetlands, while meeting transmission line vegetation management standards. Project constraints and mitigation approaches have been discussed with the City throughout the development of this Critical Areas Report.

D. Incorporation of Previous Study.

Where a valid critical areas report or report for another agency with jurisdiction over the proposal has been prepared within the last five years for a specific site, and where the proposed land use activity and surrounding site conditions are unchanged, said report may be incorporated into the required critical *areas report. The applicant shall submit an assessment detailing any changed environmental conditions associated with the site. (Ord. 5680, 6-26-06, § 3)*

Response: The *Wetland and Stream Delineation Report Update for North Bellevue* (The Watershed Company 2021c) and *Vegetation Inventory & Management Plan for North Bellevue* (The Watershed Company 2021b) have recently been updated for the proposed Project. Additionally, the *Targeted Critical Areas Geologic Hazard Evaluation* (GeoEngineers 2020) was prepared to evaluate the Project's potential impact to geologic hazard areas.

9.8 LUC 20.25H.255 - Critical areas report – Decision criteria

Compliance with applicable critical areas report decision criteria is described below.

A. General.

Except for the proposals described in subsection B of this section, the Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:

1. *The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;*

Response: PSE proposes to mitigate for Project impacts through on-site wetland enhancement on the Richards Creek Substation property and through purchase of mitigation bank credits from KFMB. The Project proposes partial off-site, out of basin mitigation, only after considering all on-site, in-kind options as documented in Section 8.1.1. LUC 20.25H.225 allows that, "the Director may encourage, facilitate, and approve innovative mitigation projects that are based on the best available science". Possible mitigation sites were considered for potential ecological functional lift and consistency with *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Hruby, Harper, and Stanley 2009), in accordance with best available science, interagency guidance and rules. See Section 8.3 for a discussion of the functional lift provided and the protection of critical areas function and values that will be provided through implementation of the proposed mitigation approach. Proposed critical area mitigation compensates for tree removal based on approximate area of canopy to be removed. In addition to compensation of ecological functions through critical area mitigation requirements, PSE has committed to replace removed trees based on size per the Project's *Vegetation Inventory & Management Plan Report* (The Watershed Company 2021b). Proposed mitigation activities are anticipated to more than compensate for North Bellevue Segment impacts.

The 2008 federal Compensatory Mitigation for Losses of Aquatic Resources Final Rule states a preference for mitigation banking over permittee responsible mitigation due to demonstrated success of banking and because banks help reduce the risk of failure inherent in many permittee responsible mitigation projects. The use of mitigation banks promotes consistency and predictability and improves ecological success of mitigation efforts through better site selection, use of a watershed approach for planning and project design, and use of ecological success criteria to evaluate and measure performance of mitigation projects (40 CFR Part 230, Subpart J).

2. *Adequate resources to ensure completion of any required mitigation and monitoring efforts;*

Response: PSE has adequate resources to ensure completion of any required mitigation and monitoring efforts.

3. *The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and*

Response: No part of the proposal will be detrimental to off-site areas. Appropriate BMPs will be used during construction activities to prevent off-site impacts, including short-term impacts to water quality. Enhancement of the on-site mitigation area at the Richards Creek Substation will increase the overall habitat function of the area, thereby potentially improving habitat functions on adjacent properties.

4. *The resulting development is compatible with other uses and development in the same land use district.*

Response: The project involves the replacement of an existing transmission line, therefore, no change in land use is proposed. PSE's transmission line proposal is anticipated by and included in Bellevue's Comprehensive Plan (Map UT-7). The transmission line upgrade proposal is limited to the existing corridor which was established in the 1920s. The Project is compatible with and responds to the uses and development that has been built up around the transmission line corridor for decades. Compatibility was analyzed in detail in Chapter 3.1 of the *Energize Eastside Project Phase 2 Draft Environmental Impact Statement* (ESA 2017). The transmission corridor is predominantly surrounded by residential uses with some commercial and park/public open space uses. The corridor currently contains 115 kV transmission lines; use of the existing corridor (which has housed transmission lines since the 1920s and 30s) minimizes environmental impacts and impacts to adjacent uses to the fullest extent feasible. The project corridor is currently maintained and permanent impacts to critical areas and buffers are limited to the minimum extent feasible through design considerations, such as removing all poles from wetlands and replacing within buffers.

9.9 LUC 20.30P.140 - Critical Areas Land Use Permit Decision Criteria

Compliance with the critical areas land use permit decision criteria is described below.

The Director may approve or approve with modifications an application for a Critical Areas Land Use Permit if:

A. The proposal obtains all other permits required by the Land Use Code; and

Response: PSE will apply for a Conditional Use Permit in addition to the Critical Areas Land Use Permit (LO), for which an application is required based upon proposed impacts to critical area/buffers and associated mitigation activities. In addition, construction permits will be required, including but not limited to a ROW Use permit and a clearing and grading permit. PSE will also submit approved State and Federal permits, if applicable, to the City to demonstrate compliance with all regulatory requirements.

B. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer; and

Response: The Project has been through multiple design revisions and has considered alternate routes in order to ensure the least impact to critical areas that is reasonably feasible. Unavoidable impacts will be minimized through Project design and engineering. The Project will use existing access points to minimize impacts on critical areas and critical area buffers, as these areas have previously been disturbed. BMPs after construction include plant replacement, scattering trimmed or removed tree debris, and chipping wood to reduce potential impacts to work areas. Removal of vegetation by hand and/or using limited access machinery will reduce potential impacts. PSE has designed the transmission line to locate poles in the general vicinity of existing impacts, limiting the number of new poles and minimizing vegetation removal with pole heights. However, existing poles in wetlands will be relocated outside of wetlands resulting in a net improvement in wetland impacts. Most poles will be direct embed rather than constructed with foundations, which have a bigger footprint. Direct embed pole technique minimizes ground disturbance and impacts to vegetation by using an auger to remove sediment and directly installing the pole within the augered hole. Methods suggested for construction access and staging plans, such as using mats over wetland vegetation, also demonstrate use of best available techniques for reducing impacts on critical area.

The project geotechnical engineer shall certify that PSE has conducted geotechnical hazard evaluations for all applicable proposed elements and that recommendations are incorporated into final design. Additionally, as part of PSE's regular inspection of the poles, it shall monitor all poles for changes in conditions that could reduce the ability of the structures to resist seismic disturbances and then submit annual reporting to the City of Bellevue. If changes are identified during inspection and monitoring of conditions, PSE shall implement additional measures to reduce or minimize those impacts.

PSE is not aware of any less impactful construction, design and development techniques and regularly reviews its practices consistent with this goal.

C. *The proposal incorporates the performance standards of Part 20.25H LUC to the maximum extent applicable; and*

Response: See above Sections 9.2 through 9.6 for compliance with applicable performance standards for wetlands and buffers impacted by the Project.

D. *The proposal will be served by adequate public facilities including streets, fire protection, and utilities; and*

Response: The objective of the Project is to increase the capacity of the Eastside electric grid, to ensure reliable utility service is available. The Project will be served by adequate public facilities. Temporary and some potentially permanent access routes will be needed to service the Project but no new streets are necessary. Fire and police protection are currently available in the Project vicinity. This topic was analyzed in detail in Chapter 3 of the *Energize Eastside Project Phase 2 Draft Environmental Impact Statement* (ESA 2017).

E. *The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC 20.25H.055.C.3.i shall not require a mitigation or restoration plan; and*

Response: The *Richards Creek Substation Mitigation Plan* (Appendix F) has been prepared in accordance with the requirements of LUC 20.25H.210. Additional mitigation is provided through purchase of credits from a mitigation bank as outlined in the *Mitigation Bank Use Plan* (Appendix G).

F. *The proposal complies with other applicable requirements of this code.*

Response: The proposed Project complies with all other applicable City of Bellevue Land Use Codes, as described in the Project's Critical Areas Land Use Permit application package and the Conditional Use Permit application package, including compliance with LUC 20.20.255, Electrical utility facilities.

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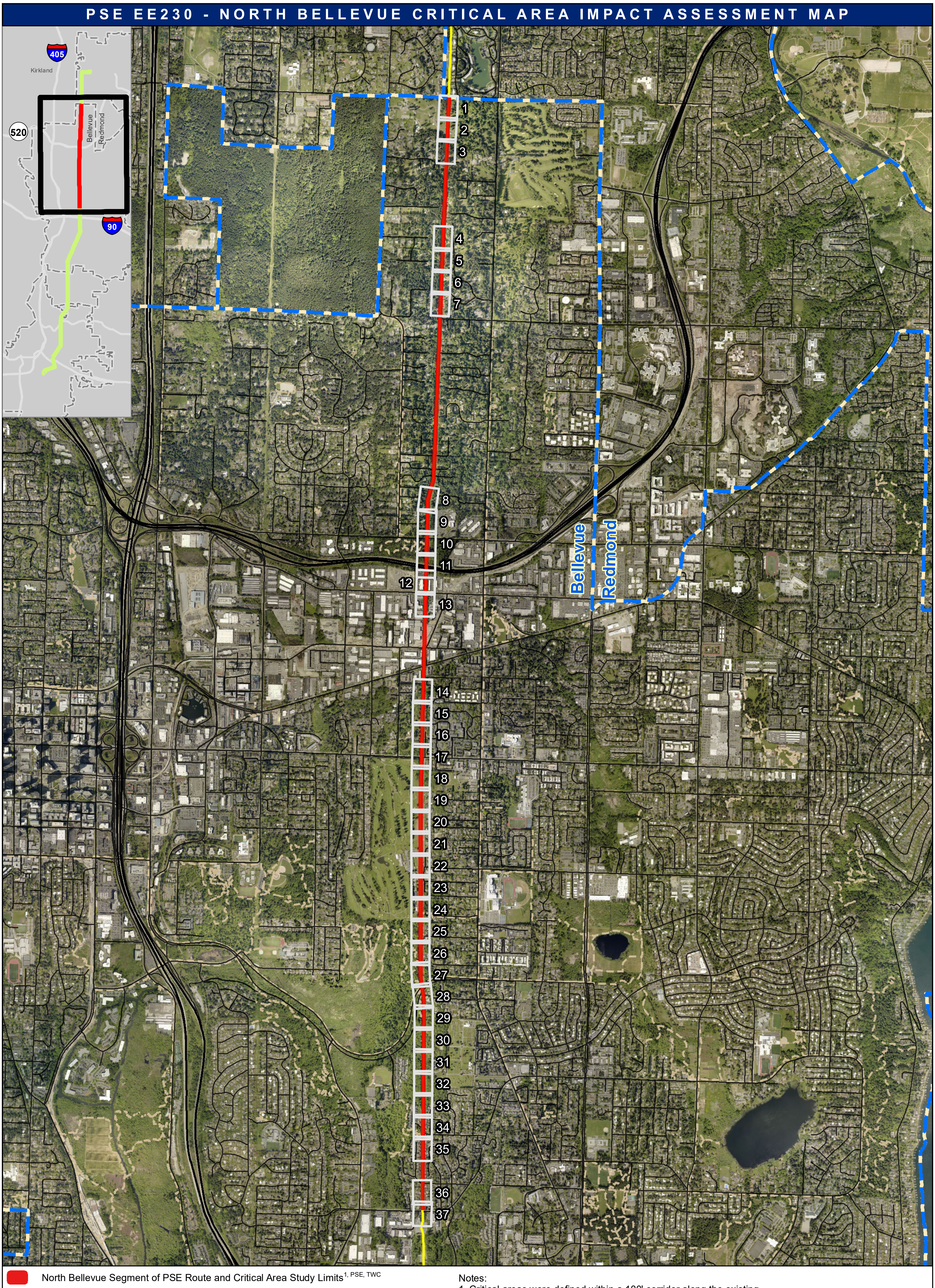
Appendix A

CRITICAL AREA IMPACT ASSESSMENT MAPS

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 North Bellevue Segment of PSE Route and Critical Area Study Limits[1, PSE, TWC]

〰 PSE Route and Critical Area Study Limits outside of North Bellevue Segment [PSE]

▢ Report Map Page Extents [2, TWC]

〰 Road Centerlines[COB]

〰 Trails[COB]

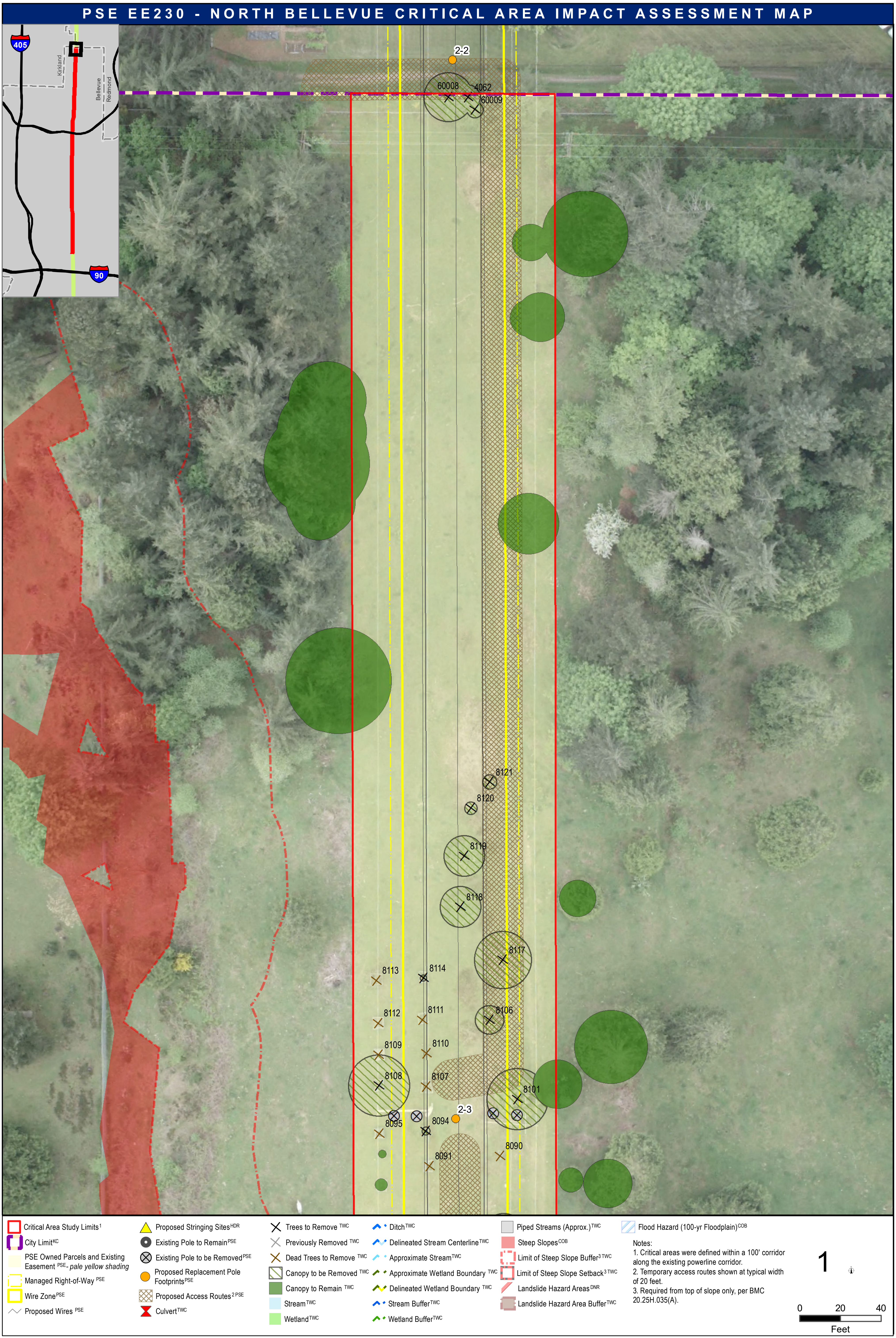
▢ City Limit[KC]

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor and the entirety of the Richards Creek substation parcels.
2. Map pages highlighted are where critical areas, as designated in Bellevue Municipal Code, are mapped within the North Bellevue portion of the corridor. All other map pages were omitted.
3. Only those steep slopes designated as priority through geotechnical field investigation are mapped within the corridor. Please refer to discussion in Critical Areas Report.

N

0 1,100 2,200
Feet

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- 🟥 Critical Area Study Limits[1]
- City Limit KC
- PSE Owned Parcels and Existing Easement PSE- *pale yellow shading*
- Managed Right-of-Way PSE
- Wire Zone PSE
- Proposed Wires PSE
- ▲ Proposed Stringing Sites HDR
- ● Existing Pole to Remain PSE
- ⊗ Existing Pole to be Removed PSE
- ● Proposed Replacement Pole Footprints PSE
- ▨ Proposed Access Routes[2] PSE
- Culvert TWC
- × Trees to Remove TWC
- × Previously Removed TWC
- × Dead Trees to Remove TWC
- ▨ Canopy to be Removed TWC
- 🟩 Canopy to Remain TWC
- Stream TWC
- 🟩 Wetland TWC
- Ditch TWC
- Delineated Stream Centerline TWC
- Approximate Stream TWC
- Approximate Wetland Boundary TWC
- Delineated Wetland Boundary TWC
- Stream Buffer TWC
- Wetland Buffer TWC
- Piped Streams (Approx.) TWC
- 🟥 Steep Slopes COB
- Limit of Steep Slope Buffer[3] TWC
- Limit of Steep Slope Setback[3] TWC
- Landslide Hazard Areas DNR
- Landslide Hazard Area Buffer TWC
- Flood Hazard (100-yr Floodplain) COB

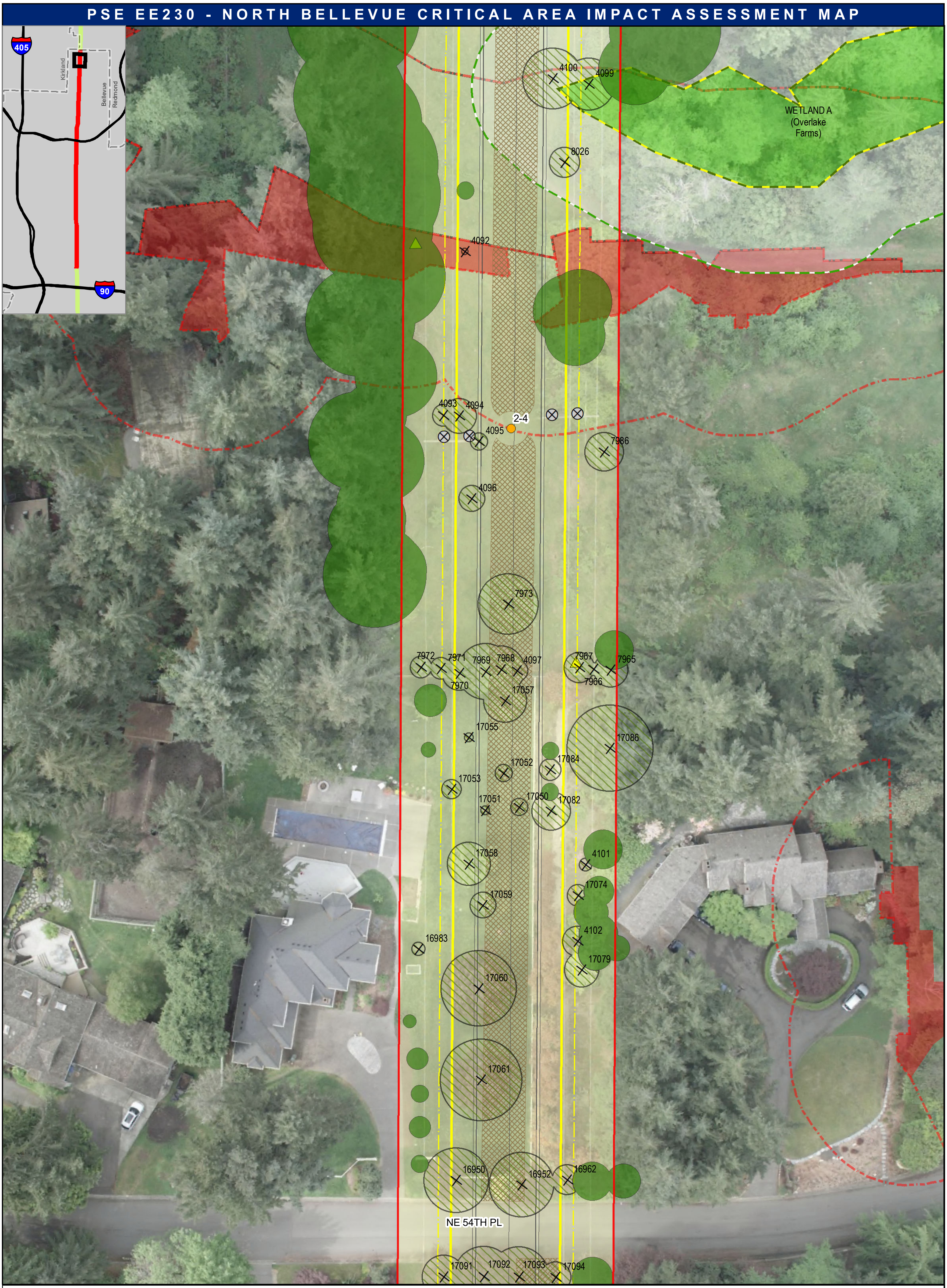
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

2

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Critical Area Study Limits[1]
City Limit^{KC}
PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
Managed Right-of-Way ^{PSE}
Wire Zone^{PSE}
Proposed Wires ^{PSE}

Proposed Stringing Sites^{HDR}
Existing Pole to Remain^{PSE}
Existing Pole to be Removed^{PSE}
Proposed Replacement Pole Footprints^{PSE}
Proposed Access Routes$^{2\ PSE}$
Culvert^{TWC}

Trees to Remove ^{TWC}
Previously Removed ^{TWC}
Dead Trees to Remove ^{TWC}
Canopy to be Removed ^{TWC}
Canopy to Remain ^{TWC}
Stream^{TWC}
Wetland^{TWC}

Ditch^{TWC}
Delineated Stream Centerline^{TWC}
Approximate Stream^{TWC}
Approximate Wetland Boundary ^{TWC}
Delineated Wetland Boundary ^{TWC}
Stream Buffer^{TWC}
Wetland Buffer^{TWC}

Piped Streams (Approx.)^{TWC}
Steep Slopes^{COB}
Limit of Steep Slope Buffer$^{3\ TWC}$
Limit of Steep Slope Setback$^{3\ TWC}$
Landslide Hazard Areas^{DNR}
Landslide Hazard Area Buffer^{TWC}

Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

3

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

Critical Area Study Limits[1]
City Limit^KC
PSE Owned Parcels and Existing Easement ^PSE - *pale yellow shading*
Managed Right-of-Way ^PSE
Wire Zone^PSE
Proposed Wires ^PSE
Proposed Stringing Sites^HDR
Existing Pole to Remain^PSE
Existing Pole to be Removed^PSE
Proposed Replacement Pole Footprints^PSE
Proposed Access Routes^2 PSE
Culvert^TWC
Trees to Remove ^TWC
Previously Removed ^TWC
Dead Trees to Remove ^TWC
Canopy to be Removed ^TWC
Canopy to Remain ^TWC
Stream^TWC
Wetland^TWC
Ditch^TWC
Delineated Stream Centerline^TWC
Approximate Stream^TWC
Approximate Wetland Boundary ^TWC
Delineated Wetland Boundary ^TWC
Stream Buffer^TWC
Wetland Buffer^TWC
Piped Streams (Approx.)^TWC
Steep Slopes^COB
Limit of Steep Slope Buffer^3 TWC
Limit of Steep Slope Setback^3 TWC
Landslide Hazard Areas^DNR
Landslide Hazard Area Buffer^TWC
Flood Hazard (100-yr Floodplain)^COB

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

4

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- □ Critical Area Study Limits^{1}
- □ City Limit^{KC}
- ▭ PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- ⬚ Managed Right-of-Way ^{PSE}
- □ Wire Zone^{PSE}
- ╱╲ Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ⊙ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▩ Proposed Access Routes$^{2\,PSE}$
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▧ Canopy to be Removed ^{TWC}
- ■ Canopy to Remain ^{TWC}
- ■ Stream^{TWC}
- ■ Wetland^{TWC}
- ⌃ Ditch^{TWC}
- ⌃ Delineated Stream Centerline^{TWC}
- ⌃ Approximate Stream^{TWC}
- ⌃ Approximate Wetland Boundary ^{TWC}
- ⌃ Delineated Wetland Boundary ^{TWC}
- ⌃ Stream Buffer^{TWC}
- ⌃ Wetland Buffer^{TWC}
- ■ Piped Streams (Approx.)^{TWC}
- ■ Steep Slopes^{COB}
- ⬚ Limit of Steep Slope Buffer$^{3\,TWC}$
- ⬚ Limit of Steep Slope Setback$^{3\,TWC}$
- ▨ Landslide Hazard Areas^{DNR}
- ■ Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

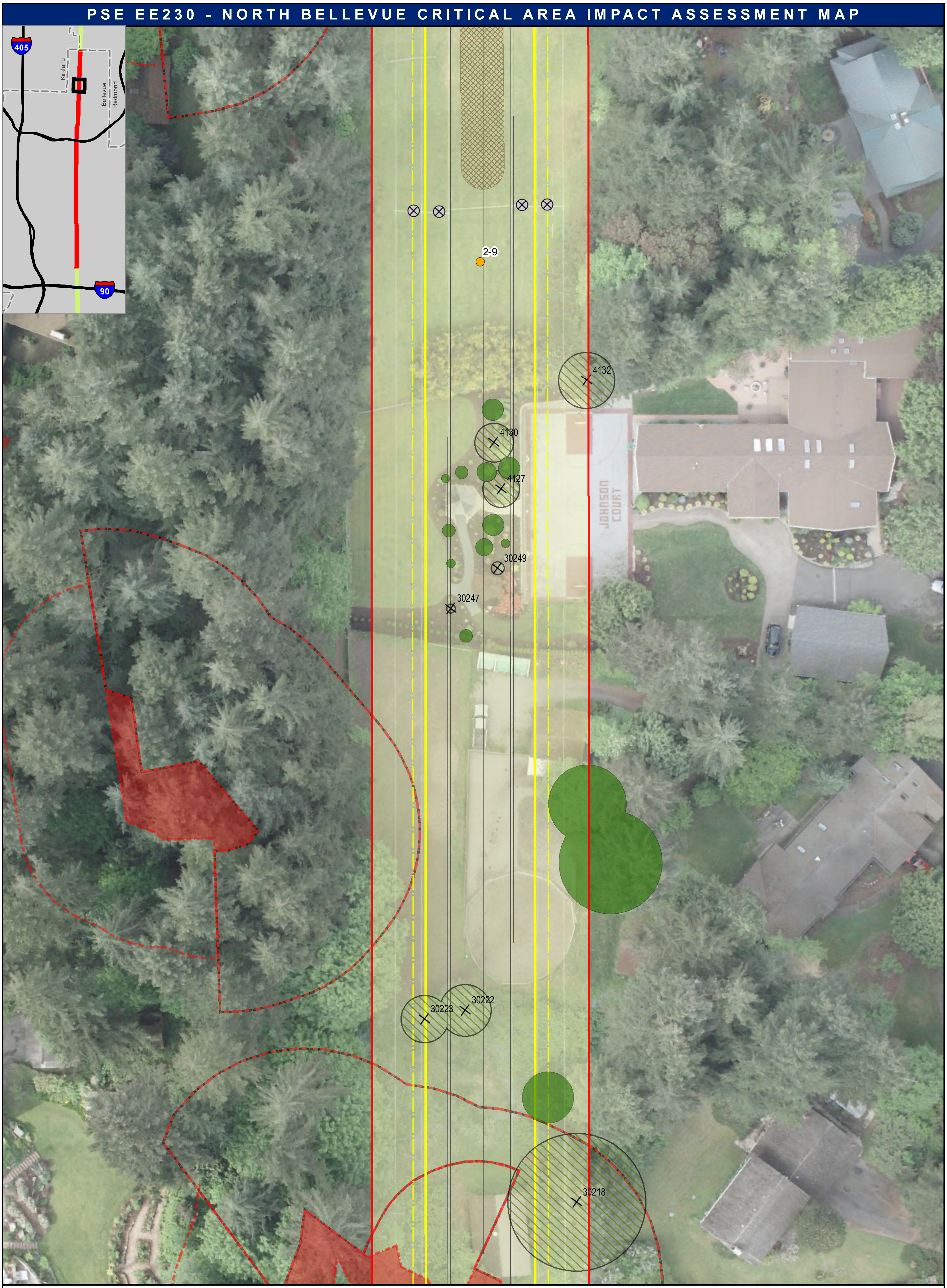
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

5

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- ▢ Critical Area Study Limits[1]
- ▢ City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- ▢ Managed Right-of-Way ^{PSE}
- ▢ Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ⊙ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes$^{2\ PSE}$
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- ▢ Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- ▢ Limit of Steep Slope Buffer$^{3\ TWC}$
- ▢ Limit of Steep Slope Setback$^{3\ TWC}$
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

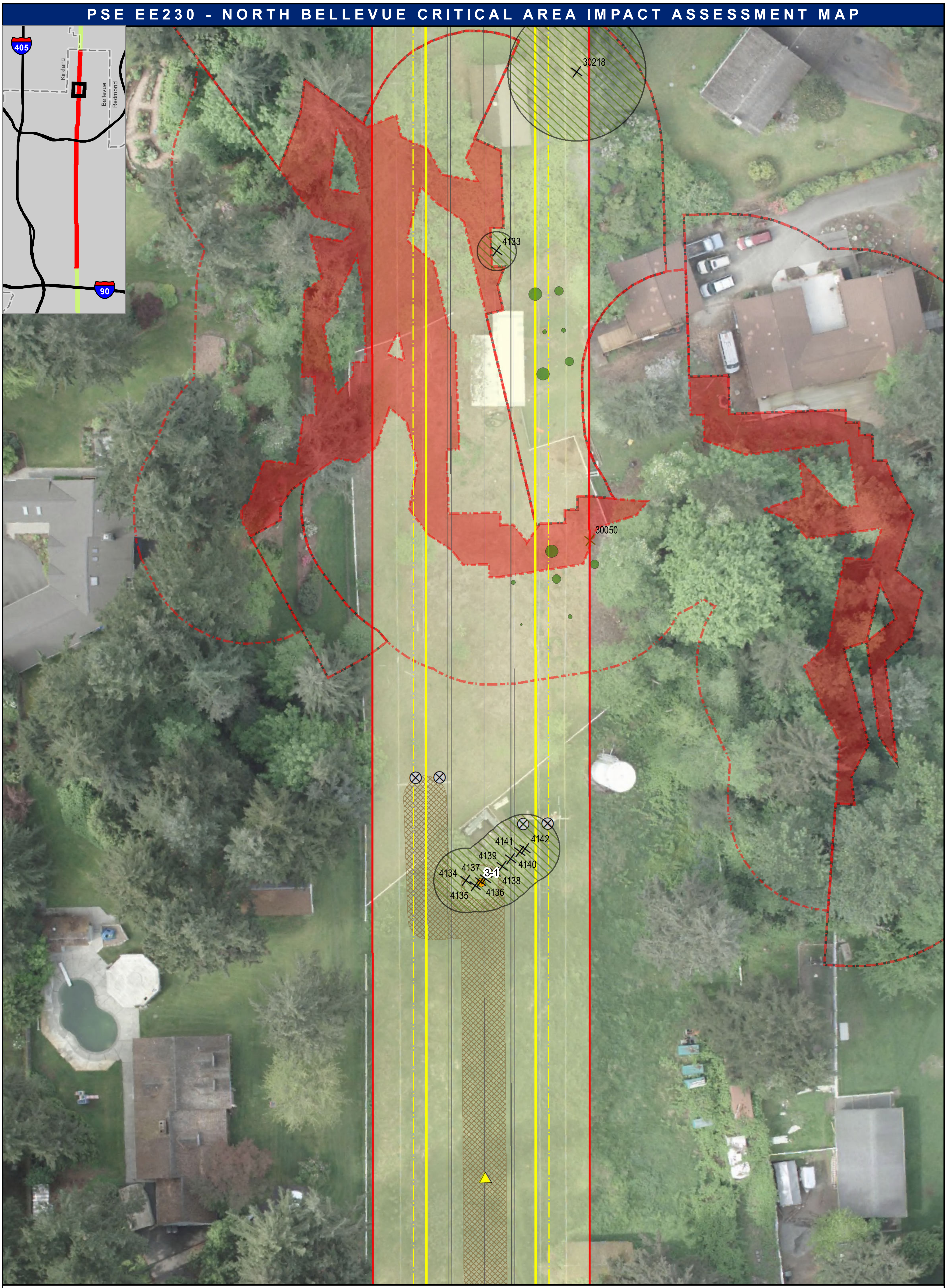
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

6

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

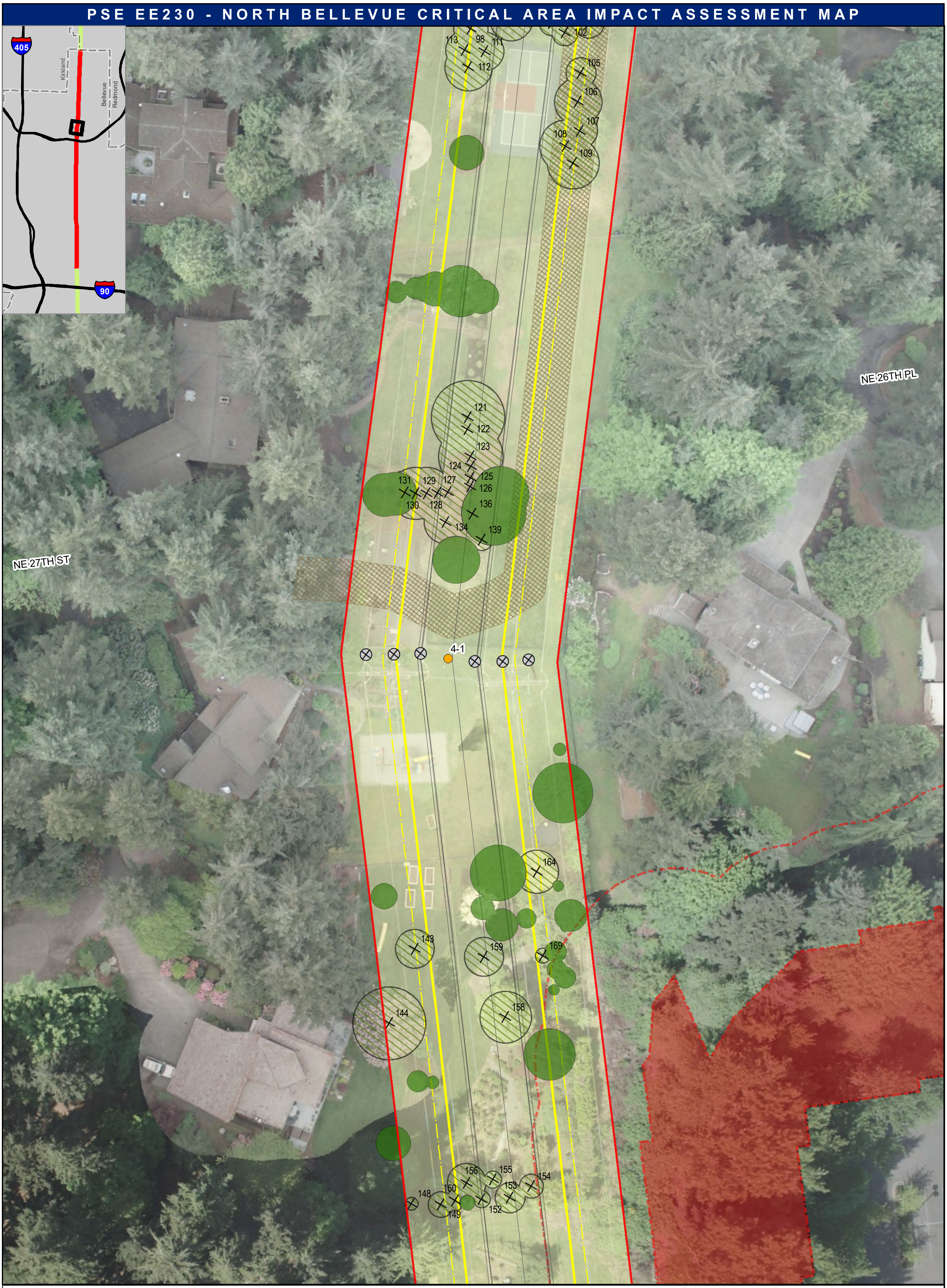


Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

7

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- Critical Area Study Limits^{1}
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- Proposed Stringing Sites^{HDR}
- Existing Pole to Remain^{PSE}
- Existing Pole to be Removed^{PSE}
- Proposed Replacement Pole Footprints^{PSE}
- Proposed Access Routes$^{2\ PSE}$
- Culvert^{TWC}
- Trees to Remove ^{TWC}
- Previously Removed ^{TWC}
- Dead Trees to Remove ^{TWC}
- Canopy to be Removed ^{TWC}
- Canopy to Remain ^{TWC}
- Stream^{TWC}
- Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- Piped Streams (Approx.)^{TWC}
- Steep Slopes^{COB}
- Limit of Steep Slope Buffer$^{3\ TWC}$
- Limit of Steep Slope Setback$^{3\ TWC}$
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- Flood Hazard (100-yr Floodplain)^{COB}

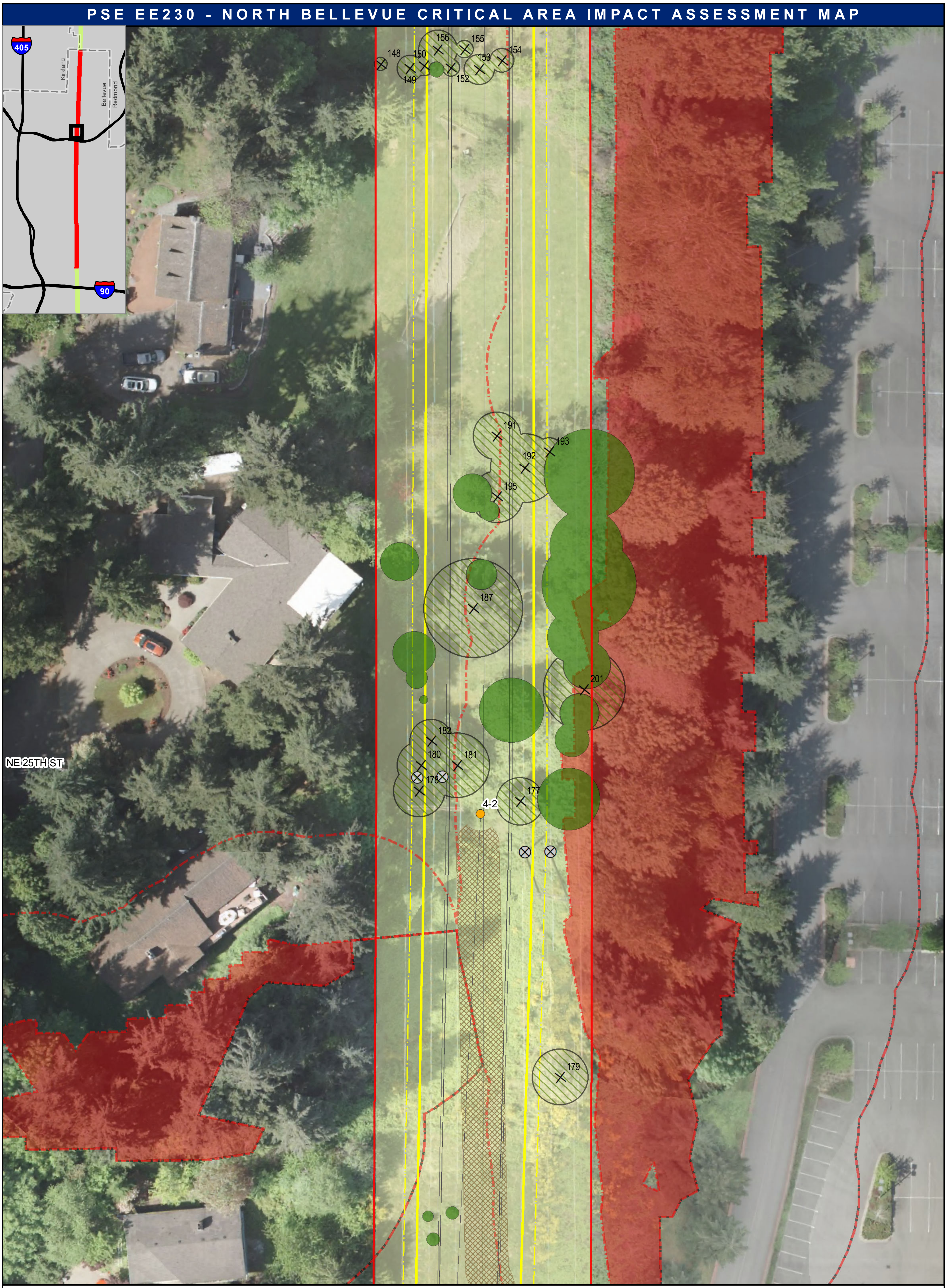
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

8

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Critical Area Study Limits^{1}
City Limit$^{\text{KC}}$
PSE Owned Parcels and Existing Easement $^{\text{PSE}}$- *pale yellow shading*
Managed Right-of-Way $^{\text{PSE}}$
Wire Zone$^{\text{PSE}}$
Proposed Wires $^{\text{PSE}}$

Proposed Stringing Sites$^{\text{HDR}}$
Existing Pole to Remain$^{\text{PSE}}$
Existing Pole to be Removed$^{\text{PSE}}$
Proposed Replacement Pole Footprints$^{\text{PSE}}$
Proposed Access Routes$^{2\,\text{PSE}}$
Culvert$^{\text{TWC}}$

Trees to Remove $^{\text{TWC}}$
Previously Removed $^{\text{TWC}}$
Dead Trees to Remove $^{\text{TWC}}$
Canopy to be Removed $^{\text{TWC}}$
Canopy to Remain $^{\text{TWC}}$
Stream$^{\text{TWC}}$
Wetland$^{\text{TWC}}$

Ditch$^{\text{TWC}}$
Delineated Stream Centerline$^{\text{TWC}}$
Approximate Stream$^{\text{TWC}}$
Approximate Wetland Boundary $^{\text{TWC}}$
Delineated Wetland Boundary $^{\text{TWC}}$
Stream Buffer$^{\text{TWC}}$
Wetland Buffer$^{\text{TWC}}$

Piped Streams (Approx.)$^{\text{TWC}}$
Steep Slopes$^{\text{COB}}$
Limit of Steep Slope Buffer$^{3\,\text{TWC}}$
Limit of Steep Slope Setback$^{3\,\text{TWC}}$
Landslide Hazard Areas$^{\text{DNR}}$
Landslide Hazard Area Buffer$^{\text{TWC}}$

Flood Hazard (100-yr Floodplain)$^{\text{COB}}$

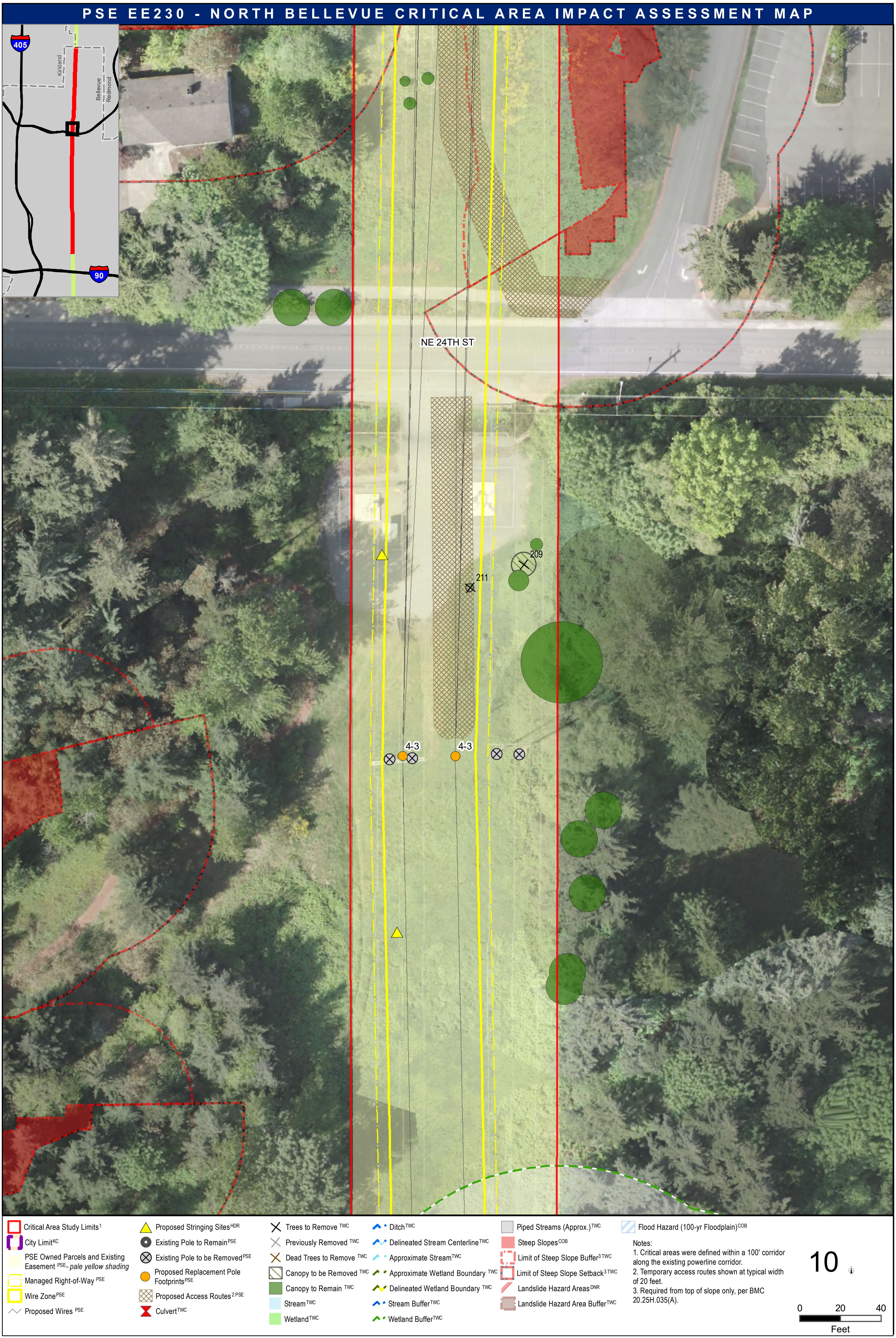
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

9

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

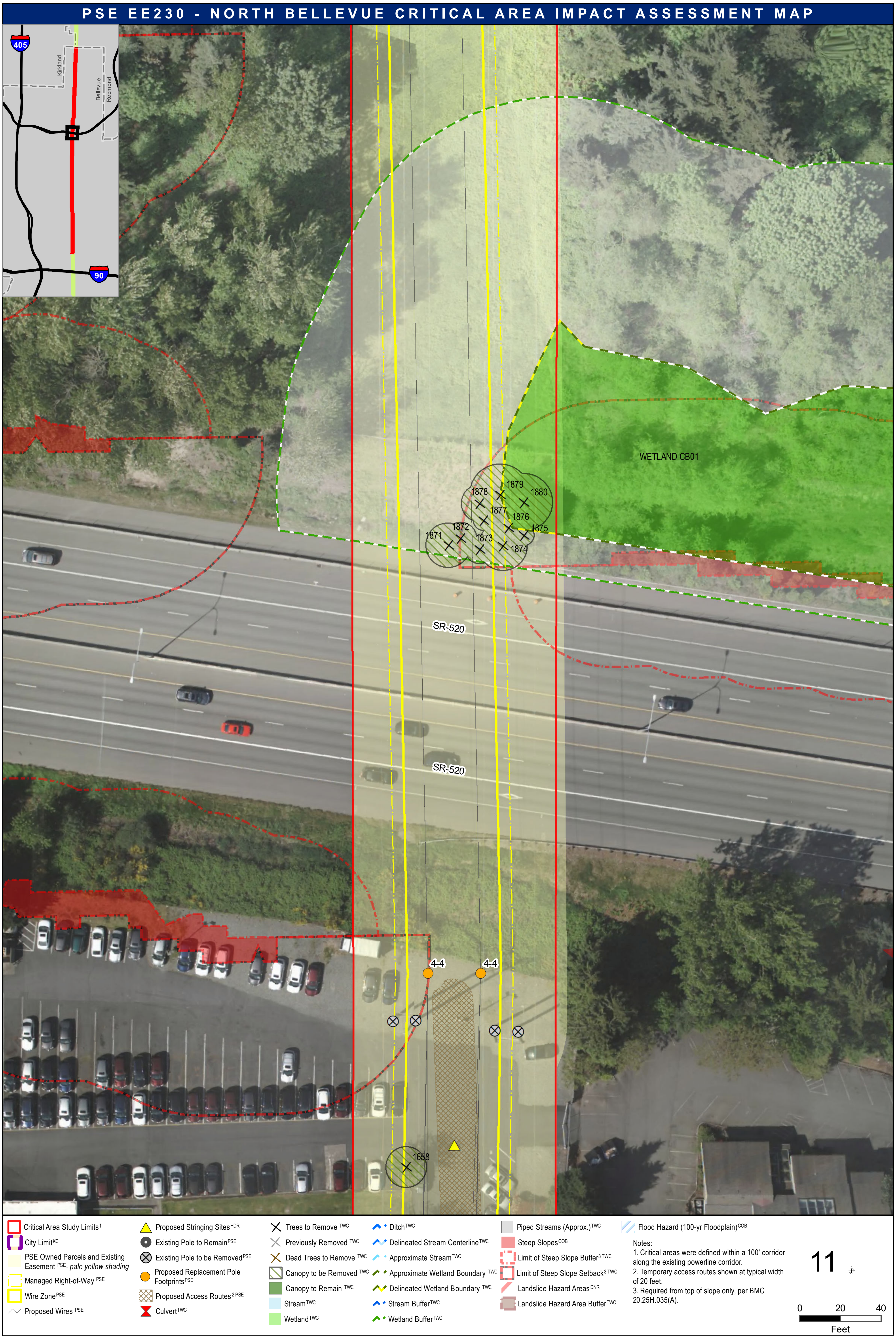


Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

10

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

11

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

🟥 Critical Area Study Limits^{1}
City Limit^{KC}
PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
Managed Right-of-Way ^{PSE}
Wire Zone^{PSE}
Proposed Wires ^{PSE}

▲ Proposed Stringing Sites^{HDR}
● Existing Pole to Remain^{PSE}
⊗ Existing Pole to be Removed^{PSE}
● Proposed Replacement Pole Footprints^{PSE}
▨ Proposed Access Routes$^{2\,PSE}$
Culvert^{TWC}

× Trees to Remove ^{TWC}
× Previously Removed ^{TWC}
× Dead Trees to Remove ^{TWC}
▨ Canopy to be Removed ^{TWC}
🟩 Canopy to Remain ^{TWC}
Stream^{TWC}
Wetland^{TWC}

Ditch^{TWC}
Delineated Stream Centerline^{TWC}
Approximate Stream^{TWC}
Approximate Wetland Boundary ^{TWC}
Delineated Wetland Boundary ^{TWC}
Stream Buffer^{TWC}
Wetland Buffer^{TWC}

Piped Streams (Approx.)^{TWC}
Steep Slopes^{COB}
Limit of Steep Slope Buffer$^{3\,TWC}$
Limit of Steep Slope Setback$^{3\,TWC}$
Landslide Hazard Areas^{DNR}
Landslide Hazard Area Buffer^{TWC}

Flood Hazard (100-yr Floodplain)^{COB}

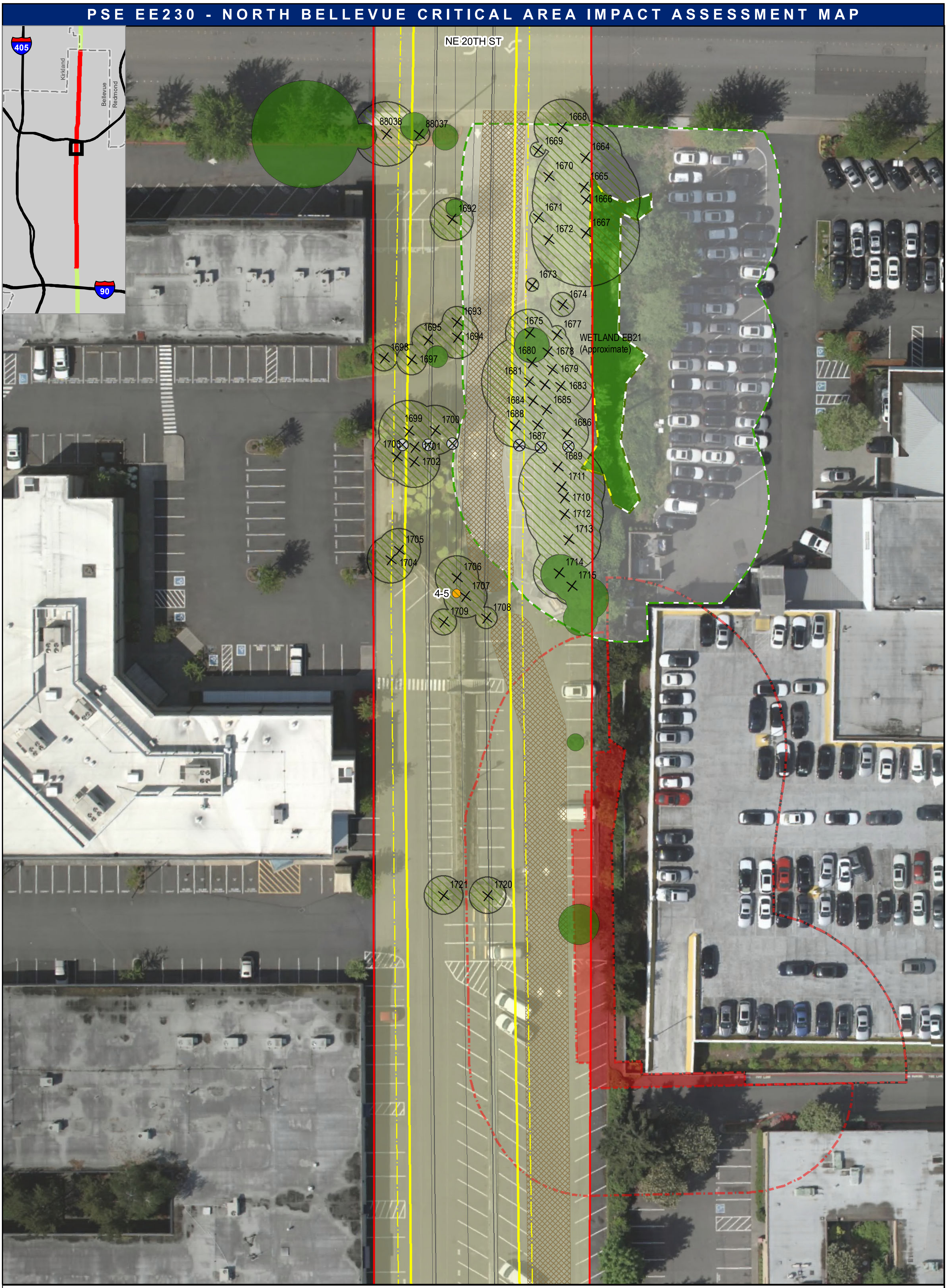
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

12

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 Critical Area Study Limits¹

City Limit^KC

PSE Owned Parcels and Existing Easement ^PSE- *pale yellow shading*

Managed Right-of-Way ^PSE

Wire Zone^PSE

Proposed Wires ^PSE

▲ Proposed Stringing Sites^HDR

● Existing Pole to Remain^PSE

⊗ Existing Pole to be Removed^PSE

● Proposed Replacement Pole Footprints^PSE

▨ Proposed Access Routes² ^PSE

Culvert^TWC

✕ Trees to Remove ^TWC

✕ Previously Removed ^TWC

✕ Dead Trees to Remove ^TWC

▨ Canopy to be Removed ^TWC

🟩 Canopy to Remain ^TWC

Stream^TWC

🟩 Wetland^TWC

Ditch^TWC

Delineated Stream Centerline^TWC

Approximate Stream^TWC

Approximate Wetland Boundary ^TWC

Delineated Wetland Boundary ^TWC

Stream Buffer^TWC

Wetland Buffer^TWC

Piped Streams (Approx.)^TWC

🟥 Steep Slopes^COB

Limit of Steep Slope Buffer³ ^TWC

Limit of Steep Slope Setback³ ^TWC

Landslide Hazard Areas^DNR

Landslide Hazard Area Buffer^TWC

Flood Hazard (100-yr Floodplain)^COB

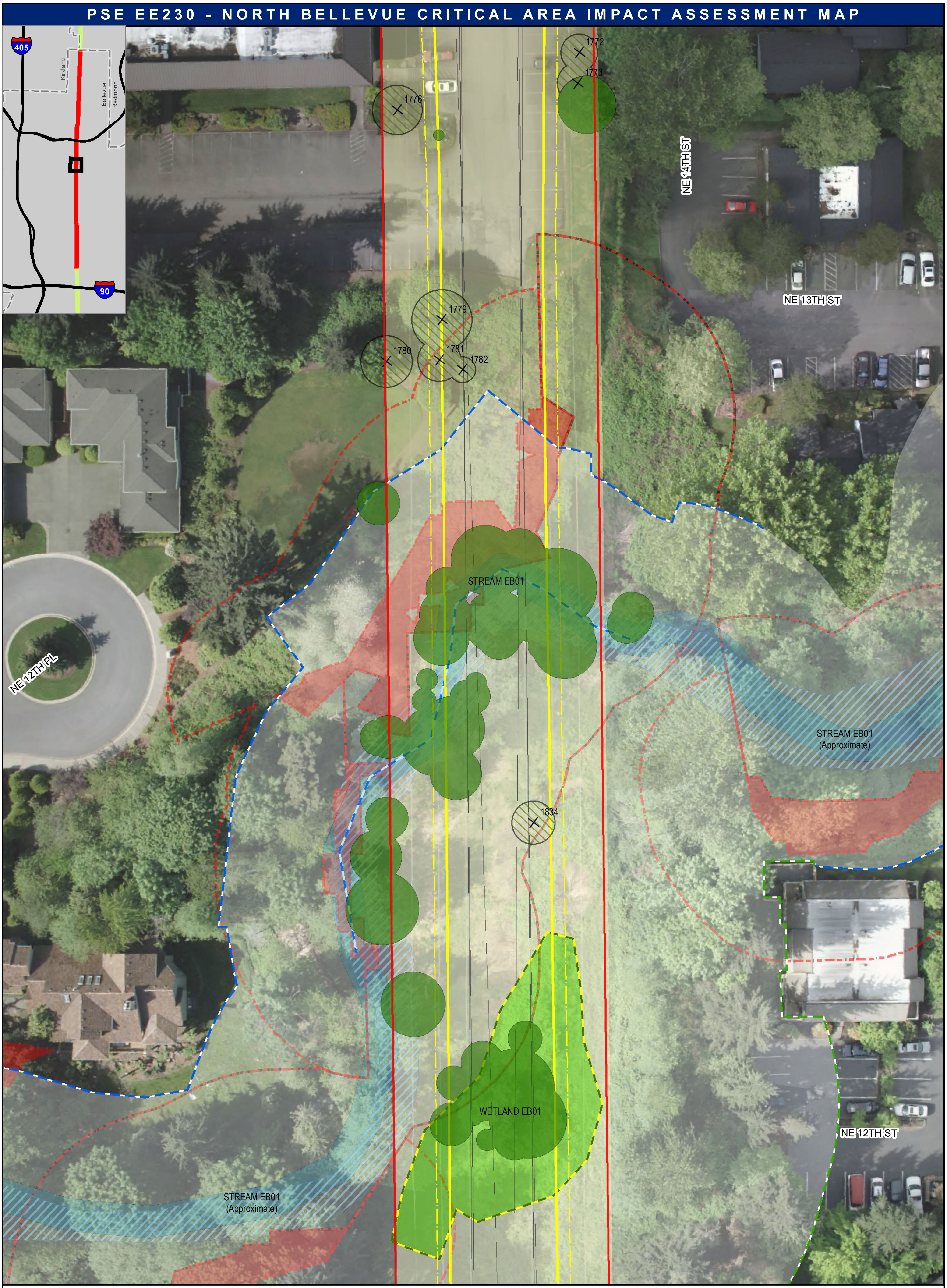
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

13

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 Critical Area Study Limits^{1}
City Limit$^{\mathrm{KC}}$
PSE Owned Parcels and Existing Easement $^{\mathrm{PSE}}$- *pale yellow shading*
Managed Right-of-Way $^{\mathrm{PSE}}$
Wire Zone$^{\mathrm{PSE}}$
Proposed Wires $^{\mathrm{PSE}}$

▲ Proposed Stringing Sites$^{\mathrm{HDR}}$
● Existing Pole to Remain$^{\mathrm{PSE}}$
⊗ Existing Pole to be Removed$^{\mathrm{PSE}}$
● Proposed Replacement Pole Footprints$^{\mathrm{PSE}}$
▨ Proposed Access Routes$^{2\ \mathrm{PSE}}$
Culvert$^{\mathrm{TWC}}$

✕ Trees to Remove $^{\mathrm{TWC}}$
✕ Previously Removed $^{\mathrm{TWC}}$
✕ Dead Trees to Remove $^{\mathrm{TWC}}$
▨ Canopy to be Removed $^{\mathrm{TWC}}$
🟩 Canopy to Remain $^{\mathrm{TWC}}$
Stream$^{\mathrm{TWC}}$
🟩 Wetland$^{\mathrm{TWC}}$

Ditch$^{\mathrm{TWC}}$
Delineated Stream Centerline$^{\mathrm{TWC}}$
Approximate Stream$^{\mathrm{TWC}}$
Approximate Wetland Boundary $^{\mathrm{TWC}}$
Delineated Wetland Boundary $^{\mathrm{TWC}}$
Stream Buffer$^{\mathrm{TWC}}$
Wetland Buffer$^{\mathrm{TWC}}$

Piped Streams (Approx.)$^{\mathrm{TWC}}$
Steep Slopes$^{\mathrm{COB}}$
Limit of Steep Slope Buffer$^{3\ \mathrm{TWC}}$
Limit of Steep Slope Setback$^{3\ \mathrm{TWC}}$
Landslide Hazard Areas$^{\mathrm{DNR}}$
Landslide Hazard Area Buffer$^{\mathrm{TWC}}$

▨ Flood Hazard (100-yr Floodplain)$^{\mathrm{COB}}$

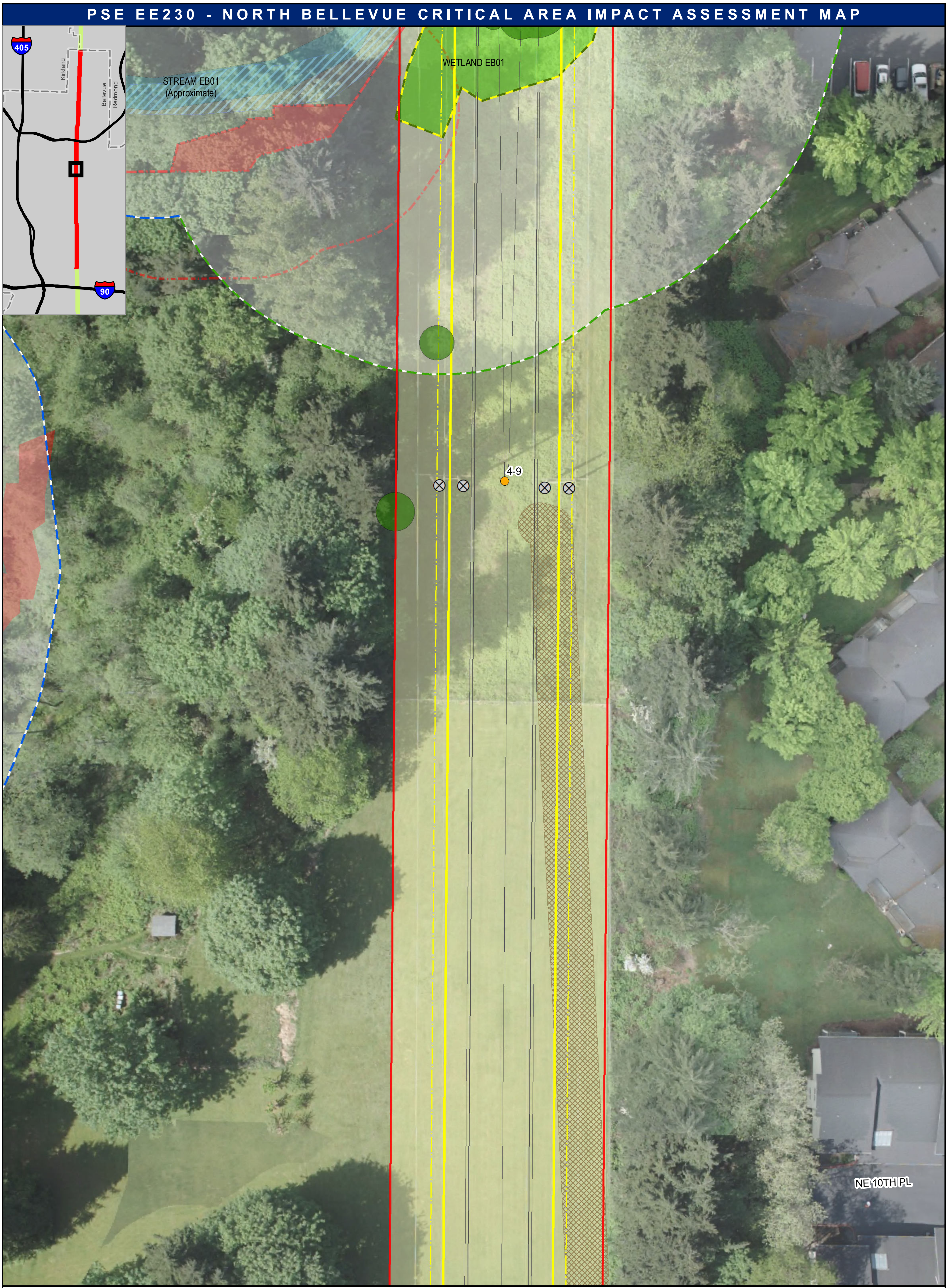
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

14

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- 🟥 Critical Area Study Limits^{1}
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ◉ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes$^{2\,PSE}$
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- ☐ Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- Limit of Steep Slope Buffer$^{3\,TWC}$
- Limit of Steep Slope Setback$^{3\,TWC}$
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

15

0 20 40
Feet

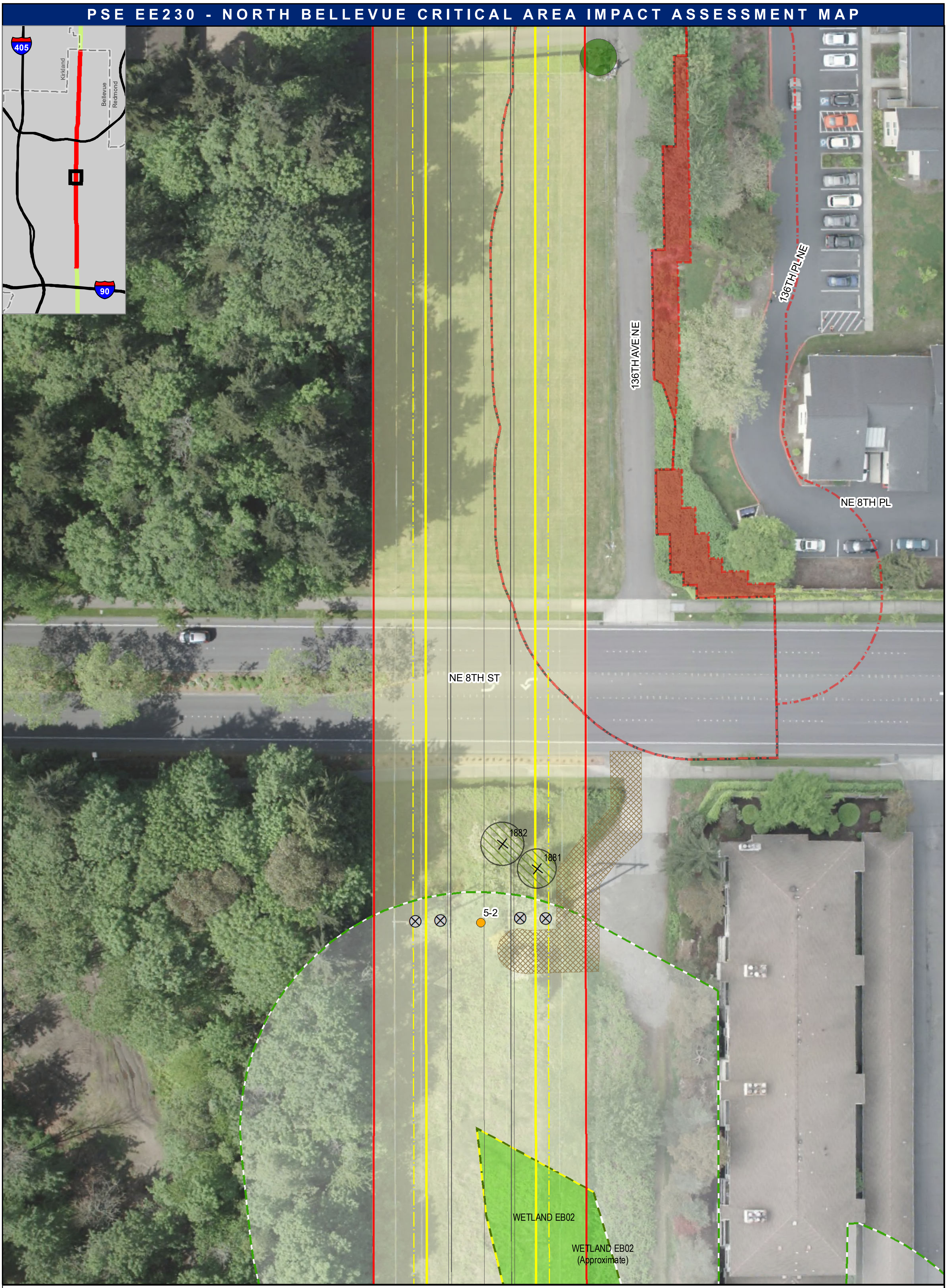
Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 Critical Area Study Limits^1
City Limit^{KC}
PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
Managed Right-of-Way ^{PSE}
Wire Zone^{PSE}
Proposed Wires ^{PSE}

▲ Proposed Stringing Sites^{HDR}
● Existing Pole to Remain^{PSE}
⊗ Existing Pole to be Removed^{PSE}
● Proposed Replacement Pole Footprints^{PSE}
▨ Proposed Access Routes$^{2\ PSE}$
Culvert^{TWC}

× Trees to Remove ^{TWC}
× Previously Removed ^{TWC}
× Dead Trees to Remove ^{TWC}
▨ Canopy to be Removed ^{TWC}
🟩 Canopy to Remain ^{TWC}
Stream^{TWC}
🟩 Wetland^{TWC}

Ditch^{TWC}
Delineated Stream Centerline^{TWC}
Approximate Stream^{TWC}
Approximate Wetland Boundary ^{TWC}
Delineated Wetland Boundary ^{TWC}
Stream Buffer^{TWC}
Wetland Buffer^{TWC}

Piped Streams (Approx.)^{TWC}
Steep Slopes^{COB}
Limit of Steep Slope Buffer$^{3\ TWC}$
Limit of Steep Slope Setback$^{3\ TWC}$
Landslide Hazard Areas^{DNR}
Landslide Hazard Area Buffer^{TWC}

Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

17

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- 🟥 Critical Area Study Limits^{1}
- City Limit$^{\text{KC}}$
- PSE Owned Parcels and Existing Easement $^{\text{PSE}}$- *pale yellow shading*
- Managed Right-of-Way $^{\text{PSE}}$
- Wire Zone$^{\text{PSE}}$
- Proposed Wires $^{\text{PSE}}$
- ▲ Proposed Stringing Sites$^{\text{HDR}}$
- ● Existing Pole to Remain$^{\text{PSE}}$
- ⊗ Existing Pole to be Removed$^{\text{PSE}}$
- ● Proposed Replacement Pole Footprints$^{\text{PSE}}$
- ▨ Proposed Access Routes$^{2\,\text{PSE}}$
- Culvert$^{\text{TWC}}$
- × Trees to Remove $^{\text{TWC}}$
- × Previously Removed $^{\text{TWC}}$
- × Dead Trees to Remove $^{\text{TWC}}$
- ▧ Canopy to be Removed $^{\text{TWC}}$
- 🟩 Canopy to Remain $^{\text{TWC}}$
- Stream$^{\text{TWC}}$
- 🟩 Wetland$^{\text{TWC}}$
- Ditch$^{\text{TWC}}$
- Delineated Stream Centerline$^{\text{TWC}}$
- Approximate Stream$^{\text{TWC}}$
- Approximate Wetland Boundary $^{\text{TWC}}$
- Delineated Wetland Boundary $^{\text{TWC}}$
- Stream Buffer$^{\text{TWC}}$
- Wetland Buffer$^{\text{TWC}}$
- Piped Streams (Approx.)$^{\text{TWC}}$
- 🟥 Steep Slopes$^{\text{COB}}$
- Limit of Steep Slope Buffer$^{3\,\text{TWC}}$
- Limit of Steep Slope Setback$^{3\,\text{TWC}}$
- Landslide Hazard Areas$^{\text{DNR}}$
- Landslide Hazard Area Buffer$^{\text{TWC}}$
- Flood Hazard (100-yr Floodplain)$^{\text{COB}}$

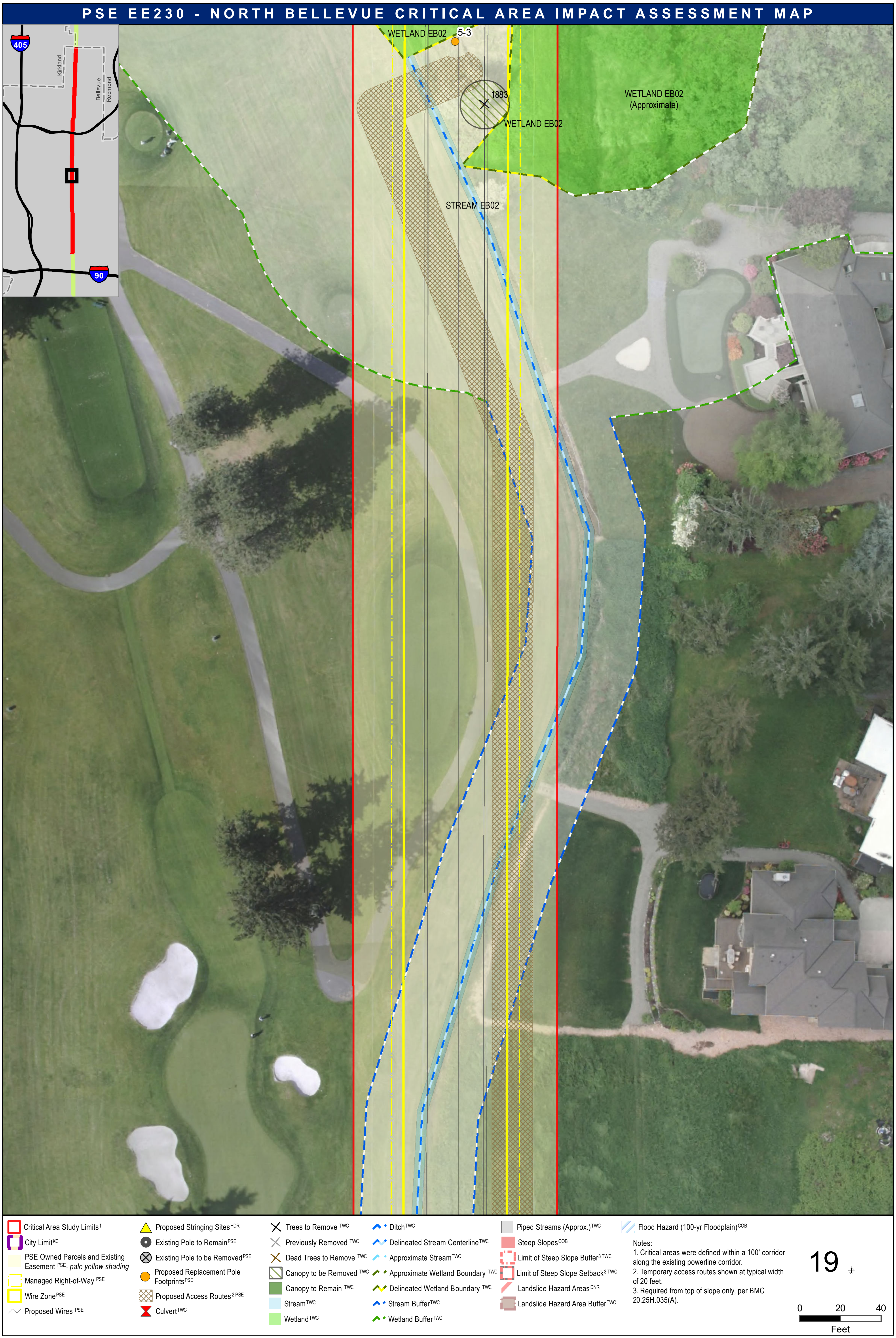
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

18

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

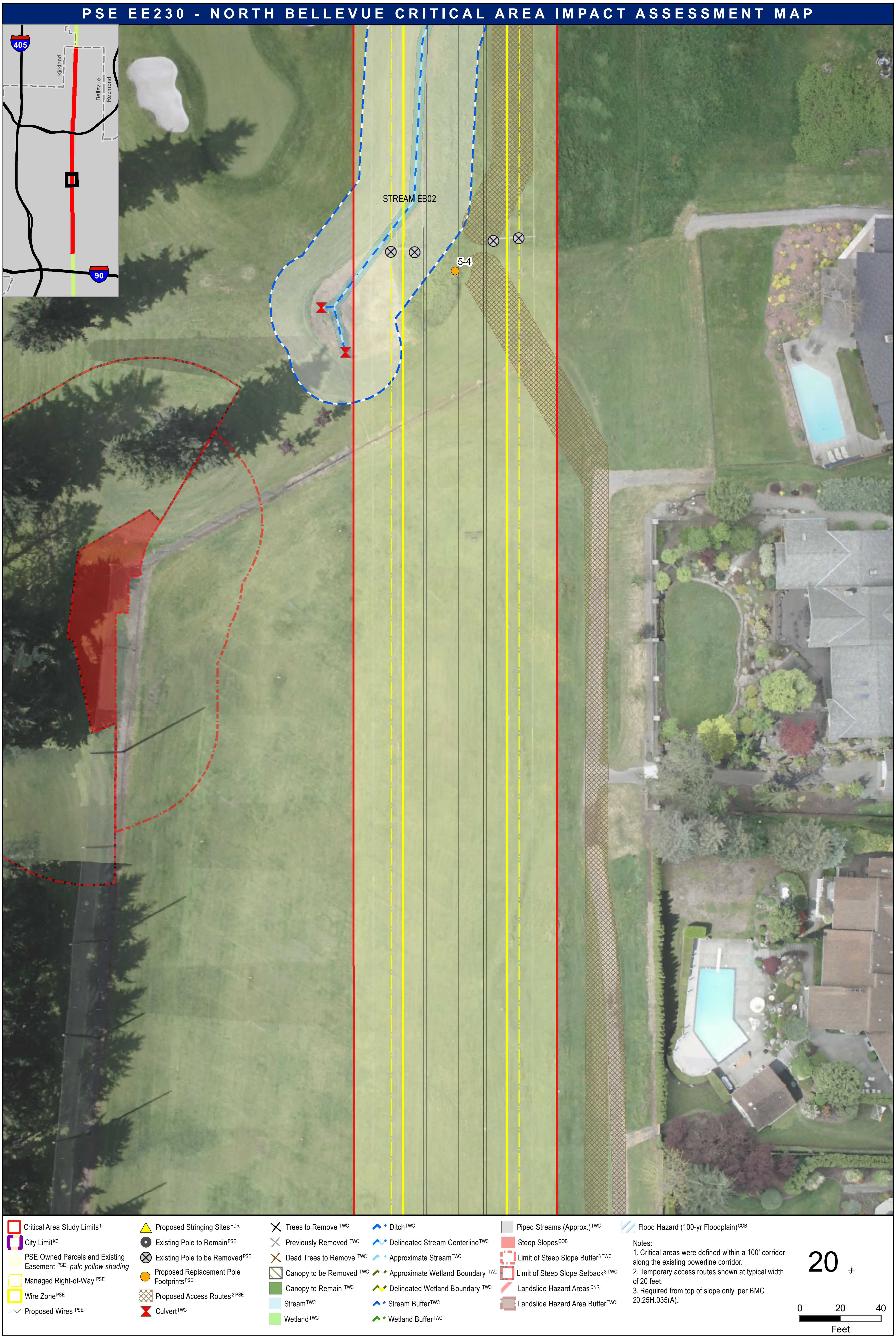


Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

19

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

20

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- 🟥 Critical Area Study Limits^1
- ▢ City Limit^{KC}
- ▢ PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- ▢ Managed Right-of-Way ^{PSE}
- 🟨 Wire Zone^{PSE}
- ⌒ Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ⊙ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes$^{2\,PSE}$
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- ▢ Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- ▢ Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- ▢ Limit of Steep Slope Buffer$^{3\,TWC}$
- ▢ Limit of Steep Slope Setback$^{3\,TWC}$
- ▨ Landslide Hazard Areas^{DNR}
- ▢ Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

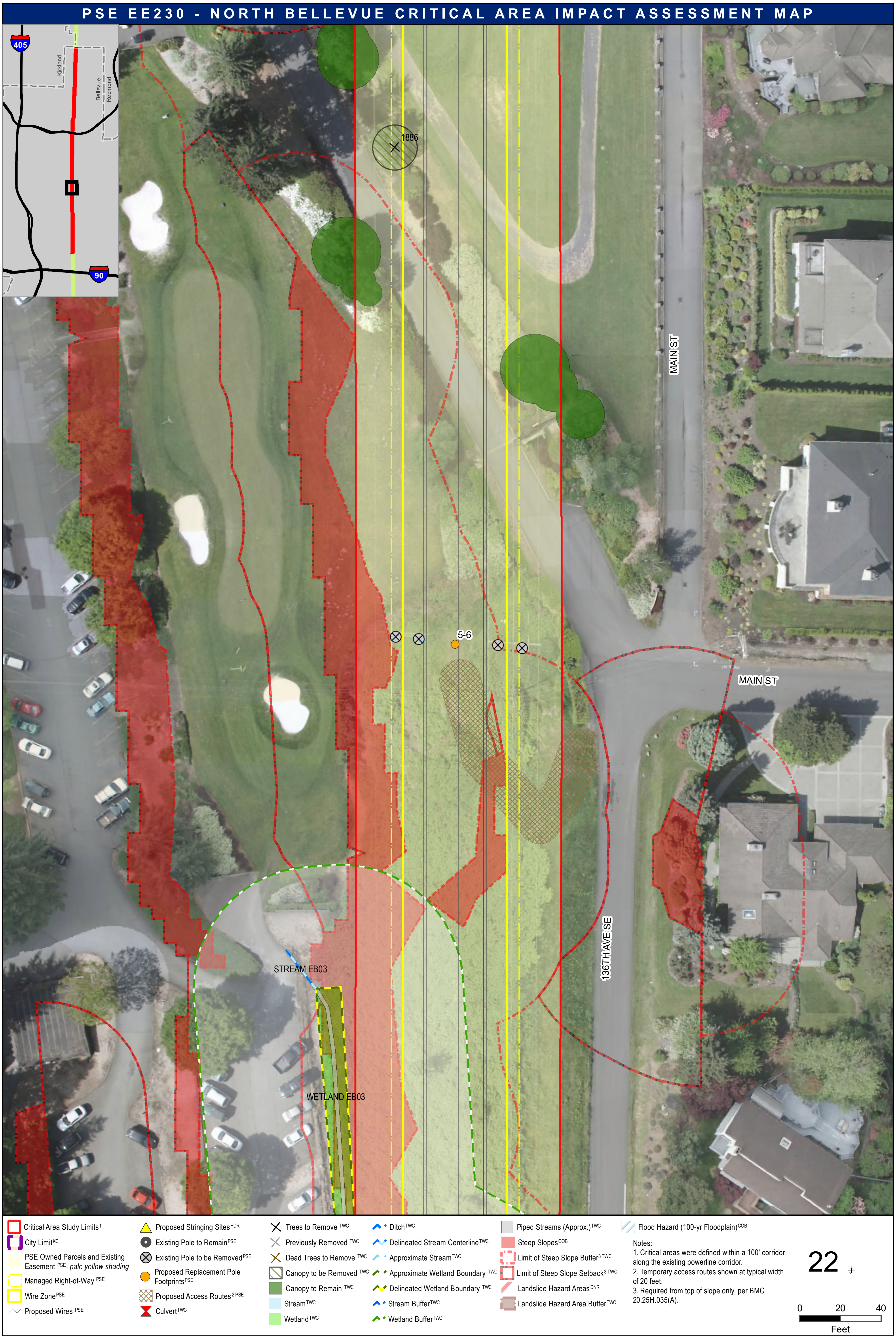
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

21

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

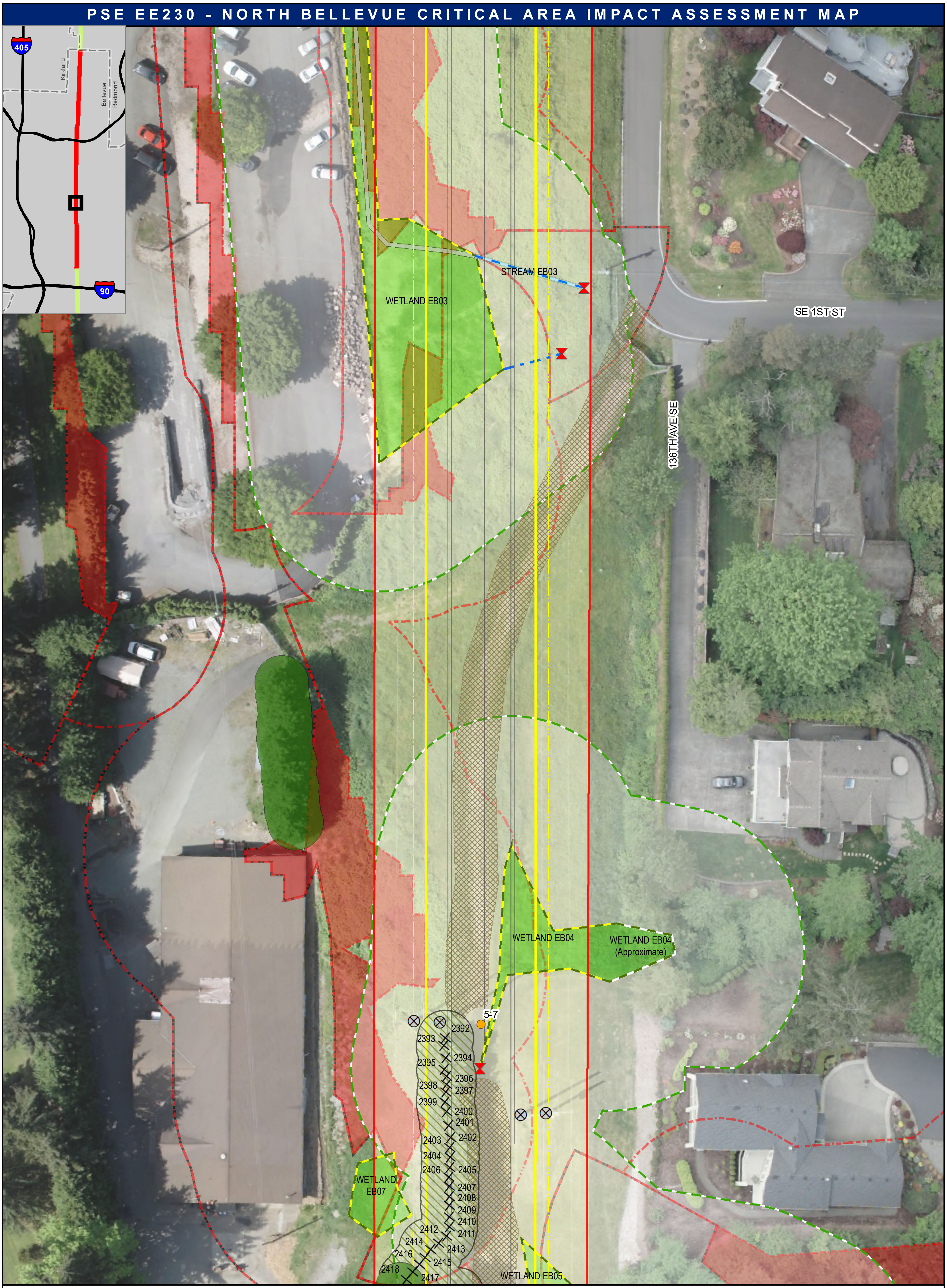
PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



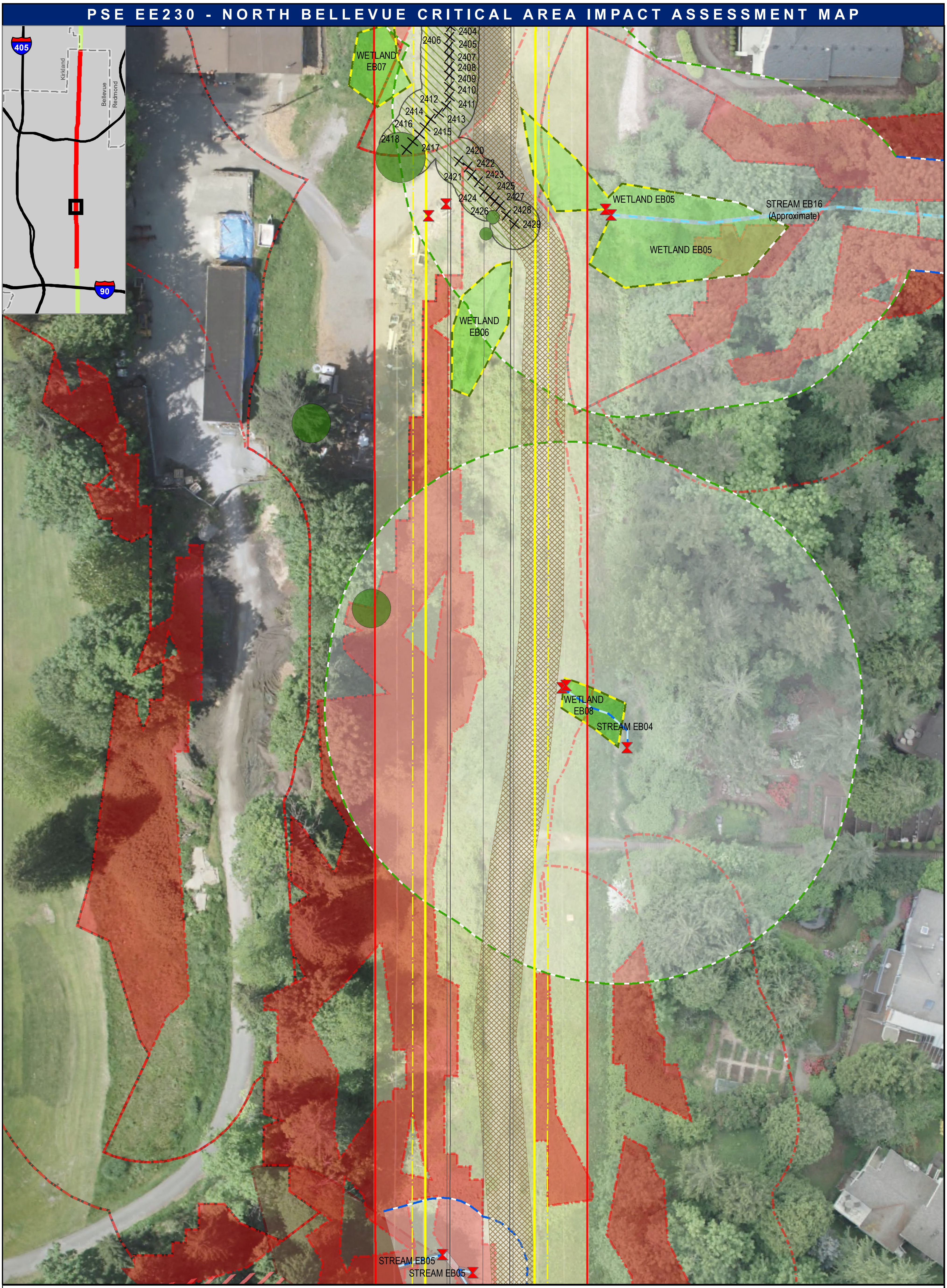
- 🟥 Critical Area Study Limits^{1}
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ● Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes$^{2\,PSE}$
- Culvert^{TWC}
- × Trees to Remove ^{TWC}
- × Previously Removed ^{TWC}
- × Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- Limit of Steep Slope Buffer$^{3\,TWC}$
- Limit of Steep Slope Setback$^{3\,TWC}$
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 Critical Area Study Limits^{1}
City Limit^{KC}
PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
Managed Right-of-Way ^{PSE}
Wire Zone^{PSE}
Proposed Wires ^{PSE}

▲ Proposed Stringing Sites^{HDR}
● Existing Pole to Remain^{PSE}
⊗ Existing Pole to be Removed^{PSE}
● Proposed Replacement Pole Footprints^{PSE}
▨ Proposed Access Routes$^{2\ PSE}$
Culvert^{TWC}

× Trees to Remove ^{TWC}
× Previously Removed ^{TWC}
× Dead Trees to Remove ^{TWC}
▨ Canopy to be Removed ^{TWC}
🟩 Canopy to Remain ^{TWC}
Stream^{TWC}
🟩 Wetland^{TWC}

Ditch^{TWC}
Delineated Stream Centerline^{TWC}
Approximate Stream^{TWC}
Approximate Wetland Boundary ^{TWC}
Delineated Wetland Boundary ^{TWC}
Stream Buffer^{TWC}
Wetland Buffer^{TWC}

Piped Streams (Approx.)^{TWC}
🟥 Steep Slopes^{COB}
Limit of Steep Slope Buffer$^{3\ TWC}$
Limit of Steep Slope Setback$^{3\ TWC}$
Landslide Hazard Areas^{DNR}
Landslide Hazard Area Buffer^{TWC}

Flood Hazard (100-yr Floodplain)^{COB}

Notes:
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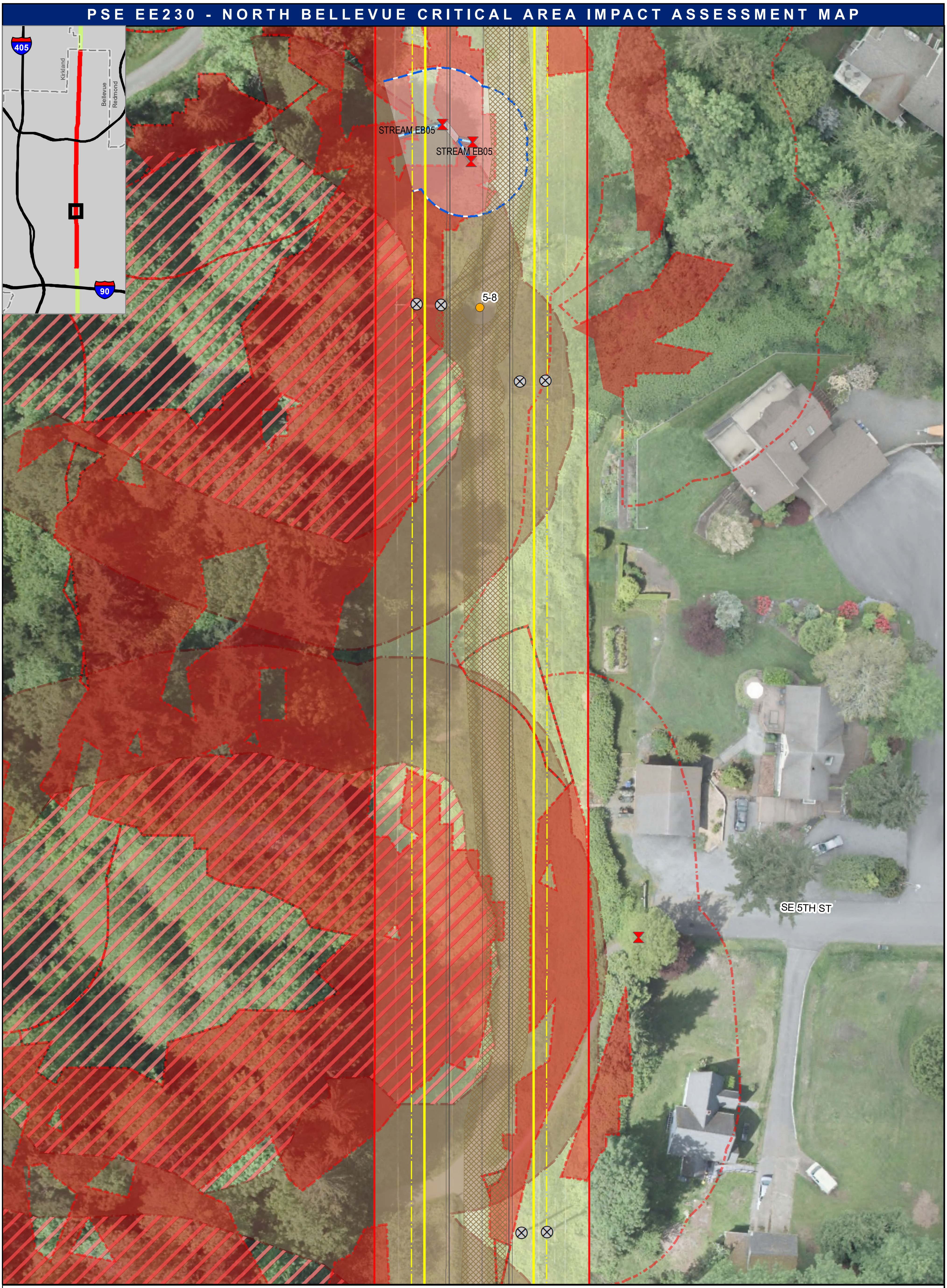
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

24

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- Critical Area Study Limits[1]
- City Limit$^{\text{KC}}$
- PSE Owned Parcels and Existing Easement $^{\text{PSE}}$- *pale yellow shading*
- Managed Right-of-Way $^{\text{PSE}}$
- Wire Zone$^{\text{PSE}}$
- Proposed Wires $^{\text{PSE}}$
- Proposed Stringing Sites$^{\text{HDR}}$
- Existing Pole to Remain$^{\text{PSE}}$
- Existing Pole to be Removed$^{\text{PSE}}$
- Proposed Replacement Pole Footprints$^{\text{PSE}}$
- Proposed Access Routes$^{2\,\text{PSE}}$
- Culvert$^{\text{TWC}}$
- Trees to Remove $^{\text{TWC}}$
- Previously Removed $^{\text{TWC}}$
- Dead Trees to Remove $^{\text{TWC}}$
- Canopy to be Removed $^{\text{TWC}}$
- Canopy to Remain $^{\text{TWC}}$
- Stream$^{\text{TWC}}$
- Wetland$^{\text{TWC}}$
- Ditch$^{\text{TWC}}$
- Delineated Stream Centerline$^{\text{TWC}}$
- Approximate Stream$^{\text{TWC}}$
- Approximate Wetland Boundary $^{\text{TWC}}$
- Delineated Wetland Boundary $^{\text{TWC}}$
- Stream Buffer$^{\text{TWC}}$
- Wetland Buffer$^{\text{TWC}}$
- Piped Streams (Approx.)$^{\text{TWC}}$
- Steep Slopes$^{\text{COB}}$
- Limit of Steep Slope Buffer$^{3\,\text{TWC}}$
- Limit of Steep Slope Setback$^{3\,\text{TWC}}$
- Landslide Hazard Areas$^{\text{DNR}}$
- Landslide Hazard Area Buffer$^{\text{TWC}}$
- Flood Hazard (100-yr Floodplain)$^{\text{COB}}$

Notes:
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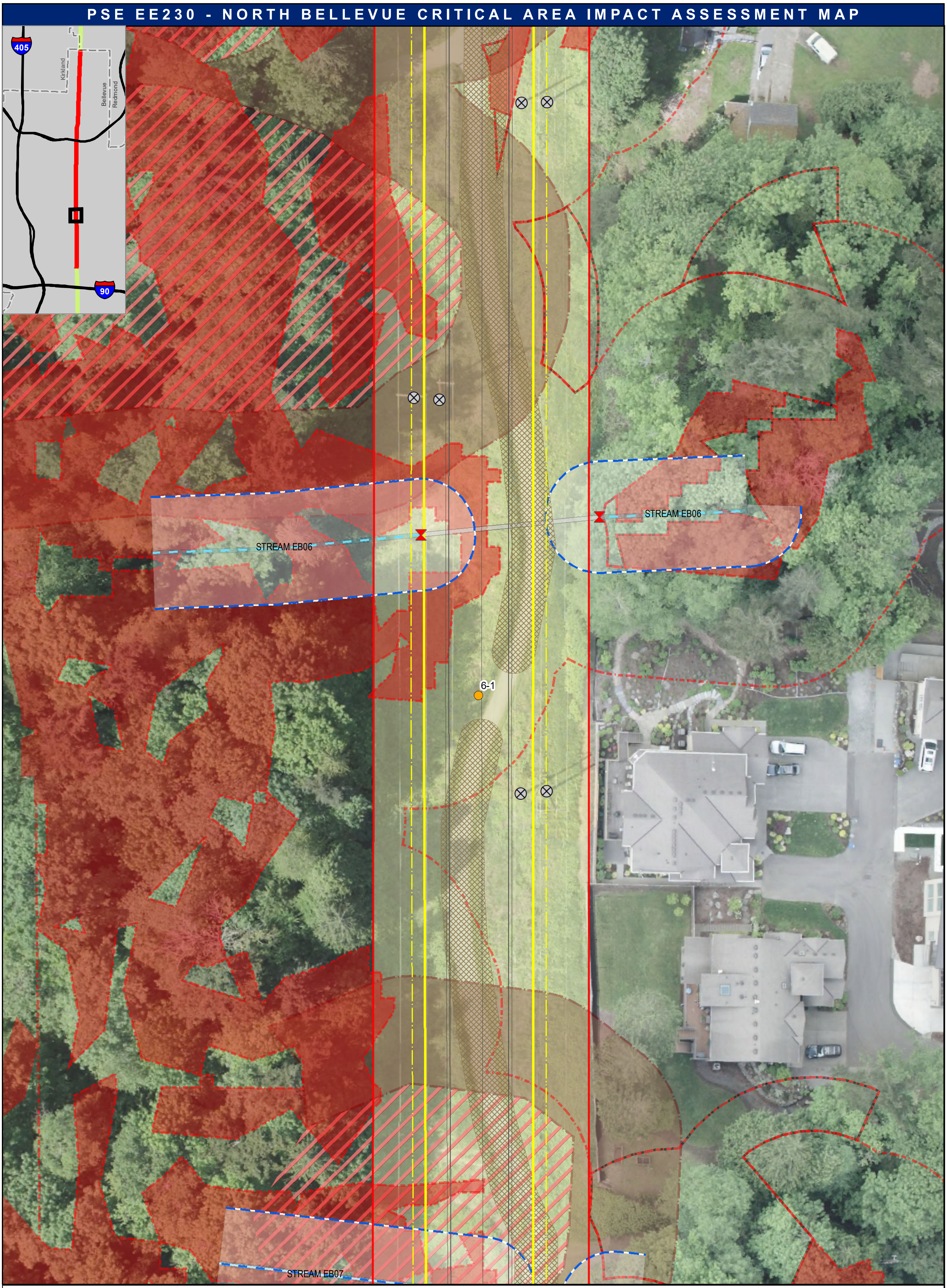
25

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- 🟥 Critical Area Study Limits[1]
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ● Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes[2] ^{PSE}
- Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- Piped Streams (Approx.)^{TWC}
- Steep Slopes^{COB}
- Limit of Steep Slope Buffer[3] ^{TWC}
- Limit of Steep Slope Setback[3] ^{TWC}
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- Flood Hazard (100-yr Floodplain)^{COB}

Notes:
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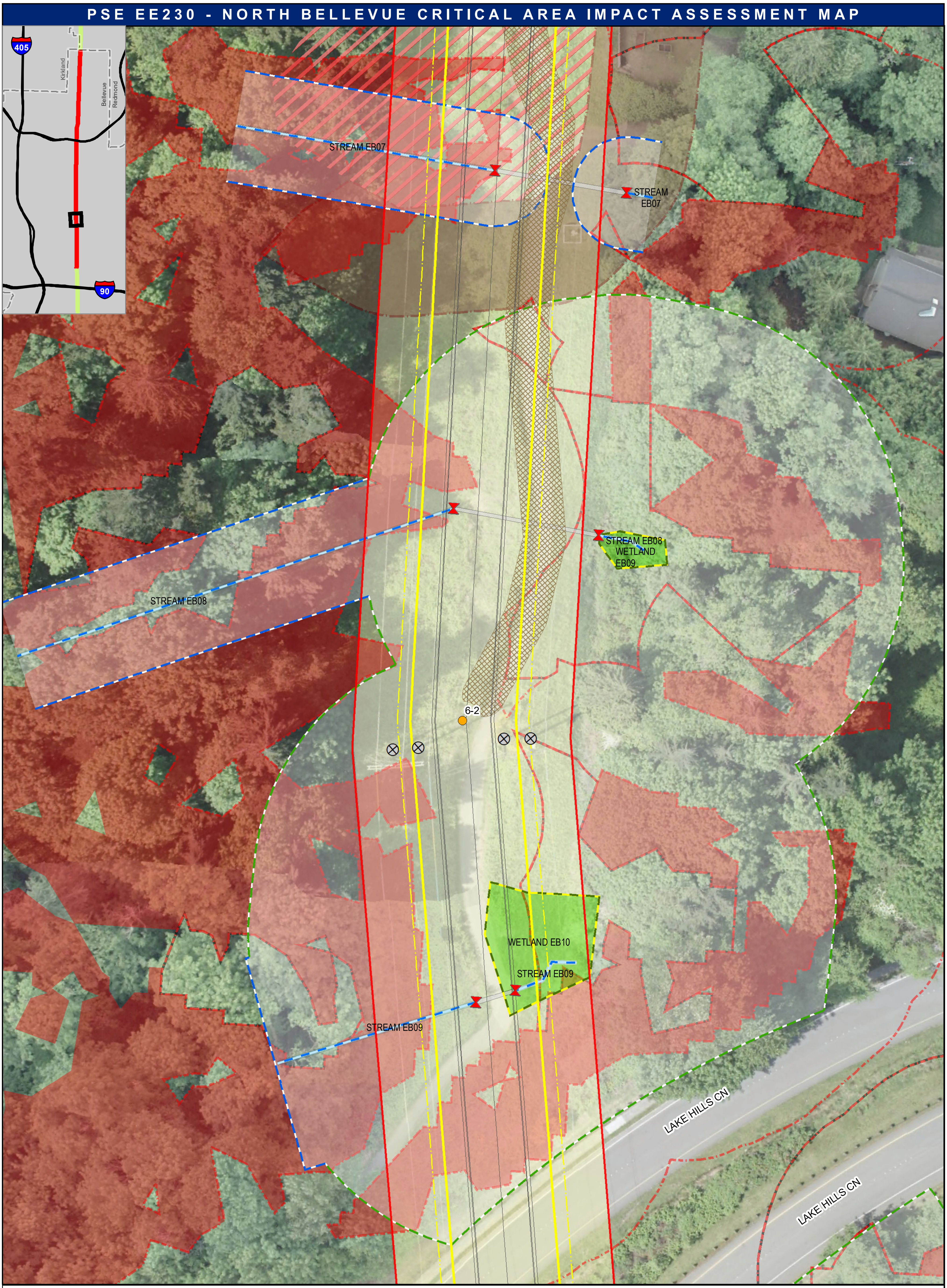
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

26

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- ☐ Critical Area Study Limits[1]
- ☐ City Limit^{KC}
- ▭ PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- ☐ Managed Right-of-Way ^{PSE}
- ☐ Wire Zone^{PSE}
- ╱╲ Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ◉ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes[2] ^{PSE}
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- ▭ Stream^{TWC}
- 🟩 Wetland^{TWC}
- ⌃ Ditch^{TWC}
- ⌃ Delineated Stream Centerline^{TWC}
- ⌃ Approximate Stream^{TWC}
- ⌃ Approximate Wetland Boundary ^{TWC}
- ⌃ Delineated Wetland Boundary ^{TWC}
- ⌃ Stream Buffer^{TWC}
- ⌃ Wetland Buffer^{TWC}
- ▭ Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- ☐ Limit of Steep Slope Buffer[3] ^{TWC}
- ☐ Limit of Steep Slope Setback[3] ^{TWC}
- ╱ Landslide Hazard Areas^{DNR}
- ▭ Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

27

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

🟥 Critical Area Study Limits^{1}

🟪 City Limit^{KC}

PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*

Managed Right-of-Way ^{PSE}

🟨 Wire Zone^{PSE}

Proposed Wires ^{PSE}

▲ Proposed Stringing Sites^{HDR}

● Existing Pole to Remain^{PSE}

⊗ Existing Pole to be Removed^{PSE}

● Proposed Replacement Pole Footprints^{PSE}

▨ Proposed Access Routes$^{2\ PSE}$

⧗ Culvert^{TWC}

✕ Trees to Remove ^{TWC}

✕ Previously Removed ^{TWC}

✕ Dead Trees to Remove ^{TWC}

▨ Canopy to be Removed ^{TWC}

🟩 Canopy to Remain ^{TWC}

Stream^{TWC}

🟩 Wetland^{TWC}

Ditch^{TWC}

Delineated Stream Centerline^{TWC}

Approximate Stream^{TWC}

Approximate Wetland Boundary ^{TWC}

Delineated Wetland Boundary ^{TWC}

Stream Buffer^{TWC}

Wetland Buffer^{TWC}

☐ Piped Streams (Approx.)^{TWC}

🟥 Steep Slopes^{COB}

Limit of Steep Slope Buffer$^{3\ TWC}$

Limit of Steep Slope Setback$^{3\ TWC}$

Landslide Hazard Areas^{DNR}

Landslide Hazard Area Buffer^{TWC}

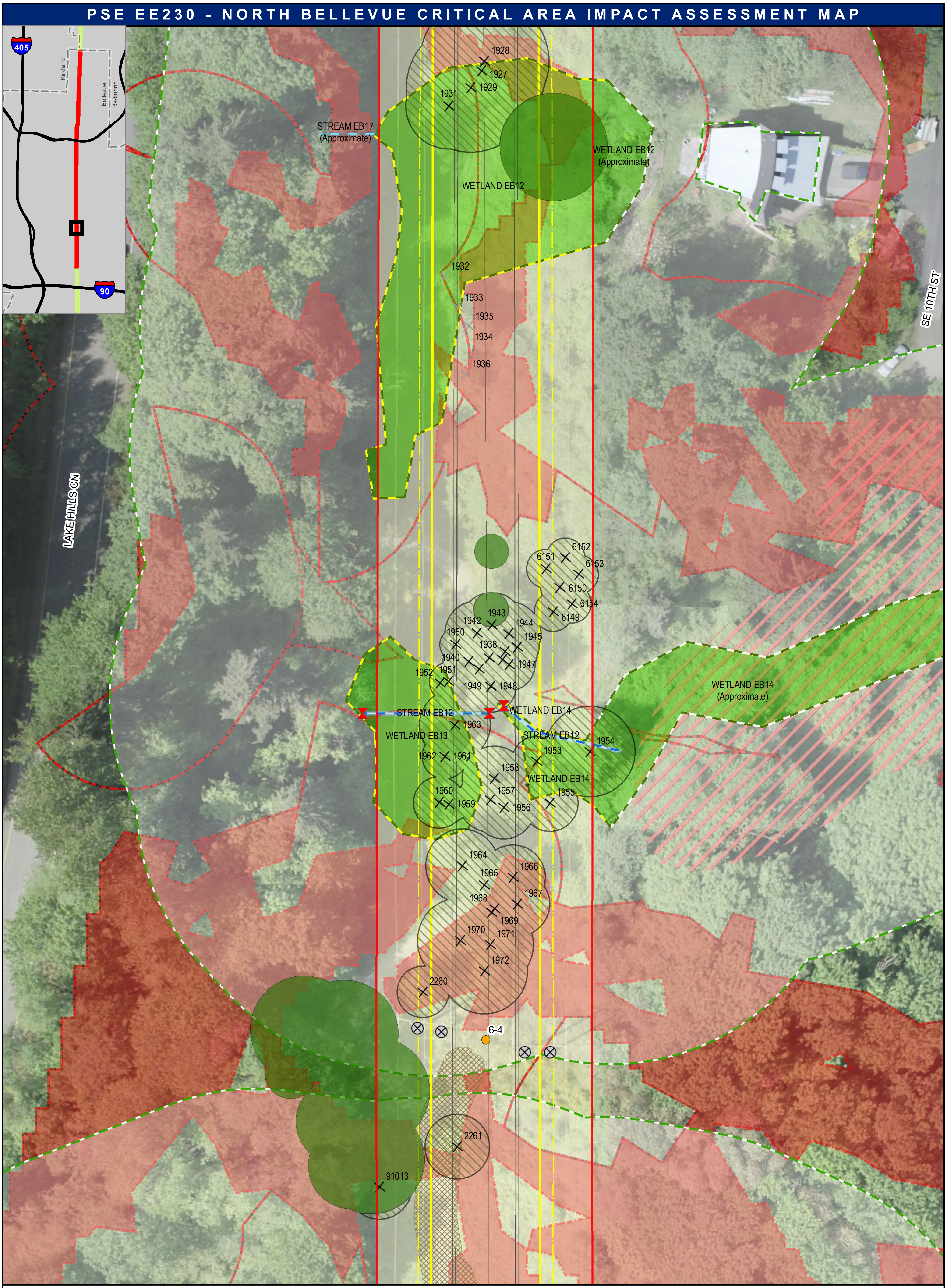
▨ Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- Critical Area Study Limits[1]
- City Limit KC
- PSE Owned Parcels and Existing Easement PSE- *pale yellow shading*
- Managed Right-of-Way PSE
- Wire Zone PSE
- Proposed Wires PSE
- Proposed Stringing Sites HDR
- Existing Pole to Remain PSE
- Existing Pole to be Removed PSE
- Proposed Replacement Pole Footprints PSE
- Proposed Access Routes[2] PSE
- Culvert TWC
- Trees to Remove TWC
- Previously Removed TWC
- Dead Trees to Remove TWC
- Canopy to be Removed TWC
- Canopy to Remain TWC
- Stream TWC
- Wetland TWC
- Ditch TWC
- Delineated Stream Centerline TWC
- Approximate Stream TWC
- Approximate Wetland Boundary TWC
- Delineated Wetland Boundary TWC
- Stream Buffer TWC
- Wetland Buffer TWC
- Piped Streams (Approx.) TWC
- Steep Slopes COB
- Limit of Steep Slope Buffer[3] TWC
- Limit of Steep Slope Setback[3] TWC
- Landslide Hazard Areas DNR
- Landslide Hazard Area Buffer TWC
- Flood Hazard (100-yr Floodplain) COB

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
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29

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- 🟥 Critical Area Study Limits^{1}
- ▢ City Limit^{KC}
- ▢ PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- ▢ Managed Right-of-Way ^{PSE}
- 🟨 Wire Zone^{PSE}
- ╱╲ Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ⊙ Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▩ Proposed Access Routes$^{2\ PSE}$
- ⧗ Culvert^{TWC}
- ✕ Trees to Remove ^{TWC}
- ✕ Previously Removed ^{TWC}
- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- ▢ Stream^{TWC}
- 🟩 Wetland^{TWC}
- ⌃ Ditch^{TWC}
- ⌃ Delineated Stream Centerline^{TWC}
- ⌃ Approximate Stream^{TWC}
- ⌃ Approximate Wetland Boundary ^{TWC}
- ⌃ Delineated Wetland Boundary ^{TWC}
- ⌃ Stream Buffer^{TWC}
- ⌃ Wetland Buffer^{TWC}
- ▢ Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- ▢ Limit of Steep Slope Buffer$^{3\ TWC}$
- ▢ Limit of Steep Slope Setback$^{3\ TWC}$
- ╱ Landslide Hazard Areas^{DNR}
- ▢ Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

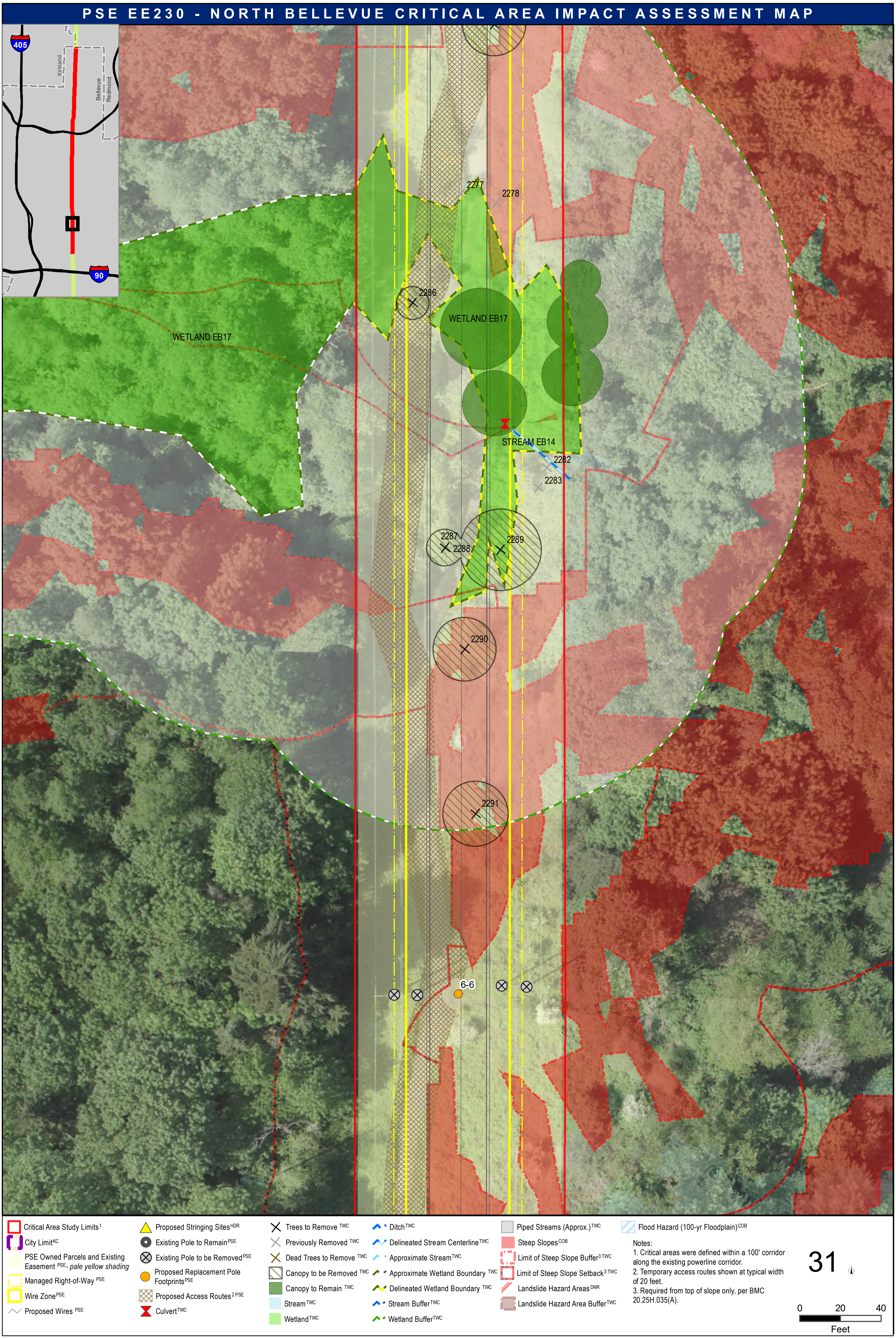
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

30

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

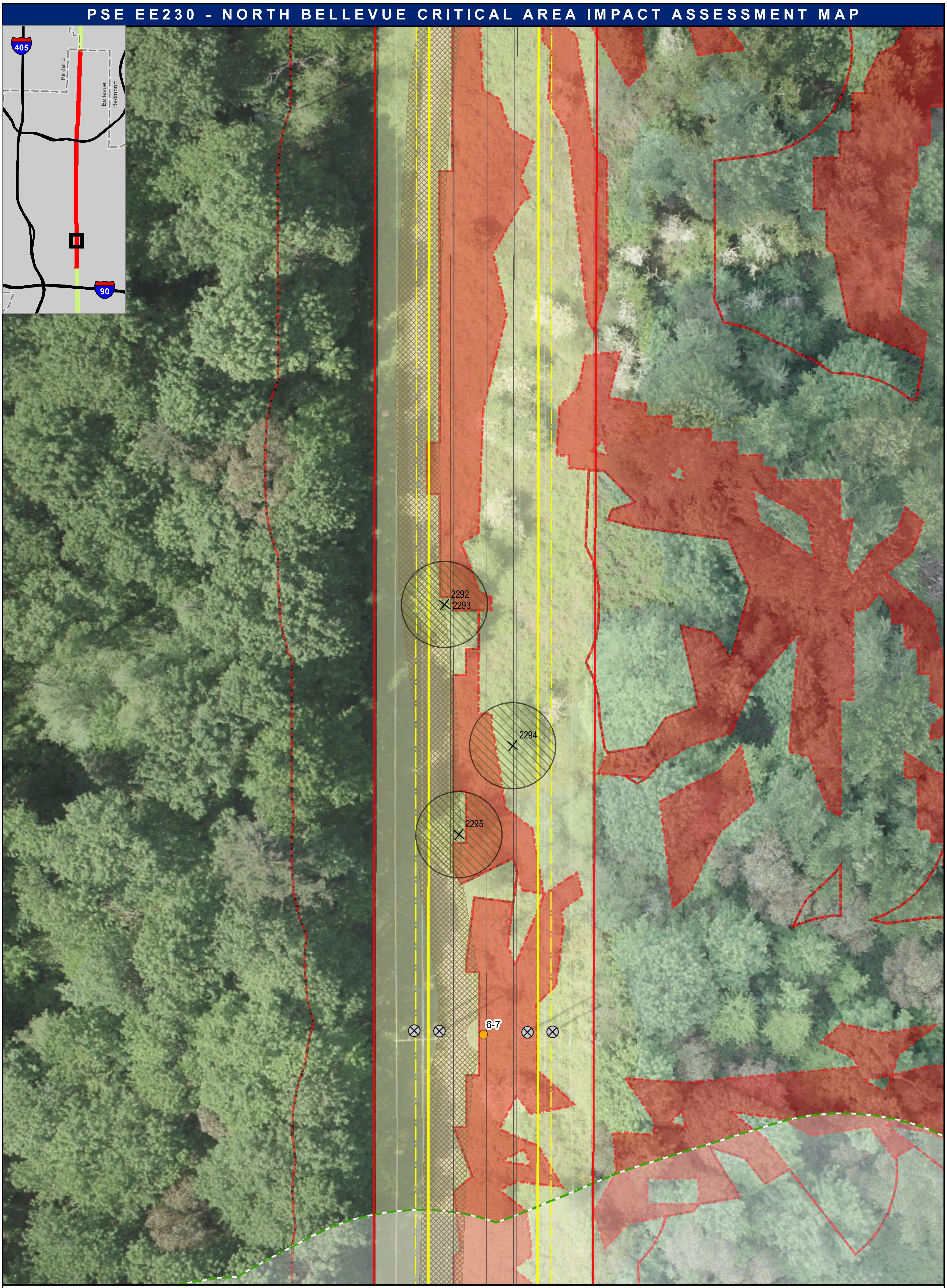


Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

31

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



- 🟥 Critical Area Study Limits[1]
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ● Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
- ● Proposed Replacement Pole Footprints^{PSE}
- ▨ Proposed Access Routes[2] ^{PSE}
- Culvert^{TWC}
- × Trees to Remove ^{TWC}
- × Previously Removed ^{TWC}
- × Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- Piped Streams (Approx.)^{TWC}
- 🟥 Steep Slopes^{COB}
- Limit of Steep Slope Buffer[3] ^{TWC}
- Limit of Steep Slope Setback[3] ^{TWC}
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- ▨ Flood Hazard (100-yr Floodplain)^{COB}

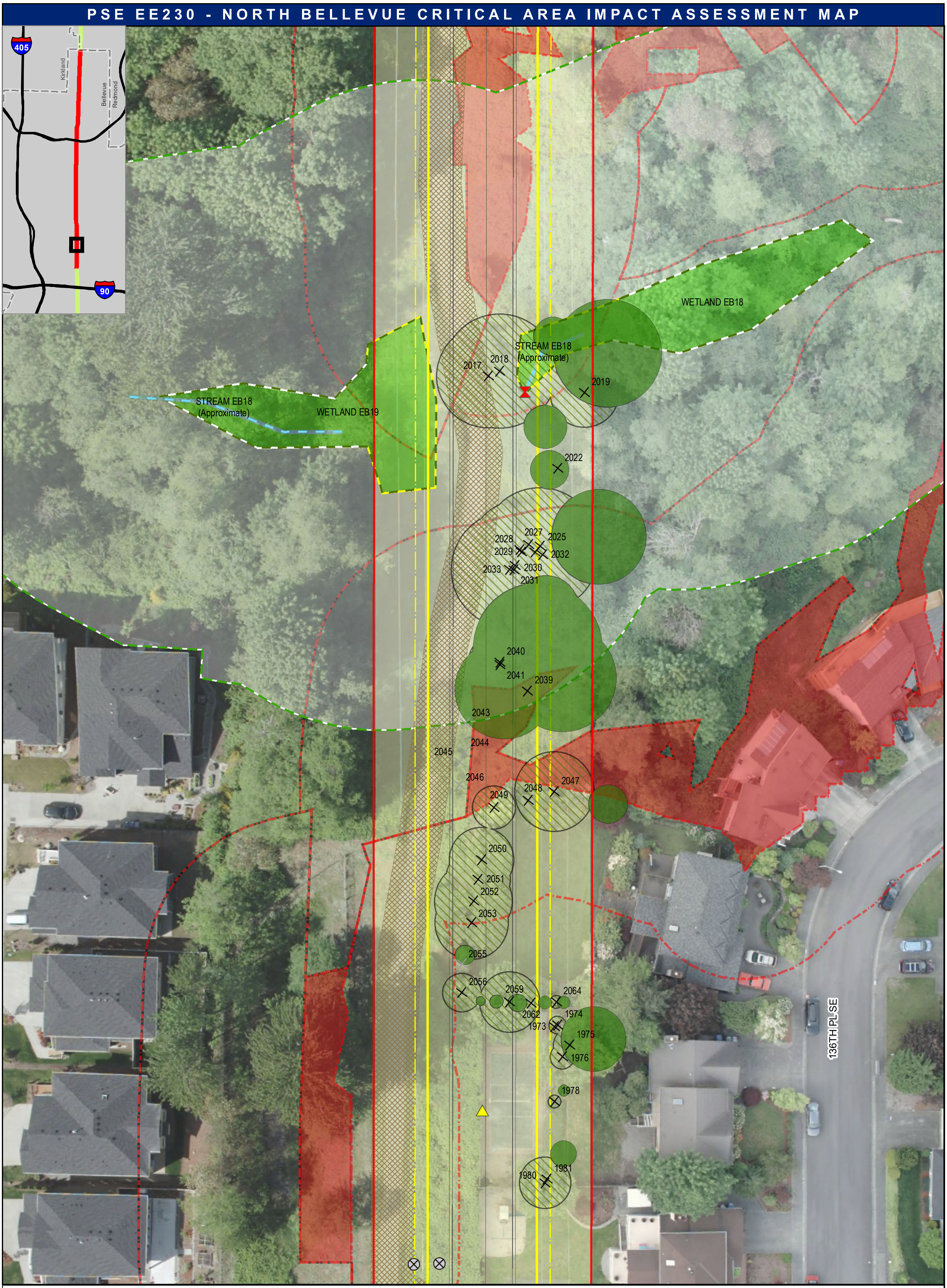
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

32

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



Critical Area Study Limits[1]
City Limit[KC]
PSE Owned Parcels and Existing Easement [PSE]- *pale yellow shading*
Managed Right-of-Way [PSE]
Wire Zone[PSE]
Proposed Wires [PSE]
Proposed Stringing Sites[HDR]
Existing Pole to Remain[PSE]
Existing Pole to be Removed[PSE]
Proposed Replacement Pole Footprints[PSE]
Proposed Access Routes[2 PSE]
Culvert[TWC]
Trees to Remove [TWC]
Previously Removed [TWC]
Dead Trees to Remove [TWC]
Canopy to be Removed [TWC]
Canopy to Remain [TWC]
Stream[TWC]
Wetland[TWC]
Ditch[TWC]
Delineated Stream Centerline[TWC]
Approximate Stream[TWC]
Approximate Wetland Boundary [TWC]
Delineated Wetland Boundary [TWC]
Stream Buffer[TWC]
Wetland Buffer[TWC]
Piped Streams (Approx.)[TWC]
Steep Slopes[COB]
Limit of Steep Slope Buffer[3 TWC]
Limit of Steep Slope Setback[3 TWC]
Landslide Hazard Areas[DNR]
Landslide Hazard Area Buffer[TWC]
Flood Hazard (100-yr Floodplain)[COB]

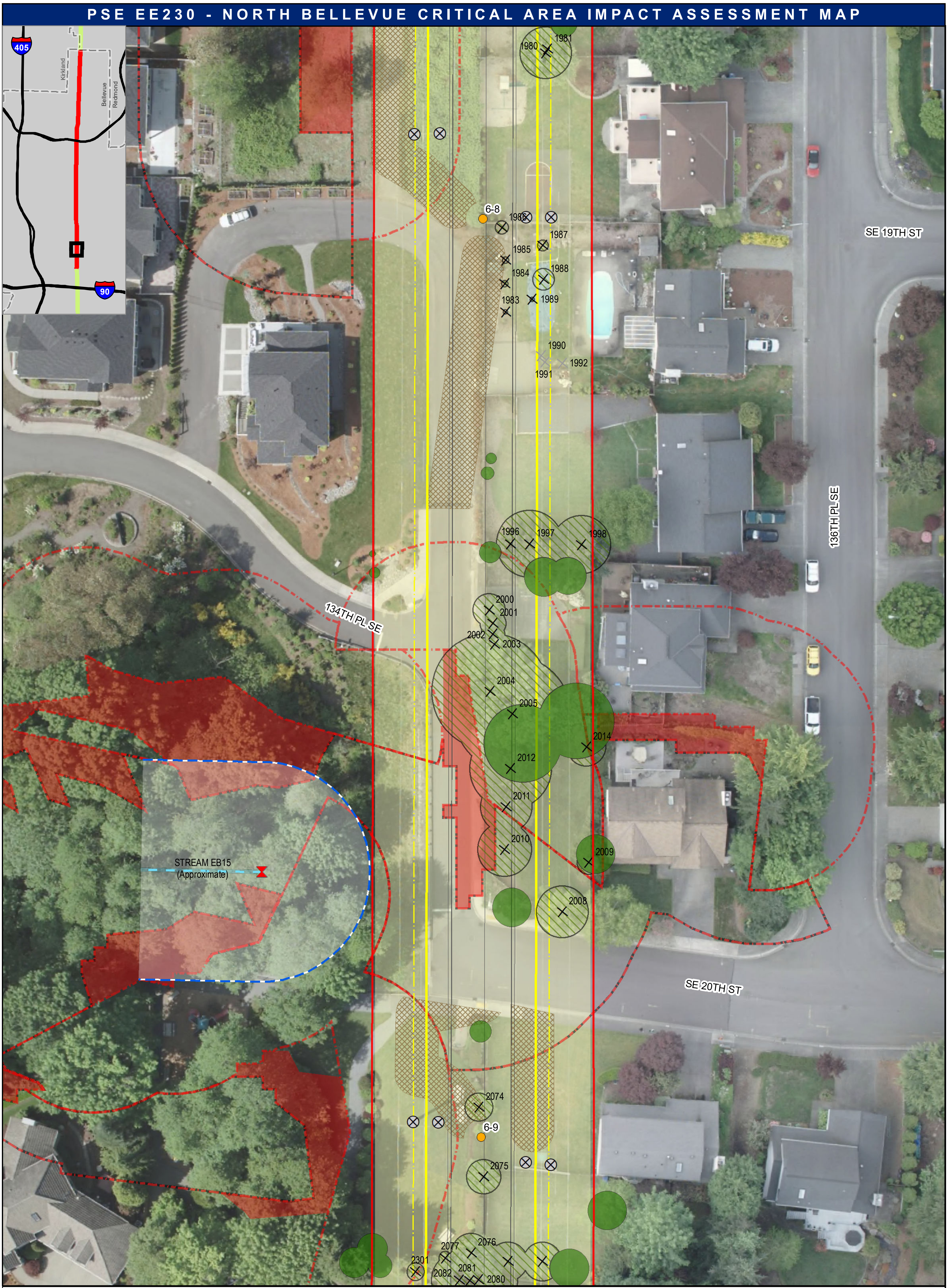
Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

33

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP



🟥 Critical Area Study Limits^{1}

City Limit^{KC}

PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*

Managed Right-of-Way ^{PSE}

Wire Zone^{PSE}

Proposed Wires ^{PSE}

△ Proposed Stringing Sites^{HDR}

● Existing Pole to Remain^{PSE}

⊗ Existing Pole to be Removed^{PSE}

● Proposed Replacement Pole Footprints^{PSE}

▨ Proposed Access Routes$^{2\,PSE}$

Culvert^{TWC}

✕ Trees to Remove ^{TWC}

✕ Previously Removed ^{TWC}

✕ Dead Trees to Remove ^{TWC}

▨ Canopy to be Removed ^{TWC}

🟩 Canopy to Remain ^{TWC}

Stream^{TWC}

🟩 Wetland^{TWC}

Ditch^{TWC}

Delineated Stream Centerline^{TWC}

Approximate Stream^{TWC}

Approximate Wetland Boundary ^{TWC}

Delineated Wetland Boundary ^{TWC}

Stream Buffer^{TWC}

Wetland Buffer^{TWC}

Piped Streams (Approx.)^{TWC}

🟥 Steep Slopes^{COB}

Limit of Steep Slope Buffer$^{3\,TWC}$

Limit of Steep Slope Setback$^{3\,TWC}$

Landslide Hazard Areas^{DNR}

Landslide Hazard Area Buffer^{TWC}

Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

34

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

Critical Area Study Limits^1
City Limit^{KC}
PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
Managed Right-of-Way ^{PSE}
Wire Zone^{PSE}
Proposed Wires ^{PSE}
Proposed Stringing Sites^{HDR}
Existing Pole to Remain^{PSE}
Existing Pole to be Removed^{PSE}
Proposed Replacement Pole Footprints^{PSE}
Proposed Access Routes$^{2\,PSE}$
Culvert^{TWC}
Trees to Remove ^{TWC}
Previously Removed ^{TWC}
Dead Trees to Remove ^{TWC}
Canopy to be Removed ^{TWC}
Canopy to Remain ^{TWC}
Stream^{TWC}
Wetland^{TWC}
Ditch^{TWC}
Delineated Stream Centerline^{TWC}
Approximate Stream^{TWC}
Approximate Wetland Boundary ^{TWC}
Delineated Wetland Boundary ^{TWC}
Stream Buffer^{TWC}
Wetland Buffer^{TWC}
Piped Streams (Approx.)^{TWC}
Steep Slopes^{COB}
Limit of Steep Slope Buffer$^{3\,TWC}$
Limit of Steep Slope Setback$^{3\,TWC}$
Landslide Hazard Areas^{DNR}
Landslide Hazard Area Buffer^{TWC}
Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

35

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

- 🟥 Critical Area Study Limits[1]
- City Limit^{KC}
- PSE Owned Parcels and Existing Easement ^{PSE}- *pale yellow shading*
- Managed Right-of-Way ^{PSE}
- Wire Zone^{PSE}
- Proposed Wires ^{PSE}
- ▲ Proposed Stringing Sites^{HDR}
- ● Existing Pole to Remain^{PSE}
- ⊗ Existing Pole to be Removed^{PSE}
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- Culvert^{TWC}
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- ✕ Dead Trees to Remove ^{TWC}
- ▨ Canopy to be Removed ^{TWC}
- 🟩 Canopy to Remain ^{TWC}
- Stream^{TWC}
- 🟩 Wetland^{TWC}
- Ditch^{TWC}
- Delineated Stream Centerline^{TWC}
- Approximate Stream^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Stream Buffer^{TWC}
- Wetland Buffer^{TWC}
- Piped Streams (Approx.)^{TWC}
- Steep Slopes^{COB}
- Limit of Steep Slope Buffer$^{3\,TWC}$
- Limit of Steep Slope Setback$^{3\,TWC}$
- Landslide Hazard Areas^{DNR}
- Landslide Hazard Area Buffer^{TWC}
- Flood Hazard (100-yr Floodplain)^{COB}

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

36

0 20 40
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

PSE EE230 - NORTH BELLEVUE CRITICAL AREA IMPACT ASSESSMENT MAP

Notes:
1. Critical areas were defined within a 100' corridor along the existing powerline corridor.
2. Temporary access routes shown at typical width of 20 feet.
3. Required from top of slope only, per BMC 20.25H.035(A).

37

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and HDR. Aerial imagery from PSE, 2011.

Appendix B

DETAILED CAIA METHODS

Critical Area Impact Analysis Methods

This document is intended to further describe the Critical Area Impact Analysis (CAIA) methods used to determine Project impacts in North Bellevue. It details how map features (*e.g.,* critical areas and land cover classes) were generated and used in conjunction with PSE site plans to quantify impacts resulting from implementation of the Energize Eastside Project (Project). This Appendix is meant to complement and expand upon the methods described in the body of the Critical Areas Report.

The contents of this document include:

Critical Area Delineation and Mapping Methods

Critical area features not delineated in the field were mapped using publicly available GIS data. Priority was given to data produced and/or provided by the City of Bellevue. Where such data were not available for a designated critical area, data were obtained from other agency sources. A table provided at the end of this document lists data sources for each mapped critical area.

Wetland and Stream Critical Areas and Buffers Mapping

Wetland and stream critical areas were delineated and classified by The Watershed Company between 2015 and 2020 as documented in the *Wetland and Stream Delineation Report Update for North Bellevue* (The Watershed Company 2021c). These delineated features were typically GPS-located. Buffers were applied according to the current Bellevue Land Use Code, from wetland boundaries or estimated stream edges.

Geologic Hazard Areas and Buffers Mapping

According to Bellevue Land Use Code, landslide hazard areas and steep slopes require 50-foot buffers from the top-of-slope. Steep slopes also require a 75-foot toe-of-slope setback. In order to map top-of-slope buffers (or toe-of-slope setbacks for steep slopes), steep slopes and landslide hazard areas were visually evaluated relative to 2-foot contours created from PSE lidar data, and buffers were clipped to either the top- or toe-of-slope.

Existing Land Cover Mapping

In order to quantify land cover changes from Project-related activities, a layer showing existing conditions was created to describe the current land cover conditions. The land cover base map was developed from the following existing data sources:

- 2009 Impervious and Impacted Surface raster data set, King County GIS
- Energize Eastside Corridor digital survey, APS Surveying
- Energize Eastside Corridor Tree Inventory data, The Watershed Company
- Energize Eastside Corridor Vegetation Polygon data, The Watershed Company
- Energize Eastside Corridor Wetland and Stream Inventory, The Watershed Company
- High-resolution aerial photography, PSE, captured in 2011
- 2015-2016 aerial photography, King County GIS

Using the King County impervious surface raster, GIS analysts supplemented the mapped features using digital survey data. These data were further refined by manually reviewing mapped features against high-resolution aerial photography and field-verified conditions. After developed and non-developed areas were mapped, vegetation and tree canopy coverage information were integrated (described in following subsection), as well as mapped open water areas (streams).

This effort yielded a base map with six general land cover types:

- Forested with understory vegetation
- Forested without understory vegetation
- Understory vegetation, unforested
- Other (generally lawn)
- Developed (no vegetation cover)
- Water (streams)

Vegetation Assessment Methods

A full description of the vegetation analysis methods, the results of which have been incorporated into the CAIA, is presented in the *Vegetation Inventory & Management Plan Report for North Bellevue* (The Watershed Company 2021b). How the results were used to generate the mapped features presented in the CAIA is summarized below.

The Watershed Company ISA Certified Arborists® conducted a field-based vegetation inventory from March 23, 2015 to November 9, 2015 along potential routes for the Project. The methodology used during the inventory was developed to comprehensively identify, describe, and tag all vegetation greater than 15 feet tall, or that had the potential to reach a mature height of 15 feet or taller.

Inventoried vegetation was mapped as points and/or polygons. Any tree with a diameter of six inches[1] at four-and-a-half feet above the ground surface (DBH) was mapped as a point and tagged with a unique number and its attributes were recorded. Landscaped vegetation with the potential to reach 15 feet or greater was also inventoried in this manner regardless of size. Finally, volunteer vegetation (*i.e.,* from seed [not planted] and not maintained) with a DBH of three to six inches was also inventoried in this way. This type of inventoried vegetation was typically located by a professional surveyor.

Hedges and small volunteer vegetation (less than three inches DBH) were mapped as polygons, not points. Polygons were sketched in the field based on observations then digitized in GIS using high-resolution imagery. Vegetation attributes within polygons were averaged. No significant (regulated) trees were inventoried using this method.

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[1] Six inches DBH was established as a threshold for vegetation tagging and inventory during the initial scoping of the vegetation inventory work because it represents the minimum tree size that would be regulated by jurisdictions within the Project area and PSE wanted to establish a consistent approach to inventorying and replacing vegetation potentially impacted by the proposal, across jurisdictions.

Resulting mapped features included in land cover mapping of the CAIA are vegetation points with the recorded canopy (which is based on the “radius” attribute collected during field work) applied creating circular “tree footprints” and polygons representing varying densities of smaller volunteer vegetation with the potential to reach a height of 15 feet or more.

Using inventoried tree point data and incorporation of 3D design data depicting proposed pole heights and vertical wire alignment from PSE transmission engineering, tree impacts related to the construction of the Project were quantified. Canopy cover for the anticipated trees to remain and trees to be removed or maintained was then mapped and overlaid, resulting in a coverage layer depicting the extent of anticipated canopy preservation and canopy loss. These data were incorporated into the land cover data, further refining existing land cover into eight general land cover types:

- Forested to be removed (canopy loss) with understory
- Forested to be removed, no understory
- Forested to remain (canopy preservation) with understory
- Forested to remain, no understory
- Understory vegetation, unforested
- Other (generally lawn)
- Developed (no vegetation)
- Water (streams)

Impact Characterization

Proposed development areas associated with the Project were mapped using geometry from design files and data provided by PSE. As described by PSE, work proposed could be classified into eight types and maintained in the long-term as described in the following table (Table 1).

Table 1. Summary of proposed work and long-term condition of work areas.

Proposed Work	Long-term Condition
Pole footprint	Developed
Pole buffer, describes an approximate 6-foot buffer around the proposed poles that will be disturbed during construction and where tree growth will be managed long-term	Mixed Vegetation (Height maintained at 15 feet or where 20 feet of vertical clearance is provided beneath the vertical curvature of the lowest wire)
Temporary access route, describes approximate path used during construction activities	Mixed Vegetation (Height may be maintained depending upon location relative to wire alignment)
Stringing sites*	Mixed Vegetation (Height may be maintained depending upon location relative to wire alignment)
Wire zone (WZ)	Mixed Vegetation (Height maintained at 15 feet or where 20 feet of vertical clearance is provided beneath the vertical curvature of the lowest wire)
Managed right-of-way (MROW)	Mixed Vegetation (Height maintained at 15 feet or where 20 feet of vertical clearance is provided beneath the vertical curvature of the lowest wire)
Pole work area, approximate temporary disturbance related to pole construction	Mixed Vegetation (Height may be maintained depending upon location relative to wire alignment)
Maintained legal right-of-way (LROW), encompasses the areas of LROW where PSE intends to exercise long-term vegetation management	Mixed Vegetation (Height maintained at 70 feet)
* Note: Impacts from stringing sites are captured within the footprints of other proposed work activities. During construction work associated with stringing sites, adjustments may be made in the field to avoid, minimize, or mitigate impacts to critical areas and their buffers should they occur.	

These proposed work areas were then intersected with the land cover data set described above. The result was a set of polygons defining pre-Project conditions (land cover data set values) and post-Project conditions (proposed work and long-term condition values). Differences between post-Project conditions and pre-Project conditions, or impacts, were then characterized as one of four types – permanent, vegetation conversion, temporary, or no change – based on the nature of the change on the ground. These characterization types are defined in the matrix below (Table 2).

Table 2. Impact characterization matrix.

			Existing Land Cover Types					
	Impact Description	**Long-Term Condition[1]**	Forested to be Removed		Forested to Remain		Understory only	Other (mostly lawn)
			with understory	no understory	with understory	no understory		
Proposed Activities	Pole footprint (actual footprint of pole structure based on engineering drawings from PSE)	Developed	P	P	P	P	P	P
	Pole buffer (6-foot radius outside of pole footprint)	Mixed vegetation[2]	C	C	T	T	T	T
	Temporary access routes (20-foot width based on alignments from PSE)	Mixed vegetation[2]	C	C	T	T	T	T
	Pole construction work area	Mixed vegetation[2]	C	C	T	T	T	T
	Wire Zone	Mixed vegetation[2]	C	C	NC	NC	NC	NC
	Managed ROW	Mixed vegetation[2]	C	C	NC	NC	NC	NC
	Legal ROW	Mixed vegetation[2]	C	C	NC	NC	NC	NC

Type of Impact based on proposed activity, long term condition, and existing land cover type:
P = Permanent, C = Vegetation Conversion, T = Temporary, NC = No Change

[1] Long-term condition determined in coordination with PSE.

[2] Subject to varying height restrictions.

Critical Areas Impact Assessment

Application of the matrix yielded a map showing a full characterization of permanent, vegetation conversion, and temporary impacts associated with the Project. This impact characterization layer was then intersected with each individual mapped critical area in order to locate, characterize, and quantify impacts to that critical area. The results were summarized by critical area and drainage basin.

The ending table (Table 3) summarizes the data sources used for the critical areas analysis.

Quality Assurance Review of Analysis Steps and Results

The Watershed Company's internal review of CAIA steps and results has occurred throughout the process described above and will be ongoing as the analysis is refined.

Ecologists, arborists, GIS analysts, and planners from The Watershed Company worked collaboratively to ensure all appropriate critical areas were incorporated into the maps and where appropriate, classified and buffered according to the local jurisdiction regulations.

GIS analysts created the land cover base map, compiled from a variety of sources. Land cover classifications were reviewed for quality assurance first by GIS staff by comparing mapped data to high resolution aerial imagery. Following review by the GIS analysts, the land cover map was reviewed by an ecologist against delineation field notes and recollections from field work activities performed by biologists.

Project elements and site plans have been provided by, and reviewed with, PSE Project staff. The mapped location and long-term condition of Project elements is based upon discussions with PSE.

All components of the CAIA have been generated/authored by reputable sources and have been cross-checked by The Watershed Company for consistency. Quantified and depicted impacts resulting from the CAIA have been reviewed by ecologists for quality assurance to the extent feasible. Impact results will continue to be reviewed for accuracy as the Project plans and impact areas are refined.

Limitations

This analysis relies on a series of data products produced using different scales and methods; therefore, mapped features may not align with the planned real-world layout of proposed corridor facilities. However, professional survey along with PSE CADD design data were used to assess impacts. As with any GIS-based analysis, ground-truthing of results may reveal inaccuracies (such as discrepancies between aerial photographs and real-world conditions, etc.). Furthermore, as some features and design geometries were translated from AutoCAD into ArcGIS, some geometric refinements were necessary to address gaps and other issues, which could affect the accuracy of the analysis results.

Table 3. Data inventory elements and information sources.

INVENTORY ELEMENT	INFORMATION GATHERED	DATA SOURCE(S)	ASSUMPTIONS/LIMITATIONS
Proposed Development			
Topographic surface data	• Point map of surface elevations	• Puget Sound Energy (PSE) tabular data (via email R. Wieder); date received 4/19/2017 • The Watershed Company (TWC)	• Point elevations generated from lidar flight by consultant to PSE; 2012 • Data was post-processed to generate a 3D surface map using ArcGIS software
Proposed Project Improvements	• Pole structures • Wire alignments • Pole construction work areas • Proposed temporary construction access routes • Stringing sites	• PSE , design drawings in AutoCAD; date received: 1/27/2021; • HDR (via email K. Purnell), geospatial data; date received 8/2/2017 • TWC	• Reflects pole and wire design configuration from January 27, 2021 (Revision Y) • Design may be subject to revision or update based on regulatory comments, field conditions, or other factors
Cadastral Datasets & Features			
Land Cover	• Development and impervious areas • Other • Tree canopy • Understory vegetation	• King County 2009 impervious dataset and 2015-2016 aerial data • PSE high-resolution aerial photography; flight date 2011 • APS Surveying, digital survey • TWC, 2018	• Impervious dataset from King County, last updated 2009 • Vegetation survey by TWC between 2015 and 2017 • "Developed" category includes roads, structures, and heavily disturbed areas, such as compacted unimproved roadways • "Other" category observed to be mostly lawn based on visual observation of aerial photographs, but could include other conditions • Survey data was post-processed to isolate and generate geospatial feature classes using ArcGIS software
Parks	• Park land	• City of Bellevue (downloaded 10/26/20)	• Bellevue last updated on 12-01-2018 • King County last updated 10-07-2020

INVENTORY ELEMENT	INFORMATION GATHERED	DATA SOURCE(S)	ASSUMPTIONS/LIMITATIONS
		• King County (downloaded 10/26/20)	
City limits	• Incorporated city limit boundary	• City of Bellevue (downloaded 7/3/18)	• Bellevue updated 02-06-2017
Parcels	• Parcel lines	• City of Bellevue (downloaded 7/19/18)	• Bellevue updated 02-06-2017
Drainage Basins	• Bellevue drainage basin boundaries	• City of Bellevue (downloaded 7/6/2017) • TWC[1]	• Bellevue updated 06-20-2017
Regulated Critical Areas			
Streams and Riparian Areas (LUC 20.25H.075)	• Streams within study corridor • Stream buffers	• TWC	• Streams delineated by TWC beginning in 2015 and most recently in 2020 • Feature buffers assigned according to City of Bellevue 2018 Critical Areas Ordinance (CAO) (LUC 20.25H)
	• Floodplains	• *See Flood Hazard Areas*	
Wetlands (LUC 20.25H.095)	• Delineated wetlands within study corridor • Wetland buffers • Approximate wetlands	• TWC	• Wetlands delineated by TWC beginning in 2015 and most recently in 2020 • Wetland feature ratings based on 2014 rating system • Feature buffers assigned according to City of Bellevue 2018 CAO (LUC 20.25H)
Habitats for Species of Local Importance (LUC 20.25H.150)	• Priority habitat and species data (PHS)	• WDFW (received 7/19/2018)	• Scale may not be sufficient to capture individual occurrences or observations along the corridor • Accuracy does not supersede observation by PSE staff
Flood Hazard Areas (LUC 20.25H.175)	• Flood Hazard Areas	• City of Bellevue (downloaded 02-23-2018)	• Bellevue updated 05-04-2016

INVENTORY ELEMENT	INFORMATION GATHERED	DATA SOURCE(S)	ASSUMPTIONS/LIMITATIONS
Geological Hazard Areas (LUC 20.25H.120)	• Landslide hazard areas • Landslide hazard buffers	• King County (downloaded 7/3/2018) • DNR (received 7/10/2019) • GeoEngineers (received 10/13/2020)	• Data describes landslide hazards defined by King County SAO • Feature and structure setback buffers assigned according to City of Bellevue 2018 CAO
	• Steep slopes • Steep slope buffers • Steep slope structure setbacks	• City of Bellevue Mapping Services (downloaded 7/3/2018) • TWC	• Bellevue data last updated 04-06-2016 • Feature and structure setback buffers assigned according to City of Bellevue 2018 CAO
	• Coal mine hazard areas	• City of Bellevue Mapping Services (downloaded 7/3/2018)	• COALZONE – last updated 12-01-2018; no features occur within Project area

1. The Watershed Company made a small modification to the drainage basin boundary line between the Kelsey Creek and Richards Creek drainage basins to more closely reflect field assessment observations and site topography.

Appendix C

WETLAND AND STREAM DELINEATION REPORT UPDATE FOR NORTH BELLEVUE

PSE Energize Eastside Project Documentation

DELINEATION REPORT UPDATE

NORTH BELLEVUE SEGMENT

February 16, 2021

Prepared on behalf of (applicant):

PUGET SOUND ENERGY

Ryan Wieder
PSE Energize Eastside
355 110th Avenue NE
Bellevue, WA 98004

THE WATERSHED COMPANY

THE
WATERSHED
COMPANY

750 Sixth Street South
Kirkland, WA 98033

p 425.822.5242
f 425.827.8136
watershedco.com

Reference Number: 111103.12

Contact: Katy Crandall, PWS
Ecologist and Arborist

Nell Lund, PWS
Senior Ecologist

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1 Introduction

1.1 Background and Purpose

The purpose of this report is to document wetland and stream critical areas associated with the Puget Sound Energy (PSE) Energize Eastside Project (Project) in North Bellevue. The Project includes building a new electric substation and higher capacity transmission lines to serve homes and businesses on the Eastside. This report focuses on the North Bellevue Segment of the Energize Eastside Project. The North Bellevue Segment includes 5.2 miles of two existing 115 kV transmission lines which will be upgraded to operate up to 230 kV (herein referred to as 230 kV lines). Upgrades will replace pole and conductor infrastructure.

This delineation report is intended to supplement the information provided in the *North Bellevue Critical Area Report* (The Watershed Company 2021) with respect to wetlands and streams. This document is an update from the original delineation report (which covered both North and South Bellevue Segments) issued May 2016; it supersedes that previous version and is intended to serve as a stand-alone document for local permitting[1] in North Bellevue.

1.2 Project Location

The North Bellevue Segment study area spans an urban landscape setting. Most of the corridor is zoned single-family residential at various densities; with the exception of the Bel-Red area, generally zoned commercial and office. In North Bellevue Segment, the Project corridor passes through or adjacent to (from north to south) the Bridle Trails, Bel-Red, Wilburton, Crossroads, Woodridge, Lake Hills, and Eastgate neighborhoods (Figure 1). The corridor is in the following public land survey sections: Sections 15, 22, 27, and 34 of Township 25N, Range 05E; and Sections 3 and 10 of Township 24N, Range 05E.

The North Bellevue Segment study area is in the Cedar-Sammamish Watershed (WRIA 8), and spans three City of Bellevue-defined drainage basins, which include (from north to south) the Valley Creek, Kelsey Creek, and Richards Creek basins.

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[1] Energize Eastside work associated with the North Bellevue Segment avoids activities that would trigger state and federal permitting. Therefore, state and federal regulations related to wetlands and streams are not included. The jurisdictional status of wetlands and streams, their classifications, and the associated buffer widths that are provided are in accordance with City of Bellevue regulations.

1.3 Methods

Study Area

The North Bellevue Segment study area is a linear transmission line corridor that averages 100 feet in width. It begins at the northern city limit boundary at the Bridle Crest Trail near NE 60th Street and extends south to the existing Lakeside Substation for a corridor length of approximately 5.2 miles (Figure 1). Limits of the study area corridor were determined in the field using aerial maps, GPS, and by measuring 25 feet out from the center of each existing pole set or set of transmission lines when poles were not nearby.

Background Review

Public-domain information on the study area corridor was reviewed for 2015 delineation field work efforts. These sources include USDA Natural Resources Conservation Service (NRCS) soil maps, U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps, Washington Department of Fish and Wildlife interactive mapping programs (PHS on the Web and SalmonScape), the mapping tool associated with Washington Department of Natural Resources Forest Practices Application Review System (FPARS), City of Bellevue's interactive mapping website (nwmaps.net, no longer active), City of Bellevue GIS data, and King County's mapping website (iMap).

Online sources of information have been revisited so relevant changes since 2015 could be incorporated during updates to wetland and stream mapping and/or classification. Additional resources like Washington Department of Ecology's interactive Water Quality Atlas map and various sources for aerial imagery (like Google Earth) have also been referenced for answering wetland rating form questions.

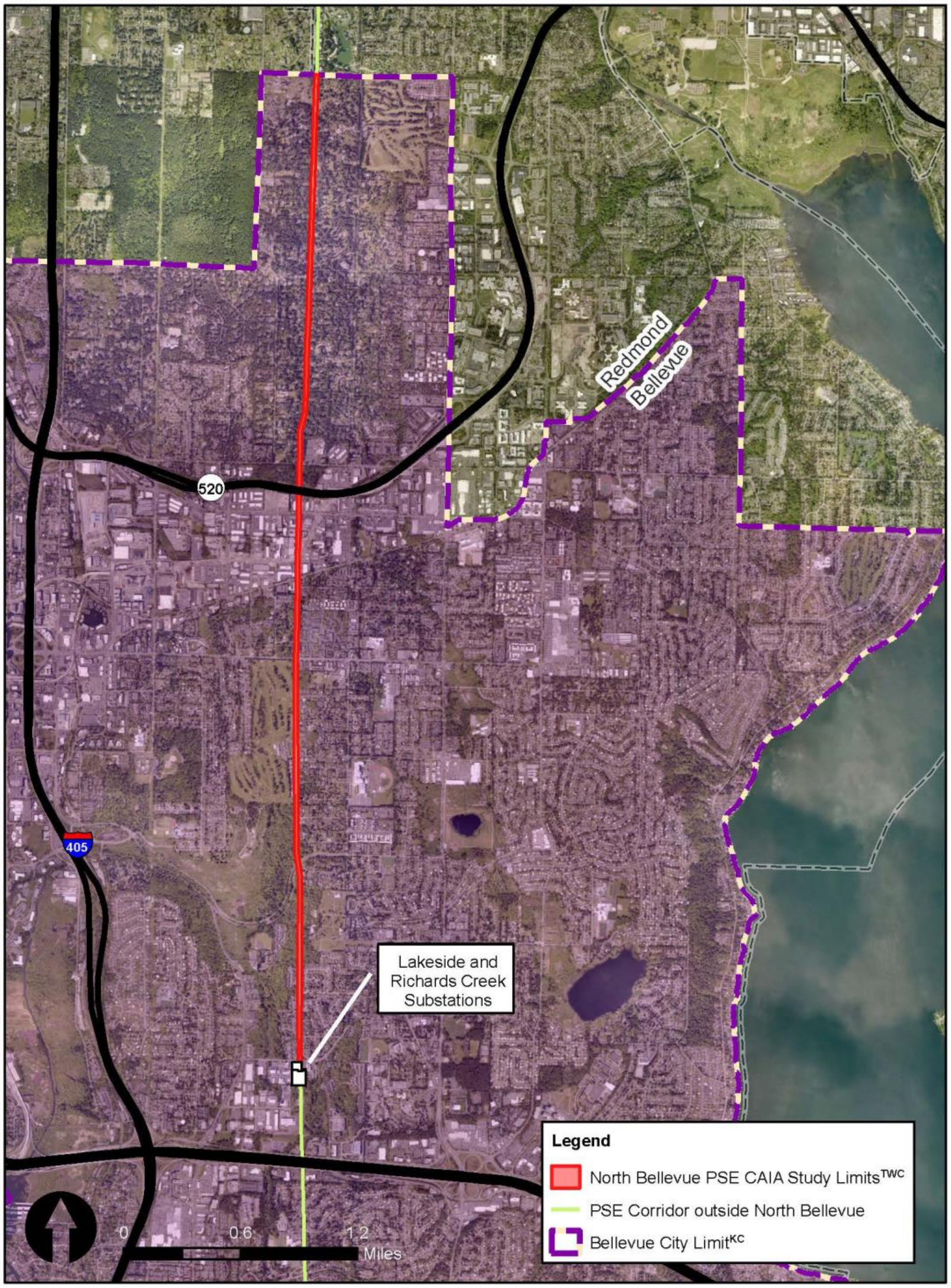

Figure 1. Vicinity map of the North Bellevue Segment study area.

Delineation and Classification Chronology

Original wetland and stream delineation field work for the Energize Eastside Project in Bellevue was completed in 2015. The Bellevue portion of the Project includes 8.3 miles of transmission line corridor and the Richards Creek Substation site. Wetlands were classified using the 2004 version of the *Washington State Wetland Rating System for Western Washington* (2004 Rating System), in accordance with the City of Bellevue Land Use Code (LUC) 20.25H.095 in effect at that time.

The 2004 Rating System was updated in 2014; and the LUC was subsequently updated to require use of the *Washington State Wetland Rating System for Western Washington: 2014 Update* (2014 Rating System) to classify wetlands. The Watershed Company began updating the North Bellevue Segment wetland classifications to the 2014 Rating System in 2018 and conducted site visits to many of the wetlands in the North Bellevue Segment to aid in that effort. The South Bellevue Segment is covered in a separate report and was permitted separately from the North Bellevue Segment.

Finally, in 2020, more than five years from the original delineation study, The Watershed Company revisited all wetlands and streams in the North Bellevue Segment project area (with one exception[2]) to verify or update wetland/stream boundaries and confirm each wetland was appropriately classified according to the 2014 Rating System. Overall, wetland boundaries did not change or remained relatively consistent with the original delineation study.

Wetland Assessment

The study area was evaluated for wetlands using methodology from the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010). Presence or absence of wetlands was determined based on an examination of vegetation, soils and hydrology. Wetland determination data forms are included in Attachment B. These parameters were sampled at several locations along the wetland boundary to determine the wetland edge.

Wetlands were originally classified according to the 2004 version of the Department of Ecology's wetland rating system (Hruby 2004). Wetland classifications were updated using the

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[2] The Watershed Company was not granted access to the Overlake Farms property (parcel numbers 1525059269 and 1525059247) to verify or update the prior wetland delineation despite PSE's numerous attempts to reach the property owner(s) to obtain permission in 2018. The wetland on Overlake Farms (Wetland A) was last delineated March 29, 2013 (The Watershed Company).

Overlake Farms property owners granted permission for The Watershed Company to utilize the information obtained during the private 2013 wetland and stream delineation study where it was relevant to the Energize Eastside Project (C. Gugoni, personal communication, March 19, 2015).

Department of Ecology's 2014 rating system (Hruby 2014) beginning in 2018. Rating forms and figures are included in Attachment C.

Stream Assessment

The study area was evaluated for streams based on the City of Bellevue's definition and the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code 220-660-030, and the Revised Code of Washington 90.58.030. The City of Bellevue defines streams as follows (LUC 20.25H.075):

> *An aquatic area where surface water produces a channel, not including a wholly artificial channel, unless the artificial channel is:*
> 1. *Used by salmonids; or*
> 2. *Used to convey a stream that occurred naturally before construction of the artificial channel.*

The centerlines of streams in the study area were recorded in the field, with stream widths either visually approximated in the field or later approximated based on aerial photometry and elevation contours. Streams were classified as a Type S, Type F, Type N or Type O water according to the City of Bellevue Land Use Code.

The City of Bellevue measures stream buffers from 'top-of-bank,' defined as (LUC 20.50.048):

> *The point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for minimum distance of 50 feet measured perpendicularly from the break*

In some instances, the mapped stream width, based on estimated average distance between opposite OHWM boundaries, coincides with top-of-bank. However, limited availability of detailed site-specific topographic information makes it infeasible to determine top-of-bank adjacent to streams. Stream buffers were measured from estimated OHWM boundaries.

Mapping

Wetland boundaries, stream centerlines, data points, and other features (such as culverts) were GPS-located using a hand-held Trimble Geo-XH unit. Following field location, the GPS data were differentially corrected using GPS Pathfinder Office and exported into ESRI ArcGIS software for mapping. Stream and wetland delineation maps are included as Attachment A.

2 Wetlands

A total of 25 wetlands are located along the North Bellevue Segment of the Energize Eastside corridor in the City of Bellevue (Attachment A). They are all categorized as having either slope or depressional hydrogeomorphic classes; and are palustrine systems according to the Cowardin classification system (Cowardin et. al. 1979). Wetland categories based on the 2014 Rating System range from Category II to Category IV with the majority of wetlands rated as

Category III features. Wetlands are further described in the following subsections and summarized in Table 1.

2.1 Descriptions

2.1.1 Wetland A (Overlake Farms)

A private 2013 delineation study was performed by The Watershed Company that included the PSE easement corridor on Overlake Farms (parcel numbers 1525059269 and 1525059247; Attachment A, Page 1) (The Watershed Company 2013). The west corner of the wetland identified as Wetland A extends into the 100-foot PSE corridor in parcel 1525059247. This wetland is a slope and depressional wetland with forested and scrub-shrub vegetation classes. Dominant vegetation includes western red cedar, red alder, vine maple, salmonberry, skunk cabbage, and lady fern. Sampled soils (Attachment B, Overlake Farms DP-1) in 2013 met hydric soil indicator, Hydrogen Sulfide. Wetland hydrology indicators include Saturation (to the surface) and Hydrogen Sulfide Odor. Wetland A is classified as a Category IV wetland.

2.1.2 Wetland CB01

Wetland CB01 is a relatively large slope wetland located north of SR-520 in Viewpoint Park (Attachment A, Page 2). Wetland CB01 hydrology is mainly provided by groundwater seeps. Wetland CB01 contains forested, scrub-shrub, and emergent vegetation classes. Common vegetation observed includes red alder, various willow species, salmonberry, reed canarygrass, creeping buttercup, giant horsetail, small-fruited bulrush and lady fern. Sampled soils (Attachment B, DP-8) met the criteria for both Depleted Matrix and Redox Dark Surface hydric soil indicators. The wetland also met multiple hydrology indicators at the time of sampling. Wetland CB01 is classified as a Category III wetland.

2.1.3 Wetland EB01

Wetland EB01 is a slope wetland located south of Bel-Red Road near Kelsey Creek (Attachment A, Page 4-5). This wetland contains forested, scrub-shrub, and emergent vegetation classes. Common vegetation observed includes red alder, Sitka willow, salmonberry, giant horsetail, small-fruited bulrush and soft rush. Hydrogen sulfide odor was detected at the test pit (Attachment B, DP-6), meeting the criteria for both hydric soil and wetland hydrology. In addition, soils were saturated to the surface and a water table was observed at seven inches below the soil surface. Wetland EB01 hydrology is mainly provided by groundwater seeps. Wetland EB01 is classified as a Category III wetland.

2.1.4 Wetland EB02

Wetland EB02 is a relatively large slope wetland located in the northeast corner of the Glendale Golf and Country Club (Attachment A, Page 7-9). This wetland contains forested, scrub-shrub, and emergent vegetation classes. Common vegetation observed includes English hawthorn, red alder, Himalayan blackberry, reed canarygrass, soft rush and small-fruited bulrush. Sampled soils (Attachment B, DP-11) met hydric soil indicator, Depleted Matrix. Oxidized rhizospheres were present along living roots, indicative of a primary wetland hydrology indicator. Two secondary wetland hydrology indicators were also observed. Wetland EB02 rates as a Category III wetland.

2.1.5 Wetlands EB03 through EB10

Wetlands EB03 through EB10 are located on two large parcels north of Lake Hills Connector (Attachment A, Pages 11-18). All except for Wetland EB09 are located within the transmission line corridor. The northern parcel is owned by the Glendale County Club; the southern property is owned by the City of Bellevue Parks Department (Kelsey Creek Park). The study area in these parcels is dominated by grasses, Himalayan blackberry, and a few trees and shrubs. It also includes a compact gravel walking trail that runs north-south through the corridor. Topography is dominated by series of rolling hills and valleys oriented perpendicular to a generally west-facing slope.

The eight wetlands identified in this general area are relatively similar in character. They are commonly present in depressions, swales, or breaks in slopes, and are primarily supported by groundwater seeps. Several of these wetlands include small streams and/or culverts that convey surface water flow beneath the established trail. Common vegetation observed includes Himalayan blackberry, reed canarygrass, soft rush, sawbeak sedge, small-fruited bulrush, and giant horsetail. Each wetland met the criteria for at least one hydric soil indicator as well as one primary or two secondary hydrology indicators (Attachment B, DPs 12-16,20-24, 24A).

Wetlands EB06 and EB07 are small (< 2,500 square feet) Category IV wetlands. The rest (EB03-EB05; EB08-EB10) are Category III wetlands (for more information, see Table 1 and Rating Forms & Figures in Attachment C).

2.1.6 Wetland EB11 through EB19

Wetlands EB11 through EB19 are located south of Lake Hills Connector (Attachment A, Pages 19-25), mostly located on a large vacant parcel owned by SCI Management Corp. Similar to the previously described area north of Lake Hills Connector the study area south of Lake Hills Connector to 130th Place SE is generally dominated by grasses, Himalayan blackberry, and a few trees and shrubs. It also includes a compact gravel walking trail that runs north-south through the corridor; and the general topography is similar.

These nine wetlands are often located in low-lying swales. Most are associated with small stream features also present in the swales. Furthermore, the trail acts as a break between several of these wetland units. These wetlands are primarily supported by groundwater seeps. Vegetation is often dominated by red alder and black cottonwood in the forested areas with lady fern and reed canarygrass common in the understory. Other common emergent and shrub vegetation observed included Himalayan blackberry, soft rush, small-fruited bulrush, and giant horsetail. Each wetland met the criteria for at least one hydric soil indicator as well as at least one primary or two secondary hydrology indicators (Attachment B, DPs 17-19, 25-26, 29-34).

Wetland EB11 is classified as a Category II wetland; Wetlands EB12 through EB19 are all Category III wetlands (for more information, see Table 1 and Rating Forms & Figures in Attachment C).

2.1.7 Wetland EB20

Wetland EB20 is a slope wetland located north of SE 26th Street on parcels 1024059089 and 1024059065 (Attachment A, Page 29, 31). The wetland contains an emergent vegetation class. Common plants observed include reed canarygrass, small-fruited bulrush, and patches of Himalayan blackberry along the perimeter. Soils met the criteria for hydric soil indicator, Redox Dark Surface. One primary wetland hydrology indicator and two secondary hydrology indicators were observed at the test pit during field investigations (Attachment B, DP-27). Wetland EB20 is classified as a Category III wetland.

2.1.8 Wetland EB21

Wetland EB21 is a depressional wetland located south of NE 20th Street in a wide ditch-like feature that runs north-south, immediately adjacent to the transmission line corridor (Attachment A, Page 3). The wetland includes scrub-shrub and emergent Cowardin vegetation classes. Vegetation is dense and dominated by willows, red-twig dogwood, Himalayan blackberry, reed canarygrass, giant horsetail, and watercress. A number of red alder, Sitka spruce and Oregon ash trees are present just outside wetland boundaries, beneath existing transmission lines. City of Bellevue's GIS data characterizes this feature as stream that flows south, then is conveyed underground until it crosses 136th Place NE. Wetland hydrology observations included permanent slow-moving water, consistent with City of Bellevue's GIS data, as well as saturation near wetland edges. Wetland hydrology has been observed during each site visit (at least three) over several years. Hydric soils are presumed because strong wetland hydrology is persistent, and all dominant vegetation is hydrophytic. Wetland boundaries were judged to be equal to or larger than (more encumbering) stream edges. Wetland EB21 is classified as a Category III wetland.

2.1.9 Wetland EE (Lakeside)

Wetland EE is located on the north side of Lakeside Substation parcel (Attachment A, Page 30-31). It is a slope wetland that drains to a ditch. It contains emergent and scrub-shrub vegetation classes. Dominant plants consist of shore pine, red alder, and English hawthorn, and willow species affected by routine vegetation management activities. Cattail, soft rush, and giant horsetail are common in the understory. Hydrology comes from groundwater seeps and is supplemented by surface water. Soils met criteria for hydric soil indicator, Redox Dark Surface and were saturated at seven inches below the surface during the site assessment. Wetland EE is rated as a Category IV wetland.

2.1.10 Wetland I (Lakeside)

Wetland I is located in the northwest corner of the Lakeside Substation site outside of the transmission line corridor (Attachment A, Page 31). It is a relatively small, narrow wetland located at the toe of a slope, adjacent to a nearby road, and is rated as depressional. Wetland I contains a forested vegetation community dominated by weeping willow, red alder, and black cottonwood in the canopy with Himalayan blackberry, giant horsetail, soft rush, and grasses in the understory. Hydrology comes from groundwater and is supplemented by surface water. Soils were a dark brown gravelly sandy clay loam with organics masking redoximorphic features. Soils were saturated to the surface and a water table was present at nine inches below the soil surface at the time of the site visit (Attachment B, DP-4). Wetland I is classified as a Category III wetland.

2.2 Standard Buffers

Wetlands are regulated by the City of Bellevue under their Land Use Code (LUC), Part 20.25H, Critical Areas Overlay District.

Wetland classification is used in part to determine wetland buffer widths in the City of Bellevue. Wetland size, habitat score, and whether a site is considered developed or undeveloped also influence buffer widths. Per LUC 20.25H.095.D, “developed” is defined as when a parcel has been previously recorded with a NGPE prior to August 1, 2006 (regardless of presence of a primary structure on-site). None of the wetlands encountered in the study area occur on parcels with NGPEs, so associated properties are all considered undeveloped for the purpose of applying wetland buffers.

Table 1 provides a summary of wetland classifications and other key wetland attributes. The wetland size in Table 1 is approximate for wetlands that include estimated wetland area outside of the transmission line corridor. Furthermore, the City of Bellevue does not regulate Category IV wetlands that are less than 2,500 SF; therefore, the two wetlands to which this exception applies do not require a buffer as they are not regulated.

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Table 1. Summary table of wetlands in the North Bellevue Segment of the PSE Energize Eastside corridor.

Latest Assessment Date	Wetland Name	Approx. Size (square feet)	HGM Class used for Rating	2014 Ecology Wetland Rating Scores (Water Quality | Hydrology | Habitat |Total)				Category	Standard Buffer Width (feet)
3/29/2013	**A (Overlake)**	15,673	Depressional	5	6	4	15	IV	40
5/26/2020	**CB01**	31,758	Slope	6	6	5	17	III	110
5/26/2020	**EB01**	7,289	Slope	5	6	6	17	III	110
5/26/2020	**EB02**	98,761	Slope	6	6	6	18	III	110
2/27/2020	**EB03**	6,507	Slope	7	7	4	18	III	60
2/27/2020	**EB04**	2,196	Depressional	7	6	4	17	III	60
2/27/2020	**EB05**	3,904	Slope	6	7	4	17	III	60
2/27/2020	**EB06**	1,067	Slope	5	6	4	15	IV	0
2/27/2020	**EB07**	717	Slope	5	6	4	15	IV	0
2/27/2020	**EB08**	497	Slope	7	5	5	17	III	110
2/27/2020	**EB09**	420	Depressional	7	6	6	19	III	110
2/27/2020	**EB10**	2,316	Slope	7	7	5	19	III	110
2/27/2020	**EB11**	8,365	Depressional	8	7	5	20	II	110
2/27/2020	**EB12**	12,823	Slope	5	6	5	16	III	110
2/27/2020	**EB13**	3,658	Slope	6	5	5	16	III	110
2/27/2020	**EB14**	7,322	Slope	6	5	6	17	III	110
2/27/2020	**EB15**	31,090	Slope	5	6	6	17	III	110
2/27/2020	**EB16**	6,792	Depressional	7	6	6	19	III	110
2/27/2020	**EB17**	58,906	Depressional	7	6	6	19	III	110
2/27/2020	**EB18**	4,317	Slope	6	6	6	18	III	110
2/27/2020	**EB19**	4,296	Slope	6	5	6	17	III	110
5/26/2020	**EB20**	11,595	Slope	5	7	4	16	III	60
5/26/2020	**EB21**	2,258	Depressional	7	7	3	17	III	60
2/27/2020	**EE (Lakeside)**	2,949	Slope	5	6	4	15	IV	40
2/27/2020	**I (Lakeside)**	1,061	Depressional	6	6	4	16	III	60

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3 Streams

3.1 Descriptions

3.1.1 Stream EB01 (Kelsey Creek)

Stream EB01, commonly known as Kelsey Creek, is a perennial fish-bearing stream that flows northeast to southwest across the PSE corridor south of Bellevue Redmond Road (parcel numbers 760580TRCT and 0672100140) (Attachment A, Page 4). It is in the Kelsey Creek drainage basin. Wetland EB01 is adjacent to the creek. Fall Chinook, coho, winter steelhead, and sockeye salmonids have been documented in Kelsey Creek (WDFW n.d.). Stream EB01 is a Type F stream due to fish presence.

3.1.2 Streams near Glendale Country Club

Streams EB02-EB05 and EB16 are typically small, non-fish bearing streams that day-light and reenter culverts along the PSE corridor on the Glendale Country Club property (parcel 3425059010) (Attachment A, Pages 8-11,13-15). They are in the Kelsey Creek drainage basin. Fish use is precluded by natural gradient barriers downstream (channel gradients exceed 16 percent); as such, they are classified as Type N streams. Additional information for these features is provided below and in Table 2:

- **Stream EB02** is a relatively straight, channelized feature that appears to have been altered by historical land use. It flows seasonally along the east edge of the Glendale County Club, both north along the edge of Wetland EB02, and south to where it enters a culvert. City of Bellevue's GIS data does not show a stream at this location.
- **Stream EB03** is associated with Wetland EB03. It is a small seasonal stream that flows west; it loses channel definition in the wetland before re-entering a culvert at the north end of the wetland unit. This feature is consistent with a stream mapped by City of Bellevue at this location.
- **Stream EB04** is a very narrow yet persistent channel within Wetland EB08. It is a short stream segment that begins at a culvert outlet, flows west then re-enters a culvert at the bottom of the wetland. This stream is not mapped by the City of Bellevue and is on the eastern edge of the transmission line corridor.
- **Stream EB05** is on the west (downslope side) of the gravel trail near the southeast corner of the golf course east of the transmission line corridor. Three culverts discharge water on a slope of angular rock that eventually meet and channelize to the west, just outside of the project corridor. City of Bellevue GIS data show a stream in the vicinity of this feature, just downstream of the culverts and angular rock, outside the corridor.

- **Stream EB16** enters Wetland EB05 from the east, flows west through the center of the wetland unit then into a culvert. It is a seasonally flowing stream that is also mapped (and typed as 'Ns') in City of Bellevue's GIS data.

3.1.3 Streams in vicinity of Lake Hills Connector

Streams EB06 through EB14 and EB17 also occur in the Kelsey Creek drainage basin in the vicinity of the Lake Hills Connector (Attachment A, Pages 16-24). They are small, non-fish bearing streams that are often piped under the trail within the corridor or were noted to enter culverts. Fish use is precluded by natural gradient barriers downstream (channel gradients exceed 16 percent). These streams are Type N streams.

- **Stream EB06, EB07, and EB08** are within approximately 600 feet of one another. They are mostly piped in the project corridor. They are consistent with streams mapped by the City of Bellevue. These are perennial features that flow west.
- **Stream EB09** is just north of Lake Hills Connector, associated with Wetland EB10. It is a perennial stream that flows west and is piped under the trail within the corridor. This stream is in the vicinity of one depicted in City of Bellevue's GIS data.
- **Streams EB10 and EB11** are south of Lake Hills Connector, within the boundaries of Wetland EB11. Stream EB10 is a short segment that flows south. Stream EB11 is a longer segment that flows generally northwest. They meet and flow into the same culvert near the road right-of-way. These streams are located in the vicinity of one depicted in City of Bellevue's GIS data.
- **Stream EB12** flows west through Wetlands EB14 and EB13. City of Bellevue GIS data indicate two stream features that converge in the vicinity of this one.
- **Stream EB13** serves as the outlet to Wetland EB16. It is piped under the gravel trail and daylights again at the western edge of the study area in Wetland EB15. This stream location is consistent with the City of Bellevue's stream mapping.
- **Stream EB14** is located in and adjacent to Wetland EB17. It flows into a culvert on the east side of the trail and presumably daylights further downstream within the wetland unit, outside of the study area. Stream EB14 is in the vicinity of one depicted in City of Bellevue's GIS data.
- **Stream EB17** is a small channel that begins at the western edge of Wetland EB12 and flows west outside of the study area. City of Bellevue GIS data show a stream feature nearby.

3.1.4 Stream EB15

Stream EB15 is located in the Richards Creek drainage basin. The stream forms at a culvert outlet west of 130th Place SE. The stream and its buffer fall outside of the transmission line corridor (Attachment A, Page 27-28). It is consistent with City of Bellevue mapping. City of Bellevue data indicate this feature is a permanently flowing, non-fish bearing stream. Fish use is likely precluded by a natural downstream gradient barrier. Stream EB15 is a Type N stream.

3.1.5 Stream EB18

Stream EB18 is located in the Richards Creek drainage basin (Attachment A, Page 25). Stream flows near the study area to the west and appears to be seasonal. It flows west through Wetland EB18 then enters a culvert and discharges outside of the transmission line corridor in Wetland EB19. City of Bellevue GIS data indicate a stream at this location and classifies is as Type F. The fish access gradient barrier that was present for similar streams in the Kelsey Creek basin (except for Kelsey Creek) is no longer present at this location.

3.2 Standard Buffers

Streams are regulated by the City of Bellevue under their Land Use Code (LUC), Part 20.25H, Critical Areas Overlay District.

Stream buffers are established based upon stream type, stream condition (open or closed), and whether the parcel on which the stream is located is considered developed or undeveloped. For streams, a developed site is a site that includes a primary structure or any site where the stream and stream buffer have been included within an approved and recorded NGPE or NGPA prior to August 1, 2006 (LUC 20.25H.075.C). There are two locations where streams in the study area occur on parcels with NGPEs/NGPAs and some contain structures. Table 2 provides a summary of stream classifications, flow characteristics, approximate channel width, description of developed or undeveloped site conditions, and buffer widths.

Table 2. Summary of stream critical area classifications, key attributes, and buffer widths.

Stream Name	Type	Flow	Est. Width (feet)	Primary Structure? (Y/N |Applicable Parcel Number)		Buffer (feet)
EB01 (Kelsey Creek)	F	Perennial	15	No	undeveloped ROW	100
				Yes	NGPA- 760580TRCT	NGPA edge
				Yes	0672100140	50
				Yes	0672100139	50
				Yes	0672100135	50
				Yes	0672100120	50
EB02	N	Seasonal	5	Yes	3425059010	25
EB03	N	Seasonal	2	Yes	3425059010	25
EB04	N	Seasonal	1	Yes	3425059010	25
EB05	N	Seasonal	3	Yes	3425059010	25
EB06	N	Perennial	2	Yes	3425059287	NGPE edge
				Yes	3425059016	25
EB07	N	Perennial	2	Yes	3425059017	25
				Yes	3425059016	25
EB08	N	Seasonal	2	Yes	3425059017	25
				Yes	3425059016	25
EB09	N	Perennial	2	No	0324059009	50
				No	0324059047	50
EB10	N	Seasonal	5	No	0324059122	50
				Yes	developed ROW	25
EB11	N	Seasonal	5	Yes	2077700036	25
				Yes	developed ROW	25
				No	developed ROW	50
EB12	N	Seasonal	2	No	0324059066	50
EB13	N	Seasonal	2	No	0324059066	50
EB14	N	Seasonal	2	No	0324059066	50
EB15	N	Perennial	2	Yes	0686050100	25
				No	0686050090	50
EB16	N	Seasonal	2	Yes	3425059219	25
				Yes	3425059010	25
EB17	N	Seasonal	2	No	0324059122	50
EB18	F	Seasonal	2	Yes	0324059025	50

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Attachment A

DELINEATION MAPS

PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

▭ City Limit[KC]
Parcel Boundary[COB] - *white outline*
⊕ Existing Pole Locations [PSE]
⌜⌟ 100' Screening Limit[TWC]
◆ Delineated Wetland Boundary [TWC]
▨ Wetland
◆ Critical Area Buffer

1

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

City Limit^{KC}

Parcel Boundary^{COB} - *white outline*

100' Screening Limit^{TWC}

Approximate Wetland Boundary ^{TWC}

Delineated Wetland Boundary ^{TWC}

Wetland

Critical Area Buffer

Data Point^{TWC}

2

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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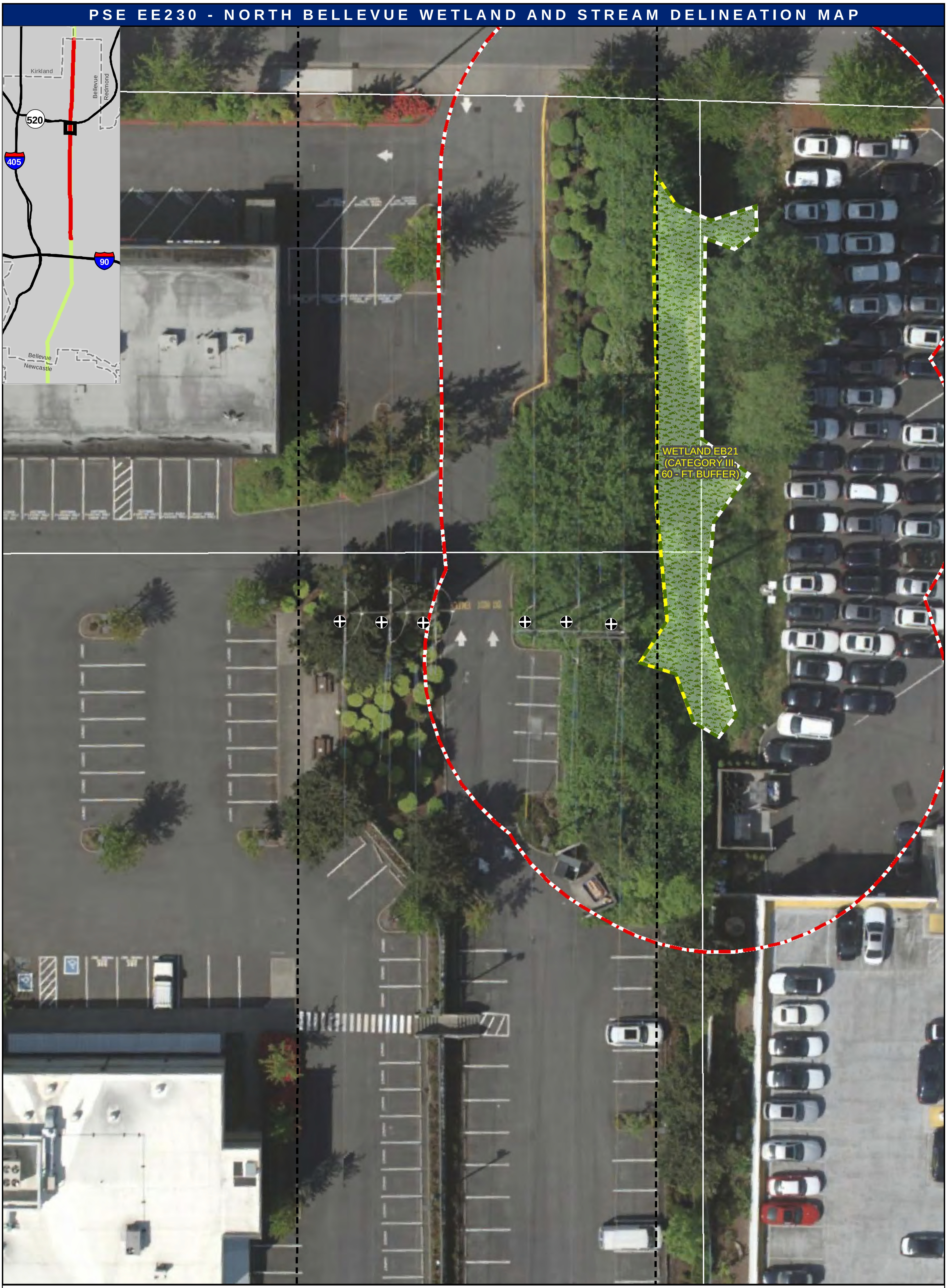
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- ▭ City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations [PSE]
- ⌜⌟ 100' Screening Limit[TWC]
- Approximate Wetland Boundary [TWC]
- Delineated Wetland Boundary [TWC]
- 🟩 Wetland
- 🟥 Critical Area Buffer

3

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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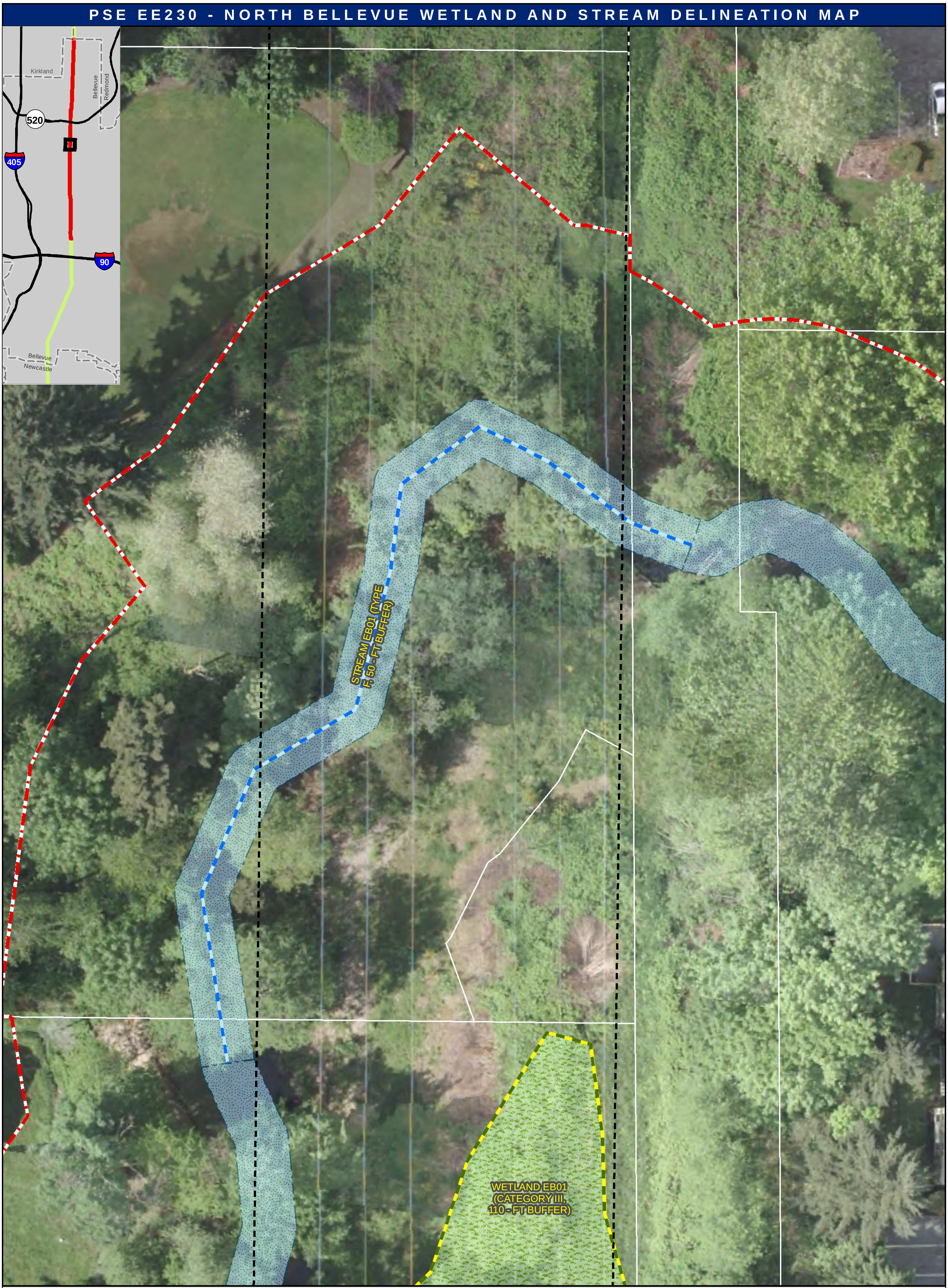
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- City Limit^{KC}
- Parcel Boundary^{COB} - *white*
- 100' Screening Limit^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Delineated Stream Centerline^{TWC}
- Stream
- Wetland
- Critical Area Buffer

4

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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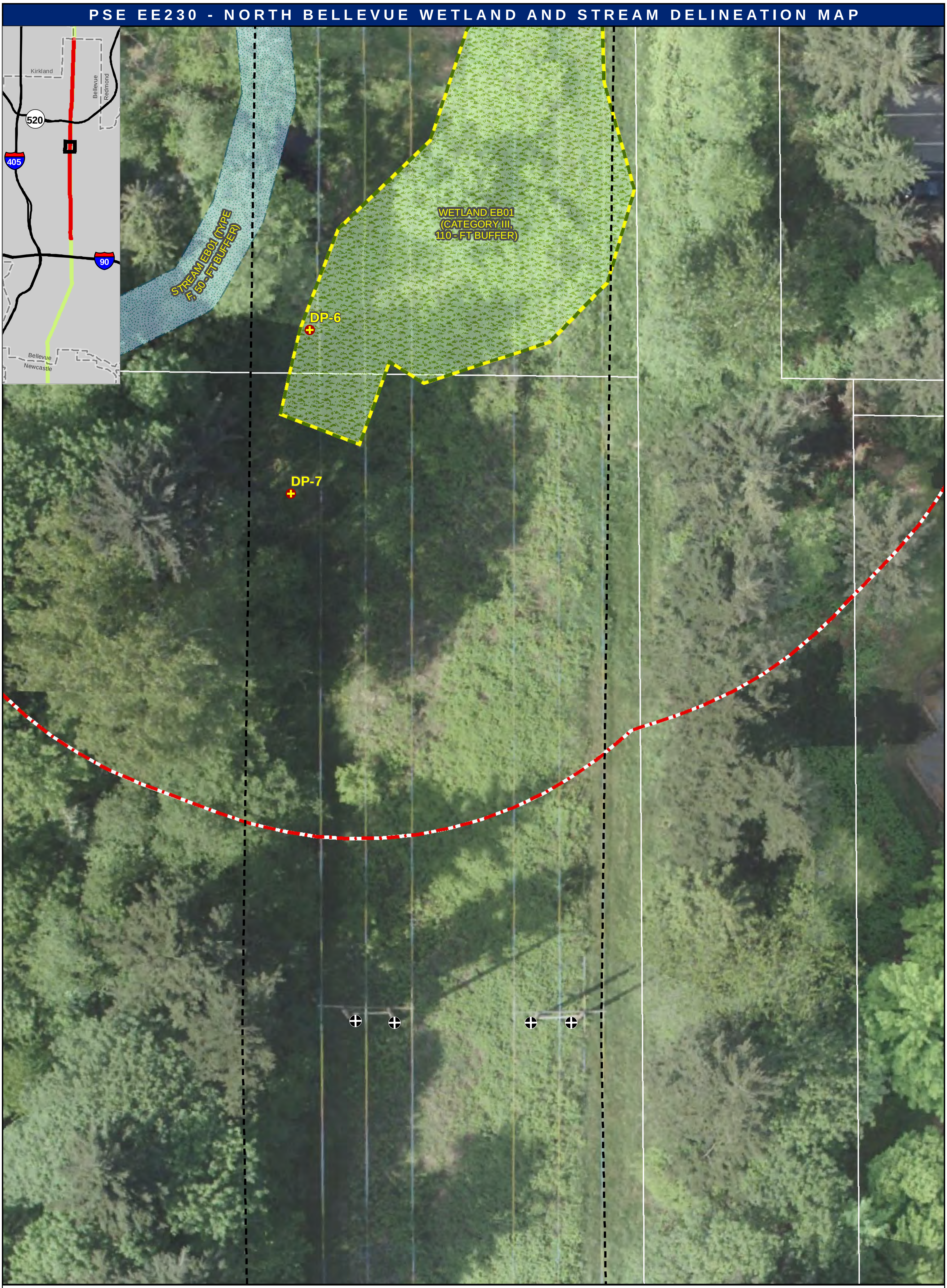
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



▭ City Limit^KC
Parcel Boundary^COB - *white outline*
⊕ Existing Pole Locations ^PSE
⌜⌟ 100' Screening Limit^TWC

◆ Delineated Wetland Boundary ^TWC

▨ Stream
▨ Wetland
▲ Critical Area Buffer
⊕ Data Point^TWC

5

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

🟪 City Limit^{KC}

Parcel Boundary^{COB} - *white outline*

⊕ Existing Pole Locations ^{PSE}

⛶ 100' Screening Limit^{TWC}

🟥 Critical Area Buffer

6

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- 100' Screening Limit^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Delineated Stream Centerline^{TWC}
- Stream
- Wetland
- Critical Area Buffer
- Data Point

8

N

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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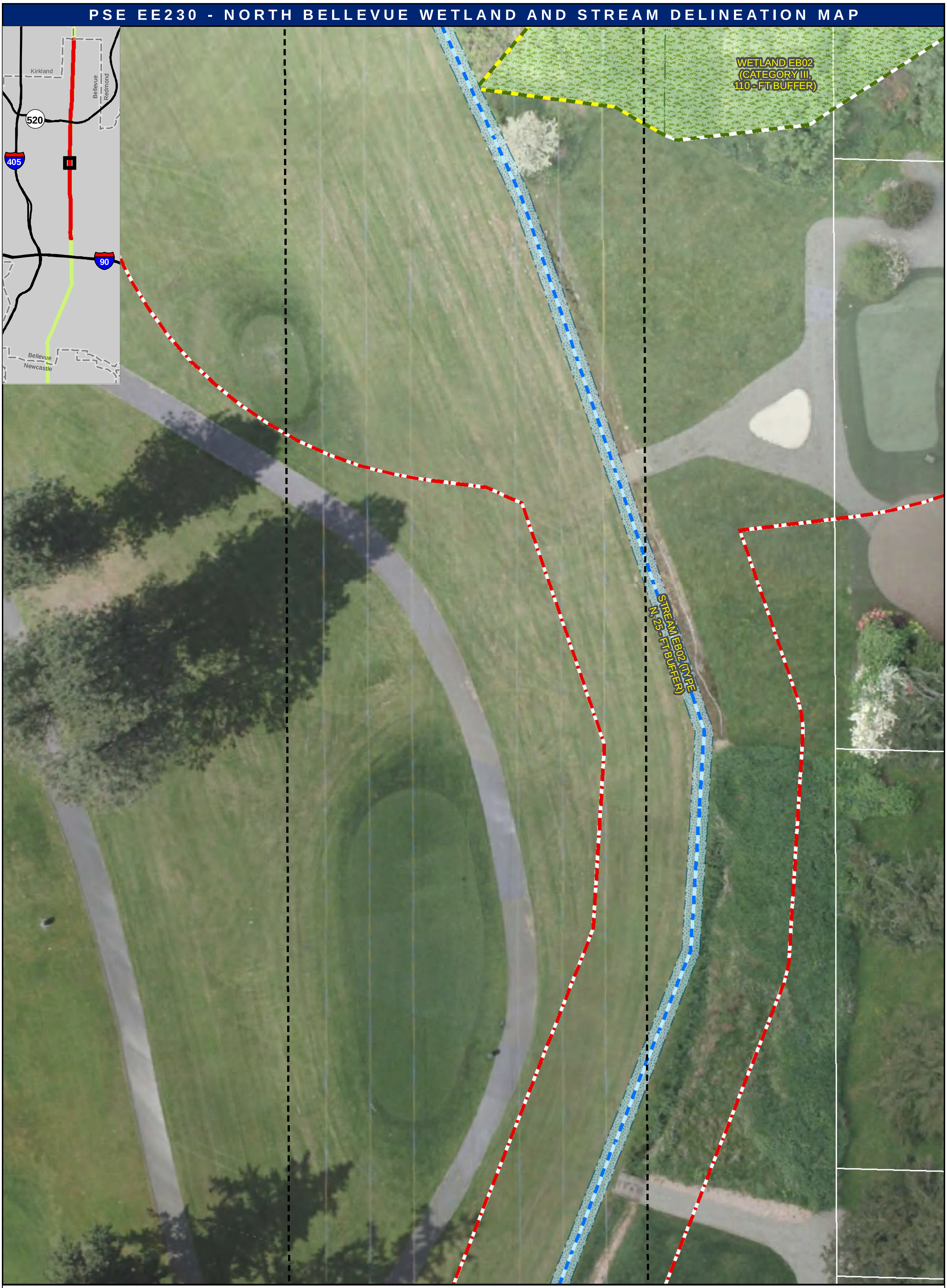

▭ City Limit^{KC}	Approximate Wetland Boundary ^{TWC}	Stream
Parcel Boundary^{COB} - *white outline*	Delineated Wetland Boundary ^{TWC}	Wetland
100' Screening Limit^{TWC}	Delineated Stream Centerline^{TWC}	Critical Area Buffer

9

N

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations [PSE]
- 100' Screening Limit[TWC]
- Delineated Stream Centerline[TWC]
- Stream
- Critical Area Buffer
- Culvert

10

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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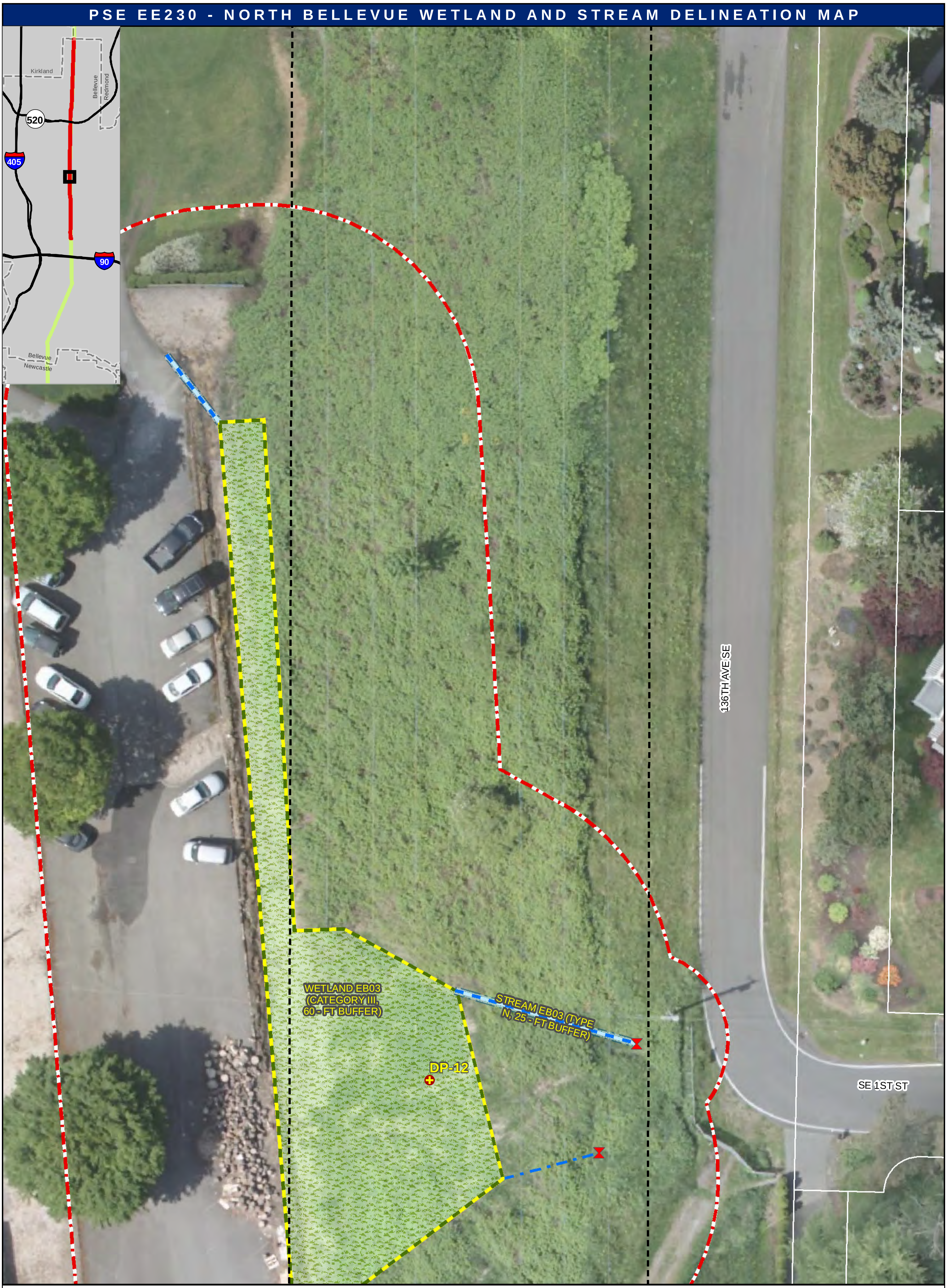

City Limit[KC]
Parcel Boundary[COB] - *white outline*
100' Screening Limit[TWC]

Delineated Wetland Boundary [TWC]
Ditch[TWC]
Delineated Stream Centerline[TWC]

Stream
Wetland
Critical Area Buffer
Data Point[TWC]
Culvert[TWC]

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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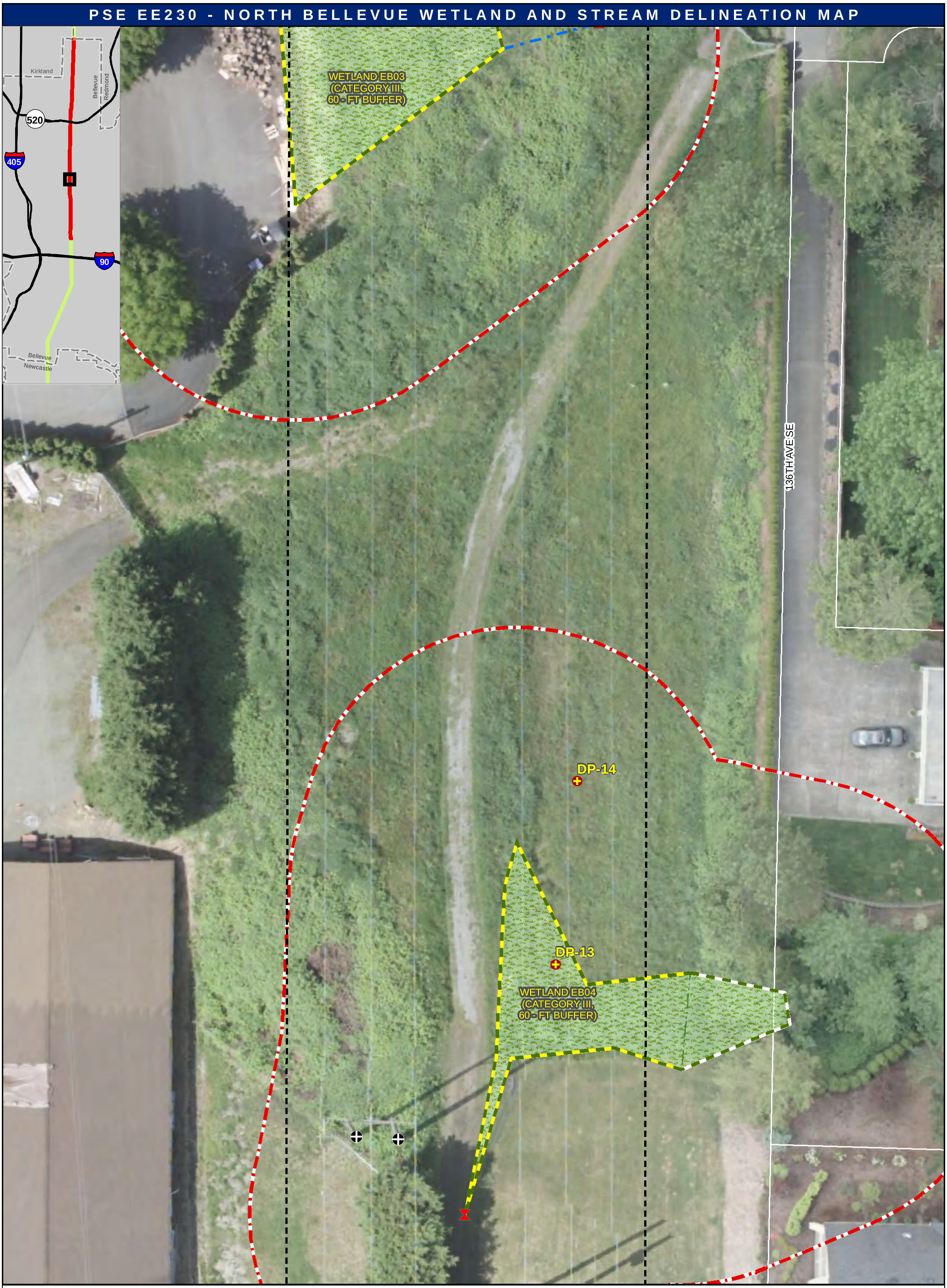
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations[PSE]
- 100' Screening Limit[TWC]
- Approximate Wetland Boundary[TWC]
- Delineated Wetland Boundary[TWC]
- Ditch[TWC]
- 🟩 Wetland
- Critical Area Buffer
- ⊕ Data Point[TWC]
- Culvert[TWC]

12

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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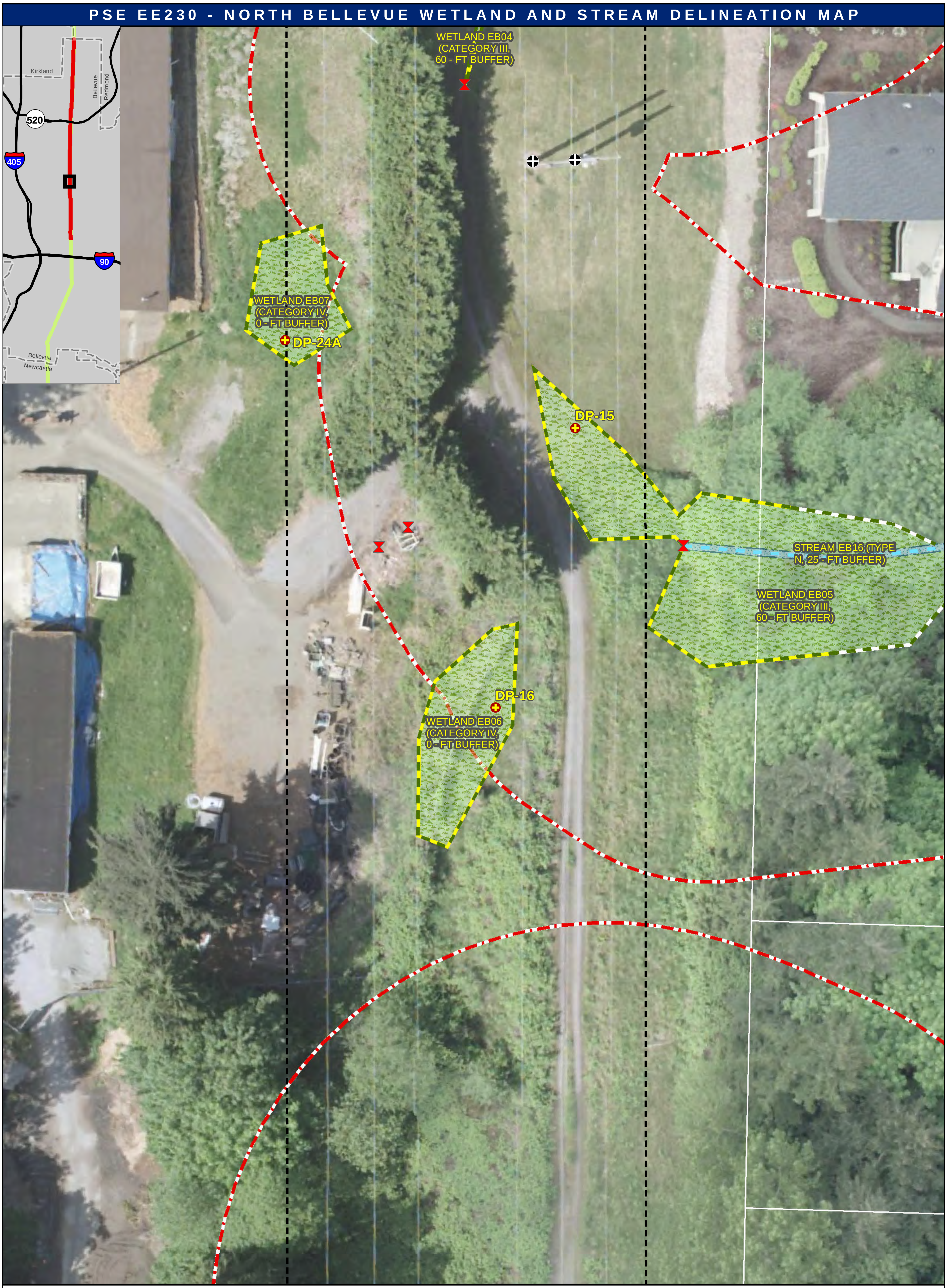
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- ▭ City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- ⌜⌟ 100' Screening Limit^{TWC}
- ◆ Approximate Wetland Boundary ^{TWC}
- ◆ Delineated Wetland Boundary ^{TWC}
- ◆ Approximate Stream^{TWC}
- ▨ Stream
- ▨ Wetland
- ▲ Critical Area Buffer
- ⊕ Data Point
- ⧗ Culvert

13

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- 100' Screening Limit[TWC]
- Delineated Wetland Boundary [TWC]
- Delineated Stream Centerline[TWC]
- Stream
- Wetland
- Critical Area Buffer
- Data Point
- Culvert

14

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations [PSE]
- ⌜⌟ 100' Screening Limit[TWC]
- Delineated Stream Centerline[TWC]
- ▨ Stream
- 🟥 Critical Area Buffer
- ⧗ Culvert

15

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

City Limit[KC]
Parcel Boundary[COB] - *white outline*
Existing Pole Locations [PSE]
100' Screening Limit[TWC]
Approximate Stream[TWC]
Stream
Critical Area Buffer
Data Point
Culvert

16

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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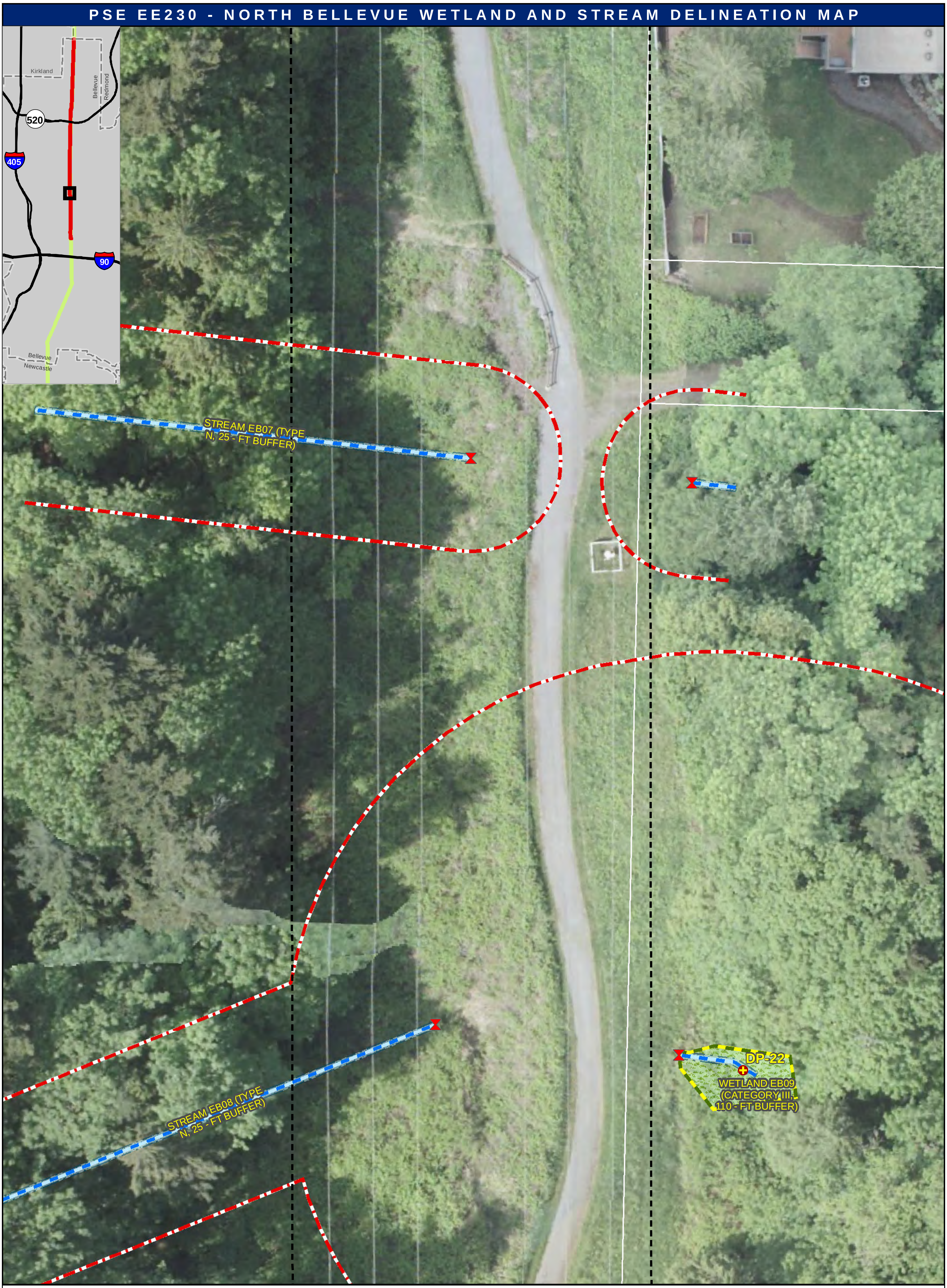

- City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- 100' Screening Limit^{TWC}
- Delineated Wetland Boundary ^{TWC}
- Delineated Stream Centerline^{TWC}
- Stream
- Wetland
- Critical Area Buffer
- ⊕ Data Point
- Culvert

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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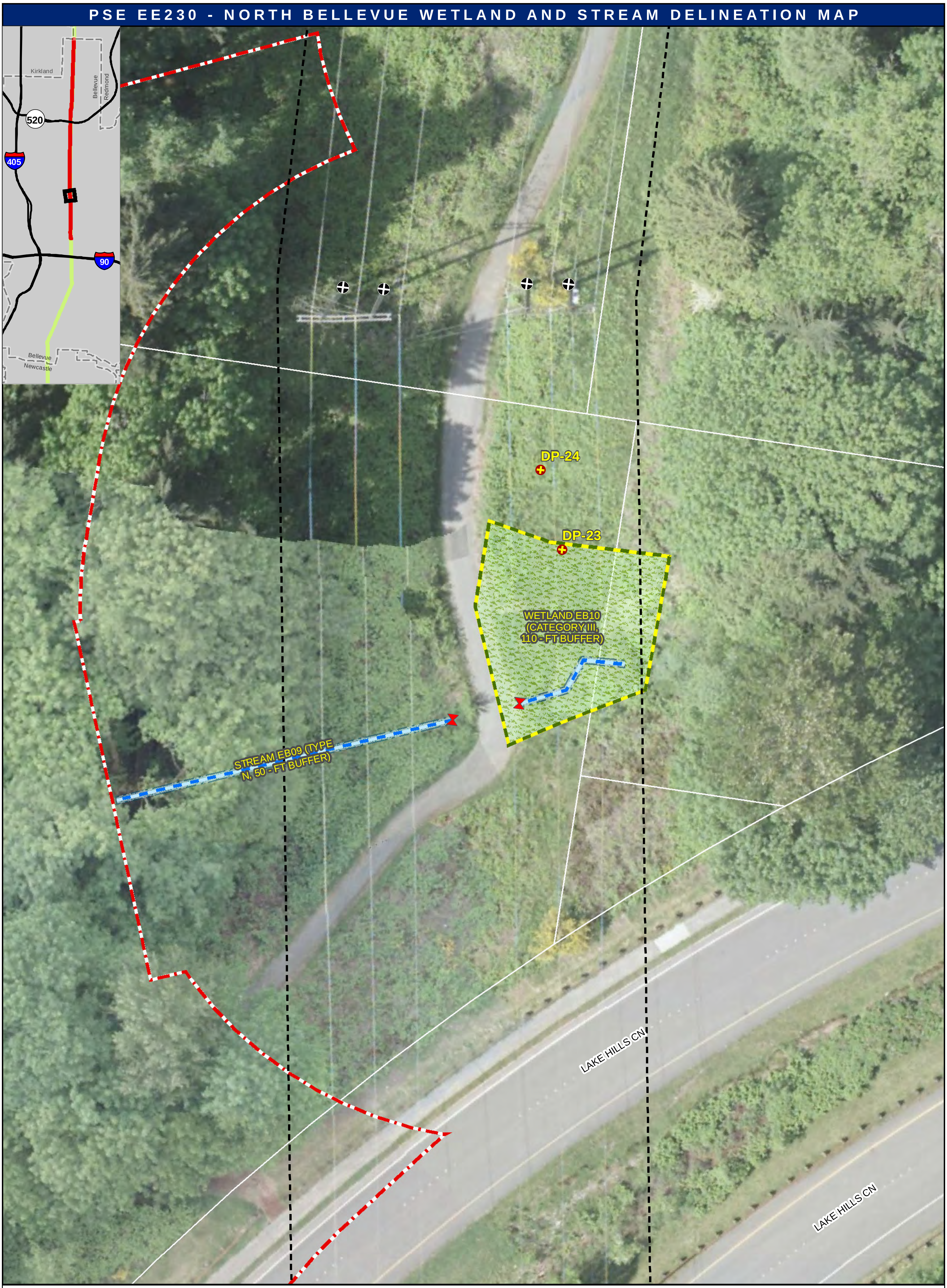
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



▭ City Limit^{KC}
Parcel Boundary^{COB} - *white outline*
⊕ Existing Pole Locations ^{PSE}
⌐ ¬ 100' Screening Limit^{TWC}

Delineated Wetland Boundary ^{TWC}
Delineated Stream Centerline^{TWC}

Stream
Wetland
Critical Area Buffer
Data Point
Culvert

18

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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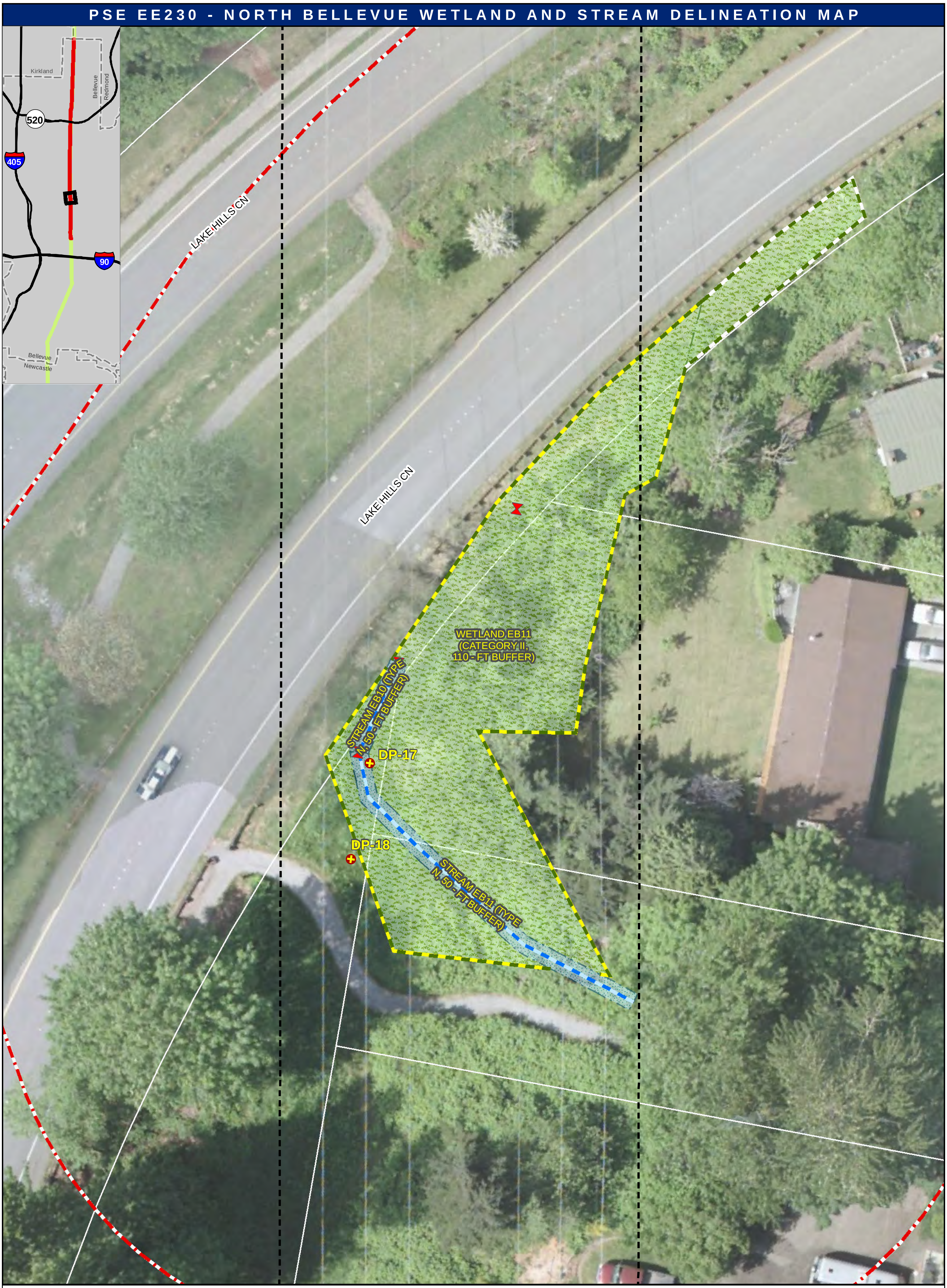
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- 100' Screening Limit[TWC]
- Approximate Wetland Boundary [TWC]
- Delineated Wetland Boundary [TWC]
- Delineated Stream Centerline[TWC]
- Stream
- Wetland
- Critical Area Buffer
- Data Point
- Culvert

19

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

City Limit[KC]	Approximate Wetland Boundary [TWC]	Stream
Parcel Boundary[COB] - *white outline*	Delineated Wetland Boundary [TWC]	Wetland
Existing Pole Locations [PSE]	Approximate Stream[TWC]	Critical Area Buffer
100' Screening Limit[TWC]		Data Point

20

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

▭ City Limit^{KC}

Parcel Boundary^{COB} - *white outline*

⊕ Existing Pole Locations ^{PSE}

⌜⌟ 100' Screening Limit^{TWC}

Approximate Wetland Boundary ^{TWC}

Delineated Wetland Boundary ^{TWC}

Delineated Stream Centerline^{TWC}

Stream

Wetland

Critical Area Buffer

⊕ Data Point^{TWC}

⧗ Culvert^{TWC}

21

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

City Limit[KC]
Parcel Boundary[COB] - *white outline*
Existing Pole Locations [PSE]
100' Screening Limit[TWC]

Approximate Wetland Boundary [TWC]
Delineated Wetland Boundary [TWC]
Delineated Stream Centerline[TWC]

Stream
Wetland
Critical Area Buffer
Data Point
Culvert

22

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- 🟪 City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- ⌐ 100' Screening Limit^{TWC}
- Approximate Wetland Boundary ^{TWC}
- Delineated Wetland Boundary ^{TWC}
- 🟩 Wetland
- 🟥 Critical Area Buffer
- ⊕ Data Point

23

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- 100' Screening Limit[TWC]
- Approximate Wetland Boundary [TWC]
- Delineated Wetland Boundary [TWC]
- Delineated Stream Centerline[TWC]
- Stream
- Wetland
- Critical Area Buffer
- Data Point[TWC]
- Culvert[TWC]

24

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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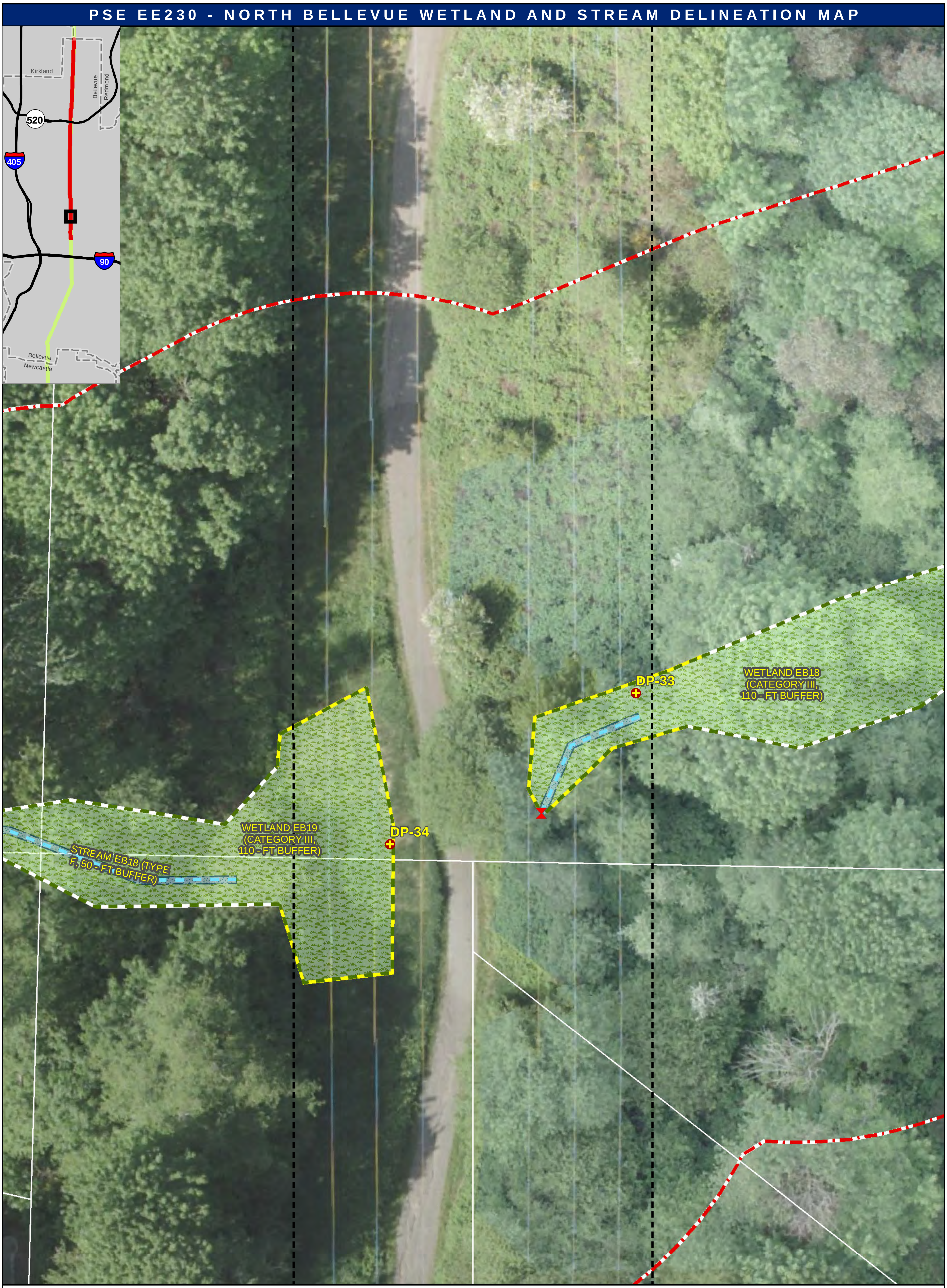
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



🟪 City Limit^{KC}

Parcel Boundary^{COB} - *white outline*

⌜⌟ 100' Screening Limit^{TWC}

Approximate Wetland Boundary ^{TWC}

Delineated Wetland Boundary ^{TWC}

Approximate Stream^{TWC}

Stream

Wetland

Critical Area Buffer

⊕ Data Point

⧗ Culvert

25

0 10 20

Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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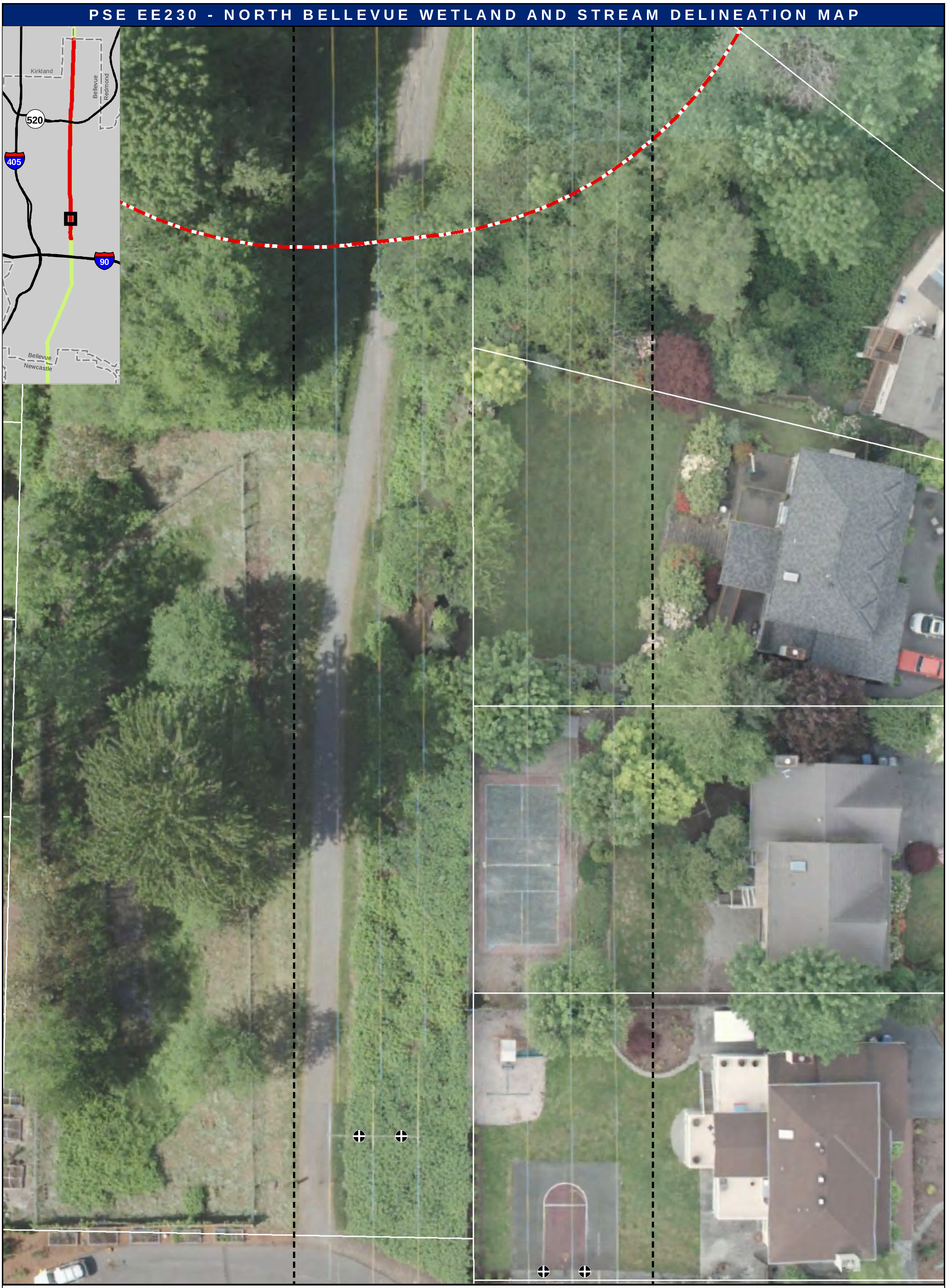
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- ⬜ City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- ⌐ 100' Screening Limit^{TWC}
- ▲ Critical Area Buffer

26

0 10 20
Feet

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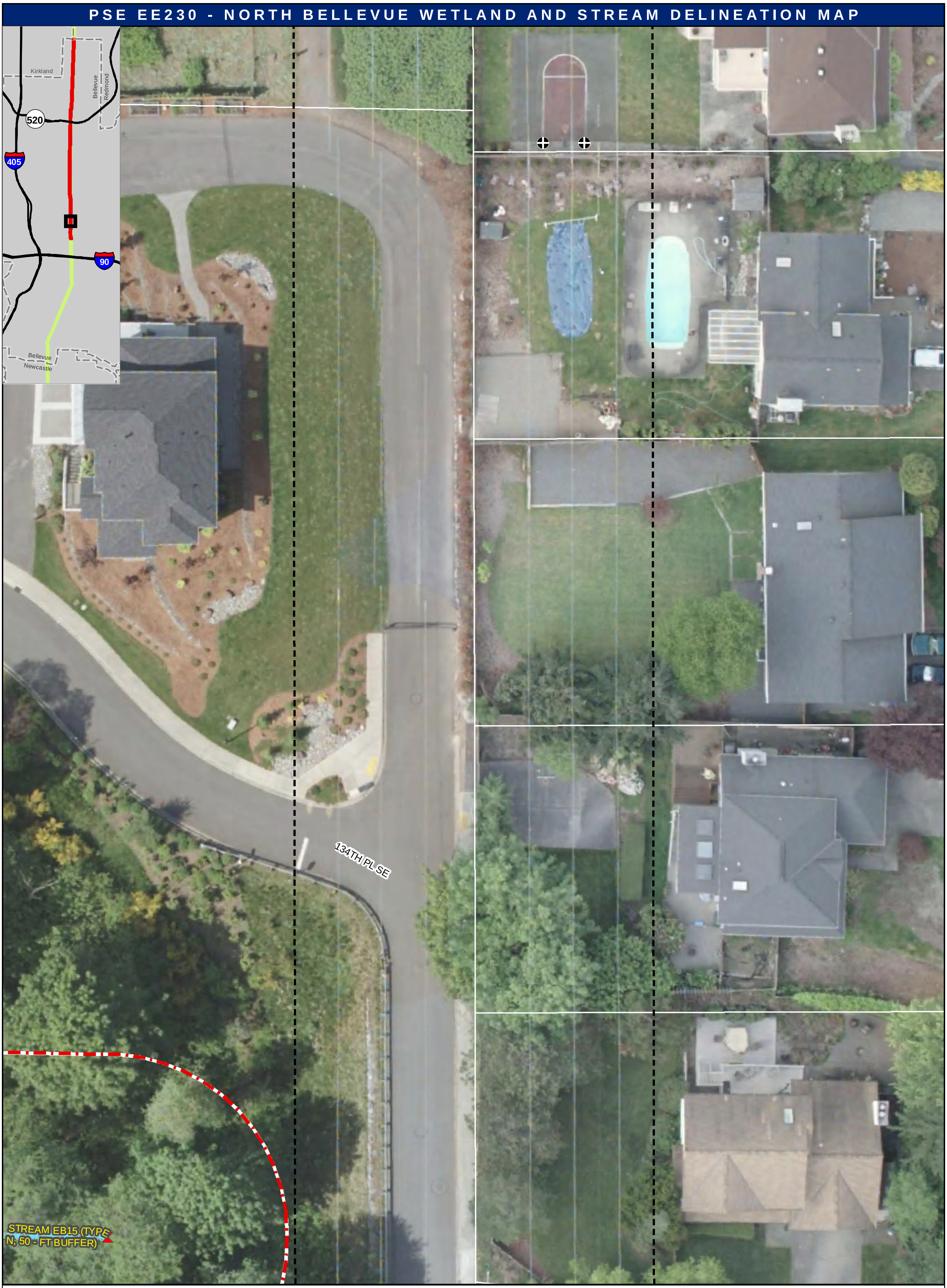
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- ▭ City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- ⌜⌟ 100' Screening Limit^{TWC}
- ◆ Approximate Stream^{TWC}
- ▨ Stream
- ▲ Critical Area Buffer
- ⧗ Culvert

27

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

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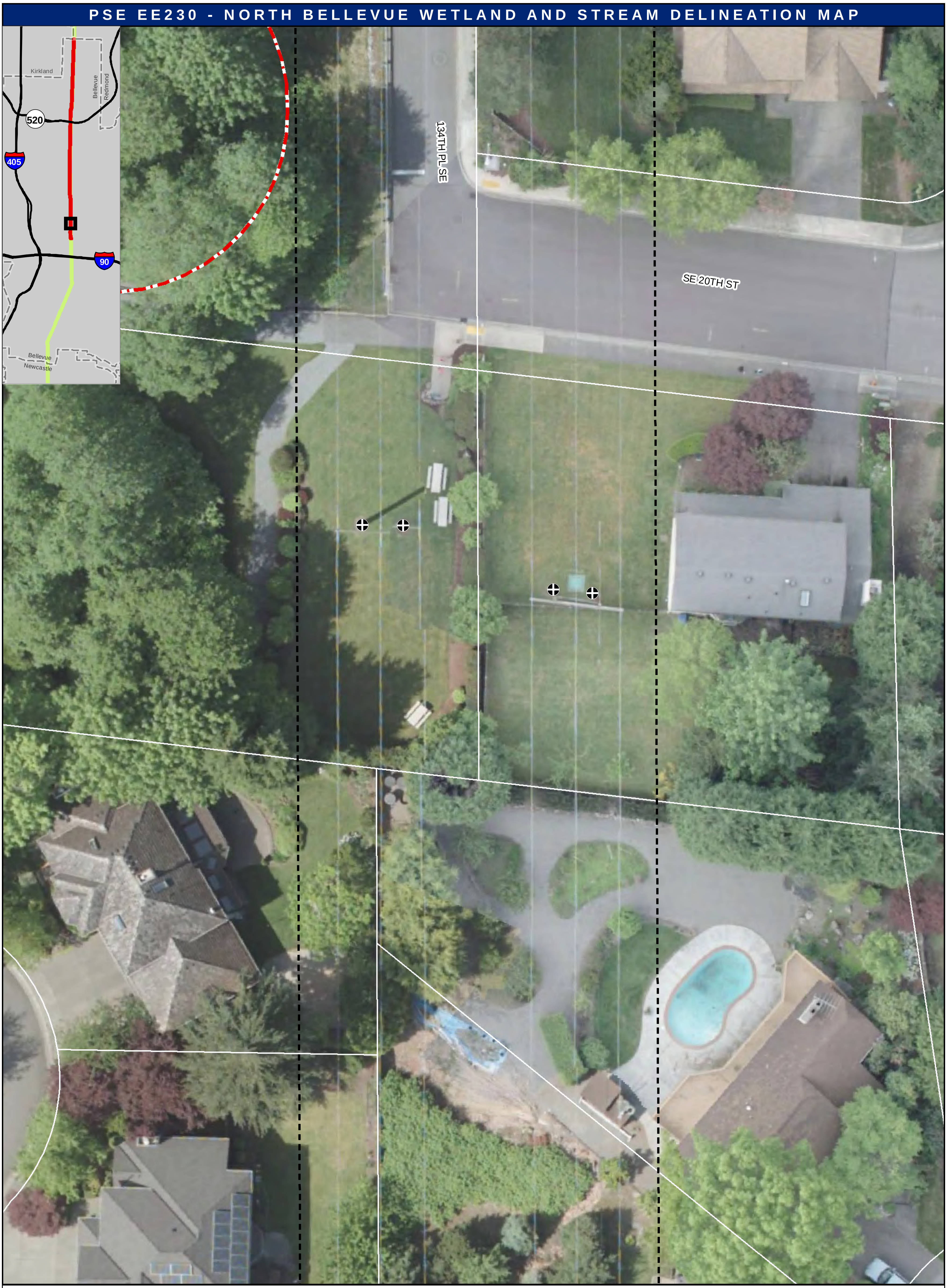
PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP



- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations [PSE]
- 100' Screening Limit[TWC]
- Approximate Stream[TWC]
- Stream
- Critical Area Buffer
- Culvert

28

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

Document Path: H:\PROJECTS\2011\11 - NOV\111103 - PSE Eastside\GIS\111103_CAInventory\MXDs\Report Maps by Jurisdiction\EE230_NorthBellevue_RelevantCorridor_20201001.mxd

PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- ▭ City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- ⊕ Existing Pole Locations [PSE]
- ⌜⌟ 100' Screening Limit[TWC]
- 🟩 Delineated Wetland Boundary [TWC]
- ▨ Wetland
- 🟥 Critical Area Buffer
- ⊕ Data Point

29

N

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

Document Path: H:\PROJECTS\2011\11 - NOV\111103 - PSE Eastside\GIS\111103_CAInventory\MXDs\Report Maps by Jurisdiction\EE230_NorthBellevue_RelevantCorridor_20201001.mxd

PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit[KC]
- Parcel Boundary[COB] - *white outline*
- Existing Pole Locations [PSE]
- 100' Screening Limit[TWC]
- Delineated Wetland Boundary [TWC]
- Wetland
- Critical Area Buffer

30

0 10 20
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

Document Path: H:\PROJECTS\2011\11 - NOV\111103 - PSE Eastside\GIS\111103_CAInventory\MXDs\Report Maps by Jurisdiction\EE230_NorthBellevue_RelevantCorridor_20201001.mxd

PSE EE230 - NORTH BELLEVUE WETLAND AND STREAM DELINEATION MAP

- City Limit^{KC}
- Parcel Boundary^{COB} - *white outline*
- ⊕ Existing Pole Locations ^{PSE}
- ⌜⌟ 100' Screening Limit^{TWC}
- Delineated Wetland Boundary ^{TWC}
- 🟩 Wetland
- Critical Area Buffer
- ⊕ Data Point^{TWC}

31

0 25 50
Feet

Data sources: Puget Sound Energy (PSE), The Watershed Company (TWC), City of Bellevue (COB), King County (KC), and Aerial imagery from PSE, 2011.

Document Path: H:\PROJECTS\2011\11 - NOV\111103 - PSE Eastside\GIS\111103_CAInventory\MXDs\Report Maps by Jurisdiction\EE230_NorthBellevue_RelevantCorridor_20201001.mxd

Attachment B

WETLAND DETERMINATION DATA FORMS

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 1

Project Site: **Overlake Farms (parcels 152505-9269 and -9247)**
Applicant/Owner: **Davis Investors and Management, LLC**
Investigator: **R. Kahlo, M. McManus**
Sect., Township, Range: S **15** T **25N** R **5E**
Landform (hillslope, terrace, etc): Riverbank
Slope (%): >5%
Subregion (LRR): **A**
Lat: **47 deg. 39’ 37” N**
Soil Map Unit Name: **Everett gravelly sandy loam, 5-15% slopes**

Sampling Date: **4/20/2010**
Sampling Point: DP- **1**
City/County: **Bellevue / King**
State: **WA**
Local relief (concave, convex, none): **concave**
Long: **122 deg. 9’ 15” W**
Datum:
NWI classification: **N/A**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic?
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is this Sampling Point within a Wetland? ☒ Yes ☐ No

Remarks: **Wetland A (Overlake Farms) in-pit. Wetland conditions were reconfirmed in adjacent areas in March 2013.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size 3m diam.)			
1. ***Rubus spectabilis***	**15**	**Y**	**FAC**
2. ***Rubus leucodermis***	**5**	**Y**	**NL**
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size 1m diam.)			
1. ***Athyrium filix-femina***	**55**	**Y**	**FAC**
2. ***Lysichiton americanum***	**10**	**N**	**OBL**
3. ***Urtica dioica***	**20**	**Y**	**FAC**
4. ***Rorippa sp.***	**5**	**N**	**NL**
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**4**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

Yes	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8”	10YR 2/1	100					Sandy loam	
8-16”	10YR 2/1	100					Sandy loam with some organic	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric soil present? Yes ☒ No ☐

Remarks: **Low chroma soil, redoximorphic features masked by organic accumulations that formed as a result of prolonged saturation, sulfidic odor**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? ☐ Yes ☒ No Depth (in):
Water Table Present? ☐ Yes ☒ No Depth (in):
Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (in): **0”**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 6

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 0672100140**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall, R. Whitson, M. Foster**
Sect., Township, Range: S **27** T **25N** R **05E**
Sampling Date: **5/29/2015**
Sampling Point: DP- **6**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **~5**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB01 in-pit. Wetland near Kelsey Creek under lines; weedy corridor area.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Scirpus microcarpus***	**60**	**Y**	**OBL**
2. ***Phalaris arundinacea***	**50**	**Y**	**FACW**
3. ***Equisetum telmateia***	**30**	**N**	**FACW**
4. ***Stachys chamissonis cooleyae***	**5**	**N**	**FACW**
5. ***Galium sp.***	**5**	**N**	**FAC***
6. ***Carex obnupta***	**5**	**N**	**OBL**
7.			
8.			
9.			
10.			
11.			
	155	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

☒ Dominance test is > 50%
☐ Prevalence test is ≤ 3.0 *
☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
☐ Wetland Non-Vascular Plants *
☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL

Sampling Point – DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-12	**10YR 3/1**	**100**					**Sandy loam**	
12-16	**2.5Y 3/1**	**95**	**10YR 3/4**	**5**	**C**	**M**	**Sandy loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☒ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ____

Depth (inches): _____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☒ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☒ No ☐ Depth (in): **7 BGS**
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **0 BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 7

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 0672100140**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall, R. Whitson, M. Foster**
Sect., Township, Range: S **27** T **25N** R **05E**
Sampling Date: **5/29/2015**
Sampling Point: DP- **7**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **3**
Local relief (concave, convex, none): **None**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☐	No	☒
Wetland Hydrology Present?	Yes	☐	No	☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Wetland EB01 out-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Rubus parviflorus***	**10**	**Y**	**FACU**
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Holcus lanatus***	**70**	**Y**	**FAC**
2. ***Other grass***	**60**	**Y**	**FAC***
3. ***Equisetum telmateia***	**20**	**N**	**FACW**
4. ***Alopecurus pratensis***	**10**	**N**	**FAC**
5. ***Athyrium cyclosorum***	**5**	**N**	**FAC**
6.			
7.			
8.			
9.			
10.			
11.			
	155	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**10**	**Y**	**FACU**
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL **Sampling Point – DP-7**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	**10YR 3/2**	**100**					**Loam**	
4-8	**10YR 4/2**	**98**	**10YR 4/6**	**2**	**C**	**M**	**Loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______________________________________
Depth (inches): ____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Compact with many roots and cobbles; difficult to dig below 8 inches.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 8

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment C, parcel number 2725059045**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **27** T **25N** R **05E**

Sampling Date: **6/1/2015**
Sampling Point: DP- **8**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **3**
Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A**
Lat:
Long:
Datum:

Soil Map Unit Name: **EvC – Everett gravelly sandy loam, 5-15% slopes.**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland CB01 in-pit. Wetland is located north of 520.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Alnus rubra***	**30**	**Y**	**FAC**
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**80**	**Y**	**FACW**
2. ***Scirpus microcarpus***	**70**	**Y**	**OBL**
3. ***Carex stipata***	**10**	**N**	**OBL**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	160	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point – DP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	**10YR 3/2**	**95**	**7.5YR 4/6**	**5**	**C**	**M**	**Sandy loam**	
6-12	**10YR 4/1**	**85**	**7.5YR 4/6**	**15**	**C**	**M, PL**	**Gravelly sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☒ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Dryer than average rainfall – 1.32 inches below average for the year to date (NOAA National Weather Service Data, generated 6/2/2015).**

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 9

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment C, parcel number 2725059045**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **27** T **25N** R **05E**

Sampling Date: **6/1/2015**
Sampling Point: DP- **9**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **10**
Local relief (concave, convex, none): **None**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **EvC – Everett gravelly sandy loam, 5-15% slopes.**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Wetland CB01 out-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Alnus rubra***	**10**	**Y**	**FAC**
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**70**	**Y**	**FAC**
2. ***Other grass***	**40**	**Y**	**FAC***
3. ***Galium sp.***	**15**	**N**	**FAC***
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**45**	**Y**	**FACU**
2.			
	45	= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL

Sampling Point – DP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**10 YR 4/2**	**100**					**Sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☐	No ☒	Depth (in):
Saturation Present? (includes capillary fringe)	Yes ☐	No ☒	Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE
WATERSHED
COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the
1987 COE Wetlands Delineation Manual

DP- 10

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site:	**Segment E, parcel number 3425059010**	Sampling Date:	**6/3/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **10**
Investigator:	**Katy Crandall, Mike Foster**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **10** Local relief (concave, convex, none): **None**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slope** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☐	No	☒
Wetland Hydrology Present?	Yes	☐	No	☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **EB02 out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**80**	**Y**	**FACW**
2. ***Agrostis stolonifera***	**35**	**Y**	**FAC**
3. ***Holcus lanatus***	**15**	**N**	**FAC**
4. ***Vicia sp.***	**15**	**N**	**FAC***
5. ***Galium sp.***	**5**	**N**	**FAC***
6. ***Cirsium arvense***	**5**	**N**	**FAC**
7. ***Carex sp.***	**Trace**	**N**	
8.			
9.			
10.			
11.			
	155 = Total Cover		
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**35**	**Y**	**FACU**
2.			
	35 = Total Cover		

% Bare Ground in Herb Stratum: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**67**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL

Sampling Point – DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**10YR 4/2**	**100**					**Sandy loam**	
5-14	**10YR 4/3**	**97**	**7.5YR 5/8**	**3**	**C**	**M**	**Gravelly sandy loam**	**Relict redox features***

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): _____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: ***Redox features are hard nodules with sharp edges**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Dry**

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 11

Project Site:	**Segment E, parcel number 3425059010**	Sampling Date:	**6/3/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **11**
Investigator:	**Katy Crandall, Mike Foster**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope**

Slope (%): **5**

Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A**

Lat:

Long:

Datum:

Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes**

NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB02 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Juncus ensifolius***	**60**	**Y**	**FACW**
2. ***Juncus tenuis***	**40**	**Y**	**FAC**
3. ***Holcus lanatus***	**20**	**N**	**FAC**
4. ***Carex stipata***	**5**	**N**	**OBL**
5. ***Ranunculus repens***	**5**	**N**	**FAC**
6. ***Equisetum telmateia***	**5**	**N**	**FACW**
7. ***Plantago major***	**5**	**N**	**FAC**
8. ***Trifolium repens***	**5**	**N**	**FAC**
9.			
10.			
11.			
	145	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**5**	**Y**	**FACU**
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**67**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-11**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**10YR 4/2**	**100**					**Sandy loam**	
5-12	**2.5Y 6/2**	**75**	**7.5YR 4/6**	**25**	**C**	**M, PL**	**Sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☐	No ☒	Depth (in):
Saturation Present? (includes capillary fringe)	Yes ☐	No ☒	Depth (in):

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 12

Project Site: **Segment E, parcel number 3425059010**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **34** T **25N** R **05E**
Sampling Date: **6/3/2015**
Sampling Point: DP- **12**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5-10**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB03; west of SE 1st street.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Solanum dulcamara***	**50**	**Y**	**FAC**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	150	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **2** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species that are OBL, FACW, or FAC: **100** (A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Rubus armeniacus*** **growing in plot from upslope**

SOIL **Sampling Point – DP-12**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**10YR 3/2**	**100**					**Sandy loam**	
10-12	**5GY 4/1**	**100**					**Sandy loam**	**Slightly higher sand content**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☒ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☒ Surface water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☒ No ☐ Depth (in): **+1/2"**
Water Table Present? Yes ☒ No ☐ Depth (in): **At surface**
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **Throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **About a half an inch of surface water flow near the test pit.**

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
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DP- 13

Project Site: **Segment E, parcel number 3425059010**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **34** T **25N** R **05E**
Sampling Date: **6/3/2015**
Sampling Point: DP- **13**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **10**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB04; depression adjacent to trail south of EB03.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Holcus lanatus***	**75**	**Y**	**FAC**
2. ***Equisetum telmateia***	**25**	**N**	**FACW**
3. ***Carex stipata***	**25**	**N**	**OBL**
4. ***Phalaris arundinacea***	**20**	**N**	**FACW**
5. ***Juncus effusus***	**20**	**N**	**FACW**
6.			
7.			
8.			
9.			
10.			
11.			
	165	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**1**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point – DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	**2.5Y 3/2**	**100**					**Sandy loam**	
2-16	**5Y 4/1**	**85**	**10YR 4/6**	**15**	**C**	**M**	**Gravelly sandy clay loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☒	No ☐	Depth (in): **15” BGS**
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in): **surface**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Standing water present in nearby depression.**

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the
1987 COE Wetlands Delineation Manual

DP- 14

Project Site: **Segment E, parcel number 3425059010**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **34** T **25N** R **05E**
Sampling Date: **6/3/2015**
Sampling Point: DP- **14**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5-10**
Local relief (concave, convex, none): **NA**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒
Hydric Soils Present? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **EB03/EB04 out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Dactylis glomerata***	**30**	**Y**	**FACU**
2. ***Holcus lanatus***	**30**	**Y**	**FAC**
3. ***Other grass***	**30**	**Y**	**FAC***
4. ***Rumex crispus***	**10**	**N**	**FAC**
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**10**	**Y**	**FACU**
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**50**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☐ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: ***Presumed FAC**

SOIL

Sampling Point – DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type^1	Loc^2	Texture	Remarks
0-8	**10 YR 3/2**	**100**					**Gravelly sandy loam**	

^{1}Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ^{2}Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils^3

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

^{3} Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Soil very compact**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 15

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site:	**Segment E, parcel number 3425059010**	Sampling Date:	**6/3/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **15**
Investigator:	**Katy Crandall, Mike Foster**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **5** Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB05 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**60**	**Y**	**FACW**
2. ***Holcus lanatus***	**60**	**Y**	**FAC**
3. ***Vicia sp.***	**5**	**N**	**FAC***
4. ***Equisetum telmateia***	**5**	**N**	**FACW**
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL

Sampling Point – DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	**2.5Y 3/2**	**100**					**Loam**	**High organic content**
9-16	**5GY 4/1**	**100**					**Gravelly sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☒ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☒ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______________________________________
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☒ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☒	No ☐	Depth (in):	**+1/2**
Water Table Present?	Yes ☒	No ☐	Depth (in):	**At surface**
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in):	**Throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Shallow standing water**

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DP- 16

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 3425059010**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Mike Foster**
Sect., Township, Range: S **34** T **25N** R **05E**
Sampling Date: **6/3/2015**
Sampling Point: DP- **16**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgC – Alderwood gravelly sandy loam, 8-15% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB06**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**90**	**Y**	**FACW**
2. ***Equisetum telmateia***	**50**	**Y**	**FACW**
3. ***Vicia sp.***	**20**	**N**	**FAC***
4. ***Cirsium arvense***	**5**	**N**	**FAC**
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	165	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed FAC**

SOIL **Sampling Point – DP-16**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**2.5Y 3/2**	**100**					**Sandy loam**	
5-14	**10GY 4/1**	**90**	**10YR 4/8**	**10**	**C**	**M, PL**	**Loamy sand**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ____

Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):

Water Table Present? Yes ☐ No ☒ Depth (in):

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **Throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Water seeping into pit at about 5 inches below ground surface and pooling in bottom of pit.**

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WETLAND DETERMINATION DATA FORM

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DP- 17

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 2077700035**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Rose Whitson, Mike Foster**
Sect., Township, Range: S **03** T **24N** R **05E**
Sampling Date: **6/5/2015**
Sampling Point: DP- **17**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB11**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Rubus spectabilis***	**15**	**Y**	**FAC**
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**85**	**Y**	**FACW**
2. ***Juncus effusus***	**20**	**N**	**FACW**
3. ***Typha latifolia***	**15**	**N**	**OBL**
4. ***Galium sp.***	**10**	**N**	**FACU**
5. ***Stachys cooleyae***	**5**	**N**	**FACW**
6. ***Athyrium cyclosorum***	**5**	**N**	**FAC**
7. ***Equisetum telmateia***	**Trace**	**N**	**FACW**
8.			
9.			
10.			
11.			
	140	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point – DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**10YR 3/2**	**90**	**7.5YR 3/4**	**10**	**C**	**M**	**Sandy loam**	
5-14	**10Y 3/1**	**93**	**5YR 3/4**	**7**	**C**	**PL**	**Coarse sandy loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ____

Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):

Water Table Present? Yes ☐ No ☒ Depth (in):

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 18

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 2077700035**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Rose Whitson, Mike Foster**
Sect., Township, Range: S **03** T **24N** R **05E**
Sampling Date: **6/5/2015**
Sampling Point: DP- **18**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **None**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒
Hydric Soils Present? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Wetland EB11 out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Various unknown grasses***	**80**	**Y**	**FAC***
2. ***Equisetum telmateia***	**15**	**N**	**FACW**
3. ***Phalaris arundinacea***	**15**	**N**	**FACW**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**20**	**Y**	**FACU**
2. ***Rubus ursinus***	**Trace**	**N**	**FACU**
	20	= Total Cover	

% Bare Ground in Herb Stratum:

Remarks: ***Presumed FAC**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**50**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☐ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL **Sampling Point – DP-18**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-9	**10YR 2/2**	**100**					**Sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): _____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Soils contain some cobbles and is compact.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **dry**

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the
1987 COE Wetlands Delineation Manual

DP- 19

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 2077700042**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Rose Whitson, Mike Foster**
Sect., Township, Range: S **03** T **24N** R **05E**

Sampling Date: **6/5/2015**
Sampling Point: DP- **19**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **<5**
Local relief (concave, convex, none): **None**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB12**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Salix scouleriana***	**100**	**Y**	**FAC**
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Rubus spectabilis***	**45**	**Y**	**FAC**
2.			
3.			
4.			
5.			
	45	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Equisetum telmateia***	**10**	**Y**	**FACW**
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**50**	**Y**	**FACU**
2. ***Solanum dulcamara***	**25**	**Y**	**FAC**
	75	= Total Cover	

% Bare Ground in Herb Stratum: 70

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **4** (A)
Total Number of Dominant Species Across All Strata: **5** (B)
Percent of Dominant Species that are OBL, FACW, or FAC: **80** (A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

☒ Dominance test is > 50%
☐ Prevalence test is ≤ 3.0 *
☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
☐ Wetland Non-Vascular Plants *
☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL **Sampling Point – DP-19**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**10YR 3/1**	**100**					**Silt loam**	
10-14	**2.5Y 3/1**	**100**					**Coarse loamy sand**	**Few cobbles**

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks: **Soils very saturated, no redox visible at the time of sampling.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☒ No ☐ Depth (in): **5 BGS**
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface soil visibly saturated due to groundwater seeps. BGS = below ground surface**

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Kirkland, Washington 98033
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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 20

Project Site:	**Segment E, parcel number 3425059016**	Sampling Date:	**6/8/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **20**
Investigator:	**Katy Crandall, Nell Lund, Clover Muters**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **5-10** Local relief (concave, convex, none): **None**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB08**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Populus balsamifera* (sapling)**	**5**	**Y**	**FAC**
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**90**	**Y**	**FACW**
2. ***Juncus effusus***	**35**	**Y**	**FACW**
3. ***Carex stipata***	**5**	**N**	**OBL**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 3m diam)			
1. ***Solanum dulcamara***	**15**	**Y**	**FAC**
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**4**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-20**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	**10YR 3/2**	**100**					**Sandy loam**	
4-12	**10GY 4/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M, PL**	**Sandy clay loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☒ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **4-12 BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 21

Project Site: **Segment E, parcel number 3425059016**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Nell Lund, Clover Muters**
Sect., Township, Range: S **34** T **25N** R **05E**

Sampling Date: **6/8/2015**
Sampling Point: DP- **21**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Terrace**
Slope (%): **~5**
Local relief (concave, convex, none): **None**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☐	No	☒
Wetland Hydrology Present?	Yes	☐	No	☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Former wetland per GeoEngineers’ 2008 delineation**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Alnus rubra***	**5**	**Y**	**FAC**
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Juncus effusus***	**75**	**Y**	**FACW**
2. ***Phalaris arundinacea***	**40**	**Y**	**FACW**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**20**	**Y**	**FACU**
2.			
	20	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-21**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**10 YR 3/2**	**100**					**Gravelly sandy clay loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______________________________________
Depth (inches): ____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Compact, cannot dig below 5” depth.**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 22

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 3425059017**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Nell Lund, Clover Muters**
Sect., Township, Range: S **34** T **25N** R **05E**

Sampling Date: **6/8/2015**
Sampling Point: DP- **22**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Depression**
Slope (%): **2**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB09 – Stream EB07 present within boundaries.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Thuja plicata***	**30**	**Y**	**FAC**
2. ***Acer macrophllyum (rooted out)***			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Rubus spectabilis***	**90**	**Y**	**FAC**
2.			
3.			
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Equisetum telmateia***	**20**	**Y**	**FACW**
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**10**	**Y**	**FACU**
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum:

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point – DP-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	**10YR 3/1**	**100**					**Gravelly sandy clay loam**	
10-16	**5GY 5/1**	**100**					**Gravelly clay loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☒ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ______________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☒ Drainage Patterns (B10)
☒ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☒ No ☐ Depth (in): **15" BGS**
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Surface water (Stream EB07) located nearby. BGS = below ground surface**

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750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 23

Project Site: **Segment E, parcel number 3425059009**
Applicant/Owner: **Puget Sound Energy**
Investigator: **Katy Crandall, Nell Lund, Clover Muters**
Sect., Township, Range: S **34** T **25N** R **05E**
Sampling Date: **6/8/2015**
Sampling Point: DP- **23**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5-10**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**
Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐
Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB10**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Scirpus microcarpus***	**25**	**Y**	**OBL**
2. ***Juncus effusus***	**25**	**Y**	**FACW**
3. ***Phalaris arundinacea***	**20**	**Y**	**FACW**
4. ***Carex stipata***	**10**	**N**	**OBL**
5. ***Athyrium cyclosorum***	**10**	**N**	**FAC**
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **3** (A)
Total Number of Dominant Species Across All Strata: **3** (B)
Percent of Dominant Species that are OBL, FACW, or FAC: **100** (A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point – DP-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	**2.5Y 3/1**	**95**	**2.5Y 3/3**	**5**	**C**	**M**	**Sandy clay loam**	
8-14	**10Y 4/1**	**70**	**7.5YR 4/6**	**30**	**C**	**M**	**Gravelly sandy clay loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ______________________________________

Depth (inches): ___________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):	
Water Table Present?	Yes ☐	No ☒	Depth (in):	
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in):	**throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 24

Project Site:	**Segment E, parcel number 3425059009**	Sampling Date:	**6/8/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **24**
Investigator:	**Katy Crandall, Nell Lund, Clover Muters**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **>10** Local relief (concave, convex, none): **None**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☐	No	☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Wetland EB10 out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Unknown grass***	**30**	**Y**	**FAC***
2. ***Equisetum telmateia***	**15**	**Y**	**FACW**
3. ***Phalaris arundinacea***	**5**	**N**	**FACW**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**5**	**Y**	**FACU**
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**67**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-24**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	**2.5Y 3/2**	**90**	**10YR 3/4**	**10**	**C**	**M**	**Sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): _____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks: **Soils compact**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 24A

Project Site:	**Segment E – parcel number 3425059010**	Sampling Date:	**6/15/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **24A**
Investigator:	**K. Crandall, R. Whitson**	City/County:	**Bellevue**
Sect., Township, Range:	S **34** T **25N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **15** Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **EwC – Everett-Alderwood gravelly sandy loams, 6-15% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB07 inpit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Scirpus microcarpus***	**10**	**N**	**OBL**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**1**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: **Herbaceous vegetation is mowed.**

SOIL

Sampling Point – DP-24A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	**2.5Y 3/1**	**100**					**Coarse loamy sand**	
18-24	**5GY 5/1**	**90**	**7.5YR 3/2**	**10**	**C**	**M**	**Gravelly loamy sand**	**Round small pea-gravel**

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ____

Depth (inches): _____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):

Water Table Present? Yes ☐ No ☒ Depth (in):

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **0 BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**
Some surface water upslope from test pit

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WETLAND DETERMINATION DATA FORM

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1987 COE Wetlands Delineation Manual

DP- 25

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E – parcel number 0324059066**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall, R. Whitson**
Sect., Township, Range: S **03** T **24N** R **05E**

Sampling Date: **6/15/2015**
Sampling Point: DP- **25**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A**
Lat:
Long:
Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic

(If no, explain in remarks.)
Below avg precipitation

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB13 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Alnus rubra***	**100**	**Y**	**FAC**
2.			
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**85**	**Y**	**FACW**
2. ***Equisetum telmateia***	**15**	**N**	**FACW**
3. ***Cardamine oligosperma***	**5**	**N**	**FAC**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-25**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	**10YR 3/2**	**100**					**Gravelly sandy loam**	
6-16	**2.5Y 3/1**	**85**	**7.5YR 3/3**	**15**	**C**	**M**	**Gravelly sandy loam**	**With large cobbles**

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☒ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☐	No ☒	Depth (in):
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Groundwater seeps in pit at 6 inches below ground surface. Iron deposits near test pit.**

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1987 COE Wetlands Delineation Manual

DP- 26

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site:	**Segment E – parcel number 0324059066**	Sampling Date:	**6/15/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **26**
Investigator:	**K. Crandall, R. Whitson**	City/County:	**Bellevue**
Sect., Township, Range:	S **03** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **5** Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 8-15% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No **Below avg precipitation**

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB14 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Alnus rubra***	**100**	**Y**	**FAC**
2.			
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Athyrium cyclosorum***	**25**	**N**	**FAC**
3. ***Urtica dioica***	**5**	**N**	**FAC**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**2**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Equisetum telmateia*** **and** ***Rubus armeniacus*** **nearby.**

SOIL **Sampling Point – DP-26**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	**10YR 3/1**	**100**					**Sandy silt loam**	**Moist**
5-18	**10YR 4/1**	**80**	**10YR 4/6**	**20**	**C**	**M, PL**	**Sandy loam**	**Medium to large sized gravel**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **5-18 BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface.**

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WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 27

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E – parcel number 1024059089**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall, R. Whitson**
Sect., Township, Range: S **10** T **24N** R **05E**

Sampling Date: **6/17/2015**
Sampling Point: DP- **27**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **NA**

Subregion (LRR): **A**
Lat:
Long:
Datum:

Soil Map Unit Name: **RdE – Ragnar-Indianola association, moderately steep**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB20 in-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Salix lasiandra***	**50**	**Y**	**FACW**
2.			
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Cirsium arvense***	**10**	**N**	**FAC**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**20**	**Y**	**FACU**
2.			
	20	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**67**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-27**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	**10YR 2/2**	**100**					**Silt loam**	
8-16	**5YR 2.5/1**	**85**	**5YR 3/4**	**15**	**C**	**M, PL**	**Silt loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): _____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Damp, not saturated.**

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WETLAND DETERMINATION DATA FORM

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DP- 28

Project Site:	**Segment E – parcel number 1024059089**	Sampling Date:	**6/17/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **28**
Investigator:	**K. Crandall, R. Whitson**	City/County:	**Bellevue**
Sect., Township, Range:	S **10** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **5** Local relief (concave, convex, none): **None**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **RdE – Ragnar-Indianola association, moderately steep** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☐	No	☒
Hydric Soils Present?	Yes	☐	No	☒
Wetland Hydrology Present?	Yes	☐	No	☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Out-pit near wetland EB20.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Dactylis glomerata***	**15**	**Y**	**FACU**
2. ***Holcus lanatus***	**15**	**Y**	**FAC**
3. ***Convolvulus sp. (bindweed)***	**15**	**Y**	**FACU***
4. ***Phalaris arundinacea***	**15**	**Y**	**FACW**
5. ***Galium aparine***	**10**	**N**	**FACU**
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**2**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**50**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☐ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: ***Presumed FACU.**

Other dead/brown unidentifiable grasses and weeds make up 50% absolute cover in herbaceous stratum.

SOIL

Sampling Point – DP-28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**10YR 2/2**	**100**					**Gravelly sandy loam**	**With cobbles**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: __Fill material______________________________________
Depth (inches): ____10” BGS_________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Compact fill layer at 10 inches below ground surface**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM

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DP- 29

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
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Project Site:	**Segment E – parcel number 0324059066**	Sampling Date:	**6/19/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **29**
Investigator:	**K. Crandall, R. Kahlo**	City/County:	**Bellevue**
Sect., Township, Range:	S **03** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **10** Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 8-15% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐		
Hydric Soils Present?	Yes ☒	No ☐	**Is the Sampling Point within a Wetland?**	Yes ☒ No ☐
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **Wetland EB15 inpit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Scirpus microcarpus***	**25**	**N**	**OBL**
3. ***Galium sp.***	**25**	**N**	**FAC***
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	150	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**1**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***Presumed**

SOIL **Sampling Point – DP-29**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	**10YR 3/2**	**100**					**Sandy loam**	
8-16	**5GY 3/1**	**90**	**7.5YR 4/4**	**10**	**C**	**M, PL**	**Loamy coarse sand**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)*
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☒ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☒	No ☐	Depth (in): **14 BGS**
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**

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WETLAND DETERMINATION DATA FORM

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DP-30

Project Site:	**Segment E – parcel number 0324059066**	Sampling Date:	**6/19/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **30**
Investigator:	**K. Crandall, R. Kahlo**	City/County:	**Bellevue**
Sect., Township, Range:	S **03** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **terrace**

Slope (%): **0**

Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A**

Lat:

Long:

Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 8-15% slopes**

NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)

Are “Normal Circumstances” present on the site? ☒ Yes ☐ No

Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?

Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB16 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Rubus spectabilis***	**25**	**Y**	**FAC**
2. ***Ribes lacustre***	**15**	**Y**	**FAC**
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**80**	**Y**	**FACW**
2. ***Pteridium aquilinum***	**10**	**N**	**FACU**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**20**	**Y**	**FACU**
2.			
	20	= Total Cover	

% Bare Ground in Herb Stratum:

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL **Sampling Point – DP-30**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	**10YR 2/2**	**100**					**Sandy loam**	
8-16	**5Y 4/1**	**100**					**Gravelly loamy sand**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☒ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☒ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present?	Yes ☐	No ☒	Depth (in):
Water Table Present?	Yes ☒	No ☐	Depth (in): **12 BGS**
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**

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WETLAND DETERMINATION DATA FORM

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DP- 31

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
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Project Site:	**Segment E – parcel number 0324059066**	Sampling Date:	**6/19/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **31**
Investigator:	**K. Crandall, R. Kahlo**	City/County:	**Bellevue**
Sect., Township, Range:	S **03** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **10** Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A** Lat: Long: Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 8-15% slopes** NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐
Hydric Soils Present?	Yes	☒	No	☐
Wetland Hydrology Present?	Yes	☒	No	☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB17 in-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**95**	**Y**	**FACW**
2. ***Galium sp.***	**15**	**N**	**FAC***
3. ***Scirpus microcarpus***	**15**	**N**	**OBL**
4. ***Typha latifolia***	**10**	**N**	**OBL**
5. ***Juncus effusus***	**5**	**N**	**FACW**
6.			
7.			
8.			
9.			
10.			
11.			
	140 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum:			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**1**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: ***presumed FAC**

SOIL

Sampling Point – DP-31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-9	**10YR 2/2**	**100**					**Loam**	
9+	**10Y 4/1**	**93**	**10YR 4/3**	**7**	**C**	**M**	**Gravelly loamy sand**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☒ Hydrogen Sulfide (A4)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ___Fill material_____________________________________
Depth (inches): ____9 inches_________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☒ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☒ No ☐ Depth (in): **9 BGS**
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **BGS = below ground surface**

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

DP- 32

Project Site: **Segment E – parcel number 0324059066**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall**
Sect., Township, Range: S **03** T **24N** R **05E**
Sampling Date: **6/19/2015**
Sampling Point: DP- **32**
City/County: **Bellevue**
State: **WA**
Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **Convex**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 8-15% slopes**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒
Hydric Soils Present? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampling Point within a Wetland? Yes ☐ No ☒

Remarks: **Out-pit near EB17**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Unknown field grass(es)***	**80**	**Y**	**FAC***
2. ***Holcus lanatus***	**20**	**N**	**FAC**
3. ***Plantago lanceolata***	**5**	**N**	**FACU**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**50**	**Y**	**FACU**
2.			
	50	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species that are OBL, FACW, or FAC: **50** (A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☐ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: ***Presumed**

SOIL

Sampling Point – DP-32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**2.5Y 3/2**	**100**					**Gravelly sandy loam**	**Very compact**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______________________________________
Depth (inches): ____________________________________

Hydric soil present? Yes ☐ No ☒

Remarks: **Compact; could not dig below 10 inches**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Dry**

THE WATERSHED COMPANY

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 33

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

Project Site: **Segment E, parcel number 0324059066**
Applicant/Owner: **Puget Sound Energy**
Investigator: **K. Crandall, R. Kahlo**
Sect., Township, Range: S **03** T **24N** R **05E**

Sampling Date: **6/24/2015**
Sampling Point: DP- **33**
City/County: **Bellevue**
State: **WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **10**
Local relief (concave, convex, none): **Concave**

Subregion (LRR): **A**
Lat:
Long:
Datum:

Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30%**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB18 in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Alnus rubra***	**75**	**Y**	**FAC**
2.			
3.			
4.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1. ***Populus balsamifera* (sapling)**	**15**	**Y**	**FAC**
2. ***Alnus rubra* (sapling)**	**10**	**Y**	**FAC**
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Athyrium cyclosorum***	**5**	**Y**	**FAC**
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
Woody Vine Stratum (Plot size:)			
1. ***Rubus armeniacus***	**50**	**Y**	**FACU**
2. ***Solanum dulcamara***	**80**	**Y**	**FAC**
	130	= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**5**	(A)
Total Number of Dominant Species Across All Strata:	**6**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**83**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

- ☒ Dominance test is > 50%
- ☐ Prevalence test is ≤ 3.0 *
- ☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants *
- ☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point – DP-33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	**7.5YR 2/1**	**100**					**Loam**	
7-11	**2.5Y 3/2**	**95**	**10YR 4/6**	**5**	**C**	**M**	**Gravelly sandy clay loam**	
11-16	**2.5Y 3/2**	**80**	**7.5YR3/4**	**20**	**C**	**M**	**Gravelly sandy clay loam**	**With more gravel than previous layer**

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ____
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☒ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☒ No ☐ Depth (in): **0.5 AGS***
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **throughout**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **AGS = Above ground surface**

***Appears to be coming from shallow groundwater seeps.**

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM
Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 34

Project Site:	**Segment E, parcel number 0324059066**	Sampling Date:	**6/24/2015**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **34**
Investigator:	**K. Crandall, R. Kahlo**	City/County:	**Bellevue**
Sect., Township, Range:	S **03** T **24N** R **05E**	State:	**WA**

Landform (hillslope, terrace, etc): **Hillslope**
Slope (%): **5**
Local relief (concave, convex, none): **Concave**
Subregion (LRR): **A**
Lat:
Long:
Datum:
Soil Map Unit Name: **AgD – Alderwood gravelly sandy loam, 15-30%**
NWI classification: **NA**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation☐, Soil ☐, or Hydrology ☐ naturally problematic
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampling Point within a Wetland? Yes ☒ No ☐

Remarks: **Wetland EB19 in-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m diam.)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**1**	(A)
Total Number of Dominant Species Across All Strata:	**1**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

☒ Dominance test is > 50%
☐ Prevalence test is ≤ 3.0 *
☐ Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
☐ Wetland Non-Vascular Plants *
☐ Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point – DP-34**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-4	**10YR 2/2**	**100**					**Gravelly sandy loam**	
4-9	**2.5Y 3/2**	**85**	**7.5YR 3/3**	**15**	**C**	**M**	**Loam**	
9-14	**2.5Y 3/2**	**75**	**5YR 3/4**	**25**	**C**	**M**	**Gravelly sandy loam**	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______________________________________
Depth (inches): ____________________________________

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (in):
Water Table Present? Yes ☐ No ☒ Depth (in):
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (in): **0-9 BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 1E

Project Site:	**PSE Lakeside**	Sampling Date:	**5/2/2014**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **1E**
Investigator:	**N. Lund, K. Crandall**	City/County:	**Bellevue**
Sect., Township, Range	S **10** T **24N** R **05E**	State:	**WA**
Landform (hillslope, terrace, etc)	**Hillslope** Slope (%) **2-5**	Local relief (concave, convex, none)	**Slightly concave**
Subregion (LRR)	**A** Lat	Long	Datum
Soil Map Unit Name	**Ur – Urban Land**	NWI classification	**N/A**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is this Sampling Point within a Wetland? ☒ Yes ☐ No

Remarks: **Wetland E in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Pinus contorta (rooted upslope)***	**5**	**Y**	**FAC**
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size 3m diam.)			
1. ***Salix sitchensis***	**2**	**Y**	**FACW**
2. ***Salix lucida***	**2**	**Y**	**FACW**
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size 1m diam.)			
1. ***Poa sp.***	**80**	**Y**	**FAC***
2. ***Holcus lanatus***	**25**	**N**	**FAC**
3. ***Juncus effuses***	**10**	**N**	**FACW**
4. ***Equisetum arvense***	**5**	**N**	**FAC**
5. ***Ranunculus repens***	**5**	**N**	**FAC**
6. ***Trifolium repens***	**5**	**N**	**FAC**
7. ***Carex sp.***	**1**	**N**	**--**
8.			
9.			
10.			
11.			
	131	= Total Cover	
Woody Vine Stratum (Plot size)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum			

Remarks: ***Presumed FAC**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**4**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

X	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL **Sampling Point – DP-1E**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	**10 YR 3/1**	**95**	**7.5 YR ¾**	**5**	**C**	**PL**	**Sandy loam**	
4-12	**10 YR 3/1**	**80**	**7.5 YR 3//4**	**20**	**C**	**PL**	**Gravelly sandy loam with cobbles**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? ☐ Yes ☒ No Depth (in):
Water Table Present? ☐ Yes ☒ No Depth (in):
Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (in): **7" BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 2E

Project Site: **PSE Lakeside**
Applicant/Owner: **Puget Sound Energy**
Investigator: **N. Lund, K. Crandall**
Sect., Township, Range: S **10** T **24N** R **05E**
Landform (hillslope, terrace, etc): **Hillslope** Slope (%): **5-10**
Subregion (LRR): **A** Lat: Long: Datum:
Soil Map Unit Name: **Ur – Urban Land**
Sampling Date: **5/2/2014**
Sampling Point: DP- **2E**
City/County: **Bellevue**
State: **WA**
Local relief (concave, convex, none): **None**
NWI classification: **N/A**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No

Is this Sampling Point within a Wetland? ☐ Yes ☒ No

Remarks: **Wetland E out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Pinus contorta***	**5**	**Y**	**FAC**
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size 3m diam.)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size 1m diam.)			
1. ***Meadow grass***	**80**	**Y**	**FAC***
2. ***Trifolium repens***	**70**	**Y**	**FAC**
3. ***Taraxacum officinale***	**30**	**N**	**FACU**
4. ***Ranunculus repens***	**20**	**N**	**FAC**
5. ***Holcus lanatus***	**5**	**N**	**FAC**
6. ***Vicia sp.***	**5**	**N**	**--**
7. ***Equisetum arvense***	**5**	**N**	**FAC**
8.			
9.			
10.			
11.			
	= Total Cover		

Woody Vine Stratum (Plot size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**3**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**100**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

X	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: *Presumed FAC

SOIL **Sampling Point – DP-2E**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	**10 YR 2/2**	**100**					**Gravelly sandy loam**	
10-12	**10 YR 2/2**	**70**					**Gravelly sandy loam with cobbles**	**Mixed matrix**
	7.5 YR 3/4	**30**						**Mixed matrix**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) **(except MLRA** 1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric soil present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

☐ Surface water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? ☐ Yes ☒ No Depth (in):
Water Table Present? ☐ Yes ☒ No Depth (in):
Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Damp, not saturated.**

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750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 4

Project Site:	**PSE Lakeside**	Sampling Date:	**5/2/2014**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **4**
Investigator:	**N. Lund, K. Crandall**	City/County:	**Bellevue**
Sect., Township, Range	S **10** T **24N** R **05E**	State:	**WA**
Landform (hillslope, terrace, etc)	**Hillslope** Slope (%) **<5**	Local relief (concave, convex, none)	**Concave**
Subregion (LRR)	**A** Lat	Long	Datum
Soil Map Unit Name	**Ur – Urban Land**	NWI classification	**N/A**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☒ Yes	☐ No
Hydric Soils Present?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No

Is this Sampling Point within a Wetland? ☒ Yes ☐ No

Remarks: **Wetland I in-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Salix babylonica***	**55**	**Y**	**FACW**
2. ***Pinus contorta***	**10**	**Y**	**FAC**
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size 3m diam.)			
1. ***Alnus rubra (sapling)***	**3**	**Y**	**FAC**
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size 1m diam.)			
1. ***Meadow grass***	**99**	**Y**	**FAC**
2. ***Equisetum arvense***	**3**	**N**	**FAC**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size)			
1. ***Rubus armeniacus***	**20**	**Y**	**FACU**
2.			
		= Total Cover	
% Bare Ground in Herb Stratum			

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**4**	(A)
Total Number of Dominant Species Across All Strata:	**5**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**80**	(A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

X	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point – DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10 YR 3/1**	**100**					**Gravelly sandy clay loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☒ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ______________________________

Depth (inches): ______________________________

Hydric soil present? Yes ☒ No ☐

Remarks: **Organics masking redox**

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? ☐ Yes ☒ No Depth (in):

Water Table Present? ☒ Yes ☐ No Depth (in): **9” BGS**

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (in): **0” BGS**

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 5

Project Site:	**PSE Lakeside**	Sampling Date:	**5/2/2014**
Applicant/Owner:	**Puget Sound Energy**	Sampling Point:	DP- **5**
Investigator:	**N. Lund, K. Crandall**	City/County:	**Bellevue**
Sect., Township, Range	S **10** T **24N** R **05E**	State:	**WA**
Landform (hillslope, terrace, etc)	**Hillslope** Slope (%) **>10**	Local relief (concave, convex, none)	**None**
Subregion (LRR)	**A** Lat	Long	Datum
Soil Map Unit Name	**Ur – Urban Land**	NWI classification	**N/A**

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are “Normal Circumstances” present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☒ Yes	☐ No
Hydric Soils Present?	☐ Yes	☒ No
Wetland Hydrology Present?	☐ Yes	☒ No

Is this Sampling Point within a Wetland? ☐ Yes ☒ No

Remarks: **Wetland I out-pit**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Pinus contorta***	**40**	**Y**	**FAC**
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size 3m diam.)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size 1m diam.)			
1. ***Meadow grass***	**60**	**Y**	**FAC***
2. ***Phalaris arundinacea***	**45**	**Y**	**FACW**
3. ***Equisetum arvense***	**15**	**N**	**FAC**
4. ***Solanum dulcamara***	**5**	**N**	**FAC**
5. ***Taracacum officinale***	**5**	**N**	**FACU**
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover			
Woody Vine Stratum (Plot size)			
1. ***Rubus armeniacus***	**15**	**Y**	**FACU**
2.			
= Total Cover			
% Bare Ground in Herb Stratum			

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	**3**	(A)
Total Number of Dominant Species Across All Strata:	**4**	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	**75**	(A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

X	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: *Presumed FAC

SOIL

Sampling Point – DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	**7.5 YR 3/2**	**100**					**Sandy loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric soil present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations

Surface Water Present? ☐ Yes ☒ No Depth (in):
Water Table Present? ☐ Yes ☒ No Depth (in):
Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Damp, not saturated**

Attachment C

UPDATED WETLAND RATING FORMS AND FIGURES

PSE Energize Eastside Project – North Bellevue

WETLAND RATING FORMS

September 2020

List of Rating Forms (hyperlinks):

Rating Form Notes and Assumptions

The following special notes and assumptions have been relied upon for classifying all wetlands in the North Bellevue portion of the PSE Energize Eastside Project area corridor to consistently rate wetland units.

General:

- Rating forms should be reviewed in conjunction with the associated wetland rating figures (separate document).
- Where only part of a wetland unit was delineated, off-site portions have been estimated to the extent feasible using best professional judgement. Off-site areas have not been field-assessed.
- Figures for 303(d) list, TMDL, and habitat have been consolidated to the extent feasible.
- No wetlands included in this document met criteria for categorization based on special characteristics. Rather than including redundant rating form pages for each wetland rated, the 'categorization based on special characteristics' section of the rating form has been included only once at the end of this document. It applies to all wetlands rated.

Rating Form Questions S1.3 and S4.1:

- In regard to "uncut" vegetation, it is presumed that emergent vegetation in the utility corridor is mowed on an approximately annual basis in the dryer summer months and that vegetation has re-grown and reached a height of greater than six inches when the wetter, early growing season arrives. This is consistent with field observations.

Rating Form Question S2.1:

- The north-south gravel trail located both north and south of Lake Hills Connector is not considered pollutant-generating.
- The PSE utility corridor is not considered pollutant-generating.

Rating Form Question S3.1:

- Per Ecology guidance, "within 1 mile" is to be measured as the crow flies.

Rating Form Question S6.1:

- Per Ecology guidance, the term "sub-basin" refers to hydrologic cataloging units (12-digit HUC), which is different from the Bellevue-defined sub-basins. The North Bellevue wetlands are in the Lake Washington-Sammamish River sub-basin (HUC: 171100120400). All wetlands were awarded 2 points for "the sub-basin immediately down-gradient of the site has flooding problems that result in damage to human or natural resource (e.g., houses or salmon redds)." This determination is based on Bellevue's *2012 Storm and Surface Water System Plan* that documents structural flooding and salmonid use in the Lake Washington-Sammamish River sub-basin.

Rating Form Question D2.1, D5.1, S2.2

- D2.1 and D5.1 ask if the wetland receives stormwater discharges. The rating form guidance document states “Stormwater may come into the unit by way of a stream or ditch as well as a pipe.” Therefore, when depressional wetlands include a stream channel that drains urban areas (all instances), these questions were answered “yes.”
- Similarly, question S2.2 asks if there are other of pollutants coming into the wetland that are not listed in question S2.1 (which focuses on land uses within 150 feet of the wetland unit). When slope wetlands include a stream channel that drains urban areas (all instances), this question was answered “yes.”

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 3/29/2013

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

1. Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☐ **Category III** – Total score = 16 - 19
☒ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	[✓ H] M L	H [✓ M] L	H M [✓ L]	
Value	H M [✓ L]	[✓ H] M L	H M [✓ L]	**TOTAL**
Score Based on Ratings	5	6	4	15

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	A-1
Hydroperiods	D 1.4, H 1.2	A-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	A-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	A-2
Map of the contributing basin	D 4.3, D 5.3	A-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☒	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☐ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☒ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	5

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☐ Yes = 1 ☒ No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?* ☒ Yes = 1 ☐ No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source: grazing in/adjacent to wetland ☒ Yes = 1 ☐ No = 0	1
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ☒ **3 or 4 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	0

Rating of Value If score is**:** ☐ **2-4 = H** ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

*Three properties to west on septic based on KC assessor (Sewer/septic = PRIVATE)

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☒ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☐ Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☐ The area of the basin is 10 to 100 times the area of the unit points = 3 ☒ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	5

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☐ Yes = 1 ☒ No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☒ Yes = 1 ☐ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4	
☐ Emergent	3 structures: points = 2	
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1	2
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3	
☒ Seasonally flooded or inundated	3 types present: points = 2	
☐ Occasionally flooded or inundated	2 types present: points = 1	1
☒ Saturated only	1 type present: points = 0	
☐ Permanently flowing stream or river in, or adjacent to, the wetland		
☐ Seasonally flowing stream in, or adjacent to, the wetland		
☐ **Lake Fringe wetland**	**2 points**	
☐ **Freshwater tidal wetland**	**2 points**	

H 1.3. Richness of plant species

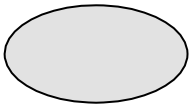
Count the number of plant species in the wetland that cover at least 10 ft^2.

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

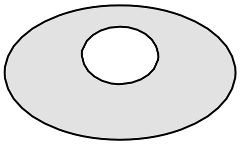
If you counted:	☐ > 19 species	points = 2	
	☒ 5 - 19 species	points = 1	1
	☐ < 5 species	points = 0	

H 1.4. Interspersion of habitats

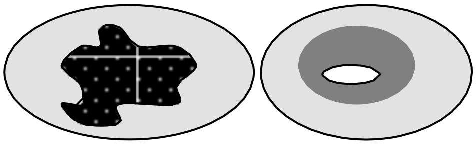
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points



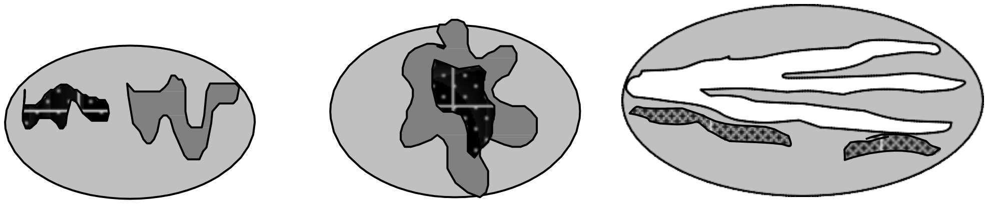
☐ **Low** = 1 point



☒ **Moderate** = 2 points

2

All three diagrams in this row are
☐ **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	9

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☒ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☐ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☒ Site does not meet any of the criteria above points = 0	0

Rating of Value If score is: ☐ **2 = H** ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland CB01 Date of site visit: 6/1/2015, 3/2018, 5/26/2020

Rated by: K. Crandall, N. Lund Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☒ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	6	6	5	17

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	CB01-1
Hydroperiods	H 1.2	CB01-3
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	CB01-2
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	CB01-2
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	CB01-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	CB01-4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

9. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

10. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

11. Does the entire wetland unit **meet all** of the following criteria?
☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

12. Does the entire wetland unit **meet all** of the following criteria?
☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

13. Does the entire wetland unit **meet all** of the following criteria?
☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

14. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

15. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

16. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☒ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	1
Total for S 1 Add the points in the boxes above	1

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: homeless encampment debris ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

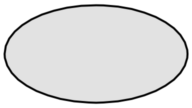
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

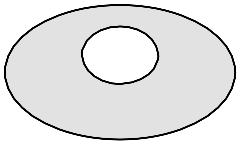
1

H 1.4. Interspersion of habitats

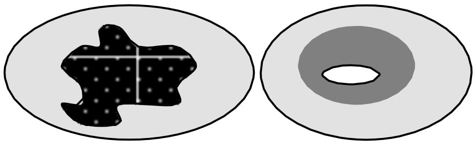
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



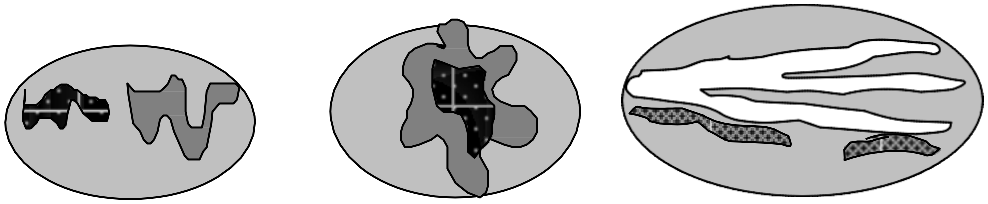
☐ **None** = 0 points



☐ **Low** = 1 point



☐ **Moderate** = 2 points



All three diagrams in this row are ☒ **HIGH** = 3points

3

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

- ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).
- ☒ Standing snags (dbh > 4 in) within the wetland
- ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*
- ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*
- ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

2

Total for H 1 — Add the points in the boxes above — 8

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat: **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

- ☐ > 1/3 (33.3%) of 1 km Polygon — points = 3
- ☐ 20-33% of 1 km Polygon — points = 2
- ☐ 10-19% of 1 km Polygon — points = 1
- ☒ < 10% of 1 km Polygon — points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat: **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

- ☐ Undisturbed habitat > 50% of Polygon — points = 3
- ☐ Undisturbed habitat 10-50% and in 1-3 patches — points = 2
- ☐ Undisturbed habitat 10-50% and > 3 patches — points = 1
- ☒ Undisturbed habitat < 10% of 1 km Polygon — points = 0

0

H 2.3. Land use intensity in 1 km Polygon: If

- ☒ > 50% of 1 km Polygon is high intensity land use — points = (- 2)
- ☐ ≤ 50% of 1 km Polygon is high intensity — points = 0

-2

Total for H 2 — Add the points in the boxes above — -2

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: — points = 2

- ☐ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m — points = 1

☐ Site does not meet any of the criteria above — points = 0

1

Rating of Value If score is: ☐**2 = H** ☒**1 = M** ☐**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB01 Date of site visit: 5/29/2015, 5/26/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	5	6	6	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	**To answer questions:**	**Figure #**
Cowardin plant classes	H 1.1, H 1.4	EB01-1
Hydroperiods	H 1.2	EB01-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB01-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB01-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB01-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

17. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

18. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

19. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

20. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

21. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

22. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

23. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

24. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:_________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8_8 in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed
☒ Emergent
☒ Scrub-shrub (areas where shrubs have > 30% cover)
☐ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated
☐ Seasonally flooded or inundated
☒ Occasionally flooded or inundated
☒ Saturated only
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** **2 points**
☐ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

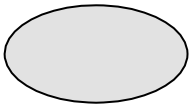
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: ☐ > 19 species points = 2
☒ 5 - 19 species points = 1
☐ < 5 species points = 0

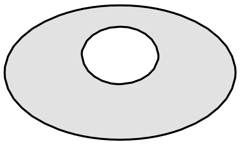
1

H 1.4. Interspersion of habitats

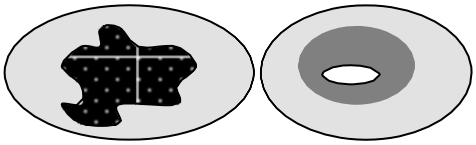
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

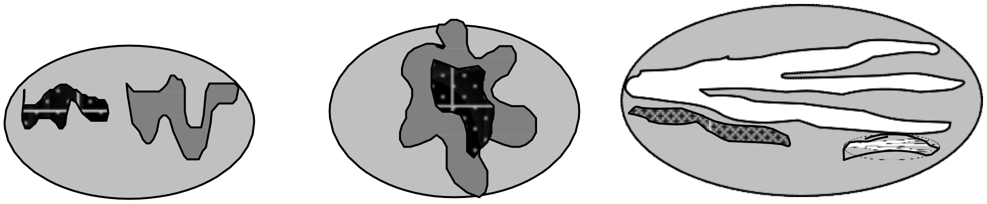


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



2

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☐ Standing snags (dbh > 4 in) within the wetland

☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

0

Total for H 1 — Add the points in the boxes above — 5

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon	points = 3	0
☐ 20-33% of 1 km Polygon	points = 2	
☐ 10-19% of 1 km Polygon	points = 1	
☒ < 10% of 1 km Polygon	points = 0	

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon	points = 3	0
☐ Undisturbed habitat 10-50% and in 1-3 patches	points = 2	
☐ Undisturbed habitat 10-50% and > 3 patches	points = 1	
☒ Undisturbed habitat < 10% of 1 km Polygon	points = 0	

H 2.3. Land use intensity in 1 km Polygon: If

☒ > 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
☐ ≤ 50% of 1 km Polygon is high intensity	points = 0	

Total for H 2 — Add the points in the boxes above — -2

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

- ☒ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

☐ Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB02 Date of site visit: 6/3/2015

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	6	6	6	18

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	**To answer questions:**	**Figure #**
Cowardin plant classes	H 1.1, H 1.4	EB02-1
Hydroperiods	H 1.2	EB02-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB02-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB02-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB02-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

25. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

26. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

27. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

28. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

29. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

30. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

31. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

32. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: ☐ Yes = 3 ☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: golf course stream/ditch ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually* $>1/8_8$ *in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

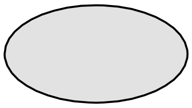
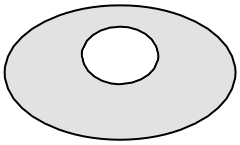
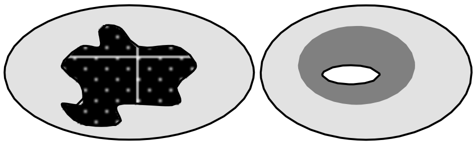
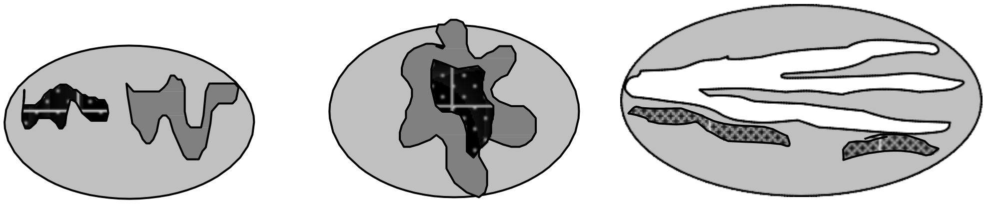
S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☒ Emergent — 3 structures: points = 2 ☒ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ☒ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☐ Seasonally flooded or inundated — 3 types present: points = 2 ☒ Occasionally flooded or inundated — 2 types present: points = 1 ☒ Saturated only — 1 type present: points = 0 ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: ☒ > 19 species — points = 2 ☐ 5 - 19 species — points = 1 ☐ < 5 species — points = 0	2
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  ☐ **None** = 0 points  ☐ **Low** = 1 point  ☐ **Moderate** = 2 points  All three diagrams in this row are ☒ **HIGH** = 3 points	3

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☐ Standing snags (dbh > 4 in) within the wetland

☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

1

Total for H 1 — Add the points in the boxes above — 9

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon	points = 3
☐ 20-33% of 1 km Polygon	points = 2
☐ 10-19% of 1 km Polygon	points = 1
☒ < 10% of 1 km Polygon	points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon	points = 3
☐ Undisturbed habitat 10-50% and in 1-3 patches	points = 2
☐ Undisturbed habitat 10-50% and > 3 patches	points = 1
☒ Undisturbed habitat < 10% of 1 km Polygon	points = 0

0

H 2.3. Land use intensity in 1 km Polygon: If

☒ > 50% of 1 km Polygon is high intensity land use	points = (- 2)
☐ ≤ 50% of 1 km Polygon is high intensity	points = 0

-2

Total for H 2 — Add the points in the boxes above — -2

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

- ☒ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

☐ Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB03 Date of site visit: 6/3/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27

☐ **Category II** – Total score = 20 - 22

☒ **Category III** – Total score = 16 - 19

☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	7	7	4	18

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB03-1
Hydroperiods	H 1.2	EB03-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB03-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB03-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB03-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

33. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

34. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

35. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

36. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

37. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

38. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

39. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

40. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☒ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aqatic bed — 4 structures or more: points = 4
☒ Emergent — 3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1
☐ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated — 4 or more types present: points = 3
☐ Seasonally flooded or inundated — 3 types present: points = 2
☒ Occasionally flooded or inundated — 2 types present: points = 1
☒ Saturated only — 1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** — **2 points**
☐ **Freshwater tidal wetland** — **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

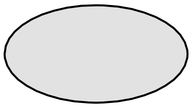
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: ☐ > 19 species — points = 2
☒ 5 - 19 species — points = 1
☐ < 5 species — points = 0

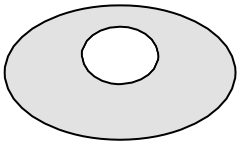
1

H 1.4. Interspersion of habitats

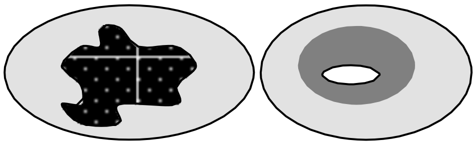
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points

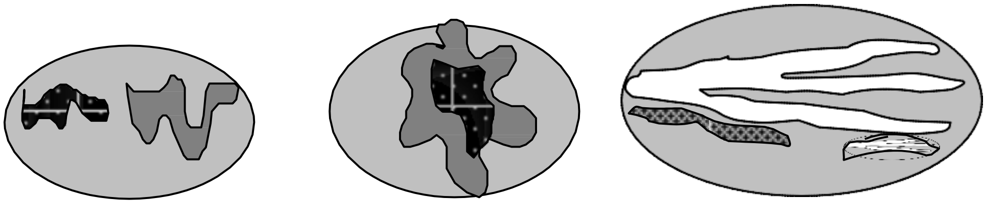


☐ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB04 Date of site visit: 6/3/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth and King County iMap

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27

☐ **Category II** – Total score = 20 - 22

☒ **Category III** – Total score = 16 - 19

☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	7	6	4	17

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB04-1
Hydroperiods	D 1.4, H 1.2	EB04-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB04-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB04-2
Map of the contributing basin	D 4.3, D 5.3	EB04-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

41. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

42. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

43. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

44. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

45. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

46. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

47. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

48. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☒	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☐ Yes = 1 ☒ No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☐ The area of the basin is 10 to 100 times the area of the unit points = 3 ☒ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☐ Yes = 1 ☒ No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☒ Yes = 1 ☐ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed
☒ Emergent
☐ Scrub-shrub (areas where shrubs have > 30% cover)
☒ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated
☒ Seasonally flooded or inundated
☐ Occasionally flooded or inundated
☒ Saturated only
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** **2 points**
☐ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

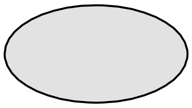
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:
☐ > 19 species points = 2
☒ 5 - 19 species points = 1
☐ < 5 species points = 0

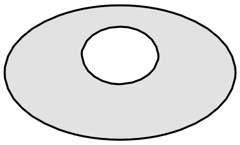
1

H 1.4. Interspersion of habitats

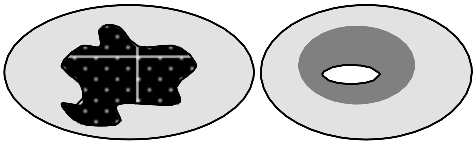
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

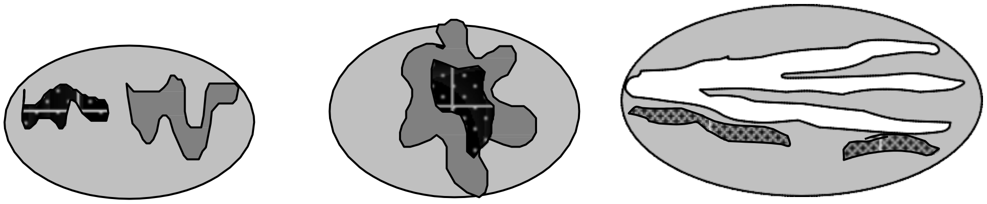


☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 — Add the points in the boxes above	5

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☒ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB05   Date of site visit: 6/3/2015, 2/27/2020

Rated by: K. Crandall   Trained by Ecology? ☒ Y ☐ N   Date of training: 9/2014

HGM Class used for rating: Slope   Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	6	7	4	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB05-1
Hydroperiods	H 1.2	EB05-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB05-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB05-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB05-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

49. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

50. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

51. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

52. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

53. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

54. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

55. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

56. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3 ☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: **☐ 12 = H ☐ 6-11 = M ☒ 0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: urban stream______ ☒ Yes = 1 ☒ No = 0	1
Total for S 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: **☒ 1-2 = M ☐ 0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: **☒ 2-4 = H ☐ 1 = M ☐ 0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_{8}$ in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed
☒ Emergent
☒ Scrub-shrub (areas where shrubs have > 30% cover)
☐ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated
☐ Seasonally flooded or inundated
☐ Occasionally flooded or inundated
☒ Saturated only
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☒ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** **2 points**
☐ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

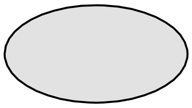
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: ☐ > 19 species points = 2
☒ 5 - 19 species points = 1
☐ < 5 species points = 0

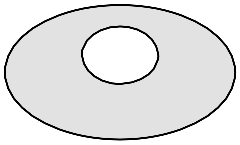
1

H 1.4. Interspersion of habitats

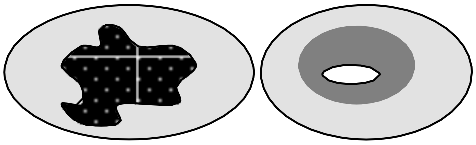
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

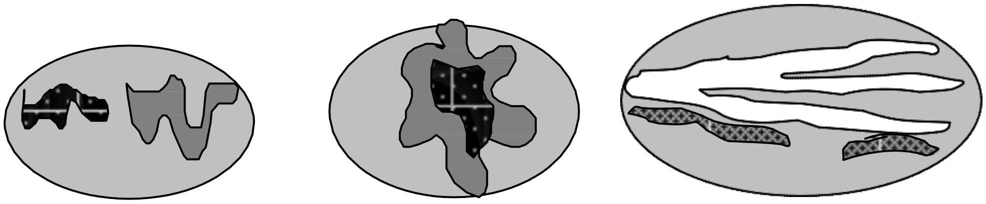


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	4

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon ☐ 20-33% of 1 km Polygon ☐ 10-19% of 1 km Polygon ☒ < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon ☐ Undisturbed habitat 10-50% and in 1-3 patches ☒ Undisturbed habitat 10-50% and > 3 patches ☐ Undisturbed habitat < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use ☐ ≤ 50% of 1 km Polygon is high intensity	 points = (- 2) points = 0	-2
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m ☐ Site does not meet any of the criteria above	 points = 2 points = 1 points = 0	1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB06 Date of site visit: 6/3/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☐ **Category III** – Total score = 16 - 19
- ☒ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
Circle the appropriate ratings				
Site Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Landscape Potential	H M [✓ L]	H M [✓ L]	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	5	6	4	15

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB05-1
Hydroperiods	H 1.2	EB06-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB05-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB05-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB06-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

57. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

58. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

59. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

60. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

61. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

62. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

63. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

64. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☒ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	6

Rating of Site Potential If score is: **☐ 12 = H ☒ 6-11 = M ☐ 0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:_________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: **☐ 1-2 = M ☒ 0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: **☐ 2-4 = H ☒ 1 = M ☐ 0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8_8 in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is**:** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☒ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

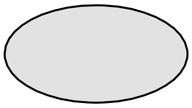
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

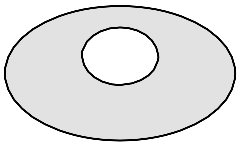
1

H 1.4. Interspersion of habitats

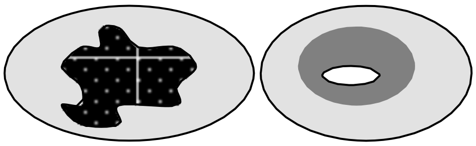
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

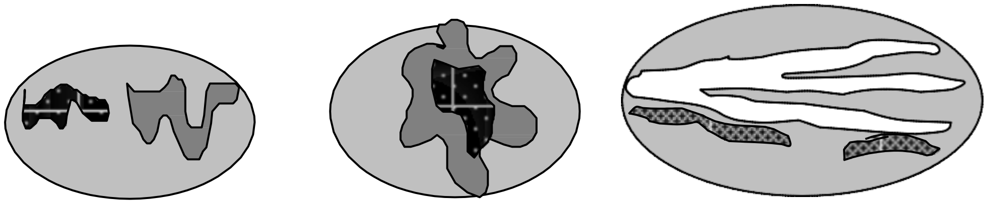


☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



1

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☐ Standing snags (dbh > 4 in) within the wetland

☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

0

Total for H 1 Add the points in the boxes above 4

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon	points = 3	1
☐ 20-33% of 1 km Polygon	points = 2	
☒ 10-19% of 1 km Polygon	points = 1	
☐ < 10% of 1 km Polygon	points = 0	

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon	points = 3	1
☐ Undisturbed habitat 10-50% and in 1-3 patches	points = 2	
☒ Undisturbed habitat 10-50% and > 3 patches	points = 1	
☐ Undisturbed habitat < 10% of 1 km Polygon	points = 0	

H 2.3. Land use intensity in 1 km Polygon: If

☒ > 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
☐ ≤ 50% of 1 km Polygon is high intensity	points = 0	

Total for H 2 Add the points in the boxes above 0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

- ☐ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

☐ Site does not meet any of the criteria above points = 0

1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB07 Date of site visit: 6/15/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☐ **Category III** – Total score = 16 - 19
- ☒ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	H M [✓ L]	H M [✓ L]	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	5	6	4	15

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	**To answer questions:**	**Figure #**
Cowardin plant classes	H 1.1, H 1.4	EB05-1
Hydroperiods	H 1.2	EB07-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB05-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB05-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB07-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

65. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

66. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

67. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

68. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

69. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

70. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

71. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

72. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: ☐ Yes = 3 ☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☒ Does not meet any of the criteria above for plants points = 0	0
Total for S 1 Add the points in the boxes above	0

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: automobiles ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list*. ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8_8 in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

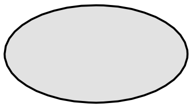
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

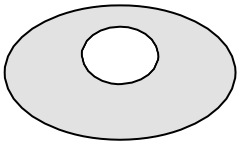
1

H 1.4. Interspersion of habitats

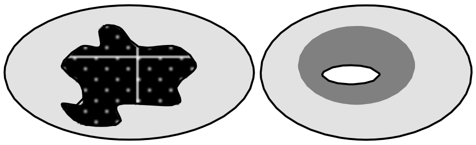
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points



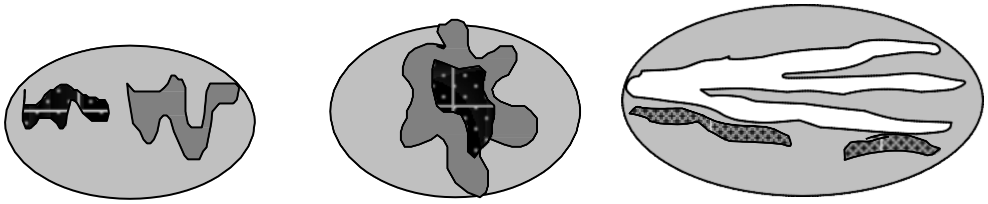
☐ **Low** = 1 point



☐ **Moderate** = 2 points

0

All three diagrams in this row are ☐ **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 — Add the points in the boxes above	1

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is:		0
☐ > 1/3 (33.3%) of 1 km Polygon	points = 3	
☐ 20-33% of 1 km Polygon	points = 2	
☐ 10-19% of 1 km Polygon	points = 1	
☒ < 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*		1
☐ Undisturbed habitat > 50% of Polygon	points = 3	
☐ Undisturbed habitat 10-50% and in 1-3 patches	points = 2	
☒ Undisturbed habitat 10-50% and > 3 patches	points = 1	
☐ Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		-2
☒ > 50% of 1 km Polygon is high intensity land use	points = (- 2)	
☐ ≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*		1
Site meets ANY of the following criteria: ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	points = 2	
☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
☐ Site does not meet any of the criteria above	points = 0	

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB08   Date of site visit: 6/8/2015, 2/27/2020

Rated by: K. Crandall, N. Lund   Trained by Ecology? ☒ Y ☐ N   Date of training: 9/2014, 6/2014

HGM Class used for rating: Slope   Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	5	5	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB08-1
Hydroperiods	H 1.2	EB08-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB08-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB08-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB08-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

73. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

74. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

75. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

76. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

77. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

78. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

79. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

80. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☒ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: urban stream/surface water________________________________ ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8*$_8$ *in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	1

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

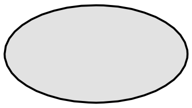
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

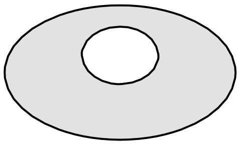
1

H 1.4. Interspersion of habitats

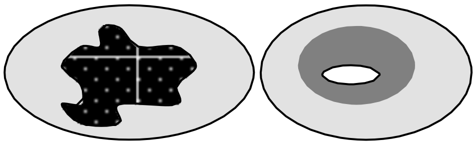
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points

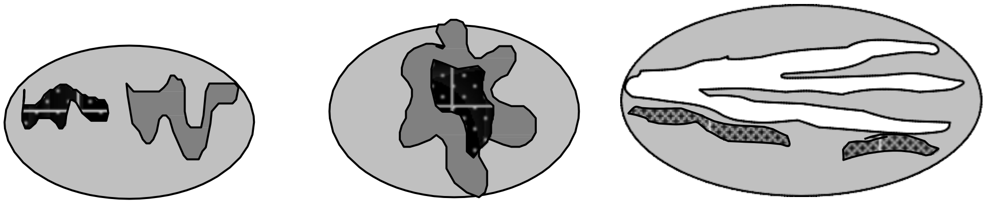


☐ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	1

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB09 Date of site visit: 6/8/2015, 2/27/2020

Rated by: K. Crandall, N. Lund Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014, 6/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth, King County iMap

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	6	6	19

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB09-1
Hydroperiods	D 1.4, H 1.2	EB09-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB09-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB09-2
Map of the contributing basin	D 4.3, D 5.3	EB09-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

81. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

82. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

83. Does the entire wetland unit **meet all** of the following criteria?
☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

84. Does the entire wetland unit **meet all** of the following criteria?
☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

85. Does the entire wetland unit **meet all** of the following criteria?
☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

86. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

87. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

88. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☒	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☒ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☐ Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☐ The area of the basin is 10 to 100 times the area of the unit points = 3 ☒ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	0

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☐ Yes = 1 ☒ No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☐ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☒ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☐ Saturated only	1 type present: points = 0
☒ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

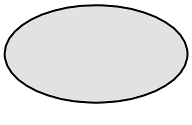
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

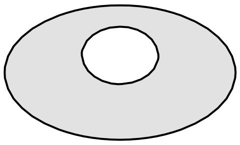
1

H 1.4. Interspersion of habitats

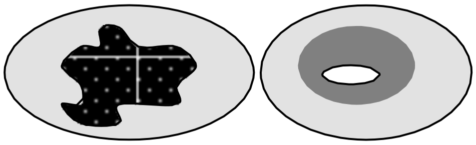
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

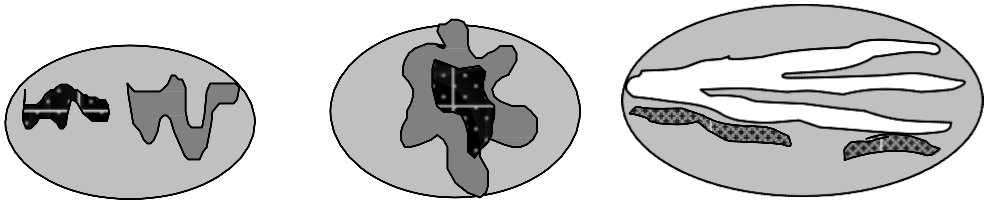


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



2

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☐ Standing snags (dbh > 4 in) within the wetland

☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

1

Total for H 1 — Add the points in the boxes above — 7

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon points = 3

☐ 20-33% of 1 km Polygon points = 2

☐ 10-19% of 1 km Polygon points = 1

☒ < 10% of 1 km Polygon points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon points = 3

☒ Undisturbed habitat 10-50% and in 1-3 patches points = 2

☐ Undisturbed habitat 10-50% and > 3 patches points = 1

☐ Undisturbed habitat < 10% of 1 km Polygon points = 0

2

H 2.3. Land use intensity in 1 km Polygon: If

☒ > 50% of 1 km Polygon is high intensity land use points = (- 2)

☐ ≤ 50% of 1 km Polygon is high intensity points = 0

-2

Total for H 2 — Add the points in the boxes above — 0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: points = 2

- ☒ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

☐ Site does not meet any of the criteria above points = 0

2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB10 Date of site visit: 6/15/2015, 2/27/2020

Rated by: K. Crandall, N. Lund Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014, 6/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27

☐ **Category II** – Total score = 20 - 22

☒ **Category III** – Total score = 16 - 19

☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	7	5	19

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB10-1
Hydroperiods	H 1.2	EB10-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB10-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB10-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB10-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

89. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

90. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

91. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

92. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

93. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

94. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

95. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

96. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☒ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually* $>1/8_8$ *in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is**:** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☒ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

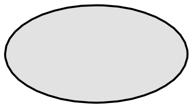
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

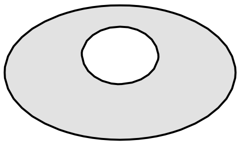
1

H 1.4. Interspersion of habitats

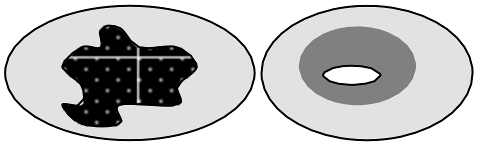
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

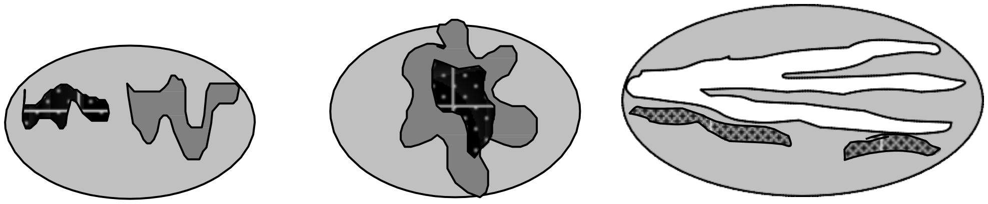


☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are ☐ **HIGH** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	4

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☒ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☐ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB11 Date of site visit: 6/5/2015, 2/27/2020

Rated by: K. Crandall, R. Whitson Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☒ **Category II** – Total score = 20 - 22
☐ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	[✓ H] M L	[✓ H] M L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	8	7	5	20

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB11-1
Hydroperiods	D 1.4, H 1.2	EB11-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB11-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB11-2
Map of the contributing basin	D 4.3, D 5.3	EB11-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

97. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

98. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

99. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

100. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

101. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

102. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

103. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

104. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☒ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?* ☒ Yes = 1 ☐ No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ☒ **3 or 4 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

*13610 SE 10th St, septic = private, per KC assessor

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:		0
☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*		0
☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
☐ The wetland is a "headwater" wetland	points = 3	
☐ Wetland is flat but has small depressions on the surface that trap water	points = 1	
☒ Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*		3
☐ The area of the basin is less than 10 times the area of the unit	points = 5	
☒ The area of the basin is 10 to 100 times the area of the unit	points = 3	
☐ The area of the basin is more than 100 times the area of the unit	points = 0	
☐ Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	☒ Yes = 1 ☐ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	☒ Yes = 1 ☐ No = 0	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: ☒ **3 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		2
• ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• ☐ Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
☐ Flooding from groundwater is an issue in the sub-basin.	points = 1	
☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________	points = 0	
☐ There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	☐ Yes = 2 ☒ No = 0	0
Total for D 6	Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☒ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

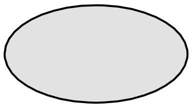
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

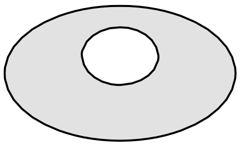
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

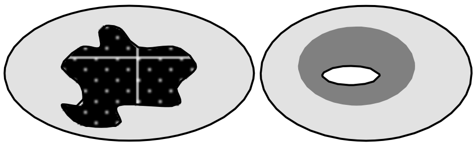


☐ **None** = 0 points



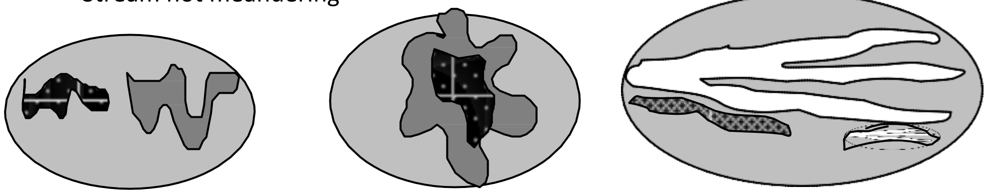
☒ **Low*** = 1 point

*Stream not meandering



☐ **Moderate** = 2 points

All three diagrams in this row are ☐ **HIGH** = 3 points



1

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☐ Standing snags (dbh > 4 in) within the wetland

☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

1

Total for H 1 — Add the points in the boxes above — 5

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon — points = 3
☐ 20-33% of 1 km Polygon — points = 2
☐ 10-19% of 1 km Polygon — points = 1
☒ < 10% of 1 km Polygon — points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon — points = 3
☒ Undisturbed habitat 10-50% and in 1-3 patches — points = 2
☐ Undisturbed habitat 10-50% and > 3 patches — points = 1
☐ Undisturbed habitat < 10% of 1 km Polygon — points = 0

2

H 2.3. Land use intensity in 1 km Polygon: If

☐ > 50% of 1 km Polygon is high intensity land use — points = (- 2)
☐ ≤ 50% of 1 km Polygon is high intensity — points = 0

-2

Total for H 2 — Add the points in the boxes above — 0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: — points = 2

- ☒ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m — points = 1

☐ Site does not meet any of the criteria above — points = 0

2

Rating of Value If score is: ☒**2 = H** ☐**1 = M** ☐**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB12 Date of site visit: 6/5/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☒ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H M [✓ L]	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	5	6	5	16

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	**To answer questions:**	**Figure #**
Cowardin plant classes	H 1.1, H 1.4	EB12-1
Hydroperiods	H 1.2	EB12-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB12-3
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB12-3
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB12-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

105. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

106. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

107. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

108. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

109. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

110. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

111. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

112. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: ☐ Yes = 3 ☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☒ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	2
Total for S 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed — 4 structures or more: points = 4
☒ Emergent — 3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1
☐ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated — 4 or more types present: points = 3
☐ Seasonally flooded or inundated — 3 types present: points = 2
☒ Occasionally flooded or inundated — 2 types present: points = 1
☒ Saturated only — 1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** — **2 points**
☐ **Freshwater tidal wetland** — **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

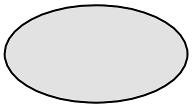
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:
☐ > 19 species — points = 2
☒ 5 - 19 species — points = 1
☐ < 5 species — points = 0

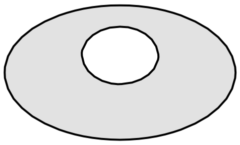
1

H 1.4. Interspersion of habitats

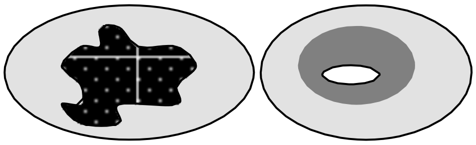
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

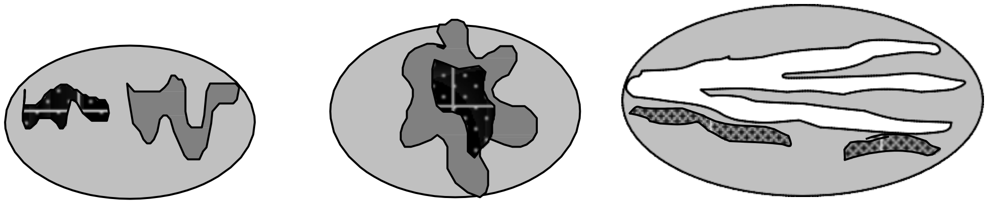


☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	1
Total for H 1 Add the points in the boxes above	5

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon ☐ 20-33% of 1 km Polygon ☐ 10-19% of 1 km Polygon ☒ < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat **+** [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon ☒ Undisturbed habitat 10-50% and in 1-3 patches ☐ Undisturbed habitat 10-50% and > 3 patches ☐ Undisturbed habitat < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use ☐ ≤ 50% of 1 km Polygon is high intensity	 points = (- 2) points = 0	-2
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m ☐ Site does not meet any of the criteria above	 points = 2 points = 1 points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB13 Date of site visit: 6/15/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☒ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	H M [✓ L]	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	6	5	5	16

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB12-1
Hydroperiods	H 1.2	EB12-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB12-3
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB12-3
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB12-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

113. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

114. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

115. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

116. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

117. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

118. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

119. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

120. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☒ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is**:** ☐ **1-2 = M** ☒ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed

☒ Emergent

☐ Scrub-shrub (areas where shrubs have > 30% cover)

☒ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4

3 structures: points = 2

2 structures: points = 1

1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated

☐ Seasonally flooded or inundated

☒ Occasionally flooded or inundated

☒ Saturated only

4 or more types present: points = 3

3 types present: points = 2

2 types present: points = 1

1 type present: points = 0

☐ Permanently flowing stream or river in, or adjacent to, the wetland

☐ Seasonally flowing stream in, or adjacent to, the wetland

☐ **Lake Fringe wetland** **2 points**

☐ **Freshwater tidal wetland** **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:

☐ > 19 species points = 2

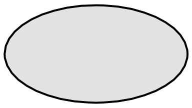
☒ 5 - 19 species points = 1

☐ < 5 species points = 0

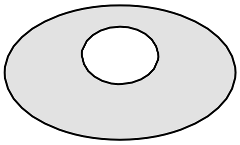
1

H 1.4. Interspersion of habitats

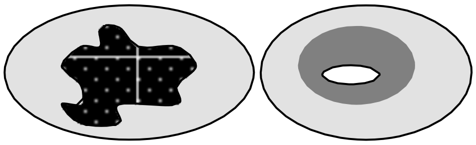
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points



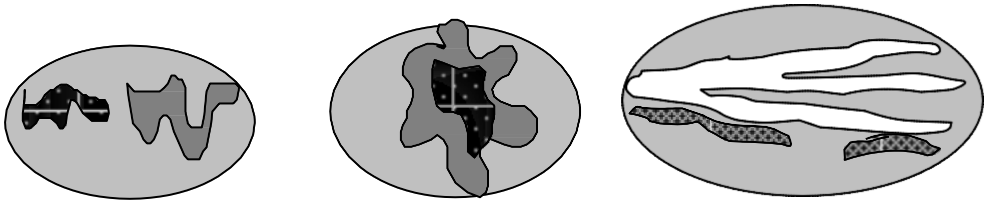
☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are

☐ **HIGH** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	4

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☒ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☐ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB14 Date of site visit: 6/15/2015, 2/27/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	6	5	6	17

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB12-1
Hydroperiods	H 1.2	EB12-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB12-3
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB12-3
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB12-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

121. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

122. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

123. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

124. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

125. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

126. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

127. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

128. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☒ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	2
Total for S 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: urban stream______ ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

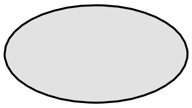
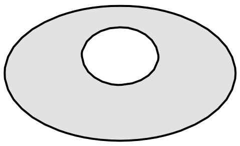
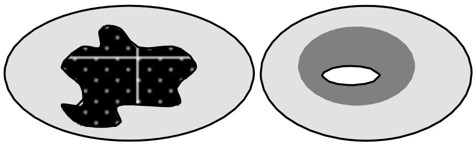
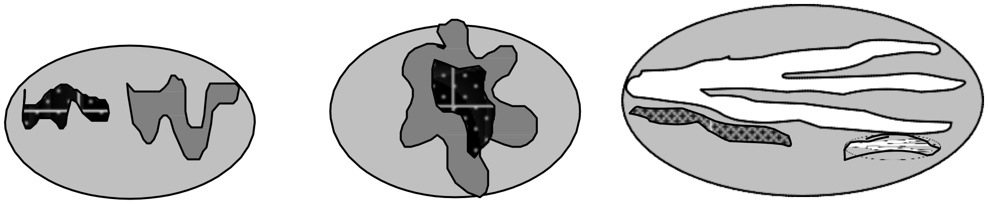
Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☐ Emergent — 3 structures: points = 2 ☒ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ☒ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☐ Seasonally flooded or inundated — 3 types present: points = 2 ☐ Occasionally flooded or inundated — 2 types present: points = 1 ☒ Saturated only — 1 type present: points = 0 ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☒ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: ☐ > 19 species — points = 2 ☒ 5 - 19 species — points = 1 ☐ < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  ☐ **None** = 0 points  ☐ **Low** = 1 point  ☒ **Moderate** = 2 points All three diagrams in this row are ☐ **HIGH** = 3 points 	2

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

☒ Standing snags (dbh > 4 in) within the wetland

☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)*

☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)*

☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)

3

Total for H 1 — Add the points in the boxes above — 9

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

If total accessible habitat is:

☐ > 1/3 (33.3%) of 1 km Polygon — points = 3

☐ 20-33% of 1 km Polygon — points = 2

☐ 10-19% of 1 km Polygon — points = 1

☒ < 10% of 1 km Polygon — points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*

☐ Undisturbed habitat > 50% of Polygon — points = 3

☒ Undisturbed habitat 10-50% and in 1-3 patches — points = 2

☐ Undisturbed habitat 10-50% and > 3 patches — points = 1

☐ Undisturbed habitat < 10% of 1 km Polygon — points = 0

2

H 2.3. Land use intensity in 1 km Polygon: If

☒ > 50% of 1 km Polygon is high intensity land use — points = (- 2)

☐ ≤ 50% of 1 km Polygon is high intensity — points = 0

-2

Total for H 2 — Add the points in the boxes above — 0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria: — points = 2

- ☒ It has 3 or more priority habitats within 100 m (see next page)
- ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- ☐ It is mapped as a location for an individual WDFW priority species
- ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m — points = 1

☐ Site does not meet any of the criteria above — points = 0

2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

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☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB15 Date of site visit: 6/19/2015, 2/27/2020

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☒ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	H M [✓ L]	H [✓ M] L	H [✓ M] L	
Landscape Potential	H M [✓ L]	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	5	6	6	17

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB15-1
Hydroperiods	H 1.2	EB15-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB15-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB15-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB15-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

129. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

130. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

131. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

132. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

133. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

134. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

135. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

136. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☒ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	2
Total for S 1 Add the points in the boxes above	2

Rating of Site Potential If score is: **☐ 12 = H ☐ 6-11 = M ☒ 0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: **☐ 1-2 = M ☒ 0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: **☒ 2-4 = H ☐ 1 = M ☐ 0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually $>1/8_8$ in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is**:** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☒ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

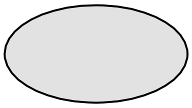
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

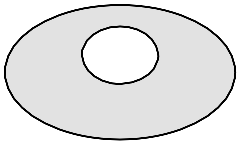
1

H 1.4. Interspersion of habitats

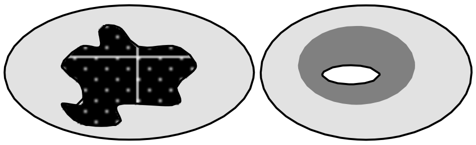
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

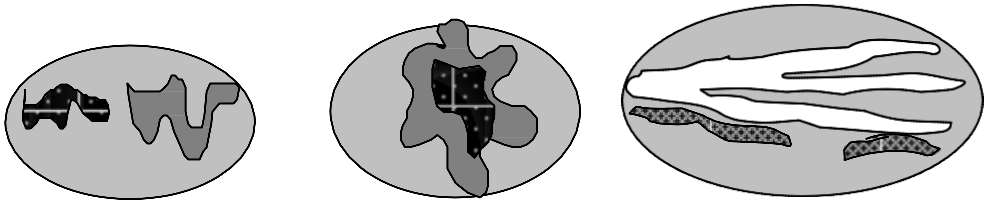


☐ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☒ **HIGH** = 3 points



3

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	12

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon ☐ 20-33% of 1 km Polygon ☐ 10-19% of 1 km Polygon ☒ < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon ☒ Undisturbed habitat 10-50% and in 1-3 patches ☐ Undisturbed habitat 10-50% and > 3 patches ☐ Undisturbed habitat < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use ☐ ≤ 50% of 1 km Polygon is high intensity	 points = (- 2) points = 0	-2
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m ☐ Site does not meet any of the criteria above	 points = 2 points = 1 points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB16 Date of site visit: 6/19/2015, 2/27/2020

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth, King County iMap

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
		Circle the appropriate ratings		
Site Potential	H [✓ M] L	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	6	6	19

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB16-1
Hydroperiods	D 1.4, H 1.2	EB16-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB16-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB16-2
Map of the contributing basin	D 4.3, D 5.3	EB16-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

137. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

138. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

139. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

140. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

141. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

142. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

143. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

144. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☒	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☒ The area of the basin is 10 to 100 times the area of the unit points = 3 ☐ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☐ Yes = 1 ☒ No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☐ Yes = 1 ☒ No = 0	0
Total for D 5 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☐ **3 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☒ Permanently flooded or inundated	4 or more types present: points = 3
☒ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

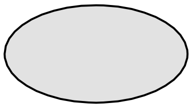
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

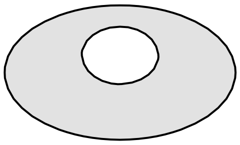
1

H 1.4. Interspersion of habitats

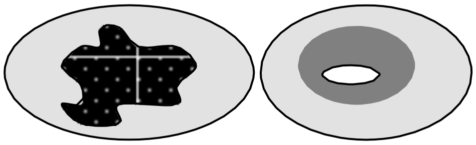
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

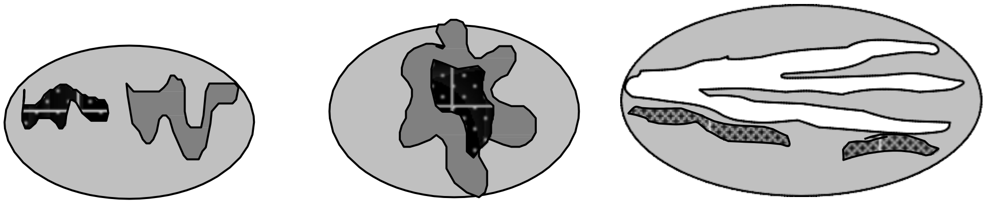


☒ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB17 Date of site visit: 6/19/2015, 2/27/2020

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☒ Y ☐ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth, King County iMap

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27
☐ **Category II** – Total score = 20 - 22
☒ **Category III** – Total score = 16 - 19
☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	6	6	19

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	**To answer questions:**	**Figure #**
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB17-1
Hydroperiods	D 1.4, H 1.2	EB17-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB17-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB17-2
Map of the contributing basin	D 4.3, D 5.3	EB17-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

145. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

146. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

147. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

148. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

149. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

150. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☒ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

151. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

152. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☒ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source: ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☒ The area of the basin is 10 to 100 times the area of the unit points = 3 ☐ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☐ Yes = 1 ☒ No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☐ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed
☐ Emergent
☒ Scrub-shrub (areas where shrubs have > 30% cover)
☒ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated
☐ Seasonally flooded or inundated
☒ Occasionally flooded or inundated
☒ Saturated only
☒ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** **2 points**
☐ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

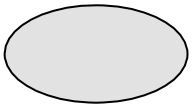
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: ☐ > 19 species points = 2
☒ 5 - 19 species points = 1
☐ < 5 species points = 0

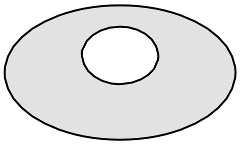
1

H 1.4. Interspersion of habitats

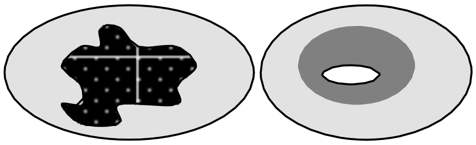
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

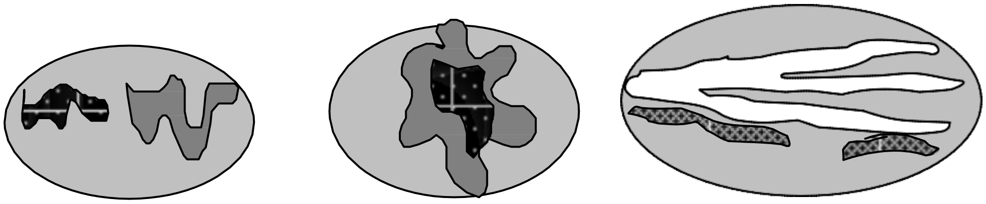


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☒ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☐ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB18 Date of site visit: 6/24/2015, 2/27/2020

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
		Circle the appropriate ratings		
Site Potential	H M [✓ L]	H [✓ M] L	H [✓ M] L	
Landscape Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	6	6	6	18

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB18-1
Hydroperiods	H 1.2	EB18-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB18-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB18-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB18-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

153. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

154. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

155. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

156. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

157. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

158. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

159. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

160. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☒ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	2
Total for S 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: urban stream ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is: ☒ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed — 4 structures or more: points = 4
☐ Emergent — 3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1
☒ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated — 4 or more types present: points = 3
☐ Seasonally flooded or inundated — 3 types present: points = 2
☐ Occasionally flooded or inundated — 2 types present: points = 1
☒ Saturated only — 1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☒ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** — **2 points**
☐ **Freshwater tidal wetland** — **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

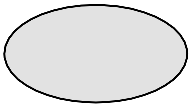
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: ☐ > 19 species — points = 2
☒ 5 - 19 species — points = 1
☐ < 5 species — points = 0

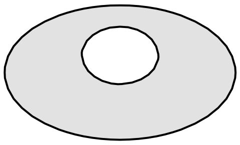
1

H 1.4. Interspersion of habitats

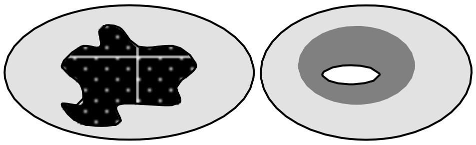
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points

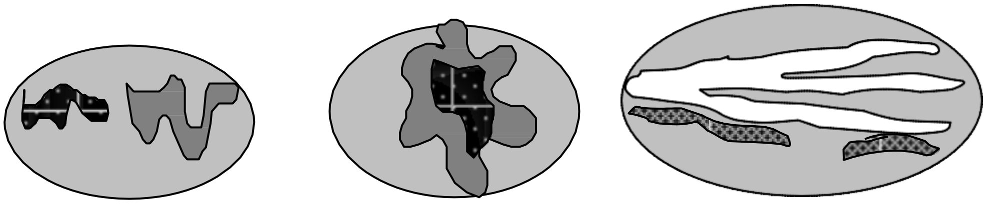


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are
☐ **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 — Add the points in the boxes above	8

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon — points = 3 ☐ 20-33% of 1 km Polygon — points = 2 ☐ 10-19% of 1 km Polygon — points = 1 ☒ < 10% of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon — points = 3 ☒ Undisturbed habitat 10-50% and in 1-3 patches — points = 2 ☐ Undisturbed habitat 10-50% and > 3 patches — points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon — points = 0	2
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use — points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: — points = 2 ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m — points = 1 ☐ Site does not meet any of the criteria above — points = 0	1

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB19 Date of site visit: 6/24/2015, 2/27/2020

Rated by: K. Crandall, R. Kahlo Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
Circle the appropriate ratings				
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	[✓ H] M L	**TOTAL**
Score Based on Ratings	6	5	6	17

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB18-1
Hydroperiods	H 1.2	EB18-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB18-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EB18-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB18-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

161. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

162. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

163. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

164. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

165. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

166. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

167. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

168. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: **☐ 12 = H ☐ 6-11 = M ☒ 0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☐ Yes = 1 ☒ No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources: urban stream ☒ Yes = 1 ☐ No = 0	1
Total for S 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: **☒ 1-2 = M ☐ 0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: **☒ 2-4 = H ☐ 1 = M ☐ 0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☐ Yes = 1 ☒ No = 0	0

Rating of Landscape Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☒ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

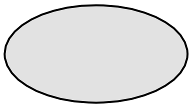
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

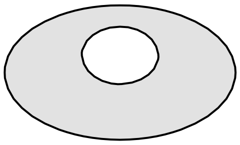
1

H 1.4. Interspersion of habitats

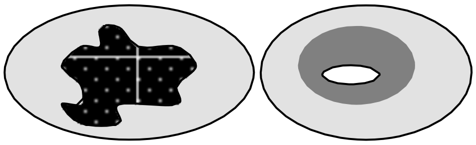
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

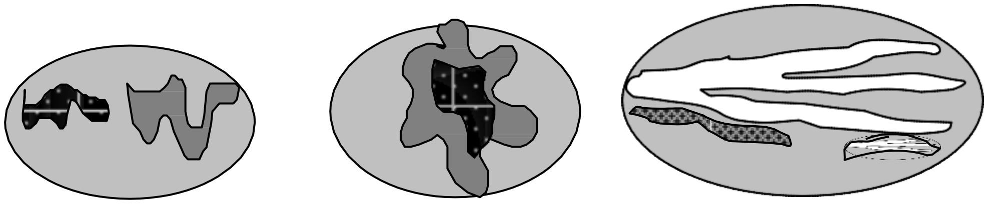


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are ☐ **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon ☐ 20-33% of 1 km Polygon ☐ 10-19% of 1 km Polygon ☒ < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon ☐ Undisturbed habitat 10-50% and in 1-3 patches ☒ Undisturbed habitat 10-50% and > 3 patches ☐ Undisturbed habitat < 10% of 1 km Polygon	 points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☐ > 50% of 1 km Polygon is high intensity land use ☐ ≤ 50% of 1 km Polygon is high intensity	 points = (- 2) points = 0	-2
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: ☒ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m ☐ Site does not meet any of the criteria above	 points = 2 points = 1 points = 0	2

Rating of Value If score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB20 Date of site visit: 6/17/2015, 5/26/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Slope Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	H M [✓ L]	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	H [✓ M] L	**TOTAL**
Score Based on Ratings	5	7	4	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EB20-1
Hydroperiods	H 1.2	EB20-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EB20-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	EB20-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EB20-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

169. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

170. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

171. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

172. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

173. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

174. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

175. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

176. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)* ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually* $>1/8_8$ *in), or dense enough, to remain erect during surface flows.* ☒ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☐ All other conditions points = 0	1

Rating of Site Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.
Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

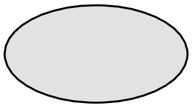
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:		
	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

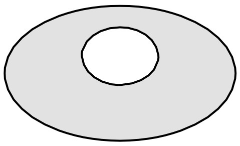
1

H 1.4. Interspersion of habitats

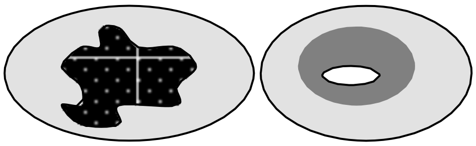
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points

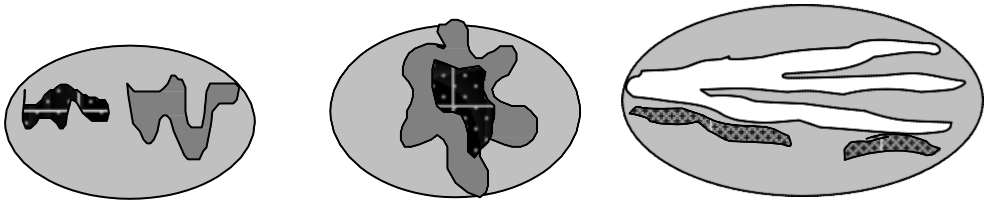


☐ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in
this row are
☐ **HIGH** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	1

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EB21 Date of site visit: 6/1/2015, 5/26/2020

Rated by: K. Crandall Trained by Ecology? ☒ Y ☐ N Date of training: 9/2014

HGM Class used for rating: Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth, King County iMap

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27

☐ **Category II** – Total score = 20 - 22

☒ **Category III** – Total score = 16 - 19

☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	H [✓ M] L	[✓ H] M L	H M [✓ L]	
Value	[✓ H] M L	[✓ H] M L	H M [✓ L]	**TOTAL**
Score Based on Ratings	7	7	3	17

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	EB21-1
Hydroperiods	D 1.4, H 1.2	EB21-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	EB21-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	EB21-2
Map of the contributing basin	D 4.3, D 5.3	EB21-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

177. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

178. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

179. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

180. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

181. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

182. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

183. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

184. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is > ¼ total area of wetland points = 2 ☒ Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☒ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☐ The area of the basin is 10 to 100 times the area of the unit points = 3 ☒ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	0

Rating of Site Potential If score is: ☐ **12-16 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☒ Yes = 1 ☐ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ☒ **3 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☒ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why*_________ points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☒ Emergent	3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☒ Permanently flooded or inundated	4 or more types present: points = 3
☐ Seasonally flooded or inundated	3 types present: points = 2
☒ Occasionally flooded or inundated	2 types present: points = 1
☐ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

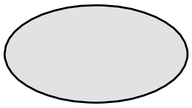
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

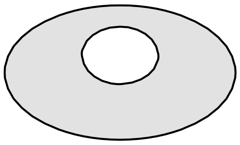
1

H 1.4. Interspersion of habitats

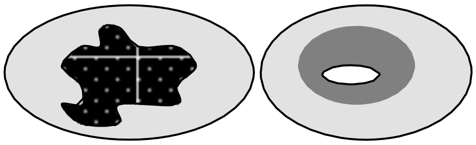
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☐ **None** = 0 points

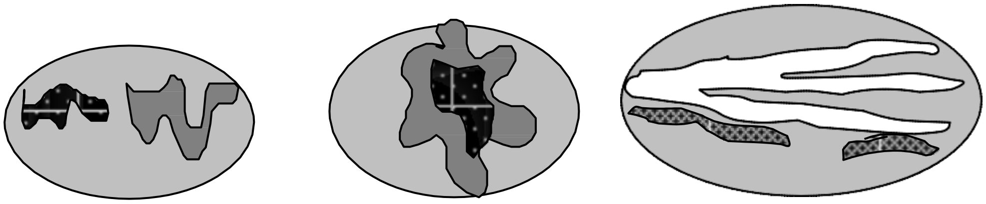


☐ **Low** = 1 point



☒ **Moderate** = 2 points

All three diagrams in this row are ☐ **HIGH** = 3 points



2

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)		1
Total for H 1	Add the points in the boxes above	6

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is:		
☐ > 1/3 (33.3%) of 1 km Polygon	points = 3	0
☐ 20-33% of 1 km Polygon	points = 2	
☐ 10-19% of 1 km Polygon	points = 1	
☒ < 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5*		
☐ Undisturbed habitat > 50% of Polygon	points = 3	1
☐ Undisturbed habitat 10-50% and in 1-3 patches	points = 2	
☒ Undisturbed habitat 10-50% and > 3 patches	points = 1	
☐ Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
☐ > 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
☐ ≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*		
Site meets ANY of the following criteria: ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan	points = 2	0
☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
☒ Site does not meet any of the criteria above	points = 0	

Rating of Value If score is: ☐ **2 = H** ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

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☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland EE, Lakeside Substation   Date of site visit: 2/27/2018, 5/26/2020

Rated by: K. Crandall, N. Lund   Trained by Ecology? ☒ Y ☐ N   Date of training: 9/2014, 6/2014

HGM Class used for rating: Slope   Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

☐ **Category I** – Total score = 23 - 27

☐ **Category II** – Total score = 20 - 22

☐ **Category III** – Total score = 16 - 19

☒ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
		Circle the appropriate ratings		
Site Potential	H M [✓ L]	H M [✓ L]	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	H [✓ M] L	[✓ H] M L	H M [✓ L]	**TOTAL**
Score Based on Ratings	5	6	4	15

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	EE-1
Hydroperiods	H 1.2	EE-2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	EE-1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	EE-1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	EE-2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

185. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

186. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES –** The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

187. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

188. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

☐ NO – go to 5 ☒ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

189. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☐ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

190. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☐ **YES** – The wetland class is **Depressional**

191. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

192. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:☐ Yes = 3☒ No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☒ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☐ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	3
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ☐ **12 = H** ☐ **6-11 = M** ☒ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources:__________________ ☐ Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is**:** ☒ **1-2 = M** ☐ **0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.* ☒ Yes = 1 ☐ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* ☐ Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8$_8$ in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒ Yes = 1 ☐ No = 0	1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☒ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☐ No flooding problems anywhere downstream points = 0	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for S 6 Add the points in the boxes above	2

Rating of Value If score is: ☒ **2-4 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed
☒ Emergent
☒ Scrub-shrub (areas where shrubs have > 30% cover)
☐ Forested (areas where trees have > 30% cover)

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated
☐ Seasonally flooded or inundated
☒ Occasionally flooded or inundated
☒ Saturated only
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** **2 points**
☐ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

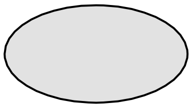
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:
☒ > 19 species points = 2
☐ 5 - 19 species points = 1
☐ < 5 species points = 0

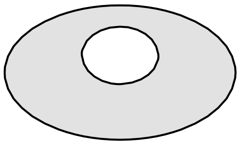
2

H 1.4. Interspersion of habitats

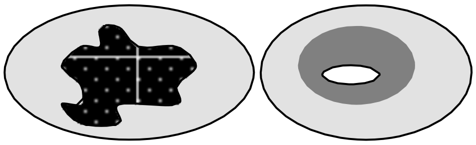
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



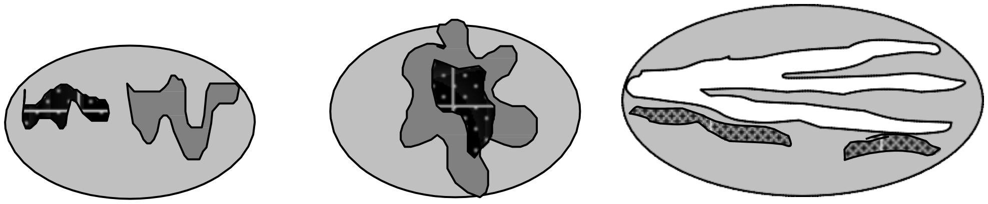
☐ **None** = 0 points



☒ **Low** = 1 point



☐ **Moderate** = 2 points



All three diagrams in this row are
☐ **HIGH** = 3 points

1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	2
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ☐ **15-18 = H** ☒ **7-14 = M** ☐ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☐ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	0

Rating of Value If score is: ☐ **2 = H** ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland I, Lakeside Substation   Date of site visit: 2/27/2018, 5/26/2020

Rated by: K. Crandall, N. Lund   Trained by Ecology? ☒ Y ☐ N   Date of training: 9/2014, 6/2014

HGM Class used for rating: Depressional   Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: Form is not complete without the figures requested *(figures can be combined)*.
Source of base aerial photo/map: Google Earth

OVERALL WETLAND CATEGORY (based on functions ☒ or special characteristics ☐)

Category of wetland based on FUNCTIONS

- ☐ **Category I** – Total score = 23 - 27
- ☐ **Category II** – Total score = 20 - 22
- ☒ **Category III** – Total score = 16 - 19
- ☐ **Category IV** – Total score = 9 - 15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
			Circle the appropriate ratings	
Site Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Landscape Potential	H [✓ M] L	[✓ H] M L	H M [✓ L]	
Value	H [✓ M] L	H M [✓ L]	H [✓ M] L	**TOTAL**
Score Based on Ratings	6	6	4	16

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY**
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	☒

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	I-1
Hydroperiods	D 1.4, H 1.2	I-2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	I-2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	I-2
Map of the contributing basin	D 4.3, D 5.3	I-3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	2 to 5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

193. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES –** the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is an* ***Estuarine*** *wetland and is not scored. This method* ***cannot*** *be used to score functions for estuarine wetlands.*

194. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for ***Depressional*** *wetlands.*

195. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

196. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

197. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

198. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

199. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

200. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
☐	Slope + Riverine	Riverine
☐	Slope + Depressional	Depressional
☐	Slope + Lake Fringe	Lake Fringe
☐	Depressional + Riverine along stream within boundary of depression	Depressional
☐	Depressional + Lake Fringe	Depressional
☐	Riverine + Lake Fringe	Riverine
☐	Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

☐ More than 2 HGM classes

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☒ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)* ☐ Yes = 4 ☒ No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☐ Wetland has persistent, ungrazed, plants > 95% of area points = 5 ☒ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3 ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☒ Area seasonally ponded is > ¼ total area of wetland points = 2 ☐ Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	8

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? ☒ Yes = 1 ☐ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? ☐ Yes = 1 ☒ No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_________________ ☐ Yes = 1 ☒ No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ☐ **3 or 4 = H** ☒ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? ☐ Yes = 1 ☒ No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? ☒ Yes = 1 ☐ No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? ☐ Yes = 2 ☒ No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: ☐ **2-4 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: ☒ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ☐ The wetland is a "headwater" wetland points = 3 ☐ Wetland is flat but has small depressions on the surface that trap water points = 1 ☒ Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 ☒ The area of the basin is 10 to 100 times the area of the unit points = 3 ☐ The area of the basin is more than 100 times the area of the unit points = 0 ☐ Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	7

Rating of Site Potential If score is: ☐ **12-16 = H** ☒ **6-11 = M** ☐ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? ☒ Yes = 1 ☐ No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? ☒ Yes = 1 ☐ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? ☒ Yes = 1 ☐ No = 0	1
Total for D 5 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ☒ **3 = H** ☐ **1 or 2 = M** ☐ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • ☐ Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • ☐ Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☒ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why: wetland is surrounded by a hillside and roadside curb, far from any stream* points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐ Yes = 2 ☒ No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: ☐ **2-4 = H** ☐ **1 = M** ☒ **0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

Habitat Functions - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

☐ Aquatic bed	4 structures or more: points = 4
☐ Emergent	3 structures: points = 2
☐ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☒ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

☐ Permanently flooded or inundated	4 or more types present: points = 3
☒ Seasonally flooded or inundated	3 types present: points = 2
☐ Occasionally flooded or inundated	2 types present: points = 1
☒ Saturated only	1 type present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland	
☐ Seasonally flowing stream in, or adjacent to, the wetland	
☐ **Lake Fringe wetland**	**2 points**
☐ **Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

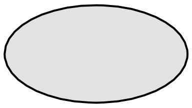
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted:	☐ > 19 species	points = 2
	☒ 5 - 19 species	points = 1
	☐ < 5 species	points = 0

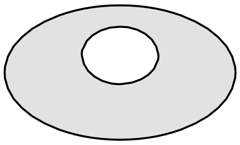
1

H 1.4. Interspersion of habitats

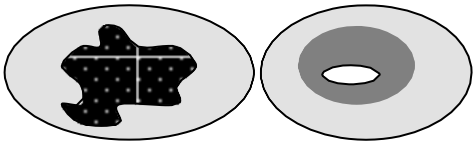
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



☒ **None** = 0 points



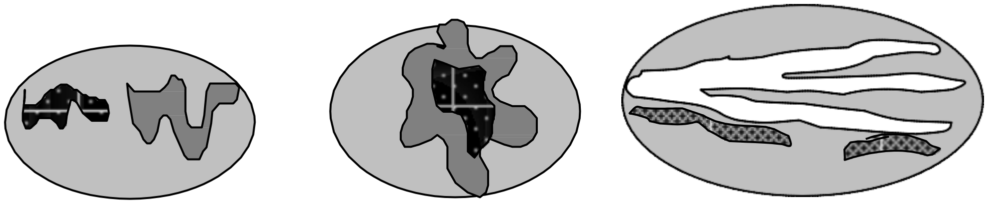
☐ **Low** = 1 point



☐ **Moderate** = 2 points

All three diagrams in this row are

☐ **HIGH** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☐ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	0
Total for H 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ☐ **15-18 = H** ☐ **7-14 = M** ☒ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = *see Figs. 2-5* ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☒ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ☒ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ☐ Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: ☐ **2 = H** ☒ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☐ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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“Categorization based on special characteristics” pages for *all* wetlands rated in this document

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

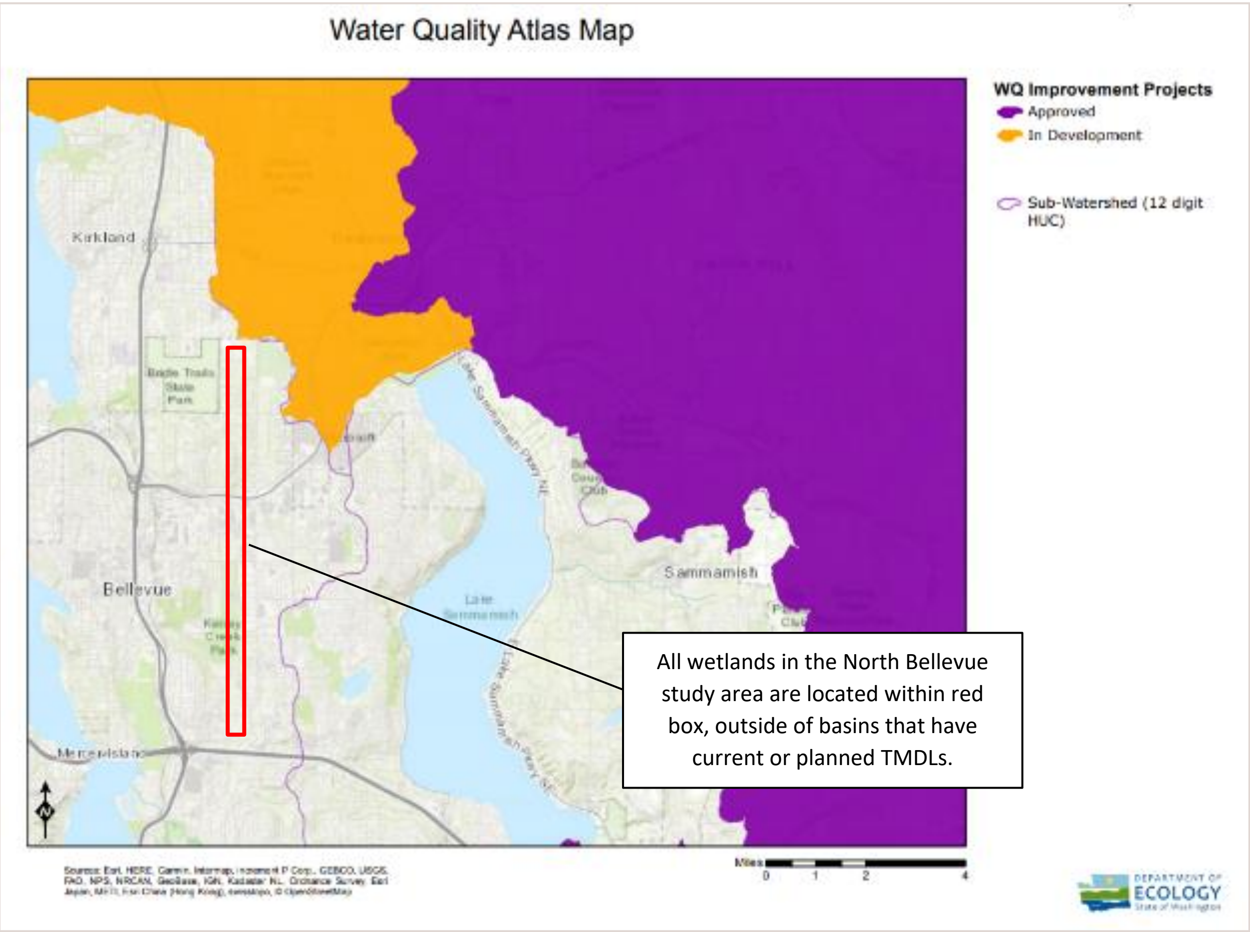
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes –Go to **SC 1.1** ☒ No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = **Category I** ☐ No - Go to **SC 1.2**	☐ **Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	☐ **Cat. I** ☐ **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☒ Yes **–** Go to **SC 2.2** ☐ No **–** Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? https://www.dnr.wa.gov/NHPwetlandviewer ☐ Yes **= Category** I ☒ No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? https://www.dnr.wa.gov/NHPdata ☐ Yes **– Contact WNHP/WDNR and go to SC 2.4** ☐ No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes **= Category I** ☐ No **= Not a WHCV**	☐ **Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes – Go to **SC 3.3** ☒ No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes – Go to **SC 3.3** ☒ No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = **Is a Category I bog** ☐ No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = **Is a Category I bog** ☐ No = **Is not a bog**	☐ **Cat. I**

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). ☐ Yes = **Category I** ☒ No **= Not a forested wetland for this section**	☐ **Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ Yes – Go to **SC 5.1** ☒ No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^1/_{10}$ ac (4350 ft^2) ☐ Yes = **Category I** ☐ No = **Category II**	☐ **Cat. I** ☐ **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 ☐ Yes – Go to **SC 6.1** ☒ No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? ☐ Yes = **Category I** ☐ No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? ☐ Yes = **Category II** ☐ No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? ☐ Yes = **Category III** ☐ No = **Category IV**	☐ **Cat I** ☐ **Cat. II** ☐ **Cat. III** ☐ **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

PSE Energize Eastside Project – North Bellevue
WETLAND RATING FIGURES

October 2020

All Wetlands



All wetlands in the North Bellevue study area are located within red box, outside of basins that have current or planned TMDLs.

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap

Figure 1. Screen-capture of Water Quality Improvement Projects (TMDLs) from the Water Quality Atlas Map – S3.3.

Habitat Figures

Figure 2 below, shows the majority of the area within approximately one kilometer of the North Bellevue corridor is urban and developed and would be considered high intensity for the purpose of rating wetlands. The largest habitat patches present near the Project corridor (which are visible in Figure 2) are Bridle Trails State Park and Kelsey Creek Park. Wetlands located near these features would have the greatest potential to score “Moderate” (1-3 points) or “High” (4-6 points) for Habitat Landscape Potential using the 2014 Wetland Rating Form.

Habitat figures for Wetland A (Overlake Farms), located near Bridle Trails, and Wetlands EB10 and EB17, located near Kelsey Creek Park, are provided below (Figures 3, 4 and 5, respectively). These three wetlands were selected for as examples because they are considered to have the greatest potential to generate “Moderate” or “High” Habitat Landscape Potential scores based on their proximity and connectivity to large patches of undisturbed habitat.

In all instances (Figures 3, 4, and 5) high intensity land uses represent greater than 50 percent of the area within one kilometer of the wetland units (-2 points in the rating form); this is true of all wetlands in the Project corridor. Therefore, a “High” Habitat Landscape Potential score is not possible. Accessible habitat is always limited to less than 20 percent of the 1 km polygon (Figure 4 example represents the maximum accessible habitat for any wetland rated). To generate enough points to reach a “Moderate” Habitat Landscape Potential score, accessible habitat must be 10-19 percent (1 point) and undisturbed habitat must be 10-50 percent in 1-3 patches (2 points). However, this is not possible because the following statements are always true:

- When there is accessible habitat (which never exceeds the 10-19 percent range) (1 point), undisturbed habitat is disconnected by roads and development and represented by more than 3 patches (1 point) (Figure 4). The resulting score is “Low”.
- When undisturbed habitat is 10-50 percent and in 1-3 patches (2 points), accessible habitat is limited to less than 10 percent of the 1 km polygon (0 points) (Figure 3). The resulting score is “Low”.

These conditions are a function of the urban setting in which the Project is located. Roads and other types of development disconnect retained habitat areas across the landscape. Most often some undisturbed habitat is present in the landscape surrounding inventoried wetlands (10-50 percent of 1 km polygon) but much of it is not accessible. Therefore, all of the wetlands rated using the 2014 Rating System for this portion of the Project received a “Low” Habitat Landscape Potential score. To save paper, minimize document size, and use time efficiently, separate “1 km Polygon” figures for each wetland have not been provided. The following figures illustrate that the Habitat Landscape Potential rating of “Low” applies to all wetlands included in the North Bellevue segment of the Energize Eastside Project because in all instances, greater than half of the area within one kilometer of the wetland includes high intensity land uses and the key points above are true.

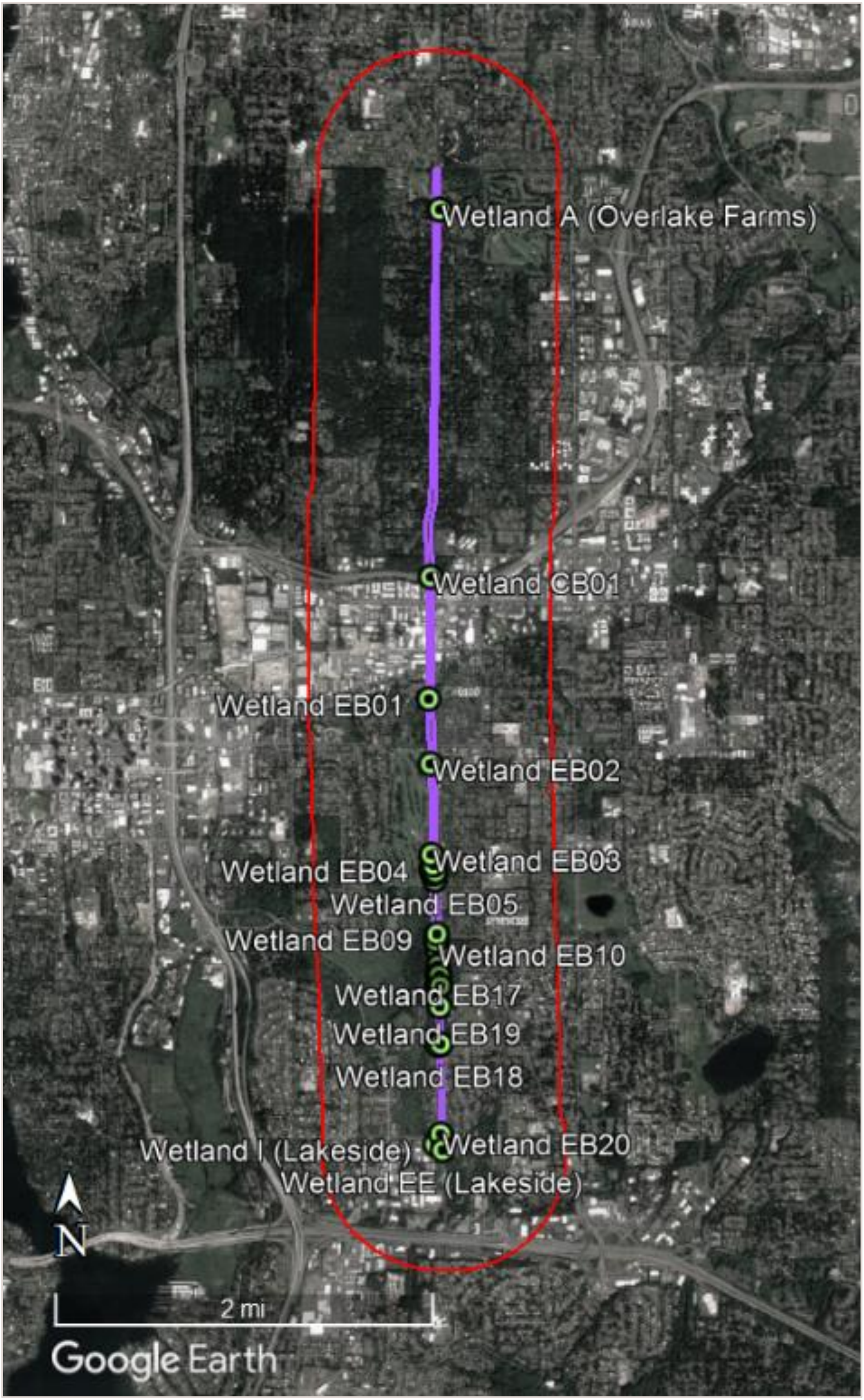


Figure 2. Approximate North Bellevue corridor segment (purple) and area within one kilometer of that segment (red).

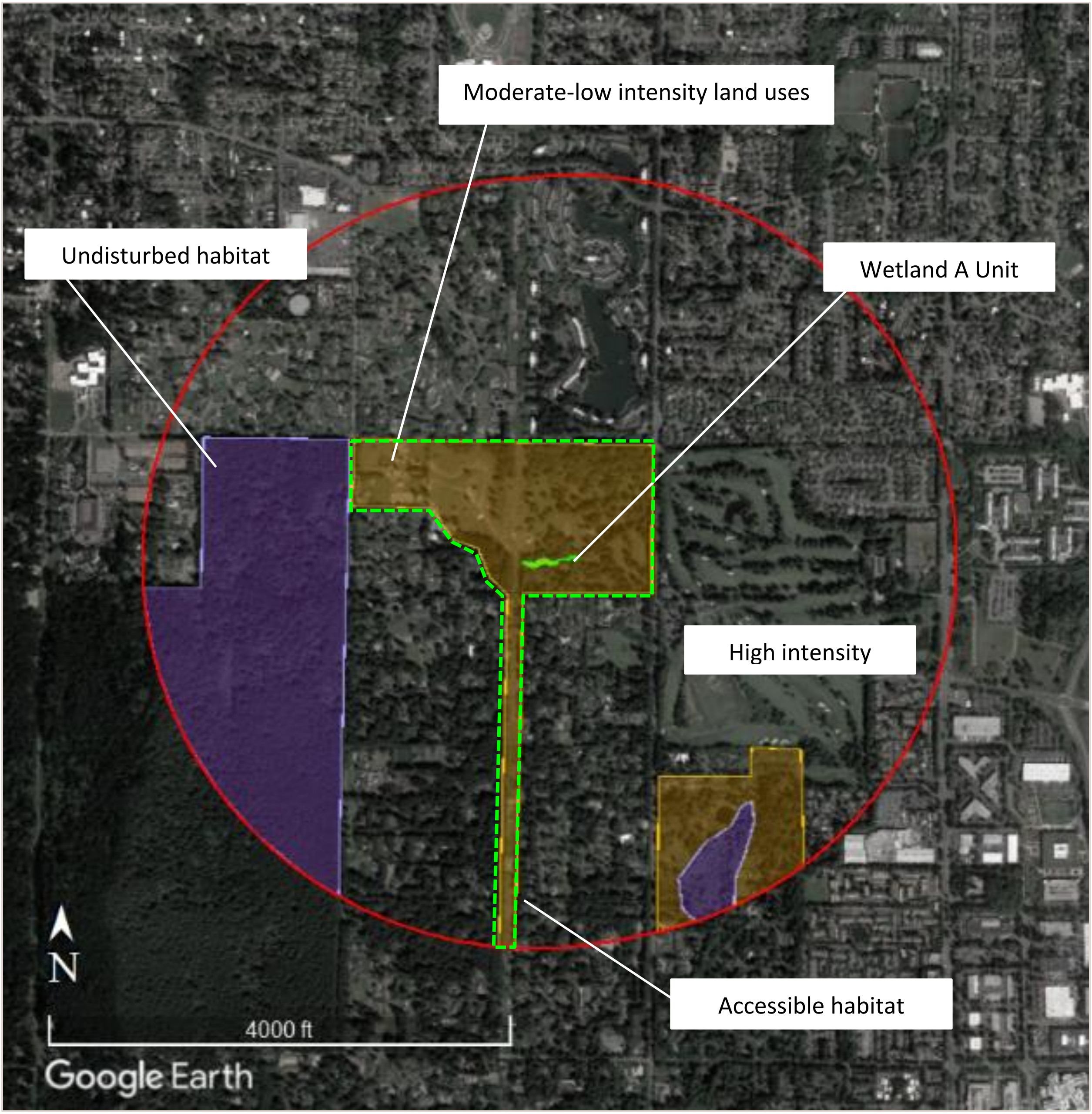


Figure 3. Undisturbed habitat and moderate-low intensity land uses within 1 km from Wetland A (Overlake Farms) edge including polygon for accessible habitat – H2.1, H2.2, H2.3

Accessible habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 0 + (8/2) = **4%**

Undisturbed habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 14 + (11/2) = **20%**

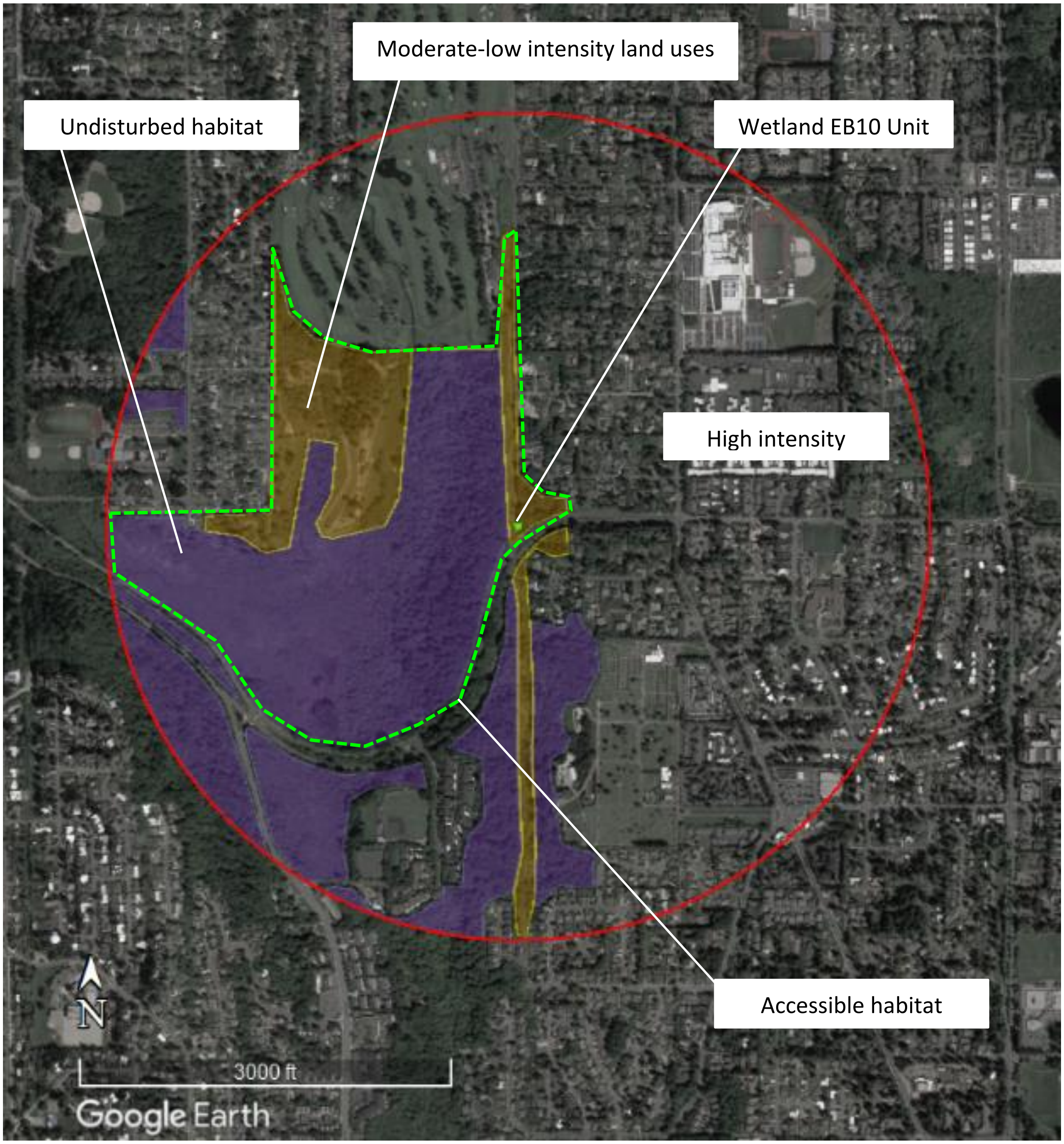


Figure 4. Undisturbed habitat and moderate-low intensity land uses within 1 km from Wetland EB10 edge including polygon for accessible habitat – H2.1, H2.2, H2.3

Accessible habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 15 + (6/2) = **18%**

Undisturbed habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 24 + (7/2) = **28%**

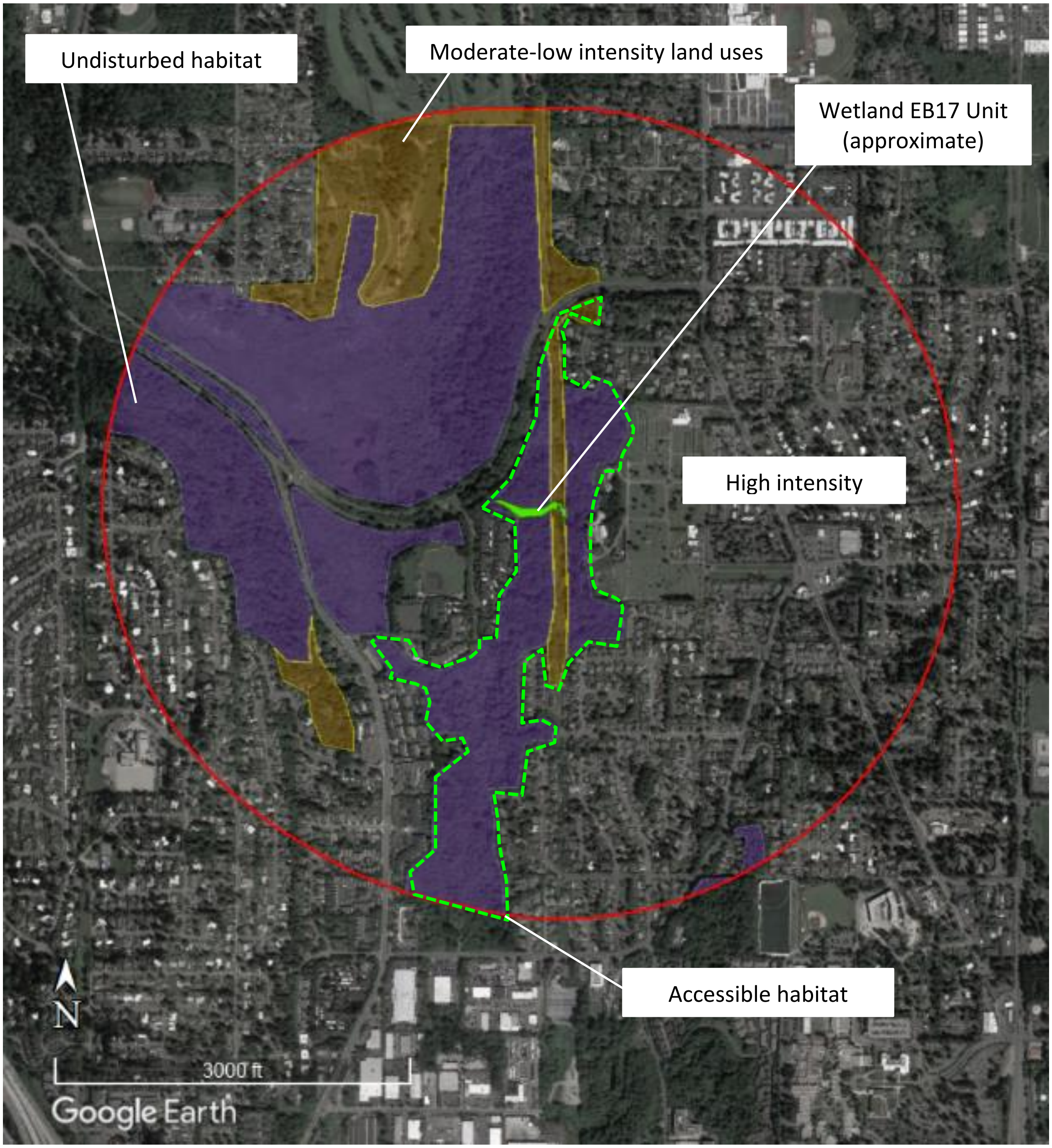
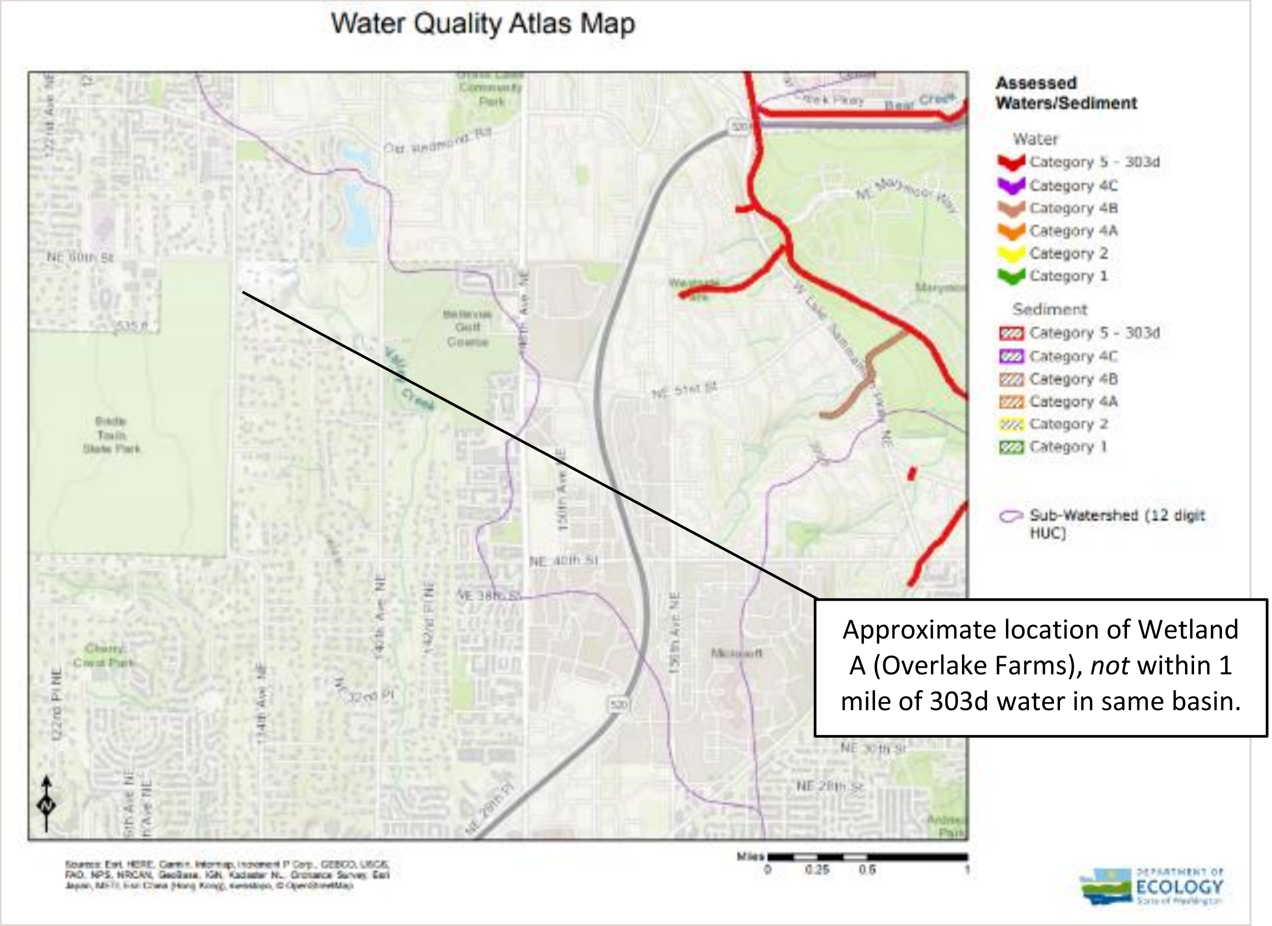


Figure 5. Undisturbed habitat and moderate-low intensity land uses within 1 km from Wetland EB17 edge including polygon for accessible habitat – H2.1, H2.2, H2.3

Accessible habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 8 + (5/2) = **11%**

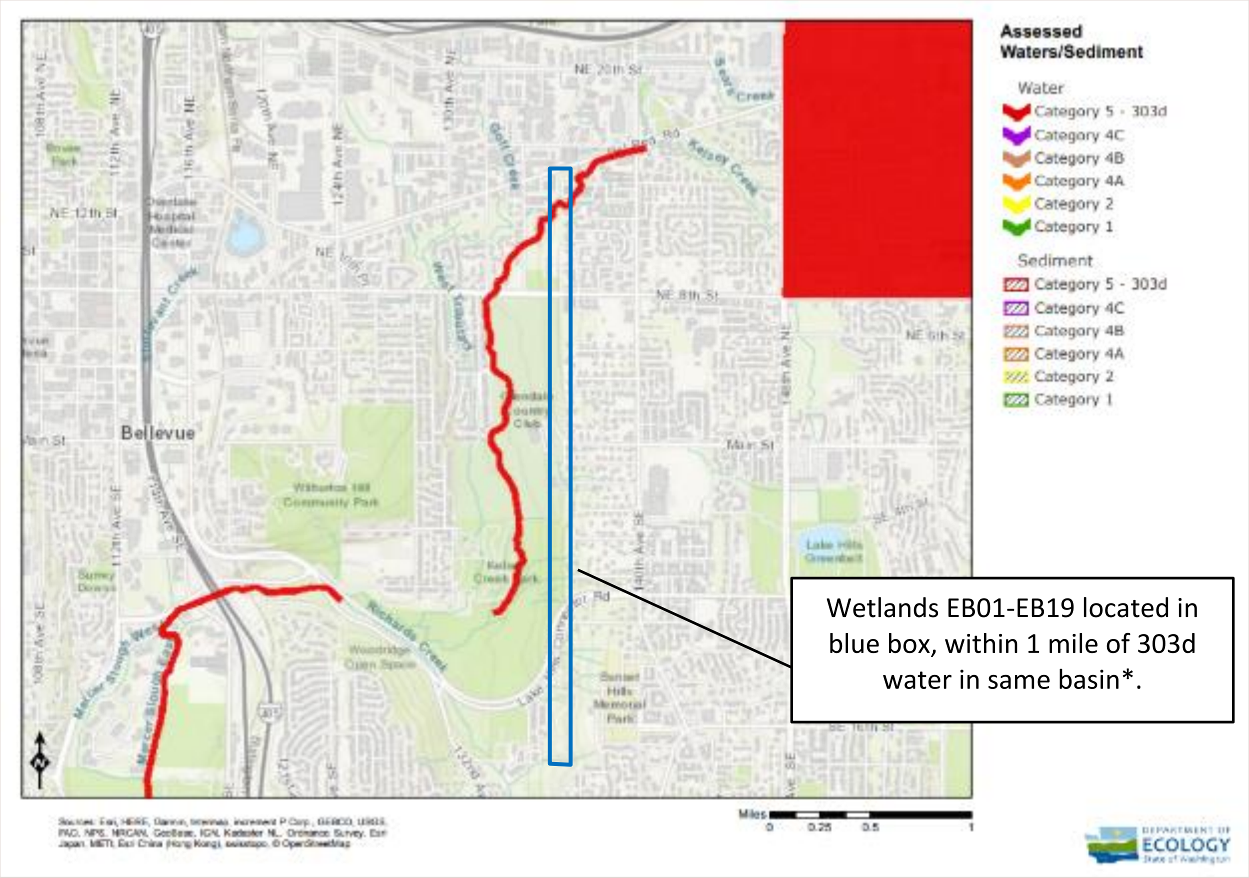
Undisturbed habitat = *% undisturbed + [(% moderate and low intensity land uses)/2]* = 28 + (3/2) = **31%**

303d Figures



Approximate location of Wetland A (Overlake Farms), *not* within 1 mile of 303d water in same basin.

Figure 6. Screen-capture of 303(d) listed waters in basin for Wetland A (Overlake Farms) – S3.1, S3.2



Wetlands EB01-EB19 located in blue box, within 1 mile of 303d water in same basin*.

Figure 7. Screen-capture of 303(d) listed waters in basin for Wetlands EB01 to EB19 – S3.1, S3.2

*Note: Wetlands EB01, EB06, EB07, and EB12 *do not* have a surface water connection to the nearby 303(d) listed water. A surface water connection was observed or presumed for Wetlands EB02-EB05, EB08-EB11, EB13-EB19, and EB21. For more visual information on water flow, see related hydrology figures.

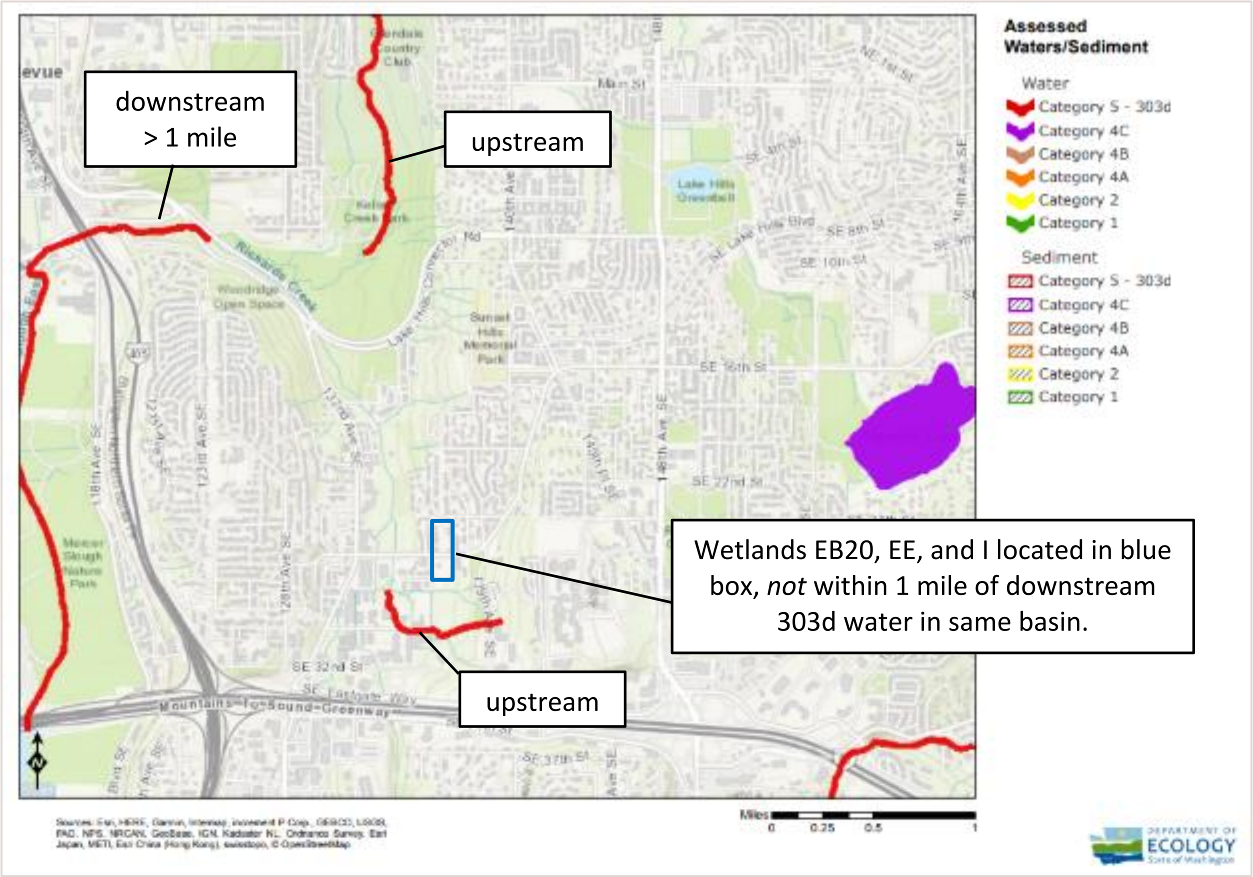


Figure 8. Screen-capture of 303(d) listed waters in basin for Wetlands EB20, EE & I – S3.1, S3.2

Wetland A – Overlake Farms (Depressional)

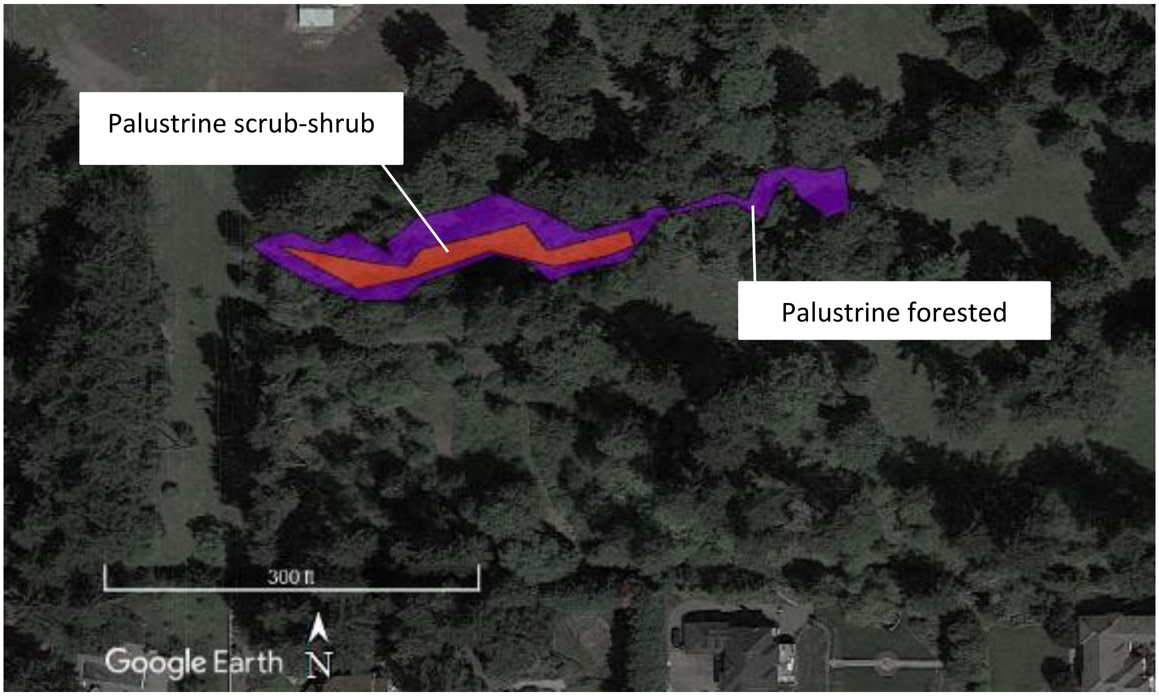


Figure A-1. Cowardin plant classes – D1.3, H1.1, H1.4

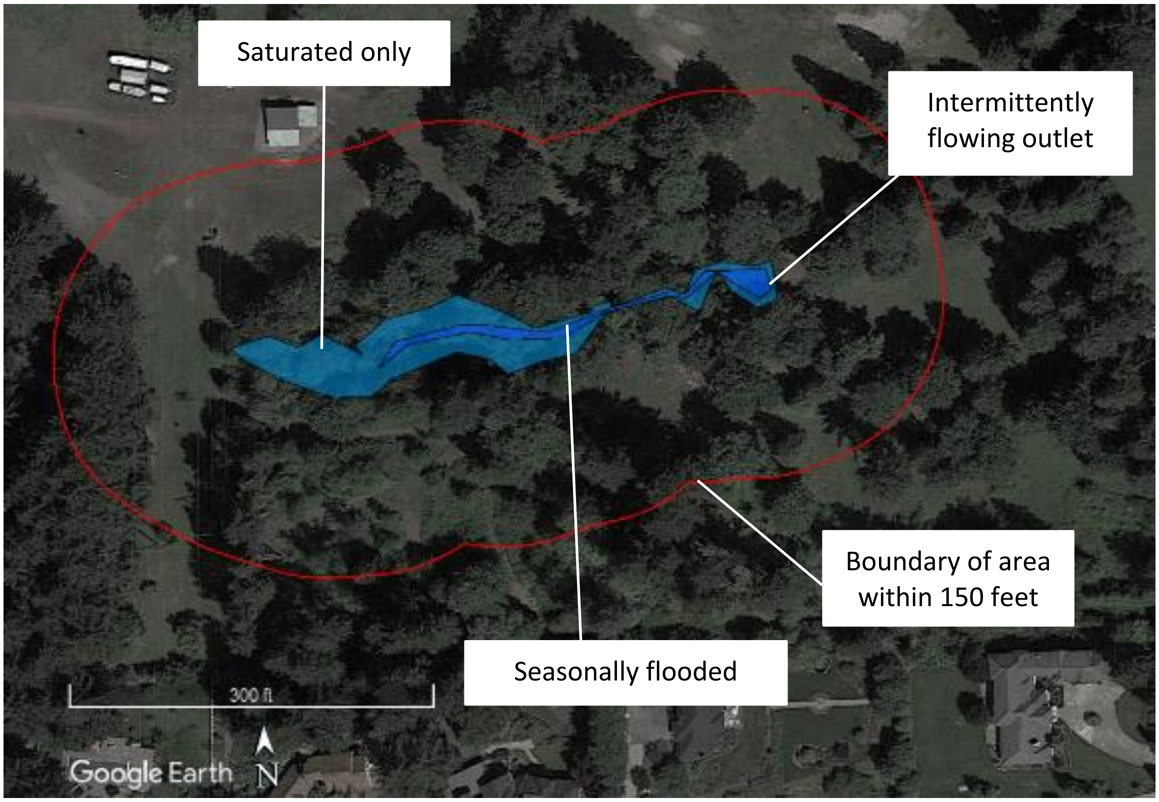


Figure A-2. Hydroperiods, outlet, and 150-foot area – H1.2, S2.1, S5.1

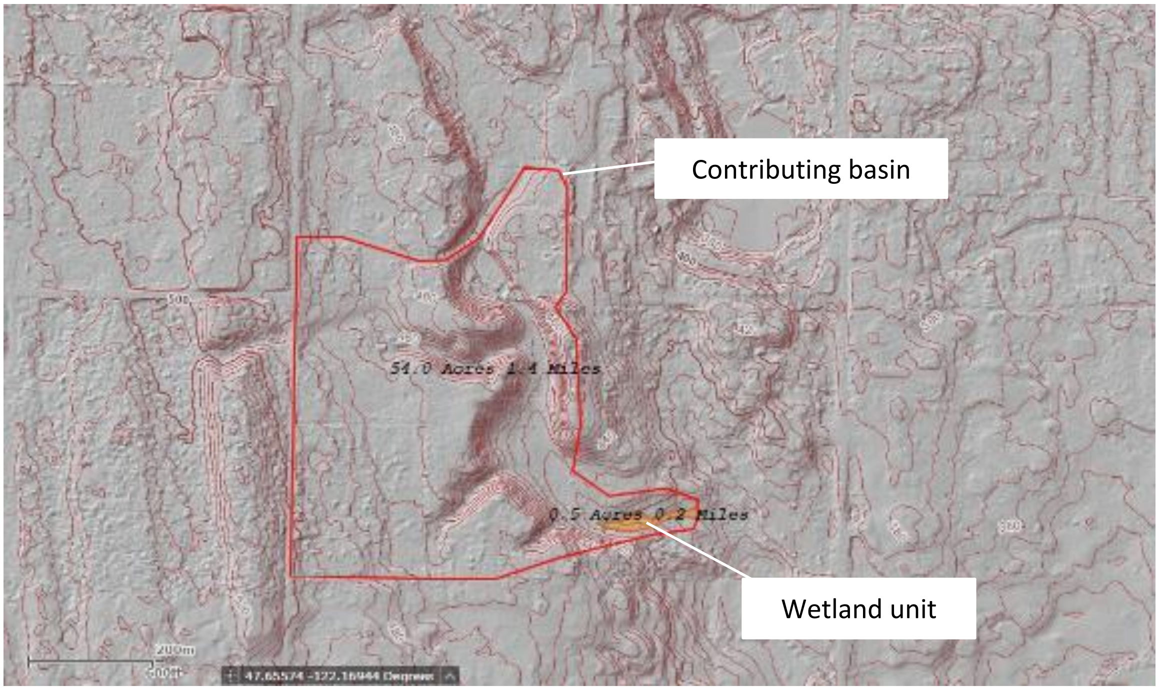


Figure A-3. Map of the contributing basin – D4.3, D5.3

Wetland CB01 (Slope)

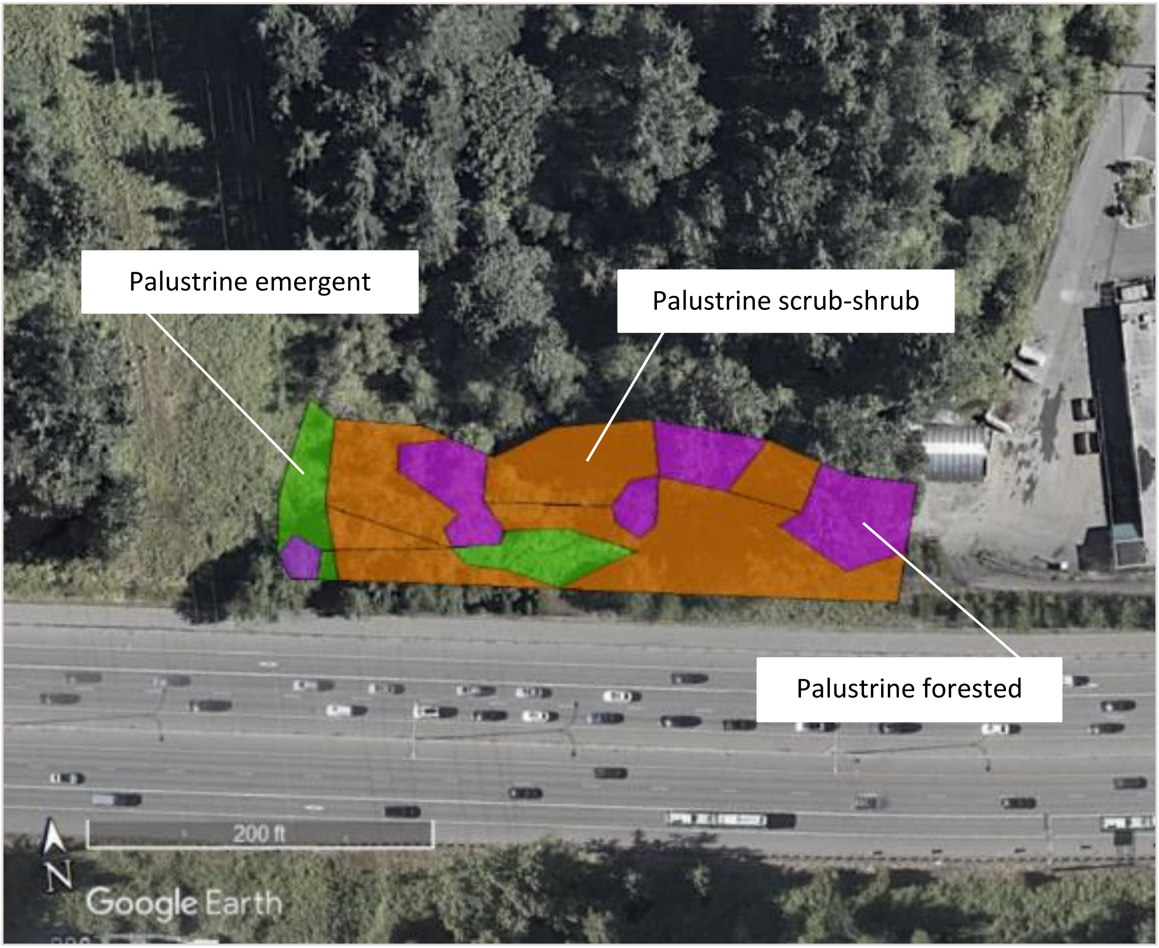


Figure CB01-1. Cowardin plant classes – H1.1, H1.4

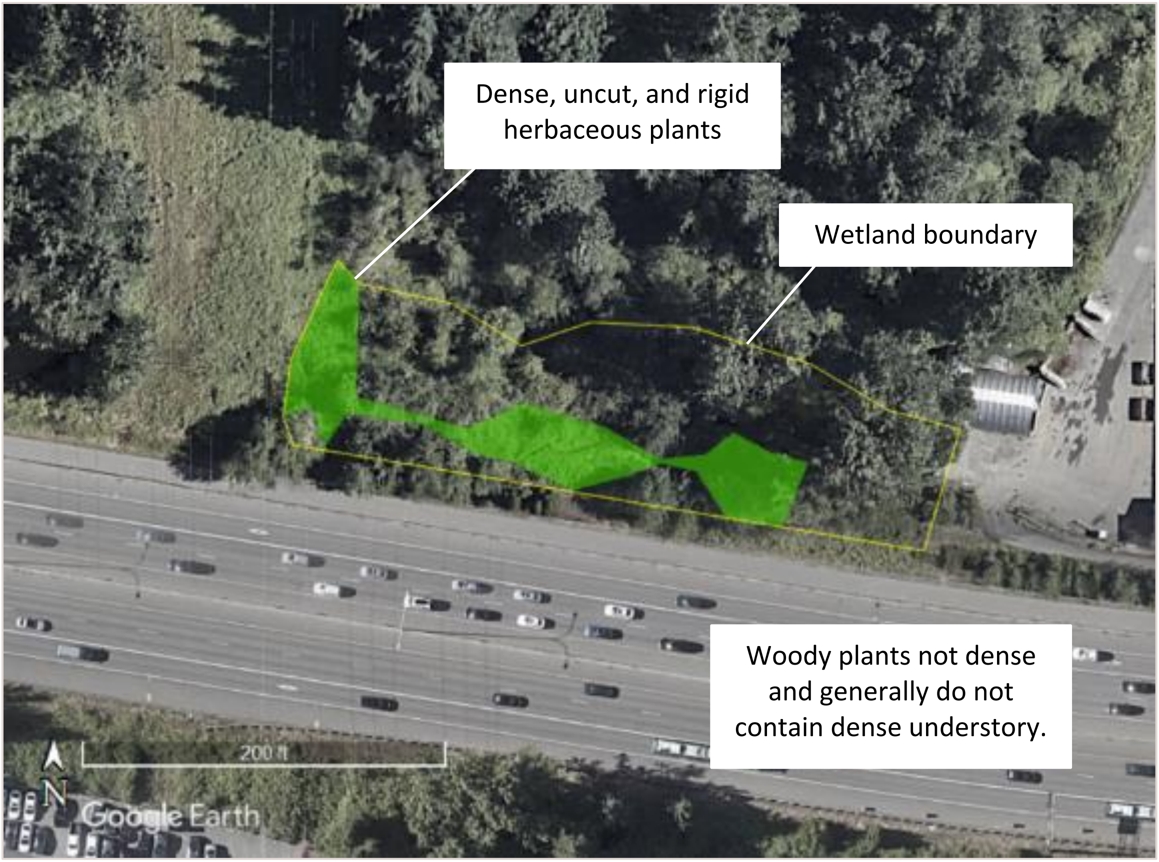
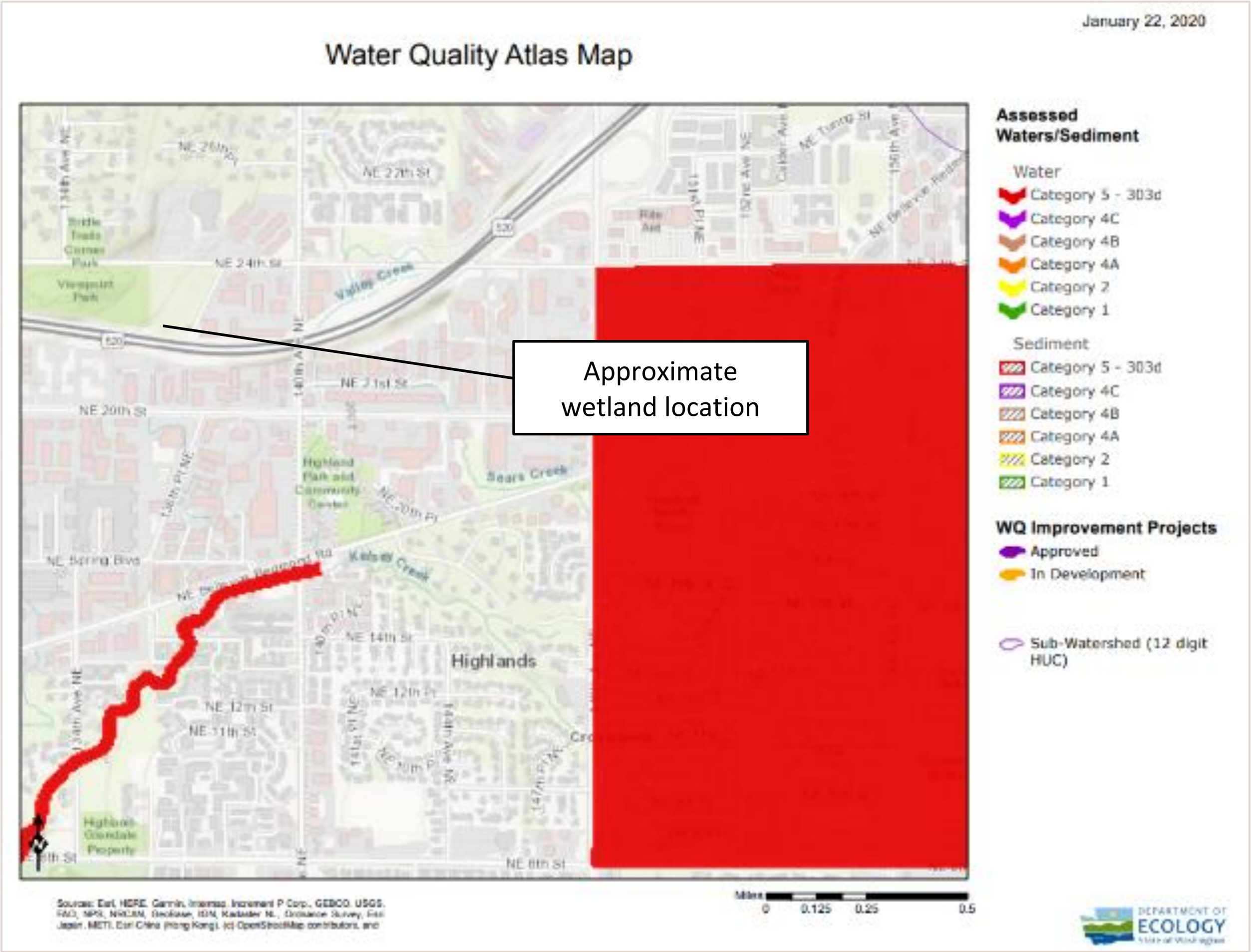


Figure CB01-2. Plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1.

Figure CB01-3. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1



Approximate wetland location

Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

Figure CB01-4. Screen-capture of 303(d) listed waters in basin – S3.1, S3.2

Wetland EB01 (Slope)


Palustrine scrub-shrub: dense, rigid, and uncut with little herbaceous vegetation present in the understory.

Palustrine forested (<10%)

Palustrine emergent: dense, rigid, and uncut.

Figure EB01-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

Figure EB01-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Wetland EB02 (Slope)

Figure EB02-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

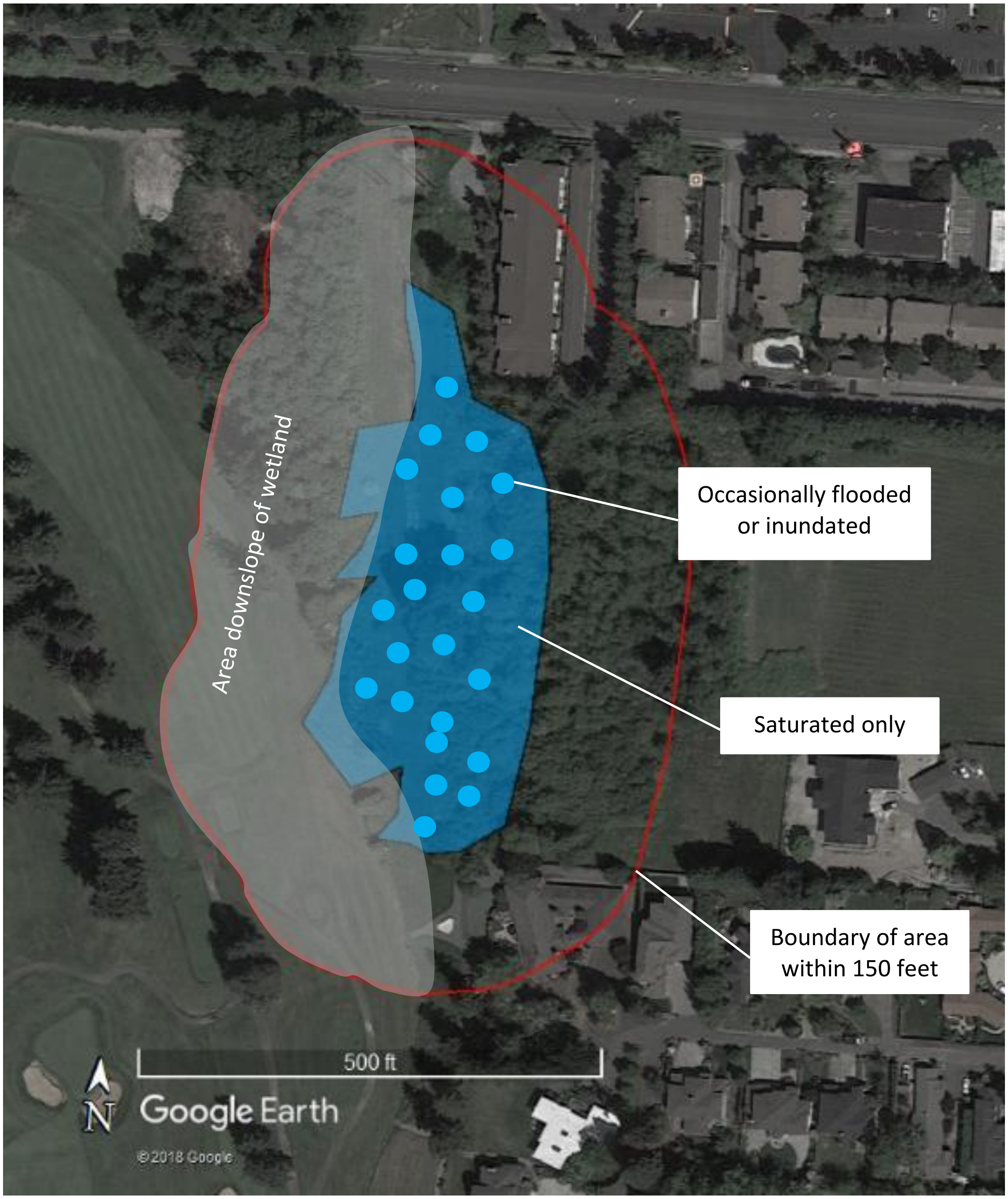


Figure EB02-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Note: Ditch/stream feature that is <10% of wetland are (not shown) is presumed to convey surface water to Kelsey Creek.

Wetland EB03 (Slope)

Figure EB03-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

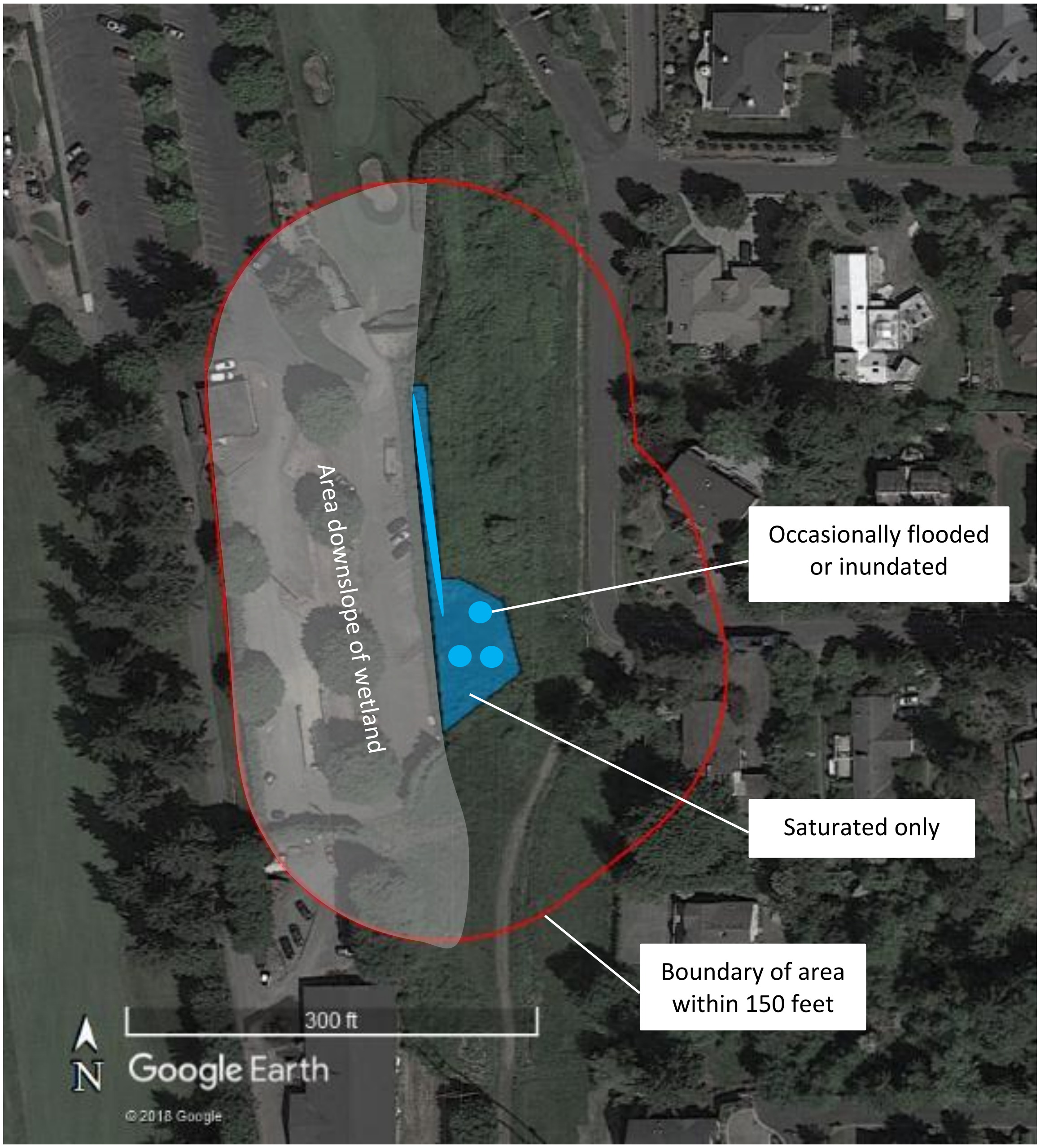


Figure EB03-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Wetland EB04 (Depressional)

Figure EB04-1. Cowardin plant classes – D1.3, H1.1, H1.4

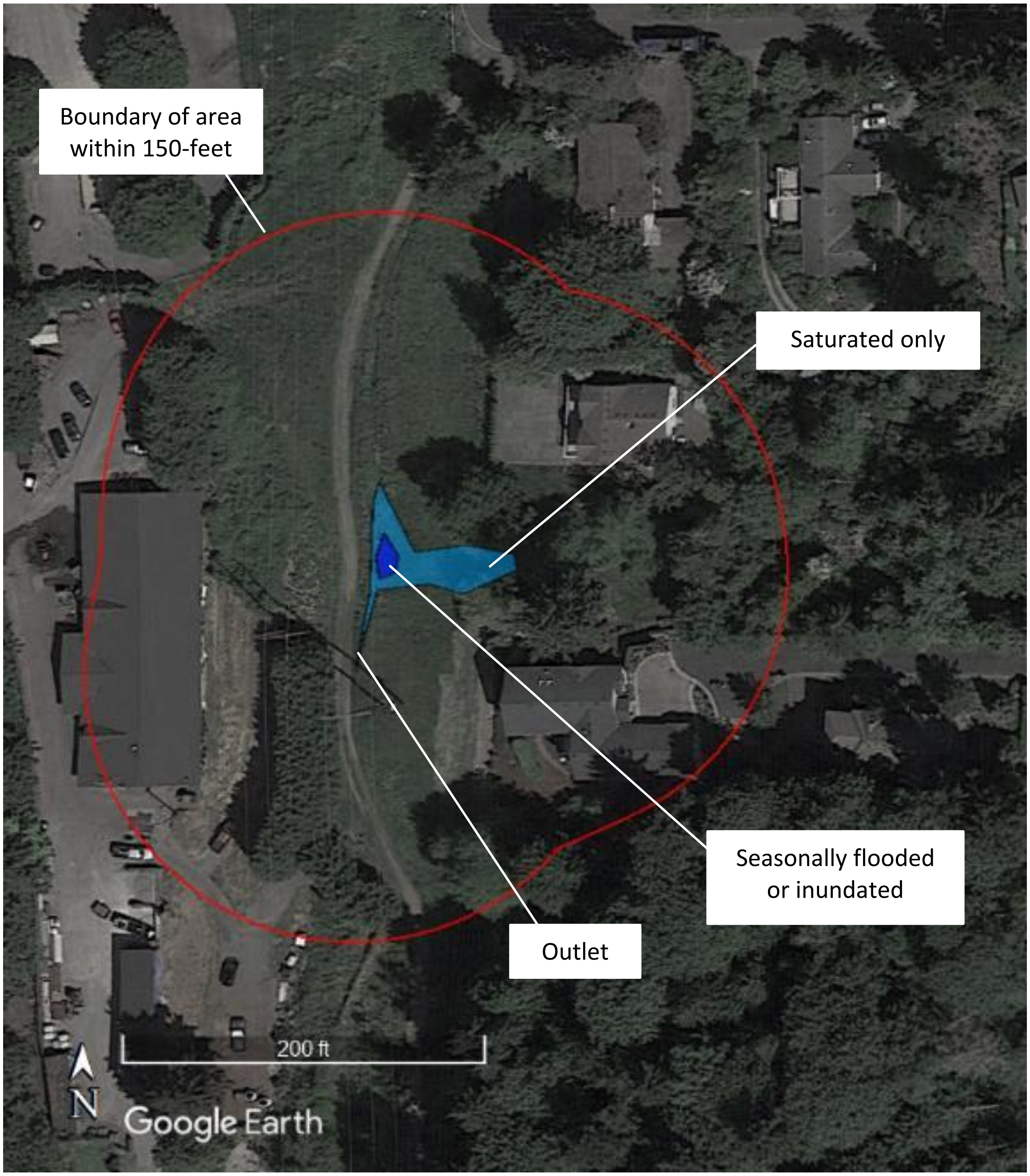


Figure EB04-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

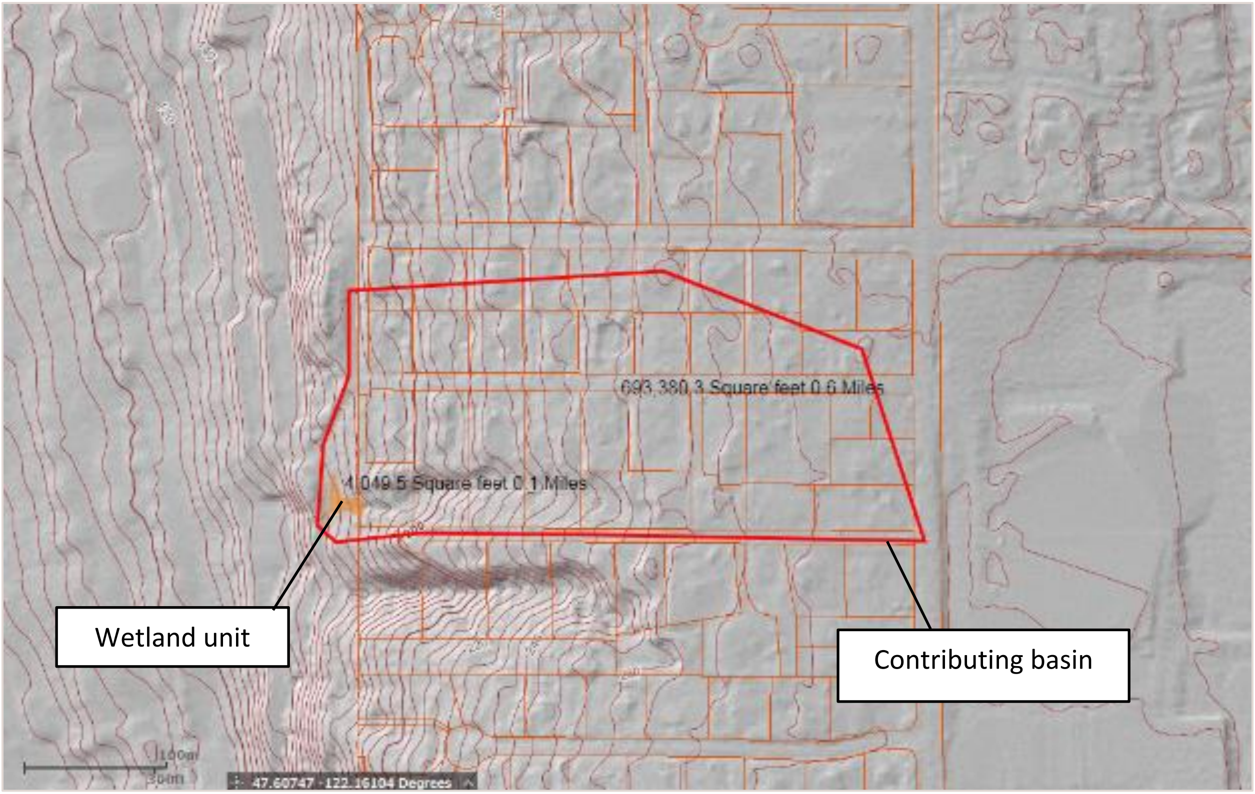


Figure EB04-3. Map of the contributing basin – D4.3, D5.3

Wetland EB05, EB06, and EB07 (Slope)

Wetland EB06: dense, rigid, and uncut herbaceous vegetation throughout.

Wetland EB07: vegetation appears to be mowed on a more regular basis – therefore, not considered uncut.

Palustrine Emergent (>50%): dense, rigid, uncut

Palustrine Scrub-shrub (<50%): dense, rigid, uncut; no herbaceous below

Figure EB05-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

Figure EB05-2. Hydroperiods and 150-foot area for Wetland EB05 – H1.2, S2.1, S5.1

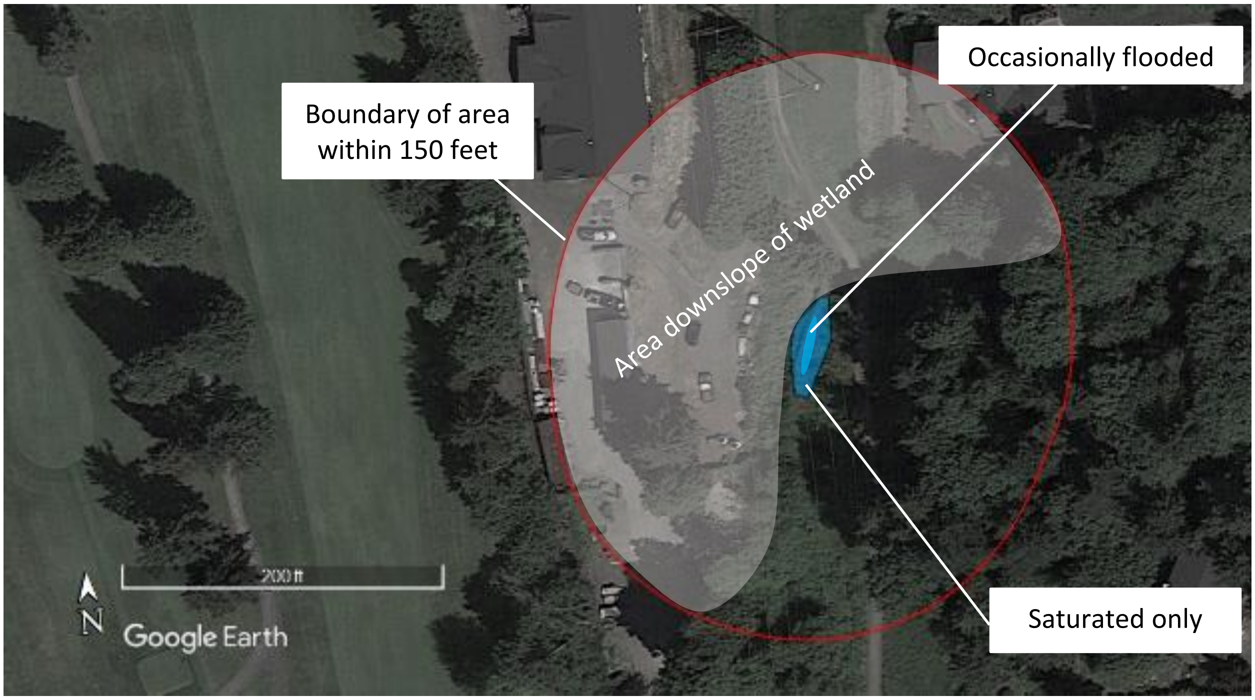


Figure EB06-2. Hydroperiods and 150-foot area for Wetland EB06 – H1.2, S2.1, S5.1

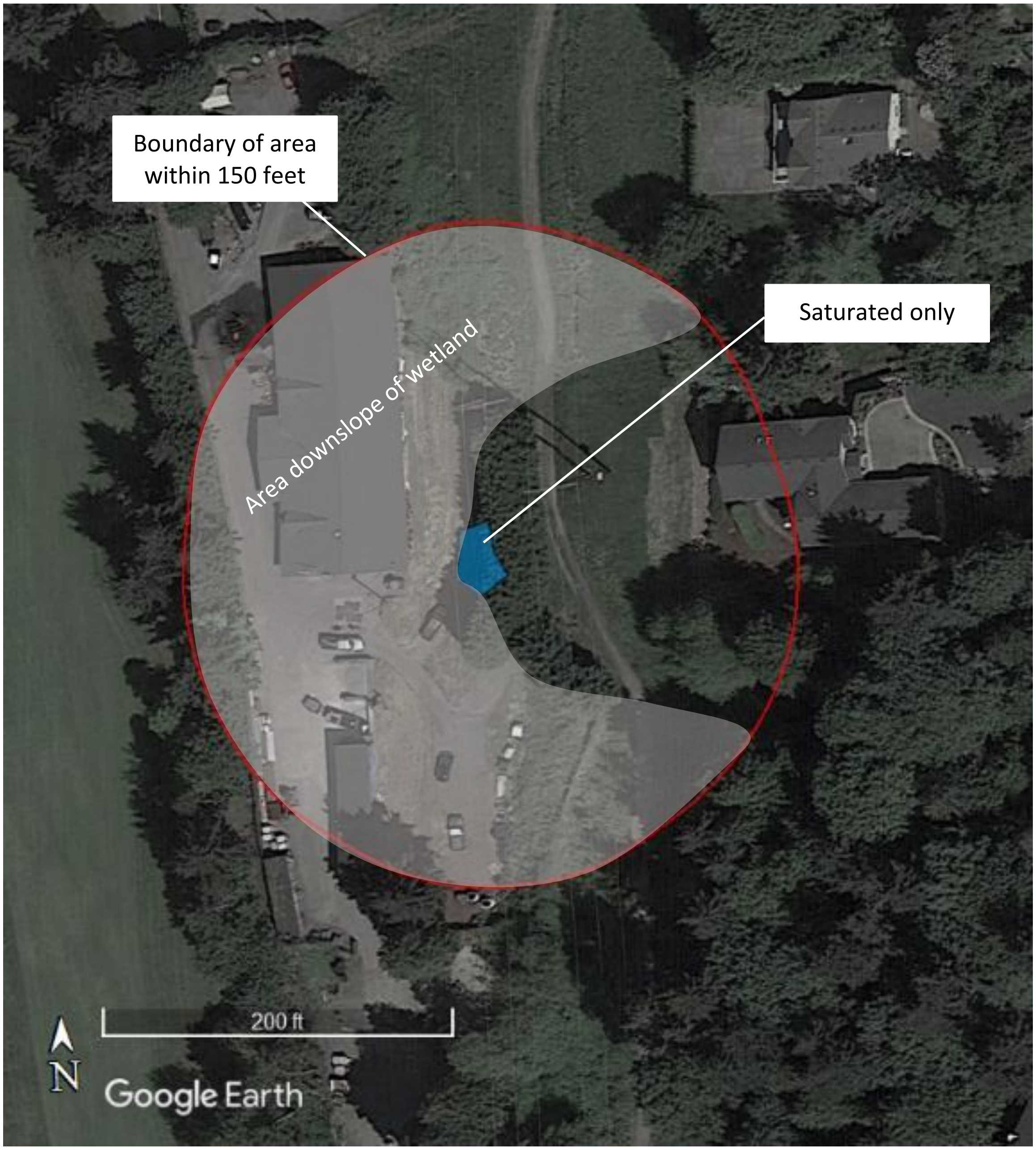


Figure EB07-2. Hydroperiods and 150-foot area for Wetland EB07 – H1.2, S2.1, S5.1

Wetland EB08 (Slope)

Figure EB08-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

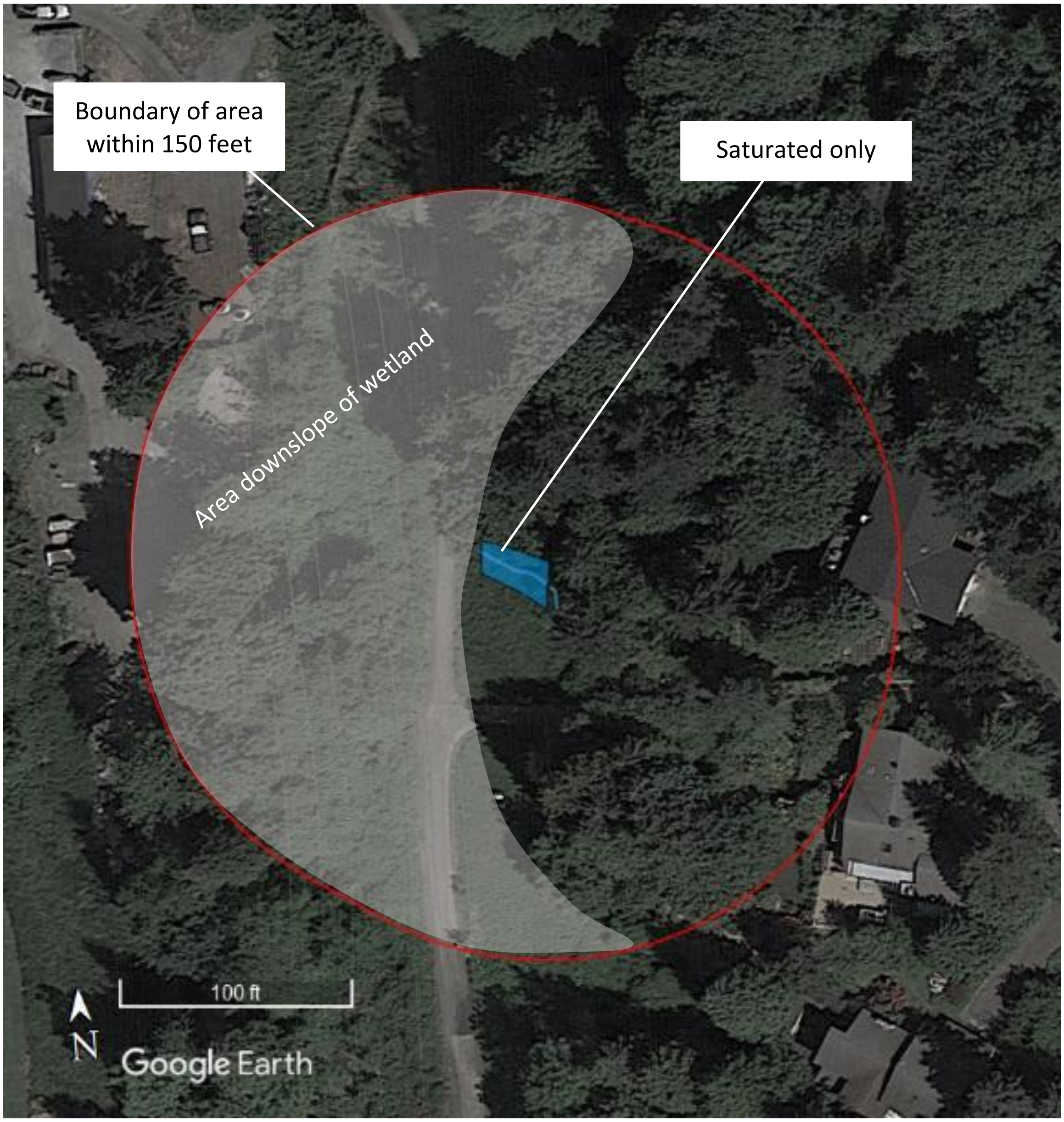


Figure EB08-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Note: Small, permanently flowing channel/stream represents less than 10 percent of wetland unit.

Wetland EB09 (Depressional)

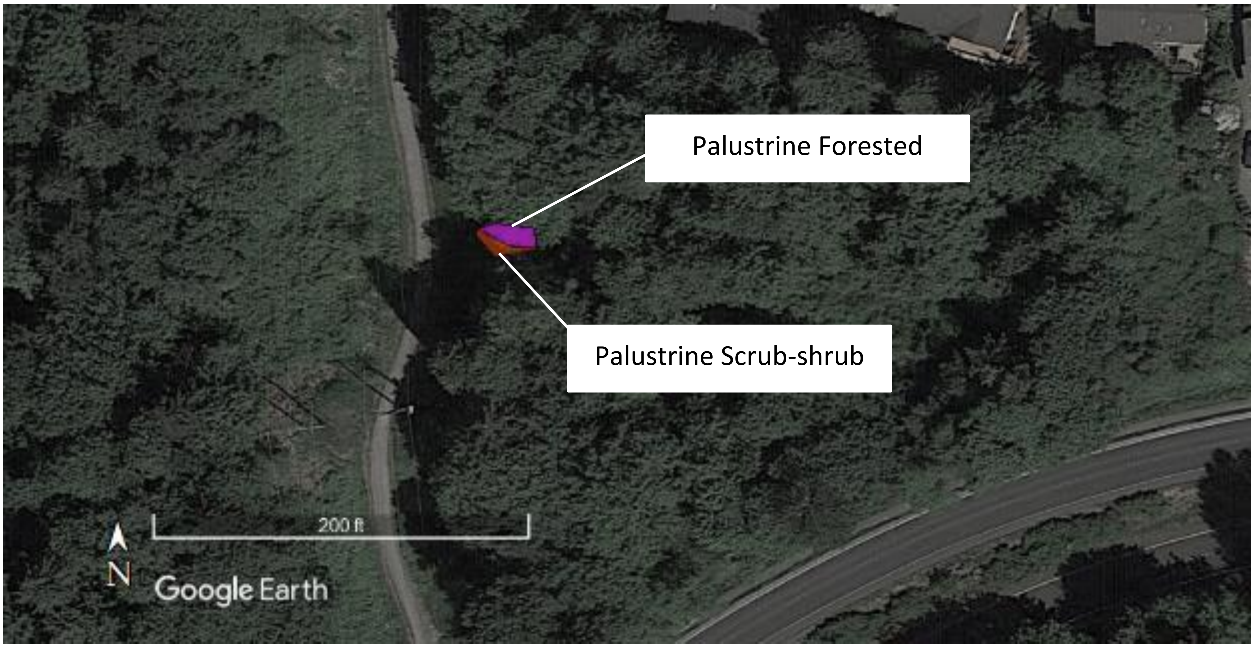


Figure EB09-1. Cowardin plant classes – D1.3, H1.1, H1.4

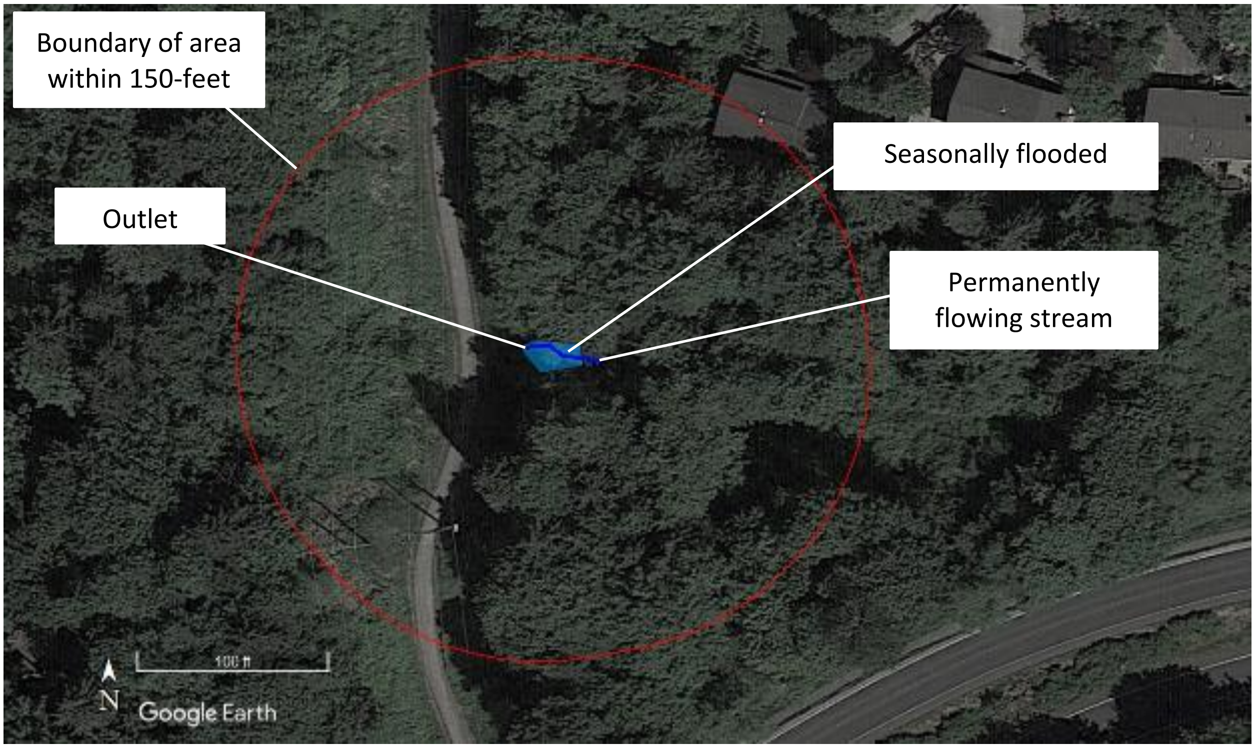


Figure EB09-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

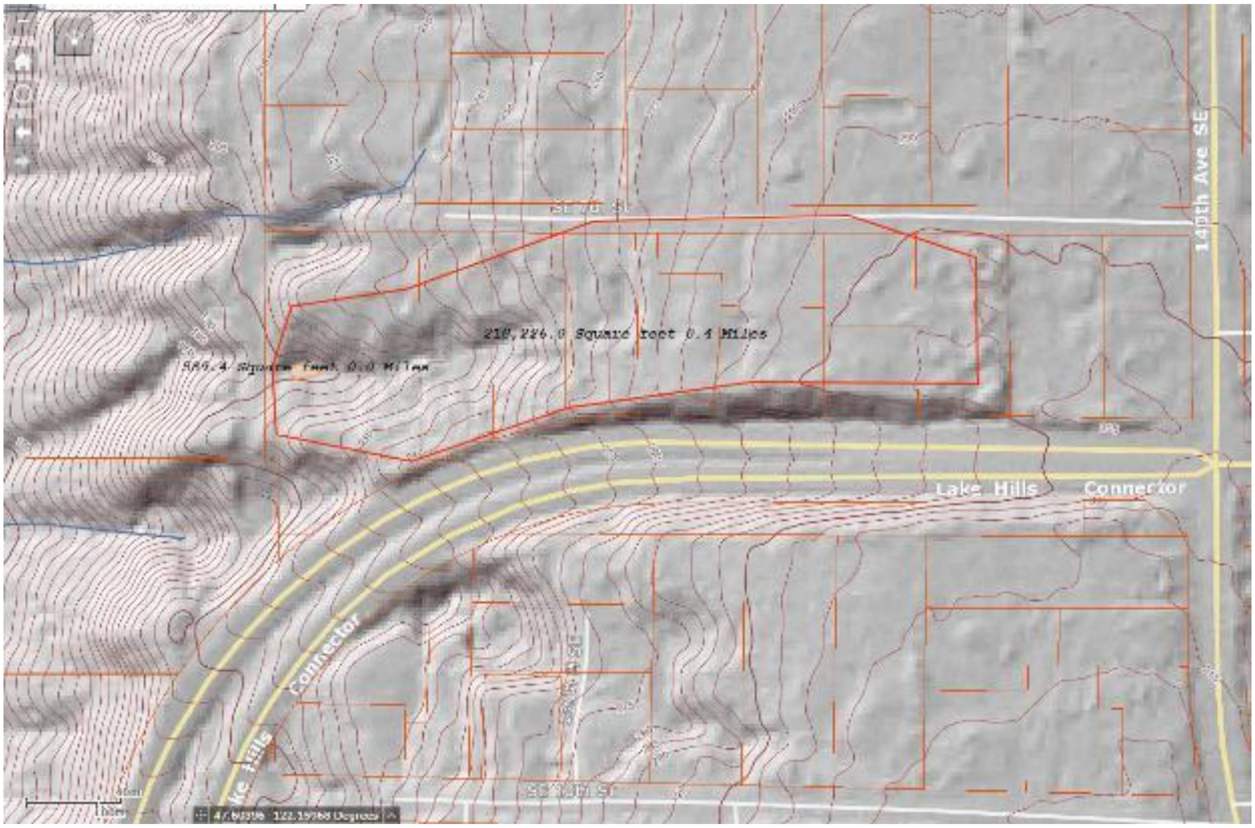


Figure EB09-3. Map of the contributing basin – D4.3, D5.3

Wetland EB10 (Slope)

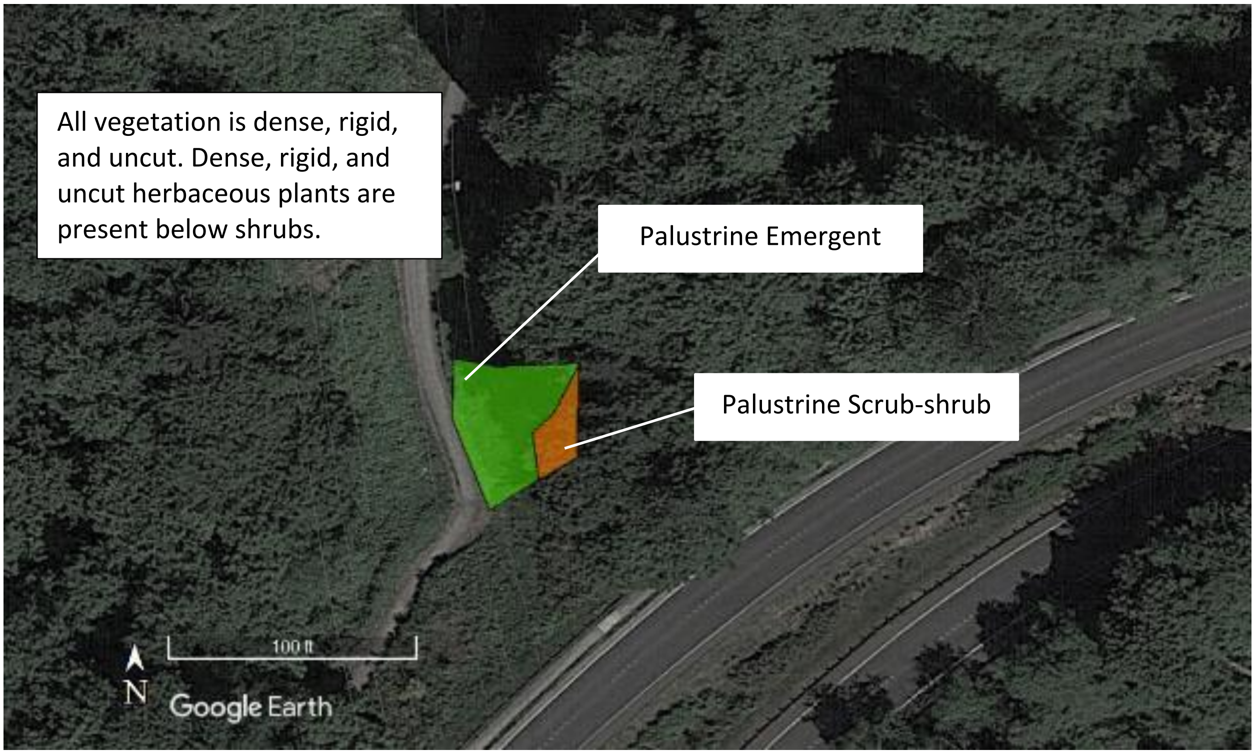


Figure EB10-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

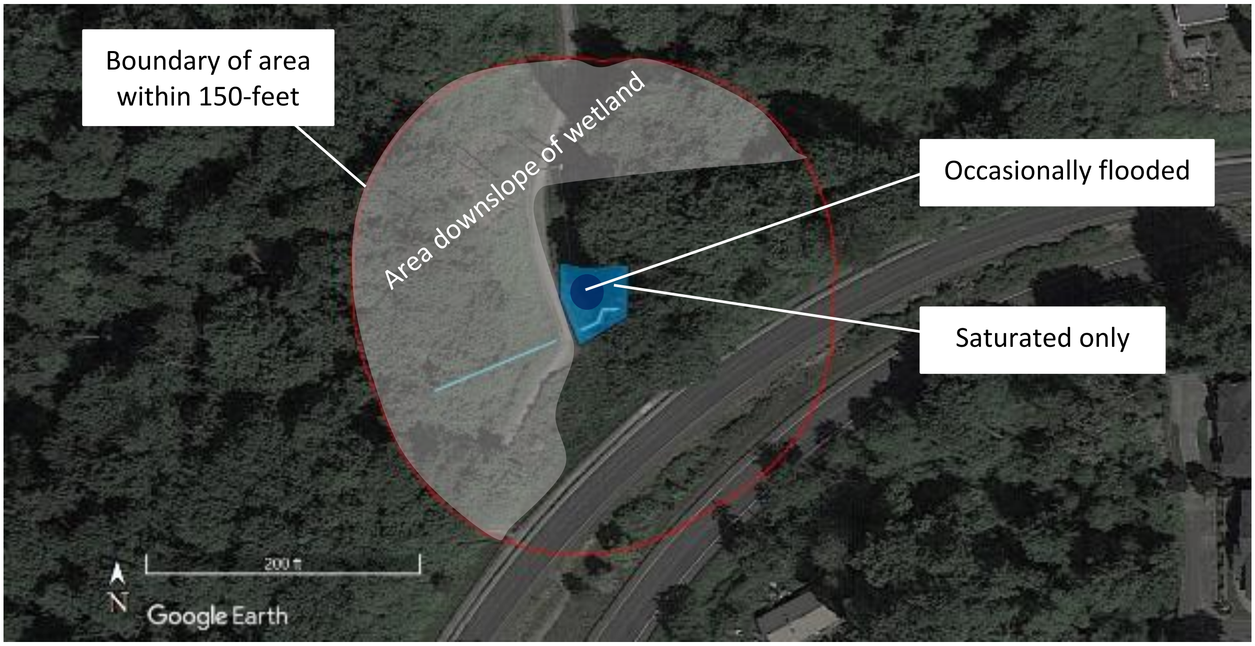


Figure EB10-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Note: Small, permanently flowing stream represents less than 10 percent of wetland unit.

Wetland EB11 (Depressional)

Figure EB11-1. Cowardin plant classes – D1.3, H1.1, H1.4

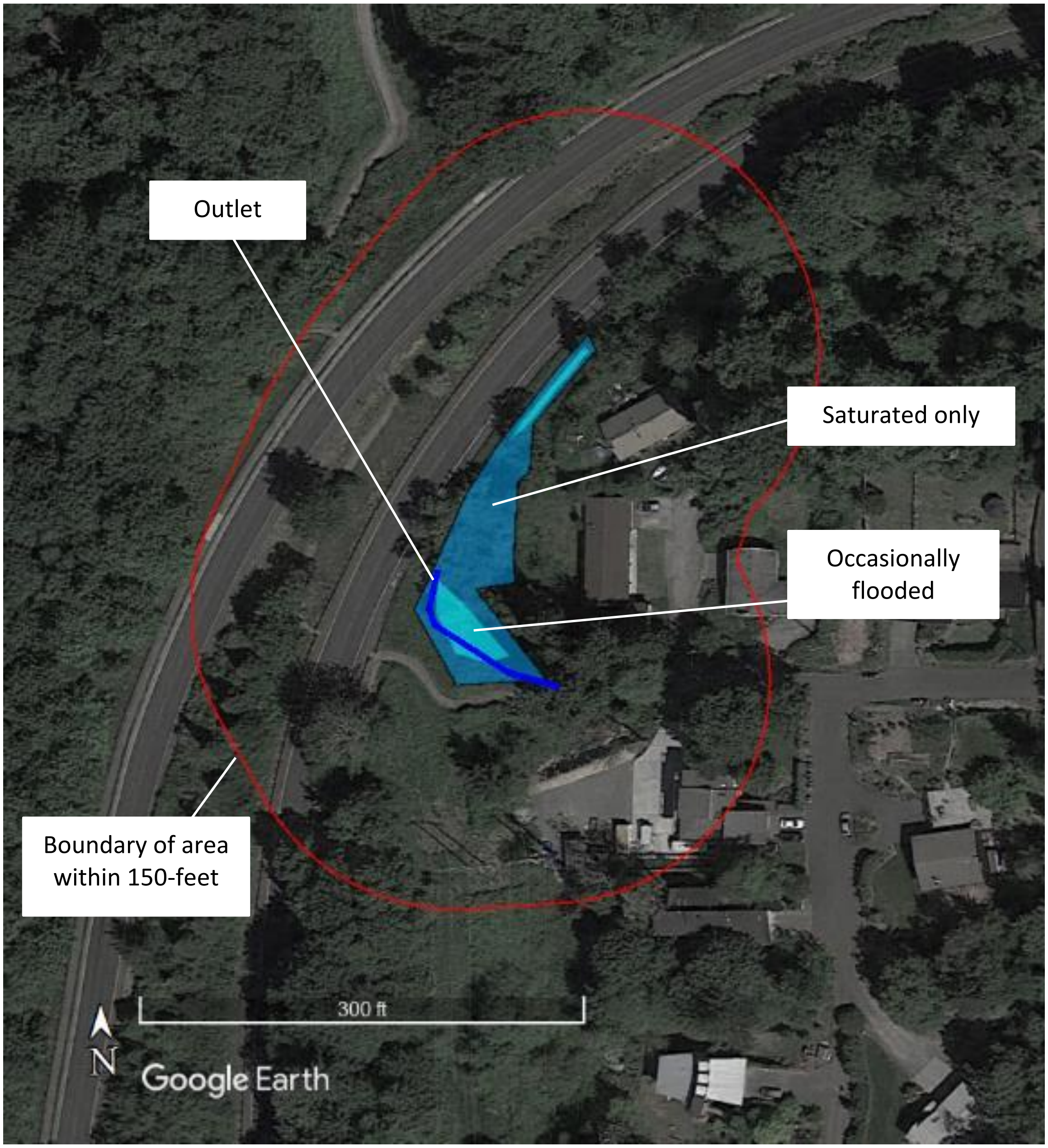


Figure EB11-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

Note: Permanently flowing stream is less than 10 percent of wetland area.

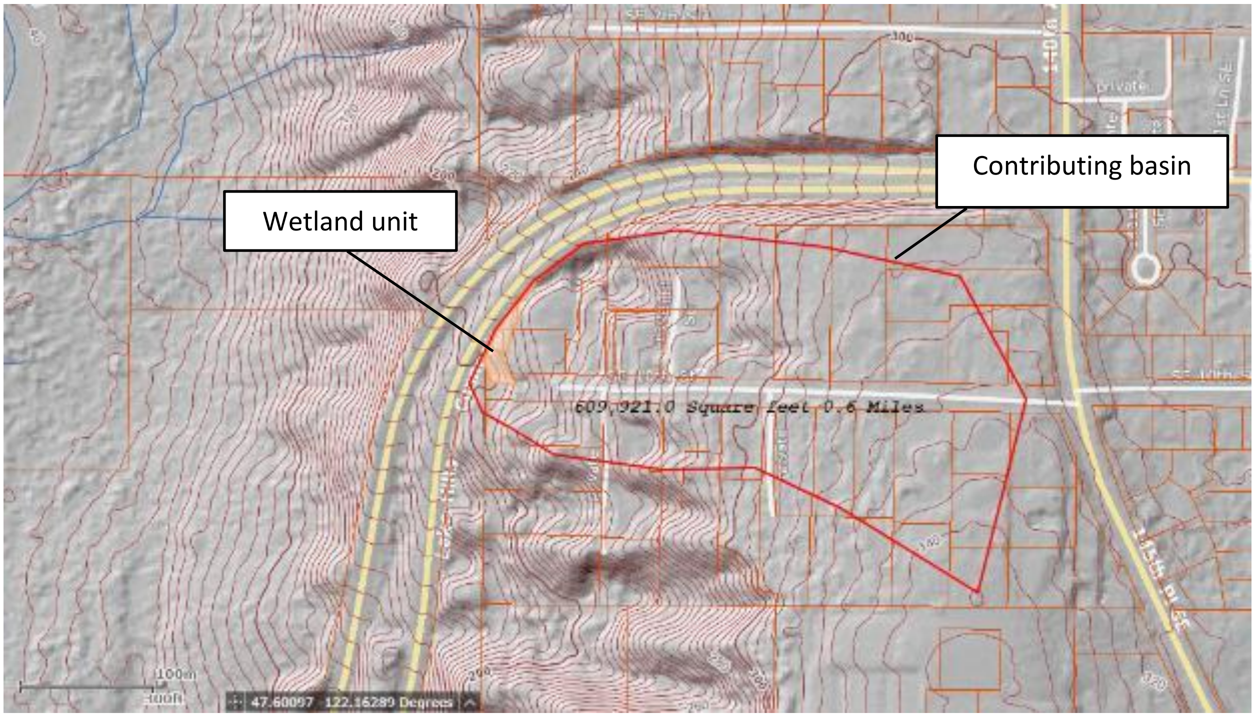


Figure EB11-3. Map of the contributing basin – D4.3, D5.3

Wetland EB12, EB13, and EB14 (Slope)

Figure EB12-1. Cowardin plant classes – H1.1, H1.4

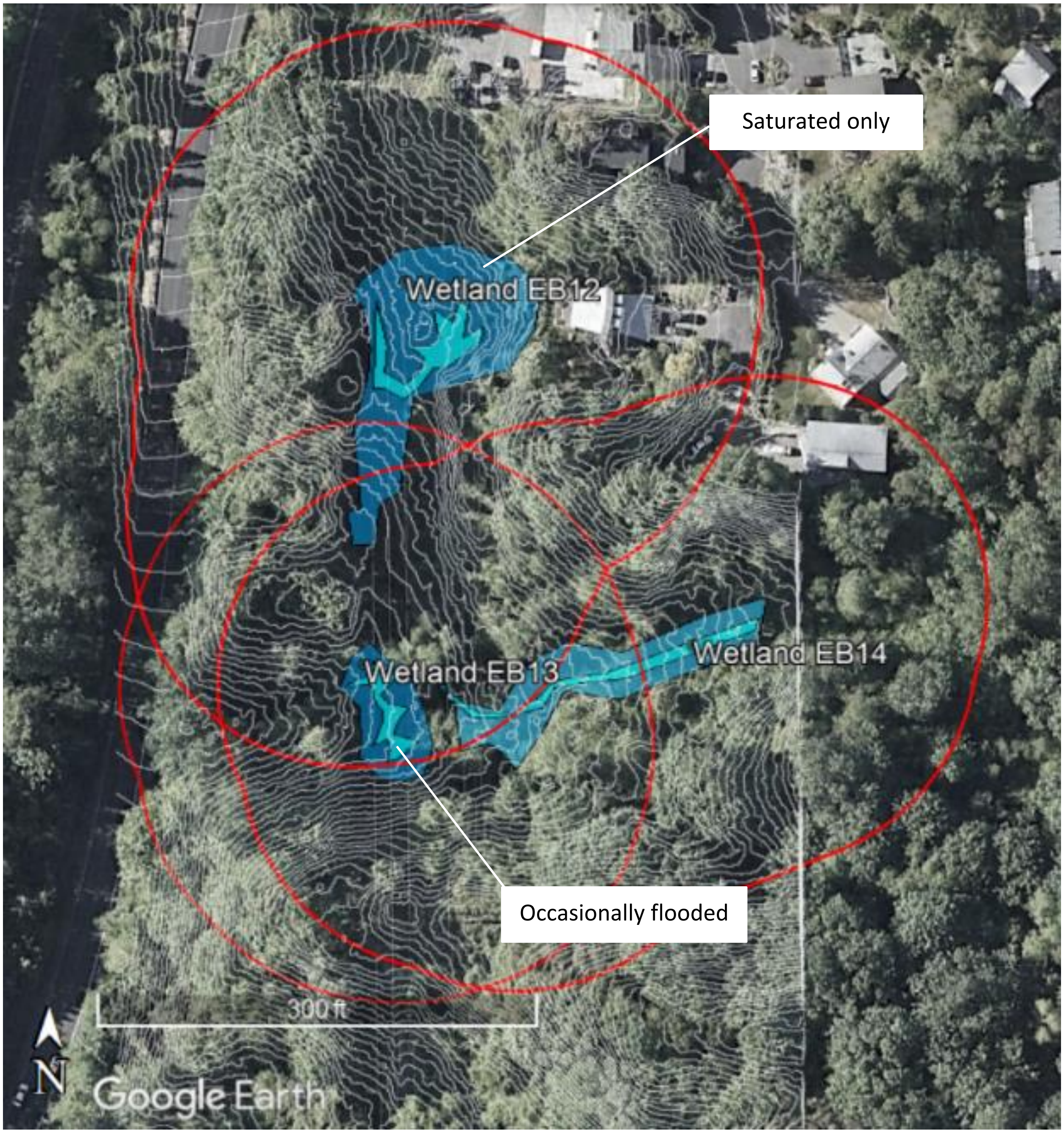


Figure EB12-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Note: Available 2-ft contours displayed, but limited to certain distance adjacent to corridor.

- Within the uphill side of EB12, > 10% of area in land use that generates pollutants; and > 25% of area produces excess runoff.
- Within the uphill side of EB13 and EB14, over 90% area naturally vegetated (i.e., < 10% of area is pollutant-generating and < 25% of area produces excess runoff).

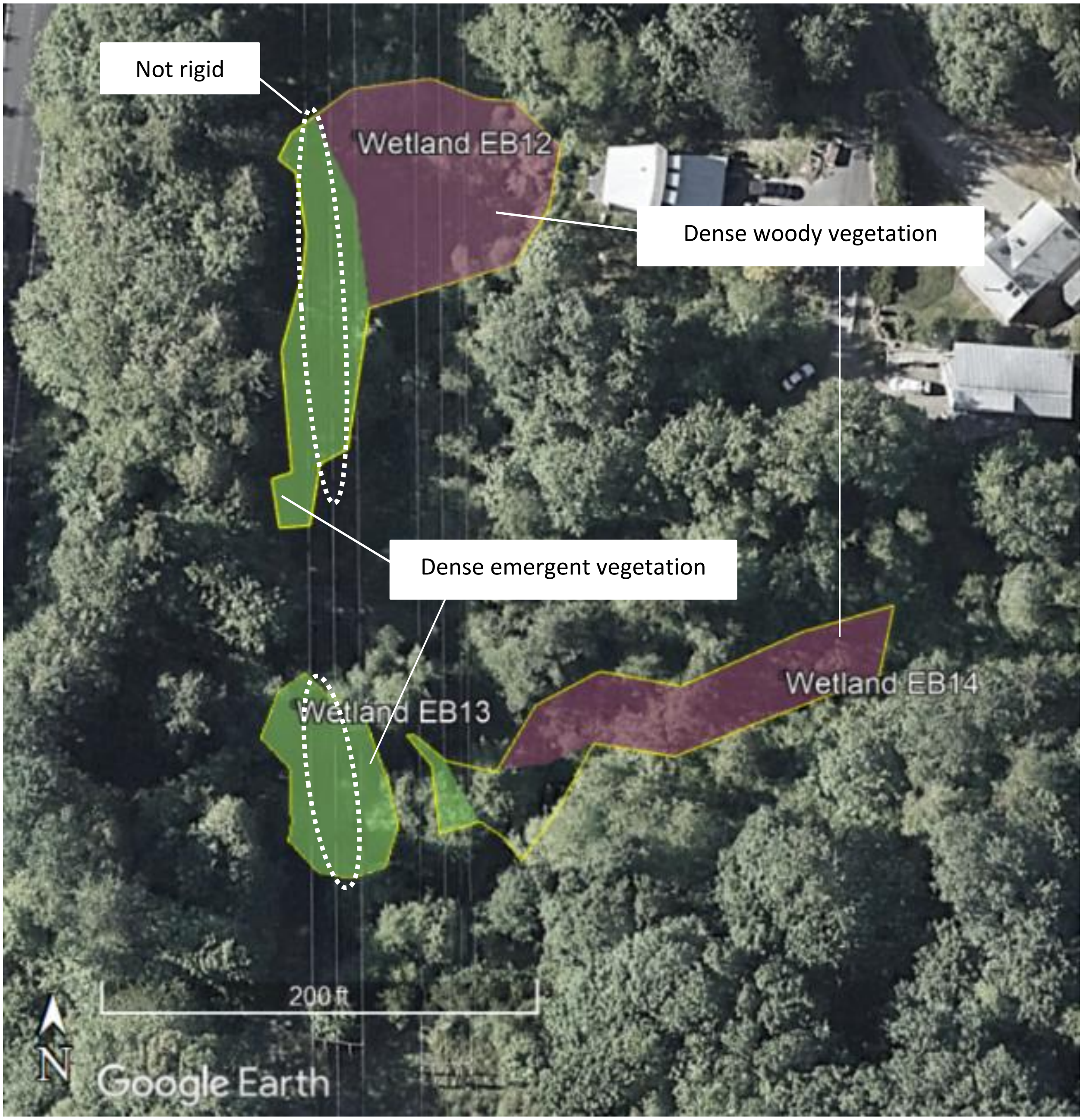


Figure EB12-3. Plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1

Wetland EB15 (Slope)

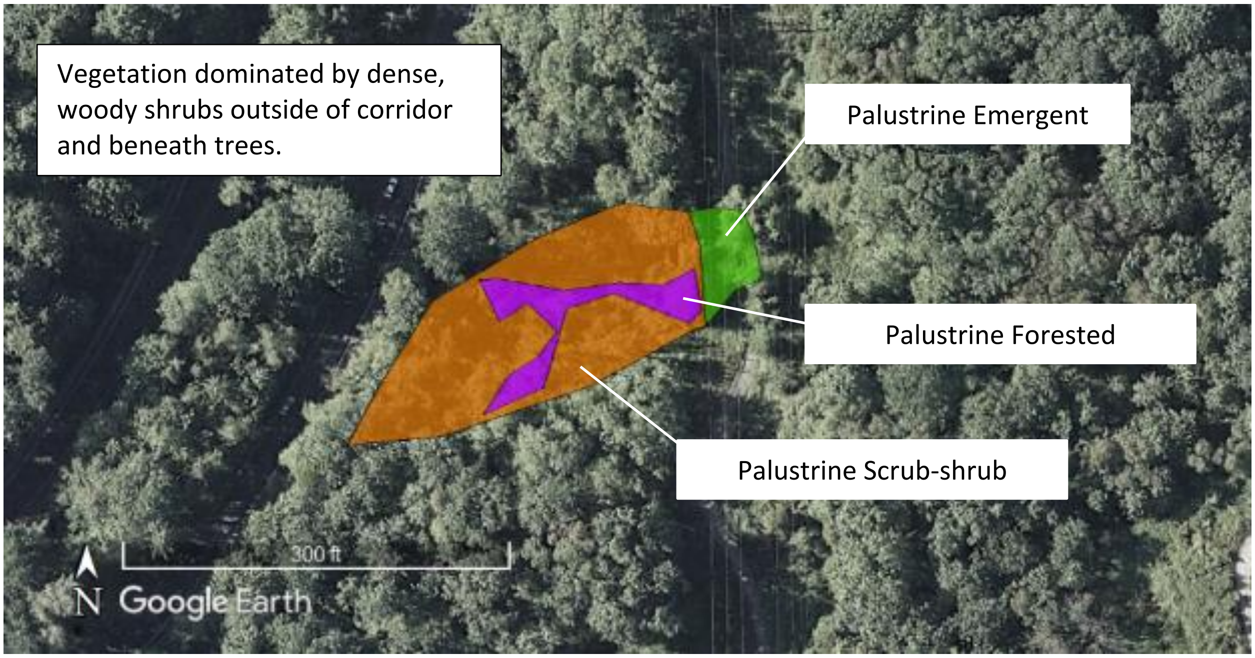


Figure EB15-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

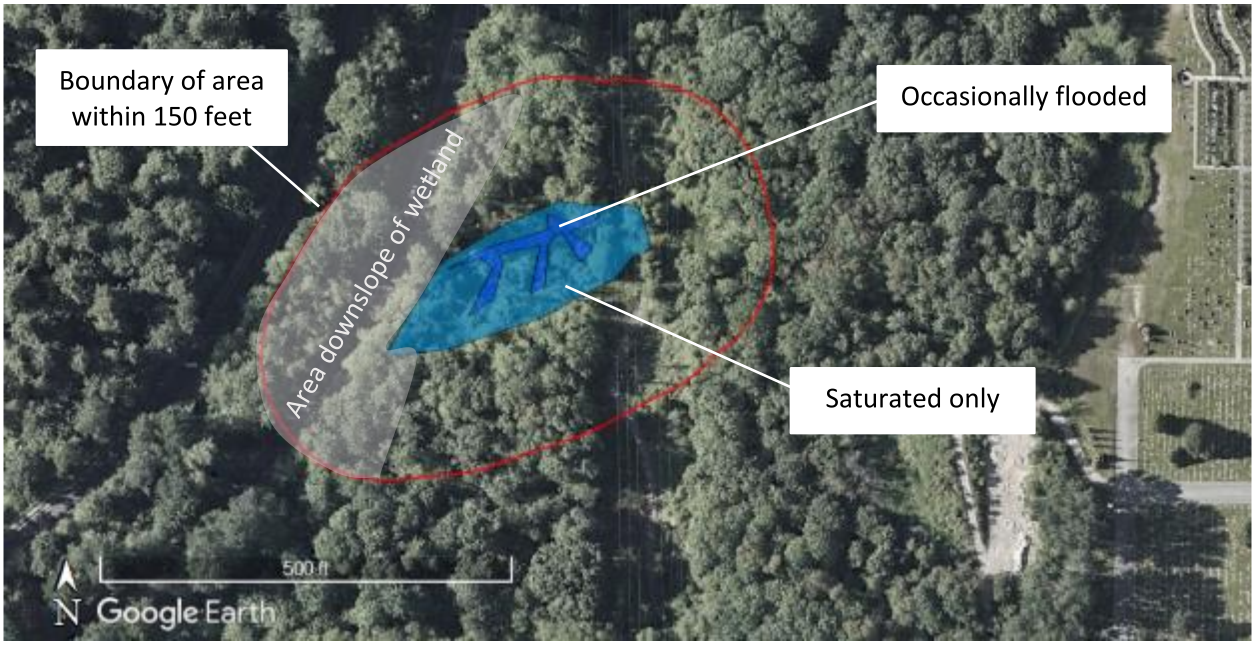


Figure EB15-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Note: Stream present within wetland boundaries presumed to be less than 10 percent of wetland unit.

Wetland EB16 (Depressional)

Figure EB16-1. Cowardin plant classes – D1.3, H1.1, H1.4

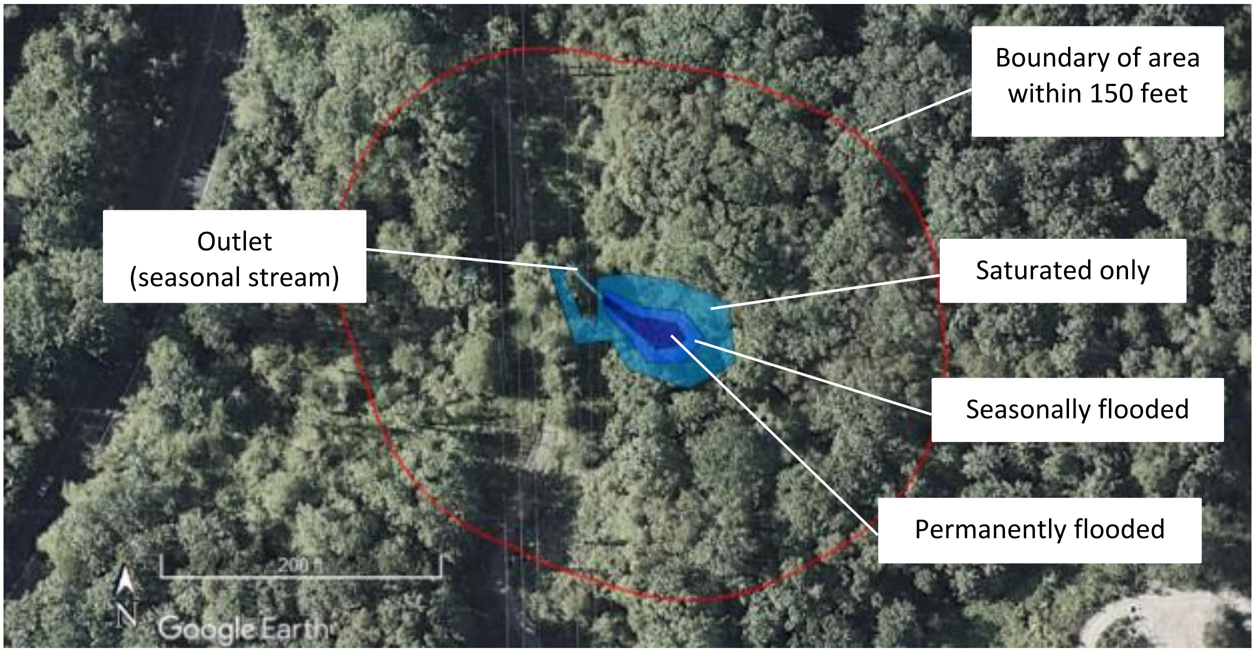


Figure EB16-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

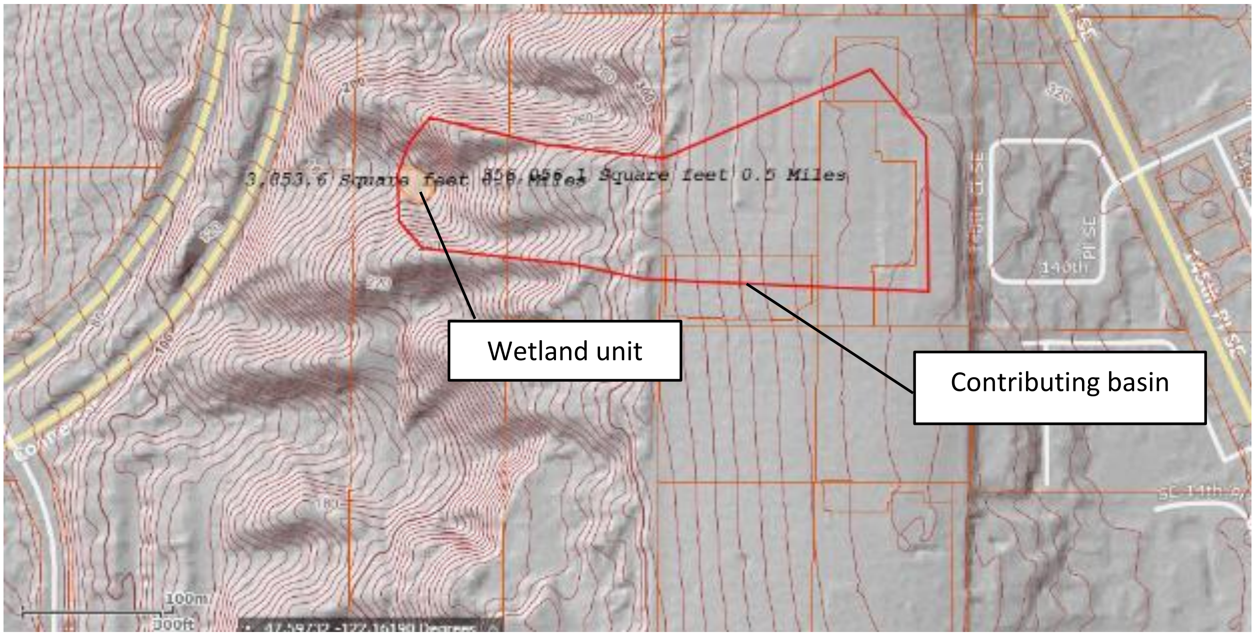


Figure EB16-3. Map of the contributing basin – D4.3, D5.3

Wetland EB17 (Depressional)

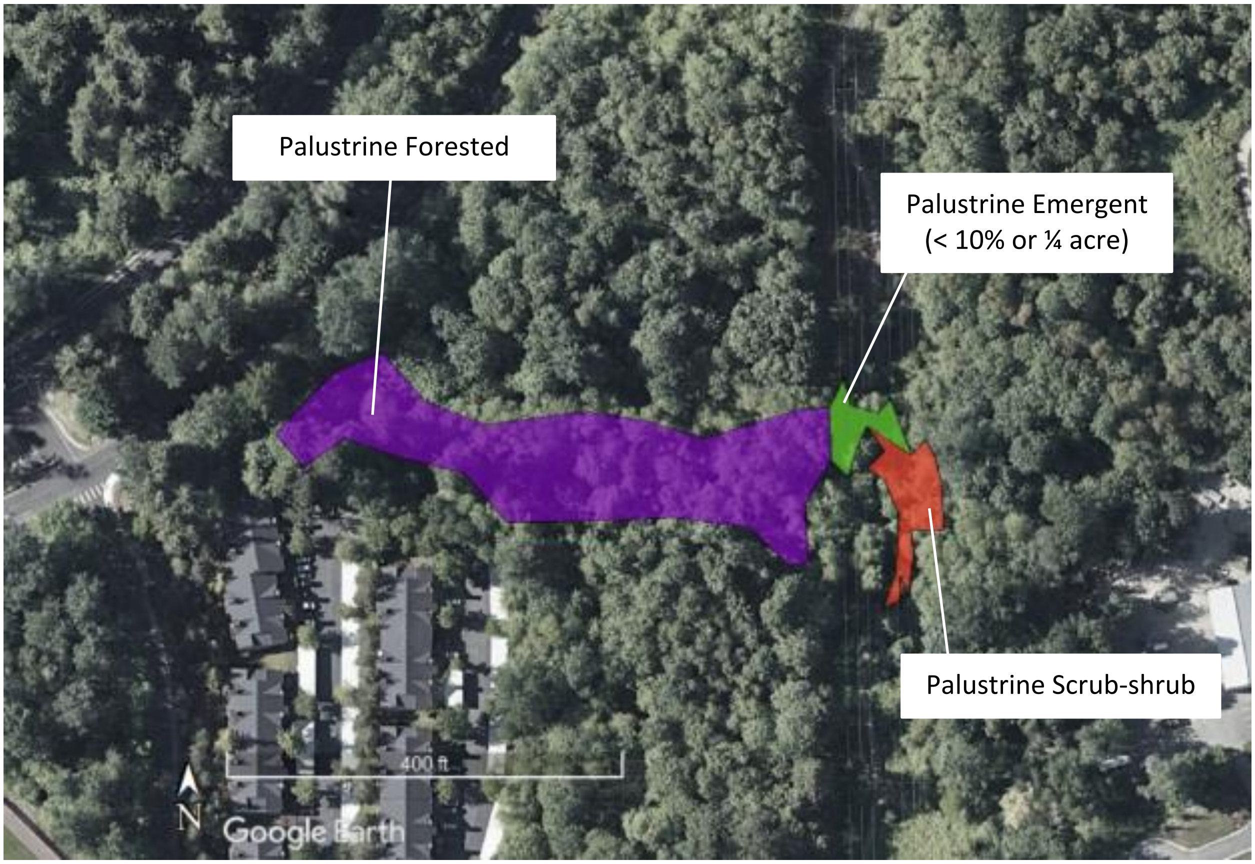


Figure EB17-1. Cowardin plant classes – D1.3, H1.1, H1.4

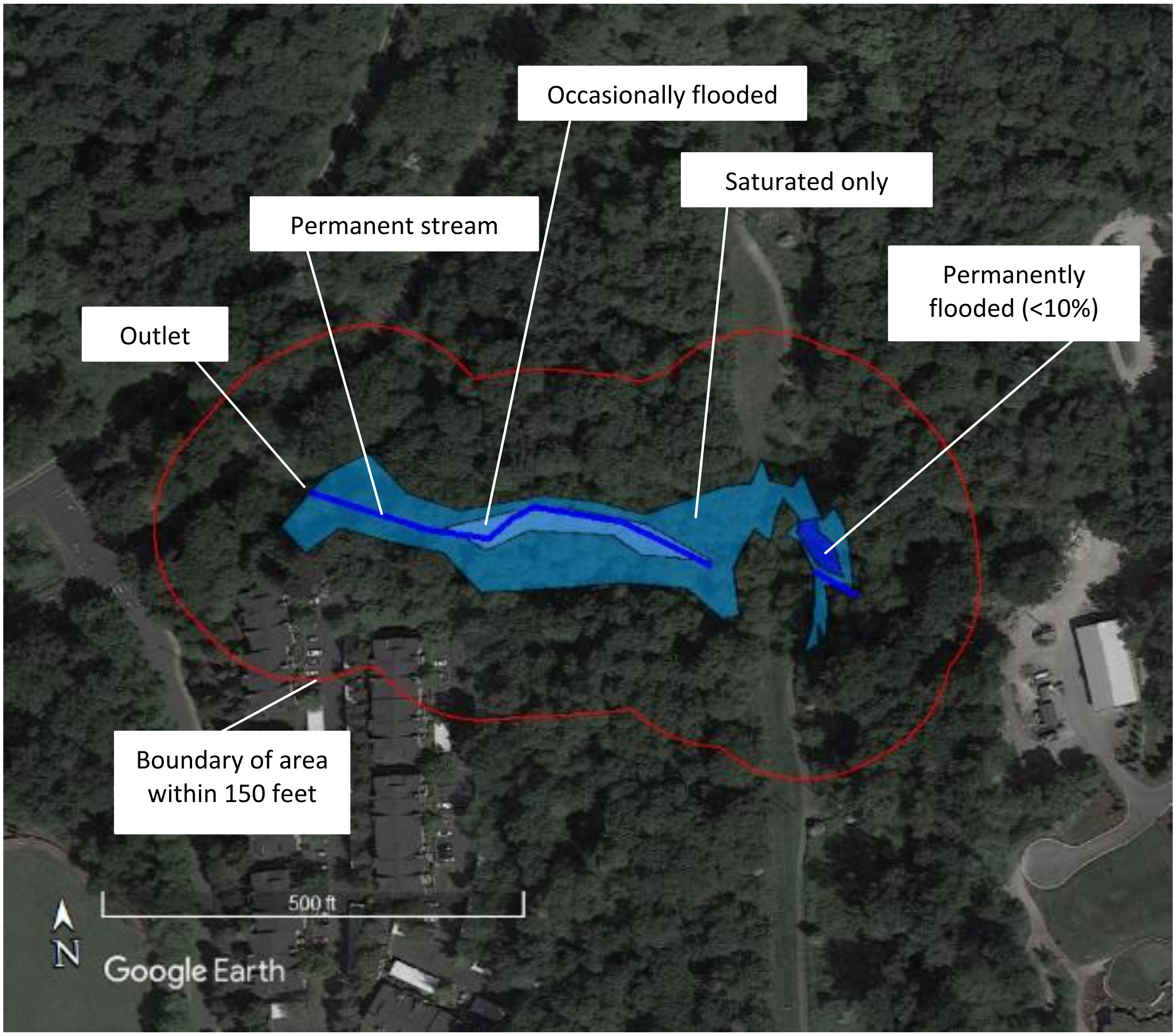


Figure EB17-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

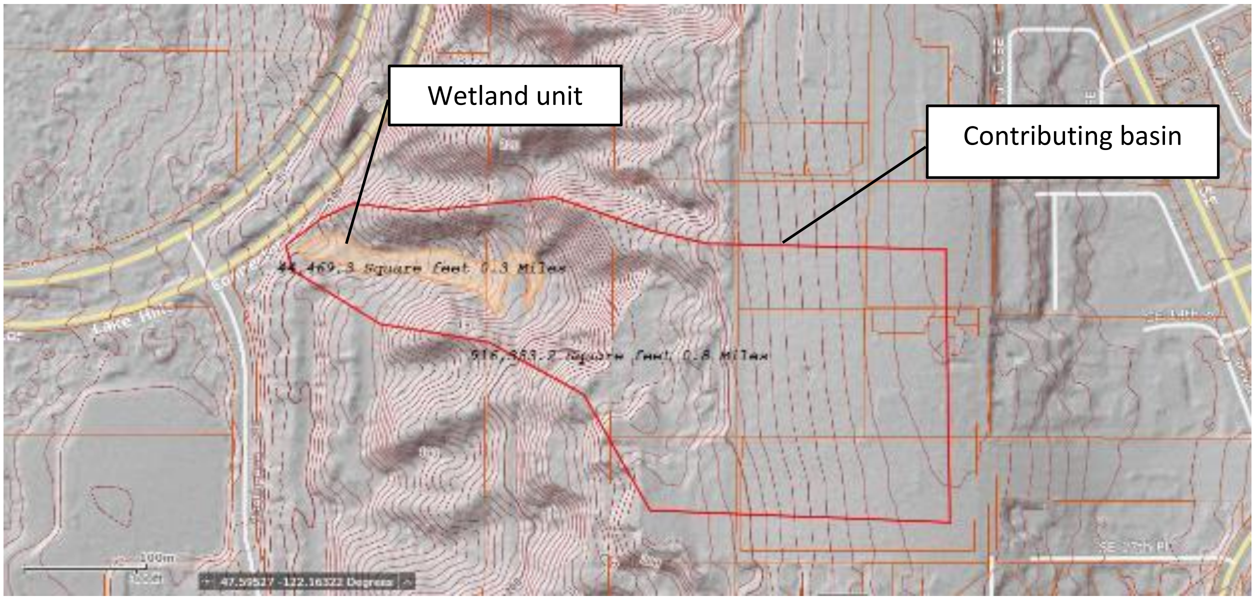


Figure EB17-3. Map of the contributing basin – D4.3, D5.3

Wetland EB18 and EB19 (Slope)

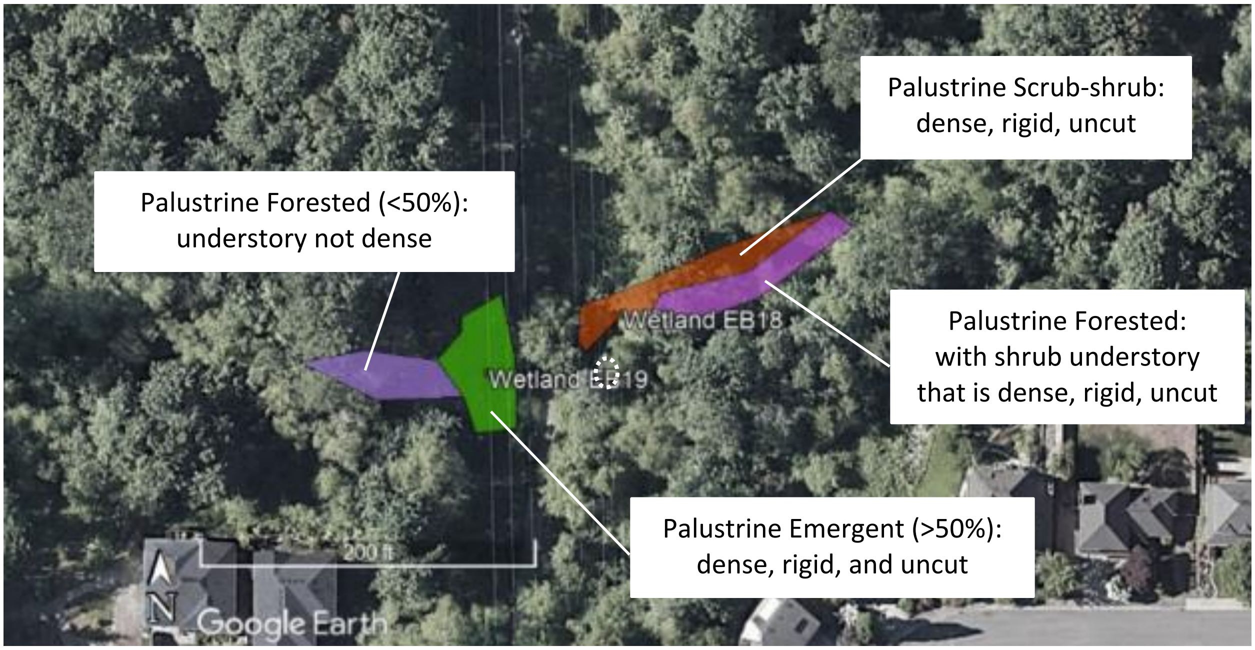


Figure EB18-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants for Wetland EB18 and EB19 – S1.3, S4.1, H1.1, H1.4

Figure EB18-2. Hydroperiods and 150-foot area for Wetland EB18 and EB19 – H1.2, S2.1, S5.1

Wetland EB20 (Slope)

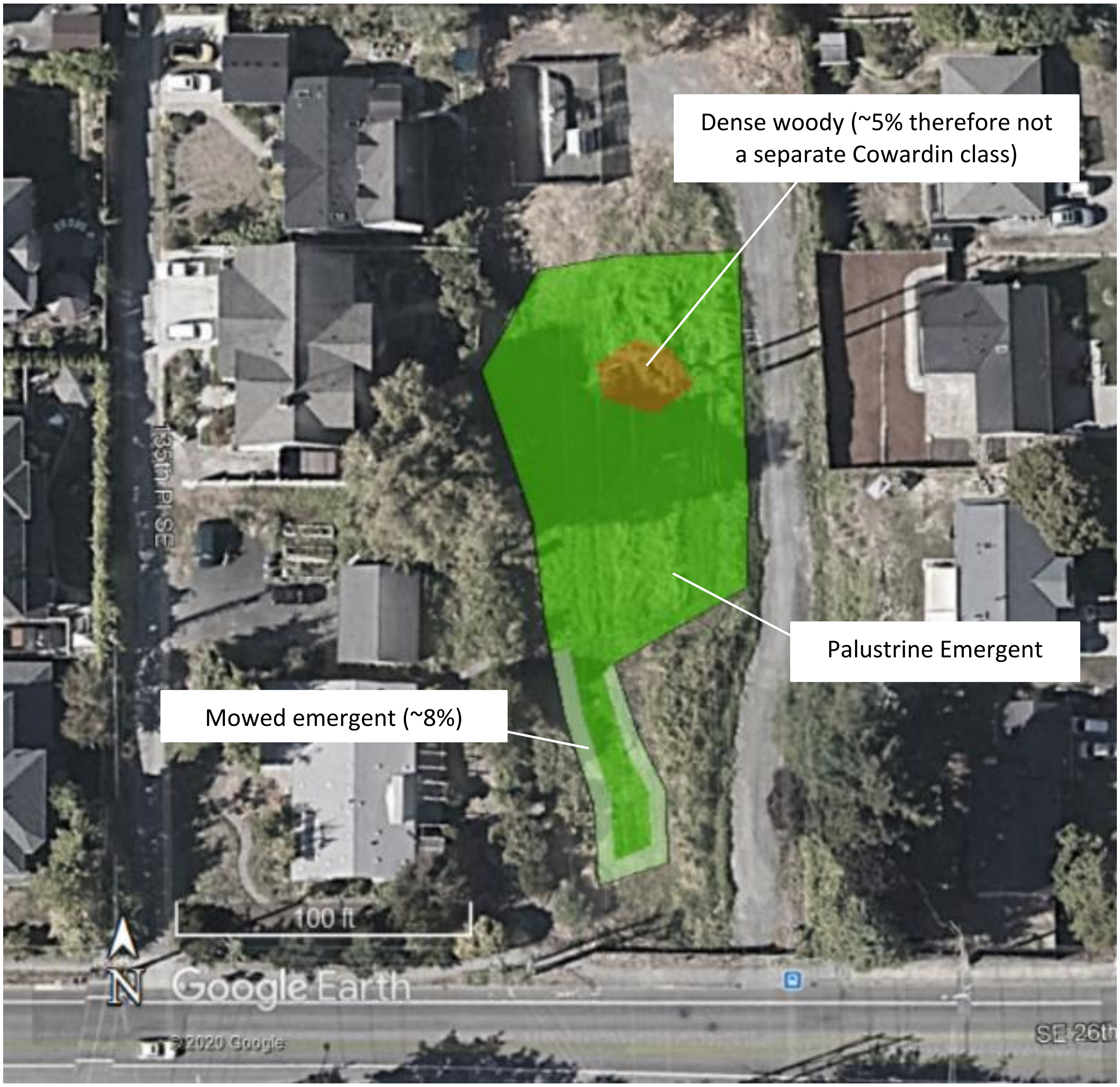


Figure EB20-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

Figure EB20-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Wetland EB21 (Depressional)

Figure EB21-1. Cowardin plant classes – D1.3, H1.1, H1.4

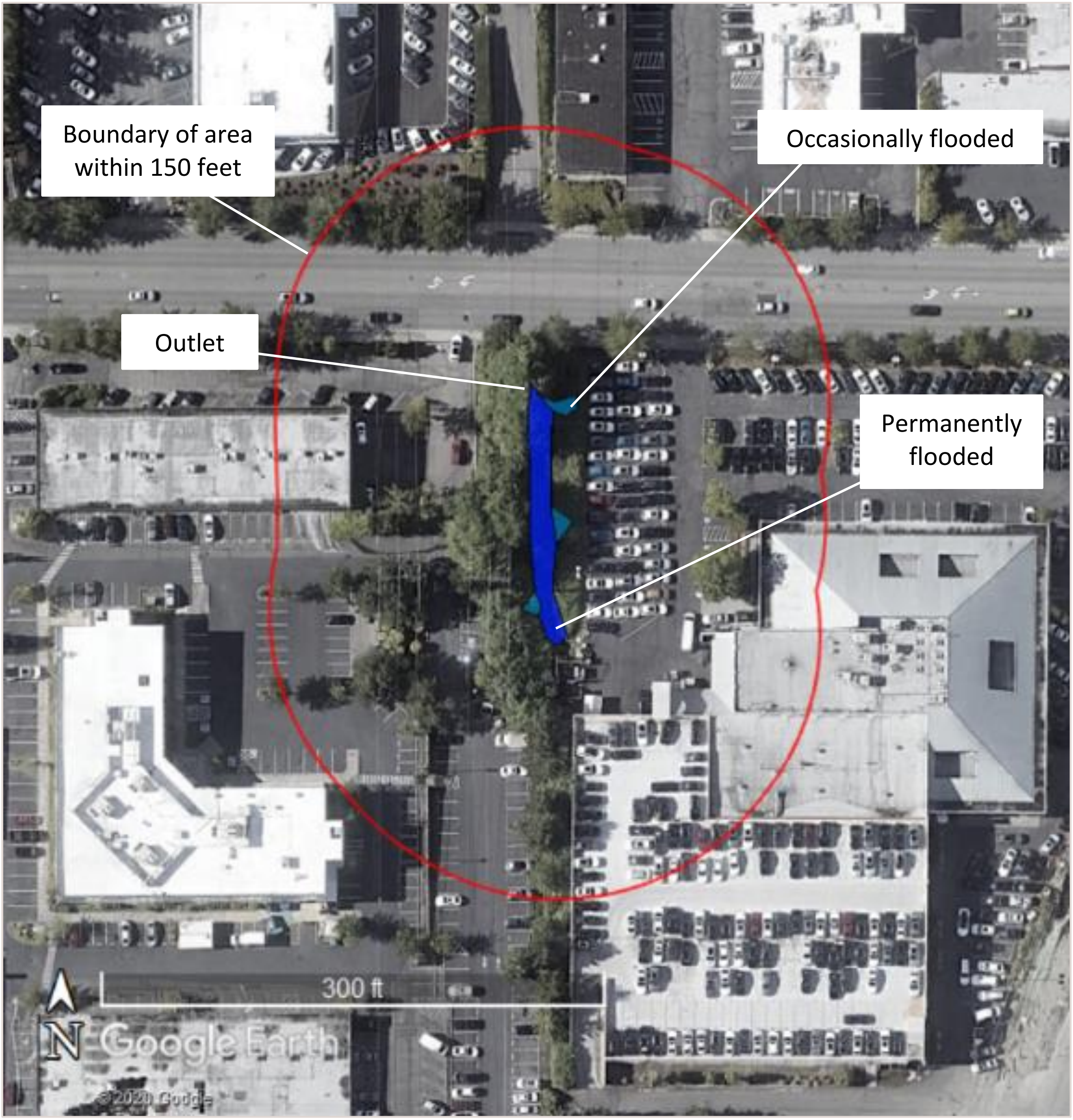


Figure EB21-2. Hydroperiods, outlet(s), and 150-ft area – D1.1, D1.4, H1.2, D2.2, D5.2

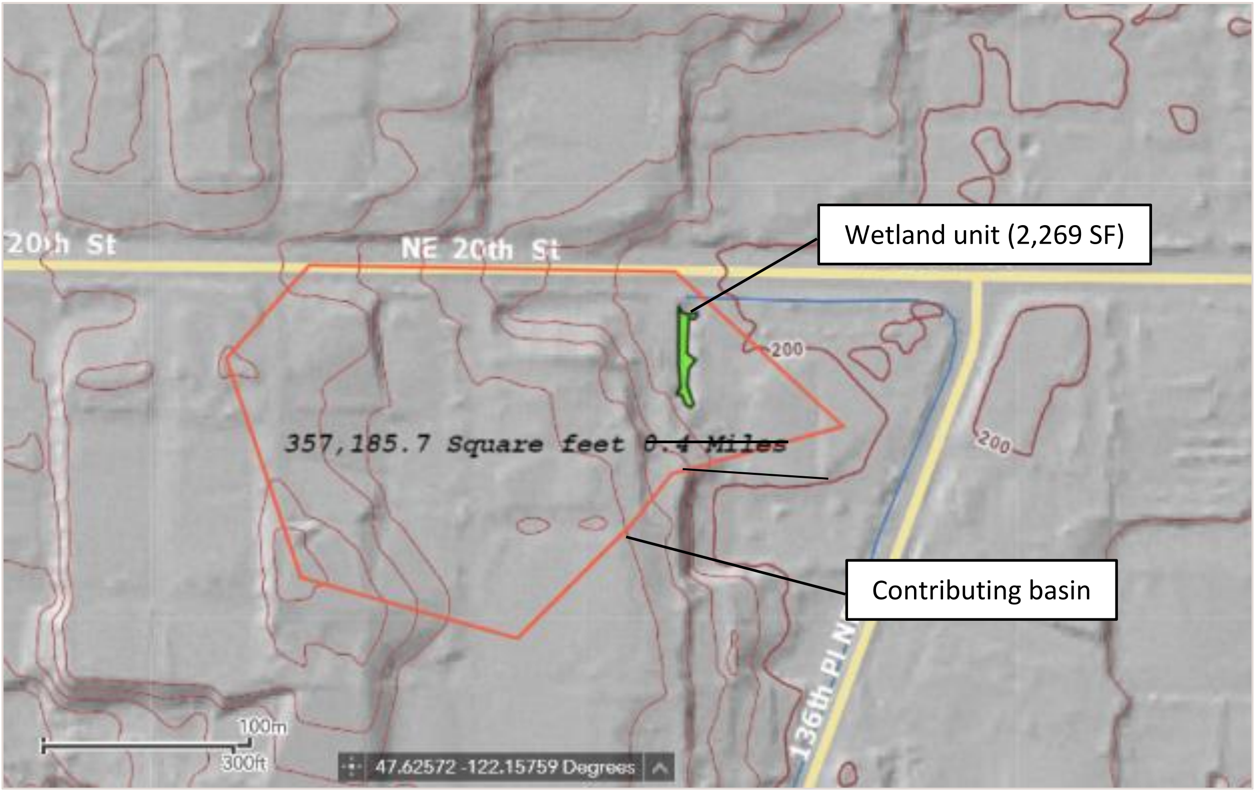


Figure EB21-3. Map of the contributing basin – D4.3, D5.3

Wetland EE (Slope)

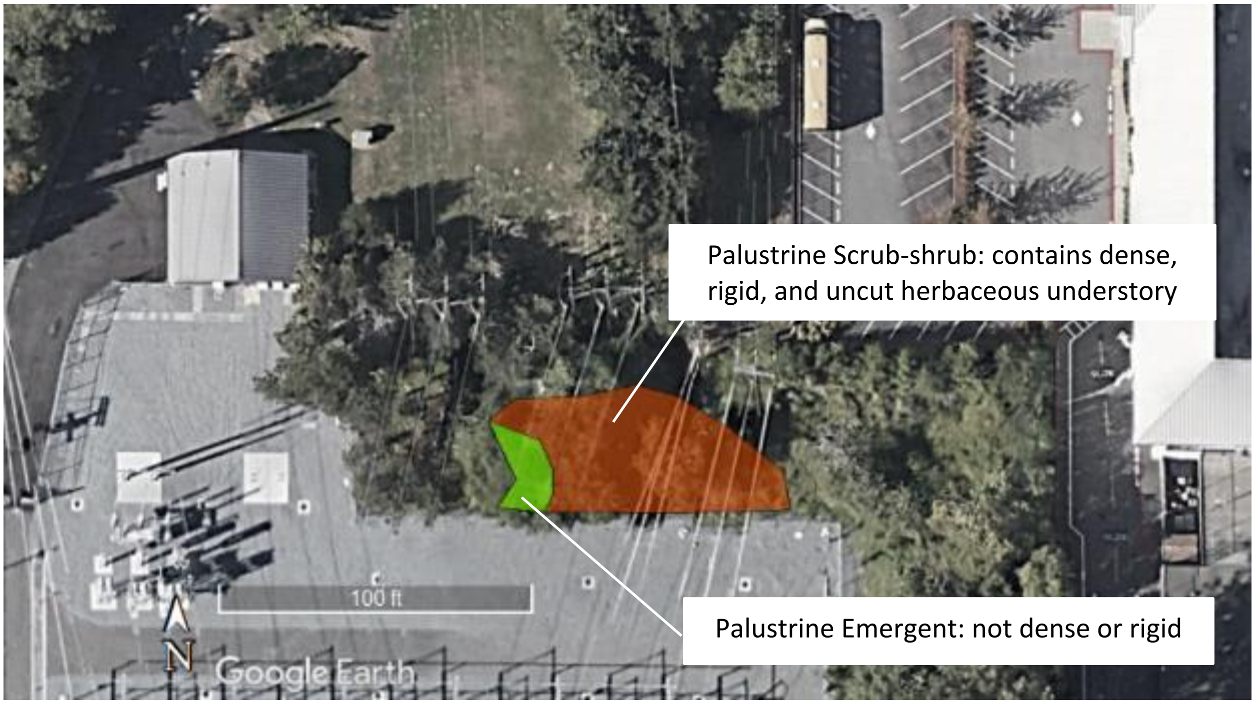


Figure EE-1. Cowardin plant classes and plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1, H1.1, H1.4

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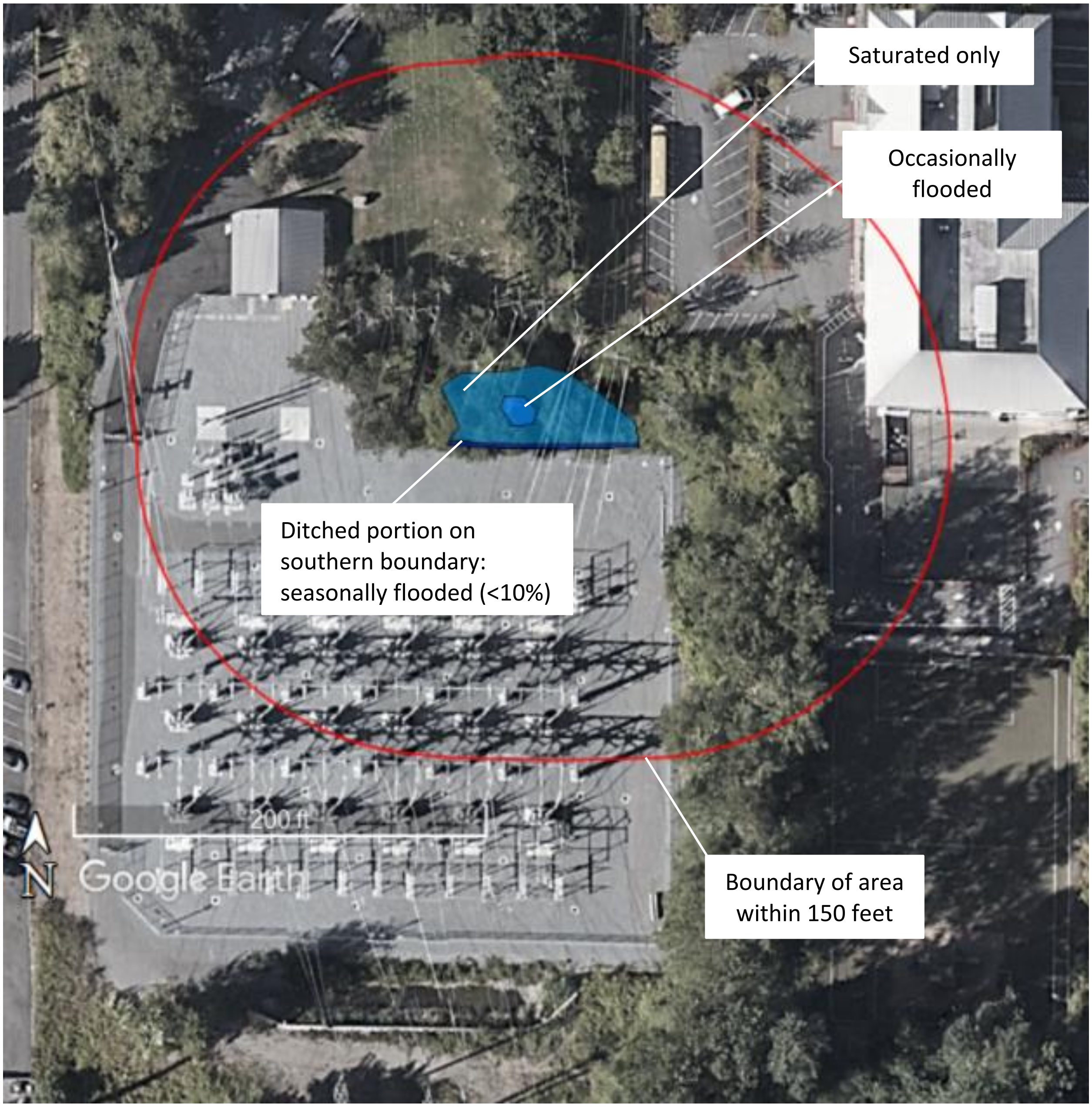

Figure EE-2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Wetland I (Depressional)

Figure I-1. Cowardin plant classes – D1.3, H1.1, H1.4

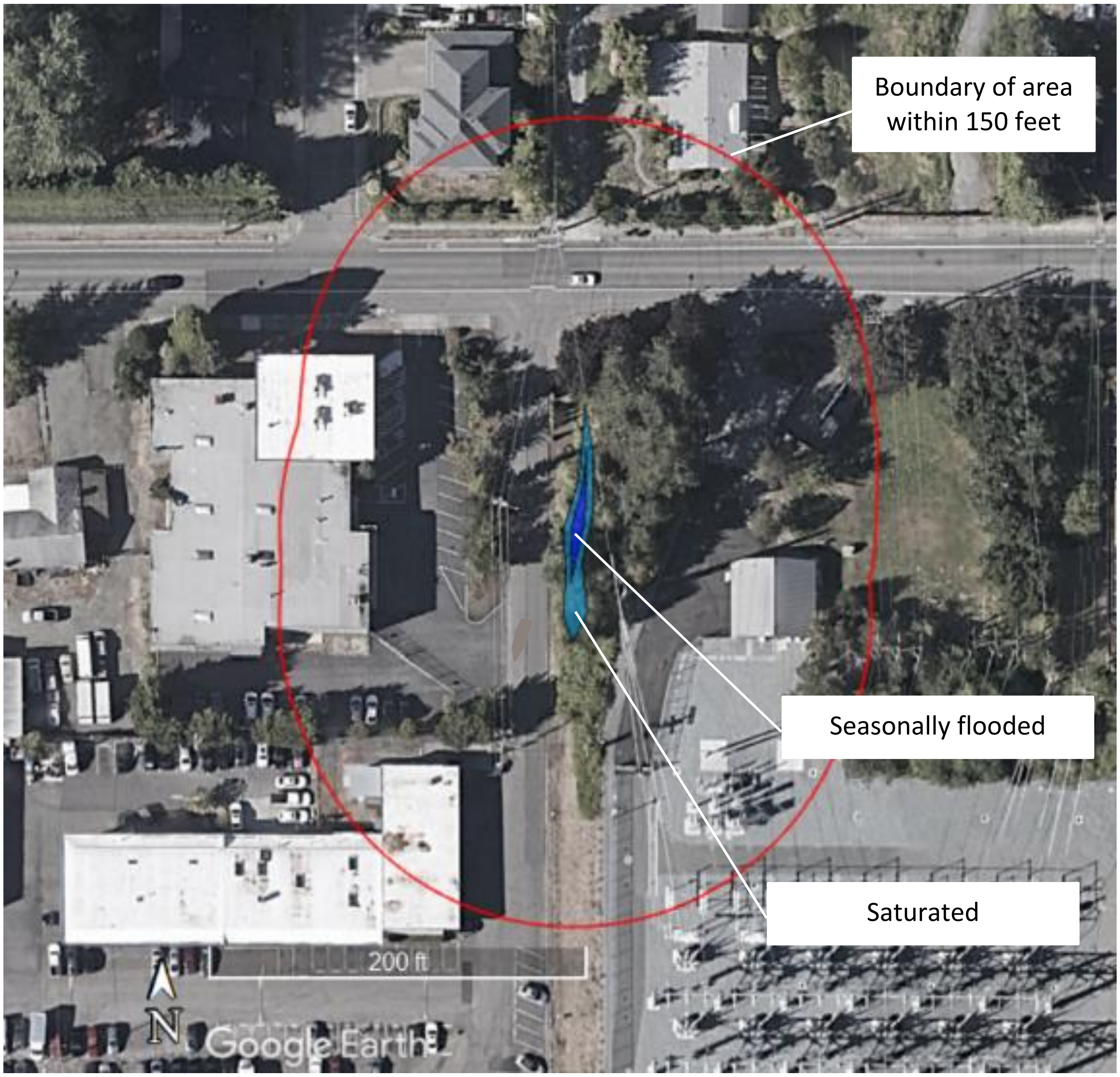

Figure I-2. Hydroperiods, outlet(s), and 150-foot area – D1.1, D1.4, H1.2, D2.2, D5.2

Figure I-3. Map of the contributing basin – D4.3, D5.3

Appendix D

GEOTECHNICAL REPORT

Targeted Critical Areas
Geologic Hazards Evaluation

Energize Eastside Project
North Bellevue, Washington

for
Puget Sound Energy

November 5, 2020

Targeted Critical Areas Geologic Hazards Evaluation

Energize Eastside Project
North Bellevue, Washington

for

Puget Sound Energy

November 5, 2020

GeoEngineers

17425 NE Union Hill Road, Suite 250
Redmond, Washington 98052
425.861.6000

Targeted Critical Areas Geologic Hazards Evaluation

Energize Eastside Project North Bellevue, Washington

File No. 0186-871-07

November 5, 2020

Prepared for:

Puget Sound Energy
P.O. Box 97034, EST-03W
Bellevue, Washington 98009

Attention: Ryan Wieder

Prepared by:

GeoEngineers, Inc.
17425 NE Union Hill Road, Suite 250
Redmond, Washington 98052
425.861.6000

Lisa J. Bona
Lisa J. Bona, LG
Senior Geologist

Galan W. McInelly
Galan W. McInelly, LG, LHG, LEG
Principal Geologist

State of Washington Licensed Geologist
Engineering Geologist
620
Galan W. McInelly
11/5/2020

LJB:GWM:leh

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INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) is pleased to present the results for this targeted critical areas evaluation of regulated geologic hazard areas in the Energize Eastside project corridor within the City of Bellevue (City). Our services have been provided in general accordance with the proposal between GeoEngineers and Puget Sound Energy (PSE).

The project area is located within the existing PSE transmission line corridor between the Lakeside Substation and the northern city limit, as depicted in the City Conditional Use Permit mapbook. We previously provided a geologic hazard evaluation for various routes under consideration, including the transmission corridor route evaluated within this document, in a separate report submitted to PSE on December 19, 2014. The geologic hazards evaluation included in this report focuses on compliance with the City's Critical Areas regulations, including a review of readily available public data for steep slopes and landslide hazard areas (geologic hazard areas) relative to proposed vegetation management/tree removal, pole replacement activities, and construction access routes.

For our evaluation, we identified specific locations for ground-truthing along the transmission corridor using a Web-based platform developed by The Watershed Company that shows proposed pole replacement and vegetation management/tree removal locations, overlain by geologic hazards. Our understanding of access to these locations is based on information provided by PSE, the Watershed Web-based platform, and plans developed for PSE by HDR Engineering, Inc. (HDR), dated April 3, 2017.

BELLEVUE LAND USE CODE REGULATIONS

GeoEngineers reviewed local regulations in the Bellevue Land Use Code (LUC), Critical Areas Overlay District for Geologic Hazard Areas (20.25H.120) as of October 30, 2020. The project area that is proposed by PSE within the existing transmission corridor contains geologic hazard areas regulated by the City including landslide hazards, steep slope hazards, and their buffers. Erosion hazards in the City are regulated under the stormwater code and were not evaluated in this report.

General Geologic Hazard Area Code

The City's criteria for defining geologic hazards and geologic hazard buffers (LUC 20.25H.120) are summarized below.

A. Designation of Critical Areas.

> ***The following geologic hazard areas are hereby designated critical areas subject to the regulations of this part:***
>
> 1. *Landslide Hazards. Areas of slopes of 15 percent or more with more than 10 feet of rise, which also display any of the following characteristics:*
>   - a. *Areas of historic failures, including those areas designated as quaternary slumps, earthflows, mudflows, or landslides.*
>   - b. *Areas that have shown movement during the Holocene Epoch (past 13,500 years) or that are underlain by landslide deposits.*

   c. *Slopes that are parallel or subparallel to planes of weakness in subsurface materials.*
   d. *Slopes exhibiting geomorphological features indicative of past failures, such as hummocky ground and back-rotated benches on slopes.*
   e. *Areas with seeps indicating a shallow groundwater table on or adjacent to the slope face.*
   f. *Areas of potential instability because of rapid stream incision, stream bank erosion, and undercutting by wave action.*
2. *Steep Slopes. Slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area.*
3. *Coal Mine Hazards. Areas designated on the Coal Mine Area Maps or in the City's coal mine area regulations, LUC 20.25H.130, as potentially affected by abandoned coal mines; provided, that compliance with the coal mine area regulations shall constitute compliance with the requirements of this chapter in regard to coal mines.*
4. *Seismic Hazards. Areas of known faults or Holocene displacement, based on the most up-to-date information, or areas mapped areas of "moderate to high" or "high" hazard liquefaction susceptibility by the Washington Department of Natural Resources Liquefaction Susceptibility Map of King County, Washington, 2004, as amended.*

B. Geologic Hazard Area Buffers. The following critical area buffers are established:

1. *General Geologic Hazard Critical Area Buffers.*
   a. *Landslide hazards: Top-of slope buffer of 50 feet.*
   b. *Steep slopes: Top-of-slope buffer of 50 feet.*
2. *Existing Development. Where a primary structure legally established on a site prior to August 1, 2006, encroaches into the critical area buffer established in subsection B.1 of this section, the critical area buffer and setback shall be modified to exclude the footprint of the existing structure. Expansion of an existing structure into the critical area buffer shall be allowed only pursuant to the provisions of LUC 20.25H.065.*
3. *Buffer Modification. Modifications to the geologic hazard critical area buffer may be considered through a critical areas report, LUC 20.25H.230.*

C. Structure Setbacks.

1. *General. The requirements of this section apply along with any other dimensional requirements of the Land Use Code (see LUC 20.20.010, 20.20.130, 20.20.190 and Parts 20.25A through 20.25G). The most restrictive dimension controls [sic]. Structure setbacks are required in order to:*
   a. *Minimize long-term impacts of development adjacent to critical areas and critical area buffers; and*
   b. *Protect critical areas and critical area buffers from adverse impacts during construction.*

2. *Minimum Setback of Structures.*
    a. *Landslide hazards: Determined based on site-specific geotechnical studies to reflect site characteristics, including site topography and conditions that may be conducive to fast moving, shallow debris slides and flows.*
    b. *Steep slopes: Toe-of-slope setback of 75 feet.*
3. *Structure Setback Modification. Structure setbacks may be modified only through an approved critical areas report. (Ord. 6417, 5-21-18, § 39; Ord. 5680, 6-26-06, § 3)*

Structure Setbacks

Although PSE poles are not regulated as structures per the City's LUC, we have provided guidance for structure setbacks. We reviewed the location of each proposed pole relative to the location of mapped critical areas provided by The Watershed Company in the Web-based platform. The critical area buffer and structure setback from the City's LUC for landslide hazards and steep slopes is provided in the LUC excerpt above and summarized in Table 1 below.

TABLE 1. SELECTED PORTION OF CITY OF BELLEVUE CODE

Critical Area Category or Type	Critical Area Buffer Width	Structure Setback
Landslide hazards	Toe-of-slope: None Top-of-slope: 50 feet	Toe-of-slope: Based on site-specific standards (generally pertains to building lots) Top-of-slope: None
Steep slopes	Toe-of-slope: None Top-of-slope: 50 feet	Toe-of-slope: 75 feet Top-of-slope: None

METHODOLOGY

Our methodology to evaluate geologic hazards primarily relied on the following:

- Review published geologic maps;
- Review soil maps from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS);
- Review geologic hazard maps, including the City's Geologic Hazard areas maps and Landslide Deposits in the City of Bellevue (Department of Natural Resources [DNR] Final Draft – May 2018 and personal communication, DNR via Watershed 2019), for the following geologic hazards;
    - Landslide Areas and buffers
    - Steep Slopes (greater than 40 percent) and buffers
    - Potential for impacts in seismic (moderate to high or high liquefaction susceptibility) and coal mine hazard areas were not evaluated because no poles or vegetation management overlapped these hazard areas. However, because the Seattle Fault trace is located south of the Energize Eastside Project North Bellevue project area, there is potential for seismic shaking during fault rupture. Therefore, we recommend that new poles be installed in accordance with current seismic design standards.
- Review of digital imagery (King County and Google Earth);
- Review Light Detection and Ranging (LiDAR) data of the Bellevue, Washington area from the Washington DNR;

- Review a previous report, titled "*Geologic Hazards Evaluation and Preliminary Geotechnical Engineering Services*," submitted to PSE in December 2014, which assessed existing conditions in the Bellevue project area (GeoEngineers 2014); and
- Develop a response to specific critical area code requirements (see Code Compliance section of this report).

Review of Published Geologic Maps and Geologic Hazard Maps

We reviewed geologic and geologic hazard maps from published King County 1:100,000 scale maps as well as digital geologic hazard data from the City as provided by The Watershed Company. The goal of this task was to better understand mapped geologic conditions and geologic hazards at the site relative to planned poles and areas for proposed tree removal. We also reviewed previous geologic and geotechnical reports completed in the vicinity of the project area.

Review of Digital Area Photographs and LiDAR Imagery

Aerial photographs were reviewed using both King County iMap[1], as well as Google Earth images. This task was focused on observing changes in development and vegetation and if geologic hazard areas show some activity during the aerial photograph record. Also, LiDAR bare earth hillshade data provides a tool to observe surface relief without a vegetated canopy that is key to evaluating geologic hazards physical characteristics (scarps, flanks, toe of slide, hummocky topography) of the hazard area, if any.

EXISTING CONDITIONS

Desktop Study

This geologic hazard evaluation focuses on proposed construction access routes, vegetation management/tree removal, pole installation, and pole removal locations within geologic hazard areas, geologic hazard area buffers and structure setbacks.

As documented in GeoEngineers' 2014 report, the existing geology in the project area mainly consists of glacial drift, including exposures of advance continental glacial outwash and glacially consolidated till. Alluvium is encountered in the valley bottoms. The predominant soil types in the project area include Alderwood gravelly sandy loam (AgB, Agc and AgD), Arents, Alderwood material (AmB and AmC) and Everett very gravelly sandy loam (EvC and EvD) (NRCS 2019).

Steep slopes, steep slope buffers and steep slope structure setbacks overlap with 42 pole removal or proposed new pole locations along the transmission corridor. Additionally, proposed pole 5/8 and three old poles to be removed between poles 5/8 and 6/1 are located within the landslide hazard 50-foot top-of-slope buffer. There are additional areas where vegetation management/tree removal will occur in steep slopes or steep slope buffer. No new poles will be located near landslide toes-of-slope. Because the new poles will be embedded deeply, and because of the distal location of the new poles from landslide toes-of-slope, we determined that no additional assessment of setback from landslide hazards is necessary.

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[1] http://kingcounty.gov/services/gis/Maps/imap.aspx

Site Reconnaissance

We completed site reconnaissance on December 4, 2018 and March 19, 2019 to assess conditions in selected portions of the proposed transmission corridor. We evaluated five separate sections of the PSE corridor to review the pole replacement, vegetation management and access routes with respect to landslide areas and steep slopes, as outlined in the City's LUC 20.25H.120. The sections are described below, starting from the south, from just north of the Lakeside Substation to the northern Bellevue city limit. For the purposes of this report, the five sections are sorted primarily by site access; these sections consist of: the area between SE 26th Street and the Lakeside Substation; the area between SE 20th Street and Lake Hills Connector; the area between Lake Hills Connector and Main Street; the area just north of NE 24th Street (Pole 4/2); and the area just south of NE 60th Street (Overlake Farms).

Steep slopes with inclinations of 40 percent or greater were observed locally within the project area. The steep slopes where vegetation management, pole replacement and access are proposed generally are within a maintained utility corridor occupied by PSE transmission lines and underground petroleum pipelines (owned by Olympic Pipe Line [OPL]). The corridor is periodically maintained (i.e. mowed) by OPL.

There are some urban developed areas in geologic hazard areas and their buffers, such as just north of the Lakeside Substation, adjacent to the Chestnut Hill Academy, and the vicinity of Pole 4/4.

The area just north of the Lakeside Substation contains two proposed replacement poles, 7/5 and 7/4, that are within a steep slope structure setback. Access to these poles is from SE 26th Street. The south-facing and west-facing steep slopes are a mix of dense vegetation, with a moderately cleared, sloped area, just below an L-shaped retaining wall. The ground surface of the cleared area is covered with geotextile fabric. Some previously cut tree debris has been spread around the site. It is likely that working pads will be necessary to complete replacement pole installation and removal of the old poles. A small area of saturated ground with some standing water was observed at the toe of the slope and apparently discharges into a ditch that extends east to west just north of the substation.

A pole to be removed near new Pole 6/9 is located just south of SE 20th Street and is within a grassy City park. This pole is located within a steep slope top-of-slope 50-foot-buffer.

The area between SE 20th Street and Lake Hills Connector has five proposed pole replacement locations, 6/3 through 6/7, and a number of trees to be removed within geologic hazard areas, their buffers or structure setbacks. This portion of the powerline alignment is primarily accessed by an unimproved (i.e., packed dirt and gravel) access road/trail along the power line corridor. Proposed Pole 6/3 will be accessed from a residential driveway beginning at SE 10th Street to avoid a wetland south of the pole location. This section is characterized by a series of hill crests and valleys with localized areas of steep slope and steep slope buffers. Many trees have been identified for removal by PSE and consist of both deciduous and evergreen species.

Proposed Poles 6/2 through 5/6 and poles to be removed are located within steep slopes, and steep slope buffer or structure setback between Lake Hills Connector and Main Street. One pole to be removed, near proposed Pole 5/8, is located within a steep slope hazard area. Evidence of landslides were observed downslope of most existing and proposed pole locations in this area. These poles will be accessed from Main Street, along the unimproved road/trail beneath the transmission corridor. Multiple landscape trees in a steep slope top-of-slope buffer will be removed along the PSE corridor west of SE 2nd Street, adjacent to the maintenance facility for the Glendale Country Club golf course.

This section generally has a west-facing slope aspect. GeoEngineers observed landslide features with previous mitigation installed by others at two locations along this portion of the alignment. The southernmost landslide feature is adjacent to the access road/trail and nearly parallel with SE 7th Street. Between proposed poles 6/1 and 6/2, the access road/trail narrows at this location to about 3 feet wide, and a layer of quarry spalls is visible at the head of the landslide just west of the access road/trail. Access for construction equipment at this narrow point will be difficult. Possible widening of the existing access road would require coordination with OPL, who may require restrictions to driving over the pipeline. Before OPL can provide an analysis and subsequent requirements to potentially cross their pipeline, they need specific information from the selected contractor, such as types, weights and axle configuration of construction equipment. Therefore, alternatives to access the area south of the construction are discussed below. The second landslide is located just north of proposed Pole 5/8. This landslide area has been buttressed with quarry spalls by others. Neither landslide area shows visible evidence of recent movement.

There are two possible locations that may require special construction methods for access to poles south of proposed Pole 5/8. The first is located west of SE 5th Street, where two sewer manholes are located along the edges of the access road/trail. We suggest that the project's contractor consider placing some fill or a bridge of some type temporarily over one or both of the manholes to allow construction equipment to pass.

The second location that will require special access considerations is proposed Pole 6/2. There are three possible routes for access from which the project's contractor may choose, each with different challenges. The first is an existing gravel access road extending west from the east end of SE 7th Street in steep slope buffers. The road has bollards where SE 7th Street ends and crosses a culverted small stream. Limbing of a number of landscape trees and potential removal of one evergreen tree from private property likely would be required to allow construction equipment to pass along this road. The fill over the culvert also likely would need to be temporarily widened. A second access alternative would partially cross a steep slope buffer. The project's contractor may consider placing fill temporarily over the OPL and the end of the gravel road from the west end of SE 7th Street and create a ramp past the narrow point in the access road. The third alternative for access to proposed Pole 6/2 would be north from Lake Hills Connector, in a steep slope hazard area. The guard rail at this location would need to be temporarily removed to allow a crane to travel northeast along the existing access road/trail. A second crane could be staged on Lake Hills Connector near the top of the slope. Use of this access route likely would require removal of several significant deciduous trees, along with smaller trees and a snag along the trail. Some larger trees on the north side of the access road/trail likely would need low branches trimmed. We suggest that fill material be placed on top of the existing access road/trail over cut tree stumps immediately north of Lake Hills Connector in order to widen the access route, and the fill graded to decrease the inclination of the access road if this access route is used. A stream and wetland are located at the base of the new fill slope and could be impacted temporarily by modifying the access road/trail.

A number of trees are to be removed in steep slopes and steep slope buffer and structural setback immediately north and south of Kelsey Creek, just south of Bel-Red Road. Another tree is to be removed from a steep slope top-of-slope buffer just north of proposed Pole 4/5. Several trees are to be removed from a landslide toe-of-slope structural setback north of Pole 6/4.

One of the proposed poles at location 4/4 and one of the existing poles to be removed are located directly south of Washington State Route 520 (SR 520) in a steep slope toe-of-slope structure setback. This site is located within a parking lot and is generally level. The steep slope (highway embankment) is vegetated with grass and invasive Himalayan blackberries.

The area just north of NE 24th Street around proposed Pole 4/2 includes proposed vegetation management and has a steep slope and steep slope buffer area with east- and south-facing slope aspects. The slope is densely vegetated with both deciduous and evergreen tree species and terminates at a retaining wall adjacent to a parking lot (to the east). Vegetation management is proposed well above the retaining wall. Access to the new and old pole sites will be from the NE 24th Street along the grassy utility corridor.

The northernmost section is located south of NE 60th Street on Overlake Farms. We were not able to access this section because the property owner did not respond to PSE's request for access. Proposed pole site 2/4, one old pole and several trees are located in a steep slope hazard area or steep slope buffer. LiDAR imagery was used to evaluate the area for slope instability. No evidence of landslides or slope instability was visible on LiDAR imagery.

IMPACT ASSESSMENT

GeoEngineers reviewed the proposed construction activities within the geologic hazard areas, their buffers and structure setbacks relative to the expected impacts that may result, based on information provided by PSE staff and our experience with previous, similar evaluations.

Construction Access

Temporary and existing maintained access routes for track-mounted or wheeled equipment will be used to construct new poles and remove old poles and for vegetation management. Equipment access may potentially increase the risk of localized erosion in geologic hazard areas and their buffers and temporary impacts to wetland vegetation. Wetlands that overlap with geologic hazard areas or their buffers include the access to proposed Pole 7/4, one possible access to proposed Pole 6/2, and trees to be removed between proposed Poles 6/3 and 6/4. Minor regrading and the temporary addition of small amounts of quarry spalls or gravel may be necessary to stabilize portions of the existing access routes. Additionally, timber driving mats may be needed to drive across wetland areas. However, driving on timber mats likely is not feasible on slopes greater than about 5 percent during construction. If timber mats cannot be used, then temporary fill may be needed on the access route and would need to be removed once construction is complete. The access routes may require either prior removal of marked trees and/or trimming of overhanging limbs to access the pole sites.

Substantial import of fill and grading may be required for access in areas between proposed Pole 6/1 and Lake Hills Connector (see discussion in Existing Conditions section above). Geotechnical evaluation of substantial volumes of fill placed immediately adjacent to or on steep slopes or landslides should be conducted prior to placing the fill. No adverse impacts to geologic hazard areas from fill placement are anticipated if geotechnical recommendations are implemented properly.

Vegetation Management/Tree Removal

There are two primary ways in which tree removal activities may impact slope stability in landslide and steep slope hazard areas. The first is root decay, which causes both the numbers of roots and the tensile strength of the remaining individual roots to decrease with time (Burroughs and Thomas 1977). Studies show that the period of minimum root strength is typically from 3 to 5 years after harvest (Ziemer 1981a; 1981b) but can extend up to 10 to 20 years depending on the tree species. For example, minimum root strength in evergreens is typically 10 years after harvest, alders have a minimum root strength of 5 to

10 years after harvest, and maples typically maintain full root strength after harvest (because they regrow from the existing stump). The reductions in root strength result in a net decrease in the cohesive strength of the near-surface soil mass.

Tree removal can modify surface and subsurface hydrology. Tree removal may increase soil moisture by reducing canopy interception and evapotranspiration. Ground-based yarding and excavation equipment, that could be potentially used, can compact soil, and may alter hydrologic processes.

Elevated groundwater levels have the potential to decrease the stability of slopes in the transmission corridor by reducing the shear strength of the soil and by adding additional weight. The probability of landslides occurring in the transmission corridor from increased groundwater levels depends on the magnitude of the increase and the existing stability of the slope. The magnitude of potential changes in groundwater levels from tree removal is highly variable and depends on several factors, including the tree size, silviculture, subsurface conditions, and topography.

In localized areas, we anticipate a temporary decrease in evapotranspiration of 15 to 50 percent (Sias 2003). The decrease in evapotranspiration depends on the quantity of trees and the area of ground cover to be removed with trees representing a larger decrease in evapotranspiration. The largest impact likely will occur during the first year after tree removal. The decrease in evapotranspiration also effects the rate of infiltration and subsequent soil saturation, which is similarly dependent on the degree of vegetation removal. PSE’s proposed vegetation management plan will include selective removal of trees so increases in infiltration will be considerably less than wholesale removal of continuous forest canopy. Based on the relatively scattered and/or small clumps of trees to be removed, we estimate that changes in evapotranspiration will be much less than 50 percent; and, therefore, potential impacts to slope stability from increased infiltration will be low. Our estimate is based on selective vegetation management, the planned use of Best Management Practices (BMPs) to reduce soil erosion and replanting of shrubs and trees that are compatible with an existing utility corridor. We anticipate that the potential impacts to geologic hazard areas from the proposed vegetation removal will be considerably less than the impacts during original construction of the existing power line, as vegetation will be maintained within the corridor.

Pole Installation and Removal

Where new poles are proposed in steep slope or landslide hazard areas, a temporary working bench, or work pad, may be necessary to install and/or remove existing poles. Work pads at some locations may be irregular in shape because of specific on-site restrictions, such as slope geometry. Minor regrading and the temporary addition of small amounts of quarry spalls and/or gravel might be necessary to stabilize portions of the existing access routes. The access routes also may require removing or trimming trees. We recommend that vegetation clearing activities be restricted to that necessary to stage equipment for pole installation and removal. If proper BMPs are implemented, we anticipate no adverse impacts to geologic hazard areas from pole installation and removal.

Recommendations for the design and construction of poles are presented in our *Geotechnical Engineering Services* report dated June 8, 2016. In general, most of the site soils along the proposed transmission corridor consist of glacially-consolidated deposits. These soils should provide adequate support for the new poles, and it is our opinion that once the pole is installed, the pole will not adversely impact slope stability since the pole footprint is small.

Man-made Areas

The City's LUC does not distinguish between natural and man-made steep slope areas in terms of critical areas regulations. We observed two locations within the North Bellevue alignment where man-made steep slopes overlap with geologic hazard areas. New Poles 7/5 and 7/4 are located in a steep slope structure setback north of the Lakeside Substation, as described in the Existing Conditions section.

The second man-made area is located directly south and adjacent to SR 520 in a parking lot at new Pole 4/4, within a steep slope toe-of-slope structure setback. The slope grade above the existing and proposed poles is approximately 40 percent and likely was a result of regrading during construction of SR 520. The poles to be removed and replaced are located in a relatively flat parking area at the base of the slope.

As outlined in the City's LUC 20.25H.125, pole-type construction is the preferred method of construction within steep slope areas. Pole installation has a much smaller footprint than residential or commercial building development contemplated in the regulations. Based on the relatively small footprint of a new pole, it is our opinion that the new poles will have little to no effect on slope stability within steep slopes, their buffers and structure setbacks, provided that proper BMPs are implemented.

CONCEPTUAL IMPACT MITIGATION STRATEGY

Establish Access Routes

Most of the access routes in geologic hazard areas and their buffers will be along an existing road/trail system. Where vegetation clearing is required to establish access to the work site, such as north of the Lakeside Substation, appropriate site-specific BMPs should be implemented, such as using silt fencing on the downslope side of the access route, leaving stumps in place and covering with temporary fill or mats.

After access use is complete, where it is deemed necessary, limited regrading of the access route is recommended where needed to avoid concentrating surface runoff along tracks, ruts, or other potential flow paths. Following completion of construction activities, any gravel or spalls added to temporarily stabilize the access route not located on current access road/trail should be removed. The access route then will be regraded to a stable free-draining configuration, and treated with appropriate Temporary Erosion Sediment Control (TESC) measures, such as mulching and/or placing erosion control nets and blankets and installation of water bars as needed to control runoff, and seeded, as necessary. If nets and blankets are determined a necessary BMP, proper installation specifications per the manufacturer's recommendations should be followed.

Where permanent fill is placed, proper implementation of geotechnical recommendations during construction, along with appropriate erosion control BMPs, should be implemented.

Vegetation Management/Tree Removal

For vegetation management/tree removal in the City within the mapped geologic hazard areas, GeoEngineers suggests the following options for mitigating impacts.

In general, the sites should be accessed by foot to reduce equipment impacts. Hand cutting with chainsaws is recommended to trim branches and remove trees. Stumps should remain in place in order to provide stability until transmission compatible vegetation reestablishes but can be cut to ground level. Branches, limbs, trunks and other tree debris should be chipped and scattered around the removal site within the transmission corridor to the extent possible. Where chipping is not feasible, reasonably sized unchipped tree debris can be scattered.

In areas where tree removal is clustered, erosion control BMPs, such as grass seeding, leaving stumps, scattering straw mulch and/or replacement planting of native shrubs or small trees, are recommended to reduce concentrated runoff and minimize erosion.

In areas where tree removal is widely spaced within steep slope and landslide buffer areas, the trees should be cut, stumps left in place, and trimmed branches and trunks scattered in the transmission corridor to the extent possible. If scattering branches and trunks would impact public access and use, or maintenance of the OPL, the debris should be removed from the site.

Where vegetation is removed from private property, all tree debris should be removed from the owner's property and communication with the property owner is suggested to identify possible reseeding, replacement tree or shrub, or landscaping options. If agreeable to the property owner, it is possible that the tree trunk can be cut and left below ground surface to maintain root strength, and a replacement tree or shrub may be planted near the trimmed trunk.

Pole Installation and Removal

Areas disturbed for installation and removal of poles will require TESC BMPs. Clearing activities will be restricted to that necessary to access each pole location.

Where a bench (work pad) is required to install or remove a pole on a steep slope or landslide hazard area, the recommendations presented above for temporary access routes also apply. Appropriate erosion control BMPs should be implemented during construction, and the disturbed area should be regraded and restored after pole construction activities are completed using seed and mulch and/or revegetating, and the area treated with appropriate BMPs to prevent transport of sediment during rain events. Soil removed from the new pole excavations should be scattered into vegetation away from any landscaped areas and old poles removed from the site. If the work area is wet or has standing water, driving mats should be used under equipment and all soils should be removed from the site for off-site disposal.

For poles located in geologic hazards areas, if not removed entirely, the old poles should be cut off approximately 1 to 2 feet below the ground surface and the remaining portion of each pole left in place. If new poles are installed on slopes steeper than 2H:1V (horizontal to vertical), they should be embedded at least 3 feet deeper than the typical design embedment.

Man-made Areas

We have identified two areas where man-made steep slopes overlap with critical areas: the area around proposed Poles 7/5 and 7/4 and the area around proposed Pole 4/4. The steep slope located at Poles 7/5 and 7/4 has a retaining wall separating the PSE transmission corridor from a school property. The steep slope that is located above Pole 4/4 appears to be part of the original SR 520 construction grading. As outlined above in Pole Installation and Removal, if a working bench is necessary to install or remove poles in these locations the area should be regraded and restored to the pre-construction state. During construction, appropriate BMPs should be used to prevent erosion and sedimentation delivery to nearby drainages. Any areas where vegetation is removed from the slope during construction of Poles 7/4 and 7/5 should be reseeded or replanted as quickly as possible.

Structure Setbacks

We reviewed the location of each proposed pole relative to the location of mapped geologic hazard areas and the associated setbacks. The critical area buffer and structure setback from the City's LUC for landslide hazards and steep slopes is provided in Table 1.

Some of the pole locations described in this report include the replacement of existing poles within the 75-foot setback for steep slopes. No new poles are located near the toes-of slope for landslide hazards; therefore, we conclude that no additional assessment regarding structure setback is necessary. It is our opinion that the proposed pole installation will not impact slope stability if appropriate BMPs are used and soil cuttings for pole installation either are scattered on site or removed.

Site-Specific Recommendations

In general, most of the site soils at the proposed pole locations consist of glacially-consolidated deposits. These soils should provide adequate support for the new poles, and it is our opinion that once a pole is installed, the pole will not adversely impact slope stability because the pole foundation footprint is small. Site-specific recommendations to mitigate for potential impacts during construction are presented in Table 2.

TABLE 2. SUMMARY TABLE OF POLE REPLACEMENT SITES WITHIN MAPPED GEOLOGIC HAZARD AREAS

Pole Replacement Sites	Geologic Hazard Areas	Discussion and Recommendations
Lakeside Substation: New Poles 7/5 and 7/4 and Removal of Old Poles	Steep Slope 75-foot Setback	This location is accessible from SE 26th Street and the PSE transmission corridor. Steep man-made slopes are located north of Lakeside Substation adjacent to Chestnut Hill Academy. Some areas of wet saturated ground were present at the base of the slope during our site visit and should be avoided during construction. Trees to be removed from the area can be cut into smaller pieces and the debris left on site. If any grading occurs during site activities, the slopes should be returned to pre-construction grade. Soil spoils should be scattered or removed from the site and TESC BMPs should be used to minimize impact to the steep slope until vegetation is reestablished. BMPs may include combinations of mulching, seeding, nets or blankets, and wattles as necessary, and/or replacement of the existing geotextile fabric.
New Poles 6/7 through 5/6, and Removal of Old Poles	Steep Slopes, Steep Slope 50-foot Buffer or Landslide 50-foot Buffer	This portion of this alignment is accessible from SE 20th Street, SE 10th Street, Main Street and an existing access road/trail (see above Existing Conditions for special considerations for accessing proposed Pole 6/2). The debris from the trees can be cut and left on site. Soil spoils should be scattered or removed from the site and TESC BMPs should be used to minimize impact to the steep slope until vegetation is reestablished. BMPs to be used may include combinations of mulching, seeding, nets or blankets, silt fencing and wattles as necessary.

Pole Replacement Sites	Geologic Hazard Areas	Discussion and Recommendations
Adjacent to WA SR520: New Pole 4/4 and Removal of Old Poles	Steep Slope 75-foot Structure Setback	The area is accessible through an industrial area off NE 20th Street. The new pole and old pole locations are located within a parking lot. This area does not have any trees that are designated to be removed by PSE. Soil spoils should be scattered in the existing vegetation and mulched/seeded or removed from the site, and the pre-existing surface restored.
North of NE 24th Street: New Pole 4/2 and Removal of Old Poles	Steep Slopes or Steep Slope 50-foot Buffer	The site is accessed from NE 24th Street. Blackberry bushes and residential fences separate access from NE 24th Street to the pole location. Track-mounted equipment may be necessary for the installation/excavation of the poles within this portion of the alignment. Soil spoils should be scattered or removed from the site and TESC BMPs should be used to minimize impact to the steep slope until vegetation is reestablished. BMPs to be used may include combinations of mulching, seeding, nets or blankets, silt fencing and wattles as necessary.
New Pole 2/4 and Removal of Old Poles	Steep Slope or Steep Slope 50-foot Buffer	Access to the site is across private property owned by Overlake Farms. We were not able to access this site because the property owners did not grant access. From our desktop review of the site, it is our opinion that the trees to be removed from the area can be cut and the debris should be removed from the site. Soil spoils should be scattered or removed from the site and TESC BMPs should be used to minimize impact to the steep slope until vegetation is reestablished. BMPs to be used may include combinations of mulching, seeding, nets or blankets, silt fencing and wattles as necessary. Cutting off and leaving the existing poles in place will help minimize impacts to the slope. Track-mounted or limited access equipment may be necessary for the installation/excavation of the poles within this portion of the alignment.

It is our opinion that the poles within the hazard areas described in the table above can be installed with a low risk of impact to the geologic hazard areas, their buffers or structure setbacks, provided that our recommendations and appropriate BMPs are implemented.

CODE COMPLIANCE

In addition to generally applicable performance standards set forth in the City's LUC 20.25H.055 and 20.25H.065, development within a landslide hazard or steep slope critical area or the critical area buffers of such hazards shall incorporate the following additional performance standards in design of the development, as applicable. The requirement for long-term slope stability shall exclude designs that require regular and periodic maintenance to maintain their level of function.

20.25H.125 Performance standards – Landslide hazards and steep slopes

A. *Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography.*

Response to Code Requirement: No structures will be constructed as part of the proposed project. Site improvements (pole removal, pole replacement, access improvements and vegetation management/tree removal) are not anticipated to adversely impact the natural contour of slopes. The proposed site activities including vegetation management, tree removal, and temporary access roads (associated with the proposed pole replacement activities) will maintain overall existing site topography. However, it is anticipated that a temporary working bench may be necessary to install poles in some locations. Also, there is one location just south of proposed Pole 6/2 where the natural contour of the slope may be modified slightly by adding permanent fill to the existing road/trail if the site is accessed from Lake Hills Connector. New fill placement would be geotechnically engineered and contoured to mimic existing topography. No adverse impacts from fill placement are anticipated if geotechnical recommendations are implemented.

B. *Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation.*

Response to Code Requirement: No structures will be constructed as part of the proposed project. Site improvements include localized vegetation management, including tree removal, and use of existing access routes where possible (associated with the proposed pole replacement activities). The proposed tree removal and surface disturbance will be limited to reduce potential impacts to natural landforms and vegetation. Tree removal is limited to that needed for pole installation and to meet federal North American Electric Reliability Corporation (NERC) standards to maintain safe clearances between vegetation and utility lines. The access to proposed Pole 6/3 was sited to avoid a wetland.

C. *The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties.*

Response to Code Requirement: The proposed development includes vegetation management, including tree removal, and use of existing access routes (associated with the proposed pole replacement activities) that will be followed by mitigation measures to reduce potential impacts to geologic hazards that include landslide and steep slope hazards. Mitigation measures include a variety of BMPs to reduce potential impacts to geologic hazards in the vicinity of neighboring properties. BMPs include plant replacement, scattering trimmed or removed tree debris, and chipping wood to reduce potential impacts to work areas as appropriate. Removal of vegetation by hand and/or using limited access machinery will reduce potential impacts to landslide and steep slope hazard areas. It is our opinion that the proposed project will not require increased buffers and will not result in a greater risk to neighboring properties.

D. *The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall.*

Response to Code Requirement: In the transmission corridor, no retaining walls or grading activities are proposed relative to the proposed vegetation management, tree removal and access route activities (associated with the proposed pole replacement activities). If permanent fill is used on the access route between Lake Hills Connector and proposed Pole 6/2, it will be geotechnically engineered such that no retaining walls will be required.

E. *Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer.*

Response to Code Requirement: No substantial new impervious surfaces are proposed relative to the proposed vegetation management, tree removal and access route activities (associated with the proposed pole replacement activities) within mapped critical area and mapped critical area buffers of the transmission corridor.

F. *Where change in grade outside the building footprint is necessary, the site retention system should be stepped, and regrading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with these criteria.*

Response to Code Requirement: No substantial change in grade is proposed relative to the proposed vegetation management, tree removal and access route activities (associated with the proposed pole replacement activities) within the transmission corridor.

G. *Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation.*

Response to Code Requirement: No building foundations are proposed relative to the proposed vegetation management and tree removal activities associated with the proposed pole replacement activities within the transmission corridor. However, for stability purposes, drilled pier foundations will be used on select poles in the corridor where appropriate. No soldier pile and retaining walls will be necessary to retain any grade changes that may be required.

H. *On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification.*

Response to Code Requirement: No pole-type structures are proposed relative to the proposed vegetation management and tree removal activities. The new poles will meet the preferred construction type (which is pole-type construction).

I. *On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types.*

Response to Code Requirement: No structures requiring pile deck support are proposed relative to the proposed vegetation management and tree removal activities. The new poles will meet the preferred construction type (which is pole-type construction).

J. *Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210. (Ord. 5680, 6-26-06, § 3).*

Response to Code Requirement: Temporary disturbance for the proposed vegetation management and tree removal activities and access routes (associated with the proposed pole replacement activities) within the existing transmission corridor will be mitigated by scattering and/or chipping trimmed limbs and logs, replanting vegetation, and using limited access equipment or accessing only by foot as appropriate. In the event that work areas are wet or have standing water, timber driving mats will be used under all equipment. Additionally, for poles located in geologic hazard areas, the old poles will be cut off approximately 1 to 2 feet below ground surface and the remaining portion of each pole left in place.

If fill is placed to widen and regrade the existing access road/trail just north of Lake Hills Connector for access to proposed Pole 6/2, potential impacts will be mitigated by conducting a geotechnical evaluation and design for the proposed fill, and constructing the access improvements in accordance with geotechnical recommendations.

LIMITATIONS

We have prepared this report for the exclusive use of PSE and their authorized agents for the Energize Eastside Project located in Bellevue, Washington.

The purpose of our services was to review landslide, erosion and seismic hazard impacts in relation to construction activities, vegetation management/tree removal and temporary access routes (associated with the proposed pole replacement activities) along the transmission line corridor within the City. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

It is not the intent of GeoEngineers to list and identify all applicable safety codes, standards and/or regulations relating to work to be performed for the Energize Eastside Project. The Contractor and its subcontractors are solely responsible for identifying, determining and adhering to all applicable safety codes, standards and regulations.

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GeoEngineers

Appendix E

PSE AVIAN PROTECTION PLAN MEMO AND BROCHURE

PUGET SOUND ENERGY

October 26, 2020

Official Memorandum

Prepared by: Haley Olson, Sr Resource Scientist
Puget Sound Energy's Avian Protection Program
Re: Energize Eastside North Bellevue CUP

Puget Sound Energy has an implemented corporate Avian Protection Plan (APP), originally developed in 2005, revised in 2014, and has had an official Avian Protection Program since 2000. PSE's APP describes measures taken company-wide to reduce the effects of its facilities, infrastructure, and activities on local bird species. Energize Eastside will follow PSE's Best Management Practices, as described in PSE's APP, to avoid and minimize any effects to local bird species listed in the Critical Areas Report as described below.

Avian-safe construction: All new or rebuilt power lines are constructed to PSE's avian-safe standards, and consistent with the Avian Power Line Interaction Committee (APLIC) Suggested Practices for Avian Protection on Power Lines (2006). Because transmission lines have widely spaced conductors, high visual profile due to the size of the conductors, and lack of equipment on poles, transmission poles and lines pose very little risk of electrocution or collision for birds, are generally considered avian-safe and do not require additional avian protection devices. In addition, transmission-voltage substation equipment poses little risk for bird electrocution and does not require avian protection due to the clearance required for higher voltages.

Nest Management: No nesting sites or nesting areas of species of local importance have been identified either by data review or by observation in the field. If sensitive nesting areas or nests are identified during construction-related activities, an Avian Biologist will be consulted and will coordinate with the Washington Department of Fish and Wildlife to locate the nest(s) or nesting areas, delineate appropriate temporal and/or spatial nest buffers, and ensure that construction-related activities do not cause nesting disturbance to the bird species of local importance listed in the CAR, including bald eagles, peregrine falcons, common loons, western grebes, pileated woodpeckers, Vaux's swifts, purple martins, merlins, great blue herons, green herons, osprey, and red-tailed hawks.

Please contact me with questions or concerns at haley.olson@pse.com or 425-462-3305.

Haley Olson, Sr. Resource Scientist/Avian Protection Program
Puget Sound Energy

Why does PSE have an Avian Protection Plan?

PSE is committed to reducing our electrical system's potential to harm birds, maintaining service reliability for our customers, and complying with state and federal regulations related to birds.

PSE is proud to be a leader in Avian Protection.

PSE responds to approximately 200 bird-related incidents each year.

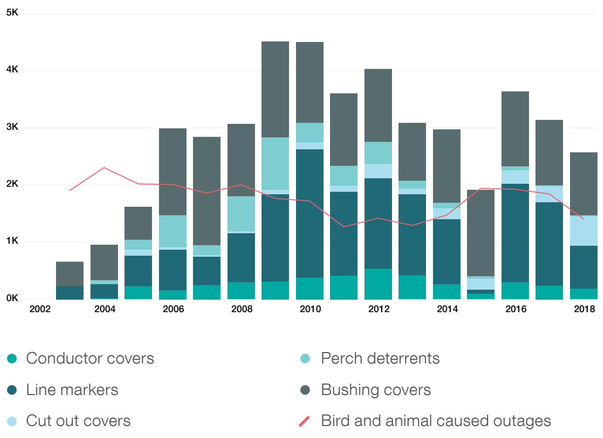
PSE had an average of about 1,750 bird and animal caused outages each year between 2003 and 2018.

PSE's avian protection program completes an average of 300 avian safe units (line spans and poles) each year with remediation projects to protect birds from electrocutions and collisions.

PSE builds all new construction in avian habitat areas using avian safe standards.

PSE's APP has partnered with the Audubon Society, The Nature Conservancy, The Trumpeter Swan Society, and is an active member of the Avian Power Line Interaction Committee.

Avian Protection Devices Installed 2003-2018



Bird protection laws

Almost all species of birds are protected from "take," which can mean to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct," under one or more of the following:

- Migratory Bird Treaty Act (MBTA)
- Bald and Golden Eagle Protection Act (BGEPA)
- Endangered Species Act (ESA)

There are three main types of bird-related utility equipment incidents:

Electrocutions occur when birds make direct contact with energized and grounded conductors or equipment, and spacing between equipment can influence this risk.

Collisions occur when birds fly directly into conductors, causing injury or mortality from impact, such as a broken wing or neck.

Problem nests become a risk when nest material on utility poles comes in contact with energized equipment, and can conduct electricity when wet, and potentially ignite, cause outages, and pose a hazard to the nesting birds.

Electrocutions, collisions, and problem nests can cause harm to birds, electrical outages, fires, and other damage to the electrical system. PSE is actively engaged in reducing all three types of incidents.

Line markers along Jones Road, Whatcom County.

PSE marks about 130 spans of power lines each year in swan foraging and roosting habitat, making the lines more visible for birds to reduce collisions.

Avian First Response contacts and resources

Puget Sound Energy

Mel Walters
Consulting Resource Scientist
425-785-4963
melvin.walters@pse.com

Haley Olson
Sr Resource Scientist
206-419-4919
haley.olson@pse.com

avianprotection@pse.com

Visit our website for more information:
pse.com/pages/environment/bird-protection

Washington Department of Fish and Wildlife

Mill Creek Office
425-775-1311
teammillcreek@dfw.wa.gov

La Connor Office
Seasonal Swan Hotline
360-466-4345 ext. 266

U.S. Fish and Wildlife Service

Western Washington Regional Office
425-883-8122
www.fws.gov

Avian Power Line Interaction Committee

www.aplic.org

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PSE PUGET SOUND ENERGY

Avian Protection Program

Promoting bird safety and improving electric system reliability.

A problem osprey nests on a 3-phase transformer bank pole.

PSE installs about 4 nest platforms each year to provide safe nest locations for birds.

Wintering snow geese and trumpeter swans in Skagit County.

PSE responds to about 74 swan related incidents each year, including injuries, mortalities, lead-poisoning, and electric outages between 2009 and 2012.

Eagle nest near the Skagit River, Sedro Woolley.

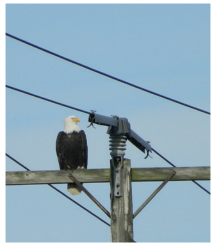
PSE monitors eagle and other sensitive nests for disturbance when construction or vegetation management activities occur in close proximity during the nesting season.

Bald eagle perched on an avian-safe pole.

PSE installs about 365 bird guards each year in eagle nesting, foraging, and roosting habitat to reduce electrocutions.

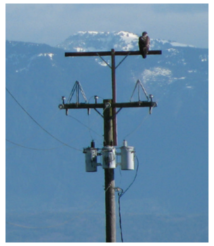
Making PSE's electrical system safer for birds

Line markers increase visibility of power lines to reduce the potential for collisions.



Bird guards allow birds to perch safely on utility poles by covering energized conductors and providing sufficient spacing between conductors.

Perches provide a safe place for birds to perch on preferred poles away from electrical equipment.



Equipment covers include bushing covers, cut out covers, and covered jumpers, which reduces the risk of bird electrocution on equipment poles.

Nest platforms provide a safe nesting location in areas with few trees to minimize nesting on utility poles and reduce risk of harm to nesting birds, outages, and damage to equipment.

Perch deterrents help move birds from unsafe parts of the crossarm to a safer perch with wider spacing between conductors.

PSE's Avian Protection Program is a voluntary program that addresses avian issues and concerns company-wide, including electrocutions and collisions, bird nests on electrical equipment, and even avian management at PSE's wind facilities.

Responsibilities of the Avian Protection Program:

- Maintain compliance with state and federal wildlife laws.
- Document and respond to incidents of bird mortalities, injuries, problem nests, and ensure appropriate notification and coordination with state and federal agencies.
- Systematically reduce the risk of avian electrocution and collision with PSE's electrical system.
- Maintain a positive relationship with regulatory agencies, manage appropriate federal and state permits, and regularly report to agencies as needed.
- Provide a framework for field personnel to manage bird/power line interactions.
- Increase electrical system reliability and environmental stewardship.
- Establish design standards for new equipment and power line construction to reduce the risk of avian mortalities and injuries.
- Coordinate with PSE planning, construction, and vegetation management to reduce affects to birds, nests, and habitat.
- Raise awareness among PSE employees and service providers about avian protection issues and the related company policies and procedures.

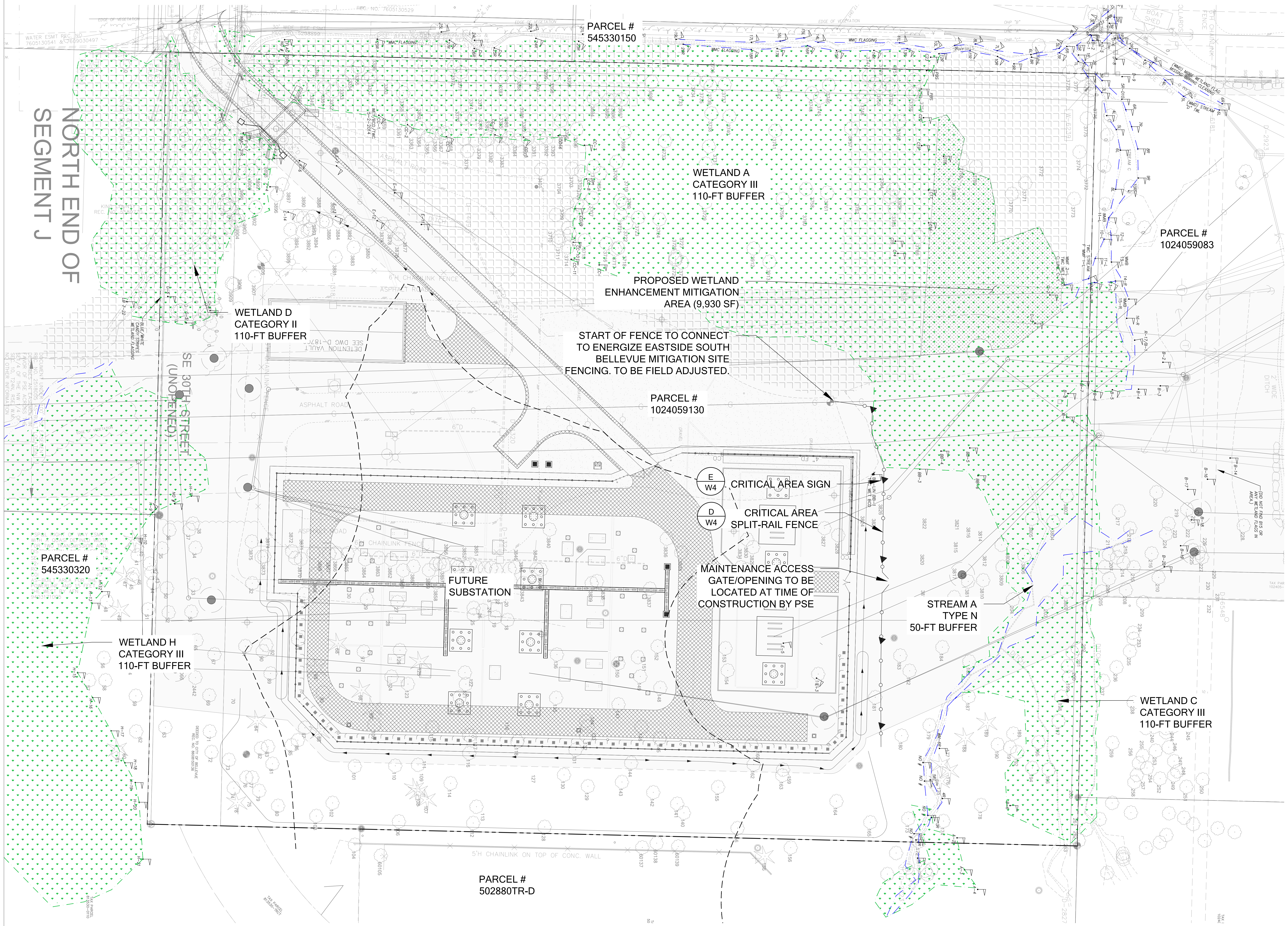
pse.com/pages/environment/bird-protection

Appendix F

RICHARDS CREEK MITIGATION PLAN

ENERGIZE EASTSIDE RICHARDS CREEK SUBSTATION

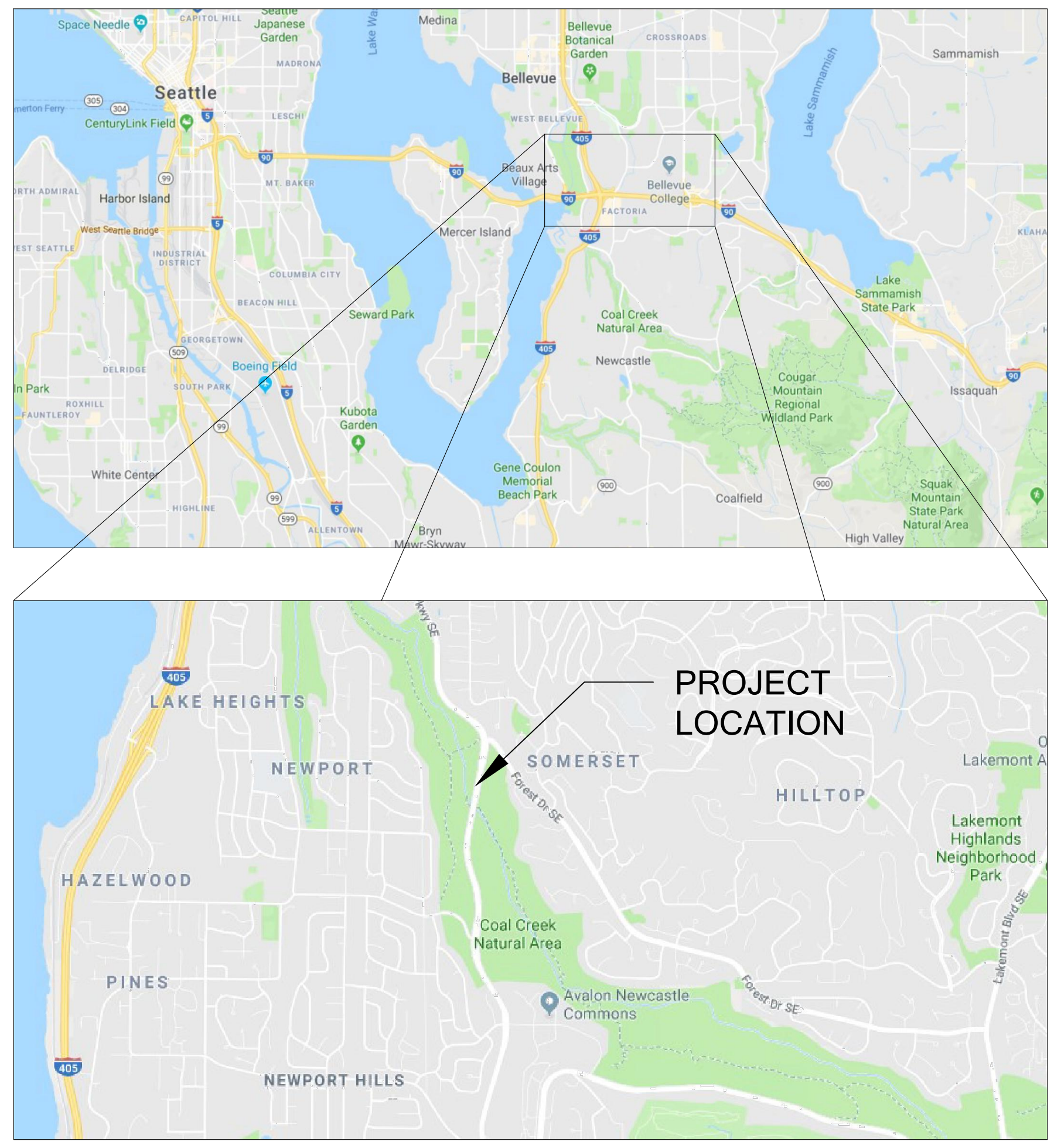
NORTH BELLEVUE MITIGATION PLAN



EXISTING CONDITIONS & MITIGATION PLAN

SCALE: 1" = 40'

0 20' 40' 80' 160'



VICINITY MAPS

LEGEND

- 🟩 WETLAND BOUNDARY
- – – – – – – WETLAND BUFFER
- —— – – —— PROPERTY BOUNDARY
- ▦ APPROVED ENERGIZE EASTSIDE SOUTH BELLEVUE MITIGATION AND RESTORATION AREA (17-120557-LO)
- ⬚ WETLAND ENHANCEMENT (9,930 SF)

SHEET INDEX

W1.	EXISTING CONDITIONS & MITIGATION PLAN
W2.	TESC PLAN
W3.	PLANTING PLAN
W4.	LANDSCAPE CONSTRUCTION NOTES & DETAILS
W5.	MITIGATION NOTES

GENERAL NOTES

1. CONSTRUCTION ACCESS, POLE TYPES, POLE HEIGHTS, AND POLE LOCATIONS ARE SUBJECT TO CHANGE PENDING FURTHER DESIGN, ENVIRONMENTAL REVIEW, PERMITTING AND IN-FIELD CONSTRUCTION NEEDS.
2. WETLANDS WERE DELINEATED BY THE WATERSHED COMPANY ON JANUARY 31, 2017 AND FEBRUARY 7, 2017.
3. SURVEY RECEIVED FROM APS SURVEY AND MAPPING, PERFORMED ON JANUARY 19, 2017 AND WETLAND LOCATES PERFORMED ON FEBRUARY 16, 2017.

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland WA 98033

p 425.822.5242
www.watershedco.com
Science & Design

RICHARDS CREEK SUBSTATION
EE NORTH BELLEVUE MITIGATION PLAN
PREPARED FOR: PUGET SOUND ENERGY
PARCEL #1024059130
RICHARDS CREEK SUBSTATION
BELLEVUE, WA 98006

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	10/09/2020	MITIGATION PLAN	KMB
2	11/09/2020	PSE COMMENTS	KMB
3	02/16/2021	PERMIT SUBMITTAL	KMB

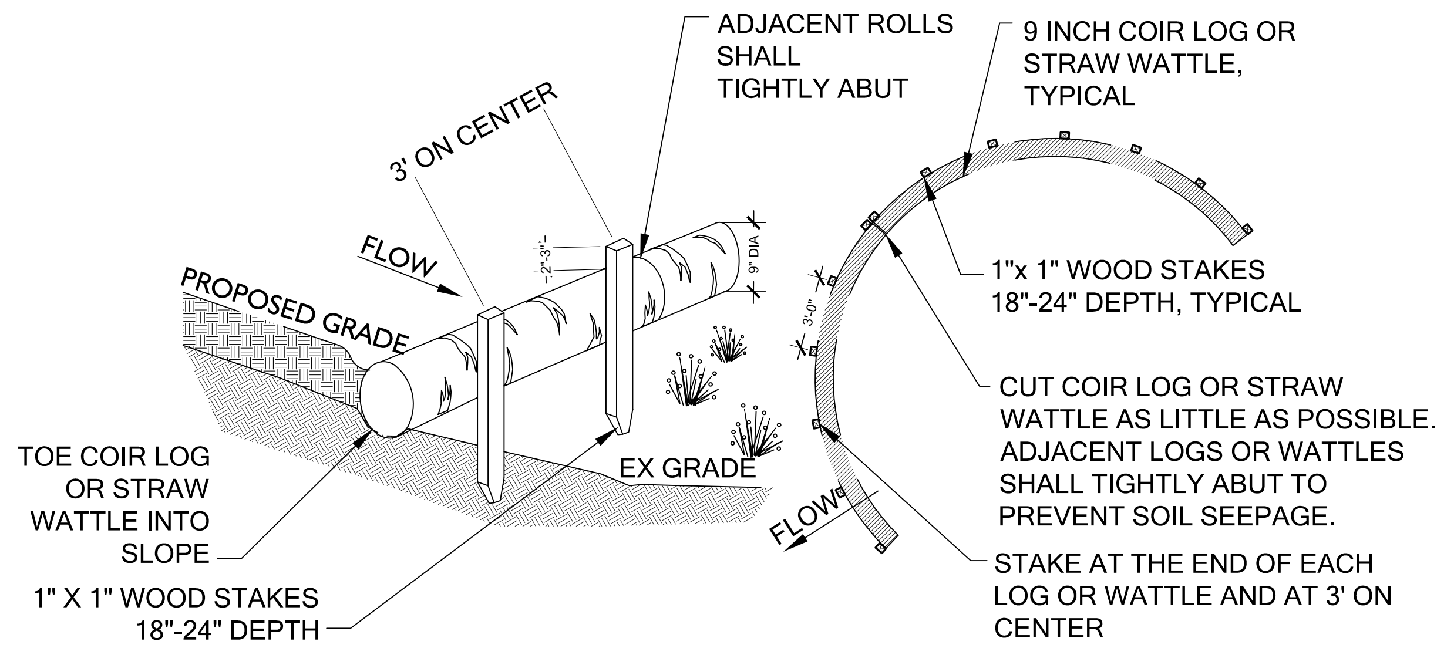
SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: KMB
DRAFTED: KMB
CHECKED: CM/KC

JOB NUMBER:
111103.11

SHEET NUMBER:
W1 OF 5

FILENAME
PRINTED BY
DATE

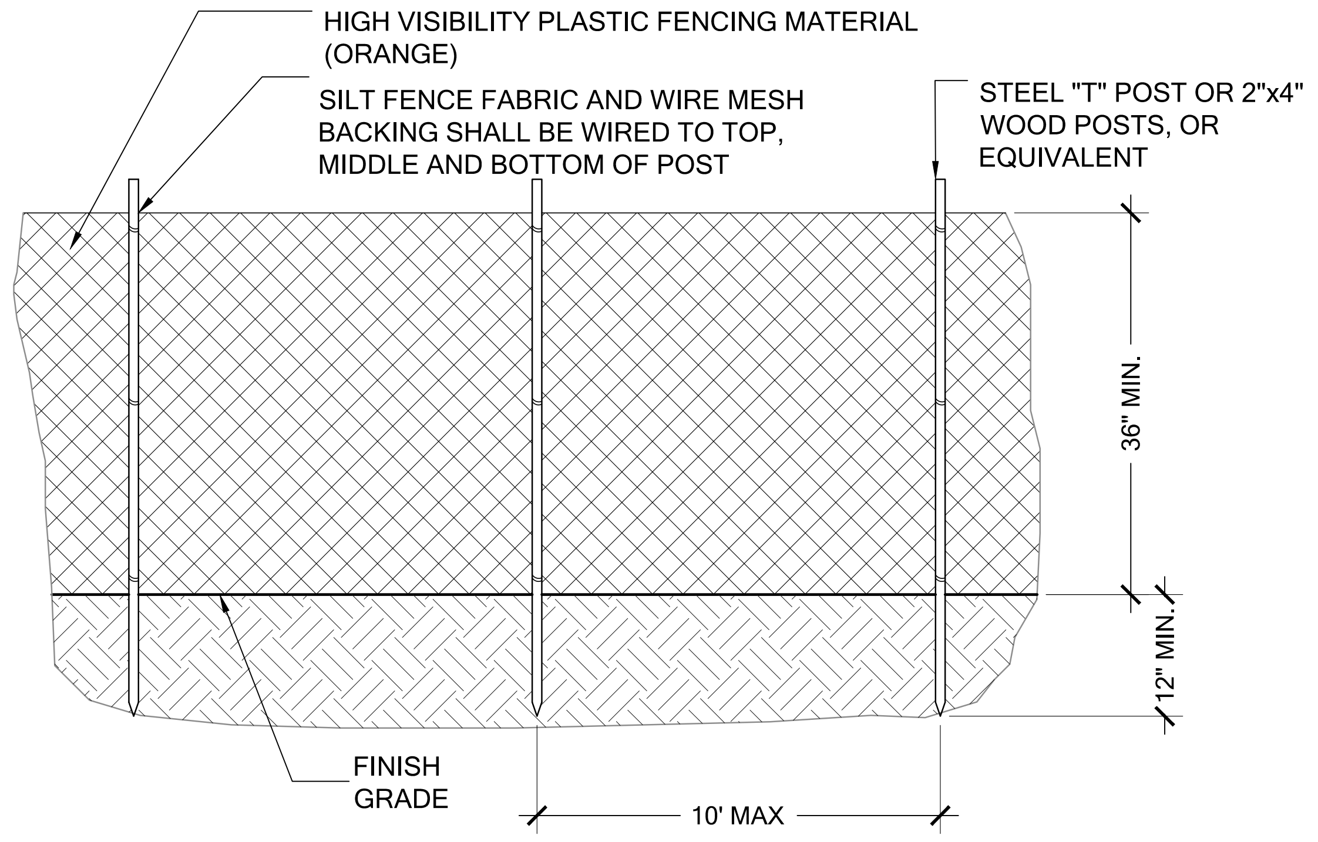


PLAN

NOTES
1. COIR LOG OR STRAW WATTLE SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES.
2. COIR LOG OR STRAW WATTLE SHALL BE 9 INCH IN DIAMETER.
3. STAKING: WOODEN STAKES ARE RECOMMENDED TO SECURE THE COIR LOG OR STRAW WATTLE. BE SURE TO USE A STAKE THAT IS LONG ENOUGH TO PROTRUDE SEVERAL INCHES ABOVE THE COIR LOG OR STRAW WATTLE: 18" IS A GOOD LENGTH FOR HARD, ROCKY SOIL; FOR SOFT LOAMY SOIL USE A 24" STAKE.
4. WHEN INSTALLING RUNNING LENGTHS OF COIR LOG OR STRAW WATTLE, BUTT THE SECOND LOG TIGHTLY AGAINST THE FIRST; DO NOT OVERLAP THE ENDS.
5. STAKE THE LOGS OR WATTLES AT EACH END AND THREE (3) FEET ON CENTER. STAKES SHOULD BE DRIVEN OUTSIDE THE COIR LOG OR STRAW WATTLE, BUT CLOSE ENOUGH TO HOLD IT IN PLACE. LEAVE 2 - 3 INCHES OF THE STAKE PROTRUDING ABOVE THE COIR LOG OR STRAW WATTLE. A HEAVY SEDIMENT LOAD WILL TEND TO PICK UP THE COIR LOG OR STRAW WATTLE AND COULD PULL IT OFF THE STAKES IF THEY ARE DRIVEN DOWN TOO LOW.
6. WHEN COIR LOG OR STRAW WATTLE ARE USED FOR FLAT GROUND APPLICATIONS, DRIVE THE STAKES STRAIGHT DOWN; WHEN INSTALLING COIR LOG OR STRAW WATTLE ON SLOPES, DRIVE THE STAKES PERPENDICULAR TO THE SLOPE. DRIVE THE FIRST END STAKE OF THE SECOND COIR LOG OR STRAW WATTLE AT AN ANGLE TOWARD THE FIRST COIR LOG OR STRAW WATTLE IN ORDER TO HELP ABUT THEM TIGHTLY TOGETHER.

A COIR WATTLE

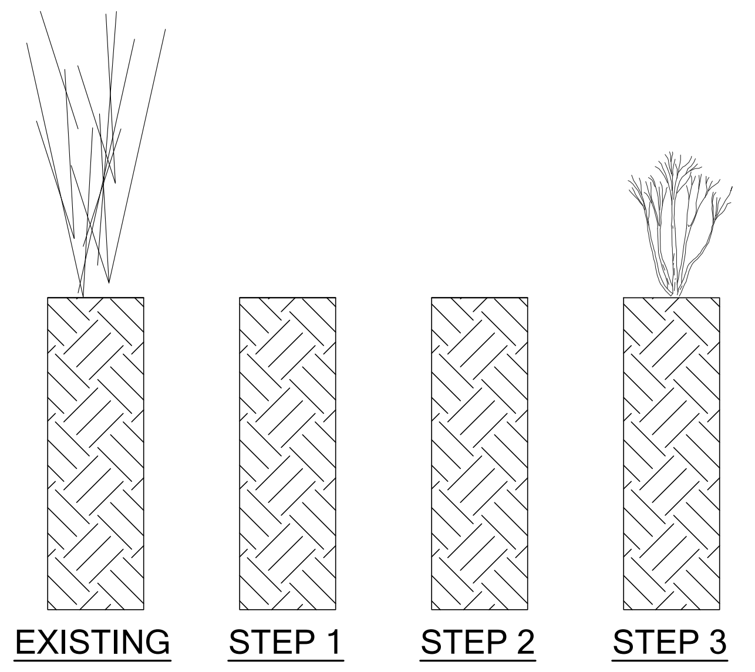
SCALE: NTS



NOTES:
1. DO NOT NAIL OR STAPLE FENCE TO EXISTING TREES OR UTILITY POLES.
2. ANY DAMAGE TO THE FENCE SHALL BE REPAIRED IMMEDIATELY.

B HIGH VISIBILITY FENCE

SCALE: NTS



PLANTING AREA PREPARATION

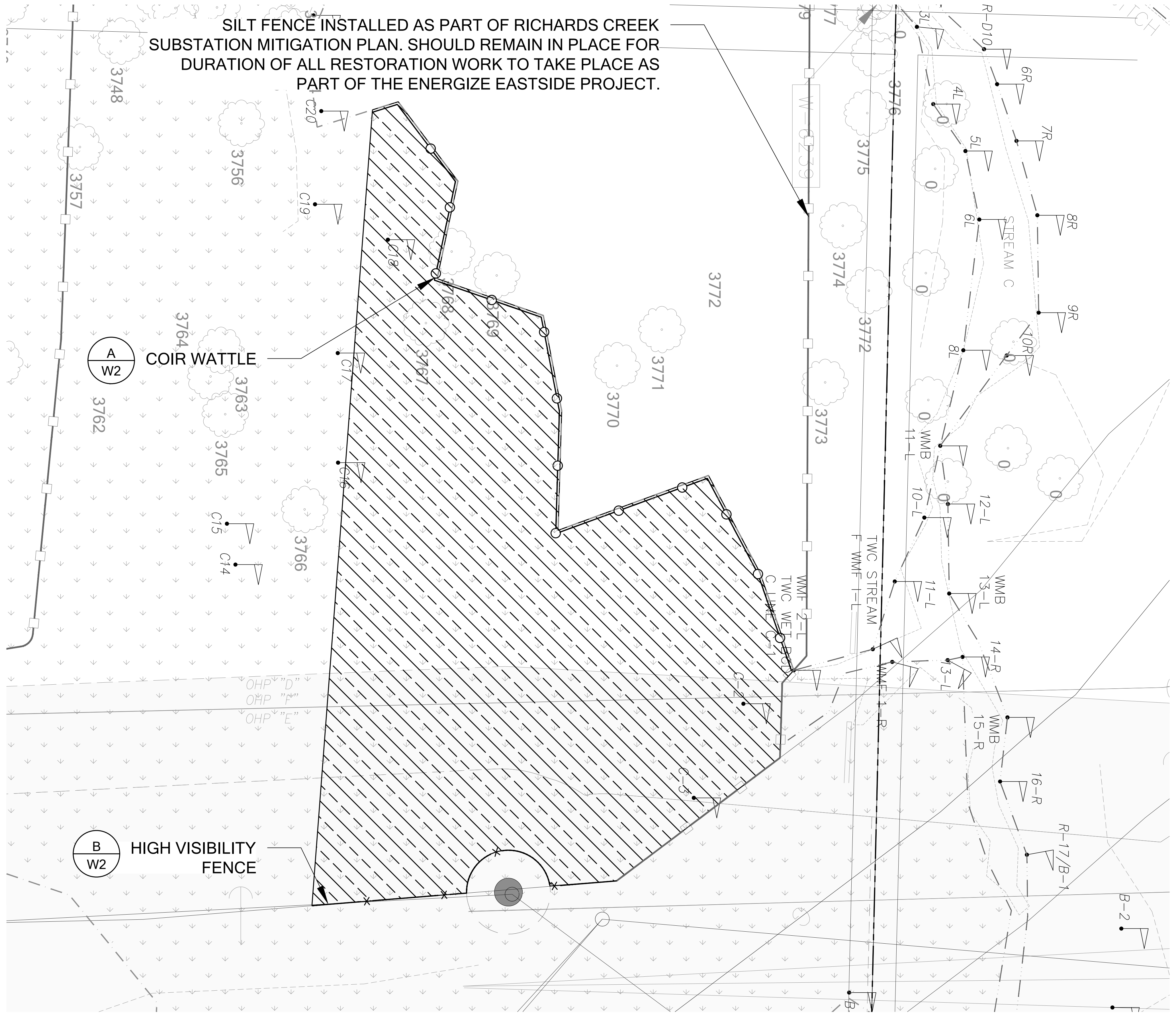
STEP 1
REMOVE INVASIVE SPECIES. WORK WITHIN ROOT ZONES OF EXISTING TREES AND SHRUBS SHALL BE DONE BY HAND. ALL OTHER WORK SHALL BE DONE BY MACHINERY WITH NON-COMPACTING TIRES/TREAD, OR BY HAND. SOIL SHALL NOT BE LEFT BARE FOR MORE THAN 7 DAYS.

STEP 2
REMOVED INVASIVE SPECIES AGAIN WITHIN ONE WEEK OF PLANTING

STEP 3
INSTALL PLANTS. (SEE PLANTING DETAIL ON SHEET W4.)

1 SOIL PREPARATION AREA 1

SEQUENCE OF WORK - NOT TO SCALE



SILT FENCE INSTALLED AS PART OF RICHARDS CREEK SUBSTATION MITIGATION PLAN. SHOULD REMAIN IN PLACE FOR DURATION OF ALL RESTORATION WORK TO TAKE PLACE AS PART OF THE ENERGIZE EASTSIDE PROJECT.

A W2 COIR WATTLE

B W2 HIGH VISIBILITY FENCE

LEGEND

⬚	WETLAND BOUNDARY
– – – –	WETLAND BUFFER
— - — -	PROPERTY BOUNDARY
▨	SOIL PREP 1 (9,930 SF)
—○—	COIR WATTLE (200 LF)
—x—	HIGH VISIBILITY FENCE (70 LF) (LIMITS OF WORK)
—□—	SILT FENCE, SEE ENERGIZE EASTSIDE SOUTH BELLEVUE MITIGATION AND RESTORATION AREA DRAWINGS. (17-120557-LO)

0 10' 20' 40' 80'

TESC PLAN

SCALE: 1" = 20'

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

RICHARDS CREEK SUBSTATION
EE NORTH BELLEVUE MITIGATION PLAN
PREPARED FOR: PUGET SOUND ENERGY
PARCEL #1024059130
RICHARDS CREEK SUBSTATION
BELLEVUE, WA 98006

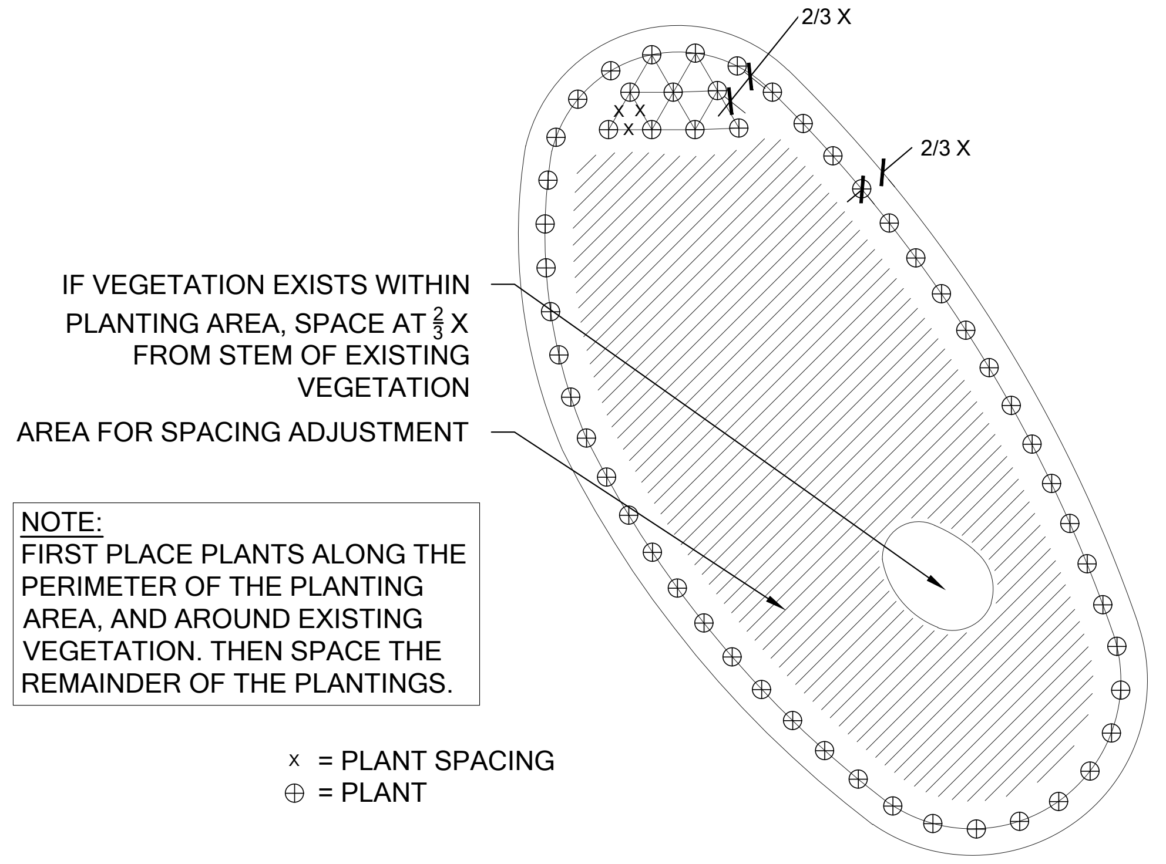
SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	10/09/2020	MITIGATION PLAN	KMB
2	11/09/2020	PSE COMMENTS	KMB
3	02/16/2021	PERMIT SUBMITTAL	KMB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: KMB
DRAFTED: KMB
CHECKED: CM/KC
JOB NUMBER:
111103.11
SHEET NUMBER:
W2 OF 5

FILENAME
PRINTED BY
DATE



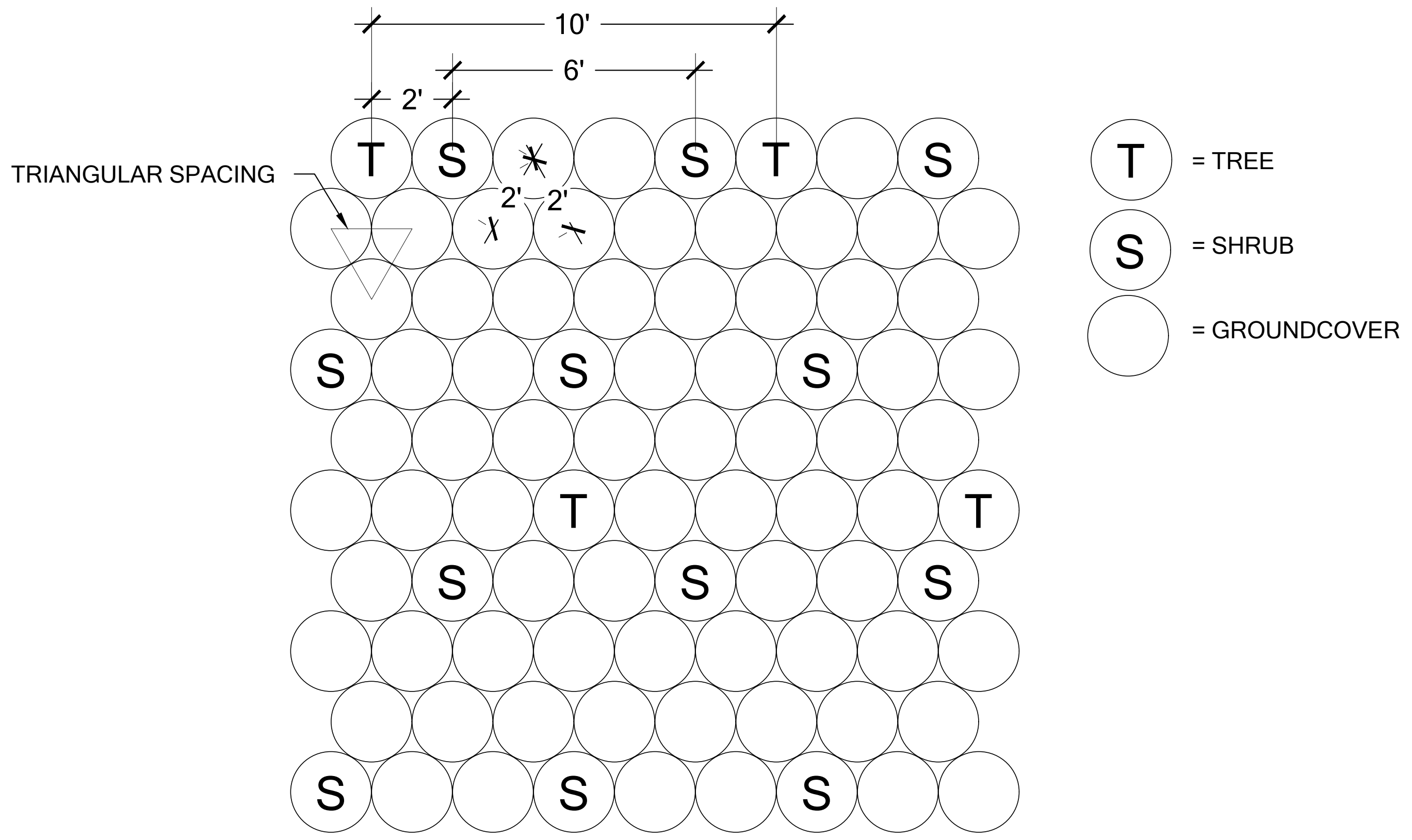
NOTE:
FIRST PLACE PLANTS ALONG THE PERIMETER OF THE PLANTING AREA, AND AROUND EXISTING VEGETATION. THEN SPACE THE REMAINDER OF THE PLANTINGS.

PLANT SCHEDULE

PLANT SPECIES / SPACING	PLANTING AREA QUANTITY				
	▨ WETLAND ENHANCEMENT	▨ WETLAND ENHANCEMENT (R.O.W)	*TOTAL QTY*	SIZE	REMARKS
SQUARE FEET	5,940 SF	3,990 SF	*9,930 SF*		
TREES / @10 FT O.C.					
ALNUS RUBRA	22		*22*	2 GAL.	
FRAXINUS LATIFOLIA	22		*22*	2 GAL.	
PICEA SITCHENSIS*	22		*22*	2 GAL.	SEE NOTE 2
SALIX SITCHENSIS	22		*22*	2 GAL.	
SHRUBS / @6 FT O.C.					
CORNUS SERICEA	48	32	*80*	1 GAL.	
PHYSOCARPUS CAPITATUS	48	32	*80*	1 GAL.	
ROSA NUTKANA	48	32	*80*	1 GAL.	
RUBUS SPECTABILIS	48	32	*80*	1 GAL.	
GROUNDCOVERS / @24-INCH O.C.					ALL SPECIES TO BE SPACED TRIANGULARLY
ATHYRIUM FILIX-FEMINA	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
CAREX OBNUPTA	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
SCIRPUS MICROCARPUS	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
TOLMIEA MENZIESII	360	270	*630*	1 GAL.	PLANT BY SPECIES IN ODD NUMBER GROUPS OF 9-15
TOTAL	*1,720*	*1,208*	***2,928***		

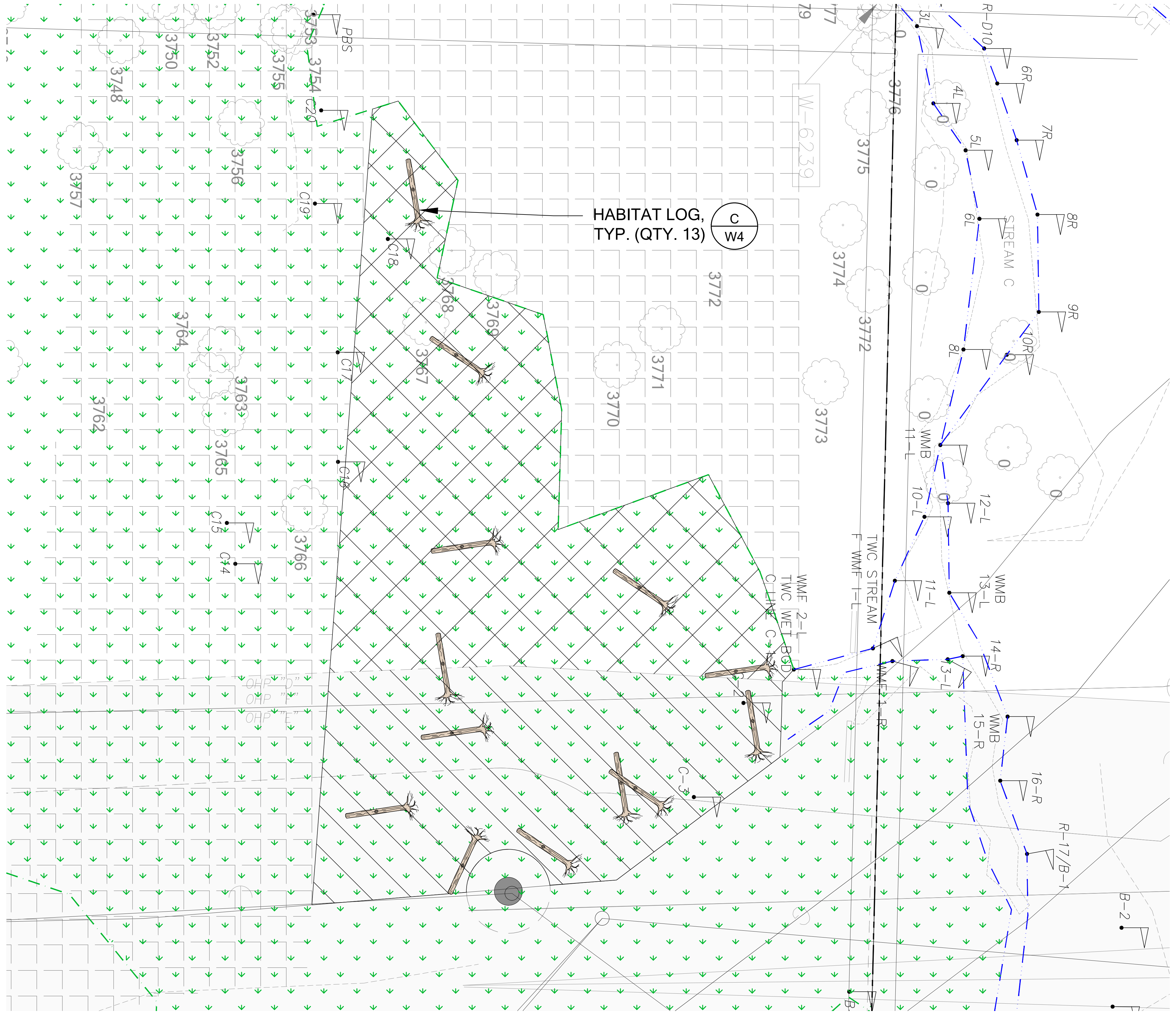
A PLANT SPACING DETAIL

Scale: NTS



B PLANT LAYOUT DETAIL

Scale: NTS



NOTES

1. ALNUS RUBRA, FRAXINUS LATIFOLIA, AND PICEA SITCHENSIS TREES TO BE PLANTED NO CLOSER THAN 25 FEET HORIZONTALLY FROM CONDUCTOR. FINAL PLACEMENT OF TREES TO BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO PLANTING.
2. *FOCUS SITKA SPRUCE IN AREAS HEAVILY DOMINATED BY REEDCANARY GRASS.
3. IN AREAS OF EXISTING NATIVE VEGETATION, A RESTORATION SPECIALIST SHALL IDENTIFY VEGETATION TO REMAIN PRIOR TO PLANTING. FIELD PLACE NEW PLANTS TO INFILL PER TYPICAL SPACING.

LEGEND

🟩	WETLAND BOUNDARY
- - - - - -	WETLAND BUFFER
- · - · -	PROPERTY BOUNDARY
▦	SUBSTATION MITIGATION
▬	PLACED LARGE WOODY DEBRIS (13)

PLANTING PLAN

SCALE: 1" = 20'

0 10' 20' 40' 80'

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DESIGNED: KMB
DRAFTED: KMB
CHECKED: CM/KC
JOB NUMBER:
111103.11
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W3 OF 5

FILENAME
PRINTED BY
DATE

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE

1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS

1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY PSE OR THE RESTORATION CONSULTANT .
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO PSE OR THE RESTORATION CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION

1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY PSE OR THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. PSE OR RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, PSE OR THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS

1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AT THE APPROVAL OF PSE OR RESTORATION CONSULTANT .
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES

1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES

1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO PSE OR RESTORATION SPECIALIST AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH PSE OR RESTORATION SPECIALIST AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION

CONTRACTOR MUST NOTIFY PSE OR RESTORATION SPECIALIST 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT PSE OR RESTORATION SPECIALIST MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS

1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY

PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT

1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT PSE OR THE RESTORATION CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL

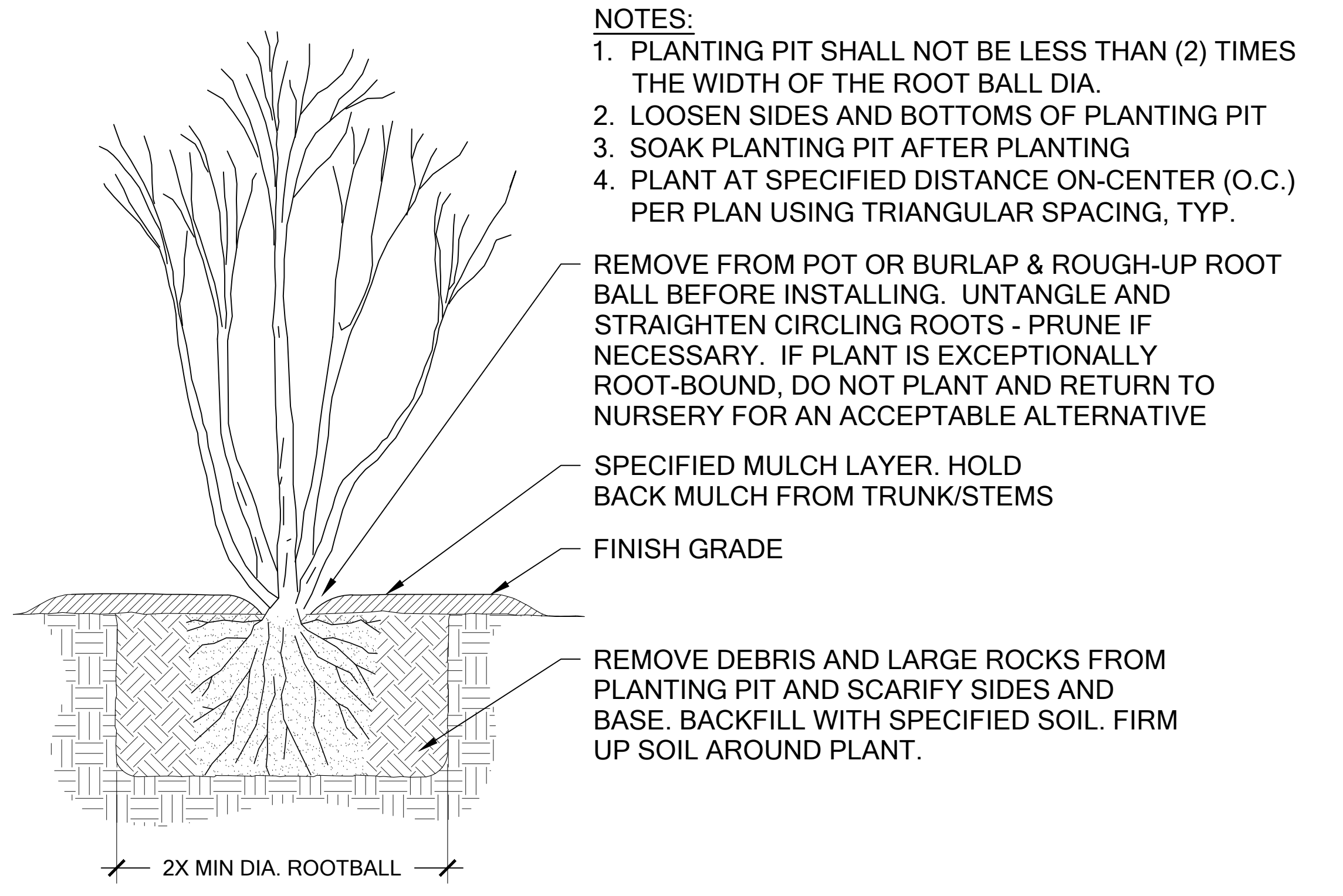
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES

SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

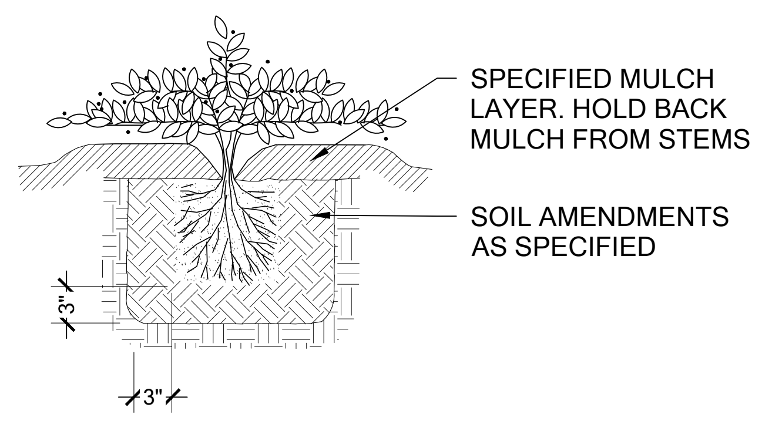


NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
3. SOAK PLANTING PIT AFTER PLANTING
4. PLANT AT SPECIFIED DISTANCE ON-CENTER (O.C.) PER PLAN USING TRIANGULAR SPACING, TYP.

A TREE AND SHRUB PLANTING

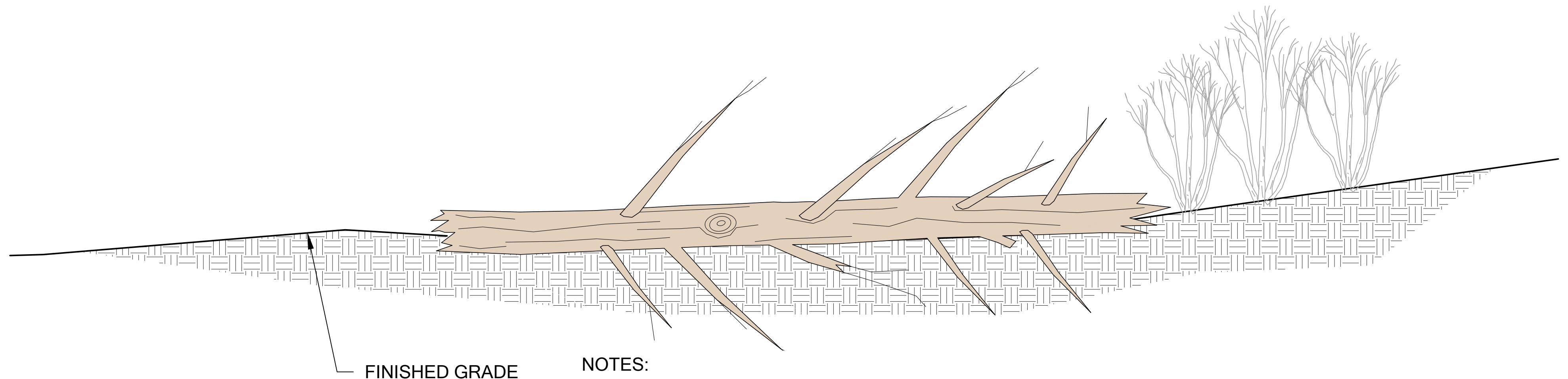
Scale: NTS

NOTES:
1. PLANT GROUNDCOVER AT SPECIFIED DISTANCE ON-CENTER (O.C.) USING TRIANGULAR SPACING, TYP.
2. LOOSEN SIDES AND BOTTOM OF PLANTING PIT AND REMOVE DEBRIS
3. LOOSEN ROOTBOUND PLANTS BEFORE INSTALLING
4. SOAK PIT BEFORE AND AFTER INSTALLING PLANT



B GROUNDCOVER PLANTING

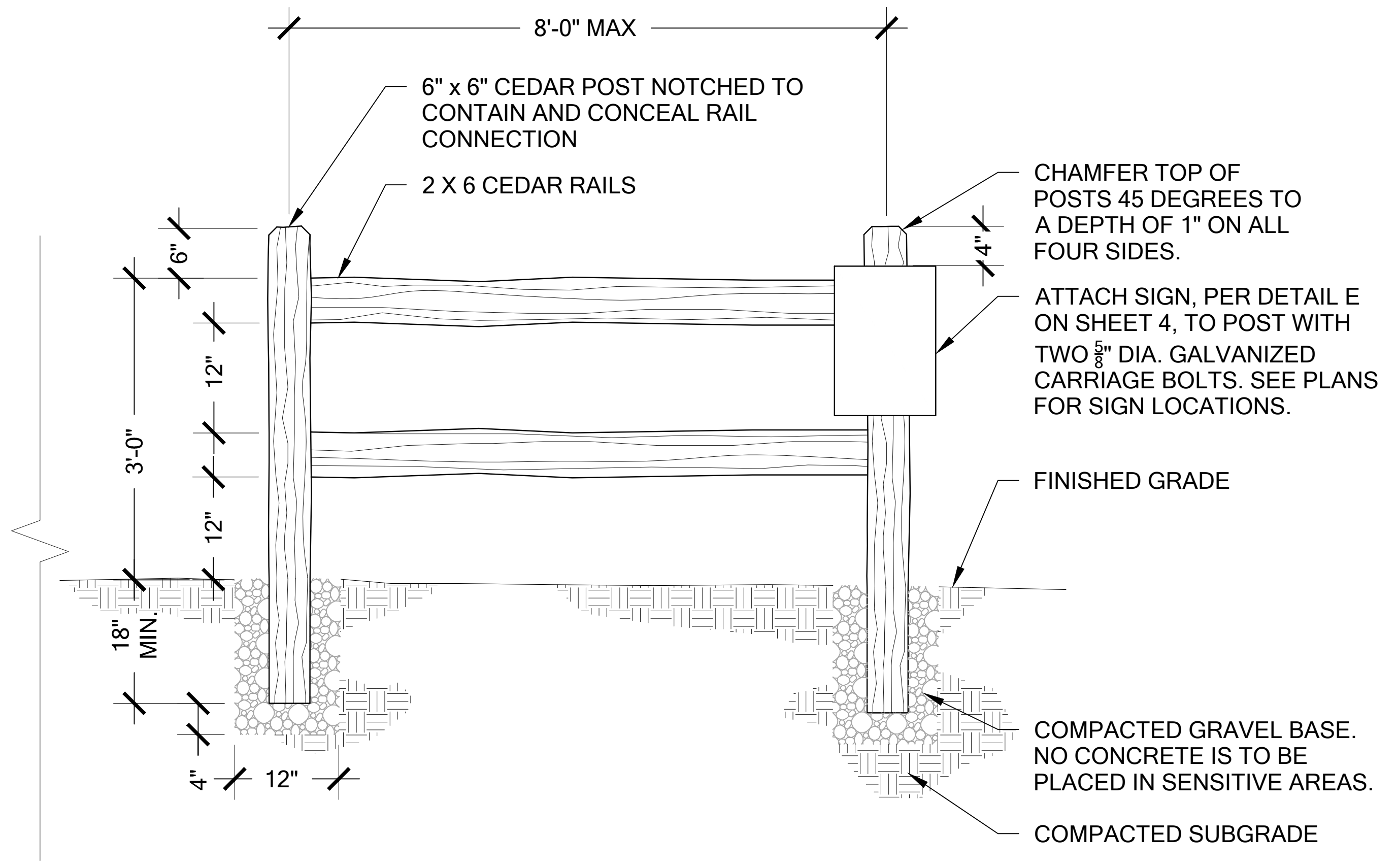
Scale: NTS



NOTES:
1. HABITAT LOG SHALL CONSIST OF NATIVE TREE SPECIES WITH BRANCHES AND BARK LEFT INTACT.
2. LOG SHALL BE A MINIMUM 25-FEET IN LENGTH AND A MINIMUM 16-INCH DIAMETER AT THE SMALLEST END.
3. LAYOUT OF DETAIL IS CONCEPTUAL. SEE PLAN FOR LOCATION. LAYOUT IN FIELD WITH ASSISTANCE FROM THE CONTRACTING AGENCY.
4. REUSE OF FELLED TREES FROM ELSEWHERE ON THE CORRIDOR IS ACCEPTABLE.

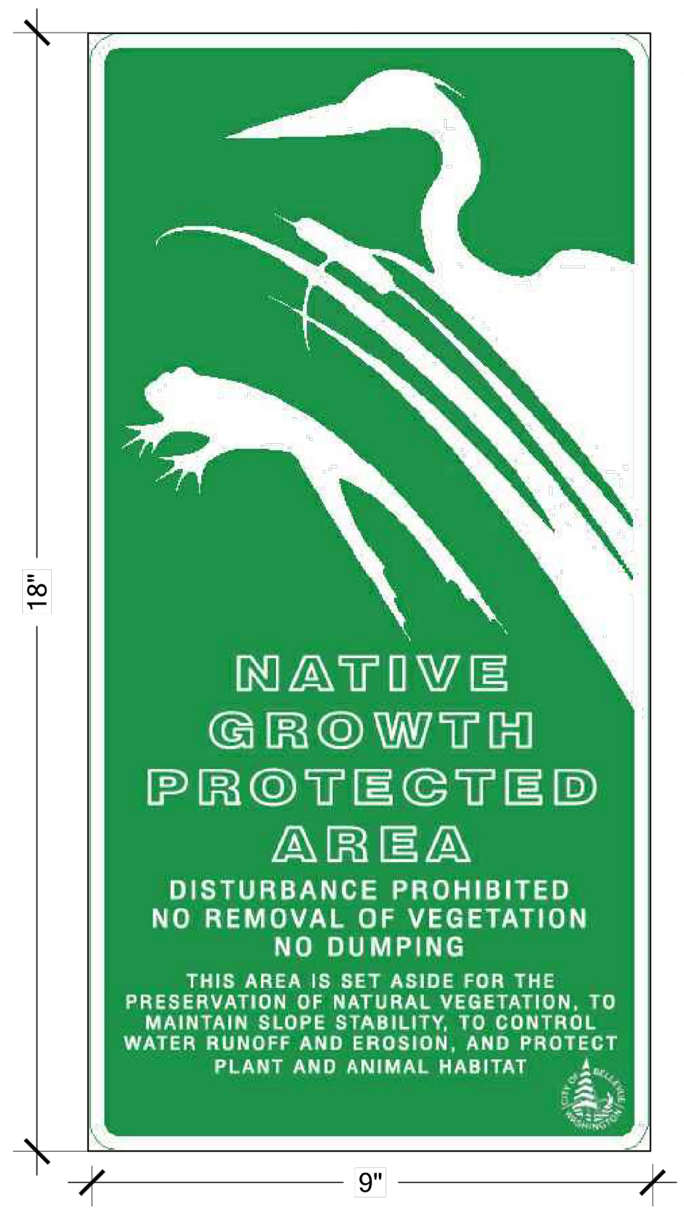
C HABITAT LOG

Scale: NTS



D SPLIT RAIL FENCING AND NGPA SIGN

Scale: NTS



NOTES:
1. SIGNAGE TO APPEAR LIKE IMAGE AND SIZES NOTED ON THE LEFT WITH A GREEN BACKGROUND.
2. SIGN TO BE FABRICATED IN ALUMINUM, BY A CITY APPROVED VENDOR, SUCH AS REDMOND SIGNS, (425) 883-9944 OR EQUIVALENT MANUFACTURER.
3. SIGNAGE TO BE PLACED ON FENCING WHERE NOTED ON THE PLANS AND PER SPECIFICATIONS.

E NGPA SIGN

Scale: NTS

LANDSCAPE CONSTRUCTION NOTES & DETAILS

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SCALE ACCORDINGLY.

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MITIGATION NOTES

EXECUTIVE SUMMARY

PSE'S ENERGIZE EASTSIDE PROJECT (THE PROJECT) PROPOSES TO UPGRADE EXISTING TRANSMISSION LINES IN NORTH BELLEVUE IN ORDER TO INCREASE TRANSMISSION SYSTEM CAPACITY TO 230KV POWER. PROJECT ELEMENTS, EXISTING CONDITIONS, MITIGATION SEQUENCING, AND PROJECT IMPACTS TO CRITICAL AREAS ARE DISCUSSED IN THE NORTH BELLEVUE CRITICAL AREAS REPORT (CAR) FOR THE PROJECT (THE WATERSHED COMPANY2021).

THIS MITIGATION PLAN HAS BEEN DESIGNED TO APPROPRIATELY MITIGATE FOR PROJECT IMPACTS OCCURRING IN WETLAND AND STREAM BUFFERS IN THE RICHARDS CREEK SUBBASIN, AND A PORTION OF THE WETLAND AND STREAM BUFFER IMPACTS OCCURING IN THE KELSEY CREEK SUBBASIN, AS DESCRIBED IN THE NORTH BELLEVUE CAR AND REQUIRED BY THE BELLEVUE MUNICIPAL CODE (BMC). THE REMAINDER OF PROJECT IMPACTS NOT COVERED BY THIS PLAN WILL BE MITIGATED THROUGH USE OF A MITIGATION BANK.

PROPOSED PROJECT ACTIVITIES HAVE THE POTENTIAL TO IMPACT WETLANDS AND WETLAND/STREAM BUFFERS IN ONE OF THREE WAYS: PERMANENT FILL RESULTING FROM TRANSMISSION POLE INSTALLATION/REPLACEMENT (PERMANENT), PERMANENT VEGETATION CONVERSION FROM A FORESTED VEGETATION TYPE DUE TO VEGETATION MANAGEMENT REQUIREMENTS (CONVERSION), AND TEMPORARY IMPACTS ASSOCIATED WITH CONSTRUCTION ACTIVITIES (TEMPORARY). NO PERMANENT IMPACTS ARE PROPOSED IN WETLANDS OR STREAMS. PERMANENT IMPACT IN WETLAND AND STREAM BUFFERS IS OFFSET BY REMOVAL OF EXISTING POLES RESULTING IN A NET GAIN OF VEGETATED BUFFER AREA. CONVERSION BUFFER IMPACTS REQUIRE MITIGATION AS SUMMARIZED IN THE TABLE BELOW. TEMPORARY IMPACTS WILL BE RESTORED IN PLACE IN ACCORDANCE WITH THE PSE ENERGIZE EASTSIDE NORTH BELLEVUE TEMPORARY IMPACTS RESTORATION PLAN (THE WATERSHED COMPANY 2021) AND ARE NOT INCLUDED IN THIS TABLE.

IMPACTS

Basin	Critical Area Name	Category	Type of Activity	Quantity (SF)	Adjusted Quantity (SF)¹	Mitigation Ratio²	Mitigation Required (SF)
Richards Creek	Wetland EB20	III	Pole Removal	-30	-	-	0
	Wetland EE	IV	Conversion	840	810	3:1	2,430
	Combined Buffers	na	Pole removal/ Installation	-280	-	-	0
	Combined Buffers	na	Conversion	6,820	6,540	0.5:1	3,270
Kelsey Creek	Wetland EB02	III	Pole removal	-120	-	-	-
	Wetland EB11	II	Conversion	2,900	2,900	6:1	17,400
	Wetland EB12	III	Conversion	1,940	1,820	4:1	7,280
	Wetland EB13	III	Conversion	1,460	1,460	4:1	5,840
	Wetland EB14	III	Conversion	800	800	4:1	3,200
	Wetland EB16	III	Conversion	500	500	4:1	2,000
	Wetland EB17	III	Conversion	560	560	4:1	2,240
	Combined buffers	na	Pole removal/ Installation	-650	-	-	0
	Combined buffers	na	Conversion	30,110	29,460	0.5:1	14,730
Valley Creek	Wetland A (Overlake Farms)	IV	Conversion	240	240	3:1	720
	Wetland CB01	III	Conversion	600	600	4:1	2,400
	Combined buffers	na	Conversion	2,130	2,130	0.5:1	1,065

MITIGATION

Critical Area Name	Category	Type of Activity	Quantity (SF)
Richards Creek Substation Wetland A	III	Enhancement	9,930
Keller Farm Mitigation Bank	See Bank Use Plan		

IMPACT & MITIGATION SUMMARY

Basin	Critical Area Type	Type of Activity	Total Quantity (SF)	Total Mitigation Required (SF)³	Mitigation Proposed
Richards Creek	Wetland	Conversion	810	2,430	2,940 SF enhancement of Richards Wetland A
	Buffer	Conversion	6,540	3,270	3,300 SF enhancement of Richards Wetland A
Kelsey Creek	Wetland	Conversion	8,040	37,960	3,690 SF enhancement of Richards Wetland A + Mitigation Bank (see Bank Use Plan)

1. THE ADJUSTED QUANTITY INCORPORATES SQUARE FOOTAGE OF POLE REMOVAL (IF ANY) AS THE REMOVAL SELF-MITIGATES FOR SOME OF THE POLE INSTALLATION
2. IN ACCORDANCE WITH AGENCY GUIDANCE FOR CONVERSION IMPACTS, MITIGATION RATIO PRESENTED IS ONE HALF THE STANDARD ENHANCEMENT RATIO, BASED ON WETLAND CATEGORY
3. THE REQUIRED MITIGATION AREA SHOWN IS BASED ON ONSITE ENHANCEMENT RATIOS. FOR DISCUSSION OF MITIGATION BANKING RATIOS AND CREDITS REQUIRED FOR BANK USE, SEE THE PROJECT'S *MITIGATION BANK USE PLAN* (THE WATERSHED COMPANY, 2021).

MITIGATION FOR SOME IMPACTS, PRESENTED IN THE TABLE ABOVE, IS PLANNED ON THE RICHARDS CREEK SUBSTATION SITE. AS DISCUSSED IN THE NORTH BELLEVUE CAR, THIS LOCATION WAS SELECTED FOR MITIGATION ACTIVITIES BASED UPON THE LOCATION OF PROJECT IMPACTS, OPPORTUNITY PRESENT, PROPERTY OWNERSHIP, AND PROXIMITY TO OTHER REGULATED CRITICAL AREAS, INCLUDING THE SOUTH BELLEVUE RICHARDS CREEK SUBBASIN MITIGATION AREA.

THIS MITIGATION PLAN PROPOSES TO COMPENSATE FOR PROJECT IMPACTS THROUGH WETLAND ENHANCEMENT WHICH WILL EXPAND AND COMPLEMENT THE ADJACENT MITIGATION AREA APPROVED FOR THE SOUTH BELLEVUE SEGMENT OF THE ENERGIZE EASTISDE PROJECT (17-120557-LO). THESE MITIGATION ACTIVITIES ARE INTENDED TO INCREASE NATIVE PLANT COVER, DECREASE INVASIVE SPECIES PREVALENCE, IMPROVE NATIVE SPECIES DIVERSITY, AND PROVIDE FOOD AND OTHER HABITAT RESOURCES FOR WILDLIFE.

THE PLAN INCLUDES A COMPREHENSIVE FIVE-YEAR MAINTENANCE AND MONITORING PLAN, DETAILED BELOW. THESE SPECIFICATIONS AND STANDARDS WILL ENSURE THAT ENHANCEMENT PLANTINGS WILL BE MAINTAINED, MONITORED, AND SUCCESSFULLY ESTABLISHED WITHIN THE FIRST FIVE YEARS FOLLOWING IMPLEMENTATION.

PROJECT GOALS

1. ENHANCE APPROXIMATELY 9,930 SF OF WETLAND AREA IN WETLAND A TO COMPENSATE FOR PROJECT IMPACTS.

PERFORMANCE STANDARDS

THE FOLLOWING PERFORMANCE STANDARDS WILL BE USED TO GAUGE THE SUCCESS OF THE PROJECT OVER TIME. IF ALL PERFORMANCE STANDARDS HAVE BEEN SATISFIED BY THE END OF YEAR FIVE, THE PROJECT SHALL BE CONSIDERED COMPLETE.

1. SURVIVAL STANDARDS:
   - 1.1. 100% SURVIVAL OF INSTALLED PLANTINGS IN ALL AREAS AT THE END OF YEAR 1. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   - 1.2. 80% SURVIVAL OF INSTALLED PLANTINGS IN ALL AREAS AT THE END OF YEAR 2. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   - 1.3. ESTABLISHMENT OF AT LEAST TWO NATIVE TREE SPECIES, FOUR NATIVE SHRUB SPECIES AND TWO NATIVE EMERGENT SPECIES IN PLANTING AREAS.
2. NATIVE VEGETATION COVER STANDARDS:
   - 2.1. ACHIEVE 60% COVER OF ALL INSTALLED VEGETATION BY THE END OF YEAR 3. NATIVE VOLUNTEERS MAY COUNT TOWARDS THIS STANDARD.
   - 2.2. ACHIEVE 80% COVER OF ALL INSTALLED VEGETATION BY THE END OF YEAR 5. NATIVE VOLUNTEERS MAY COUNT TOWARDS THIS STANDARD.
3. INVASIVE SPECIES COVER STANDARD:
   - 3.1. NO MORE THAN 10% COVER OF NON-NATIVE, INVASIVE SPECIES IN ANY PLANTING AREA IN ANY MONITORING YEAR.

MAINTENANCE

THE SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOR FIVE YEARS FOLLOWING SUCCESSFUL COMPLETION OF THE CONSTRUCTION.

1. REPLACE EACH PLANT FOUND DEAD IN YEAR ONE.
2. FOLLOW THE RECOMMENDATIONS NOTED IN THE PREVIOUS MONITORING SITE VISIT'S REPORT.
3. GENERAL WEEDING FOR ALL PLANTED AREAS:
   - 3.1. AT LEAST TWICE ANNUALLY, REMOVE COMPETING GRASSES AND WEEDS FROM AROUND THE BASE OF EACH INSTALLED PLANT TO A RADIUS OF 12 INCHES. WEEDING SHOULD OCCUR AT LEAST ONCE IN THE SPRING AND ONCE IN THE SUMMER. THOROUGH WEEDING WILL RESULT IN LOWER PLANT MORTALITY AND ASSOCIATED PLANT REPLACEMENT COSTS.
   - 3.2. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLANT INSTALLATION.
   - 3.3. NOXIOUS WEEDS MUST BE REMOVED FROM THE ENTIRE MITIGATION AREA, AT LEAST TWICE ANNUALLY.
   - 3.4. DO NOT USE STRING TRIMMERS IN THE VICINITY OF INSTALLED PLANTS, AS THEY MAY DAMAGE OR KILL THE PLANTS.
4. MAINTAIN A FOUR-INCH-THICK LAYER OF WOOD CHIP MULCH ACROSS ALL PLANTING AREAS. MULCH SHOULD BE PULLED BACK TWO INCHES FROM THE PLANT STEMS.
5. DURING AT LEAST THE FIRST TWO GROWING SEASONS, MAKE SURE THAT THE ENTIRE PLANTING AREA RECEIVES A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1ST THROUGH SEPTEMBER 30TH.
6. REMOVE TRASH AND DEBRIS FROM THE PLANTING AREAS.

MONITORING METHODS

THE MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION PLAN OVER TIME BY MEASURING THE DEGREE TO WHICH THE PLAN IS MEETING THE PERFORMANCE STANDARDS LISTED ABOVE. PRIOR TO THE COMMENCEMENT OF THE MONITORING PHASE, AN AS-BUILT PLAN DOCUMENTING THE SUCCESSFUL INSTALLATION OF THE PROJECT WILL BE SUBMITTED TO THE CITY OF BELLEVUE AND OTHER PERMITTING AGENCIES AS REQUESTED. IF NECESSARY, THE AS-BUILT REPORT MAY INCLUDE A MARK-UP OF THE ORIGINAL PLAN THAT NOTES ANY SIGNIFICANT CHANGES OR SUBSTITUTIONS THAT OCCURRED. DURING THE AS-BUILT INSPECTION, THE **RESTORATION SPECIALIST** WILL ESTABLISH AT LEAST FOUR PERMANENT PHOTO-POINTS, BASELINE PLANT INSTALLATION QUANTITIES, AND TRANSECTS AS DETAILED BELOW.

TRANSECTS:

DURING THE AS-BUILT INSPECTION, THE **RESTORATION SPECIALIST** SHALL INSTALL A SUFFICIENT NUMBER OF REPRESENTATIVELY LOCATED 50 TO 100-FOOT TRANSECTS IN THE RESTORATION PLANTING AREAS TO ADEQUATELY MEASURE THE VEGETATION PERFORMANCE STANDARDS BELOW. PERCENT COVER DATA SHALL BE RECORDED ALONG ESTABLISHED TRANSECTS USING THE LINE INTERCEPT METHOD.

YEARLY MONITORING:

THE SITE WILL BE MONITORED TWICE ANNUALLY FOR FIVE YEARS BEGINNING WITH APPROVAL OF THE AS-BUILT REPORT. DURING EACH YEAR THERE SHALL BE A SPRING VISIT AND A SUMMER OR EARLY FALL VISIT. THE SPRING MONITORING VISIT WILL ADDRESS MAINTENANCE NEEDS SUCH AS PLANT REPLACEMENT AND WEEDING.

FOLLOWING THE SPRING VISIT, THE **RESTORATION SPECIALIST** WILL NOTIFY THE RESPONSIBLE PARTY AND/OR MAINTENANCE CREWS OF NECESSARY MAINTENANCE. THE SECOND ANNUAL VISIT WILL OCCUR JULY 1ST TO SEPTEMBER 15TH AND WILL RECORD QUANTITATIVE ASSESSMENT OF THE SITE'S PROGRESS. A REPORT DETAILING THE FINDINGS OF SUMMER MONITORING WILL BE SUBMITTED ANNUALLY TO THE CITY, AND WILL CONTAIN THE FOLLOWING:

1. GENERAL SUMMARY OF SITE CONDITIONS.
2. COUNTS OF LIVE PLANTINGS BY SPECIES (YEARS ONE AND TWO ONLY)
3. PERCENT COVER OF NATIVE WOODY SPECIES, DETERMINED USING THE LINE INTERCEPT METHOD ALONG ESTABLISHED TRANSECTS.
4. PERCENT COVER OF INVASIVE SPECIES USING THE LINE INTERCEPT METHOD ALONG ESTABLISHED TRANSECTS.
5. NOTES ON INVASIVE WEEDS OUTSIDE OF ESTABLISHED TRANSECTS.
6. PHOTOGRAPHS FROM FIXED PHOTO-POINTS ESTABLISHED DURING THE AS-BUILT INSPECTION.
8. ANY EVIDENCE OF WILDLIFE USAGE IN THE MITIGATION AREA.
9. REPORT ON CONDITION OF PLACED LARGE WOODY DEBRIS.
10. INTRUSIONS INTO THE PLANTING AREAS, VANDALISM OR OTHER ACTIONS THAT IMPAIR THE INTENDED FUNCTIONS OF THE MITIGATION AREAS.
11. RECOMMENDATIONS FOR MAINTENANCE OR REPAIRS.

REPORT SUBMISSION: REPORTS SHALL BE SUBMITTED TO HEIDI BEDWELL, OR THE CITY OF BELLEVUE'S SUCCESSOR ENVIRONMENTAL PLANNING MANAGER, NO LATER THAT THE END OF EACH GROWING SEASON OR BY DECEMBER 31ST AND CAN BE EMAILED TO HBEDWELL@BELLEVUEWA.GOV OR MAILED DIRECTLY TO:

ENVIRONMENTAL PLANNING MANAGER
DEVELOPMENT SERVICES DEPARTMENT
CITY OF BELLEVUE
PO BOX 90012
BELLEVUE, WA 98009-9012

CONTINGENCIES

UNFORESEEN PROJECT CONDITIONS MAY REQUIRE CHANGES IN VEGETATION LAYOUT, DENSITY/SPACING, AND SPECIES SUBSTITUTIONS. WEED CONDITIONS MAY REQUIRE ALTERATION OF INSTALLED VEGETATION TYPES, MULCH PLACEMENT, WEED REMOVAL AND USE OF HERBICIDES. MINOR HAND WORK TO IMPROVE OR RETARD DRAINAGE MAY BE NEEDED TO SUPPORT WETLAND HYDROLOGY. SUCH WORK WILL BE COORDINATED DIRECTLY WITH THE CITY OF BELLEVUE.

SITE PROTECTION

THE MITIGATION AREA WILL BE PROTECTED BY RECORDING A NOTICE ON TITLE WITH KING COUNTY. FENCING AND SIGNS WILL BE INSTALLED ALONG THE EDGE OF THE MITIGATION AREA.

MATERIALS

1. **WOOD CHIP MULCH**: "ARBORIST CHIPS" (CHIPPED WOODY MATERIAL) APPROXIMATELY ONE TO THREE INCHES IN MAXIMUM DIMENSION (NOT SAWDUST). THIS MATERIAL IS COMMONLY AVAILABLE IN LARGE QUANTITIES FROM ARBORISTS OR TREE-PRUNING COMPANIES. MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/DEMOLITION DEBRIS. APPROX. QUANTITY REQUIRED: 75 CUBIC YARDS.
2. **COMPOST**: COMPOST SHALL MEET WSDOT STANDARDS SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 9-14.4(8) FOR FINE COMPOST: 25 CUBIC YARDS
3. **FERTILIZER (FOR NEAR AQUATIC ENVIRONMENTS):** SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. LABEL MUST INDICATE THAT PRODUCT IS SAFE FOR AQUATIC ENVIRONMENTS. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS TWO AND THREE, NOT IN YEAR ONE.
4. **RESTORATION SPECIALIST**: QUALIFIED PROFESSIONAL ABLE TO EVALUATE AND MONITOR THE CONSTRUCTION OF ENVIRONMENTAL RESTORATION PROJECTS.

MITIGATION NOTES

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
www.watershedco.com
Science & Design

RICHARDS CREEK SUBSTATION
EE NORTH BELLEVUE MITIGATION PLAN
PREPARED FOR: PUGET SOUND ENERGY
PARCEL #1024059130
RICHARDS CREEK SUBSTATION
BELLEVUE, WA 98006

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	10/09/2020	MITIGATION PLAN	KMB
2	11/09/2020	PSE COMMENTS	KMB
3	02/16/2021	PERMIT SUBMITTAL	KMB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: KMB
DRAFTED: KMB
CHECKED: CM/KC
JOB NUMBER:
111103.11
SHEET NUMBER:
W5 OF 5

FILENAME
PRINTED BY
DATE

Appendix G

MITIGATION BANK USE PLAN

PSE Energize Eastside Project Documentation

MITIGATION BANK USE PLAN

NORTH BELLEVUE SEGMENT

February 16, 2021

Prepared on behalf of (applicant):

PUGET SOUND ENERGY

Ryan Wieder
PSE Energize Eastside
PO Box 97034, EST 3W
Bellevue, WA 98009

THE WATERSHED COMPANY

THE
WATERSHED
COMPANY

750 Sixth Street South
Kirkland, WA 98033

p 425.822.5242
f 425.827.8136

watershedco.com

Reference Number: 111103.12

Contact: Katy Crandall, PWS
Ecologist and Arborist

Clover McIngalls, PWS
Environmental Planner

Nell Lund, PWS
Senior Ecologist

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1 Introduction

1.1 Background

The North Bellevue Segment of Puget Sound Energy's (PSE) Energize Eastside Project (Project) is located within the Lake Washington Service Area of the Keller Farm Mitigation Bank (KFMB or the Bank). PSE is requesting that mitigation credits from KFMB be used to compensate for impacts to wetland and wetland and stream buffer areas associated with the North Bellevue Segment of the Project. The North Bellevue Segment includes the 5.2 mile rebuild of two existing 115 kV transmission lines within a 100-foot-wide corridor by replacing poles and conductor to operate up to 230 kV (herein referred to as 230 kV lines). The mitigation for impacts to wetlands and buffers within the North Bellevue Segment will be partially mitigated onsite on the Richards Creek Substation parcel. Remaining impacts are proposed to be mitigated for through purchasing credits at the KFMB.

This Bank Use Plan describes the rationale for purchasing credits at the KFMB to compensate for impacts and was prepared following agency guidance on preparing mitigation plans and the use of mitigation banks including: the Interagency Review Team for Washington State Guidance Paper on *Using Credits from Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans* (2009); Washington State's Mitigation Banking Statutes (Revised Code of Washington (RCW) 90.84 and Washington Administrative Code (WAC) 173-700); the interagency mitigation guidance document, *Wetland Mitigation in Washington State* (Parts 1 and 2; Ecology et al. 2006) and the updated draft version of Part 1 of that document (Ecology et al. 2020); and the U.S. Army Corps of Engineers (Corps) *Compensatory Mitigation for Losses of Aquatic Resources* (33 Code of Federal Regulations (CFR) § 332)(2008).

The KFMB is a 75-acre certified mitigation bank located in the City of Redmond, Washington. The Bank location, Lake Washington Service Area, and North Bellevue Segment of the Project corridor are shown in Figure 1. KFMB is an "urban" bank that provides mitigation opportunities for urbanizing areas in east King County and south Snohomish County. KFMB was certified by federal, state, and local regulatory agencies in December 2019 and has mitigation credits available to compensate for approved impacts to wetlands, streams and buffers.

The purpose of the Bank is to generate mitigation credits for projects that will potentially have an adverse impact on the aquatic environment and that need to compensate for those impacts as a condition of their permits or other regulatory requirements resulting from project impacts. The Bank site, known locally as "the Keller Farm", has been identified as a high priority restoration site since the 1990s. It was specifically identified as a potential mitigation bank site and "Near Term Action" important to regional salmonid habitat restoration efforts in the *Final*

Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan (2005). That plan was adopted by the National Oceanic and Atmospheric Administration (NOAA) and implemented by local stakeholders to achieve Chinook salmon recovery consistent with the Endangered Species Act (ESA) (ESA 16 U.S.C. S 1531).

Restoration goals at KFMB address the limiting factors in the watershed related to loss of wetland habitat, riparian vegetation communities, and alterations to floodplain and stream habitat.

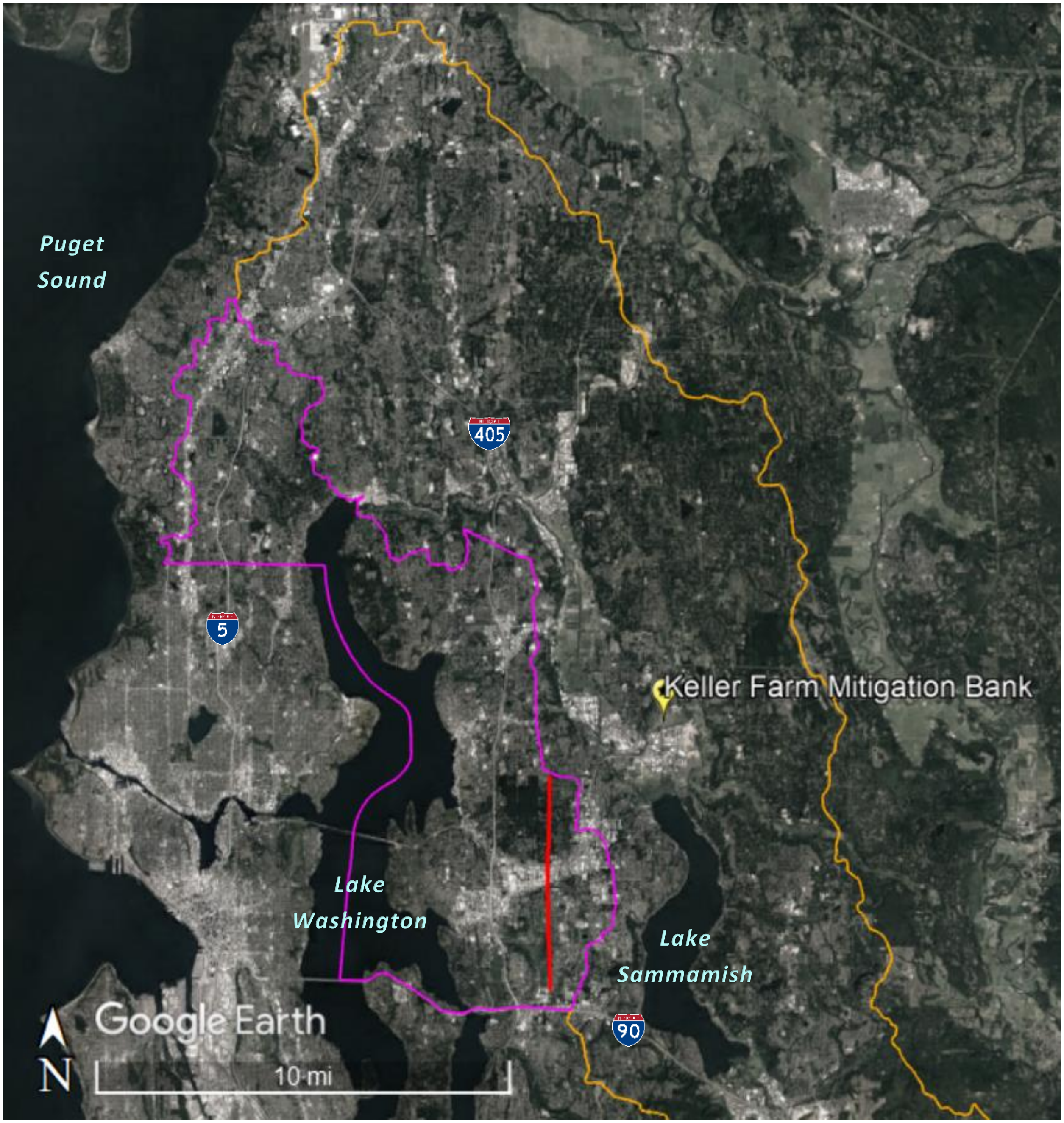

Figure 1. The North Bellevue Segment of the Energize Eastside corridor (red) is shown within the Lake Washington Service Area (purple) of the Keller Farm Mitigation Bank (yellow pin). Lake Sammamish Service Area is also mapped (orange) and extends to the south.

1.2 Consultant Qualifications

The Watershed Company (Watershed) has been the primary environmental consultant addressing wetland and stream critical areas potentially affected by the Project. Established 37 years ago, Watershed has built a reputation on using sound scientific methods to find responsible and sustainable solutions for environmental impacts. The credentials of the primary Watershed staff members working on the Project, and authors of this report, are provided below.

Katy Crandall, PWS

Wetland Biologist | ISA Certified Arborist®

Katy is a Professional Wetland Scientist (PWS) and arborist specializing in assessing infrastructure impacts on critical areas. She has experience with restoration, mitigation, and wildlife research. Prior to joining Watershed in 2013, Katy spent a year implementing wetland, stream, and buffer restoration projects throughout unincorporated King County with the Washington Conservation Corps.

Clover McIngalls, PWS

Environmental Planner

Clover is an environmental planner with over twelve years of experience helping private project proponents, public agencies and jurisdictions meet Washington's environmental regulatory requirements and mitigate for project impacts. She utilizes her background in wetland science to efficiently navigate local, state and federal permitting needs from agencies such as the Washington Department of Fish and Wildlife (WDFW), Department of Ecology (Ecology), and the Corps. Clover also has experience developing Critical Area Ordinance and Shoreline Master Program updates for local jurisdictions in Washington.

Nell Lund, PWS

Senior Ecologist

Nell is a project manager, field biologist and wetland scientist with over a decade of experience in critical areas assessment. She frequently works with Watershed’s planning department in support of policy planning efforts, providing field assessment and documentation to verify report findings and demonstrate environmental consequences of proposed changes. Nell leads Watershed’s environmental services as an on-call consultant for cities and schools in the Puget Sound region.

Greg Johnston, CFP

Senior Fisheries Biologist

Greg is a Certified Fisheries Professional (CFP) with more than 30 years of experience as a senior fisheries biologist and habitat project manager. He routinely applies his expertise in fisheries biology and civil engineering towards minimizing impacts and evaluating and developing improvements for salmonid fish habitat and passage, along with related flooding, sedimentation, erosion, and drainage issues. He has extensive experience helping design and gain approval for combined fish habitat and infrastructure projects for utilities and local municipalities. He is an expert on related local, state, and federal *permitting regulations, particularly as they relate to mitigating impacts and gaining Hydraulic Project Approval from WDFW and ESA evaluations associated with* the *Corps.*

2 Project Description

The Energize Eastside Project includes the construction of a new 230 kV to 115 kV substation (Richards Creek Substation) and to upgrade approximately 16 miles of existing 115 kV transmission lines located within an existing 100-foot wide regional utility corridor to be operated up to 230 kV power. Combined with aggressive conservation, the Project will improve reliability for Eastside communities, including the City of Bellevue (City), and supply the needed electrical capacity for anticipated growth and development on the Eastside.

The North Bellevue Segment of the Project, which is the focus of this report, begins at the City of Bellevue's northern city limits near the Bridle Crest Trail at NE 60th Street and extends south to the existing Lakeside Substation for a corridor length of approximately 5.2 miles (Figure 1). As shown in Figure 1, the North Bellevue Project area is located entirely within the Lake Washington Service Area of KFMB. See *Appendix A – Critical Area Impact Assessment Maps* of the *North Bellevue Critical Areas Report* (The Watershed Company 2021a) for more detailed maps of the North Bellevue Segment area.

Project activities in the North Bellevue Segment are limited to the replacement of existing poles and transmission lines to be operated up to 230 kV power. Federal vegetation management standards for transmission lines operated above 200kV power impose height restrictions on vegetation beneath the lines for safety. As a result, large shrubs and trees growing in the Project corridor that are incompatible with the federal vegetation management standards for 230 kV transmission lines must be removed for safe operation of the utility. Currently, the corridor is managed to PSE's 115 kV standards.

Impacts from pole replacement and vegetation management occur within wetland areas and wetland/stream buffers in the North Bellevue Segment. Impacts occur in disturbed and degraded areas within the existing transmission line corridor. The *North Bellevue Critical Areas Report* provides a more complete Project description including construction methods and equipment and discusses Project temporary and permanent impacts to wetland and buffer areas (The Watershed Company 2021a).

3 Existing Conditions

The following section describes general site conditions for the North Bellevue Segment corridor. More detailed information on specific wetland and stream conditions can be found in the *North Bellevue Critical Areas Report* (The Watershed Company 2021a), *Appendix C – Wetland and Stream Delineation Report Update for North Bellevue.*

3.1 Site Location

The North Bellevue study area is located in an urban landscape setting. The majority of the corridor is zoned single-family residential at various densities; with the exception of the Bel-Red area, generally zoned commercial and office. In the North Bellevue Segment, the Project corridor passes through or adjacent to (from north to south) the Bridle Trails, Bel-Red, Wilburton, Crossroads, Woodridge, Lake Hills, and Eastgate neighborhoods. The corridor is located in the following public land survey sections: Sections 15, 22, 27, and 34 of Township 25N, Range 05E; and Sections 3 and 10 of Township 24N, Range 05E. See Figure 1.

The North Bellevue Segment study area is located in the Cedar-Sammamish Watershed (WRIA 8), and spans three Bellevue-defined drainage basins, which include (from north to south) the Valley Creek, Kelsey Creek, and Richards Creek drainage basins.

3.2 Site Description

When the corridor was constructed in the late 1920s and early 1930s, the entire corridor was cleared. Construction activities resulted in a compacted subsurface in those areas where poles were installed. Since that time, the corridor has been continually maintained by PSE through easement rights. Poles have been replaced and vegetation has been managed requiring vehicles and equipment to use existing access routes. Over time, development has occurred adjacent to and within the corridor, including residential development, roads, parking lots, commercial development, and the establishment of trails (using overgrown access routes).

Olympic Pipeline Company also utilizes the North Bellevue Segment corridor for operation and maintenance of petroleum pipelines. In general, vegetation management requirements of pipelines are more restrictive than vegetation management requirements for the transmission line described herein. For example, trees and shrubs are expected to be mowed or removed on a more frequent basis than for the transmission lines to prevent damage to the pipeline by large roots. In addition, the corridor of herbaceous vegetation is maintained both to keep the area free of large tree and shrub roots and to be able to easily, visually inspect the pipeline corridor from the ground and/or air. The pipeline easement spans the length is varying locations of the North Bellevue Segment transmission line easement and acts as a regular, contributing source of ongoing disturbance within the shared utility corridor.

Valley Creek Drainage Basin

The Bridle Trails neighborhood, at the north end of the North Bellevue Segment consists of developed single-family residential parcels and Viewpoint Park located on the north side of State Route 520. Residential parcels in this area were developed as early as the 1960s and, in many cases, contain a mix of managed low-growing vegetation in the Project area and large established trees located at the perimeter or outside of the corridor. The Project area through Viewpoint Park appears to experience routine maintenance and is dominated by invasive Himalayan blackberry, tree saplings and small shrubs, and herbaceous vegetation. Outside of the Project area, Viewpoint Park is forested.

Soils consist of gravelly sandy loams and topography is generally dominated by a west-facing slope. Water in this portion of the Project corridor flows east toward Valley Creek.

Kelsey Creek Drainage Basin

The Bel-Red neighborhood is south of State Route 520 and contains commercial properties and businesses. The Project area through the Bel-Red neighborhood includes comparatively more impervious surface area (mainly parking lots) than other parts of the North Bellevue Segment corridor. At this location, existing vegetation is often limited to invasive species and non-native, ornamental trees.

Between Bel-Red Road and the Lake Hills Connector, the Project area borders the Wilburton neighborhood to the west and Crossroads and Lake Hills neighborhoods to the east. Parcels in the vicinity include single- and multi-family properties. Glendale Country Club and Kelsey Creek Park are also defining landscape features in this area. Again, the corridor mainly consists of low, maintained landscapes or areas overgrown by invasive, weedy vegetation; established, native vegetation is located nearby. Beginning on the Glendale County Club property, a compact gravel trail is present in the Project area. This trail connects to the City's managed trails associated with Kelsey Creek Park, south of the Glendale Country Club and generally west of the Project area.

Soils consist of gravelly sandy loams and topography is generally dominated by an east-facing slope. Water in this portion of the Project corridor flows west toward Kelsey Creek.

Richards Creek Drainage Basin

South of the Lake Hills Connector, the North Bellevue Segment corridor continues along the edge of the Lake Hills neighborhood and also borders the Woodridge neighborhood to the west. The compact gravel trail present to the north, continues south through a large undeveloped privately-owned parcel before it terminates in a Lake Hills neighborhood residential development. Unmaintained vegetation (particularly near the gravel trail) in the corridor through this area continues to be dominated by invasive Himalayan blackberry and young, weedy trees, while native forests are present in the immediate vicinity. The North Bellevue Segment terminates in the Eastgate neighborhood, at PSE's Lakeside Substation property, where surrounding properties are zoned light industrial.

Soils consist of gravelly sandy loam in addition to mapped Ragnar-Indianola association, moderately steep and urban land. Topography is generally dominated by an east-facing slope. Water in this portion of the Project corridor flows west toward Richards Creek.

4 Avoidance and Minimization of Impacts

PSE seeks to avoid and minimize impacts to the critical areas and associated buffers located in the Project corridor to the greatest extent feasible, as demonstrated below and in the *North Bellevue Critical Areas Report* (The Watershed Company 2021a).

Avoidance

Proposed poles replacing existing poles to be removed have been sited to avoid direct impacts (fill) to wetlands (although some vegetation removal will occur); no direct impacts are proposed to streams. Completely avoiding pole impacts to wetland/stream buffers is not feasible due to the prevalence of those features in the Project area. Furthermore, pole replacement activities associated with the transmission line upgrade must occur in specific locations for proper functioning of the electrical system due to complex engineering considerations making pole placement in some buffers unavoidable. Where avoidance was not possible, PSE worked with engineers to minimize impacts through design revisions; such changes reduced pole footprints and increased line heights to avoid critical area impacts to the extent feasible.

Temporary impact areas associated with construction access, pole construction work areas, and stringing sites also avoid critical areas to the extent feasible. For example, specific pole construction work areas have been adjusted to exclude critical areas on a pole-by-pole basis.

Every effort has been made to relocate poles out of critical areas and buffers where possible, resulting in a decrease in pole-associated impacts to wetlands and buffer areas in the North Bellevue Segment from existing conditions. However, completely avoiding impacts to all buffers as part of the North Bellevue Segment is not achievable. Where avoidance is not possible, PSE worked with engineers to locate poles to minimize impacts.

Minimization

Minimization techniques were utilized during the design process in order to limit impacts to critical areas and their associated buffers. Minimization measures included the following:

1. Utilizing the existing transmission line corridor, which has experienced significant disturbance as a result of adjacent development and ongoing corridor maintenance.

Alterntaive routes and options were evaluated in the Phase 2 Draft Environmental Impact Statement for the Project (ESA 2017).

2. When working within a critical area, limiting the construction disturbance to the minimum feasible size around each pole and access point.
3. Installing 230 kV transmission lines between poles with minimal site disturbance. Where feasible given maximum distance allowed between poles, the poles will be located outside of critical areas. Transmission lines will span aerially above critical areas, minimizing ground disturbance, vegetation removal, and loss of critical area function.
4. Where vegetation removal is required in critical areas, trees will be accessed by foot, stumps will be left in the ground, and debris will be chipped or dispersed as appropriate, preventing critical area disturbance by large heavy equipment.

5 Unavoidable Wetland and Buffer Impacts

Impact types resulting from the Project have been quantified based upon the long-term condition of the proposed work areas and existing land cover types in the corridor. Total vegetated wetland and wetland/stream buffer area would be increased by removing existing poles from wetlands and wetland/stream buffers and replacing them with new poles outside of critical areas where possible. Temporary impacts will result from pole installation and removal activities, but permanent impacts from pole installation (in buffer areas only) are offset by pole removals. Permanent vegetation conversion impacts are generated from implementation of federal vegetation management requirements for 230 kV transmission lines. Impact quantities have been rounded up to the nearest 10 square feet (SF) to account for the coarseness of the GIS-based impact analysis in the table below. For more information on unavoidable wetland and buffer impacts, see the *North Bellevue Critical Areas Report* (The Watershed Company 2021a).

Table 1. Approximate area (in square feet, SF) of unavoidable wetland and buffer impact.

Drainage Basin[1]	**Critical Area Name**	**Category**	**Type of Activity**	**Quantity (SF)**	**Adjusted Quantity (SF)**[2]
Richards Creek (Wetland Total: 2,430 SF Buffer Total: 3,300 SF)	Wetland EB20	III	Pole Removal	-30	-
	Wetland EE	IV	Conversion	840	810
	Combined Buffers	na	Pole removal/ Installation	-280	-
	Combined Buffers	na	Conversion	6,820	6,540
Kelsey Creek (Wetland Total: 37,960 SF Buffer Total: 14,730 SF)	Wetland EB02	III	Pole removal	-120	-
	Wetland EB11	II	Conversion	2,900	2,900
	Wetland EB12	III	Conversion	1,940	1,820
	Wetland EB13	III	Conversion	1,460	1,460
	Wetland EB14	III	Conversion	800	800
	Wetland EB16	III	Conversion	500	500
	Wetland EB17	III	Conversion	560	560
	Combined buffers	na	Pole removal/ Installation	-650	-
	Combined buffers	na	Conversion	30,110	29,460
Valley Creek (Wetland Total: 3,120 SF Buffers Total: 1,065 SF)	Wetland A (Overlake Farms)	IV	Conversion	240	240
	Wetland CB01	III	Conversion	600	600
	Combined buffers	na	Conversion	2,130	2,130

1. Bellevue-defined drainage basins.
2. The adjusted quantity incorporates square footage of pole removal (if any) as the removal self-mitigates for some of the pole installation.

6 Impacted Wetland and Buffer Functions

6.1 Tree Removal Impact Characterized

The wetland and buffer functions impacted by the Project are associated with vegetation conversion (*i.e.*, tree removal; no fill). They are limited to removal of trees growing within and immediately adjacent to the existing managed utility corridor. The approximate impacted area, quantified based on area of canopy removal (identified as vegetation conversion), has been provided previously in Table 1. Details that characterize the trees to be removed are summarized below and in the *North Bellevue Critical Areas Report* (specifically, in Tables 14 and 15 of that report) (The Watershed Company 2021a).

Approximately 30 trees will be removed from wetlands in the Richards and Kelsey Creek drainage basins. One-third of the trees to be removed from these wetlands are non-native, ornamental species (e.g., *Salix matsudana* 'Tortuosa' [corkscrew willow] and *Prunus domestica* [European plum]). The average stem diameter of trees to be removed from wetlands is 8.9 inches and includes some as small as 3-inches diameter at breast height (DBH) and others as large as 26-inches DBH. In most instances, the largest trees have experienced severe pruning or topping as part of existing vegetation management activities, often negatively affecting the tree's condition, particularly for conifers.

Approximately 172 trees will be removed from wetland/stream buffers based in the North Bellevue Segment Project corridor. Similar to tree removal from wetland areas, approximately one-third of the trees being removed from buffers are non-native species. The size of trees to be removed from buffer areas ranges from 3- to 26-inches DBH; the average diameter is 8.5 inches. The larger trees to be removed have commonly been pruned or topped as part of existing vegetation maintenance activities along the corridor. Most of the trees to be removed from buffer areas are deciduous tree species.

6.2 Functional Impact

Trees perform water quality and hydrologic functions through interception of rainfall and uptake of groundwater and nutrients. Trees also provide important breeding and foraging habitat functions to local wildlife, particularly native tree species. In general, tree removal without mitigation would diminish habitat, hydrologic, and water quality functions.

The habitat functions of trees to be removed are limited by several factors, including species composition (*i.e.*, approximately one-third are non-native or invasive); location within an existing, disturbed utility easement; and ongoing vegetation management activities.

As described in The *Targeted Critical Areas Geologic Hazard Evaluation* (GeoEngineers 2020), tree removal can affect hydrologic functions through reductions in canopy interception and evapotranspiration. Temporary impacts to evapotranspiration are expected to be limited (to much less than 50 percent from existing conditions) because tree removal will be selective and impacts to understory vegetation will be avoided to the extent feasible (GeoEngineers 2020). The greatest impact to evapotranspiration is expected to occur immediately after tree removal.

Few impacts to water quality are anticipated with application of the recommended Temporary Erosion and Sediment Control measures and Best Management Practices proposed by GeoEngineers (2020) during construction and because tree removal is selective, and removed trees are growing in an existing utility corridor which is subject to ongoing vegetation management activities. Organic matter from trees and tree debris will not be placed in water bodies preventing depleting oxygen levels. Furthermore, trees growing within the buffer of Kelsey Creek are to be retained and managed as necessary which will avoid water quality impacts to the stream (*e.g.*, from reduction in shade).

7 Mitigation Site Selection Rationale

The North Bellevue Segment of the Energize Eastside Project is located within the Lake Washington Service Area of the KFMB, a 75-acre state and federally certified mitigation bank project in WRIA 8. The KFMB is located at the confluence of two regionally significant salmon bearing streams (Bear and Evans Creeks) in the City of Redmond.

The KFMB has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the Corps and Ecology. The KFMB restoration design, performance standards and monitoring plan are detailed in the Bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies and stakeholders participated in the development of the banking instrument:

- U.S. Army Corps of Engineers, Seattle District
- U.S. Environmental Protection Agency
- Washington State Department of Ecology
- National Marine Fisheries Service
- Washington Department of Fish and Wildlife
- Muckleshoot Indian Tribe Fisheries Division
- King County-WRIA 8 Technical Committee
- City of Redmond

The availability of mitigation credits from a large-scale mitigation bank project in WRIA 8 provides many benefits above and beyond traditional permittee-responsible mitigation. First the bank project was reviewed extensively by multiple agencies to ensure appropriate siting within the watershed, appropriate design and restoration approach as well as appropriate metrics for evaluating success. In the Lake Washington-Sammamish Watershed, there are relatively little restoration or mitigation opportunities available that provide meaningful functional lift of existing aquatic resources. There are limited mitigation opportunities when looking "on-site" (*i.e.,* a managed transmission line corridor) versus locating mitigation in a more sustainable and effective location in the watershed.

Mitigation bank projects are highly regulated with multiple agencies overseeing their development and monitoring. Banks are situated in the landscape using criteria found in the joint guidance from the Corps and Ecology, *Selecting Mitigation Sites Using a Watershed Approach (*Hruby, Harper and Stanley 2009*)*, to targeting restoration actions in a WRIA or watershed. Banks are often very large, highly functioning restoration projects that restore a variety of wetland, riparian and associated upland habitat types, creating more complete and interconnected systems connected to habitat corridors rather than habitat patches separated and fragmented by development. Banks are fully protected by a conservation easement which is funded in perpetuity through the establishment of an endowment fund and credits are only released when the bank has shown that it is meeting stated performance standards.

The Corps 2008 Final Rule *Compensatory Mitigation for Losses of Aquatic Resources* establishes a preference for the use of certified mitigation banks to compensate for permitted impacts to aquatic resources:

> *Since a mitigation bank must have an approved mitigation plan and other assurances in place before any of its credits can be used to offset permitted impacts, this rule establishes a preference for the use of mitigation bank credits, which reduces some of the risks and uncertainties associated with compensatory mitigation.*

The Corps rule goes on to read:

> *when the permitted impacts are located within the service area of an approved mitigation bank, and the bank has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor (33 CFR part 332.3b[2]).*

Washington State's Mitigation Banking Rule provides the following support for the use and establishment of Mitigation Banks in Washington State:

WAC 173-700-100 Background and purpose.

> *(1) The Wetlands Mitigation Banking Act, chapter 90.84 RCW, identifies wetland mitigation banking (banks) as an important regulatory tool for providing compensatory mitigation for unavoidable impacts to wetlands and declares it the policy of the state to support banking. The*

> *act directs the department of ecology (department) to adopt rules establishing a statewide process for certifying banks.*
>
> *(2) The department anticipates that banks will provide compensatory mitigation in advance of unavoidable impacts to wetlands and will consolidate compensatory mitigation into larger contiguous areas for regionally significant ecological benefits.*
>
> *(3) Banks prioritize restoration of wetland functions and as such should be complementary to the restoration of ecosystems and ecosystem processes as identified in state or locally adopted science-based watershed management plans.*
>
> *(4) The purpose of this chapter is to encourage banking by providing an efficient, predictable statewide framework for the certification and operation of environmentally sound banks.*

Local governments also implement land use regulations, which control the type and intensity of development within a given jurisdiction. Through guidance from Ecology, many local governments have adopted critical area regulations supporting the use of mitigation banks specifically, recognizing their unique ability to address watershed scale restoration objectives and limiting factors for aquatic and critical areas. This is especially the case in more urban watersheds where very little meaningful mitigation actions may exist on-site or in the immediate sub-basin of a development project. The City of Bellevue may “encourage, facilitate, and approve innovative mitigation projects that are based on the best available science” (City of Bellevue Land Use Code 20.25H.225).

The KFMB site has been identified as a high priority stream and wetland restoration project in WRIA 8 for the last thirty years, beginning with the Bear Creek Basin Plan in the 1980s. The Bank site is identified as a ‘Near Term Action’ important to regional salmonid habitat restoration efforts as part of the Lake Washington/Cedar/Sammamish Salmon Conservation Plan for WRIA 8 adopted by NOAA Fisheries and implemented by local stakeholders to achieve Chinook salmon recovery consistent with the ESA (Chinook Salmon Conservation Plan (CSCP), 2005; ESA 16 U.S.C. S 1531).

The KFMB is located at the confluence of two regionally significant, salmon-bearing streams, Bear Creek and Evans Creek. Another smaller stream, Perrigo Creek, flows adjacent to a portion of the western Bank boundary and will be rerouted and daylighted onto the Bank site. The Bank design goals were developed as part of the *Project Prospectus* (Habitat Bank 2015) and *Basis of Design Report* (Shannon and Wilson. Inc. 2018). The design goals are consistent with Ecology, Corps, and U.S. Environmental Protection Agency guidelines for establishing mitigation bank goals and criteria, as well as with Bear Creek Basin restoration planning efforts and WRIA 8 restoration goals as established by the WRIA 8 Salmon Recovery Council. Wetland and habitat restoration goals on the Bank site were developed to address the limiting factors in the watershed related to the loss of wetland hydrology, the loss of wetland habitat and vegetation communities, and the alteration of topography affecting wetlands, floodplain, and stream habitat conditions. Implementation of the KFMB will result in substantial gains in aquatic ecosystem functions as compared to baseline conditions present on the bank site.

The site-specific goals and objectives for the KFMB include:

- Permanently protect ecosystem functions at the Bank by implementing the Bank Instrument and executing a conservation easement with permanent funding for site stewardship.
- Re-establish wetland hydrology and varying wetland hydroperiods across the site by disabling farm ditches, reconnecting Bear creek with its floodplain, and performing grading actions to re-establish wetland hydrology and riparian habitat across the Bank site.
- Create additional wetland habitat areas that support wetland-dependent organisms and anadromous fish species. Increase habitat structure and diversity on the Bank site over existing degraded conditions.
- Re-establish wetland vegetation and native plant communities across the site. Remove and control noxious and invasive plant species and reintroduce native vegetation to increase habitat complexity in the floodplain wetlands and adjacent upland areas. Plant native trees, shrubs, and herbaceous species to re-establish a mosaic of habitat communities within the Bank property.
- Improve access for aquatic organisms to floodplain wetland and aquatic areas. Enhance and create off-channel rearing and refuge habitat for salmonids within the floodplain streams and deeper backwater areas connected to Bear Creek.
- Reconnect Bear Creek to the floodplain and improve floodplain functions on the Bank site including attenuation of flood flows, reductions in peak flood flows, food web and organic material support and transport, and refuge habitat for fish and wildlife during flood events.
- Establish a connection point for the future relocation of Perrigo Creek through the adjacent parcel north of the Bank.
- Reestablish and rehabilitate stream channel habitat in the floodplain through grading and addition of large woody debris. Create pool habitat and increase channel habitat complexity.
- Increase shading and cover of streams through planting on the Bank site over existing conditions.

Specific creditable restoration actions at KFMB are shown below in Table 2.

Table 2. Creditable restoration actions at KFMB.

HABITAT TYPE (Action)	CREDITABLE ACRES	NON-CREDITABLE BUFFERS	NON-CREDITABLE EASEMENTS	TOTALS
Riparian Upland Forest (Enhancement)	6.7	5.1	0.1	11.9
Riparian Forest Wetland (Re-establishment)	17.5	1.5	0.1	19.1
Shrub-Scrub/Emergent Wetland Mix (Re-establishment)	28.7	2.8	0.5	32.0
Riparian Wetland Stream Complex (Rehabilitation)	3.9	0.3	0.1	4.3
Existing Wetland PFO/PSS Mix (Rehabilitation)	7.7	0.1	0.1	7.9
Subtotal	64.5	9.8	0.9	
Total	75.2			

In order to mitigate for some of the proposed Project impacts to wetland and buffer areas from vegetation removal activities, PSE is proposing off-site mitigation using the KFMB. The KFMB has met all required performance standards applicable to the release of available credits under the terms of the MBI. Given the size, scope and diversity of this bank located in an urban setting and its unique ability to restore both wetland area and functions as well as critical habitat for salmonids, the KFMB is the most suitable location for the Project's compensatory mitigation requirements that cannot be mitigated on-site at the Richards Creek Substation mitigation site.

For more information about the bank contact:

Habitat Bank LLC.
Zach Woodward
Project Manager
P.O. Box 354
Kirkland, WA 98033
Phone: (425) 205-0279
Email: Zachary.woodward@habitatbank.com
See also: www.habitatbank.com

7.1 Confirmation of Mitigation Credit Availability

As of October 30, 2020, the KFMB has 5.3 mitigation credits available for immediate use with an additional 7.5 credits anticipated to be available soon. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the Table 3 below, as approved by the Corps and Ecology. For vegetation conversion impacts, a discount factor has been applied to previous projects with similar impacts, generally ranging from 25 to 33 percent of the standard ratio (Z. Woodward, personal communication, June 19, 2020).

Table 3. Standard KFMB credit to impact ratios.

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1
Wetland, Category III	1.0 to 1
Wetland, Category IV	0.85 to 1
Critical Area Buffer	0.3 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the KFMB site can be confirmed by the approving agency(s) through IRT.

Contact:

Kate Thompson
Shorelands and Environmental Assistance Program
P.O. Box 47600
Olympia, WA 98504
(360) 407-6749
kate.thompson@ecy.wa.gov

Suzanne L. Anderson, PhD, PWS
Project Manager/Banking Lead
Seattle District U.S. Army Corps of Engineers
Regulatory Branch, CENWS-OD-RG
Mail Address: P.O. Box 3755
Seattle, WA 98124-3755
Building Location: 4735 East Marginal Way South
Seattle, WA 98134
Email: Suzanne.l.Anderson@usace.army.mil

8 Wetland/Stream Functions Provided at KFMB

The following is excerpted or paraphrased from the MBI:

> *The Keller Farm Mitigation Bank is located at the floodplain confluence of two regionally significant salmon bearing streams, Bear and Evans Creeks. The Bear Creek watershed is designated as a "Highest Restoration Watershed" by the City of Redmond. KFMB is a high priority wetland and stream restoration site important to regional salmonid habitat restoration efforts.*

Historically, the Bank site was a wetland and upland "mosaic" complex with forested, shrub, and herbaceous wetlands, beaver ponds, and tributary streams that flowed into Bear Creek. Two federally threatened salmonid species, Puget Sound Chinook and Steelhead, utilize Bear and Evans Creeks and their larger tributaries, as well as coho, sockeye, and coastal cutthroat, and numerous other non-salmonid fish species. The Bank site is known to have been historically used by Native Americans for fishing, camping and trading. The site was homesteaded in the 1880s and converted to agricultural use. It was extensively ditched, drained, grazed, tilled, and managed as a dairy farm through the 1980s. Very little remnant wetland area remained compared to historic conditions, and a network of linear ditches replaced the natural floodplain tributary streams to convey water off the site.

The KFMB includes wetland habitat areas that are classified as "depressional and riverine" under the hydrogeomorphic (HGM) classification system and "palustrine and riverine" wetlands under the Cowardin classification system (Cowardin et al. 1979). Improvements to water quality, water quantity, and habitat functions within the re-established and rehabilitated wetland areas on the KFMB site will be documented and evaluated through the Bank's performance standards and monitoring reports, which allow credits to be generated and released for use by applicants. The improvement of existing and historic wetlands on the Bank site can be placed into two categories of restoration actions, per the joint agency guidance on compensatory mitigation found in Wetland Mitigation in Washington State Part 1 (Washington Department of Ecology, et al. 2006):

> ***Wetland Re-establishment****: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres and functions. Activities could include removing fill, plugging ditches, or breaking drain tiles.*

Wetland re-establishment actions at the KFMB include restoring wetland hydrology to historical wetland areas within the Bear Creek floodplain that have been drained over the last 100 years by farm ditches.

Re-establishment activities for wetland hydrology include reconnecting historical wetlands and existing wetlands to floodplain streams by 1) disabling a series of deep drainage ditches and drainage tiles, 2) creating additional connection points between the floodplain wetlands and Bear Creek to increase the normal frequency of overbank flows, 3) reconnecting and daylighting Perrigo Creek into the Bank Site to increase hydrologic inputs to the site, and 4) providing habitat and space to account for beavers utilizing their historical habitat areas and creating additional floodplain inundation and saturation of soils.

These actions will reconnect wetland areas to their historical sources of hydrology and create highly functional wetland and riparian habitat types for juvenile salmonids, amphibians and other aquatic dependent organisms. Disabling ditches and reconnecting the high groundwater table to wetland areas on the Bank site will re-saturate and inundate historical wetland areas and provide additional flood storage and attenuation of baseflows in Bear Creek. Shading these areas by creating shrub and forested wetland habitat communities will also reduce peak temperatures in aquatic areas and work to maintain the cool water input to Bear Creek from the Bank site which is essential during the summer for Bear Creek and the Sammamish Basin for migrating anadromous fish.

> ***Wetland Rehabilitation****: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions [and processes] of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or returning tidal influence to a wetland.*

Wetland rehabilitation actions include restoring the natural wetland hydroperiod of existing wetlands through floodplain reconnection with Bear Creek and disabling of existing ditches, grading to create connectivity between existing wetlands and reestablished wetlands, and reestablishing native vegetation communities within the existing wetland areas.

Additionally, riparian uplands surrounding the re-established and rehabilitated wetland areas and streams will be enhanced through the planting of native trees and shrubs which will create interspersed terrestrial habitat, important for aquatic dependent wildlife as well as providing other improvements such as shading aquatic areas on the site and providing a source of organic material and large wood.

Restoration actions across the Bank site will rehabilitate 7.9 acres of existing wetland habitat while re-establishing approximately 51.1 acres of forested, shrub and emergent wetlands. The existing 7,114 linear feet (1.7 acres) of ditched tributary streams will be rehabilitated and approximately 5,162 linear feet (2.6 acres) of stream channel will be added across the Bank site.

8.1 Water Quality Functions

All pre-existing wetlands at the Bank provided a medium level of water quality functions (total water quality score of 6-7 points) and a low or medium site potential function for water quality improvement using the Washington State Wetland Rating System for Western Washington (Rating System; Hruby 2014). All wetlands are located within the floodplain of Bear Creek and are inundated during overbank flood events. However, lack of surface channel connections with Bear Creek or existing onsite ditches and limited extent of seasonal ponding during non-flood events restrict the site potential of existing wetlands to provide water quality functions. In addition, because the site was in agricultural use, pollutant filtering capability of vegetation in site wetlands was limited. All existing wetlands rate high for providing water quality improvement that is valuable to society because both Bear Creek adjacent to the Bank and the tributary Perrigo Creek that flows through the Bank site are listed on the State of Washington 303d list as impaired for water quality parameters. Perrigo Creek is impaired for temperature and a Total Maximum Daily Load (TMDL) has been established. Bear Creek is listed for bioassessment, dissolved oxygen, temperature, and bacteria and TMDLs have been established for the latter three parameters. Existing wetlands on the Bank site will gain significant functional lift in water quality from rehabilitation and enhancement actions associated with implementation of the Bank. In addition, a net increase of 51.1 acres of wetland and 2.6 acres of stream channel/wetland complex will result. Post-construction wetland and floodplain functions related to water quality, such as removing sediments, nutrients, metals, and toxic organics will significantly increase as native vegetation establishes.

The Bank’s riparian restoration and stream plantings are an integral part of a regional effort to restore riparian conditions and functions and reduce temperatures in Bear Creek and the Sammamish River. Vegetating the banks of Bear Creek and the tributary floodplain streams within the Bank site with trees and shrubs will provide additional shading during the critical months in the summer and fall when adult salmon are migrating and spawning in the Bear Creek and Sammamish River systems. The Bank was designed so that during the summer and fall periods when water levels across the Bank site will be at their lowest levels, water will be confined to the riparian stream channel areas, rather than spreading out or ponding across the site which could warm surface waters. Riparian wetlands are not expected to have extended periods of standing water June through October. Additionally, floodplain streams will maintain their groundwater connection, providing a cold-water source in the streams and to Bear Creek.

8.2 Hydrologic Functions

All pre-existing wetlands on the Bank site provided a medium level of hydrologic functions (total hydrologic score of 7 points) using the Rating System.

Restoration actions at KFMB will result in improvement to site-specific wetland and floodplain hydrologic functions and watershed-scale hydrologic processes, including increased available flood storage volume, attenuation of flood flows, reductions in peak flood flows, and groundwater recharge.

8.3 Habitat Functions

All pre-existing wetlands on the Bank site provided a medium level of habitat functions (total habitat score of 6 points) using the Rating System. Plant communities were entirely emergent and dominated by non-native and invasive species, farmed, and lacked habitat complexity.

Overall habitat suitability for wetland-associated birds, mammals, amphibians, fish and invertebrates will improve over existing conditions because of: the net increase in acreage of wetland and aquatic area, improved access for aquatic organisms to floodplain wetland and aquatic areas, the increased variety of hydroperiods, the increase in vegetation species richness and habitat interspersion, the addition of habitat enhancement features such as large woody debris, and accessibility to contiguous habitat areas such as the adjacent WSDOT mitigation site and NGPA areas along Bear Creek.

The restoration of 7,114 linear feet of ditched tributary streams and addition of 5,162 linear feet of stream channel will increase available suitable habitat for salmonids and other fish species, including ESA-listed species. This restoration will include additional off-channel rearing and refuge habitat within the floodplain streams and deeper backwater areas connected to Bear Creek.

8.4 Summary of Functional Improvements

Existing wetlands on the Bank site gain significant functional lift in water quality and habitat functions from rehabilitation and enhancement actions associated with implementation of the Bank. Hydrologic functions in existing wetlands would remain similar to pre-project conditions. Existing wetlands (7.9 acres) and re-established wetlands (63.3 acres) are anticipated to rate as Category II wetlands at maturity. For existing wetlands onsite, the Credit-Debit Method (*Calculating Credits and Debits for Compensatory Mitigation in Western Washington,* Hruby 2012*)* estimated that 14.2 acre-points would be generated for water quality functions and 7.9 acre-points would be generated for habitat functions with Bank implementation. Additionally, 500 water quality acre-points, 438 hydrology acre-points, and 438 habitat acre-points would be generated by re-establishing and rehabilitating approximately 63.3 acres of former wetlands on the site.

Post construction, the Bank site will consist of a mosaic of forested upland, forested, scrub/shrub, and emergent wetland, and stream channel habitat. The Bank will create new aquatic habitat for resident and anadromous fish species and improve existing habitat for the regionally important salmonid populations that are present on the Bank site. A net increase of 51.1 acres of wetland and 2.6 acres of stream channel/wetland will result from Bank implementation.

Post-project conditions will provide numerous functional benefits over existing conditions including: allowing Bear Creek flows to infiltrate in wetland areas during a wider range of flow conditions; recharging the local groundwater aquifer; increasing floodplain wetland groundwater storage; providing cooling of groundwater through soil heat adsorption of surface waters; and delaying release of cooler groundwater to the floodplain streams later in the spring and summer when stream temperatures are highest. Plantings adjacent to Bear Creek and floodplain streams will also help moderate summer water temperatures, and re-established vegetation communities within the wetlands and riparian upland areas will increase habitat diversity and accessibility for aquatic dependent plants and animals. Enhanced floodplain connections with Bear Creek will be established that will increase the range of flow conditions where Bear Creek flows will contribute to hydrologic support of floodplain wetlands and streams. These connections will also allow fish access to the re-established wetlands and stream channels in the floodplain.

The benefits and functional improvements provided by the Bank exceed those anticipated under a traditional permittee-responsible mitigation approach, as described in Section 7. "On-site" mitigation opportunities for the Project have been considered and are limited as described in the *North Bellevue Critical Area Report*. As described in Section 9 below, a portion of the wetland and buffer impacts for the North Bellevue Segment will be mitigated through restoration planting at the Richards Creek Substation in conjunction with an existing mitigation site for the South Bellevue Segment impacts. Due to limited space availability at the Richards Creek Substation site, the remainder of the impacts for the North Bellevue Segment are proposed to be mitigated through purchase of credits at the KFMB.

9 Wetland/Stream/Buffer Functions Not Mitigated at Mitigation Bank

A portion of the North Bellevue Project impacts will be mitigated on-site at the Richards Creek Substation site, rather than through the Bank, as described in the *North Bellevue Critical Areas Report* (The Watershed Company 2021a).

The Richards Creek Substation mitigation area consists of a Category III wetland (Wetland A) dominated by reed canarygrass and Himalayan blackberry. Wetland enhancement is proposed that would expand and complement the adjacent mitigation area approved for the South Bellevue Segment of the Project. The wetland enhancement activities are intended to increase native plant cover, decrease invasive species prevalence, improve native species diversity, and provide food and other habitat resources for wildlife. The plan includes a comprehensive five-year maintenance and monitoring plan including specifications and standards that will ensure the enhancement plantings will be maintained, monitored, and successfully established within the first five years following implementation.

Project impacts and the associated, proposed permittee-responsible on-site mitigation is summarized in Table 4, below. For more information, see the *North Bellevue Critical Areas Report* (The Watershed Company 2021a; and associated Appendix G of that report).

Table 4. Richards Creek Substation impact and mitigation summary.

Drainage Basin[1]	**Critical Area Name**	**Wetland Category**	**Type of Impact**	**Adjusted Impact Quantity (SF)**[2]	**Proposed Mitigation Activity**	**Proposed Mitigation Area (SF)**
Richards Creek	Wetland EE	IV	Conversion	810	Enhancement of Wetland A (Category III) at Richards Creek Substation in the Richards Creek drainage basin	2,940
	Combined Buffers	buffer	Conversion	6,540		3,300
Kelsey Creek	Wetland EB14	III	Conversion	800		3,690
					Total	9,930

1. Bellevue-defined drainage basins.
2. The adjusted quantity incorporates square footage of pole removal (if any) as the removal self-mitigates for some of the pole installation.

In addition to compensation of ecological functions through critical area mitigation requirements, PSE has committed to replacement of removed trees based on size per the Project's *Vegetation Inventory & Management Plan Report for North Bellevue* (The Watershed Company 2021b), which describes PSE's propose tree replacement approach. According to that document, PSE would prioritize replacement of impacted vegetation with transmission line compatible species within or near the Project corridor as negotiated with private property owners.

Temporary impacts from the Project are proposed to be restored on site in accordance with the *Temporary Impacts Restoration Plan* (Appendix E of the *North Bellevue Critical Areas Report*; The Watershed Company 2021a).

10 Proposed Mitigation Credits

The ratios in Table 5 are proposed to mitigate for the indirect impact of vegetation conversion (tree removal) in wetlands and critical area buffers. Ratios are based upon the number of bank credits typically required by the IRT agencies to compensate for each unit of permanent loss of aquatic resource type and functional level. A "vegetation conversion discount factor" is applied because the vegetation conversion impact does not result in fill or total loss of the affected aquatic resource.

Vegetation conversion discount factors have been applied for projects with similar impacts, generally ranging from 25 to 33 percent of the standard permanent impact ratio (Z. Woodward, personal communication, June 19, 2020). The 25 percent vegetation conversion discount factor is proposed based on the existing degraded condition of the transmission line corridor, impacted tree species composition, and condition of impacted trees (*i.e.*, many have been previously pruned or topped as part of ongoing vegetation management activities).

Table 5. Summary of proposed KFMB credit to impact ratios with the applied vegetation conversion factor and total credit amount and cost.

Permanent Resource Impact	Vegetation Conversion Impact (SF)	Permanent Impact Ratio	Vegetation Conversion Discount Factor (no fill)[1]	KFMB Credits
Wetland, Category II	2,900	1.2 to 1	25%	870
Wetland, Category III	4,940	1 to 1	25%	1,235
Wetland, Category IV	240	0.85 to 1	25%	51
Critical Area Buffer	31,590	0.3 to 1	25%	2,370
			Total Credit (SF) =	4,526 SF
			Total Credit (acres) =	0.103885
			Cost ($1,000,000 per acre) =	$103,885

1. The discount factor is the percentage of the standard ratio that applies.

11 Credit Purchase or Transfer Timing

PSE will enter into a Purchase Agreement with KFMB (Habitat Bank, LLC) to purchase 4,526 square feet of credits that would appropriately mitigate for the proposed project impacts. The anticipated timing of credit purchase and transfer is mid- to late-2021, following permit issuance by the agencies with jurisdiction. Purchase of credits will be completed prior to the onset of any activities affecting impacted resources. Nothing in the Purchase Agreement shall be interpreted as permitting or construed to permit any activity that otherwise requires a federal, state and/or local permit. Proof of the credit purchase and transfer will be provided in the form a notification letter to the approving agencies and to the IRT co-chairs by the Bank Sponsor. Upon service of this notification, the mitigation requirement to purchase 4,526 square feet of mitigation credits will be fully satisfied.

References

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Appendix H

PESTICIDE, INSECTICIDE, AND FERTILIZER PLAN

PUGET SOUND ENERGY

Puget Sound Energy
P.O. Box 97034
Bellevue, WA 98009-9734
PSE.com

October 23, 2020

Official Memorandum

RE: Energize Eastside North Bellevue Segment: Pesticide, Insecticide, and Fertilizer Plan

The purpose of this memo is to support PSE's Critical Areas Land Use Permit and Conditional Use Permit applications for the North Bellevue Segment of the Energize Eastside Project in Bellevue. When a project proposes impacts to critical areas, compliance with applicable City of Bellevue code provisions (LUC 20.25H – Critical Areas) must be demonstrated. New or expanded utility facilities and utility systems, including all structures and improvements, are allowed within critical areas and their associated buffers pursuant to LUC 20.25H.055, provided applicable performance standards for new and expanded uses or development (LUC 20.25H.055.C.2) and for each critical area type to be impacted, are met. Two specific critical area code provisions applicable to pesticide, insecticide, and fertilizer application are presented below (italicized), followed by a Project-specific Pesticide, Insecticide, and Fertilizer Plan.

Performance Standards for Wetlands (LUC 20.25H.100)

Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

> *F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the wetland critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.*

Performance Standards for Streams (LUC 20.25H.080)

LUC 20.25H.080.A- General

Development on sites with a type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

> *6. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.*

After the restoration contractor is selected for the Energize Eastside, North Bellevue Segment Project (Project), the contractor will submit a list of pesticides, insecticides, and/or fertilizers they propose to use as necessary on the Project to Puget Sound Energy's (PSE's) consulting arborist and our contracted arborist at Asplundh Tree Expert LLC. The arborists will review and approve the appropriate products and then PSE will submit the list to the City of Bellevue. To the extent practicable, the BMPs described in Chapter 3 of the Bellevue's Environmental Best Management Practices will be incorporated.

Asplundh Tree Expert LLC has contracted for many years with PSE's Vegetation Management forming a solid working partnership. The following is an email from Kenneth Dillinger, a certified arborist at Asplundh Tree Expert LLC, describing the best management practices followed to ensure appropriate products are selected, applicators have a current license, material safety data sheets (MSDSs) are kept on file, and vegetation management applications follow city, state and federal guidelines.

EMAIL FROM: Kenneth W Dillinger, General Foreman Asplundh Tree LLC, PSE Vegetation Management

ISA Certified Arborist / Utility Specialist; PN #1540-AU K

To Whom It May Concern,

Asplundh Tree Expert LLC is working in Partnership with Puget Sound Energy's Vegetation Management and will follow all best management practices to determine the appropriate control measures for pest situations, including selecting the most appropriate pesticide products used for applications and when pesticides are applied, the smallest effective area will be treated to maintain infrastructure safety and reliability.

In accordance with the Washington State Licensing Guidelines, all staff and contractors who are engaged in the use of pesticides will have a current Washington State Pesticide License. All chemicals used on PSE property will have corresponding Labels and MSDS sheets on file, and will be available to all staff, contractors and the public upon request.

All sites where pesticides have been applied shall be posted, as required by the Washington State Department of Agriculture. Also as required by all (WSDA) applications of pesticides will be recorded. As a ISA Certified Arborist/Utility Specialist I have reviewed and can attest that all vegetation management applications will be made following city, state and federal guidelines at substation sites and Ingress /egress of rights of way corridors.

Appendix I

TEMPORARY IMPACTS RESTORATION PLAN

TEMPORARY IMPACTS RESTORATION PLAN

PLAN SET INTENT

THE PURPOSE OF THIS TEMPORARY IMPACTS RESTORATION DOCUMENT IS TO PROVIDE GUIDANCE ON THE RESTORATION OF AREAS TEMPORARILY DISTURBED DUE TO CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE ENERGIZE EASTSIDE PROJECT IN NORTH BELLEVUE. THESE IMPACTS HAVE NOT BEEN ADDRESSED IN ANY OTHER RESTORATION OR MITIGATION DOCUMENT. TEMPORARY IMPACTS ARE THOSE RESULTING FROM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE INSTALLATION OF NEW AND REPLACED TRANSMISSION POWER POLES AND LINES, AND THE CREATION/MAINTENANCE OF ACCESS PATHS FOR INSTALLATION AND/OR MAINTENANCE PURPOSES. TEMPORARY IMPACT AREAS IDENTIFIED IN THIS DOCUMENT ARE BASED ON PERMIT LEVEL SITE PLANS AND ARE SUBJECT TO CHANGE BASED UPON CONTRACTOR INPUT AT THE TIME OF CONSTRUCTION.

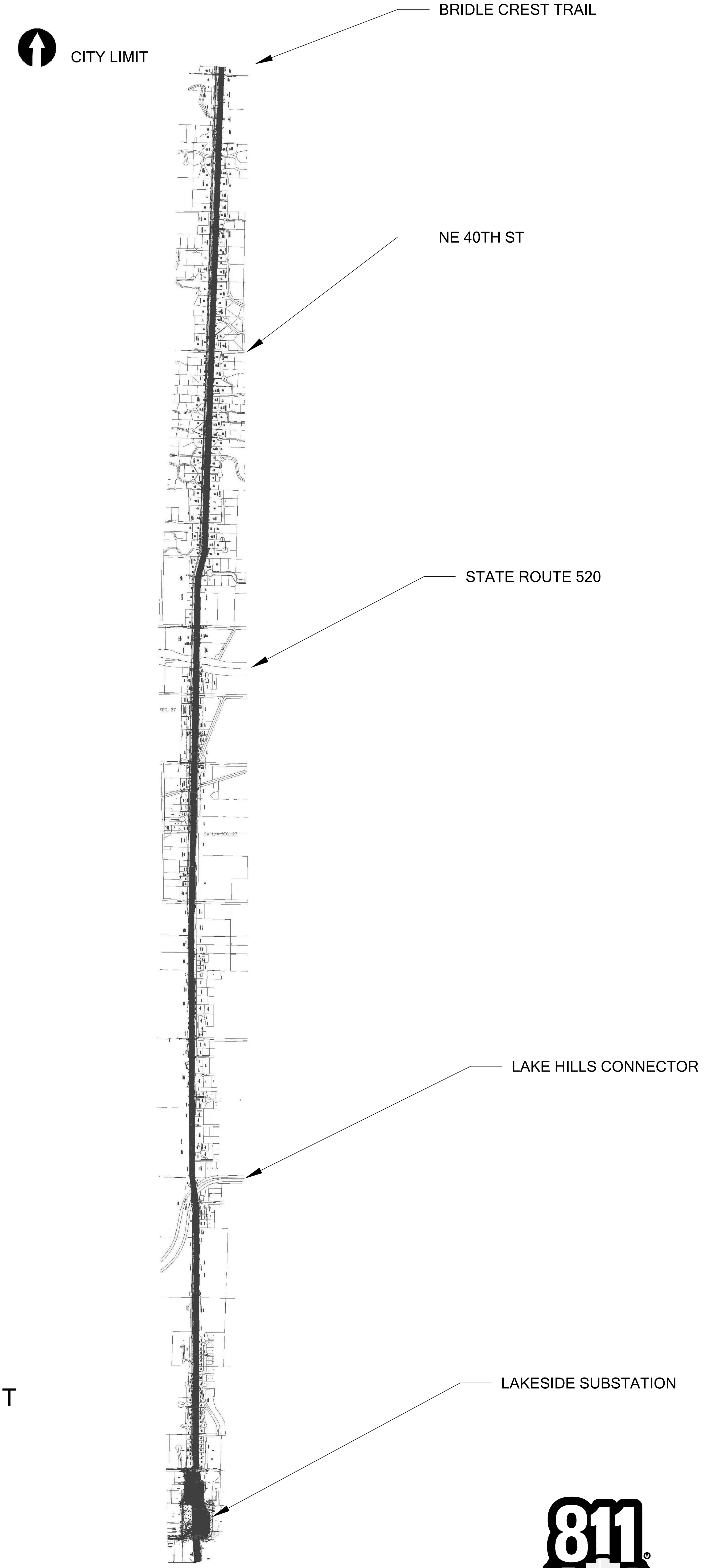
THIS PLAN IS LIMITED TO RESTORATION OF TEMPORARILY IMPACTED, VEGETATED AREAS TO PRE-CONSTRUCTION CONDITIONS, OR BETTER

SHEET INDEX

RESTORATION AREA TYPE	APPROX. SUM OF AREA (SF)
STANDARD	25,000
WETLAND	605
STREAM AND WETLAND BUFFER	27,000
OTHER	141,000
GRAND TOTAL	193,605

A PUGET SOUND ENERGY RIGHT OF WAY MAINTENANCE PATH THROUGH LOW GROWING SHRUBS AND TREES.

BELLEVUE, WASHINGTON
ENERGIZE EASTSIDE
230 CORRIDOR
NORTH BELLEVUE SEGMENT



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750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
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PSE ENERGIZE EASTSIDE
TEMPORARY IMPACTS RESTORATION PLAN
PREPARED FOR PUGET SOUND ENERGY
NORTH BELLEVUE SEGMENT

BELLEVUE, WASHINGTON

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET: W0.0
NUMBER: 1 OF 24

FILENAME
PRINTED BY
DATE

GENERAL NOTES

TYPICAL APPROACH TO IMPLEMENTATION

1. LOCATE KEY MAP THE WORK AREA RESIDES IN (SHEETS W2.0-2.15).
2. IDENTIFY TYPE(S) OF EXISTING LAND-CLASS COVER WITHIN WORK LIMITS.
3. CHOOSE CORRECT RESTORATION TYP. BASED ON EXISTING LAND-CLASS COVER AND POST-CONSTRUCTION CONDITIONS. NOTE: THIS MAY NOT APPLY TO SOME TEMPORARY IMPACTS AREAS THAT WILL NOT HAVE VEGETATION REMOVED, SUCH AS, WHERE MATS ARE PLACED OVER EXISTING VEGETATION DURING CONSTRUCTION AND THE VEGETATION IS EXPECTED TO RECOVER.
4. HOLD A PRE-CONSTRUCTION MEETING WITH A PSE REPRESENTATIVE TO ESTABLISH CONSTRUCTION WORK LIMITS AND VERIFY THE RESTORATION APPROACH CHOSEN IS CORRECT BASED ON EXISTING SITE CONDITIONS.
5. IF OPL OCCURS WITHIN WORK AREA, CONTRACTOR SHALL LOCATE AND MARK CENTERLINE (CL) OF OPL, THEN FLAG/STAKE 10FT OFFSETS TO EACH SIDE OF OPL CL.
6. FLAG/STAKE ANY CRITICAL AREAS AND ASSOCIATED BUFFERS PRIOR TO CONSTRUCTION ACTIVITIES.
7. DOCUMENT THE EXISTING CONDITIONS OF THE SITE TO BE IMPACTED BY TAKING A MINIMUM OF 3 PHOTOS CLEARLY DISPLAYING THE ENTIRE SITE. THESE SHALL BE TAKEN PRIOR TO ANY DISTURBANCE OR REMOVAL OF VEGETATION.
8. PERFORM CONSTRUCTION ACTIVITIES (SEE CIVIL OR OTHER PLAN SET).
9. POST-CONSTRUCTION, HAVE A PSE REPRESENTATIVE INSPECT SITE AND SOILS WITHIN AREAS OF TEMPORARY IMPACTS. SELECT SOIL PREP PROCEDURE BASED ON CONDITIONS (SHEET W4.0) AND VERIFY WITH A PSE REPRESENTATIVE.
10. PREP SOILS, INSTALL PLANTS, AND PLACE MULCH (SHEET W4.0).
11. REMOVE ALL MACHINERY, PLASTIC, METAL, REFUSE, DEBRIS, GARBAGE, FUELS, AND NON-NATIVE MATERIALS FROM THE CONSTRUCTION SITE.

COMPANION PLAN SETS

1. SEE THE PARCEL-SPECIFIC LANDSCAPE PLANS WHERE AVAILABLE. THESE ARE NOTED AS TYPE 5 RESTORATIONS ON THE FOLLOWING SHEETS.

ASSUMPTIONS

1. TESC PLANS AND DETAILS WILL BE PROVIDED IN THE CIVIL PLAN SET
2. ALL CRITICAL AREAS AND BUFFERS WILL BE STAKED/FLAGGED PRIOR TO STARTING CONSTRUCTION ACTIVITIES
3. A PRE-CONSTRUCTION MEETING WITH A PSE REPRESENTATIVE WILL TAKE PLACE FOR EACH WORK AREA TO CONFIRM CONTRACTOR APPROACH TO RESTORING TEMPORARY IMPACTS.

DIVERSITY STANDARDS

FOR EACH IMPACT AREA TO BE REPLANTED, INSTALL ONE OF EACH TREE, SHRUB, AND GROUNDCOVER SPECIES FROM THE LIST PROVIDED FOR EACH TYPICAL AT THE SPECIFIED SPACING UNTIL THE AREA HAS BEEN 100% PLANTED. FOR AREAS LARGE ENOUGH FOR ALL THE SPECIES PROVIDED, ONCE ALL SPECIES HAVE BEEN INSTALLED START OVER AGAIN AT THE BEGINNING OF THE LIST AND REPEAT.

PLANT INSTALLATION SPECIFICATIONS

QUALITY ASSURANCE

1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

SUBSTITUTIONS

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE PSE REPRESENTATIVE.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT OR PSE AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION

1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT OR PSE FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT OR PSE MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT OR PSE MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS

1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES

1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES

1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO RESTORATION CONSULTANT OR PSE AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH RESTORATION CONSULTANT OR PSE AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY RESTORATION CONSULTANT OR PSE 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT OR PSE MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS

1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT

1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE RESTORATION CONSULTANT OR PSE'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL

1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

DEFINITIONS

1. PSE REPRESENTATIVE: POINT OF CONTACT PROVIDED BY PSE FOR THIS PLAN SET.
2. RESTORATION CONSULTANT: WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
3. COMPOST: COMPOST SHALL MEET WSDOT STANDARDS SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 9-14.4(8).
4. WOOD CHIP MULCH: "ARBORIST CHIPS" (CHIPPED WOODY MATERIAL) APPROXIMATELY ONE TO THREE INCHES IN MAXIMUM DIMENSION (NOT SAWDUST). THIS MATERIAL IS COMMONLY AVAILABLE IN LARGE QUANTITIES FROM ARBORISTS OR TREE-PRUNING COMPANIES. MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/DEMOLITION DEBRIS.
5. THREE-WAY TOPSOIL: TOPSOIL SHALL BE A THREE-WAY MIXTURE OF APPROXIMATELY 33-50% COMPOST AND 50-65% SAND OR SANDY LOAM. ALL COMPONENTS SHALL BE FREE OF PHYTO-TOXIC MATERIALS AND VIABLE SEEDS, RHIZOMES, OR ROOTS OF STATE-LISTED NOXIOUS WEEDS.
6. PLANTS/PLANT MATERIALS: PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC.; SPRIGS, PLUGS, AND LINERS.
7. CONTAINER GROWN: CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

GENERAL NOTES & PLANT INSTALLATION SPECIFICATIONS

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WATERSHED
COMPANY

750 Sixth Street South
Kirkland WA 98033

p 425.822.5242
www.watershedco.com
Science & Design

PSE ENERGIZE EASTSIDE
TEMPORARY IMPACTS RESTORATION PLAN
PREPARED FOR PUGET SOUND ENERGY
NORTH BELLEVUE SEGMENT

BELLEVUE, WASHINGTON

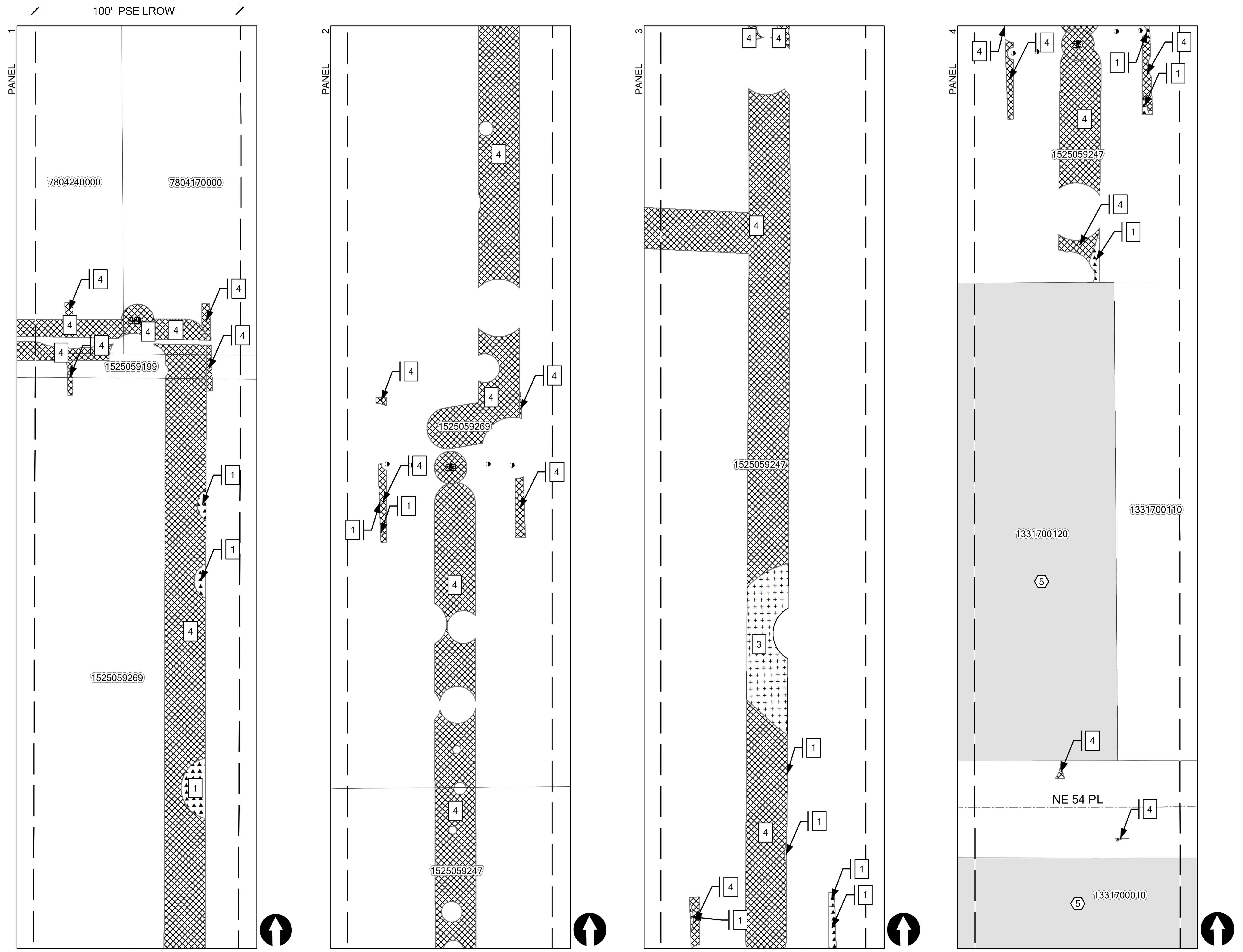
SUBMITTALS & REVISIONS

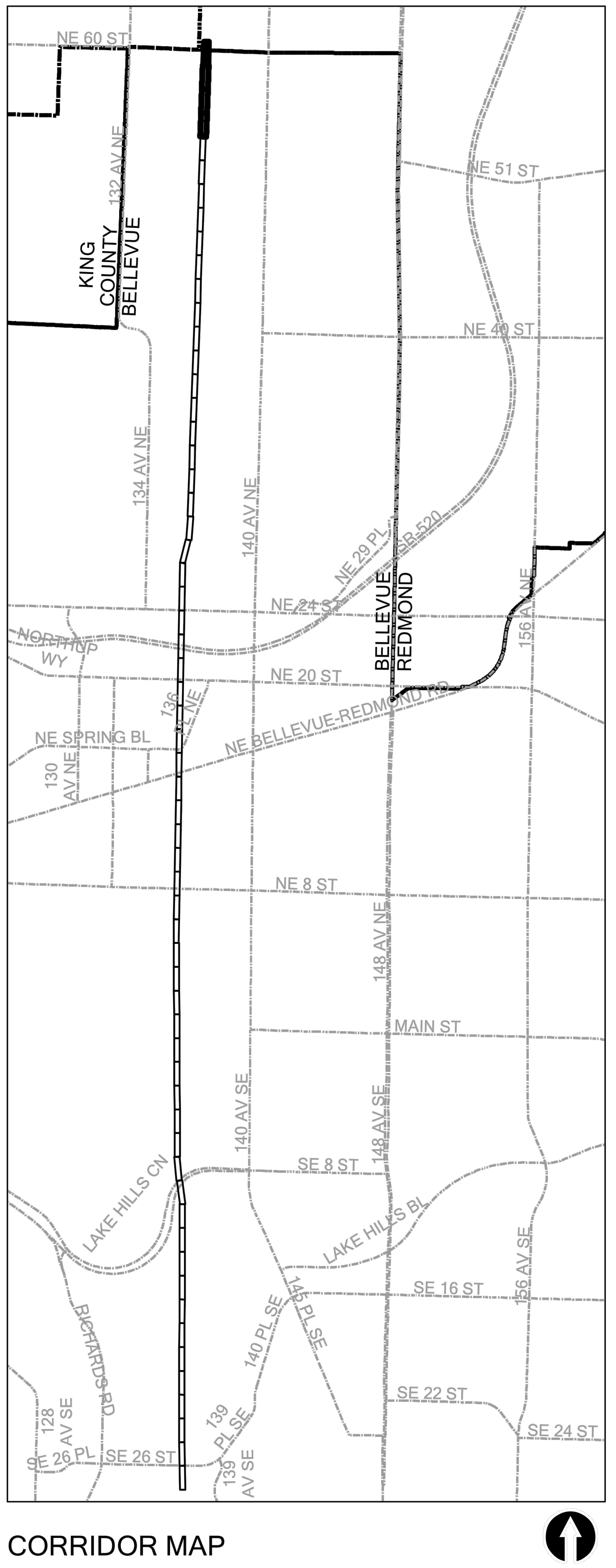
NO.	DATE	DESCRIPTION	BY
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET: W1.0
NUMBER: 2 OF 24

FILENAME
PRINTED BY
DATE





CORRIDOR MAP

◂ EXISTING POLES TO BE REMOVED

● PROPOSED POLES - *Received January 2021*

LEGEND

▲	TYPE 1. STANDARD (SEE W3.0)
░	TYPE 2. WETLAND (SEE W3.1)
+	TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
▩	TYPE 4. OTHER (SEE W3.3)
▒	TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET

NOTES

1. THESE PANELS SHOW THE 100-FT PSE MAINTENANCE EASEMENT FROM NORTH TO SOUTH FOR THE ENERGIZE EASTSIDE 230 CORRIDOR SEGMENT THROUGH NORTH BELLEVUE.
2. GEOLOGIC HAZARD AREAS (INCLUDING STEEP SLOPES, STEEP SLOPE BUFFERS, STEEP SLOPE SETBACKS, LANDSLIDE HAZARDS, AND LANDSLIDE HAZARD BUFFERS) OCCUR THROUGHOUT THE NORTH BELLEVUE SEGMENT CORRIDOR AND ARE INCLUDED IN THIS PLAN. PLEASE REFER TO GEOENGINEERS' NORTH BELLEVUE *TARGETED CRITICAL AREAS GEOLOGIC HAZARDS EVALUATION, NOVEMBER 2020*, REPORT FOR INFORMATION RELATED TO GEOLOGIC HAZARD AREAS.

KEY PLAN MAP (1 OF 16)

0 15' 30' 60' 120'

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PSE ENERGIZE EASTSIDE
TEMPORARY IMPACTS RESTORATION PLAN
PREPARED FOR PUGET SOUND ENERGY
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BELLEVUE, WASHINGTON

SUBMITTALS & REVISIONS

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ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
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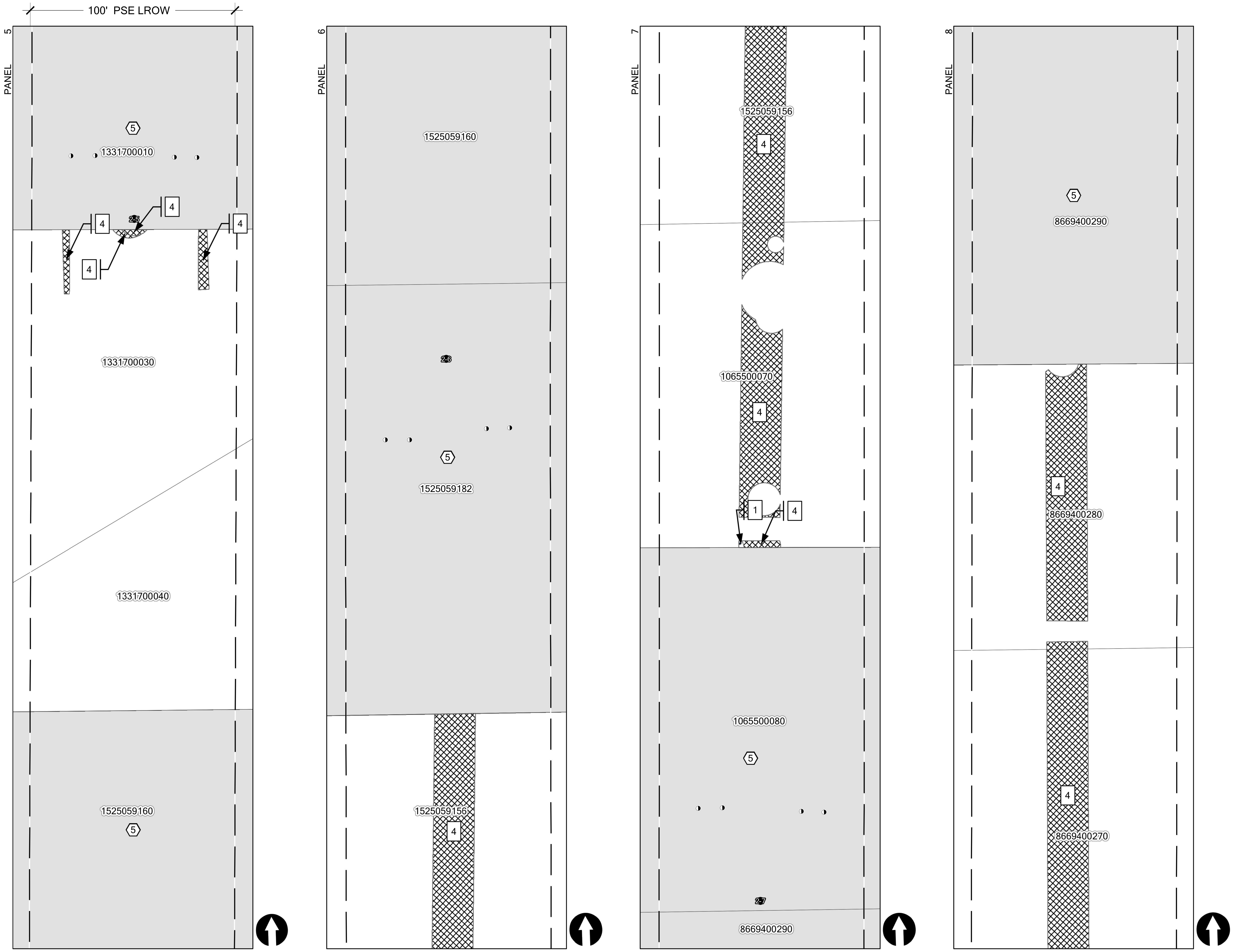
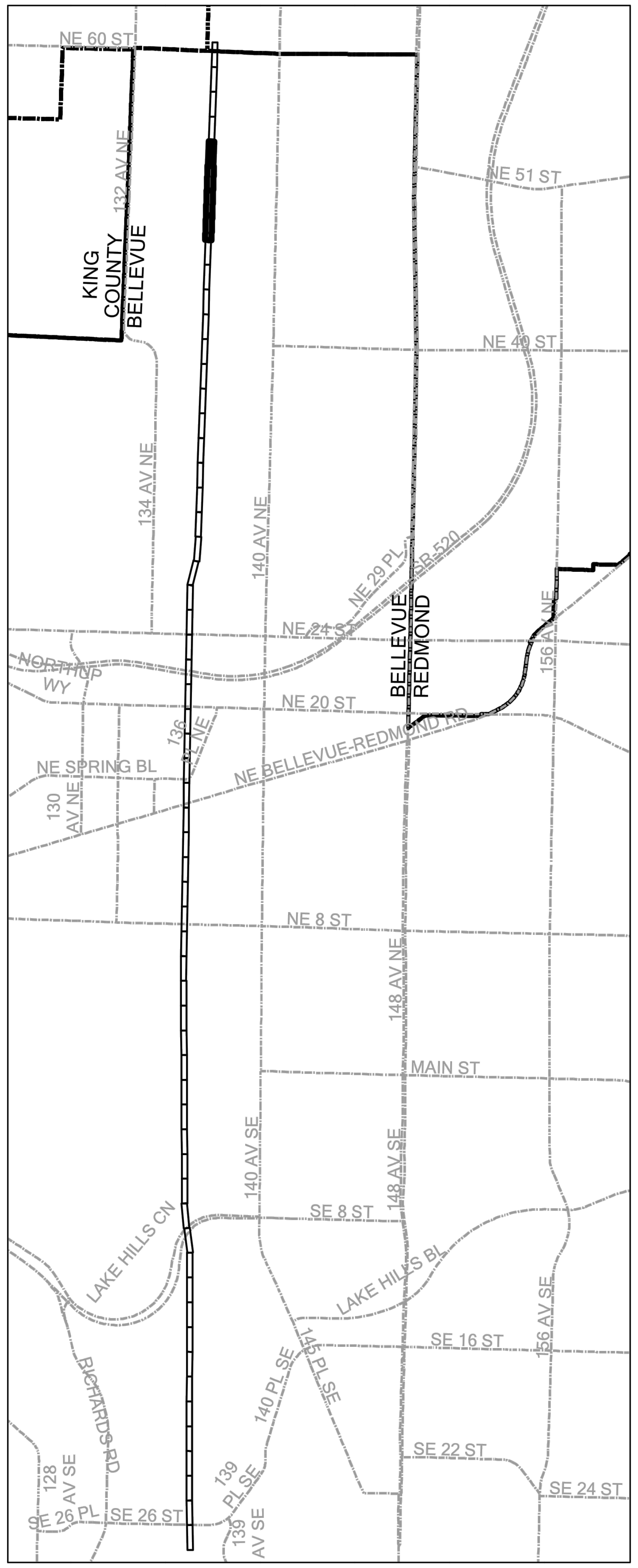
SHEET: W2.0
NUMBER: 3 OF 24

FILENAME
PRINTED BY
DATE





CORRIDOR MAP

LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
- ⁘ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▨ TYPE 4. OTHER (SEE W3.3)
- ░ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET

- • EXISTING POLES TO BE REMOVED
- ● PROPOSED POLES - *Received January 2021*

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KEY PLAN MAP (2 OF 16)

0 15' 30' 60' 120'

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PSE ENERGIZE EASTSIDE
TEMPORARY IMPACTS RESTORATION PLAN
PREPARED FOR PUGET SOUND ENERGY
NORTH BELLEVUE SEGMENT

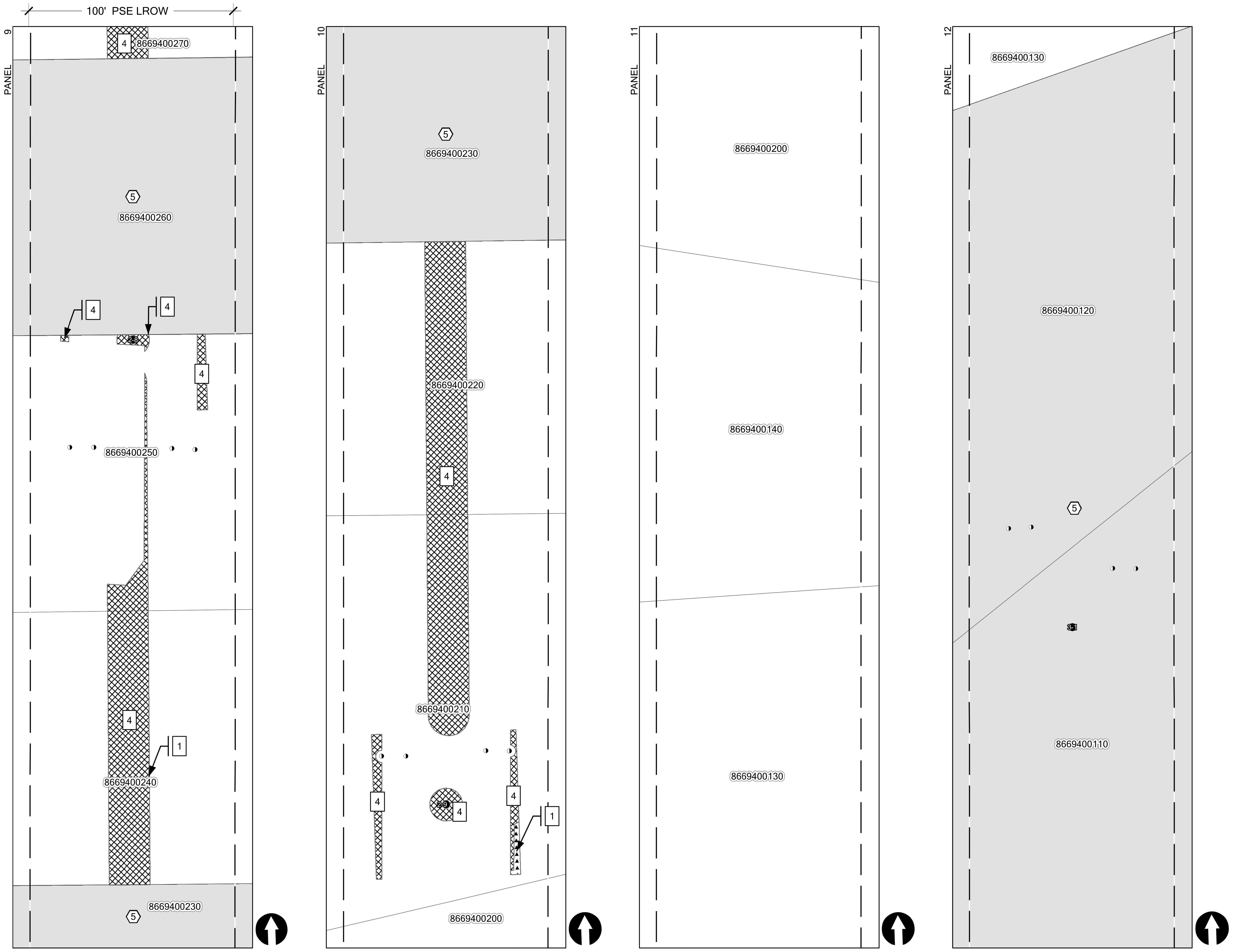
BELLEVUE, WASHINGTON

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

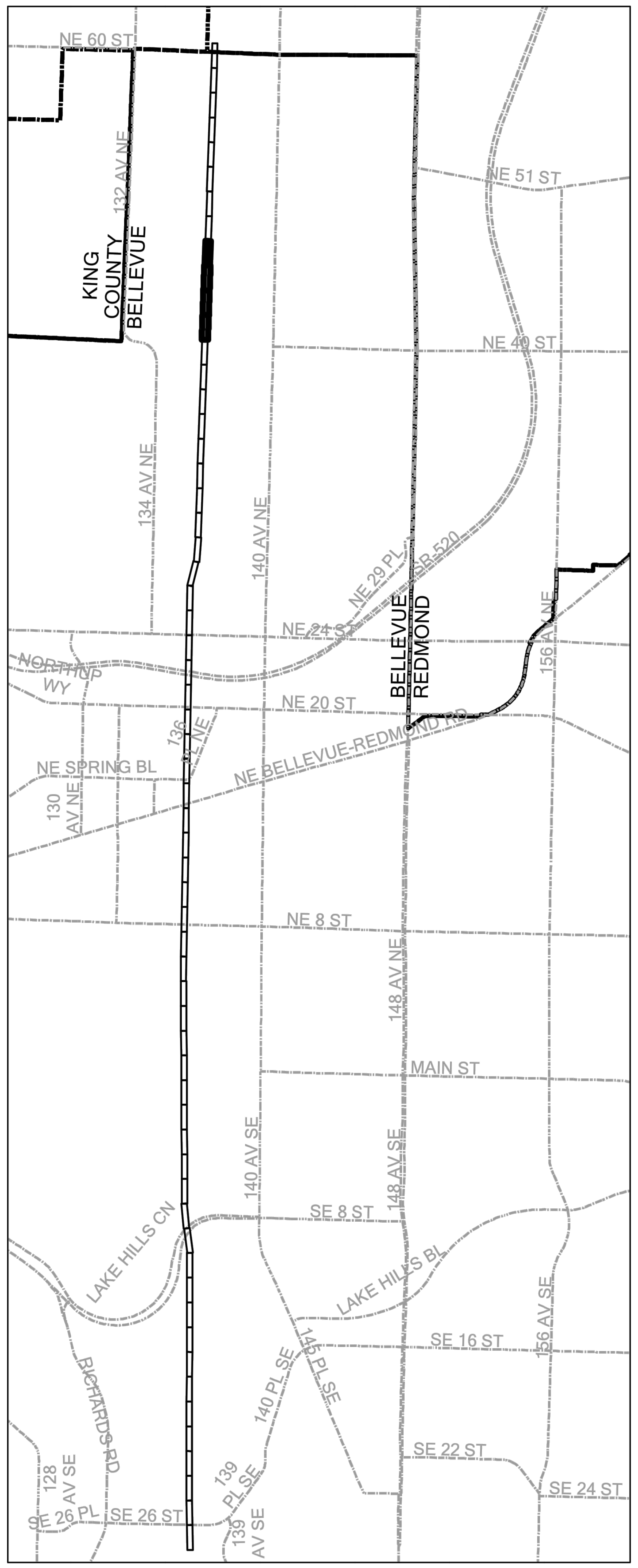
SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
FILENAME
SHEET:
W2.1
NUMBER:
4 OF 24
PRINTED BY
DATE



LEGEND

▲	TYPE 1. STANDARD (SEE W3.0)
▒	TYPE 2. WETLAND (SEE W3.1)
+	TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
▨	TYPE 4. OTHER (SEE W3.3)
░	TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- • EXISTING POLES TO BE REMOVED
- ● PROPOSED POLES - *Received January 2021*

KEY PLAN MAP (3 OF 16)

0 15' 30' 60' 120'

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SHEET SIZE:
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SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC

FILENAME

SHEET:
W2.2

NUMBER:
5 OF 24

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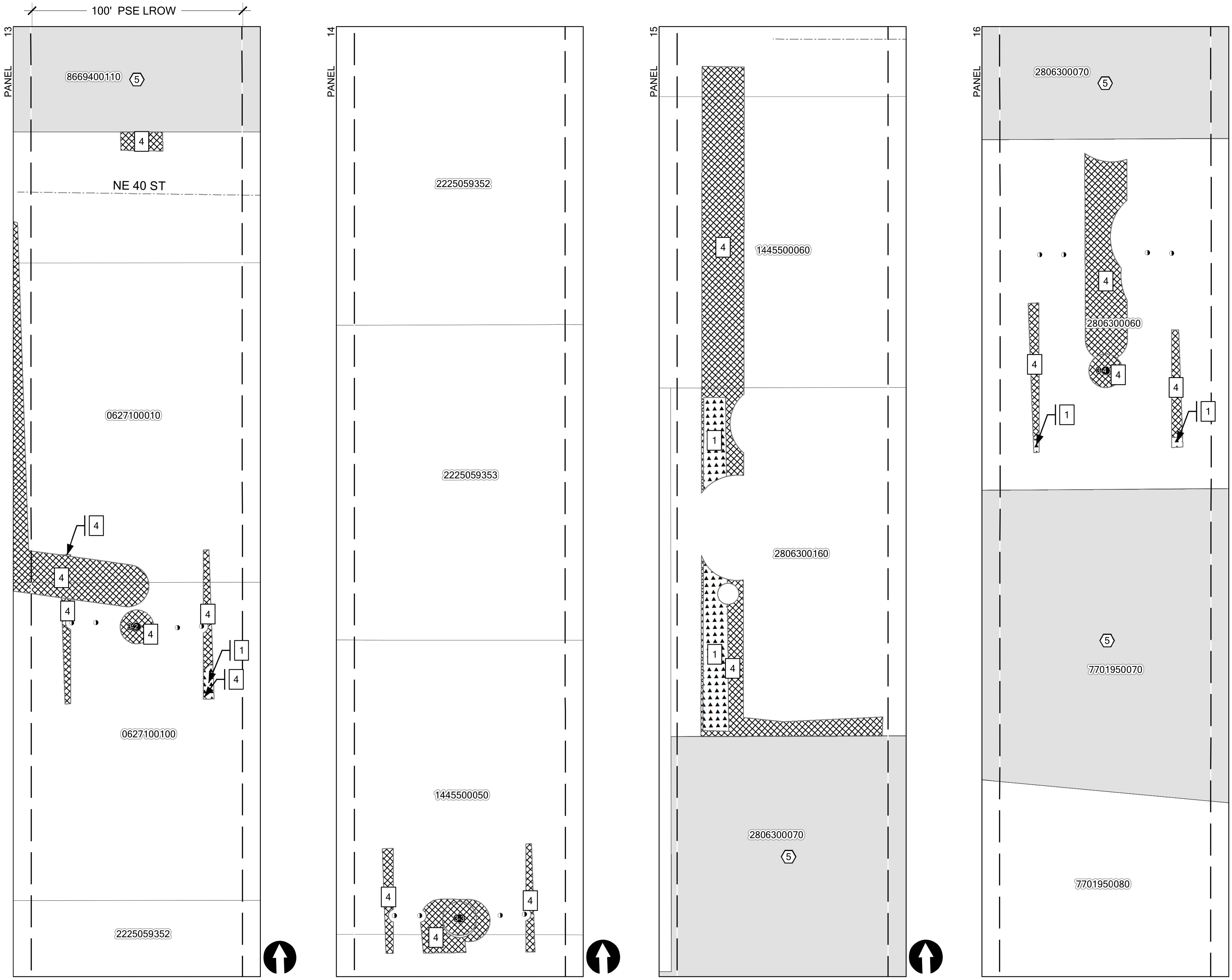
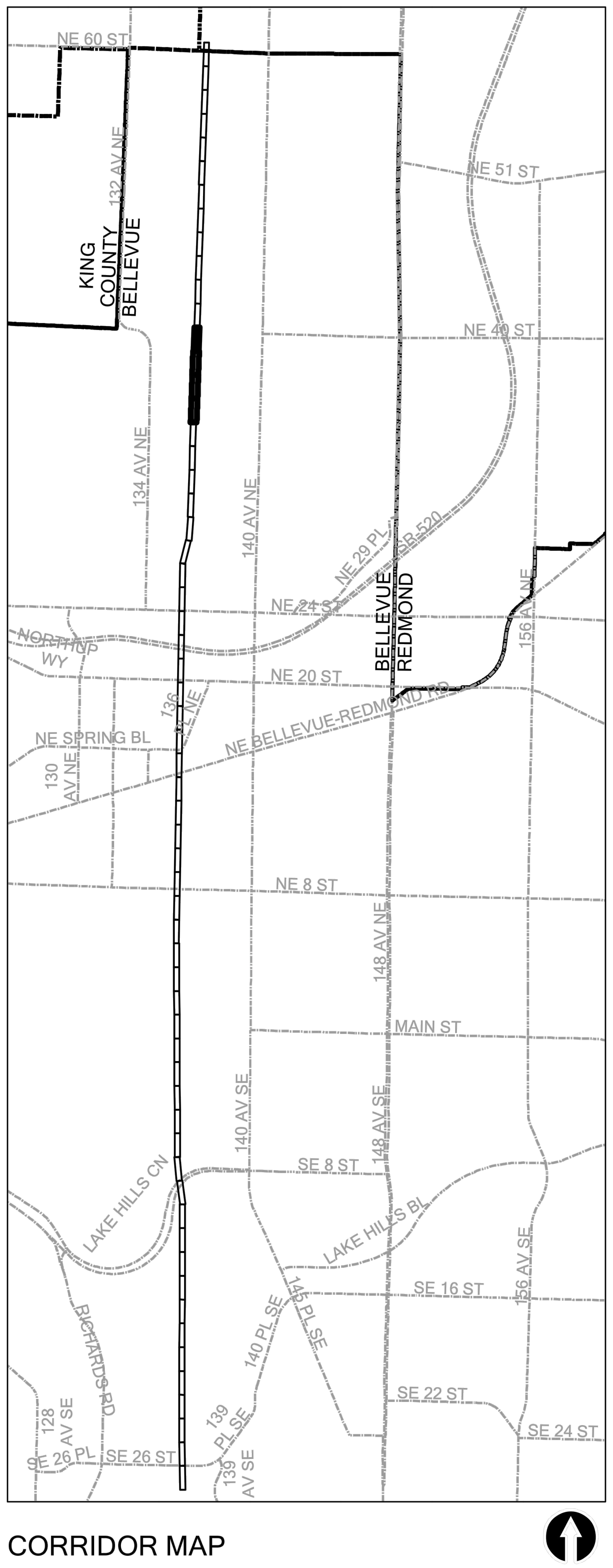


LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
- ⋯ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▩ TYPE 4. OTHER (SEE W3.3)
- ░ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- • EXISTING POLES TO BE REMOVED
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KEY PLAN MAP (4 OF 16)

0 15' 30' 60' 120'

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2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
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SCALE ACCORDINGLY.

PROJECT MANAGER:	NL
DESIGNED:	NB
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SHEET:	W2.3
NUMBER:	6 OF 24

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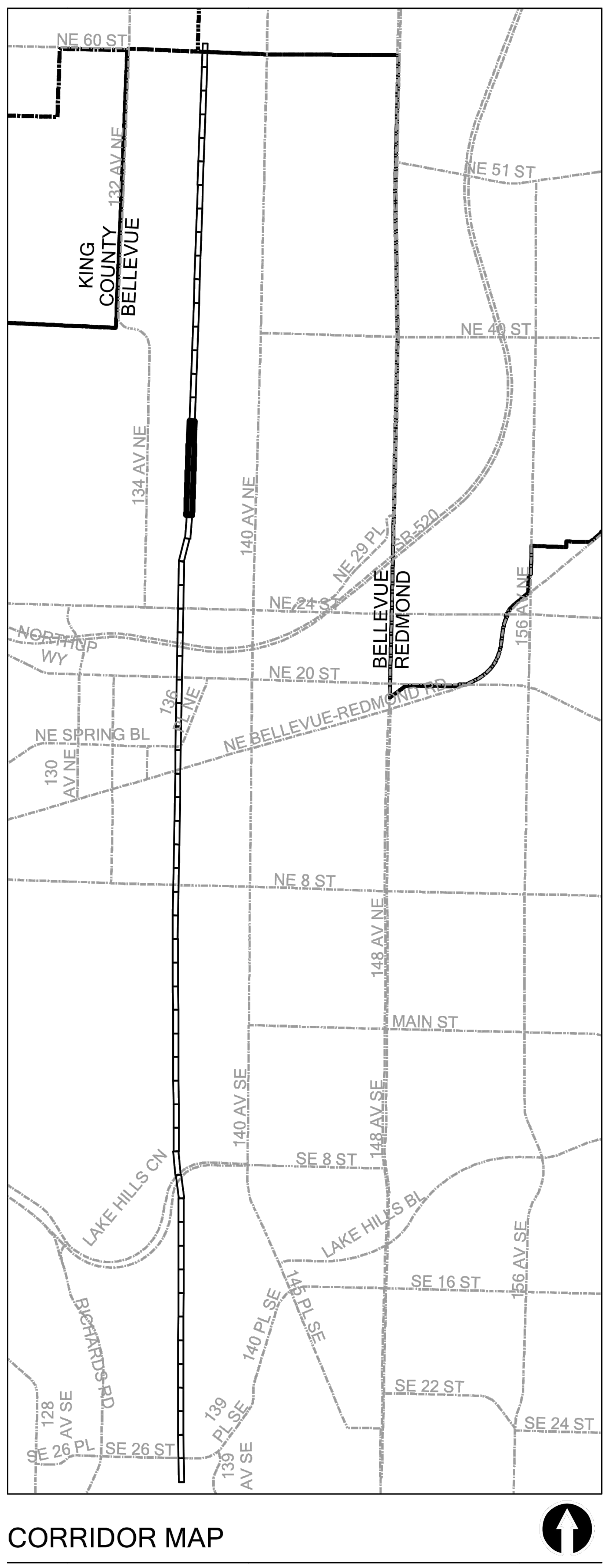
KEY PLAN MAP (5 OF 16)

LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
- ∴ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▨ TYPE 4. OTHER (SEE W3.3)
- ▢ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- ◦ EXISTING POLES TO BE REMOVED
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2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:	NL
DESIGNED:	NB
DRAFTED:	NB
CHECKED:	AMC

SHEET:
W2.4
NUMBER:
7 OF 24

FILENAME
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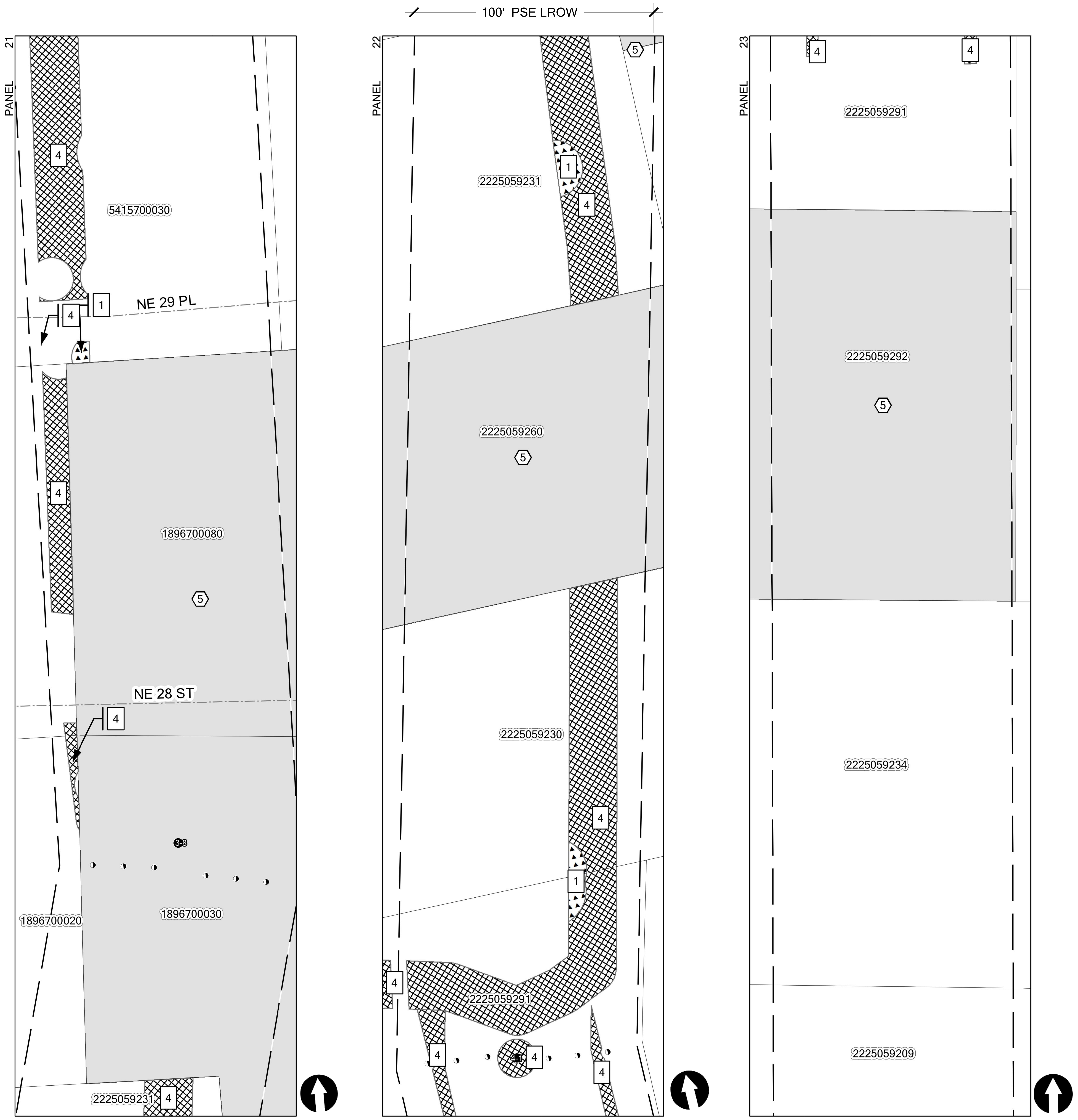
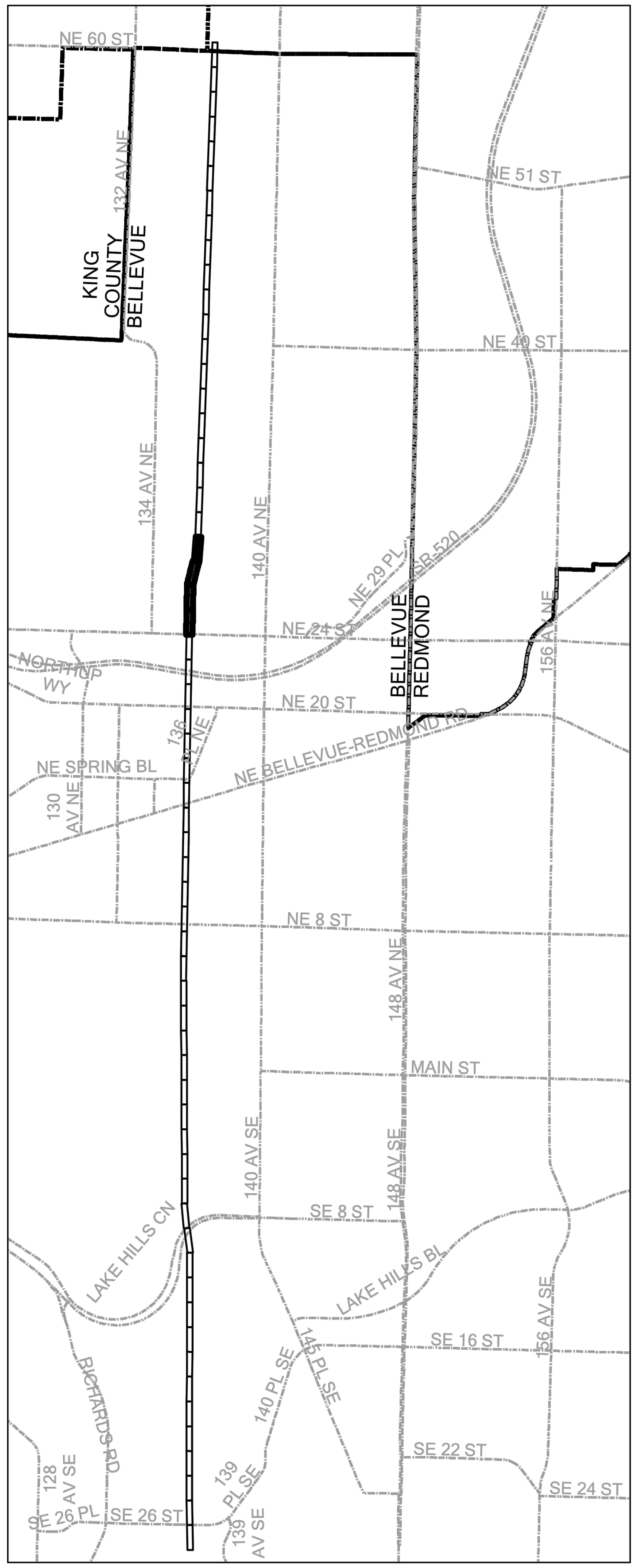


LEGEND

▲	TYPE 1. STANDARD (SEE W3.0)
░	TYPE 2. WETLAND (SEE W3.1)
⁘	TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
▨	TYPE 4. OTHER (SEE W3.3)
▢	TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

•	EXISTING POLES TO BE REMOVED
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KEY PLAN MAP (6 OF 16)

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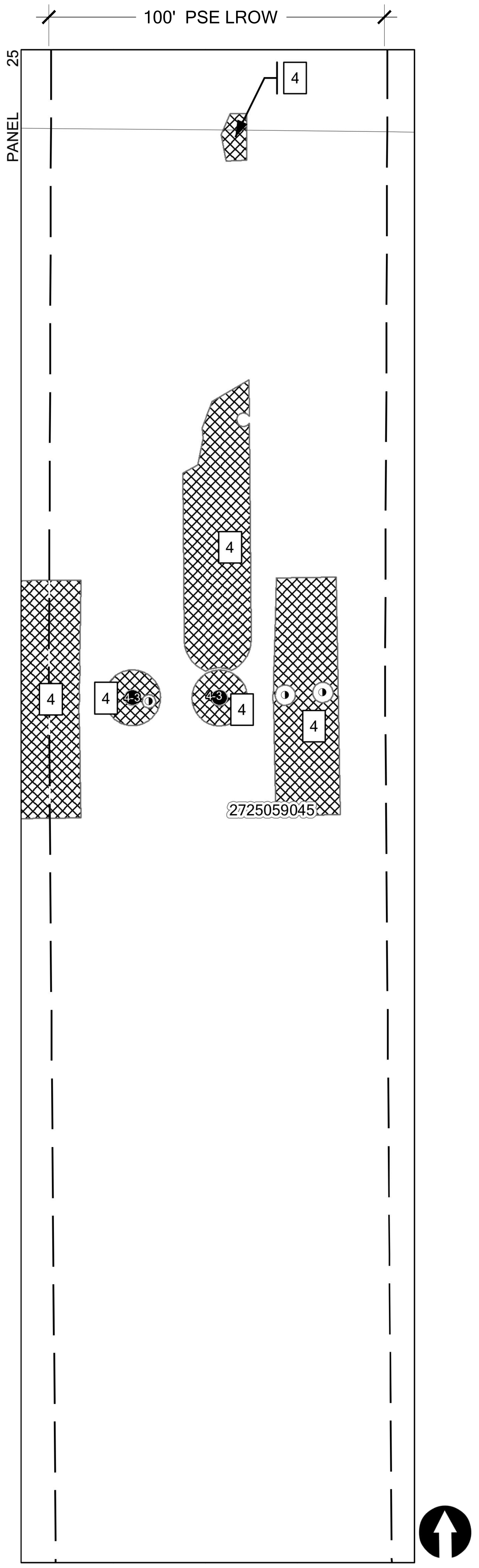
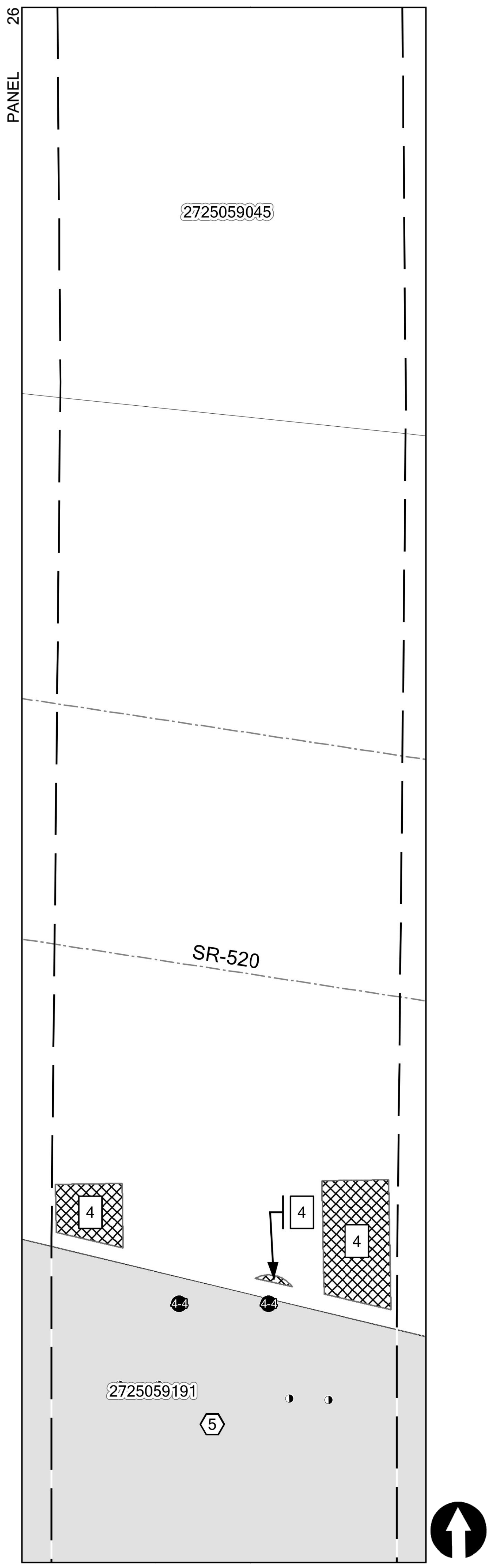
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

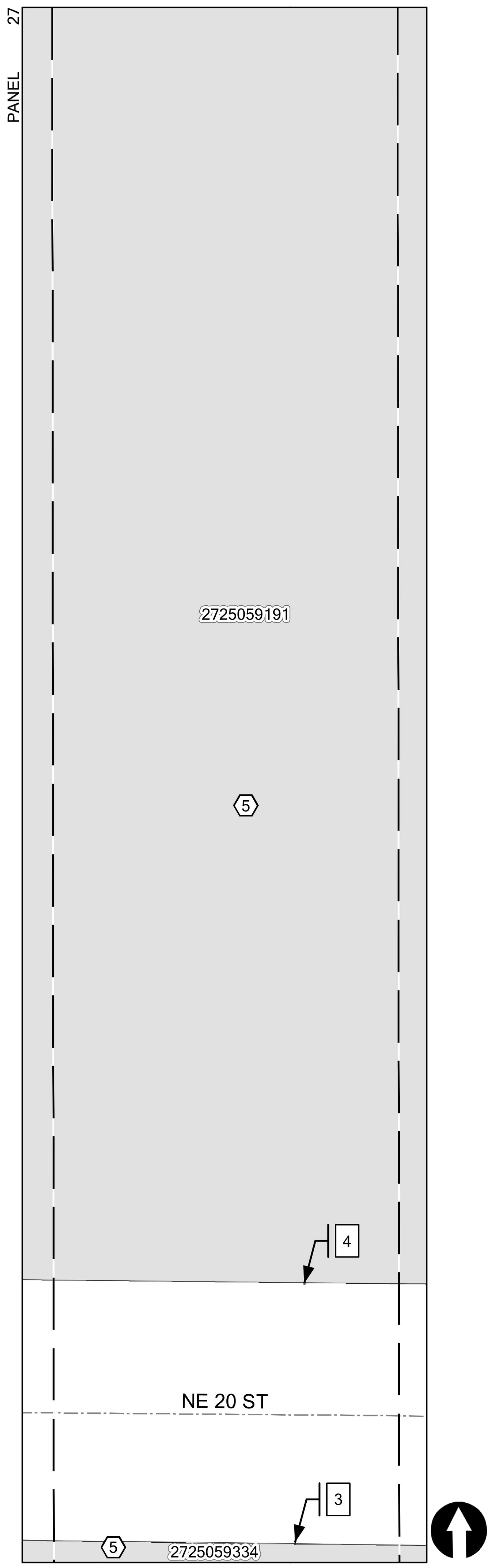
SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

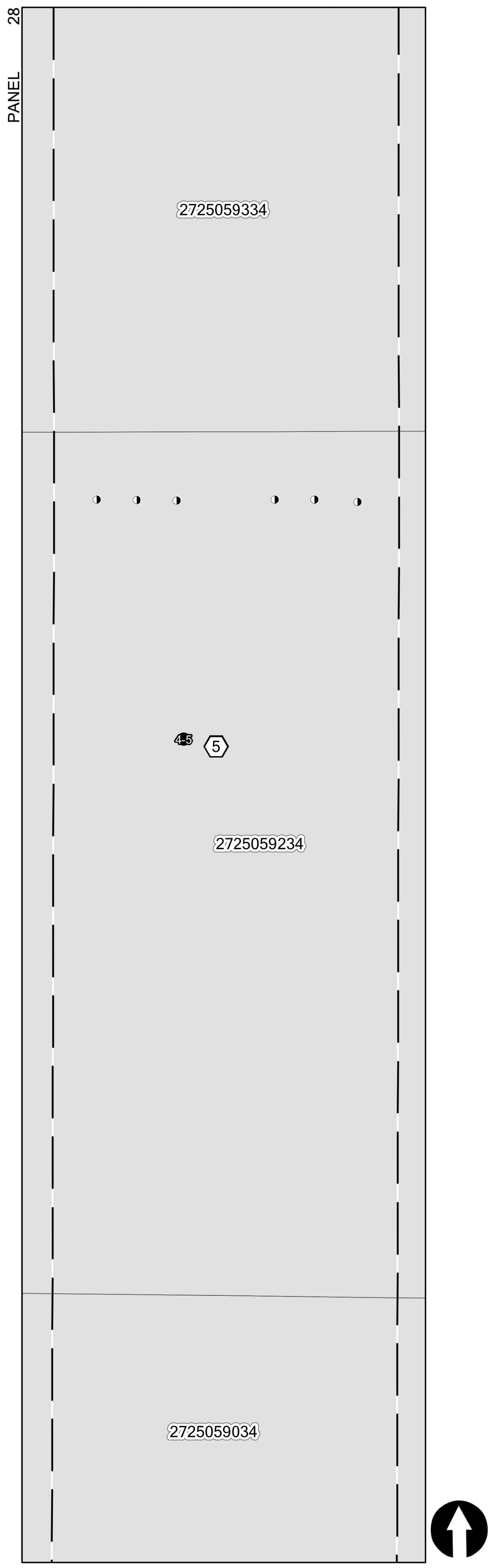
PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET: W2.5
NUMBER: 8 OF 24

FILENAME
PRINTED BY
DATE



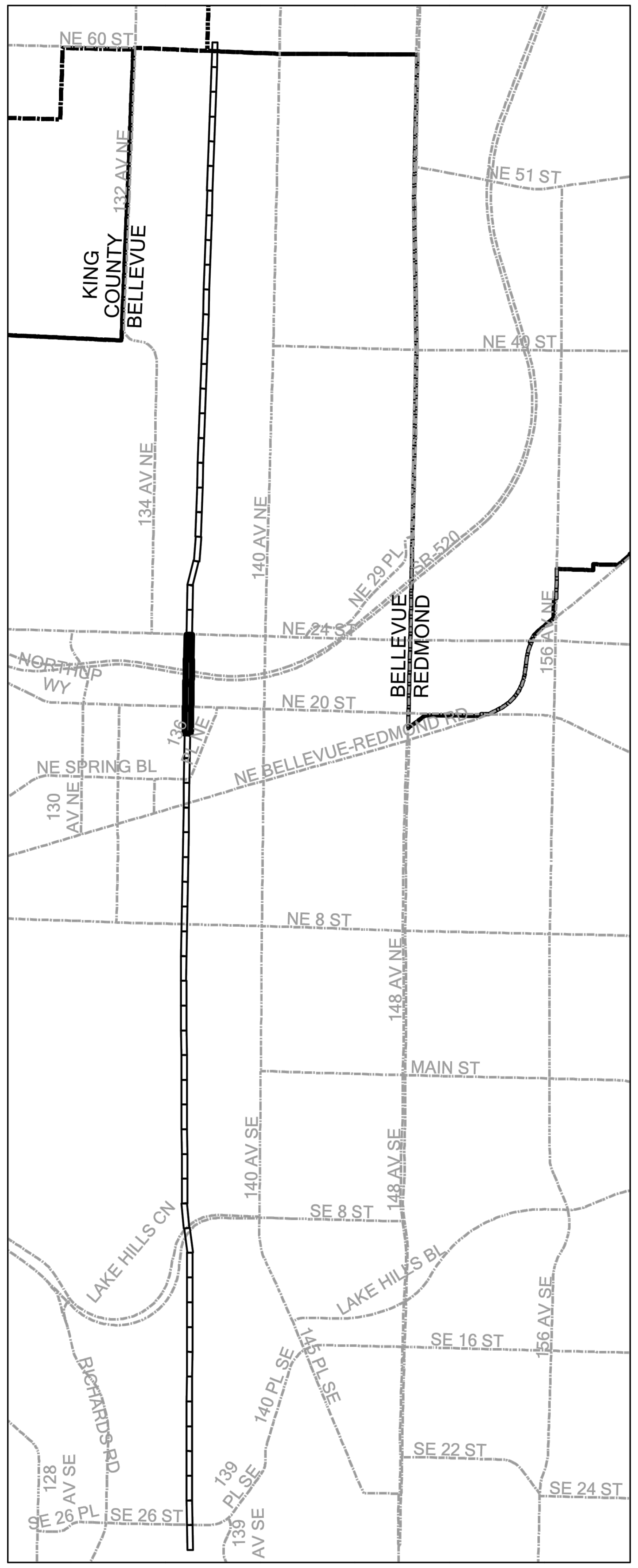






LEGEND

▲	TYPE 1. STANDARD (SEE W3.0)
▒	TYPE 2. WETLAND (SEE W3.1)
+	TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
▨	TYPE 4. OTHER (SEE W3.3)
▢	TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

▸	EXISTING POLES TO BE REMOVED
●	PROPOSED POLES - *Received January 2021*

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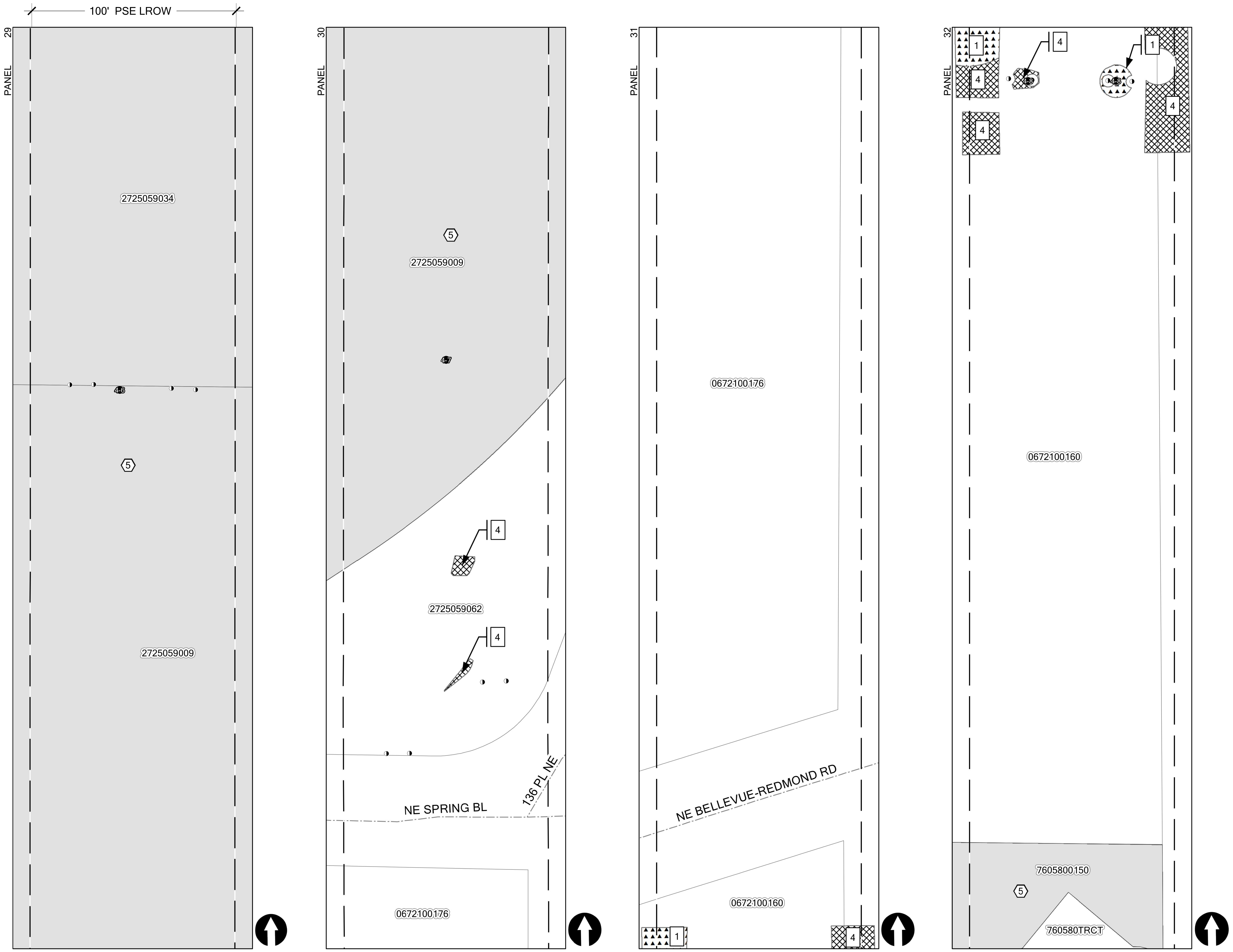
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER:	NL
DESIGNED:	NB
DRAFTED:	NB
CHECKED:	AMC

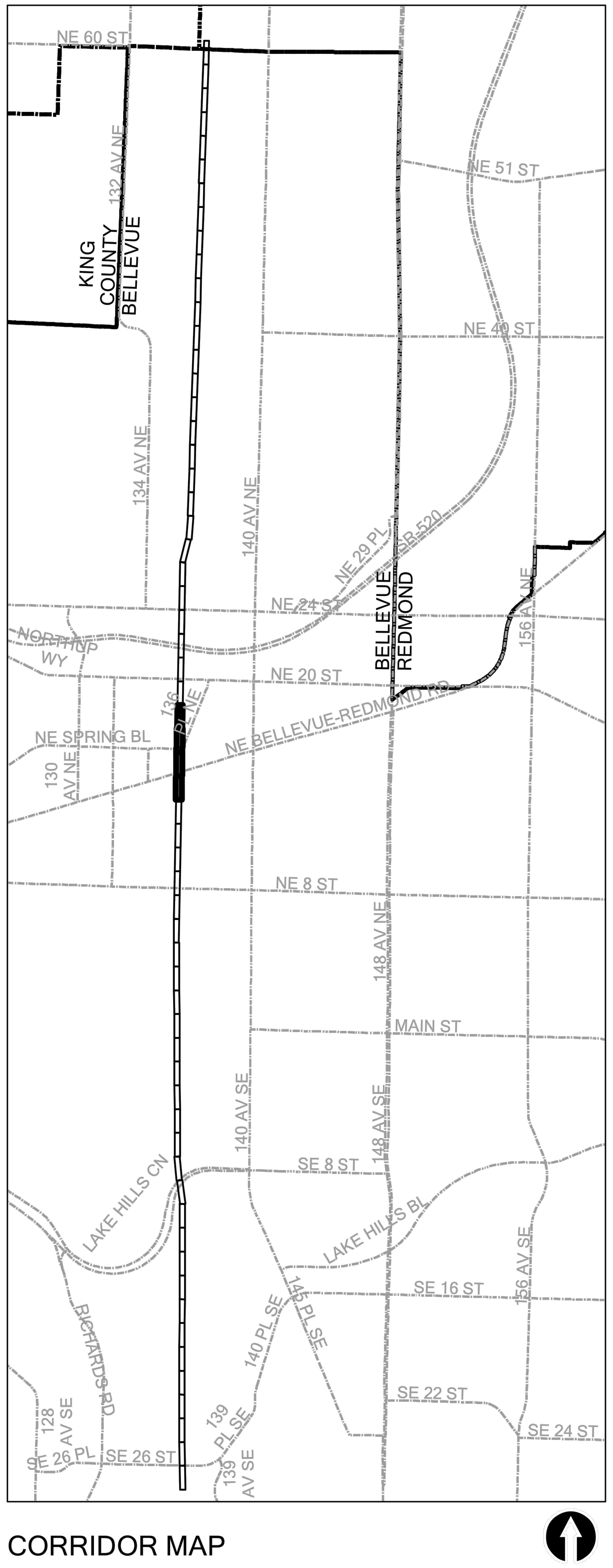
SHEET:
W2.6
NUMBER:
9 OF 24

FILENAME
PRINTED BY
DATE



LEGEND

- ▨ TYPE 1. STANDARD (SEE W3.0)
- ▨ TYPE 2. WETLAND (SEE W3.1)
- ▨ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▨ TYPE 4. OTHER (SEE W3.3)
- ▨ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- • EXISTING POLES TO BE REMOVED
- ● PROPOSED POLES - *Received January 2021*

KEY PLAN MAP (8 OF 16)

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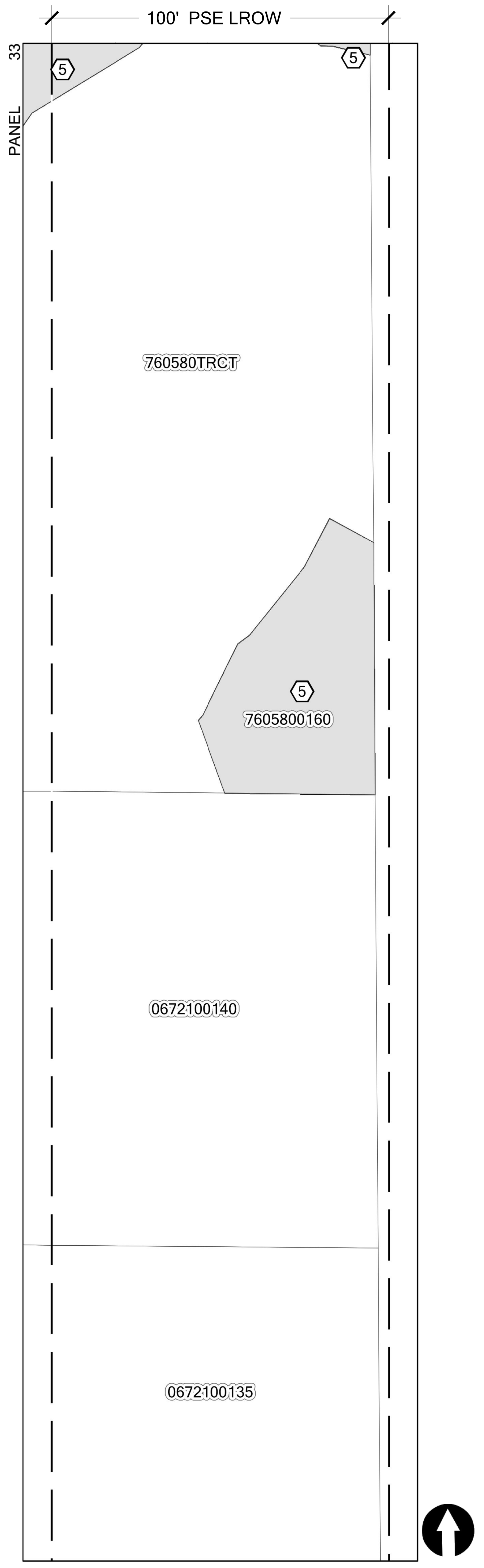
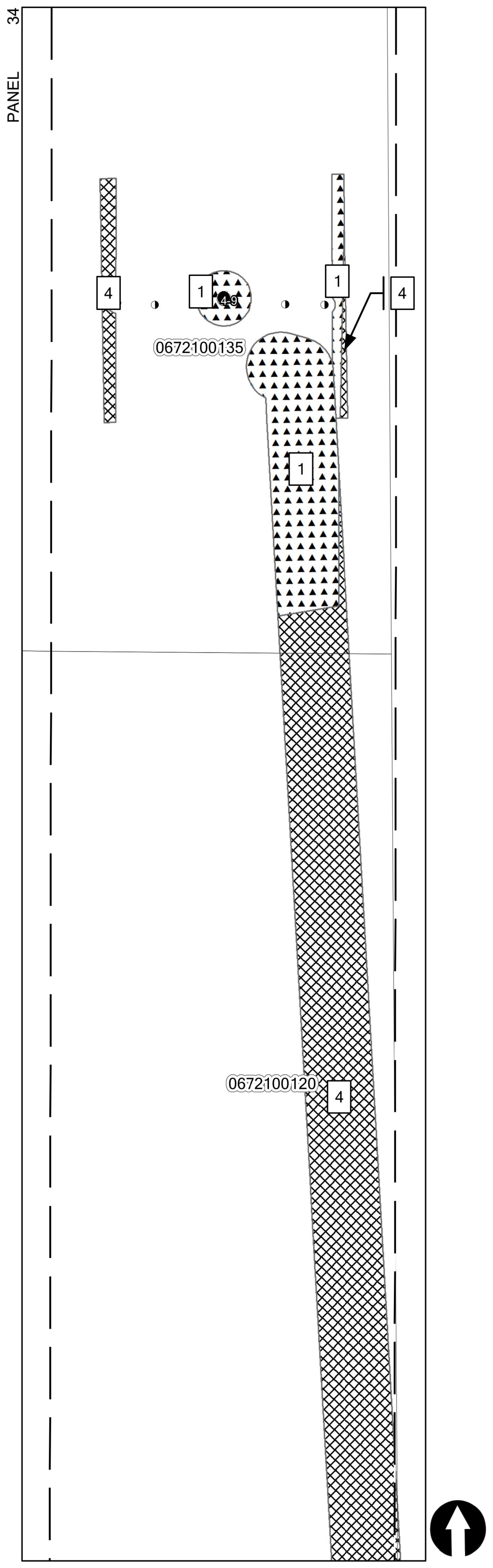
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

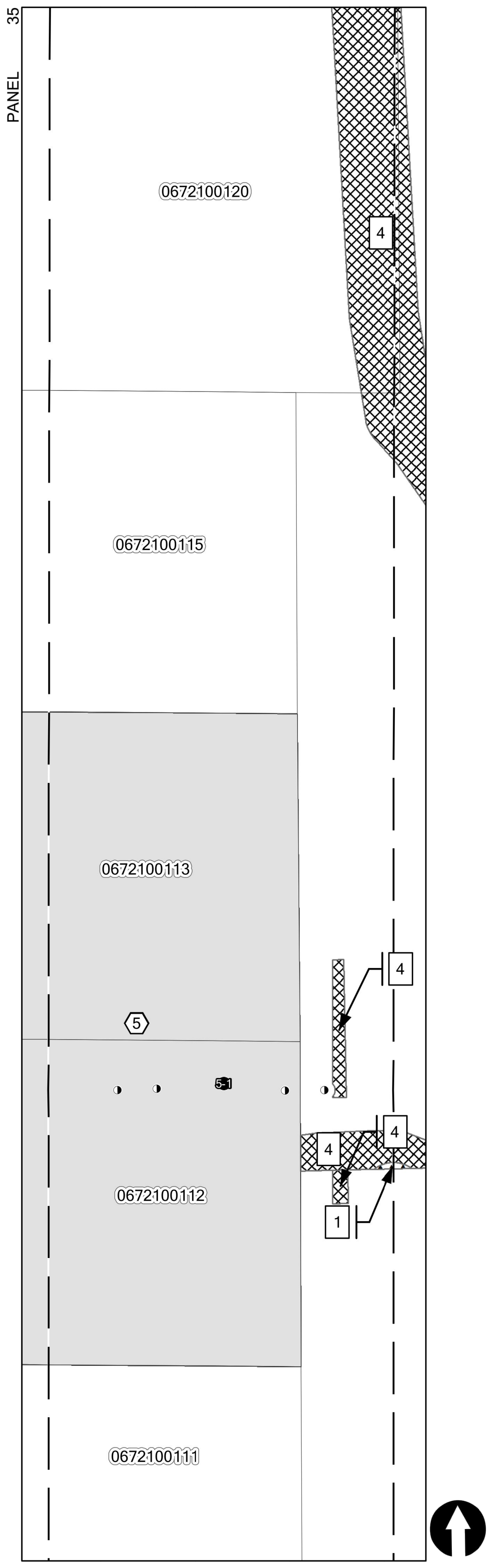
SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

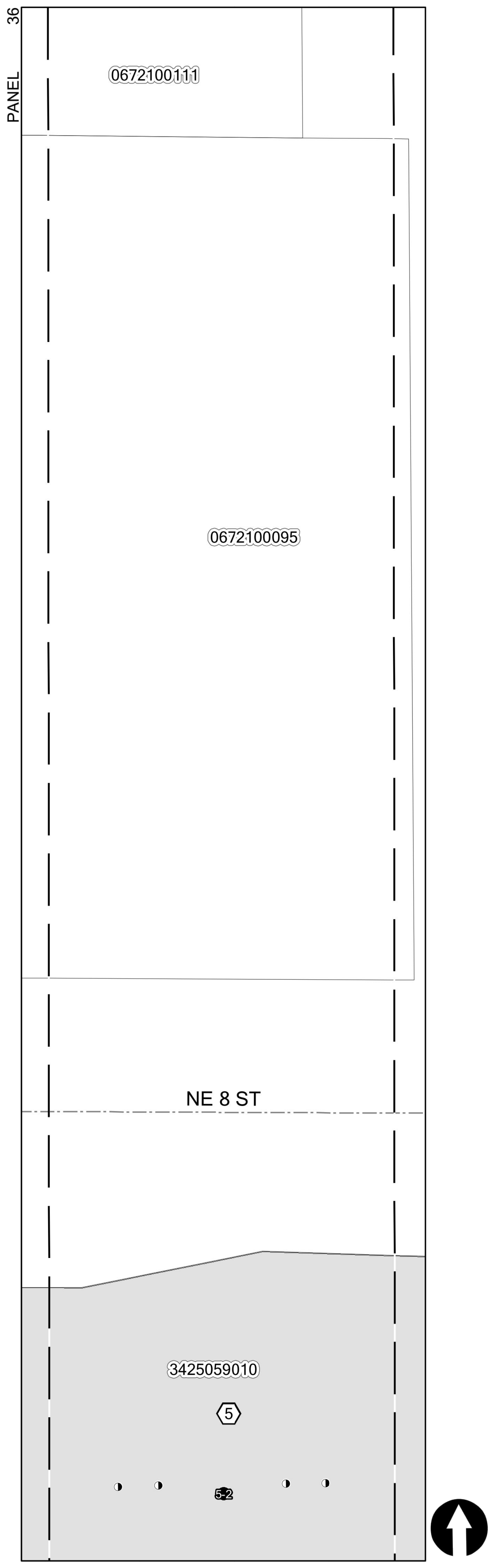
PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET: W2.7
NUMBER: 10 OF 24

FILENAME
PRINTED BY
DATE



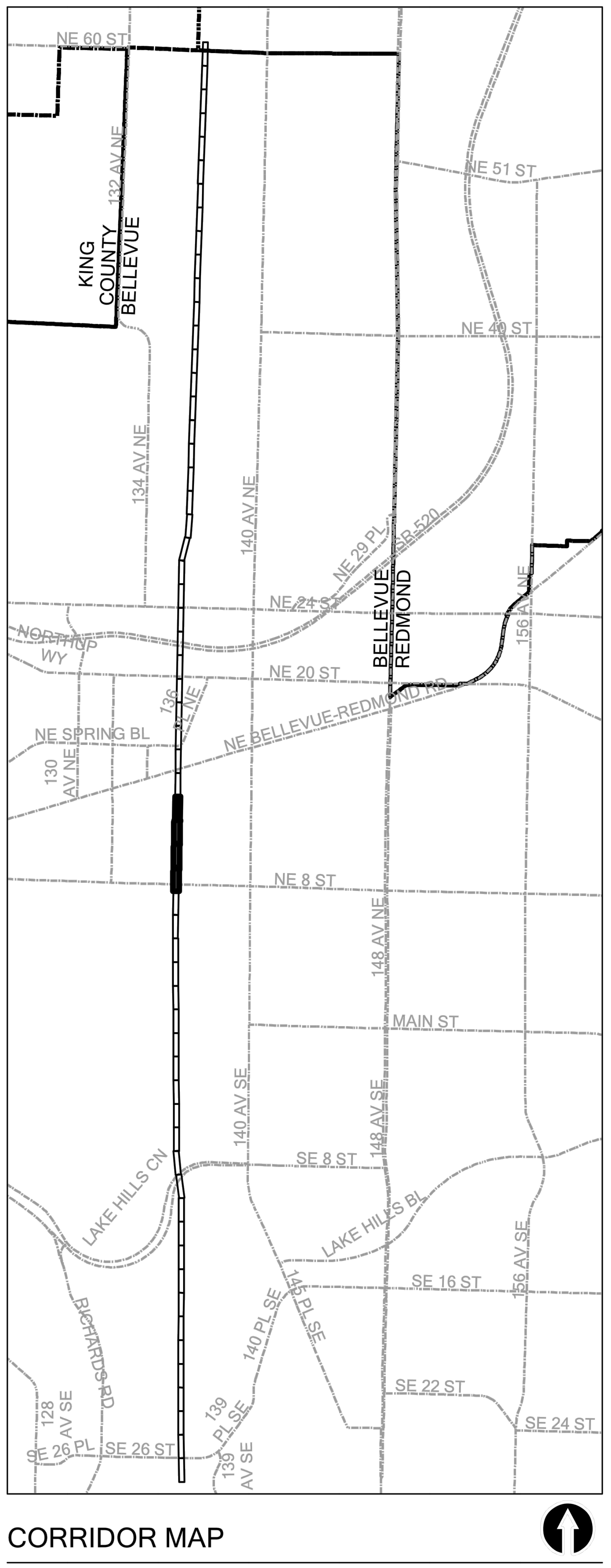






LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ░ TYPE 2. WETLAND (SEE W3.1)
- ⁘ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▩ TYPE 4. OTHER (SEE W3.3)
- ▢ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- ◂ EXISTING POLES TO BE REMOVED
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KEY PLAN MAP (9 OF 16)

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2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET: W2.8
NUMBER: 11 OF 24

FILENAME:
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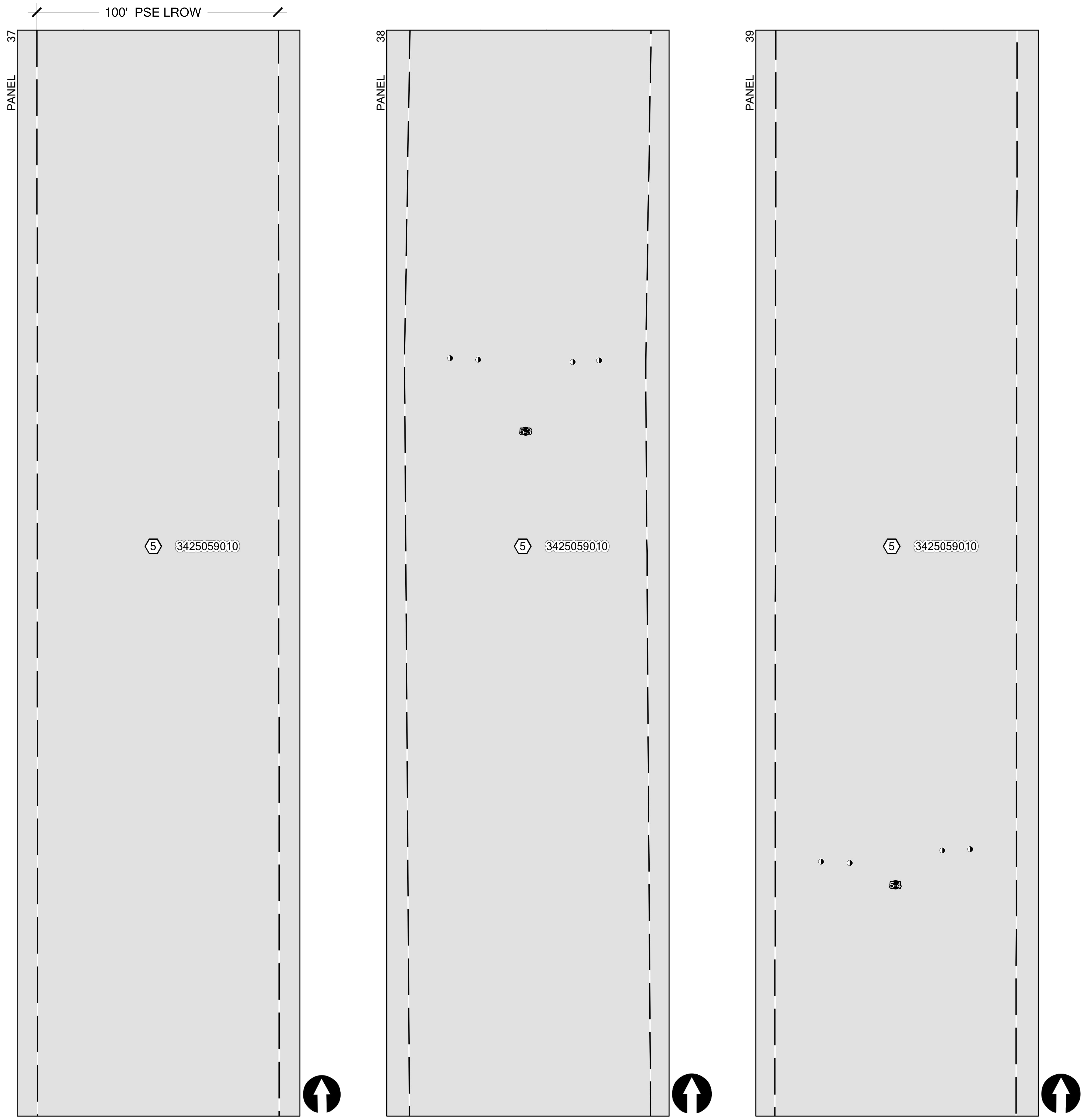
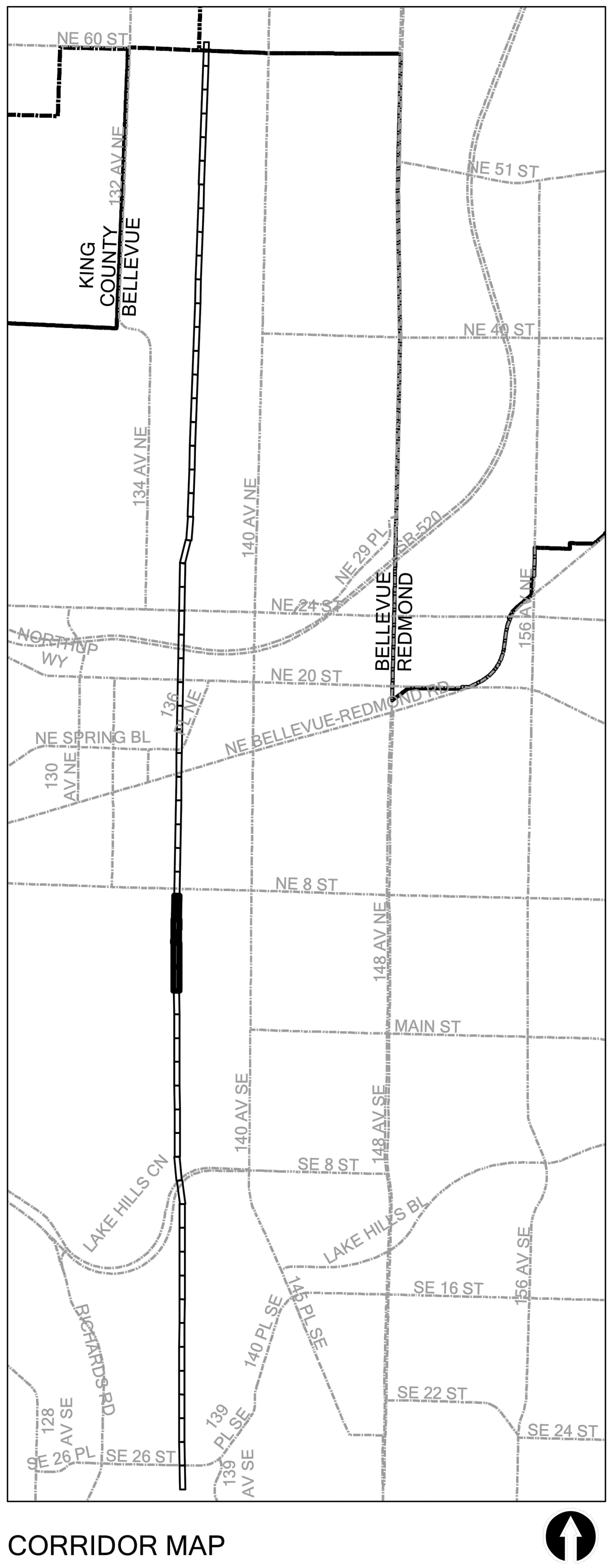
DATE:





CORRIDOR MAP

LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
- ⁘ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▩ TYPE 4. OTHER (SEE W3.3)
- ▭ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET

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KEY PLAN MAP (10 OF 16)

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SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET:
W2.9
NUMBER:
12 OF 24

FILENAME
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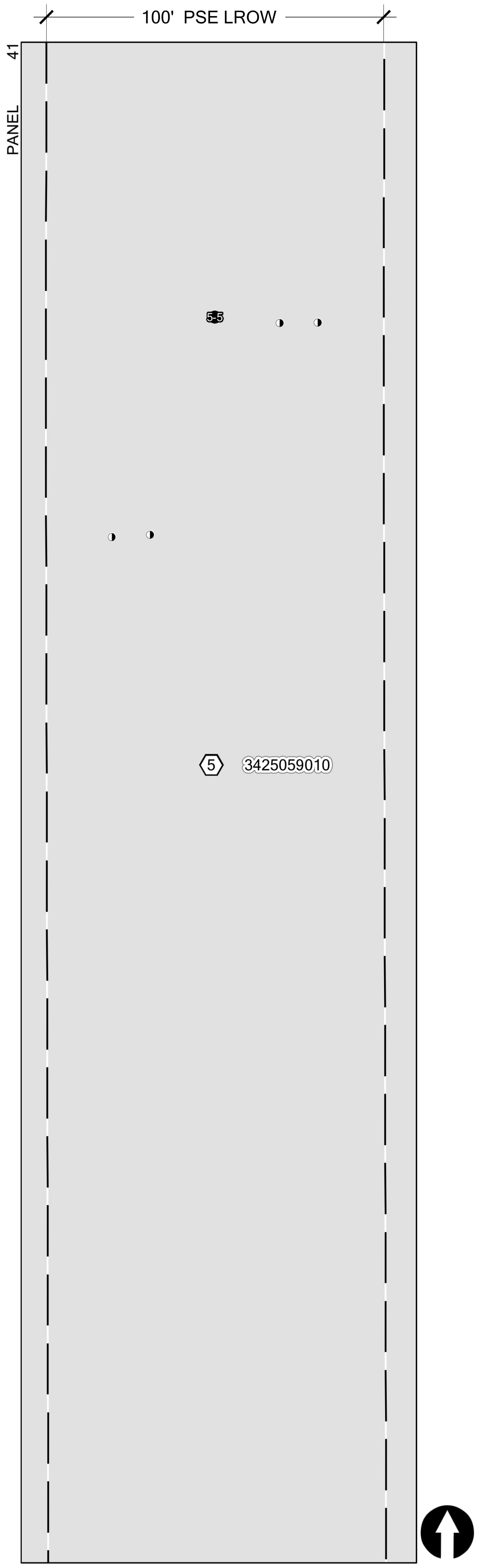

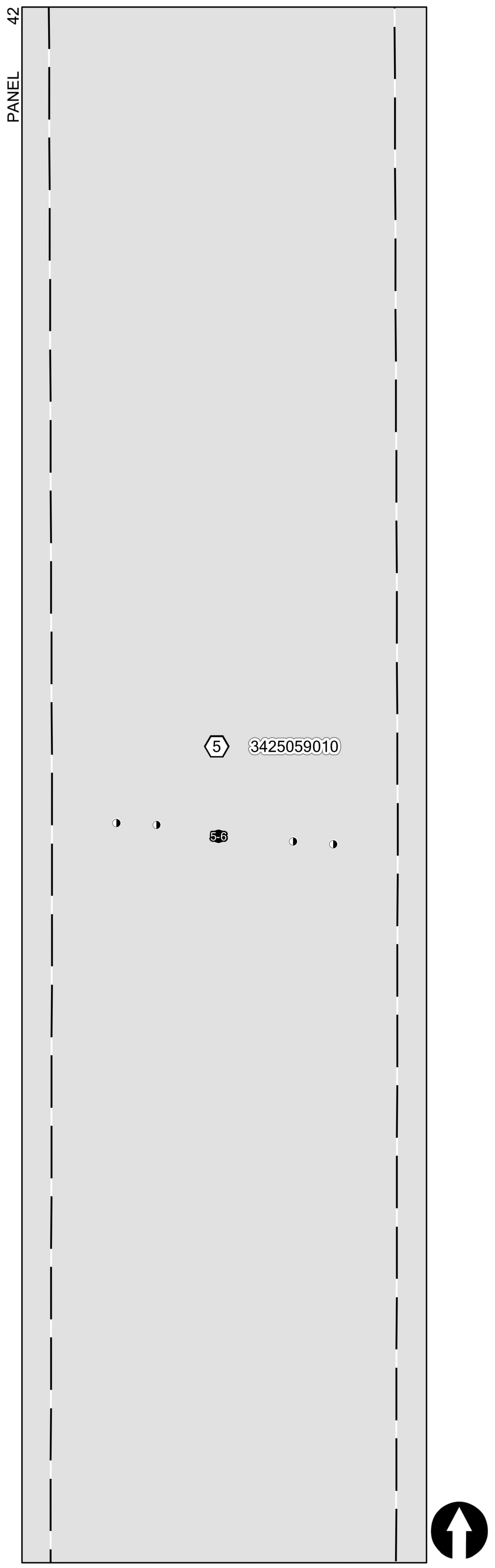

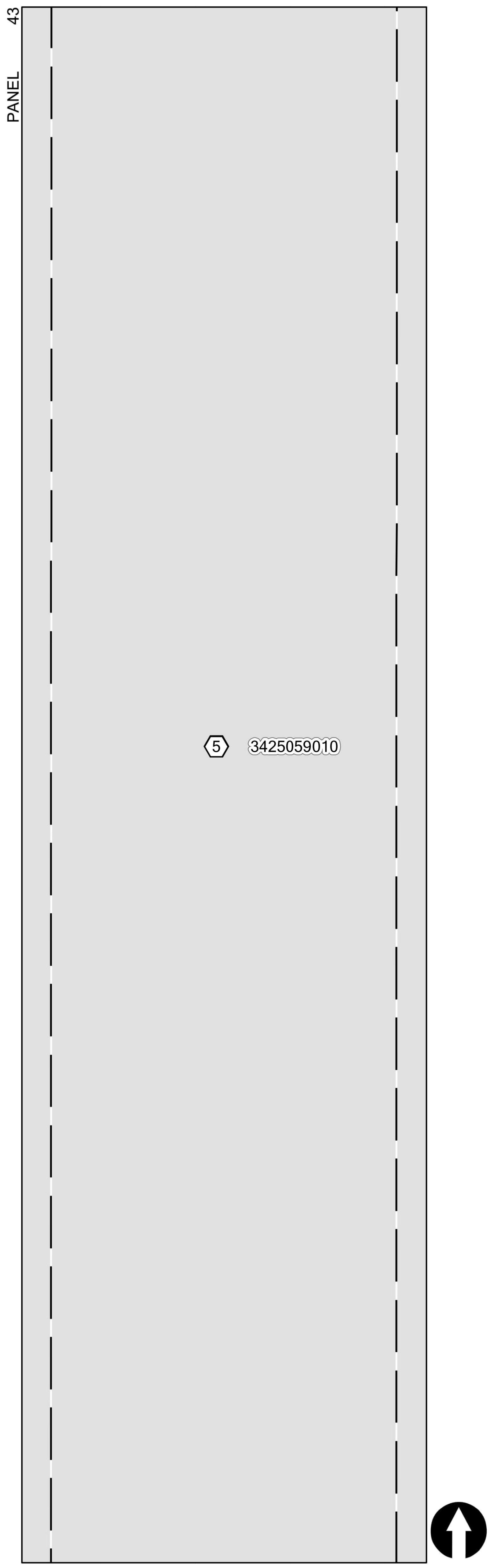

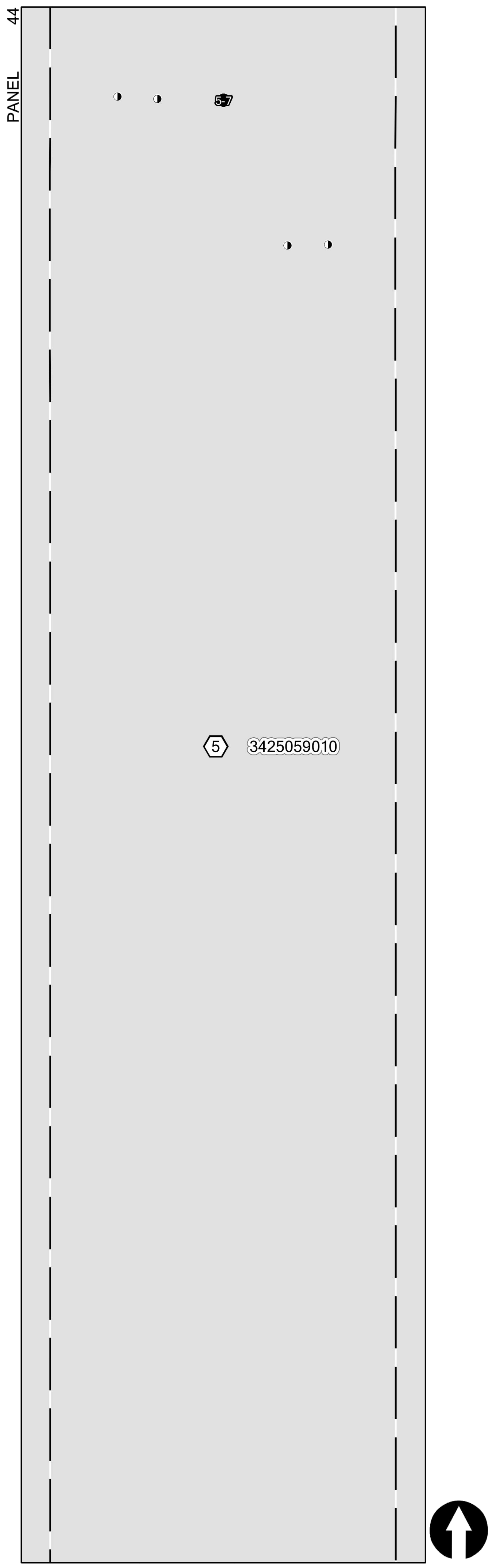

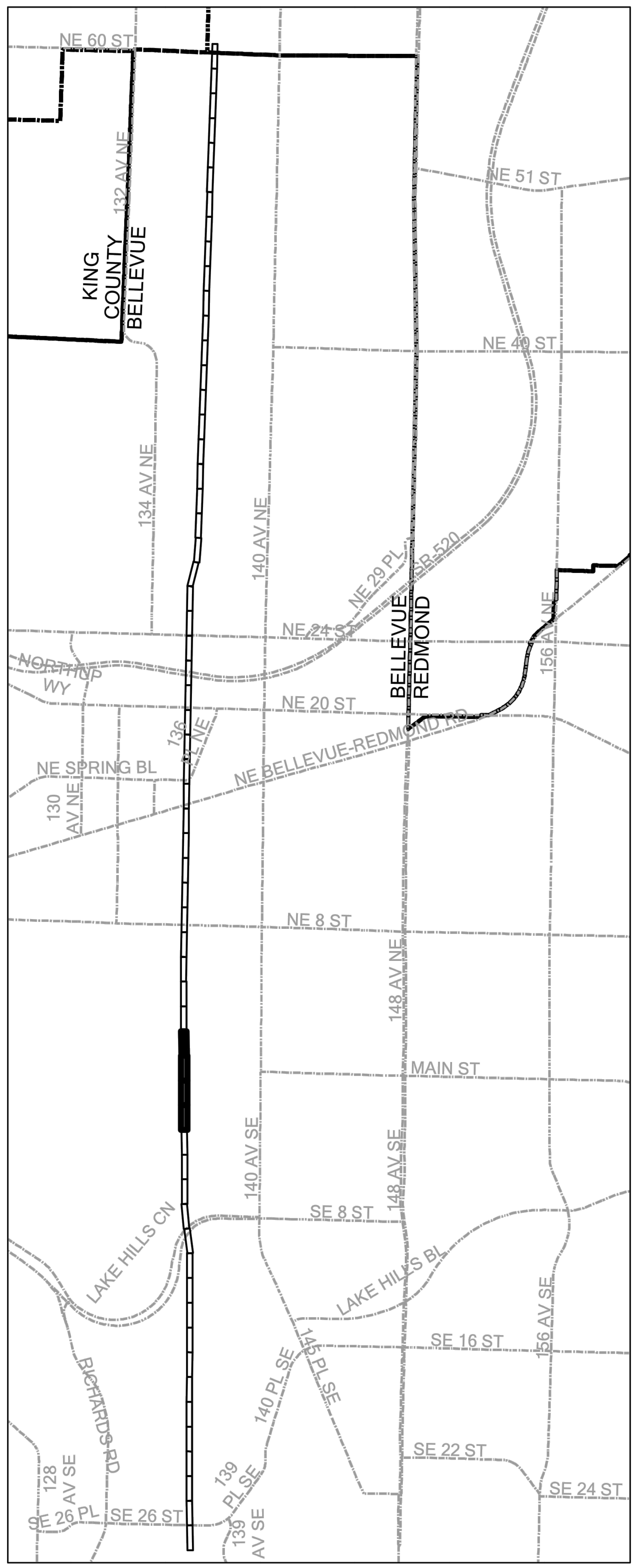

CORRIDOR MAP

LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▨ TYPE 2. WETLAND (SEE W3.1)
- ⁘ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▩ TYPE 4. OTHER (SEE W3.3)
- ▢ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET

‣ EXISTING POLES TO BE REMOVED

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PROJECT MANAGER:	NL
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SHEET:
W2.10
NUMBER:
13 OF 24

FILENAME
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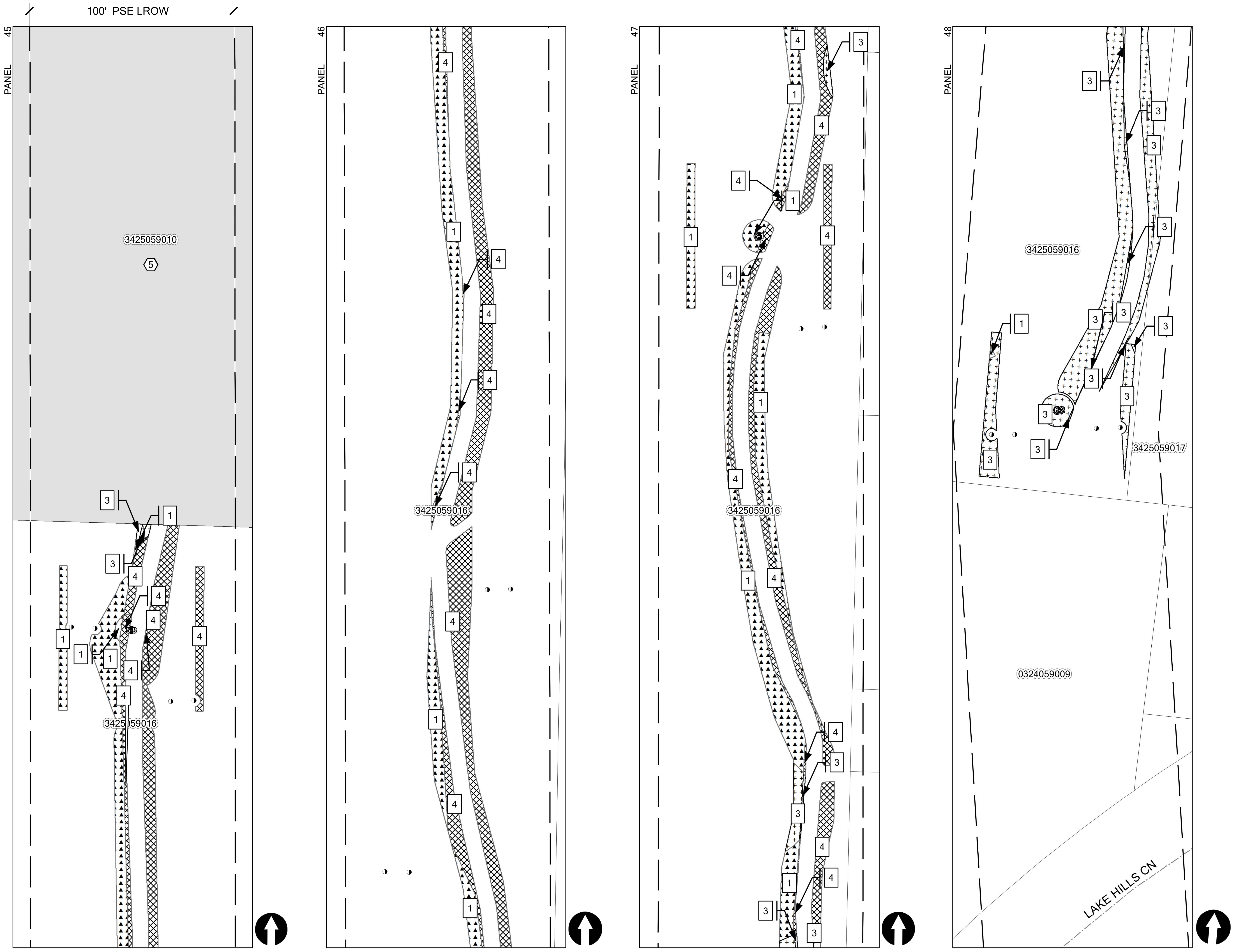
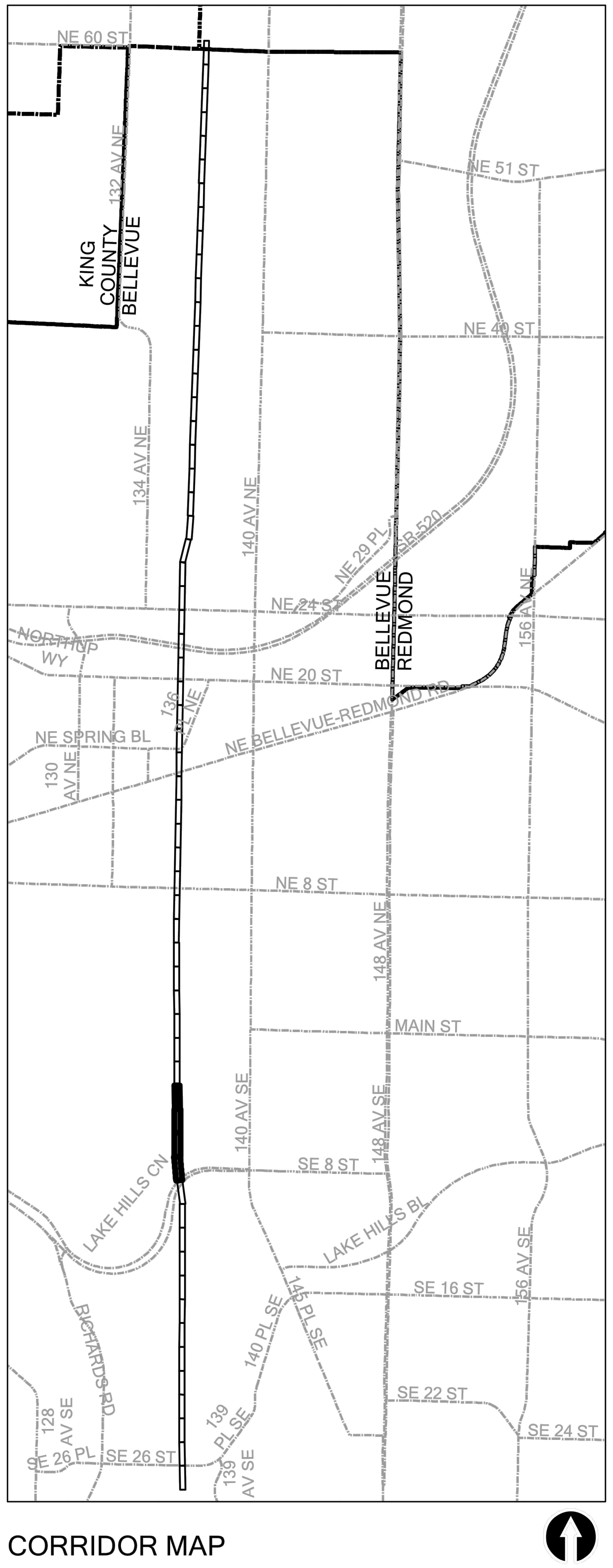


LEGEND

▴	TYPE 1. STANDARD (SEE W3.0)
▒	TYPE 2. WETLAND (SEE W3.1)
⁜	TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
▩	TYPE 4. OTHER (SEE W3.3)
▢	TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

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KEY PLAN MAP (12 OF 16)

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PROJECT MANAGER:	NL
DESIGNED:	NB
DRAFTED:	NB
CHECKED:	AMC

FILENAME

SHEET:
W2.11

NUMBER:
14 OF 24

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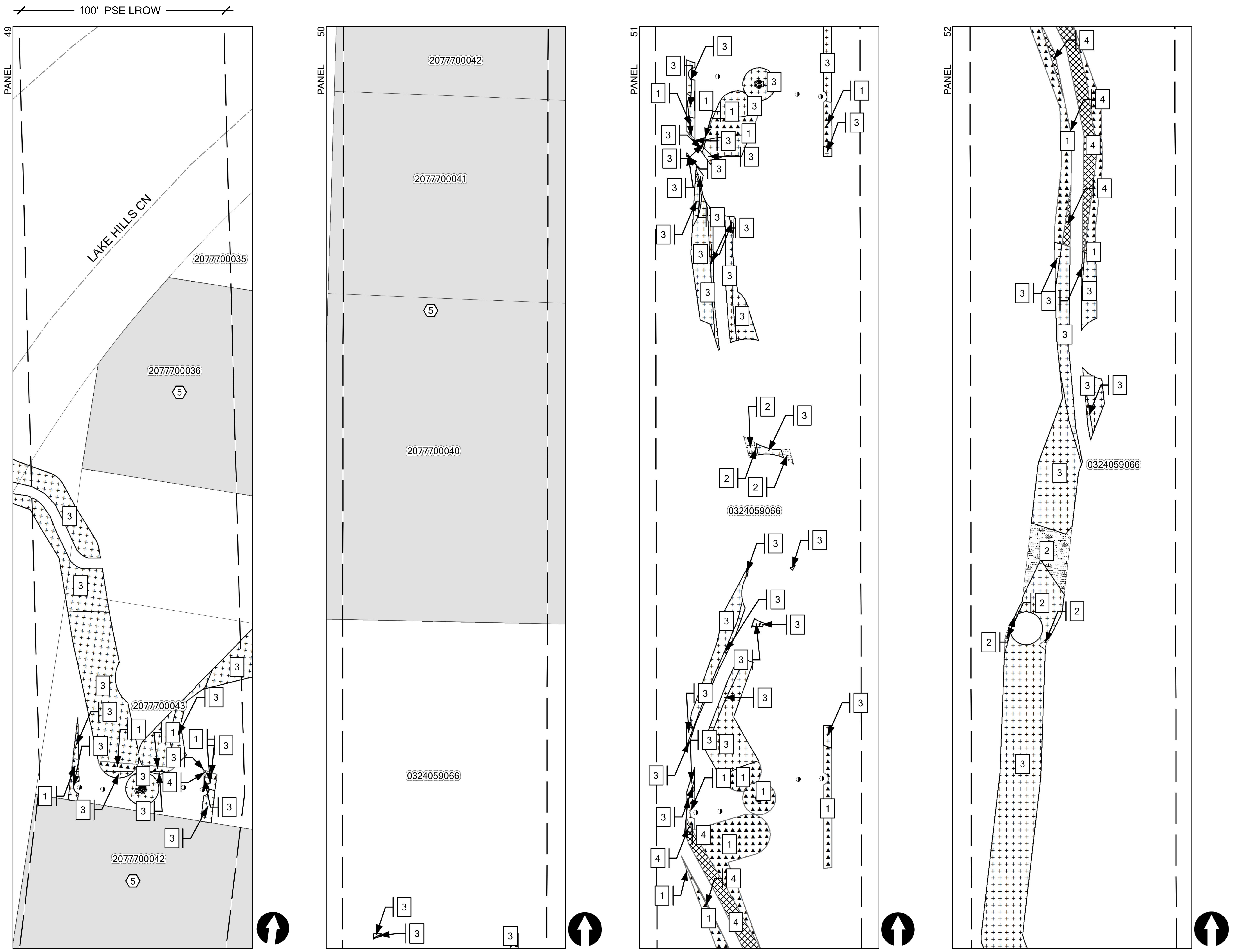
DATE



LEGEND

- ▲ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
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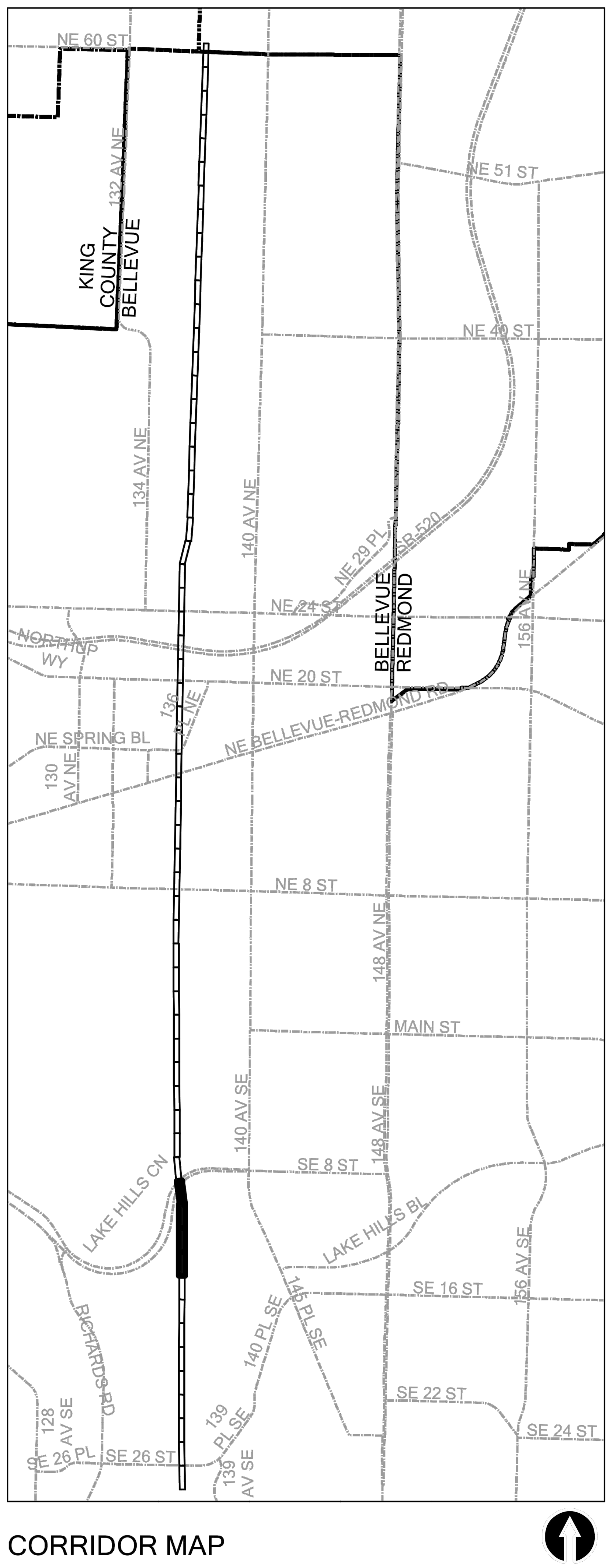
- ▢ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- ◦ EXISTING POLES TO BE REMOVED
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1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
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SHEET: W2.12
NUMBER: 15 OF 24

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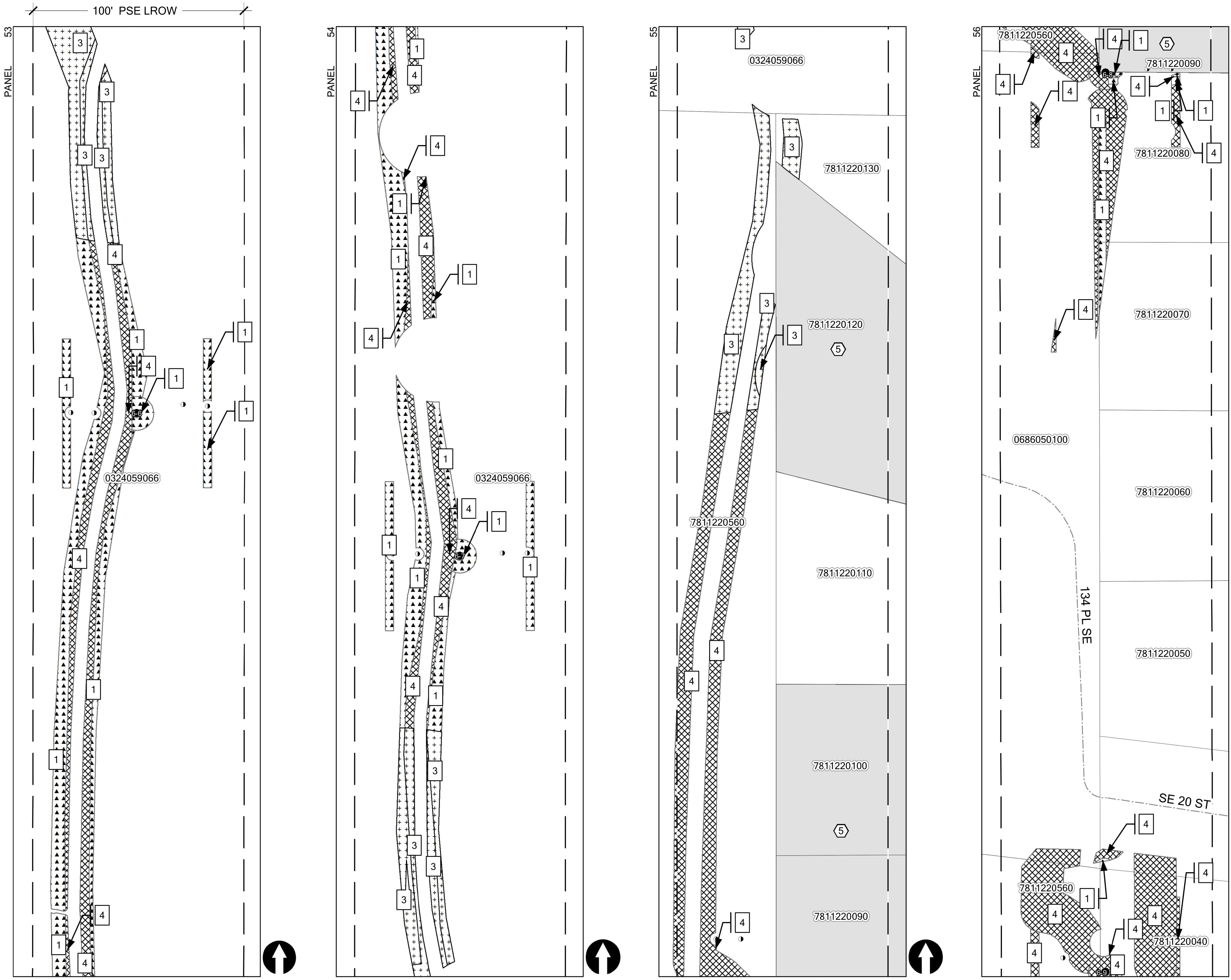
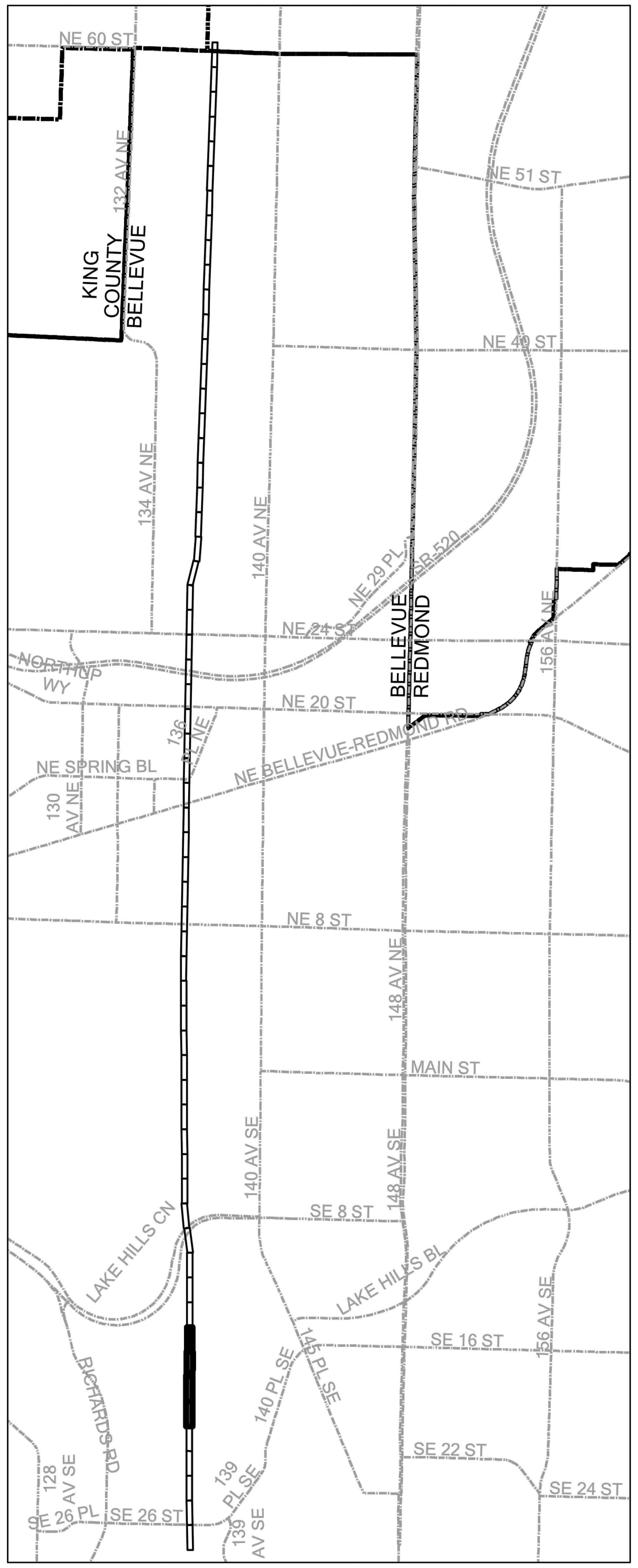


LEGEND

- ▦ TYPE 1. STANDARD (SEE W3.0)
- ▒ TYPE 2. WETLAND (SEE W3.1)
- ▤ TYPE 3. STREAM AND WETLAND BUFFER (SEE W3.2)
- ▩ TYPE 4. OTHER (SEE W3.3)
- ░ TYPE 5. PARCEL-SPECIFIC LANDSCAPE PLAN - SEE COMPANION PLAN SET



CORRIDOR MAP

- • EXISTING POLES TO BE REMOVED
- ● PROPOSED POLES - *Received January 2021*

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KEY PLAN MAP (14 OF 16)

0 15' 30' 60' 120'

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TEMPORARY IMPACTS RESTORATION PLAN
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NORTH BELLEVUE SEGMENT

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SHEET: W2.13
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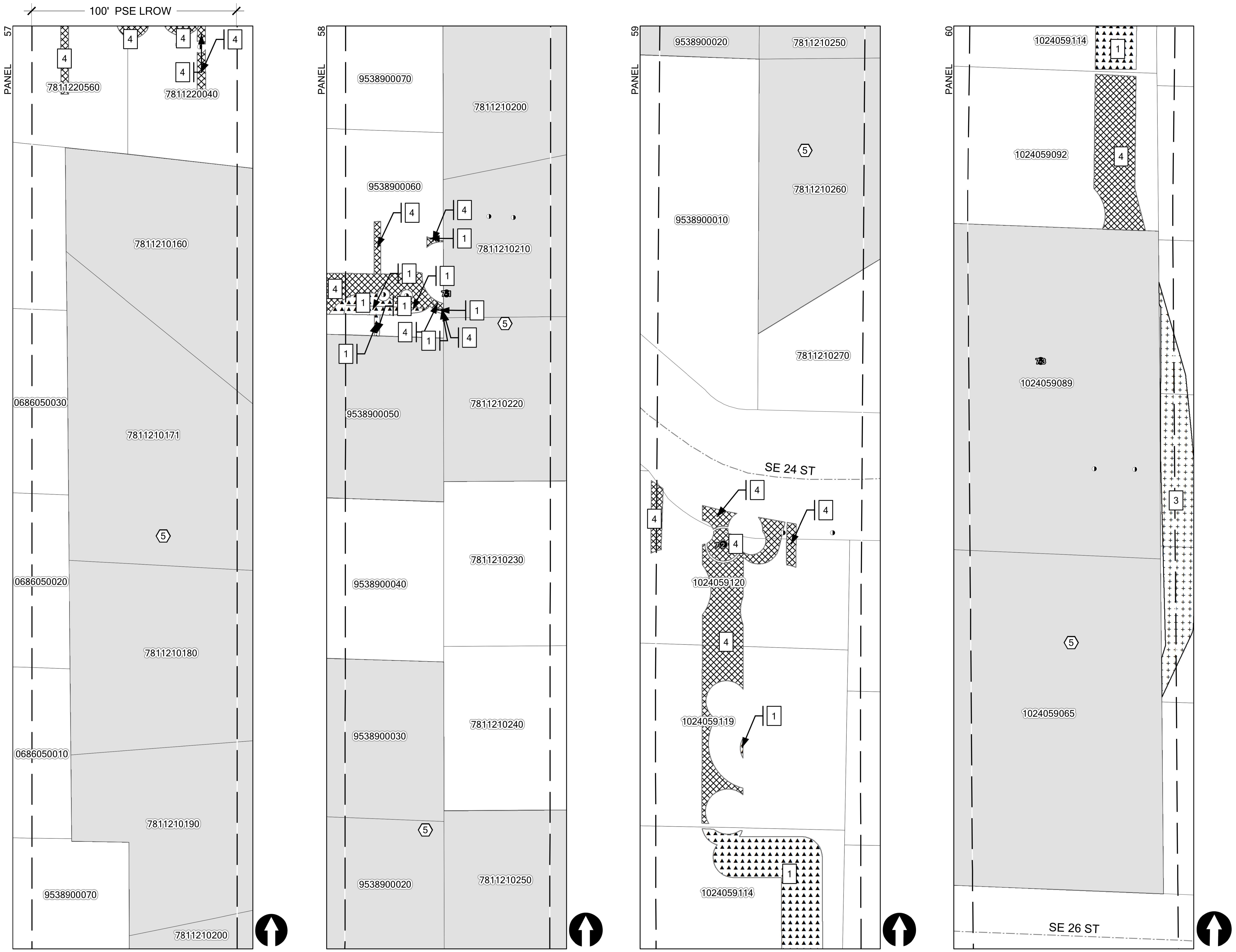

KEY PLAN MAP (15 OF 16)

0 15' 30' 60' 120'

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- ▤ TYPE 2. WETLAND (SEE W3.1)
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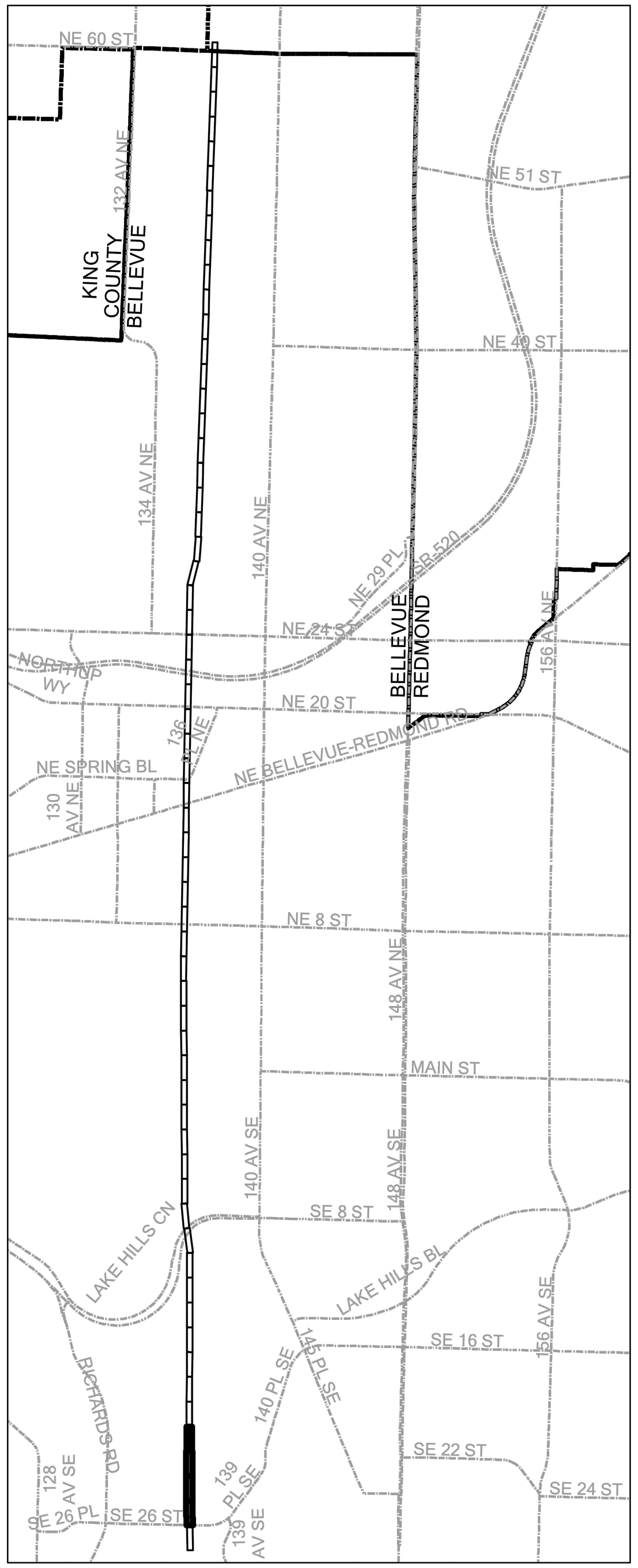

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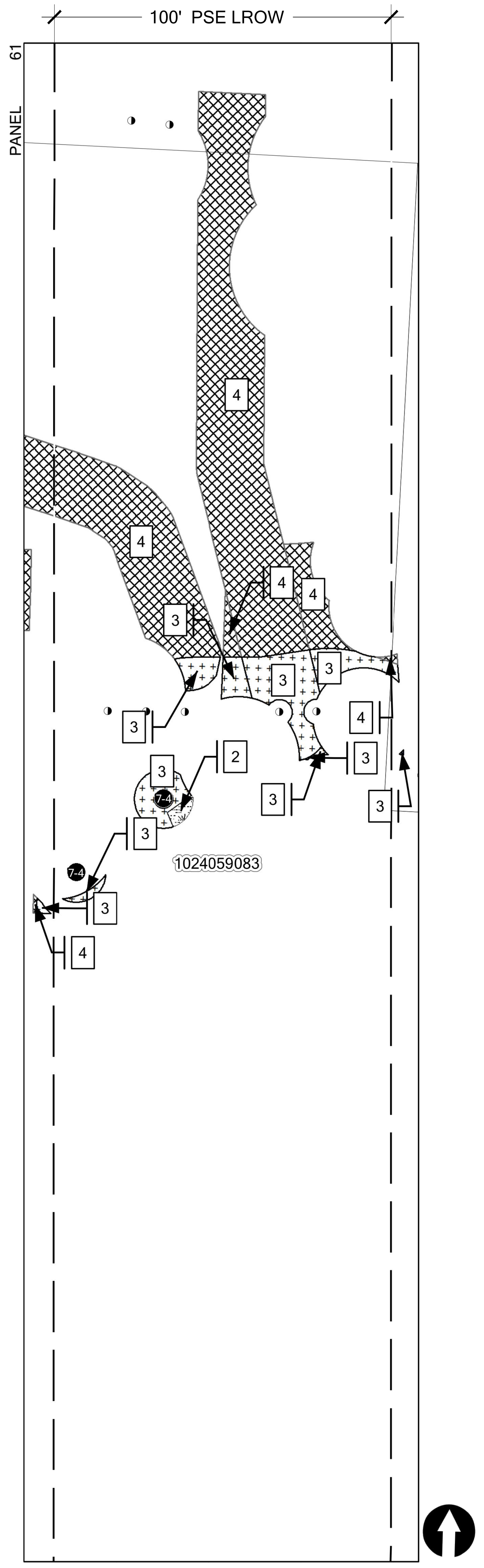

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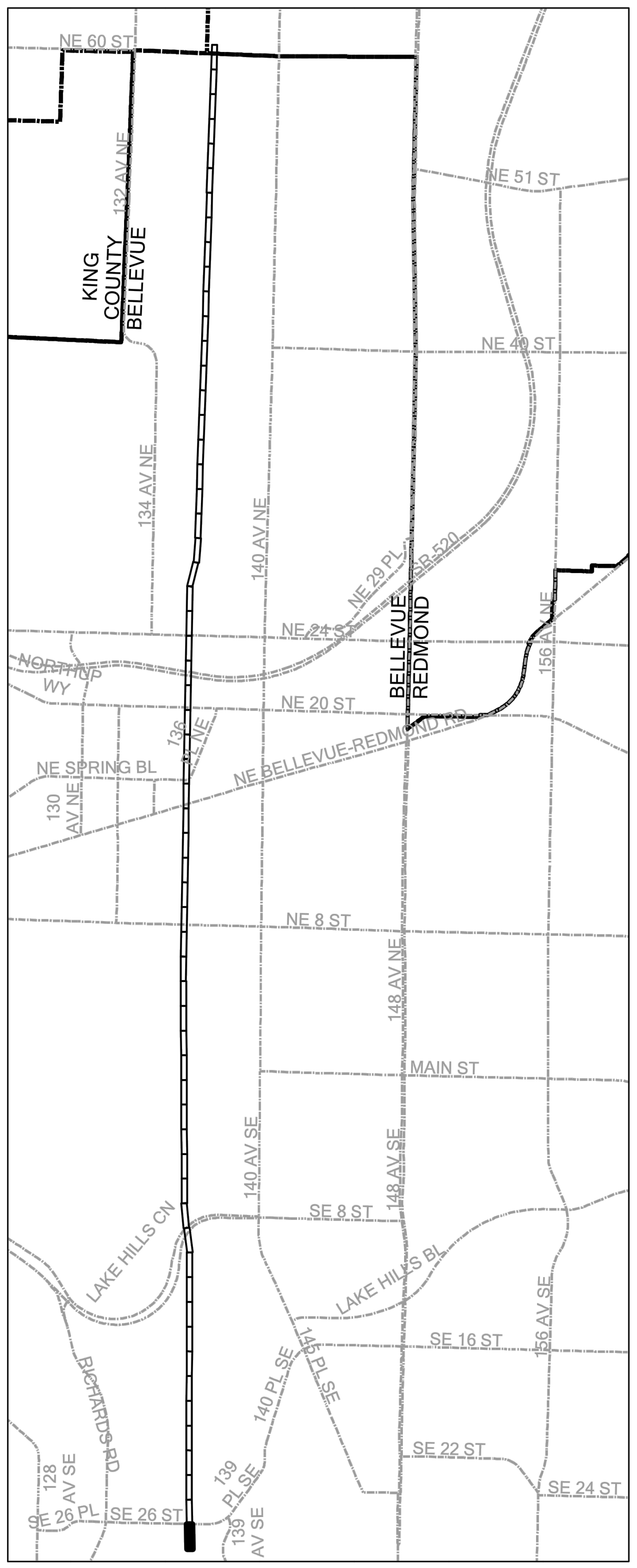

CORRIDOR MAP

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0 15' 30' 60' 120'

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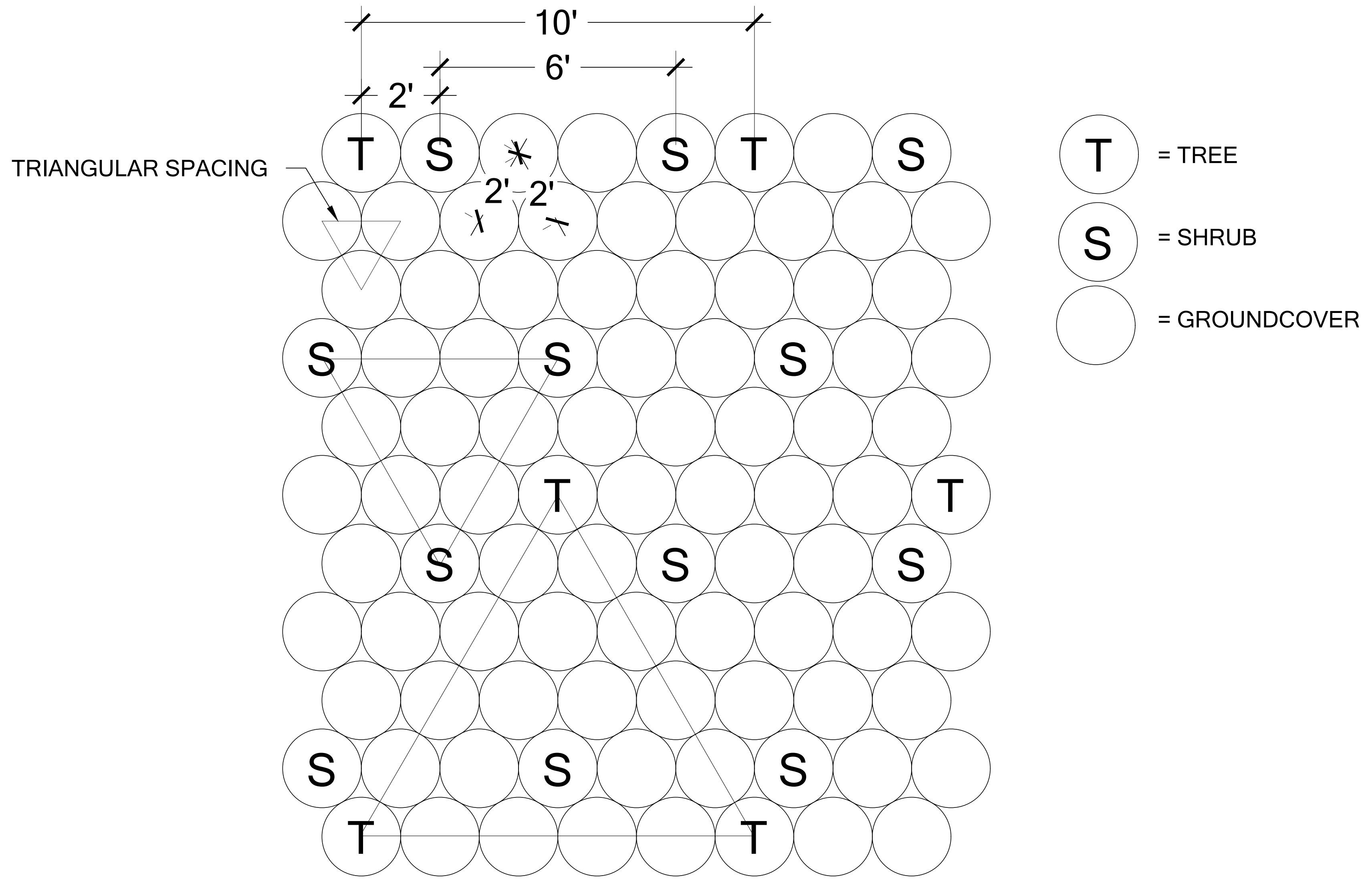

A RESTORATION TYPE 1: STANDARD (APPROX 25,000 SF TOTAL)

Scale: 1:30

PLANT LIST

TREES (2-GAL)
*AMELANCHIER ALNIFOLIA / PACIFIC SERVICEBERRY
*TSUGA MERTENSIANA / DWARF MOUNTAIN HEMLOCK
ARBUTUS 'UNEDO' COMPACTA / DWARF STRAWBERRY TREE
CRATAEGUS X MORDENENSIS 'TOBA / TOBA HAWTHORN
AMELANCHIER X GRANDIFOLIA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE SERVICEBERRY
ACER PLATANOIDES 'GLOBOSUM' / GLOBE NORWAY MAPLE
MALUS 'SCHMIDTCUTLEAF' / GOLDEN RAINDROPS CRABAPPLE

*NATIVE TREE SPECIES. WHERE NATIVE SPECIES ARE REMOVED, ONLY NATIVE SPECIES ARE TO BE INSTALLED FOR RESTORATION.

SHRUBS (1-GAL)
CORYLUS CORNUTA / BEAKED HAZELNUT
HOLODISCUS DISCOLOR / OCEANSPRAY
MAHONIA AQUIFOLIUM / TALL OREGON GRAPE
PHILADELPHUS LEWISII / MOCK ORANGE
OEMLERIA CERASIFORMIS / OSOBERRY
SYMPHORICARPUS ALBUS / SNOWBERRY
VIBURNUM EDULE / HIGHBUSH CRANBERRY
RIBES SANGUINEUM / RED-FLOWERING CURRANT

GROUNDCOVERS (1-QT)
MAHONIA NERVOSA / LOW OREGON GRAPE
GAULTHERIA SHALLON / SALAL
POLYSTICHUM MUNITUM / SWORD FERN
ARCTOSTAPHYLUS UVA-URSI / KINNIKINNICK
FRAGARIA CHILOENSIS / BEACH STRAWBERRY

TYPE 1 NOTES

PLANT GROUPING/SPACING
TREES
SPACE 10-FT O.C.

SHRUBS
SPACE 6-FT O.C.
PLACE IN GROUPS OF 3 - 7

GROUNDCOVER
SPACE 2-FT O.C.
PLACE IN GROUPS OF 3 -13

SOIL PREP
USE SOIL PREP DETAILS 1, 2, AND 3 DEPENDING ON EXISTING CONDITIONS (SEE SHEET W4.0)

PLANT LAYOUT NOTES

1. ALL WOODY PLANTS SHALL BE HELD BACK 10-FT FROM OPL CL. ONLY HERBACEOUS PLANTS SHALL BE PLANTED OVER OPL.
2. WHERE OPL OCCURS WITHIN WORK AREA, CONTRACTOR SHALL LAY OUT PLANTS WITHIN 10-FT OF OPL CL FOR APPROVAL BY PSE REPRESENTATIVE PRIOR TO INSTALL

ESTIMATED TOTAL QUANTITY

290 TREES

800 SHRUBS

7,200 GROUNDCOVER

RESTORATION PLANTING TYPE 1: STANDARD

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W3.0

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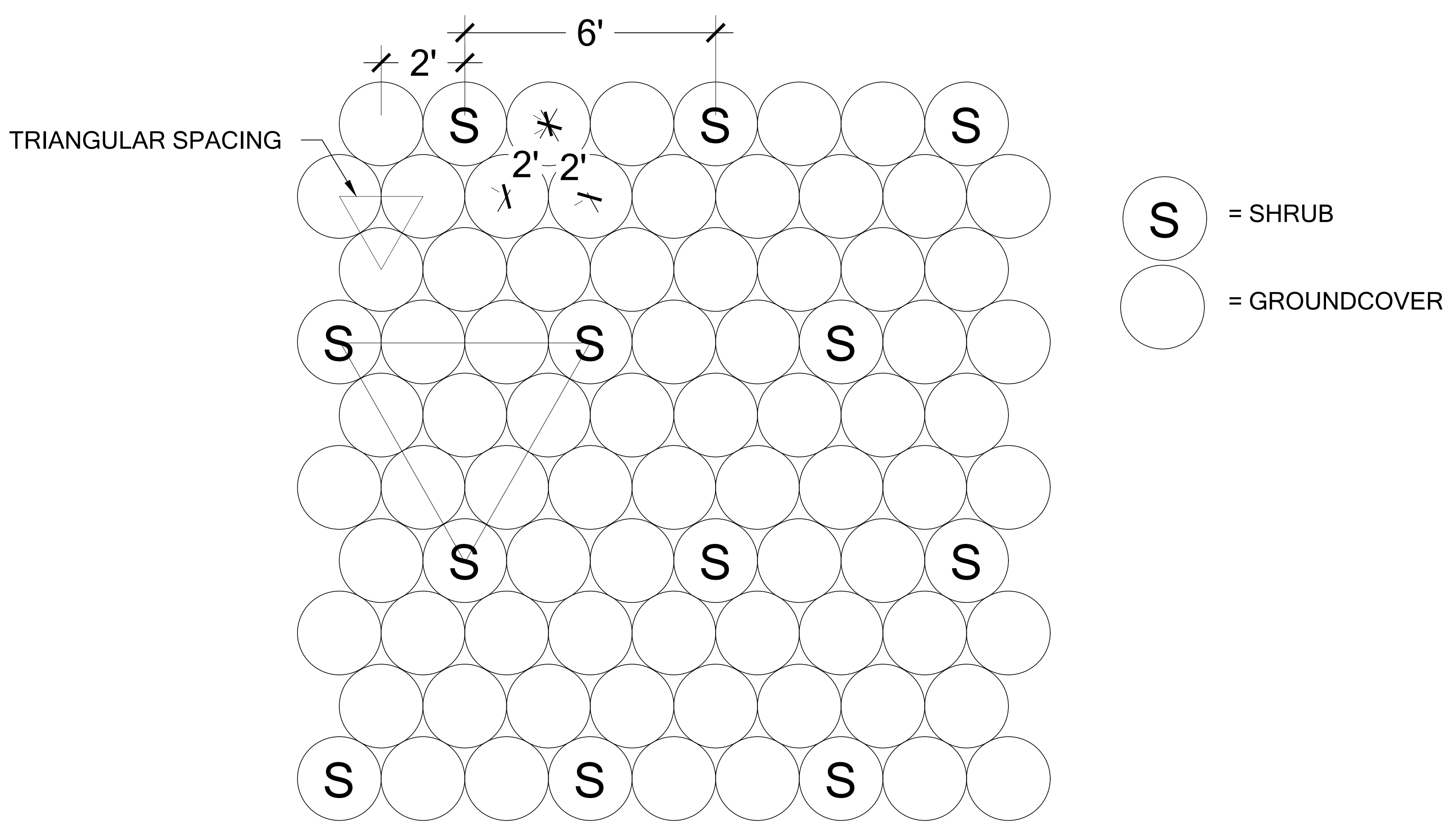

A RESTORATION TYPE 2: WETLAND (APPROX 605 SF TOTAL)

Scale: 1:30

PLANT LIST

SHRUBS (1-GAL)
LONICERA INVOLUCRATA / TWINBERRY
CORNUS SERICEA / RED OSIER DOGWOOD
ROSA PISOCARPA / SWAMP ROSE
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK
RUBUS SPECTABLIS / SALMONBERRY

GROUNDCOVERS (1-GAL)
ATHYRIUM FELIX-FEMINA / LADY FERN
SCIRPUS MICROCARPUS / SMALL-FRUITED BULRUSH
JUNCUS EFFUSUS / SOFT RUSH

TYPE 2 NOTES

PLANT GROUPING/SPACING
SHRUBS
 SPACE 6-FT O.C.
 PLACE IN GROUPS OF 3 - 7

GROUNDCOVER
 SPACE 2-FT O.C.
 PLACE IN GROUPS OF 3 -13

SOIL PREP
 USE SOIL PREP DETAILS 3 AND 4 DEPENDING ON EXISTING CONDITIONS (SEE SHEET W4.0)

ESTIMATED TOTAL QUANTITY

20 SHRUBS

175 GROUNDCOVER

PLANT LAYOUT NOTES

1. ALL WOODY PLANTS SHALL BE HELD BACK 10-FT FROM OPL CL. ONLY HERBACEOUS PLANTS SHALL BE PLANTED OVER OPL.
2. WHERE OPL OCCURS WITHIN WORK AREA, CONTRACTOR SHALL LAY OUT PLANTS WITHIN 10-FT OF OPL CL FOR APPROVAL BY PSE REPRESENTATIVE PRIOR TO INSTALL

RESTORATION TYPE 2: WETLAND

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DESIGNED:	NB
DRAFTED:	NB
CHECKED:	AMC

SHEET:
W3.1
NUMBER:
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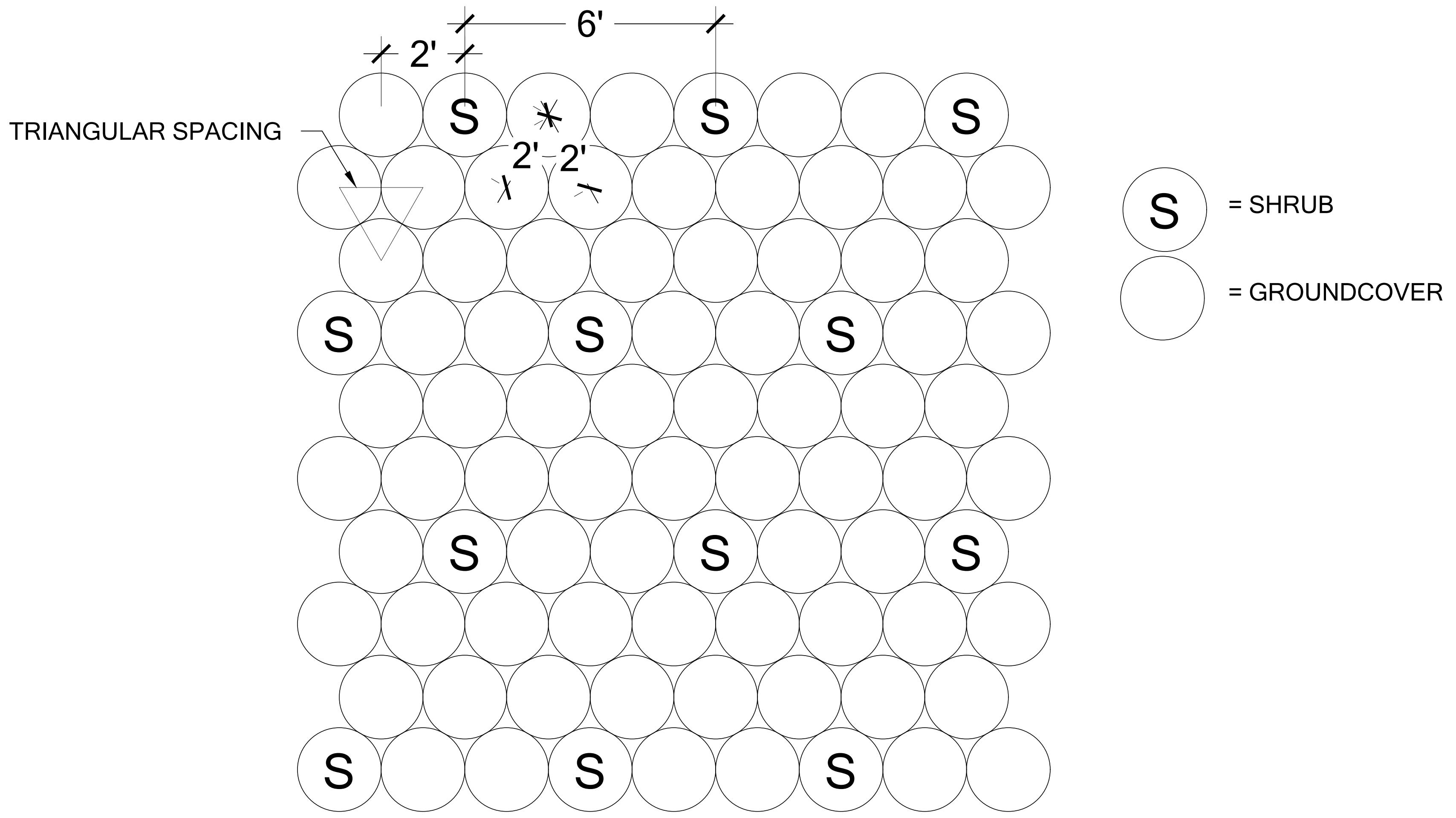

A RESTORATION TYPE 3: STREAM AND WETLAND BUFFER (APPROX 27,000 SF TOTAL)

Scale: 1:30

PLANT LIST

SHRUBS (1-GAL)
CORYLUS CORNUTA / BEAKED HAZELNUT
HOLODISCUS DISCOLOR / OCEANSPRAY
MAHONIA AQUIFOLIUM / TALL OREGON GRAPE
PHILADELPHUS LEWISII / MOCK ORANGE
OEMLERIA CERASIFORMIS / OSOBERRY
SYMPHORICARPUS ALBUS / SNOWBERRY
VIBURNUM EDULE / HIGHBUSH CRANBERRY
RIBES SANGUINEUM / RED-FLOWERING CURRANT

GROUNDCOVERS (1-GAL)
MAHONIA NERVOSA / LOW OREGON GRAPE
GAULTHERIA SHALLON / SALAL
POLYSTICHUM MUNITUM / SWORD FERN
ARCTOSTAPHYLUS UVA-URSI / KINNIKINNICK
FRAGARIA CHILOENSIS / BEACH STRAWBERRY

TYPE 3 NOTES

PLANT GROUPING/SPACING
SHRUBS
SPACE 6-FT O.C.
PLACE IN GROUPS OF 3 - 7

GROUNDCOVER
SPACE 2-FT O.C.
PLACE IN GROUPS OF 3 -13

SOIL PREP
USE SOIL PREP DETAILS 3 AND 4 DEPENDING ON EXISTING CONDITIONS (SEE SHEET W4.0)

PLANT LAYOUT NOTES

1. ALL WOODY PLANTS SHALL BE HELD BACK 10-FT FROM OPL CL. ONLY HERBACEOUS PLANTS SHALL BE PLANTED OVER OPL.
2. WHERE OPL OCCURS WITHIN WORK AREA, CONTRACTOR SHALL LAY OUT PLANTS WITHIN 10-FT OF OPL CL FOR APPROVAL BY PSE REPRESENTATIVE PRIOR TO INSTALL

ESTIMATED TOTAL QUANTITY

860 SHRUBS

7,780 GROUNDCOVER

RESTORATION TYPE 3: STREAM AND WETLAND BUFFER

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SCALE ACCORDINGLY.

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W3.2
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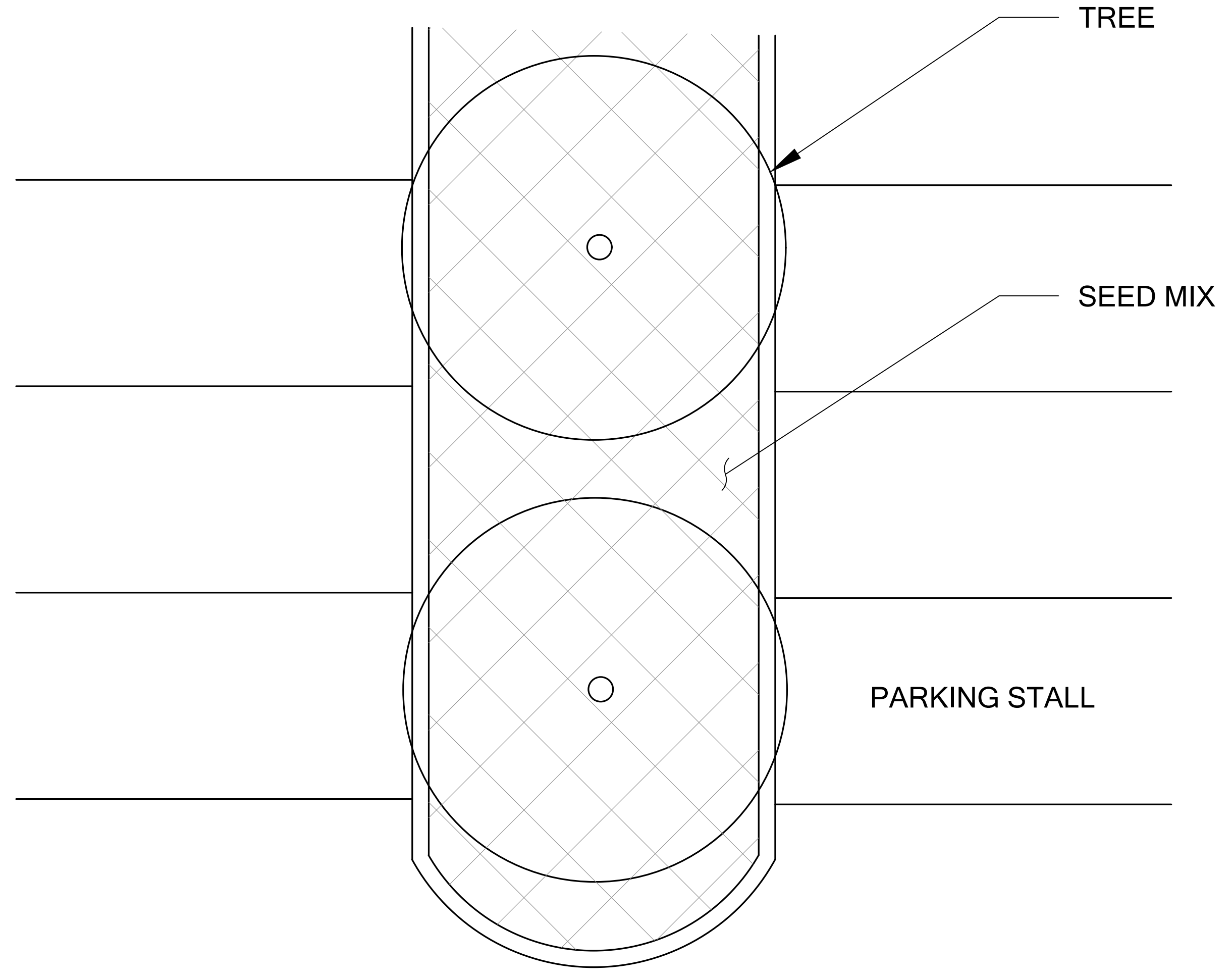

PLANT LIST

TREE (5 GAL)*
ACER GLABRUM / DOUGLAS MAPLE

SHRUB (2 GAL)*
ROSA NUTKANA / NOOTKA ROSE

SEED MIX
ECO-TURF MIX
PROTIME LAWN SEED - PT 769 OR EQUIVALENT

FESTUCA OVINA / QUATRO TETRAPLOID SHEEP FESCUE
LOLIUM PERENNE 'BANFIELD' / BANFIELD PERENNIAL RYEGRASS
FESTUCA TRACHYPHYLLA 'EUREKA II' / EUREKA II HARD FESCUE
TRIFOLIUM REPENS VAR PIPOLINA / MICROCLOVER

* ONLY INSTALL TREES OR SHRUBS WHERE EXISTING TREES OR SHRUBS WERE REMOVED DUE TO CONSTRUCTION ACTIVITIES

TYPE 4A NOTES

PLANT GROUPING/SPACING
TREES
SPACE 10-FT O.C.

SHRUBS
SPACE 6-FT O.C.
PLACE IN GROUPS OF 3 - 7

SEEDMIX
APPLY AT 5-7 LBS / 1,000 SF

SOIL PREP
USE SOIL PREP DETAILS 1 AND 2 DEPENDING ON EXISTING CONDITIONS (SEE SHEET W4.0)

PLANT LAYOUT NOTES

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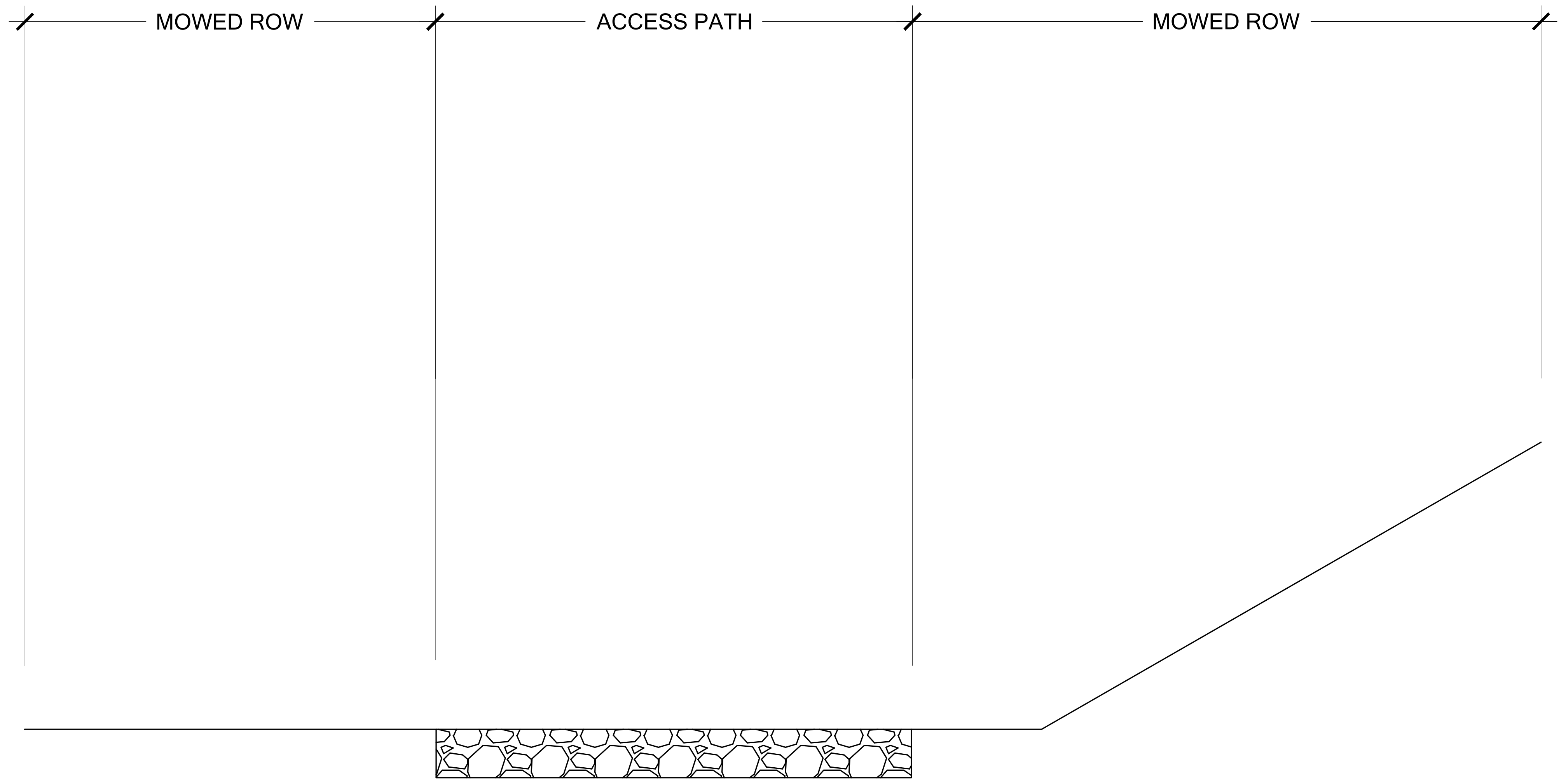
A RESTORATION TYPE 4A: OTHER - PARKING PLANTER STRIP & LAWN (APPROX 141,000 SF TOTAL, 4A & 4B)

Scale: NTS



PLANT LIST

SEED MIX
WSDOT EROSION CONTROL MIX
40% PERENNIAL RYEGRASS
40% CREEPING RED FESCUE
10% COLONIAL BENTGRASS
10% WHITE CLOVER

TYPE 4B NOTES

PLANT GROUPING/SPACING
SEEDMIX
APPLY AT 2-3 LBS / 1,000 SF

SOIL PREP
USE SOIL PREP DETAILS 1 OR 3 DEPENDING ON EXISTING CONDITIONS (SEE SHEET W4.0)

PLANT LAYOUT NOTES

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B RESTORATION TYPE 4B: OTHER - MOWED ROW & MAINTAINED ACCESS PATH RESTORATION (APPROX 141,000 SF TOTAL, 4A & 4B)

Scale: NTS

RESTORATION TYPE 4: OTHER

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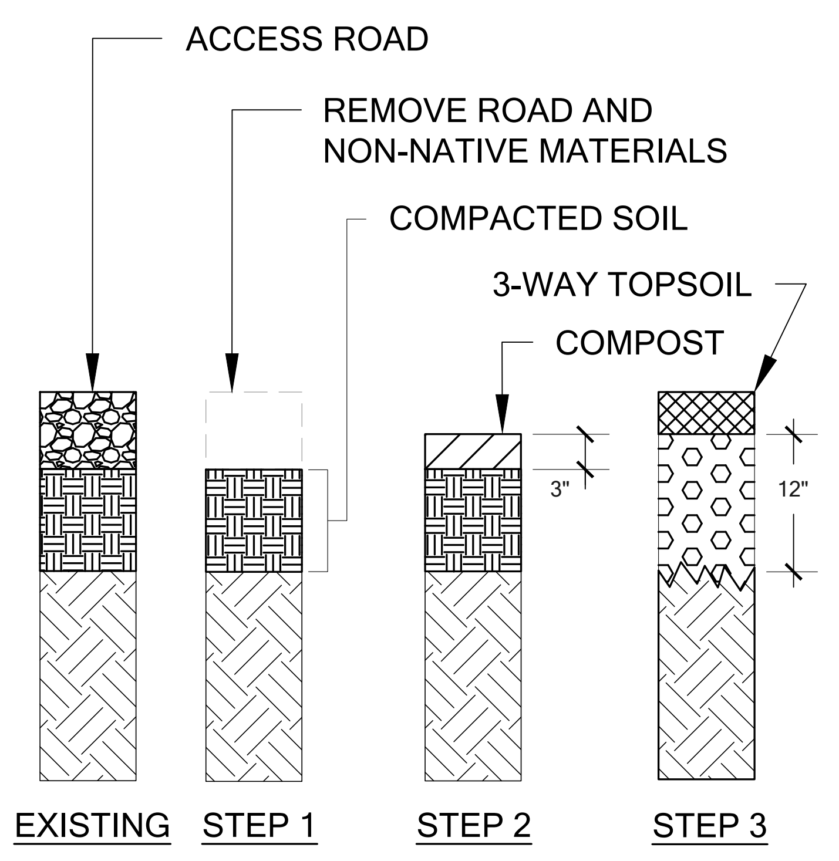


PLANTING AREA PREPARATION

EXISTING
ACCESS ROAD AND ASSOCIATED MATERIALS.

STEP 1
REMOVE ACCESS ROAD AND ALL NON-NATIVE MATERIALS. IF COMPACTION HAS OCCURRED DEEPER THAN 8", DECOMPACT/RIP SOIL TO DEPTH OF COMPACTION, UP TO 24". COMPACTION LEVELS SHOULD BE APPROPRIATE FOR ROOT GROWTH (75-85% PROCTOR DENSITY) OR AS OTHERWISE APPROVED BY PSE REPRESENTATIVE OR RESTORATION CONSULTANT. DRAINAGE RATE SHALL BE BETWEEN 1 - 5 INCHES PER HOUR OR AS OTHERWISE APPROVED BY THE ENGINEER. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND.

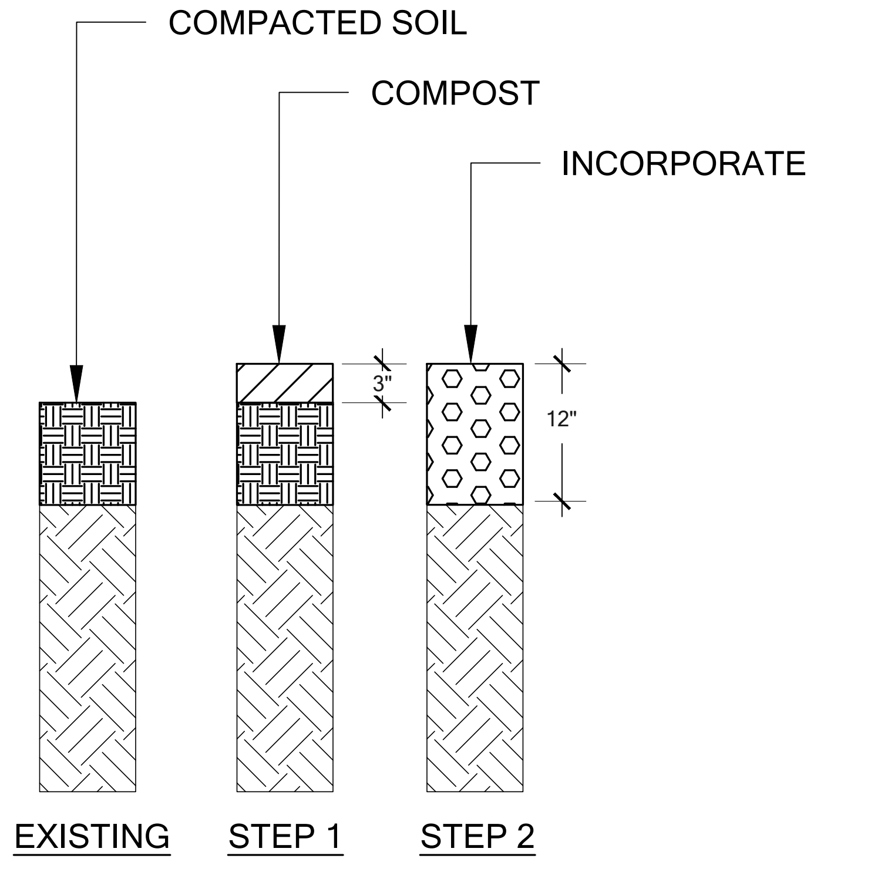
STEP 2
PLACE 3" OF COMPOST AND INCORPORATE TO A DEPTH OF 12".

STEP 3
PLACE ENOUGH 3-WAY TOPSOIL TO MATCH ADJACENT GRADES AFTER SOIL SETTLES.

SEQUENCE OF WORK - NOT TO SCALE

1 ACCESS ROAD SOIL PREP

Scale: NTS



PLANTING AREA PREPARATION

EXISTING
COMPACTED/IMPACTED SOILS.

STEP 1
IF COMPACTION HAS OCCURRED DEEPER THAN 8", DECOMPACT/RIP SOIL TO DEPTH OF COMPACTION, UP TO 24". ADD 3" OF COMPOST TO IMPACTED AREA. COMPACTION LEVELS SHOULD BE APPROPRIATE FOR ROOT GROWTH (75-85% PROCTOR DENSITY) OR AS OTHERWISE APPROVED BY PSE REPRESENTATIVE OR RESTORATION CONSULTANT. DRAINAGE RATE SHALL BE BETWEEN 1 - 5 INCHES PER HOUR OR AS OTHERWISE APPROVED BY THE ENGINEER. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND.

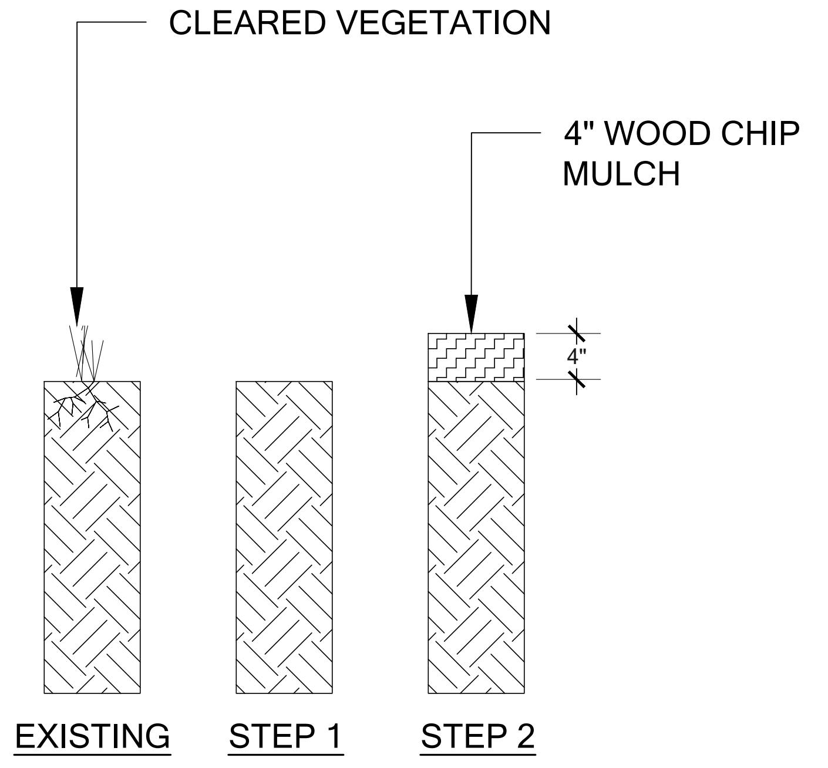
STEP 2
INCORPORATE COMPOST TO A 12" DEPTH.

STEP 3
PLACE 4" WOOD CHIP MULCH

SEQUENCE OF WORK - NOT TO SCALE

2 POLE BUFFER AND WORK AREA SOIL PREP

Scale: NTS



PLANTING AREA PREPARATION

EXISTING
CLEARED VEGETATION, UNDISTURBED SOILS (NO COMPACTION HAS OCCURRED).

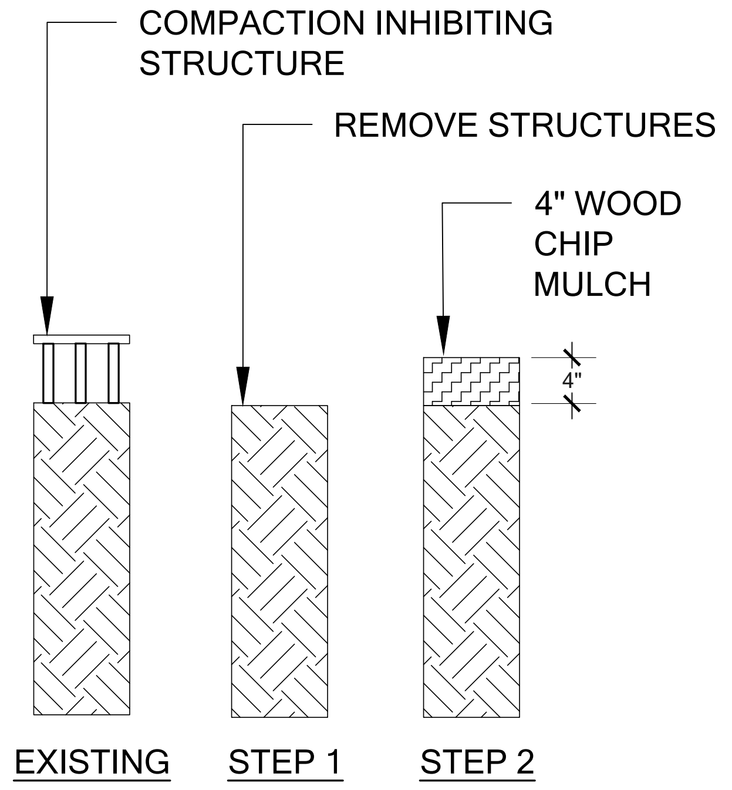
STEP 1
GRUB OUT ROOTS OF INVASIVE PLANTS AND DISPOSE OFFSITE AT APPROPRIATE DISPOSAL LOCATION.

STEP 2
PLACE 4" WOOD CHIP MULCH.

SEQUENCE OF WORK - NOT TO SCALE

3 CLEARED AREAS (NO COMPACTION) SOIL PREP

Scale: NTS



PLANTING AREA PREPARATION

EXISTING
COMPACTION INHIBITING STRUCTURES OVER WETLAND SOILS.

STEP 1
REMOVE ALL STRUCTURES FROM WETLAND. UTILIZE CAUTION TO AVOID COMPACTING SOILS.

STEP 2
INSTALL WOOD CHIP MULCH 4" DEEP. (SEE PLANTING DETAIL.)

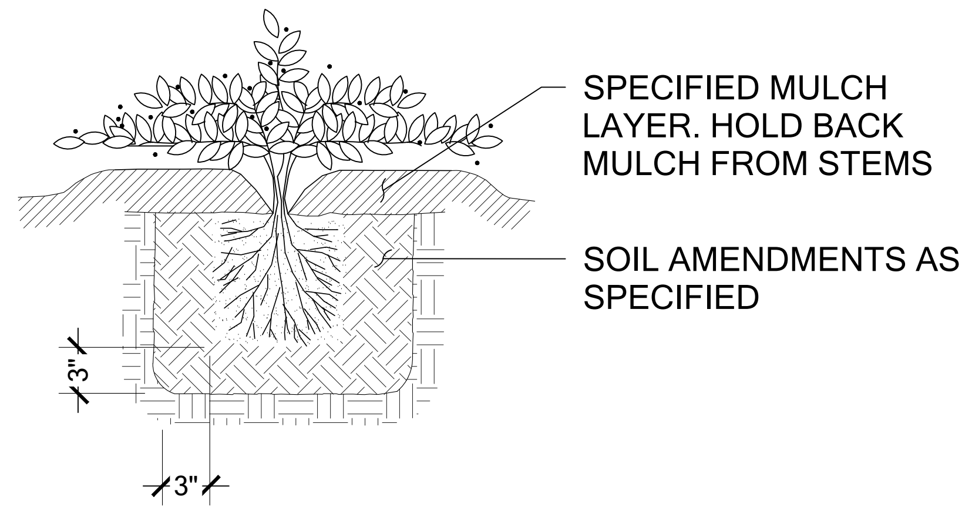
SOIL PREPARATION WETLAND AREA

SEQUENCE OF WORK - NOT TO SCALE

4 WETLAND POLE BUFFER AND WORK AREA SOIL PREP

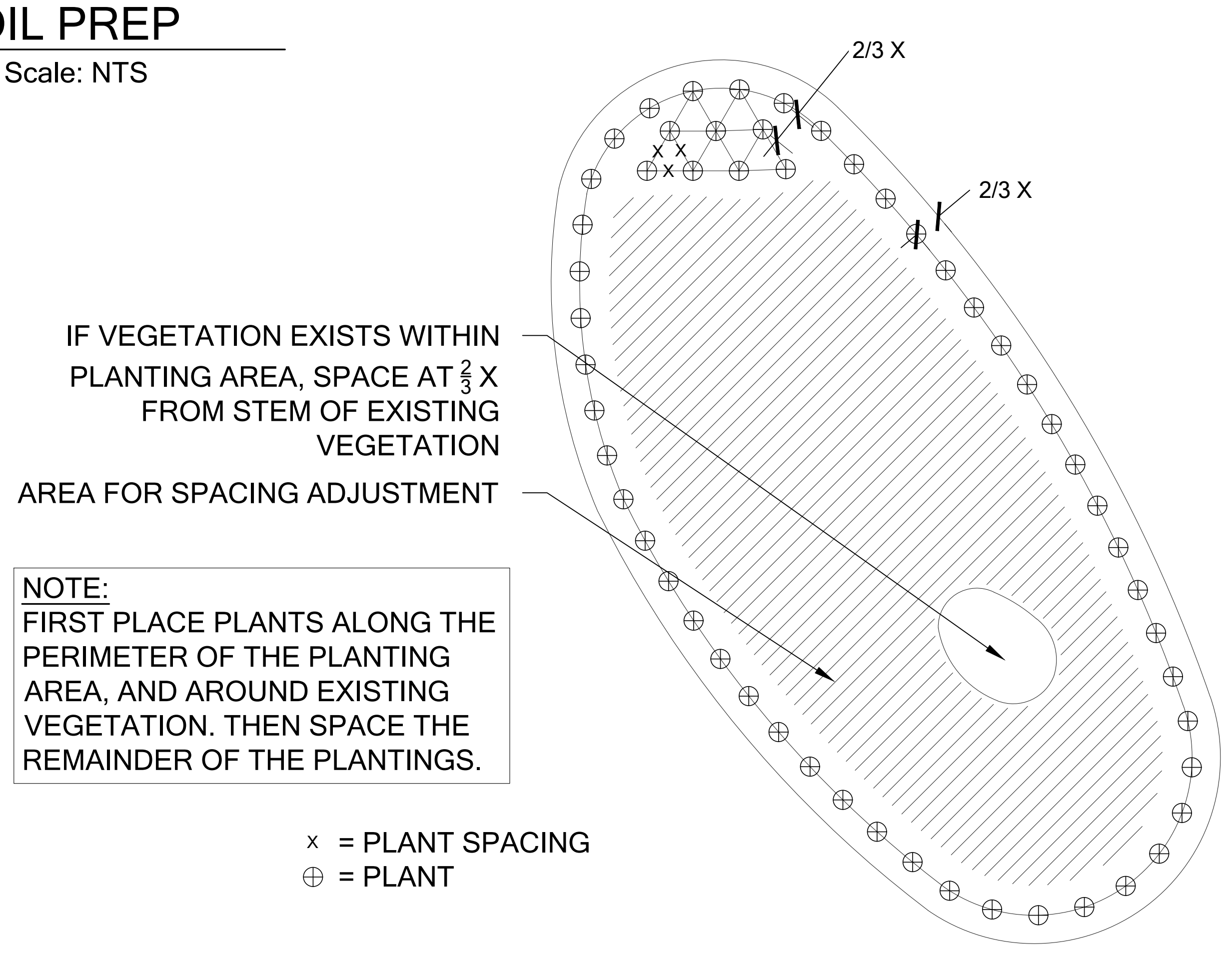
Scale: NTS

NOTES:
1. PLANT GROUNDCOVER AT SPECIFIED DISTANCE ON-CENTER (O.C.) USING TRIANGULAR SPACING, TYP.
2. LOOSEN SIDES AND BOTTOM OF PLANTING PIT AND REMOVE DEBRIS
3. LOOSEN ROOTBOUND PLANTS BEFORE INSTALLING
4. SOAK PIT BEFORE AND AFTER INSTALLING PLANT



5 GROUNDCOVER PLANTING

Scale: NTS

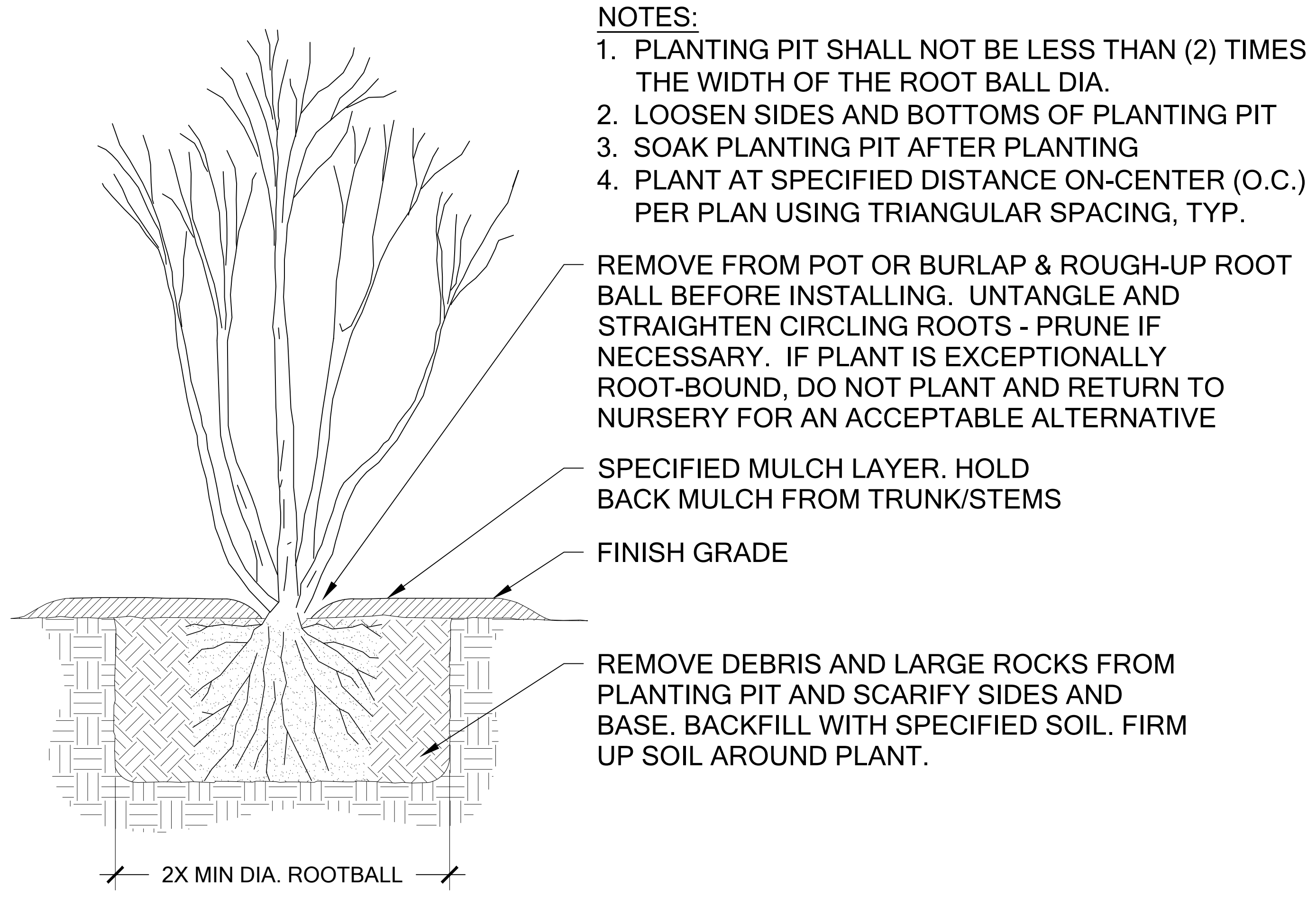


NOTE:
FIRST PLACE PLANTS ALONG THE PERIMETER OF THE PLANTING AREA, AND AROUND EXISTING VEGETATION. THEN SPACE THE REMAINDER OF THE PLANTINGS.

6 TRIANGULAR SPACING

Scale: NTS

NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT
3. SOAK PLANTING PIT AFTER PLANTING
4. PLANT AT SPECIFIED DISTANCE ON-CENTER (O.C.) PER PLAN USING TRIANGULAR SPACING, TYP.



7 GROUNDCOVER PLANTING

Scale: NTS

PLANTING & SOIL PREPARATION DETAILS

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750 Sixth Street South
Kirkland WA 98033
p 425.822.5242
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Science & Design

PSE ENERGIZE EASTSIDE
TEMPORARY IMPACTS RESTORATION PLAN
PREPARED FOR PUGET SOUND ENERGY
NORTH BELLEVUE SEGMENT

BELLEVUE, WASHINGTON

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	11-04-2020	TEMPORARY IMPACTS PLAN	NB
2	02-12-2021	TEMPORARY IMPACTS PLAN - REV Y UPDATE	NB

SHEET SIZE:
ORIGINAL PLAN IS 22" x 34".
SCALE ACCORDINGLY.

PROJECT MANAGER: NL
DESIGNED: NB
DRAFTED: NB
CHECKED: AMC
SHEET:
W4.0
NUMBER:
23 OF 24

FILENAME
PRINTED BY
DATE

MONITORING NOTES

IN COMPLIANCE WITH BELLEVUE LUC 20.25H.220, RESTORATION FOR TEMPORARY AREAS OF DISTURBANCE TO CRITICAL AREAS SHALL BE MONITORED TO ENSURE SUCCESSFUL ESTABLISHMENT. THE FOLLOWING NOTES APPLY TO AREAS OF TEMPORARY DISTURBANCE TO CRITICAL AREAS WHERE PLANTS ARE REMOVED AND RESTORATION TYPES 2 OR 3 ARE APPLIED TO RESTORE THE AREA TO PREDISTURBANCE CONDITIONS.

A FIVE YEAR MONITORING PROGRAM IS PROPOSED BELOW, HOWEVER, PER 20.25H.220.H.4, THE DIRECTOR MAY REDUCE THE MONITORING PERIOD TO NOT LESS THAN ONE YEAR FROM COMPLETION OF THE ORIGINAL RESTORATION.

GOAL

1. RESTORE ALL AREAS OF TEMPORARY DISTURBANCE TO WETLANDS AND WETLAND AND STREAM BUFFERS.

PERFORMANCE STANDARDS

THE FOLLOWING PERFORMANCE STANDARDS WILL BE USED TO GAUGE THE SUCCESS OF THE RESTORATION OVER TIME. IF ALL PERFORMANCE STANDARDS HAVE BEEN SATISFIED BY THE END OF YEAR FIVE, THE PROJECT SHALL BE CONSIDERED COMPLETE.

1) SURVIVAL STANDARDS:
   - a) 100% SURVIVAL OF INSTALLED PLANTINGS IN ALL AREAS AT THE END OF YEAR 1. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   - b) 80% SURVIVAL OF INSTALLED PLANTINGS IN ALL AREAS AT THE END OF YEAR 2. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   - c) SURVIVAL BEYOND YEAR 2 IS DIFFICULT TO TRACK. THEREFORE, A DIVERSITY STANDARD SHALL BE IMPLEMENTED.
   - i) ESTABLISHMENT OF AT LEAST TWO NATIVE TREE SPECIES, FOUR NATIVE SHRUB SPECIES AND TWO NATIVE EMERGENT SPECIES IN PLANTING AREAS.

2) NATIVE VEGETATION COVER STANDARDS:
   - a) ACHIEVE 60% AERIAL COVER OF NATIVE WOODY VEGETATION BY THE END OF YEAR 3. NATIVE VOLUNTEERS MAY COUNT TOWARDS THIS STANDARD.
   - b) ACHIEVE 80% AERIAL COVER OF NATIVE WOODY VEGETATION BY THE END OF YEAR 5. NATIVE VOLUNTEERS MAY COUNT TOWARDS THIS STANDARD.

3) INVASIVE SPECIES COVER STANDARD:
   - a) NO MORE THAN 10% AERIAL COVER OF NON-NATIVE, INVASIVE SPECIES IN ANY PLANTING AREA IN ANY MONITORING YEAR.

MAINTENANCE

THE SITE SHALL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOR FIVE YEARS FOLLOWING SUCCESSFUL COMPLETION OF THE CONSTRUCTION.

1. REPLACE EACH PLANT FOUND DEAD IN YEAR ONE.
2. FOLLOW THE RECOMMENDATIONS NOTED IN THE PREVIOUS MONITORING SITE VISIT'S REPORT.
3. GENERAL WEEDING FOR ALL PLANTED AREAS:
   - A. AT LEAST TWICE ANNUALLY, REMOVE COMPETING GRASSES AND WEEDS FROM AROUND THE BASE OF EACH INSTALLED PLANT TO A RADIUS OF 12 INCHES. WEEDING SHOULD OCCUR AT LEAST ONCE IN THE SPRING AND ONCE IN THE SUMMER. THOROUGH WEEDING WILL RESULT IN LOWER PLANT MORTALITY AND ASSOCIATED PLANT REPLACEMENT COSTS.
   - B. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLANT INSTALLATION.
   - C. NOXIOUS WEEDS MUST BE REMOVED FROM THE ENTIRE RESTORATION AREA, AT LEAST TWICE ANNUALLY.
   - D. DO NOT USE STRING TRIMMERS IN THE VICINITY OF INSTALLED PLANTS, AS THEY MAY DAMAGE OR KILL THE PLANTS.
4. MAINTAIN A FOUR-INCH-THICK LAYER OF WOODCHIP MULCH ACROSS ALL PLANTING AREAS. MULCH SHOULD BE PULLED BACK TWO INCHES FROM THE PLANT STEMS.
5. DURING AT LEAST THE FIRST TWO GROWING SEASONS, MAKE SURE THAT THE ENTIRE PLANTING AREA RECEIVES A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1ST THROUGH SEPTEMBER 30TH.
6. REMOVE TRASH AND DEBRIS FROM THE PLANTING AREAS.

MONITORING METHODS

THE MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE RESTORATION PLAN OVER TIME BY MEASURING THE DEGREE TO WHICH THE PLAN IS MEETING THE PERFORMANCE STANDARDS LISTED ABOVE. PRIOR TO THE COMMENCEMENT OF THE MONITORING PHASE, AN AS-BUILT PLAN DOCUMENTING THE SUCCESSFUL INSTALLATION OF THE PROJECT WILL BE SUBMITTED TO THE CITY OF BELLEVUE. IF NECESSARY, THE AS-BUILT REPORT MAY INCLUDE A MARK-UP OF THE ORIGINAL PLAN THAT NOTES ANY SIGNIFICANT CHANGES OR SUBSTITUTIONS THAT OCCURRED. DURING THE AS-BUILT INSPECTION, THE RESTORATION SPECIALIST WILL ESTABLISH AT LEAST FOUR PERMANENT PHOTO-POINTS, BASELINE PLANT INSTALLATION QUANTITIES, AND TRANSECTS AS DETAILED BELOW.

TRANSECTS:

DURING THE AS-BUILT INSPECTION, THE RESTORATION SPECIALIST SHALL INSTALL A SUFFICIENT NUMBER OF REPRESENTATIVELY LOCATED 100-FOOT TRANSECTS IN THE RESTORATION PLANTING AREAS TO ADEQUATELY MEASURE THE VEGETATION PERFORMANCE STANDARDS BELOW. PERCENT COVER DATA SHALL BE RECORDED ALONG ESTABLISHED TRANSECTS USING THE LINE INTERCEPT METHOD. WHERE RESTORATION AREAS ARE NOT OF SUFFICIENT SIZE TO ESTABLISH TRANSECTS, THE TOTAL RESTORATION AREA MAY BE EVALUATED INSTEAD.

YEARLY MONITORING:

THE SITE WILL BE MONITORED TWICE ANNUALLY FOR FIVE YEARS BEGINNING WITH APPROVAL OF THE AS-BUILT REPORT. DURING EACH YEAR THERE SHALL BE A SPRING VISIT AND A SUMMER OR EARLY FALL VISIT. THE SPRING MONITORING VISIT WILL ADDRESS MAINTENANCE NEEDS SUCH AS PLANT REPLACEMENT AND WEEDING.

FOLLOWING THE SPRING VISIT, THE RESTORATION SPECIALIST WILL NOTIFY THE RESPONSIBLE PARTY AND/OR MAINTENANCE CREWS OF NECESSARY MAINTENANCE. THE SECOND ANNUAL VISIT WILL OCCUR JULY 1ST TO SEPTEMBER 15TH AND WILL RECORD QUANTITATIVE ASSESSMENT OF THE SITE'S PROGRESS. A REPORT DETAILING THE FINDINGS OF SUMMER MONITORING WILL BE SUBMITTED ANNUALLY TO THE CITY, AND WILL CONTAIN THE FOLLOWING:

1\. GENERAL SUMMARY OF SITE CONDITIONS.
2\. COUNTS OF LIVE PLANTINGS BY SPECIES (YEARS ONE AND TWO ONLY)
3\. PERCENT COVER OF NATIVE WOODY SPECIES, DETERMINED USING THE LINE INTERCEPT METHOD ALONG ESTABLISHED TRANSECTS, IF APPLICABLE.
4\. PERCENT COVER OF INVASIVE SPECIES USING THE LINE INTERCEPT METHOD ALONG ESTABLISHED TRANSECTS, IF APPLICABLE.
5\. NOTES ON INVASIVE WEEDS OUTSIDE OF ESTABLISHED TRANSECTS.
6\. PHOTOGRAPHS FROM FIXED PHOTO-POINTS ESTABLISHED DURING THE AS-BUILT INSPECTION.
8\. ANY EVIDENCE OF WILDLIFE USAGE IN THE RESTORATION AREA.
9\. REPORT ON CONDITION OF PLACED LARGE WOODY DEBRIS.
10\. INTRUSIONS INTO THE PLANTING AREAS, VANDALISM OR OTHER ACTIONS THAT IMPAIR THE INTENDED FUNCTIONS OF THE RESTORATION AREAS.
11\. RECOMMENDATIONS FOR MAINTENANCE OR REPAIRS.

CONTINGENCIES

UNFORSEEN PROJECT CONDITIONS MAY REQUIRE CHANGES IN VEGETATION LAYOUT, DENSITY/SPACING, AND SPECIES SUBSTITUTIONS. WEED CONDITIONS MAY REQUIRE ALTERATION OF INSTALLED VEGETATION TYPES, MULCH PLACEMENT, WEED REMOVAL AND USE OF HERBICIDES. MINOR HAND WORK TO IMPROVE OR RETARD DRAINAGE MAY BE NEEDED TO SUPPORT WETLAND HYDROLOGY. SUCH WORK WILL BE COORDINATED DIRECTLY WITH THE CITY OF BELLEVUE.

MATERIALS

1. WOODCHIP MULCH: "ARBORIST CHIPS" (CHIPPED WOODY MATERIAL) APPROXIMATELY ONE TO THREE INCHES IN MAXIMUM DIMENSION (NOT SAWDUST). THIS MATERIAL IS COMMONLY AVAILABLE IN LARGE QUANTITIES FROM ARBORISTS OR TREE-PRUNING COMPANIES. THIS MATERIAL IS SOLD AS "ANIMAL FRIENDLY HOG FUEL" AT PACIFIC TOPSOILS [(800) 884-7645]. MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/DEMOLITION DEBRIS. APPROX. QUANTITY REQUIRED: 60 CUBIC YARDS.

2. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT "COMPOSTED MATERIAL" PER WASHINGTON ADMIN. CODE 173-350-220. APPROXIMATE QUANTITY REQUIRED: 35 CUBIC YARDS

5. RESTORATION SPECIALIST: QUALIFIED PROFESSIONAL ABLE TO EVALUATE AND MONITOR THE CONSTRUCTION OF ENVIRONMENTAL RESTORATION PROJECTS.

MITIGATION NOTES

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