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**To:** Jeff Misuik and Dylan Marcus, Puget Sound Energy  
**From:** Jennifer Dadisman, PWS and Joseph O. Callaghan, PWS  
**Date:** November 3, 2023  
**File:** 9186-184-00, Task 1100  
**Subject:** Shoreline Restoration Plan for the 2203E036 VAS-22\_23 TW FDR TIE Tramp 1.4 Mi Project

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## INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) was contracted by Puget Sound Energy (PSE) to provide a restoration plan for the PSE 2203E036 VAS-22\_23 TW FDR TIE Tramp 1.4 Mi Project (project). We understand as part of the project, PSE will cut six (6) trees; trim two (2) trees; replace two (2) poles; remove three (3) poles; and install two (2) new poles within the King County shoreline jurisdiction of the Puget Sound. We have prepared this memorandum to describe the ecological functions of the proposed restoration plan as required by the King County Chapter 21A.25 Shorelines. Figure 1, Vicinity Map depicts the entire project location and Figures 2 through 4, Impact and Restoration, depicts the portion of the project in shoreline jurisdiction and the approximate location of the poles and trees to be cut within the mapped shoreline jurisdiction.

### Existing Conditions, Functions, and Processes

The area of shoreline jurisdiction, where the trees will be cut, contains degraded habitat that is adjacent to SW Dockton Road; the shoreline habitat is disconnected from the Puget Sound by roadways and riprap. The trees that will be cut do not provide shade or cover over Puget Sound waters; however, they do provide shade and cover over wetland and stream habitat and are located in wetland and stream buffer. Shoreline habitat where the new poles will be installed consists of wetland areas (Pole 21E) and upland areas (Pole 23A). Poles 22 and 23 will be replaced; Pole 22 is located within wetland habitat, and Pole 23 is located in wetland and stream buffer.

Dominant wetland vegetation in the immediate vicinity of the project includes Lyngbye's sedge (*Carex lyngbyei*), Himalayan blackberry (*Rubus armeniacus*), soft rush (*Juncus effusus*), horsetail (*Equisetum arvense*), and cattail (*Typha latifolia*). Dominant vegetation within the upland area largely consists of black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), and shore pine (*Pinus contorta*) trees with an understory of oceanspray (*Holodiscus discolor*), salmonberry (*Rubus spectabilis*), Himalayan blackberry, and grasses and other herbaceous species.

The wetland and upland buffer areas provide food, shelter, and cover functions within the vicinity of the project area; however, because these locations are immediately adjacent to busy paved roadways and within existing transmission lines, habitat functionality is limited. The forested buffer in the south end of the project that will be impacted extends west, but there are no areas of large, forested habitat contiguous with the buffer that are not separated by single-family houses, steep slopes, or roadways. The wetland area that will be impacted with pole replacement and installation is in the north end of the project and is immediately adjacent to a paved roadway which produces stormwater runoff, but because of the surrounding development and slope, there is limited opportunity to trap runoff and provide water quality, stormwater detention, and groundwater recharge functionality. The pictures below depict the existing conditions along the alignment.



Left photograph is of Google Street View, looking towards the trees to be cut. Center photograph looks south from SW Ellisport Road, across the wetland located within the shoreline jurisdiction (Wetland C). Right photograph looks west from Chautauqua Beach Road SW, where one pole will be replaced, and a new pole installed in Wetland B.

### **IMPACT ASSESSMENT AND PROPOSED RESTORATION**

As a result of the project, there will be some impacts to the shoreline buffer with the cutting of six trees, replacement of two poles, and installation of two new poles; trimming two trees is not anticipated to cause impacts (Figures 2 through 4). The trees to be cut are estimated to have a combined area of approximately 2,500 square feet of canopy coverage (based on reviewing aeriels). The new poles to be installed are estimated to impact 5 square feet each (total of 10 square feet). Therefore, total area of upland buffer habitat impact is estimated to be 2,505 square feet (cutting trees, and one new pole) and total area of wetland habitat impact is estimated to be 5 square feet (one new pole) for a total shoreline jurisdiction impact of 2,510 square feet. The replacement poles are expected to have no impact to critical areas because the poles will be replaced in approximately the same location and are the same approximate size.

The tree species to be cut consist of red alder, Douglas fir, shore pine, spruce, and black cottonwood. Trees to be cut have diameters that range from 5 inches to approximately 22 inches. Trees that will be trimmed (two spruce trees identified on Figures 3 and 4) are not included in the below table because they are not considered an impact. The trees need to be cut for the safety of the overhead transmission line wires; according to North American Electric Reliability Corporation (NERC) standards, PSE must cut vegetation that matures at a height of more than 15 feet within transmission rights-of-way (ROWs) ([https://www.pse.com/-/media/PDFs/1225\\_energy\\_landscaping.pdf?la=en&revision=64c9f12f-65eb-4cae-bf57-b1f6a2459b78&hash=FD5F9B36425580288EE3B0E383A8DF400055FF57](https://www.pse.com/-/media/PDFs/1225_energy_landscaping.pdf?la=en&revision=64c9f12f-65eb-4cae-bf57-b1f6a2459b78&hash=FD5F9B36425580288EE3B0E383A8DF400055FF57)). Table 1 below contains a list of the tree species to be cut and the diameter at breast height (DBH) according to the tree survey that was prepared for the project.

**TABLE 1. SUMMARY OF TREES TO BE CUT AND POLE ACTIVITIES WITHIN MAPPED SHORELINE JURISDICTION**

Location/ Pole Span	Project Action	Critical Area Location	Trees to be cut information		Impact Area (Square Feet)	Mitigation Area (Square Feet)
			Tree Species	DBH (inches)		
Between SW Ellsport Road and Pole 23/ Pole Span P22 to P23	Cut tree	Shoreline; Buffer of Wetland and Stream	Shore Pine	7	2,500	--
Between SW Ellsport Road and Pole 23/ Pole Span P22 to P23	Cut tree	Shoreline; Buffer of Wetland and Stream	Red Alder	13		
South of SW Ellsport Road and Pole 23/ Pole Span P23 to P23A	Cut tree	Shoreline; Buffer of Wetland and Stream	Red Alder	6		
South of SW Ellsport Road and Pole 23/ Pole Span P23 to P23A	Cut tree	Shoreline; Buffer of Wetland and Stream	Black cottonwood	22		
Pole Span 23C to 23D	Cut Tree	Shoreline	Douglas fir	14		
Pole 22 E, north of SW Ellsport Road	New Pole	Shoreline; Wetland	N/A	N/A	5	--
Pole 23A, west of Dockton Road SW	New Pole	Shoreline; Buffer of Wetland and Stream	N/A	N/A	5	--
Pole 23B	Remove Pole	Shoreline	N/A	N/A		5
Pole 23C	Remove Pole	Shoreline	N/A	N/A		5
Pole 23D	Remove Pole	Shoreline	N/A	N/A		5
<b>Total Shoreline Jurisdiction Impact and Mitigation</b>					<b>2,510</b>	<b>15</b>

Due to planting height concerns, PSE cannot replace the trees that will be removed with other trees. Instead, PSE is proposing to increase habitat functions by planting the understory with native shrubs and creating snags within the shoreline jurisdiction. Planting areas have been identified based on habitat areas to be impacted (upland and wetland). Planting Area 1 is the wetland area where one pole will be replaced, and one pole will be new. Planting Area 2 is the upland buffer area that will be impacted from cutting trees and replacing and installing new poles. Table 2 below depicts the proposed plantings for the areas that will be impacted. These plantings are intended to be infill plantings and therefore an on-center spacing is not listed in the table below; however, the estimated impact areas (canopy coverage of the trees to be cut [2,500 square feet] and pole work [5 square feet of buffer and 5 square feet of wetland]) will be used to identify the number of plants to install and a sparse planting estimate will be used. Species specified in the table below are recommended but these species can be replaced with native species of similar size.

**TABLE 2. RESTORATION PLANTINGS**

Common Name	Scientific Name	Planting Size	Number to Install
<b>Planting Area 1 (wetland, 5 square feet)</b>			
Redosier dogwood	<i>Cornus sericea</i>	2 gallons	2
<b>Planting Area 2 (upland buffer, 2,505 square feet)</b>			
Oceanspray	<i>Holodiscus discolor</i>	2 gallons	4
Nootka Rose	<i>Rosa nutkana</i>	2 gallons	4
Salmonberry	<i>Rubus spectabilis</i>	2 gallons	3
<b>Total Plants Installed</b>			<b>13</b>

Notes:

- \*Species listed above can be replaced with other native species of similar size and habitat structure
- \*Number to install is based on estimated square footage of impact areas and a sparse on-center spacing. The on-center spacing was used to identify the number of plants to install. Final plant locations and plantings are considered infill and will not need to use a specified-on center spacing
- \*Plants can be installed more or less dense based on available areas to plant.
- \*Larger 2-gallon planting size is specified so plants will outcompete existing ground cover.

Planting 13 native shrubs will compensate for the 6 trees to be removed from within the shoreline jurisdiction and compensate for impacts associated with installation of 2 new poles. The plantings will ensure that food, shelter, and cover are provided at the site. Snags are important for shoreline ecosystems because they provide habitat interspersions, shelter, food, and will provide shoreline stability.

**ECOLOGICAL FUNCTIONS FROM RESTORATION PLAN**

The project is partially located within the shoreline buffer of the Puget Sound; however, shoreline areas to be impacted are separated from the Puget Sound by busy two-lane paved roadways. The project will selectively cut six native trees with a maturity height of over 15 feet; replace two poles and install two new poles. Snagging larger trees and planting 13 native shrubs will ensure that there is still cover, shelter, and shoreline stabilization as a result of the project. From our initial assessment, the proposed removal will reduce shade, cover, shelter, and food provided by the existing buffer. Habitat structure will improve by providing snags and planting within the buffer and wetland. The installed native vegetation will provide additional cover, shelter, and food. Therefore, there will be no net loss of ecological functions within the shoreline jurisdiction.

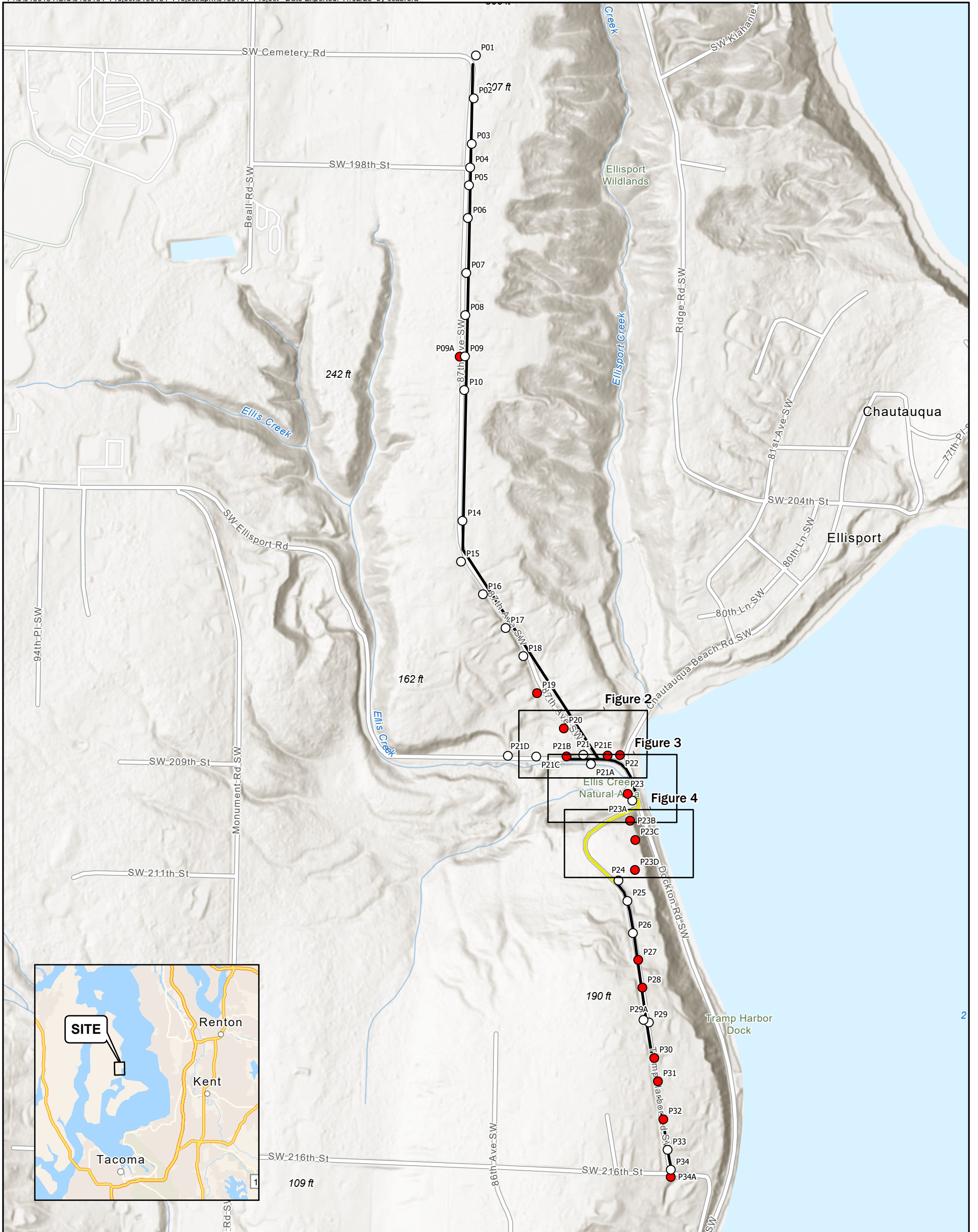
Attachments:

Figure 1. Vicinity Map

Figures 2 through 4. Impact and Restoration

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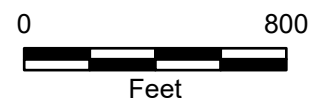


**Legend**

- Pole Inside ROW (approximate location)
- Pole Outside ROW (approximate location)
- Project Centerline
- Project Centerline with New Under Conduit

Source(s):  
• ESRI

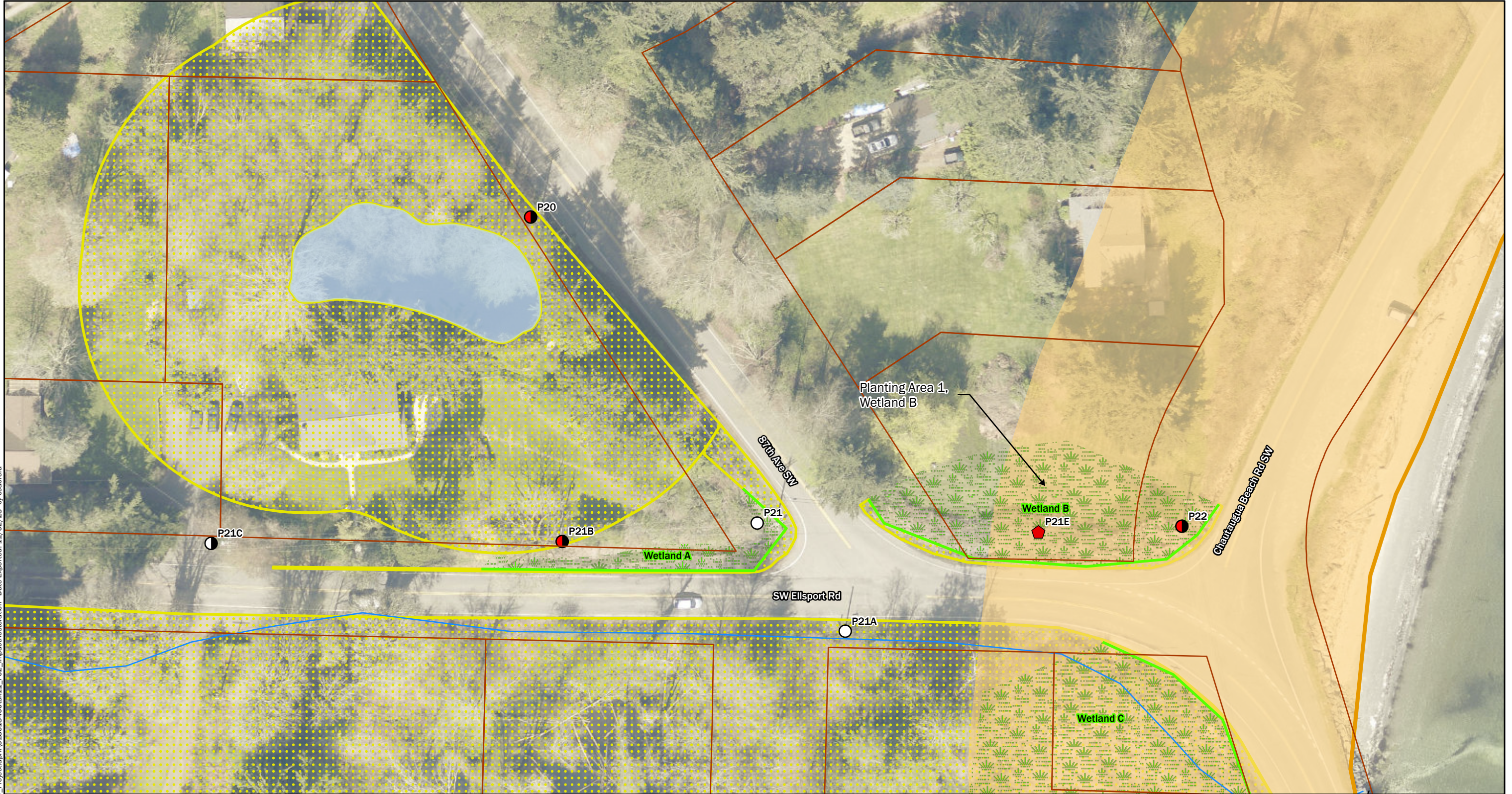
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<b>Vicinity Map</b>	
VAS-22_23 TW FDR TIE TRAMP 1.4 MI King County, Washington	
	<b>Figure 1</b>



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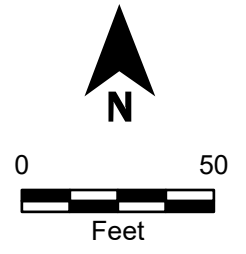


Source(s):  
 • King County  
 • Washington Department of Ecology  
 • USGS NHD Streams  
 Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet

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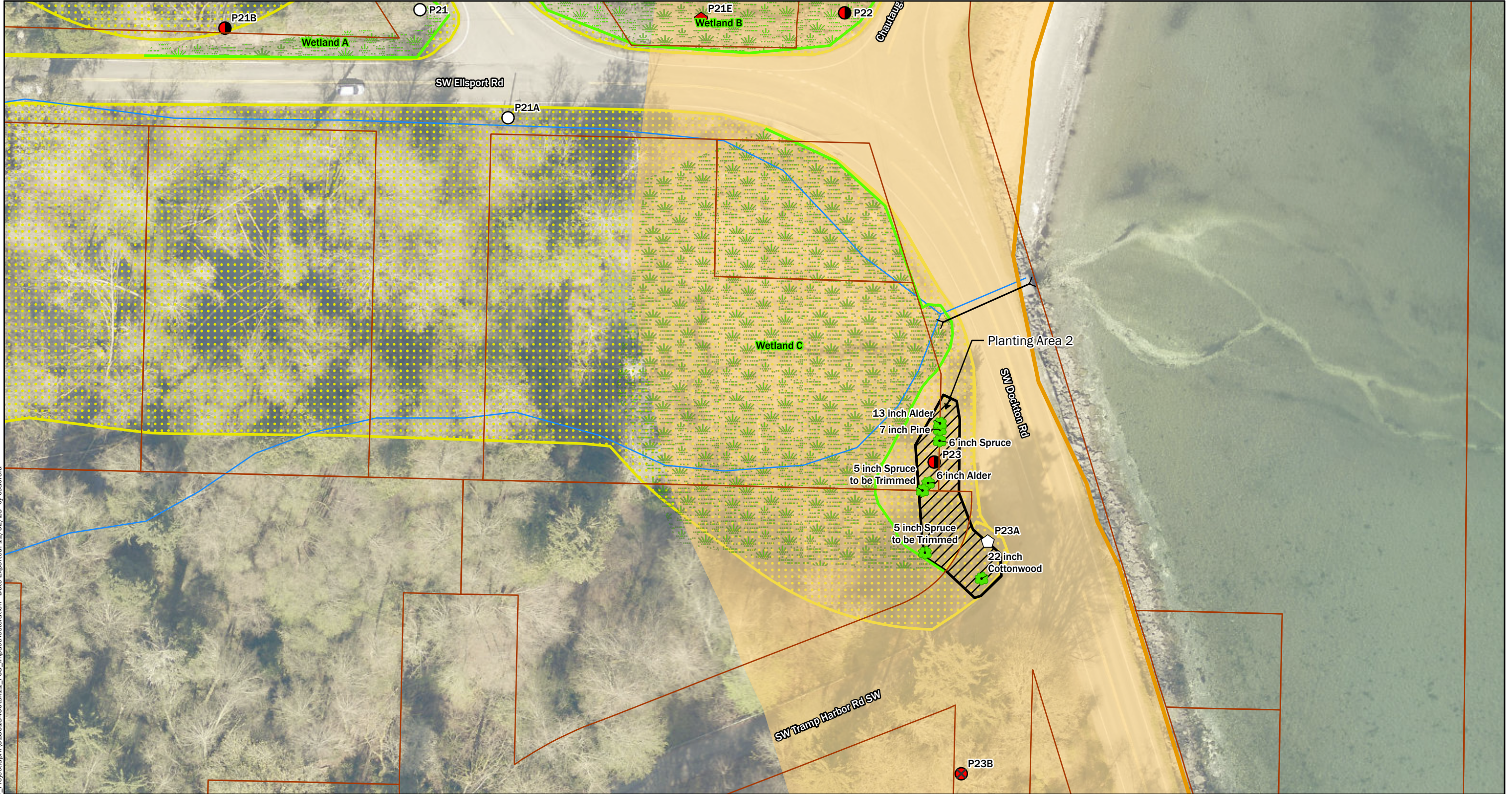
**Legend**

- New Pole - Outside ROW
- Pole to Remain in Pace - Inside ROW
- Pole to be Replace - Inside ROW
- Pole to be Replace - Outside ROW
- Culvert
- Delineated Wetland Boundary
- Tramp Wetland Area
- Mapped Streams
- Offsite Pond
- King County parcels
- SMA Jurisdiction Boundary
- 200 ft Shoreline Jurisdiction Buffer
- Wetland and Stream Buffer



<b>Impact and Restoration</b>	
VAS-22_23 TW FDR TIE TRAMP 1.4 MI King County, Washington	
	<b>Figure 2</b>





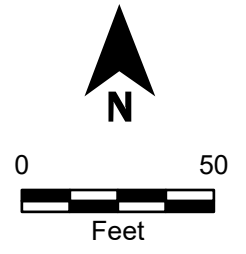
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Source(s):  
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**Legend**

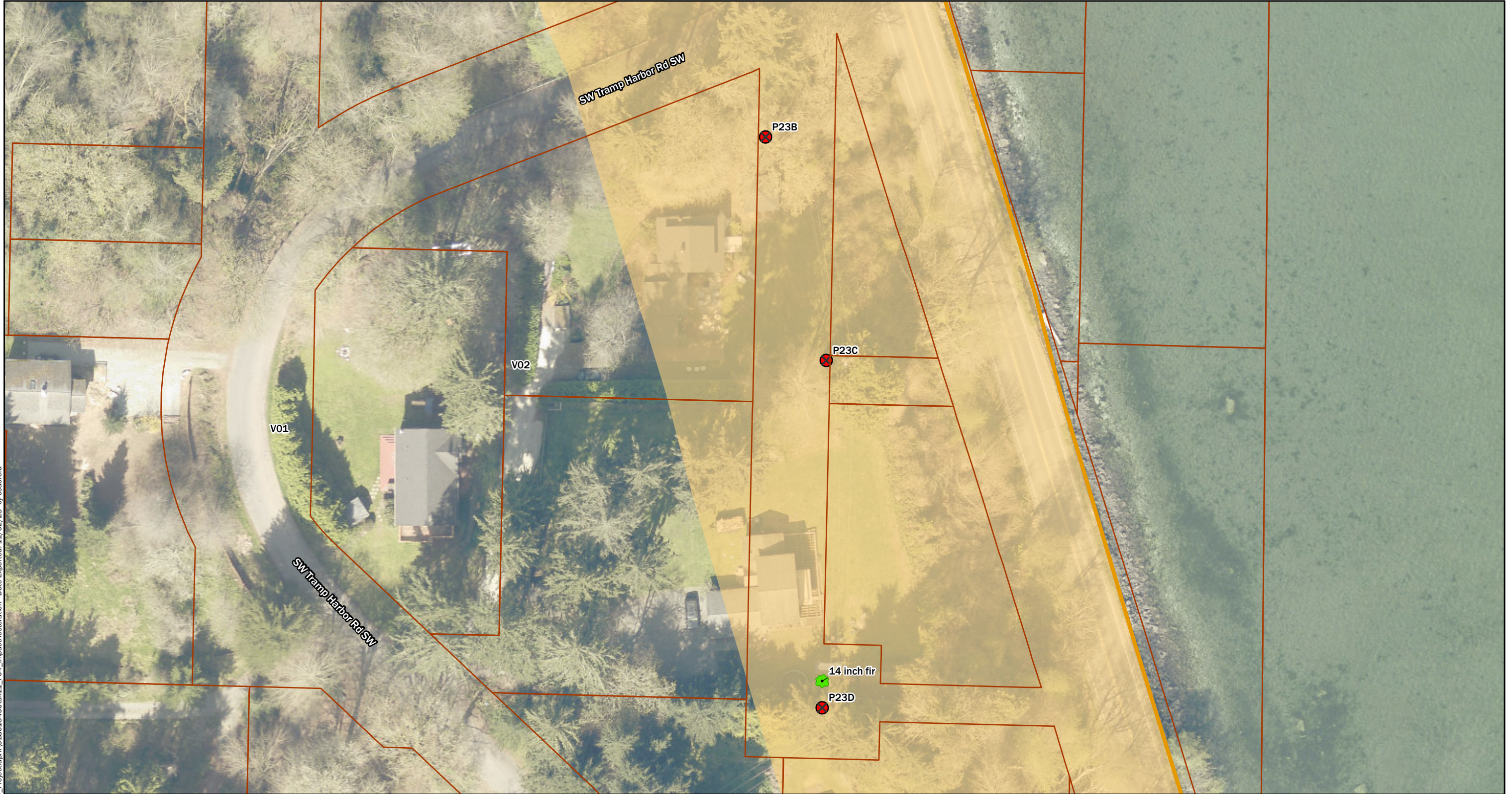
- New Pole - Inside ROW
- New Pole - Outside ROW
- Pole to Remain in Place - Inside ROW
- Pole to be Removed - Outside ROW
- Pole to be Replace - Outside ROW
- Culvert
- Delineated Wetland Boundary
- Mapped Streams
- SMA Jurisdiction Boundary
- 200 ft Shoreline Jurisdiction Buffer
- Tree to be Removed
- Impact and Restoration Area
- Wetland and Stream Buffer
- King County parcels








<b>Impact and Restoration</b>	
VAS-22_23 TW FDR TIE TRAMP 1.4 MI King County, Washington	
	<b>Figure 3</b>



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**Legend**

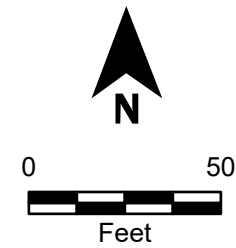
-  Pole to be Removed - Outside ROW
-  Tree to be Removed
-  SMA Jurisdiction Boundary
-  200 ft Shoreline Jurisdiction Buffer
-  King County parcels

Source(s):

- King County
- Washington Department of Ecology
- USGS NHD Streams

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet

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**Impact and Restoration**

VAS-22\_23 TW FDR TIE TRAMP 1.4 MI  
King County, Washington



**Figure 4**