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PACIFICORP

Lassen Substation

Jurisdictional Delineation Report

PROJECT NUMBER:
136412

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POWER ENGINEERS

Jurisdictional Delineation Report

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1.0 INTRODUCTION

At the request of PacifiCorp, POWER Engineers, Inc. (POWER) conducted a delineation of wetlands and other waters of the United States and the State of California in support of the Lassen Substation Project (Project). The Lassen Substation Project is located west of and within the City of Mt. Shasta, Siskiyou County, California (see Figure 1) in Township 40 North, Range 4 West, Sections 16, 17, and 21.

On September 15 and 16, 2011 and on July 15 and 16, 2015 POWER biologists Allison Carver and Melissa Lippincott conducted a field investigation of the proposed areas of disturbance based on the current project description and existing right-of-way (ROW) to determine the presence of potentially jurisdictional waters of the U.S. (including wetlands) that would likely be subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. This report documents the delineation process and results.

2.0 PROPOSED PROJECT

2.1 Project Description

PacifiCorp proposes to replace the existing Mt. Shasta Substation with a new substation, Lassen Substation, on a site adjacent to the existing Mt. Shasta Substation. The proposed Lassen Substation site consists of two parcels (APN 036-220-280 and APN 036-220-170) comprising approximately 4.5 acres. The existing substation would be removed once the Lassen Substation is operational.

As part of the proposed Project, 36 existing wood poles along the existing 69 kV transmission line (Line 2, approximately 1.5 linear miles) would be replaced to accommodate an upgraded distribution underbuild conductor and to comply with the California Code of Regulations, Title 8 and CPUC GO-95 load requirements. The transmission line would operate at 69 kV, but would be constructed as a 115 kV transmission line. The proposed Project would increase capacity to meet current and future projected demand.

The Project also includes upgrades to the existing distribution system to meet current capacity requirements and to meet future load growth. The distribution lines would be upgraded from a 4.16 kV line to a 12.47 kV line. The distribution lines would be partially reconductored and the 12.47 kV distribution lines would be reconnected in a new configuration to receive supply from three breakers at the proposed Lassen Substation. As part of the distribution line upgrade, approximately 1,200 feet of underground cable would be installed to increase capacity of an existing underground line.

Project components, including the existing Mt. Shasta Substation site, the new Lassen Substation site, the transmission line route alignment, and the pole replacement locations are depicted on Figure 2, Project Overview.

PacifiCorp is proposing to:

- Construct a new Lassen Substation.
- Replace 36 transmission wood poles on Line 2 with upgraded wood poles framed for 115kV and distribution underbuild.
- Install three new wood poles to connect the existing transmission system to the new Lassen Substation.
- Connect the existing transmission lines from the existing substation into the new substation through installation of 200 feet of overhead line.

- Connect the cable pulling vault to the existing distribution system through installation of three 300-foot underground conduits.
- Install three underground distribution circuits from cable pulling vault to a new underground/overhead transition pole.
- Reconductor two existing distribution lines.
- Install three 12.5 to 4.16kV stepdown transformers on existing poles in Mt. Shasta.
- Install an underground distribution cable approximately 1,200 feet to increase capacity of an existing underground line.
- Remove the existing Mt. Shasta Substation.

2.2 Project Location

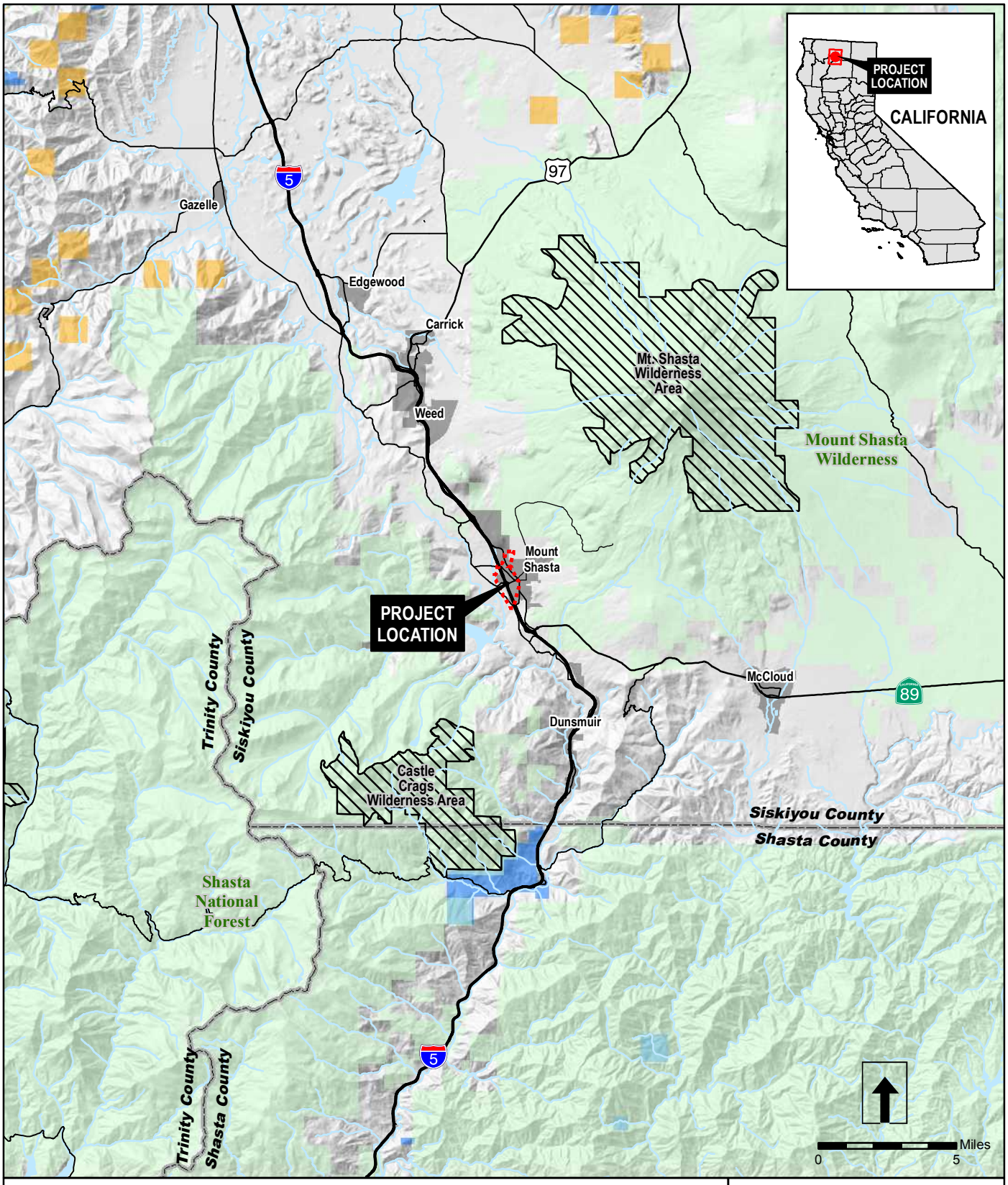
The Project is located in an unincorporated part of Siskiyou County, in northern California, and within portions of the City of Mt. Shasta. The existing Mt. Shasta Substation (located at 404 South Old Stage Road, Mt. Shasta, California) and the proposed Lassen Substation site are located west of Interstate 5 (I-5), in the south-central portion of Siskiyou County. The proposed Lassen Substation site is mapped in Township 40 North, Range 04 West, Section 21 northwest quadrant, of the City of Mount Shasta Quadrangle of the U.S. Geological Survey (USGS) 7.5-Minute Topographic Series (41°18'18.26" N 122°19'13.24" W). The entire Lassen Substation Project is located in Township 40 North, Range 4 West, Sections 16, 17, and 21.

The transmission line upgrade spans a distance of approximately 1.5 miles, from pole 19/47 north of the existing substation to pole 2/49 at West Ream Avenue, south of the existing substation. The reconductoring of existing distribution lines begins at pole 20/47 and continues north/northeast for approximately one mile to pole 093407; the second distribution line to be reconductored begins at pole 160304, on the northern edge of Hatchery Lane and approximately 40 feet south of pole 4/48. This second distribution line runs northeast along Hatchery Lane and West Jessie Street, and will cross I-5 to end at existing distribution pole 162400. Two additional reconductor segments (approximately 500 feet and 350 feet in length, respectively) will occur on developed city streets within the City of Mt. Shasta, on Mill Street and Chestnut Street.

The idle distribution line to be removed runs adjacent to the northern bank of Cold Creek beginning at transmission pole 9/48, crossing beneath I-5 and ending at distribution pole 163380 southeast of the intersection of the northbound I-5 off-ramp and East Lake Street.

Land uses in the Project area are primarily rural residential, residential, light commercial, agricultural, and forest-related. The physical address for the proposed site for the new Lassen substation is 504 South Old Stage Road, City of Mt. Shasta, California. The property is identified as Siskiyou County Assessor's Parcel Number (APN) 036-220-280.

PacifiCorp has acquired a second property located at 506 South Old Stage Road (APN 036-220-170). While this property was purchased to avoid potential impacts to adjacent residents, PacifiCorp would use this site as the material laydown yard during construction of the proposed Project, to reduce construction-related vehicle traffic on local roads.



LEGEND

- PROJECT LOCATION
- CITY LIMITS
- COUNTY BOUNDARY
- WILDERNESS AREA
- USDA FOREST SERVICE
- BUREAU OF LAND MANAGEMENT
- STATE LANDS

FIGURE 1
PROJECT LOCATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

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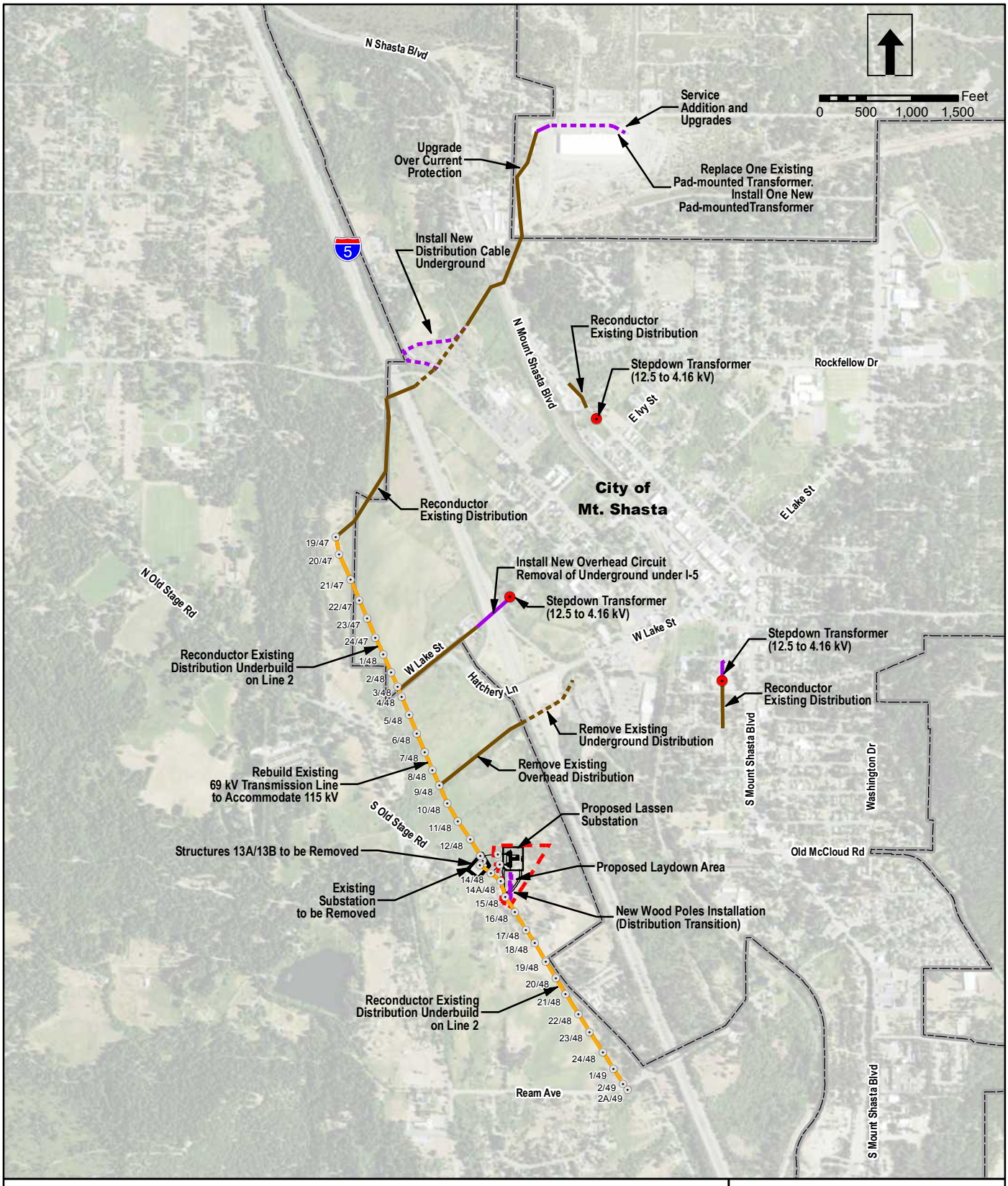

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- EXISTING UNDERGROUND DISTRIBUTION
- PROPOSED OVERHEAD DISTRIBUTION
- PROPOSED UNDERGROUND DISTRIBUTION
- INSTALL 12.47 TO 4.16 KV STEPDOWN
- PROPOSED LASSEN SUBSTATION SITE
- EXISTING SUBSTATION (MT. SHASTA)
- CITY LIMITS

FIGURE 2
PROJECT OVERVIEW

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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3.0 REGULATORY FRAMEWORK

The Project must comply with various federal, state, and local laws; those that apply to the proposed Project are described below.

3.1 Federal

Section 404 Clean Water Act. Waters of the U.S. including wetlands are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into Waters of the U.S. The Sacramento District of the USACE would provide review and permitting services for this Project.

Definition of the Waters of the United States. Waters of the U.S., as applied to the jurisdictional limits of the authority of the USACE under the CWA, is defined in 33 CFR Part 328.3(b) as "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 typically adapted for life in saturated soil conditions." The 1987 *Corps of Engineers Wetlands Delineation Manual* required that wetlands possess the following characteristics: 1) the prevalent vegetation be comprised of hydrophytic species; 2) soils may be classified as hydric, or soils possess characteristics that are associated with reducing soils conditions; and 3) hydrologic conditions are present in that the area is inundated either permanently or periodically at mean water depths less than or equal to6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Following the Supreme Court's decision in the consolidated cases Rapanos v. United States (2006) and Carabell v. United States (2006) (referred to as "Rapanos"), the jurisdiction of Waters of the U.S. was refined, giving the USACE jurisdiction over specific waters such as traditional navigable waters, tributaries of traditional navigable waters, and wetlands that abut both types of waters (USACE and USEPA 2007).

In June 2015 the Environmental Protection Agency (EPA) and the USACE jointly published a final rule defining the scope of waters and wetlands protected under the CWA in light of the statute, science, the Rapanos decision, and the agencies' experience and technical expertise (Final Rule; EPA and USACE 2015). This final rule clarifies the scope of "waters of the United States" protected under the CWA to include:

- Traditional navigable waters (TNW), interstate waters, and the territorial seas (known water of the U.S.)
- Impoundments of jurisdictional waters
- Covered ***tributaries*** (tributaries to TNWs, interstate waters, territorial seas)
- Covered ***adjacent waters*** (adjacent to TNWs, interstate waters, territorial seas, impoundments, covered tributaries)
- Certain waters with a significant nexus to a TNW, an interstate water, or a territorial sea (e.g., vernal pools, prairie potholes)
- All waters with a significant nexus to a TNW, an interstate water, or a territorial sea that are located either:
    - Within the 100-year floodplain of a TNW, interstate water, or territorial sea
    - Within 4,000 feet of the high tide line or ordinary high water mark of a TNW, interstate water, territorial sea, impoundment, or covered tributary

The final rule defines covered tributaries as:

- A water that contributes flow, either directly or indirectly, or through another water to a known water of the U.S.
- A water that is characterized by the presence of the physical indicators of a bed and bank, and an ordinary high water mark (OHWM).

Covered tributaries may be perennial, intermittent, or ephemeral.

The final rule defines covered adjacent waters as

- Waters bordering, contiguous to, or neighboring to a water of the U.S. as defined above.
- "Neighboring" includes waters that are located within:
    - 100 feet of the OHWM of a jurisdictional water;
    - 100-year *floodplain* of a jurisdictional water AND not more than 1,500 feet from the ordinary high water mark; or
    - 1,500 feet of the high tide line of a known water of the U.S., including the Great Lakes.

The entire water is considered "neighboring" even if only a portion of that water is within the covered area.

This Final Rule went into effect on August 28, 2015.

The USACE has also produced a series of Regional Supplements to the 1987 *Manual*, providing technical guidance and procedures for identifying and delineating wetlands that may be subject to Section 404 CWA. These Regional Supplements address wetland characteristics that, due to regional differences climate, geology, soils, hydrology, plant and animal communities, and other factors (USACE 2010), may not meet the characteristics identifying in the 1987 *Manual*. The Project falls within the Western Mountains, Valleys, and Coasts Region.

Section 401 Clean Water Act. Pursuant to Section 401 of the CWA, a water quality certification is required from the California Regional Water Quality Control Board (RWQCB) for Section 404 permit activities. The RWQCB certifies that the discharge complies with state water quality standards and ensures that there is no net loss of wetlands through impact avoidance, minimization, and mitigation. The Central Valley Regional Water Quality Control Board (Region 5R) would provide review and water quality certification services for the Project.

3.2 State

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act defines "water quality objectives" as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Thus, water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both Waters of the United States and Waters of the State. In the State of California, the Porter-Cologne Water Quality Act is administered in concurrence with the Section 401 CWA Water Quality Certification. As with Section 401 CWA, the Central Valley Regional Water Quality Control Board would provide review and water quality certification services for this Act.

Basin Plans. The California State Regional Water Resources Control Board (SWRCB) requires individual RWQCBs to develop Basin Plans (water quality control plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attainted or maintained to protect the designated beneficial uses and conform to the States antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations. The Project is under the jurisdiction of the Basin Plan of the Central Valley Regional Water Quality Control Board.

Construction Storm Water Program. The SWRCB and the nine RWQCBs implement water quality regulations under the federal CWA and California Porter Cologne Water Quality Control Act. Existing water quality regulations require compliance with the National Pollutant Discharge Elimination System (NPDES) for discharges of storm water runoff associated with a construction activity.

Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-2009-DWQ). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the Project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for ―non-visible pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The Project is within the jurisdiction of the Central Valley Regional Water Quality Control Board (Region 5R); however, a complete Notice of Intent package (including a SWPPP) must be filed to the SWRCB via the Storm Water Multiple Application and Report Tracking System (SMARTS) Database.

Lake or Streambed Alteration Agreement. Sections 1600 - 1616 of the California Fish and Game (CFG) Code protect the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW), in which there is at any time an existing fish or wildlife resource, or from which these resources derive benefit. General project plans must be submitted to CDFW in sufficient detail to indicate the nature of a project for construction, if the project would:

- Divert, obstruct, or change a streambed
- Use material from the streambeds
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream

The Northern Region of the CDFW serves Siskiyou County and a Section 1602 Lake or Streambed Alteration Agreement would be required for any project-related impacts to streambeds or banks.

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4.0 METHODOLOGY

Prior to conducting the on-site field investigations, an inventory of readily available data was conducted and reviewed. Aerial photography, USGS topographic maps, National Wetland Inventory (NWI) maps, data from the National Hydrography Dataset (NHD), and Natural Resources Conservation Service (NRCS) soil surveys of the Project area were examined to determine areas of potential USACE jurisdiction and the locations of wetlands and waterways. Potential jurisdictional areas were evaluated and delineated in accordance with the methodology set forth in the USACE 1987 *Wetland Delineation Manual* (Manual), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (WMVC; USACE 2010). Only those potentially jurisdictional features that intersected the ROW and proposed temporary access routes were delineated.

The Manual (USACE 1987) defines hydrophytic vegetation as the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present. In the WMVC Region, hydrophytic vegetation is considered present when either of the wetland plant indicators (i.e., rapid test and dominance test) is satisfied, using only the five basic levels of wetland indicator status, without the plus (+) and minus (-) modifiers (i.e., OBL, FACW, FAC, FACU, and UPL) (USACE 2010). Due to the extreme variability of climate, weather patterns, topography, soils, and wetland types in the WMVC Region, hydrophytic vegetation determinations are based primarily on their wetland indicator status as designated in the Western Mountains, Valleys, and Coast National Wetland Plant List (Lichvar et. al. 2014; USACE 2014).

On September 15 and 16, 2011 and on July 15 and 16, 2015, POWER biologists Allison Carver and Melissa Lippincott conducted a survey of potentially jurisdictional features adjacent to the proposed Lassen Substation site or crossed by the PacifiCorp ROW and proposed access routes anticipated to be used to access the ROW during construction of the Project area. Wetlands and other waters that are located outside the ROW and not within anticipated areas of Project-related ground disturbance would not be affected by the Project and were therefore not delineated. Results of the delineation surveys are provided in Section 6.

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5.0 INVENTORY RESULTS

5.1 National Wetland Inventory Wetlands

The NWI has mapped the following wetland types within the Project area:

- Palustrine emergent, seasonally flooded (PEMC);
- Palustrine scrub-shrub, seasonally flooded (PSSC)

Palustrine emergent (PEM) wetlands are characterized by erect, rooted, herbaceous hydrophytic vegetation, with the exception of mosses and lichens, that is present for most of the growing season in most years. Palustrine emergent wetlands are usually dominated by perennial plants.

Palustrine scrub-shrub (PSS) wetlands are wetlands dominated by woody vegetation less than 20 feet (6 meters) tall. Species found within PSS wetlands may include true shrubs, saplings, and shrubs or trees that are stunted due to saturated soil conditions.

The modifier "C" indicates wetlands that are seasonally flooded: surface water is present for extended periods, especially early in the growing season, but is absent by the end of the growing season in most years. After the end of seasonal flooding, the water table may vary from saturating the surface to dropping well below the surface (NWI 2014).

As shown in Figure 3, the NWI map depicts PEMC wetlands northwest of Mercy Medical Center (located where Pine Street intersects I-5) between the adult senior apartment community and the railroad tracks; at distribution pole 160901, and again at the southern half of the distribution line to the connection at transmission pole 20/47; from just north of pole 20/47 south to pole 9/48; from north of pole 12/48 to pole 14/48, and finally from north of pole 23/48 to pole 24/48.

The PSS wetlands are mapped in a corridor that runs generally parallel to the west side of the ROW from pole 2/48 south to pole 9/48, with a small area northwest of the existing substation (see Figure 3).

5.2 Soils

The NRCS has mapped the following soils types within the Project area (refer to Table 1 and Figure 4). Soil data from the NRCS Web Soils Survey was reviewed and the soil types that are identified by the NRCS as hydric in the Siskiyou County, California, Central Part soil survey and correspond to the Project area are described in detail below (USDA 2014).

TABLE 1 SOIL TYPES OCCURRING WITHIN THE PROJECT AREA

SOIL NAME	SYMBOL	LANDFORMS	HYDRIC (Y/N)	HYDRIC CRITERIA
Asta gravelly sandy loam, 15 to 50 percent slopes	102	Terraces	N	
Boomer, cool-Neuns complex, 30 to 70 percent slopes	116	Mountains, riverwash, channels	Y	4
Deetz gravelly loamy sand, 0 to 5 percent slopes	125	Outwash fans, summits, riverwash, drainageways	Y	4
Deetz gravelly loamy sand, 5 to 15 percent slopes	126	Outwash fans	N	
Diyou loam, peat substratum	138	Floodplains, summits	Y	2

SOIL NAME	SYMBOL	LANDFORMS	HYDRIC (Y/N)	HYDRIC CRITERIA
Marpa-Kinkel-Boomer, cool complex, 5 to 15 percent slopes	183	Mountains, summits	N	
Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes	184	Mountains	N	
Neer-Ponto stony sandy loams, 15 to 50 percent slopes complex	196	Hills	N	
Odas sandy loam	198	Floodplains, summits	Y	2
Ponto sandy loam, 5 to 15 percent slopes	208	Hills	N	
Ponto-Neer complex, 2 to 15 percent slopes	209	Hills	N	

Boomer, cool-Neuns complex, 30 to 70 percent slopes (116)

Boomer, cool-Neuns soils are residuum weathered from metamorphic rock and occur on mountains, riverwash, and in channels. This soil occurs near the southern terminus of the Project, east of pole 2/49. The soil type is listed as a hydric soil based on the following hydric soil criteria: *Criteria 4: Soils that are frequently flooded for periods of long or very long duration during the growing season* (Siskiyou County, California, Central Part).

Deetz gravelly loamy sand, 0 to 5 percent slopes (125)

Deetz gravelly loamy sand, 0 to 5 percent slopes are Glaciofluvial deposits derived from igneous rock and occurs on outwash fans and in drainageways. This soil generally parallels the western side of the Project ROW from pole 19/47 through pole 8/48. The soil type is listed as a hydric soil based on *Hydric Soil Criteria 4* (Siskiyou County, California, Central Part).

Diyou loam, peat substratum (138)

Diyou loam, peat substratum is alluvium derived from igneous, metamorphic, and sedimentary rock, and occurs on the northern half of the Project from pole 20/47 to the edge of the existing Mt. Shasta Substation; on the southern half of the Project, it occurs from pole 23/48 to pole 2/49. The soil type is listed as a hydric soil based on the following hydric soil criteria: *Criteria 2: Soils in Aquic suborders, great groups, or subgroups, Albolis suborder, Aquisalids, Historthels, and Histoturbels great groups, and Cumulic or Pachic subgroups that:*

a) Are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
b) Are poorly drained or very poorly drained and have either:

   (1) A water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
   (2) A water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 inches per hour (in/hr) in all layers within a depth of 20 inches, or
   (3) A water table at a depth of 1.0 foot or less during the growing season in permeability is less than 6.0 in/hr in any layer within a depth of 20 inches (Siskiyou County, California, Central Part).

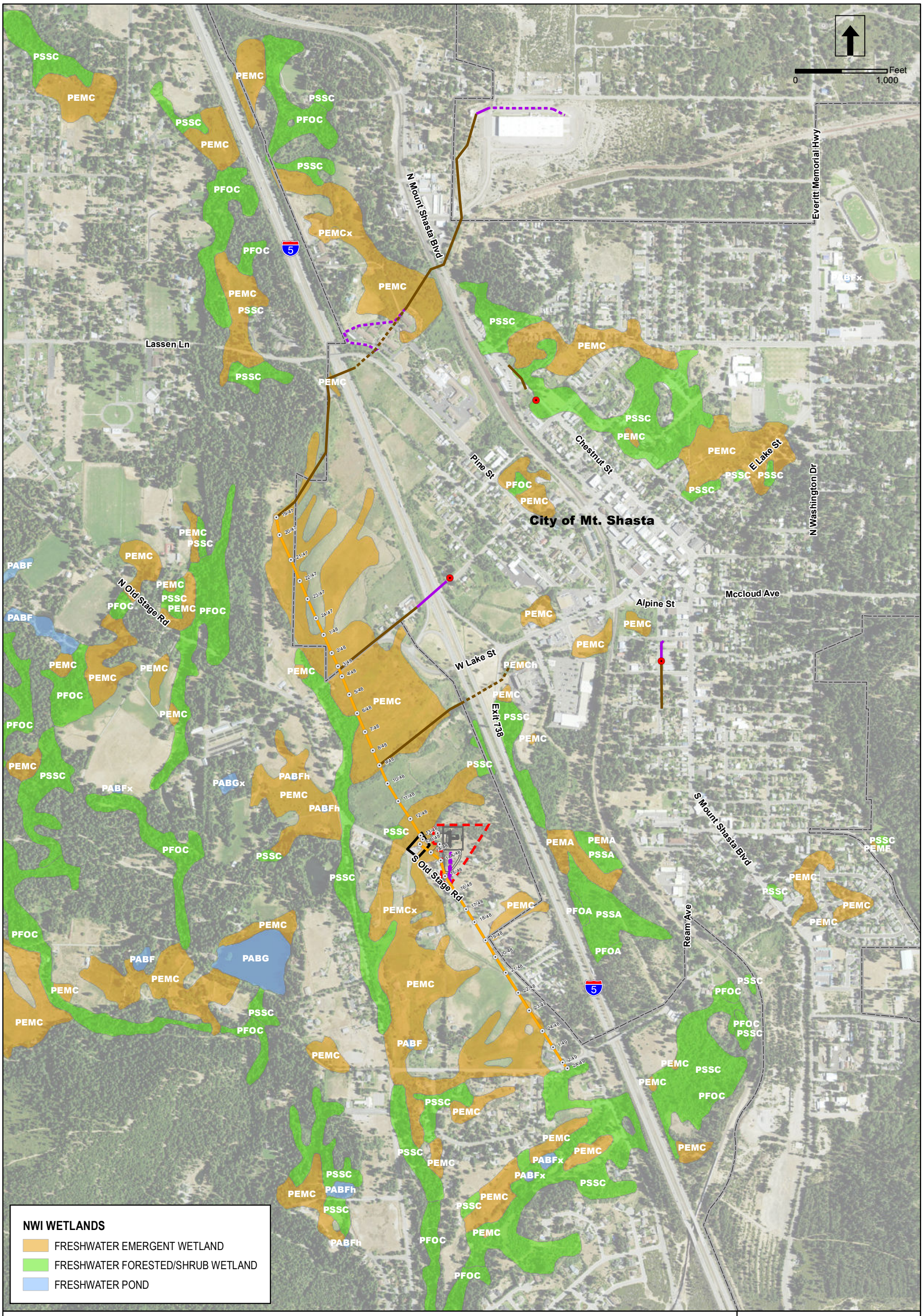

FIGURE 3
NWI WETLANDS

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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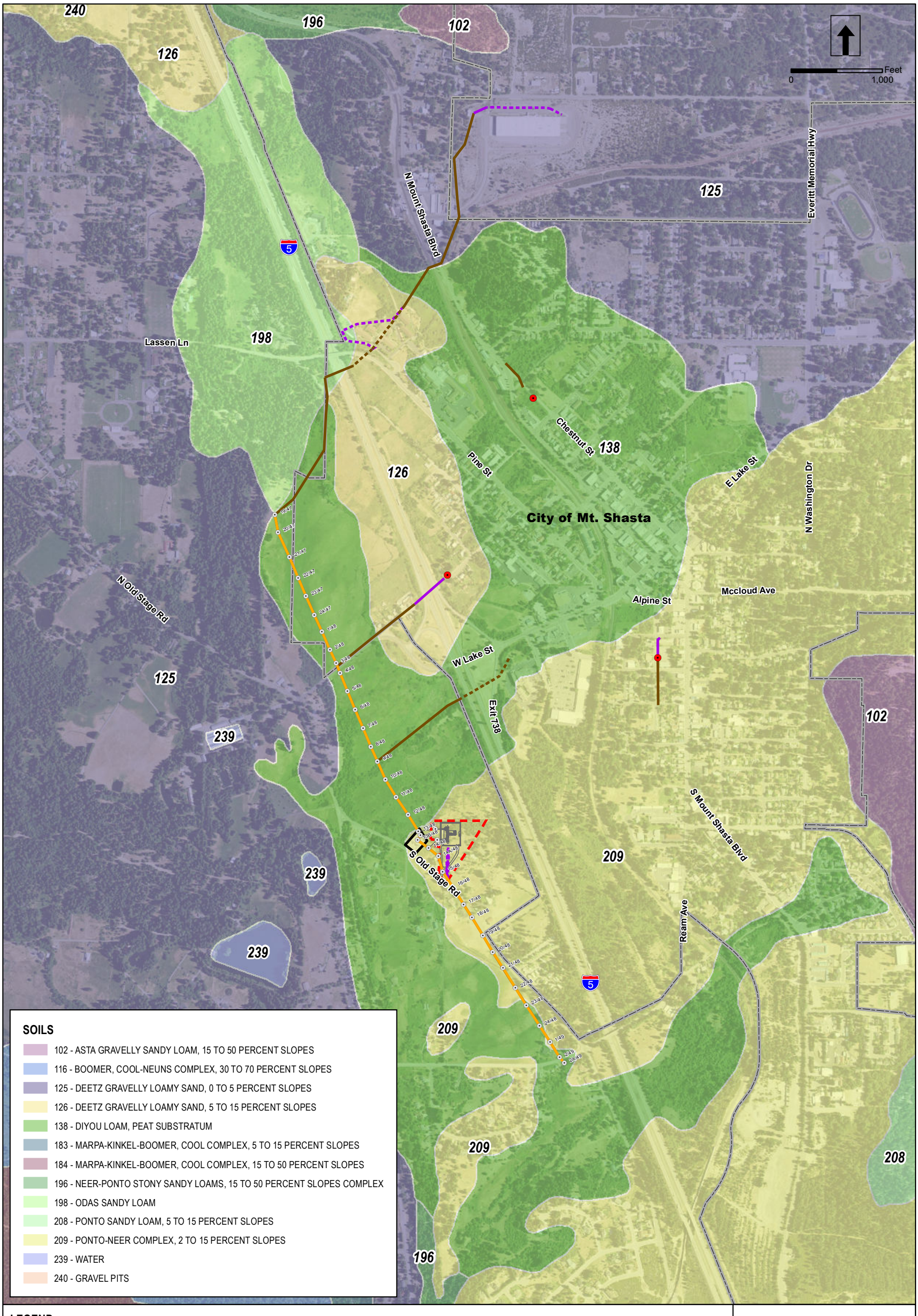

FIGURE 4
NRCS SOIL SURVEY

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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Odas sandy loam (198)

Odas sandy loam is alluvium derived from igneous rock, and occurs at the northern terminus of the Project at pole 19/47. The soil is listed as a hydric soil based hydric soil criteria: *Criteria 2* (Siskiyou County, California, Central Part).

5.3 Climate and Hydrologic Data

The Project is located immediately west of the City of Mt. Shasta, at the southeast end of Strawberry Valley, in the Cascade Range Province. The average annual maximum temperature in Mt. Shasta is 62.4 degrees Fahrenheit (°F) (16.9 degrees Celsius [°C]) and average annual minimum temperature is 36.7°F (2.6°C). Annual precipitation averages 40.0 inches (101.6 centimeters) and annual snowfall averages 103.1 inches (261.9 centimeters), most of which occurs from November through March (WRCC 2015).

The Project occurs within the southern end of the Cascade Gulch-Mount Shasta Hydrologic Unit (HUC 180200050103) which drains an area of approximately 28.7 square miles (74.4 square kilometers), and is located at the northern end of the Sacramento Headwaters Watershed (HUC 18020005). The Project area drains via Cold Creek, a perennial stream that discharges into Lake Siskiyou, approximately 1.25 miles south of the proposed Lassen Substation site.

Natural vegetation in the area at the time of the field investigations was dominated by ponderosa pine (*Pinus ponderosa*), creeping snowberry (*Symphorocarpos mollis),* sedges (*Carex* spp.), rushes (*Juncus* spp.), bulrushes (*Scirpus* spp.), cattails (*Typhus* spp.), willows (*Salix* spp.), alders, (*Alnus* spp.), dogwoods (*Cornus* spp.), western black hawthorn (*Crataegus douglasii*), Himalayan blackberry (*Rubus discolor*), and non-native grasses, including creeping bentgrass (*Agrostis stolonifera*), orchard grass (*Dactylis glomerata*), annual bluegrass (*Poa annua*), and velvet grass (*Holcus lanatus)*.

5.4 Land Use

The Project is located in the Southern Cascade Mountain Major Land Resource Area (MRLA 22B) of the Western Range and Irrigated Region (USDA 2006). MRLAs are geographically associated land resource units delineated by the Natural Resources Conservation Service and are the basic units for delineating statewide patterns of soils, climate, water resources, and land use by analyzing elevations, topography, and rainfall data (effective amount, timing, kind, and distribution). Land uses of region 22B within the Project area are diverse, reflecting the topographic and climactic conditions of the area. The economy of the Mt. Shasta area depends most heavily on recreation, travel, agriculture, and timber. Woodlands and open space account for a majority of the acreage in the Project vicinity. Land use in the Project vicinity is generally characterized by a mix of rural residences, pastures, wetlands, commercial businesses, and other various land uses.

The proposed Lassen Substation is located approximately 0.15 mile west of the I-5 corridor. The proposed substation site consists of two parcels (APN 036-220-280 and APN 036-220-170) comprising 4.5 acres in unincorporated Siskiyou County/City of Mt. Shasta sphere of influence. The proposed Project is located in a rural residential area composed of residences and assorted outbuildings, undeveloped land, and the existing Mt. Shasta Substation.

The parcels between West Lake Street and the existing Mt. Shasta Substation (APNs 036-220-040, 036-210-050, 036-210-060, and 036-220-110) form the Morgan-Merrill Wildlife Preserve (Siskiyou County 2000), a wildlife habitat and wetlands mitigation area containing natural wetlands, man-made wetlands, and non-wetland natural areas. This preserve is bisected by Cold Creek, which begins at springs Near Jessie and Spring Streets in the City of Mt. Shasta on the east side of I-5. The natural

wetlands occur north of Cold Creek; south of Cold Creek are man-made mitigation wetlands (Theiss and Associates 1990), with non-wetlands located on both sides of the creek.

The existing 69kV transmission line proposed for upgrading is located on undeveloped land just outside incorporated City of Mt. Shasta. The existing distribution line proposed for reconductoring begins at pole 20/47 and crosses a mixture of undeveloped land and light commercial areas; the remaining small segments of distribution lines to be reconductored are entirely within the developed City of Mt. Shasta. The distribution line to be removed is located adjacent to Cold Creek and within the Morgan-Merrill Wildlife Preserve.

6.0 FIELD INVESTIGATION RESULTS

The field investigation resulted in the delineation of four potentially jurisdictional wetlands within the Project area, most of which are located north of the existing Mt. Shasta Substation and all of which intersect the Project ROW. Each wetland feature was investigated for the presence of wetland indicators and delineated within the boundary of the ROW. Wetlands from pole 19/47 south to 2/49 were investigated in 2011, and wetlands occurring around the distribution line leading northeast from pole 19/47 were investigated in 2015.

Prior to the field investigations, historical aerial imagery was reviewed to identify potential locations of wetlands. Wetland features were initially surveyed using a Trimble GPS unit with sub-meter accuracy, and the data was mapped using ArcInfo Geographic Information System (GIS). Each wetland was investigated for wetland indicators (soils, vegetation, and hydrology) and boundaries were mapped in the field using project maps, these boundaries were then confirmed and refined using aerial imagery, including historical imagery (Google et. al. 2015) to capture the extent of each wetland intersecting the ROW.

All four wetlands are PEMC wetlands in which the dominant vegetation species are erect, rooted, herbaceous hydrophytes with at least 30 percent aerial coverage. Vegetation in these wetlands is dominated by perennial plants and vegetation is present for most of the growing season in most years. Due to the relatively stable climate of the Project area (WRCC 2014) these wetlands maintain the same appearance year after year (Dahl et. al. 2015) although in some years these wetlands may be heavily grazed.

The following descriptions of each wetland reflect conditions observed at the time of the field investigations. Data were recorded on Western Mountains, Valleys, and Coast Region wetland determination data forms for each delineated wetland, and the corresponding data sheets are located in Appendix A.

6.1 Wetland W-1-11

Wetland W-1-11 is a slope wetland that extends west from the proposed Project ROW between pole 21/48 and pole 24/48, toward Cold Creek (see Figure 5A). The eastern side of this wetland is bounded by an agricultural ditch that was observed to contribute horizontal flow to the fringes of W-1-11 where it intersects the ROW (see Appendix B, Photo 1 and Photo 2). This ditch begins on the west side of South Old Stage Road directly opposite the Mt. Shasta Substation and runs south/southeast through agricultural fields, then returns to the edge of the road near pole 21/48 and ending near pole 24/48. Review of aerial photography indicates that this approximately 0.5-mile-long ditch drains the land immediately up-gradient of South Old Stage Road beginning near the existing Mt. Shasta Substation. Water in the ditch was observed to pond at the end of the ditch and appears to seep/drain horizontally downgradient into W-1-11.

Wetland hydrology indicators for W-1-11 include saturation within the upper 12 inches of the soil profile and free water at 7 inches (at sample location W-1-11B) and at 17 inches (at sample location W-1-11C). The hydric soil indicator at W-1-11B is a redox dark surface (F6) based on observations of a matrix value of 3 or less and a chroma of 1 or less containing 5 percent or more distinct or prominent redox concentrations occurring as soft masses (7.5YR 3/1, 0 to 11 inches containing 20 percent 2.5YR 4/6 reduced matrix). The observed hydric soil indicator at sample location W-1-11C is also redox dark surface (F6) based on a matrix value of 3 or less with a chroma of 1 or less containing 2 percent or more distinct or prominent redox concentrations occurring as pore linings (10YR 2/1, 7 to 17 inches containing 10 percent 7.5YR 2/6 redox concentrations as pore linings).

Hydrophytic vegetation indicators include positive dominance tests of 100 percent at both sample locations with a prevalence index of less than 3.0 (2.26 at sample location B and 2.91 at sample location C) indicating the presence of hydrophytic vegetation. Dominant wetland vegetation included Baltic rush (*Juncus balticus*, FACW), creeping bentgrass (FAC), common rush (*Juncus effusus*, FACW), and Santa Barbara sedge (*Carex barbarae*, FAC). The wetland/upland boundary within the ROW generally follows the slope gradient, with wetland plants beginning at an elevation slightly above the water level of the agricultural ditch and spreading laterally west of the ROW. Upland (sample location W-1-11A) vegetation was dominated by Baltic rush and Santa Barbara sedge near the agricultural ditch, but non-native grasses such as common timothy (*Phleum pratense*, FAC) were more common within the ROW.

During the field investigation, a hydrologic connection to waters of the U.S. was not observed for wetland W-1-11. However, the agricultural ditch which was determined to be perennial since flowing water was observed during both field investigations and during drought years, meets the definition of a tributary as defined in §328.3(c)(3) of the Final Rule because it provides hydrology to Cold Creek by way of wetland W-1-11. Furthermore, review of saturation on aerial photography (i.e., patches of greener vegetation during dry periods), and the City of Mt. Shasta topographic map (USGS 1986) suggest a connection to Cold Creek via the PEMC wetlands, including the greater portion of W-1-11, mapped by the NWI west of the ROW (see Figure 3). It is therefore determined that wetland W-1-11 meets the definition of an adjacent water as defined in §328.3(a)(6) of the Final Rule and is therefore jurisdictional to the USACE under Section 404 CWA.

The two fringes of wetland W-1-11 that intersect the ROW would be temporarily impacted by construction access, but are not within pole replacement work areas and would not be permanently impacted by construction, operation, and maintenance of the Project. Temporary impacts to the wetland fringe south of pole 23/48 would measure approximately 0.007 acre (300.04 square feet, 34 linear feet), and temporary impacts to the fringe south of pole 24/48 would measure approximately 0.002 acre (75.17 square feet and 12 linear feet); total temporary impacts to W-1-11 would be 0.009 acre (375.21 square feet, 46 linear feet).

To minimize impacts to wetland W-1-11, access through these fringes and to pole work areas would be conducted using geomats, portable road platforms, or similar methods to minimize the potential for soils compression or creating ruts. Temporary impacts to wetland W-1-11 are anticipated to be minimal.

6.2 Wetland W-2-11

Wetland W-2-11 is located between pole 4/48 and the Mt. Shasta Substation, and is divided by Cold Creek (See Figures 5B, 5C, 5D, and 5E). In 1990 a wetland mitigation plan (Theiss and Associates 1990) for this site was submitted to the USACE as compensation for development in wetlands east of I-5. The plan included removal of livestock to allow the site to recover naturally, blocking and filling of drainage ditches, returning diverted surface flow to the wetlands, and altering the hydrologic regime of upland areas to convert them into wetlands. Information regarding monitoring and success of this mitigation plan was not available at the time this report was prepared.

The northern half of W-2-11, between Cold Creek and pole 4/48, is a slope wetland that is fed by a combination of spring-fed culverts (Theiss and Associates 1990) and groundwater (ENPLAN 2008), and is designated as a PEMC wetland by the NWI. The southern half of W-2-11, between Cold Creek and pole 13/48, is a man-made wetland fed by one spring-fed culvert (Theiss and Associates 1990), although the southernmost portion is also designated as a PEMC. Cold Creek receives flow from a combination of surface stormwater runoff and springs near Jessie and Spring Streets (Theiss and

Associates 1990). The Morgan-Merrill Wildlife Preserve was created in 2000 as part of the wetland mitigation requirement for a previous project.

Of the five sample locations within W-2-11, none possessed all three wetland indicators of hydrophytic vegetation, hydric soils, and wetland hydrology. However, based on all observations of the site through the length of the ROW, timing of the field investigations (during the dry season and during a severe drought), a portion of this site is a man-made wetland for wetland mitigation purposes, and the declaration of the entire site as a wildlife preserve; therefore, all portions of W-2-11 within the Project ROW were assumed to be wetland.

Sample Location A (Upland)

Sample location A was the reference upland site and is located approximately 20 feet northwest of the small drainage ditch that follows the north side of the substation pad, as shown in Figure 5C (also refer to Appendix B Photo 3). No hydric soil indicators were observed (10YR 2/1 100 percent at 0 to 10 inches) and; although an impermeable layer was reached at 10 inches, this layer proved to be concrete, possibly from substation construction, and no other hydric indicators were observed at this site.

Hydrophytic vegetation indicators at this upland reference site included a positive dominance test (100 percent) and a prevalence index of less than 3.0 (2.26). The species observed included red willow (FACW), California black oak (FAC), western dogwood (*Cornus occidentlis*, FACW), western black hawthorn (FAC), wild rose (*Rosa* sp.), common rush (FACW), Baltic rush, fringed willowherb (*Epilobium ciliatum*, FACW), Santa Barbara sedge, common velvet grass (FAC), creeping bentgrass, reed canarygrass (*Phalaris arundinacea*, FACW), common yellow monkeyflower (*Mimulus guttatus*, OBL), western water hemlock (*Cicuta douglasii*, OBL), Canada thistle (*Cirsium arvense*, FAC), common horsetail rush (*Equisetum arvense*, FAC), and Himalayan blackberry. The presence of wetland species on an otherwise upland site may be due to the proximity of a shallow drainage ditch associated with the substation pad.

Sample Location B

Wetland hydrology indicators at sample location B, located midway between pole 12/48 and pole 13/48, include geomorphic position at the bottom of a low toe slope created by fill for the Mt. Shasta Substation, and a positive FAC-neutral test. The wetland soil indicator is a redox dark surface (F6) based on observations of a matrix value of 3 or less with a chroma of 2 or less with 10 percent distinct redox concentrations occurring as soft masses (10YR 2/1 at 0 to 13 inches underlain by a layer of 7.5YR 3/4 at 13 to 20 inches, containing 10 percent 7.5YR 3/4 reduced matrix. While this layer was measured at 13 inches below the surface and not within the upper 12 inches, it is noted that the parent material is dark (10YR 2/1) and signs of reduced matrix may not have been visible at the time of sampling. However, this location possesses two secondary wetland hydrology indicators and, as discussed below, also possesses hydrophytic vegetation. It is also noted that this sampling location is within the man-made wetland (as shown in Appendix B Photo 4).

Hydrophytic vegetation indicators include a positive dominance test (100 percent) and a prevalence index of less than 3.0 (0.99), indicating the presence of hydrophytic vegetation. Dominant wetland species include Santa Barbara sedge and Baltic rush, although one obligate, perennial sweet pea (*Lathyrus latifolius*) was observed at the sampling location. Please refer to Sample Location A for a description of upland vegetation.

Sample Location C

No wetland hydrology indicators were observed at sample location C, located approximately 60 feet north of pole 11/48. This site is nearly level and located on a low terrace above Cold Creek. This sample location did not possess hydric soil indicators at the time of the investigation; from 0 to 20 inches, the matrix was observed to be 10YR 2/1 with no redox features and saturation beginning at 18 inches.

Hydrophytic vegetation was observed at this location, including a positive dominance (83.3 percent) and a prevalence index of less than 3 (2.71), indicating the presence of hydrophytic vegetation. Dominant wetland species include black hawthorn, Santa Barbara sedge, common rush, creeping bentgrass, Canada thistle, and Himalayan blackberry. Refer to Sample Location A for a description of the associated upland vegetation.

Sample Location D

Sampling point D possesses one obvious hydrology indicator: geomorphic position. This location is located approximately 100 feet south of Cold Creek in an area that is nearly level (see Appendix B Photo 5). The hydric soil indicator is redox dark surface (F6) based on observations of a matrix value of 3 or less and a chroma of 2 or less containing 5 percent or more distinct or prominent redox concentrations occurring as pore linings (10YR 2/2, 7 to 20 inches containing 5 percent 5YR 4/4 pore linings). The uppermost layer (0 to 7 inches) was observed to have a matrix of 10YR 2/2 with no redox features.

Hydrophytic vegetation indicators include a positive dominance test (100 percent) and a prevalence index of less than 3.0 (1.25), indicating the presence of hydrophytic vegetation. Dominant wetland species include black hawthorn, rufous bulrush (*Scirpus pendulus*, OBL), and Himalayan blackberry. Refer to Sample Location A for a description of the associated upland vegetation.

Sample Location E

Sampling location E is located north of Cold Creek near pole 9/48, north of the man-made wetland. Due to field conditions at the time of the 2011 investigation only one sample pit was dug in this wetland, but observations of both hydrology and vegetation justified the determination that the entirety of this site within the ROW is a wetland, as discussed below.

Hydrologic indicators at sampling location E included saturation within the upper 12 inches (7 inches), and geomorphic position (approximately 50 feet from Cold Creek). The soil profile at this site included a matrix layer of low value and low chroma (7.5YR 2.5/2, 0 to 7 inches and 7.5YR 3/2, from 7 to 20 inches) but no visible redox formations, indicating the lack of developed hydric soil. Hydrophytic vegetation indicators at the sample location include a positive dominance test (67 percent); however, the prevalence index was 3.008, indicating that the vegetation at this sample site is marginally hydrophytic.

Hydrology of this site between pole 9/48 and Hatchery Lane included surface water (during the dry season of a drought year, and over 3 feet deep in some areas), drainage patterns, and geomorphic position in a shallow concave area near the bottom of a large flat field (between Cold Creek on the south and a wetland swale on the west). No soil pits were dug between pole 9/48 and Hatchery Lane due to the density of the vegetation and the presence of both standing and flowing water throughout the ROW. The vegetation communities in this half of the site are characterized as dry montane meadow between poles 7/48 and 9/48, which were dominated by grasses (e.g., creeping bentgrass, reed canarygrass) and by both rhizomatous and clump-forming rushes (common horsetail rush, common rush, rufous bulrush; see Appendix B Photo 6). North of pole 7/48 and extending to

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- PULLING AND TENSIONING SITE
- TEMPORARY ACCESS ROUTE
- RIGHT OF WAY (ROW)
- WETLAND SAMPLING LOCATION
- UPLAND SAMPLING LOCATION
- ORDINARY HIGH WATER MARK (OHWM)
- DELINEATED WETLAND
- WETLAND IMPACTS

FIGURE 5A
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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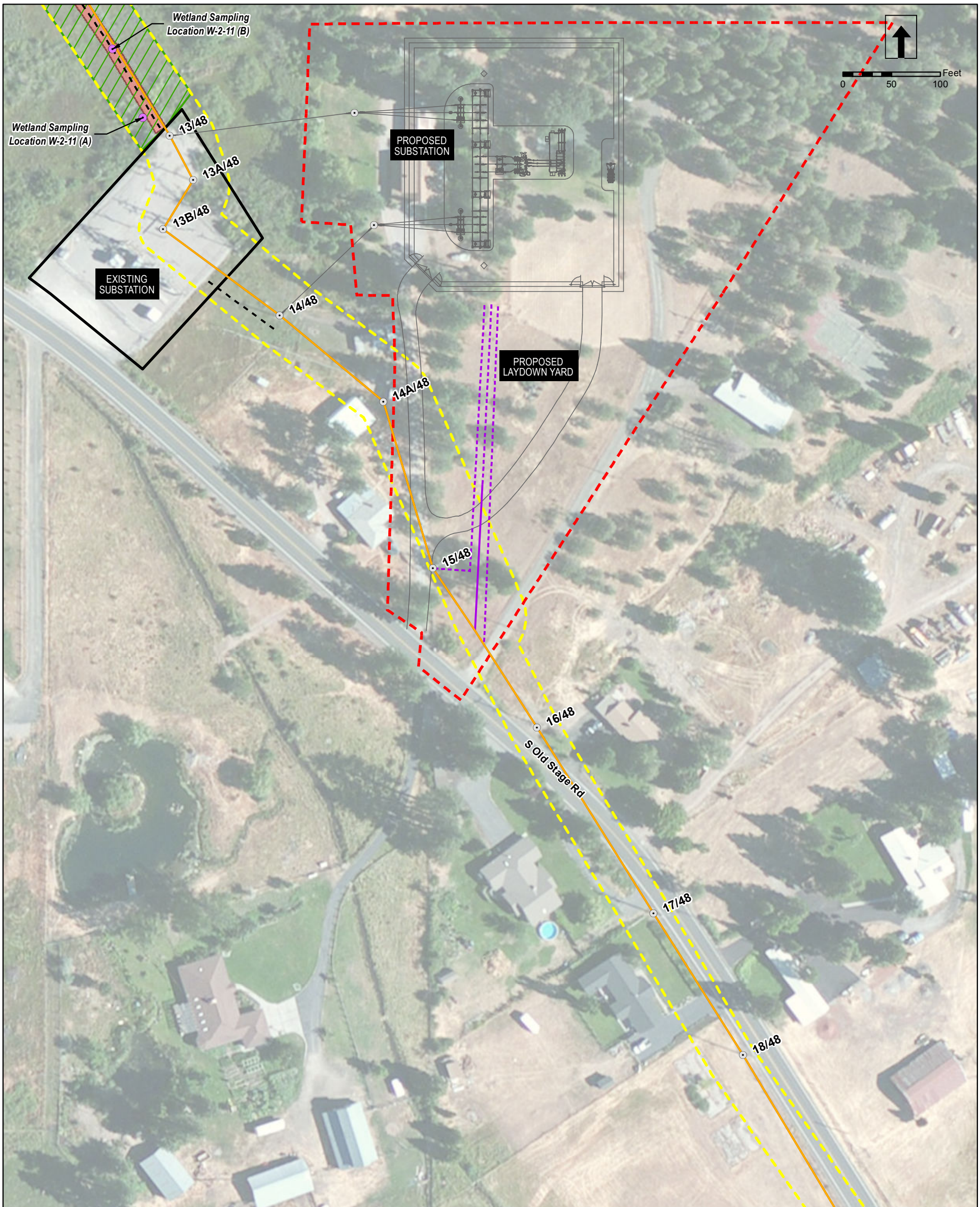

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- PROPOSED OVERHEAD DISTRIBUTION
- PROPOSED UNDERGROUND DISTRIBUTION
- TEMPORARY ACCESS ROUTE
- PROPOSED LASSEN SUBSTATION PARCEL
- EXISTING SUBSTATION (MT. SHASTA)
- RIGHT OF WAY (ROW)
- WETLAND SAMPLING LOCATION
- DELINEATED WETLAND
- WETLAND IMPACTS

FIGURE 5B
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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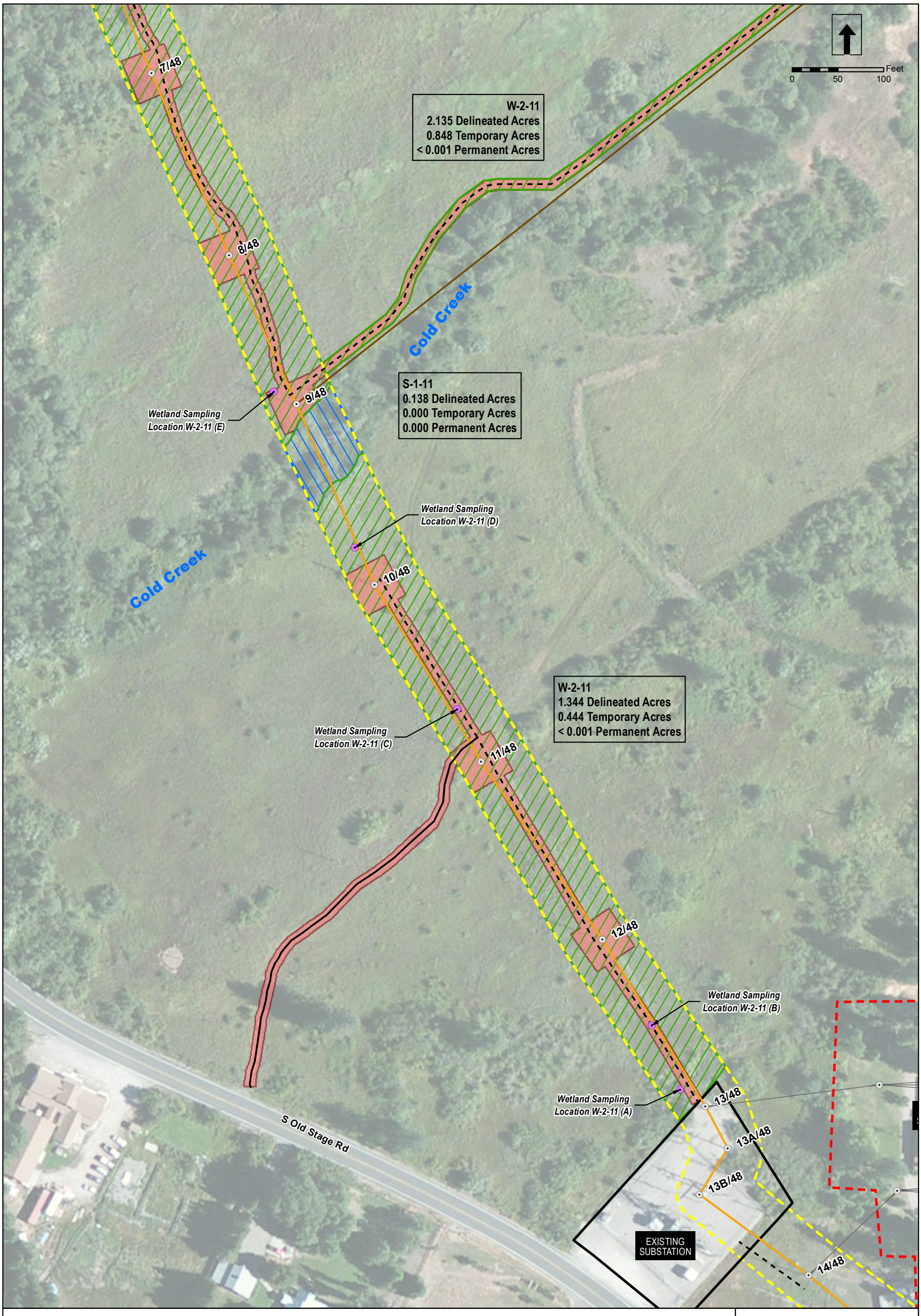

FIGURE 5C
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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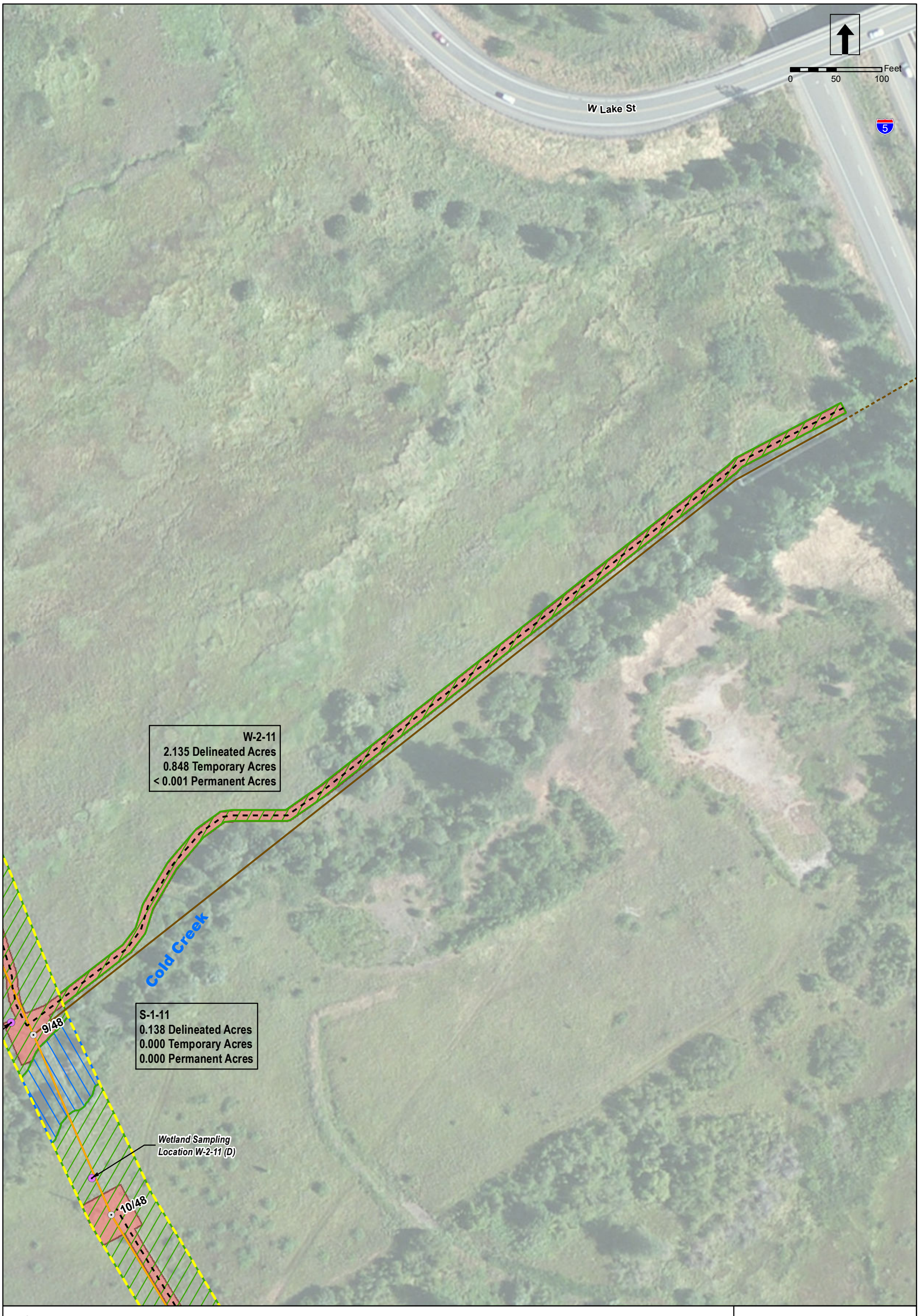

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- EXISTING UNDERGROUND DISTRIBUTION
- TEMPORARY ACCESS ROUTE
- RIGHT OF WAY (ROW)
- WETLAND SAMPLING LOCATION
- DELINEATED WETLAND
- DELINEATED STREAM
- WETLAND IMPACTS

FIGURE 5D
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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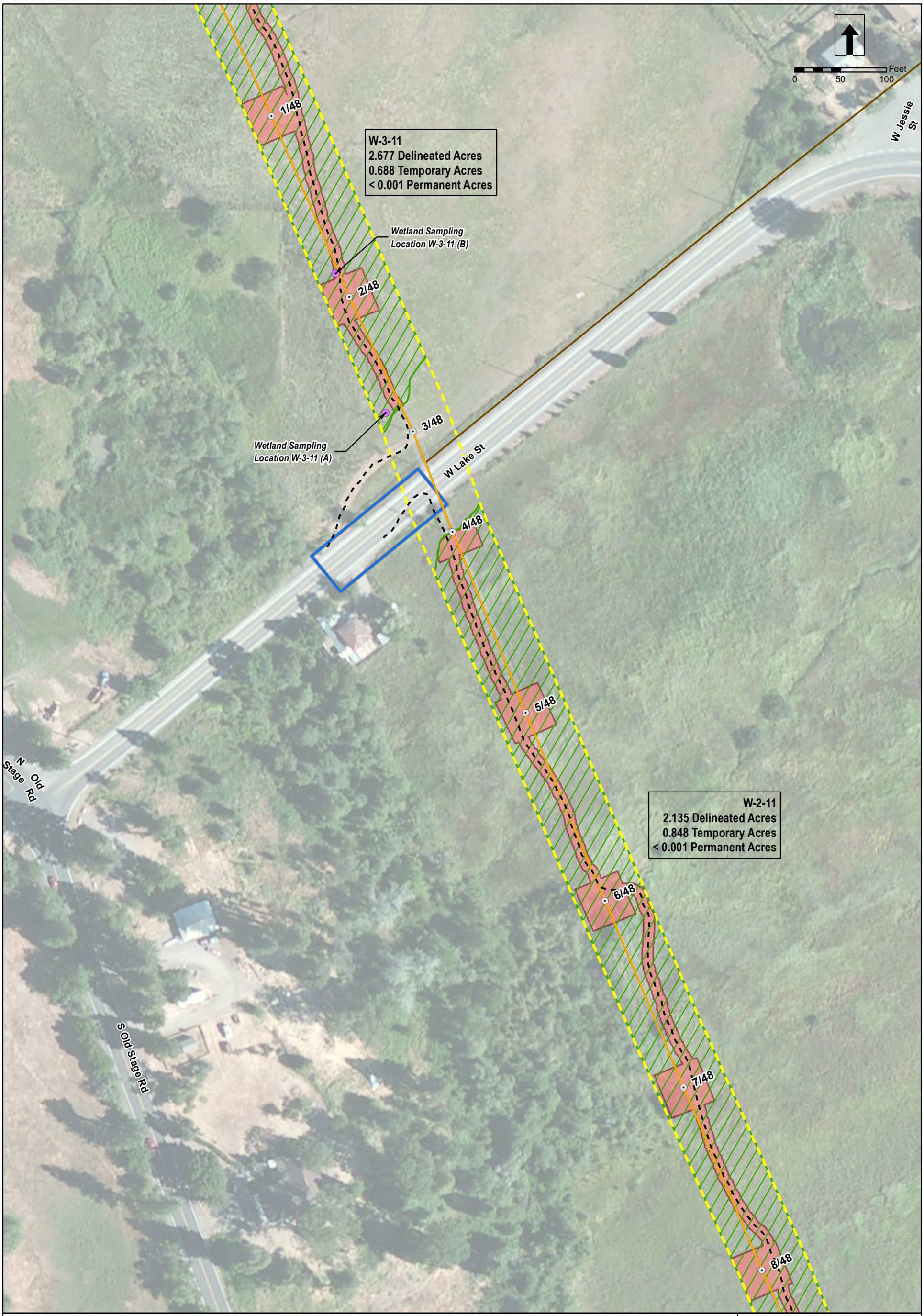

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- PULLING AND TENSIONING SITE
- TEMPORARY ACCESS ROUTE
- RIGHT OF WAY (ROW)
- WETLAND SAMPLING LOCATION
- DELINEATED WETLAND
- WETLAND IMPACTS

FIGURE 5E
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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Hatchery Lane, the ROW traverses vegetation communities characterized as wet montane meadows and fresh water marsh. The wet montane meadows were dominated by wetland species, including sedges (e.g., Santa Barbara sedge), rushes, and broad-leaved cattails (*Typha latifolia*, OBL; see Appendix B Photo 7). The freshwater marsh vegetation was dominated by stands of broad-leaved cattail and rufous bulrush (see Appendix B Photo 8). Given site hydrology and observed vegetation communities, it was determined that the area between pole 9/48 and 4/48 at Hatchery Lane is a wetland. Wetland status is extended to the ROW of the distribution line adjacent to the northwest bank of Cold Creek due to proximity of the line to the stream and overall site conditions.

During the field investigations, the northern half of W-2-11 was observed to slope slightly south/southwest toward Cold Creek and the wetland swale, and the southern half trends slightly west/southwest toward Cold Creek and a roadside ditch that discharges into Cold Creek. Cold Creek discharges into Lake Siskiyou approximately 1.5 miles downstream (south) from the site. Lake Siskiyou is part of the system that collectively form the headwaters to the Sacramento River, a known water of the U.S. and a traditional navigable water; therefore, it is determined that wetland W-2-11 fulfills the criteria of the definition of neighboring waters as defined in §328.3(a)(6) of the Final Rule and is jurisdictional to the USACE under Section 404 CWA.

Wetland W-2-11 would be temporarily impacted by construction vehicle access and creation of pole installation work areas, and permanently impacted by installation of the upgraded poles. Additionally, the existing distribution line adjacent to the northern edge of Cold Creek is anticipated to be removed, and vehicle access would result in additional temporary impacts within this ROW (as shown in Figure 5D). Temporary impacts resulting from vehicle access, pole installation, and removal of the obsolete distribution line would measure approximately 1.29 acres. Installation of the new poles would result in approximately 0.0004 acre (16.82 square feet) of permanent impact within jurisdictional waters.

To minimize temporary impacts to wetland vegetation, soils, and hydrology, construction access through W-2-11 would be conducted using geomats, portable road beds, or similar methods to minimize the potential for creating ruts or compressing wetland soils. To the greatest extent feasible, wetland vegetation will be crushed rather than bladed. Temporary impacts to wetland W-2-11 are anticipated to be minimal.

6.3 Cold Creek

As described previously, Cold Creek is a perennial stream that derives flow from both local springs and surface runoff from precipitation or snowmelt (Theiss and Associates 1990). Riparian vegetation on both banks of Cold Creek is dominated by black hawthorn, Himalayan blackberry, willow thickets (*Salix* sp.), and dogwoods (*Cornus* sp.). The ordinary high water mark (OHWM) of Cold Creek was not delineated during the investigations because the proposed access roads would not cross the stream or affect associated riparian habitat. No temporary or permanent impacts to Cold Creek are anticipated to result from construction, operation, or maintenance of the Project.

6.4 Wetland W-3-11

Wetland W-3-11 is a large slope wetland that is fed by both springs (F. Dalgallo, personal communication, September 14, 2011) and water diversions (A. Merrill, personal communication, October 8, 2009). This wetland is bounded by Hatchery Lane on the south, I-5 on the east, coniferous forest uplands on the north and east, and slopes slightly southeast toward Hatchery Lane. The Project crosses this wetland from pole 20/47 to pole 3/48 (as shown in Figures 5E and 5F), and by the northern distribution line as it diverts north from pole 19/47 (discussed separately in Section 6.5).

The NWI has mapped a large portion of this site as PEMC and PSSC wetlands, although the Project crosses only those wetlands designated PEMC. At the time of the 2011 field investigation a large portion of this site was heavily grazed, which made vegetation identification difficult.

Wetland hydrology indicators for W-3-11 include surface water, high water table, saturation within the upper 12 inches, drainage patterns, dry-season water table, and geomorphic position. Drainage patterns were observed crossing through the ROW between 23/47 and 1/48, and surface water was observed within the ROW between 21/47 through 24/47. Hydric soil indicators for sampling location A, adjacent to pole 3/48, is redox dark surface (F6) based on observations of a matrix value of 3 or less and a chroma of 1 or less (10YR 2/1, 0 to 6 inches) and 2 percent or more distinct redox concentrations occurring as soft masses (10YR 2/1 matrix with 10 percent 2.5YR 3/6 concentrations from 6 to 11 inches), underlain by a layer of 10YR 2/1 matrix with 25 percent 2.5YR 4/6 concentrations occurring as soft masses (11 to 20 inches). At this location, saturation began at 11 inches with free water observed at 17 inches. At sampling location B, hydric soil indicators were redox dark surface (F6) based on observations of a matrix of 10YR 2/1 with 10 percent 2.5YR 2.5/4 concentrations as soft masses (0 to 13 inches), underlain by a layer of 10YR 2/1 matrix with 30 percent 2.5YR 2.5/4 concentrations occurring as soft masses (13 to 20 inches). At this location, saturation began just below the surface at 1 inch, and free water was observed at 13 inches.

Hydrophytic vegetation indicators for wetland W-3-11 include positive dominance tests (100 percent) at both sample locations and prevalence indices of 2.00 and 2.39, respectively. Due to heavy grazing on the eastern property making vegetation identification difficult, a freshwater marsh located outside of the ROW west of poles 1/48 and 3/48 was used as a reference site for sampling location A, and vegetation was identified from within the ROW (see Appendix B Photo 9). Dominant wetland vegetation at the reference site included Santa Barbara sedge and common rush. Dominant wetland vegetation at sampling location B included creeping buttercup (*Ranunculus repens*, FAC), waxy mannagrass (*Glyceria declinata*, FACW), and fringed willowherb; see Appendix B Photo 11 for similar vegetation near pole 1/48. The wetland/upland topography at the northern end of W-3-11 follows a distinct change in topography, hydrologic indicators, and vegetation from wetland-to upland-dominant species (Appendix B Photo 13). Upland vegetation was dominated by Ponderosa pine, incense cedar, and annual bluegrass.

During the field investigation, a second freshwater marsh surrounded by exclusion fencing was observed within the ROW between poles 21/47 and 23/47 (see Appendix B Photo 12). The marsh is a natural wetland that has been remediated as mitigation for Section 401 CWA violations (ENPLAN 2008), and therefore no wetland sampling was conducted within the exclusion fencing. Drainage patterns were observed crossing through the ROW between 23/47 and 1/48, and surface water was observed within the ROW between 21/47 through 24/47.

During the field investigation it was observed that W-3-11 slopes south/southeast toward the observed freshwater wetland west of poles 1/48 and 2/48, and a wetland swale (mapped as a PSSC wetland by the NWI; see Appendix B Photo 10). This wetland swale flows from north to south, seeping beneath Hatchery Lane, and discharges into Cold Creek (RWQCB 2006, ENPLAN 2008). This wetland swale provides hydrologic connectivity to waters of the U.S. as an adjacent water as defined in §328.3(a)(6) of the Final Rule and is therefore jurisdictional to the USACE under Section 404 CWA.

The Project would result in both temporary and permanent impacts to wetland W-3-11. Installation of new poles would result in permanent impacts to jurisdictional waters measuring approximately 11.76 square feet (0.0003 acre). Temporary impacts would result from construction access and creation of pole installation work areas; these temporary impacts would measure approximately 0.69 acre.

To minimize temporary impacts to wetland vegetation, soils, and hydrology, construction access through W-3-11 would be conducted using geomats, portable road beds, or similar methods to

minimize the potential for creating ruts or compressing wetland soils. To the greatest extent feasible, wetland vegetation would be crushed rather than bladed. Prior to construction, the Central Valley Regional Water Quality Control Board would be consulted regarding the most appropriate and feasible construction methods for replacing the poles that occur within the freshwater marsh while minimizing adverse effects to the Morgan-Merrill Wildlife Preserve, wetlands mitigation project. Temporary impacts to wetland W-2-11 are anticipated to be minimal.

6.5 Wetland W-1-15

Wetland W-1-15 is a slope wetland that forms the northern continuation of W-3-11, but was investigated on a later date (see Figure 5G and Appendix B Photo 14). The NWI has mapped the eastern half of this wetland as PEMC. However, the wetland was observed to extend beyond the NWI boundary west of the distribution ROW (see Appendix B Photo 15). The hydrology source for this section of the larger wetland is a culvert located on the western side of a dirt access road leading from the end of Smith Road. The other end of this culvert was not located during the field investigations, but since water was observed flowing from the pipe in the dry season during an extreme drought, this culvert may be spring-fed, as are the culverts in W-2-11.

Wetland hydrology indicators for W-1-15 include saturation within the upper 12 inches, dry season water table, drainage patterns, and geomorphic position at the bottom of a low slope. Surface water was observed within five feet of the sample location, and was observed throughout most of the distribution ROW. The hydric soil indicator is redox dark surface (F6) based on observations of a matrix value of 3 or less and chroma of 1 or less with 10 percent prominent redox features occurring as soft masses (10YR 2/1, 0 to 20 inches with redox concentrations of 2.5YR 3/1 as soft masses from 10 to 20 inches).

Hydrophytic vegetation indicator is a prevalence index of less than 3.0 (2.8), indicating the presence of hydrophytic vegetation. Dominant wetland vegetation included Santa Barbara sedge and Baltic rush. The wetland/upland boundary follows a distinct change in topography and vegetation from wetland- to upland-dominant species on the west side of the upland, but the boundary on the east was less distinct, featuring a more equal blend of wetland- and upland-dominant species. Upland vegetation was dominated by Ponderosa pine along the western periphery, with incense cedar, common velvetgrass, annual bluegrass, and brome fescue (*Festuca bromoides*, FACU) intergrading with wetland vegetation on both east and west boundaries.

Wetland W-1-15, as the northernmost portion of wetland W-3-11, discharges into the wetland swale discussed in Section 6.3 and therefore was preliminarily determined to be jurisdictional under Section 404 CWA as an adjacent water as defined in §328.3(a)(6) of the Final Rule.

The distribution line upgrade is proposed as part of the Lassen Substation Project, while the conductor would be upgraded the existing poles are anticipated to remain in use. Vehicles and equipment necessary for reconductoring of the distribution line would be situated in upland areas, as feasible, or on paved city streets. Work areas, including areas requiring blading or clearing, would be clearly marked. Construction vehicles and equipment would be prohibited from disturbing slopes and drainages outside of the marked area; therefore, impacts to wetland W-1-15 are not anticipated.

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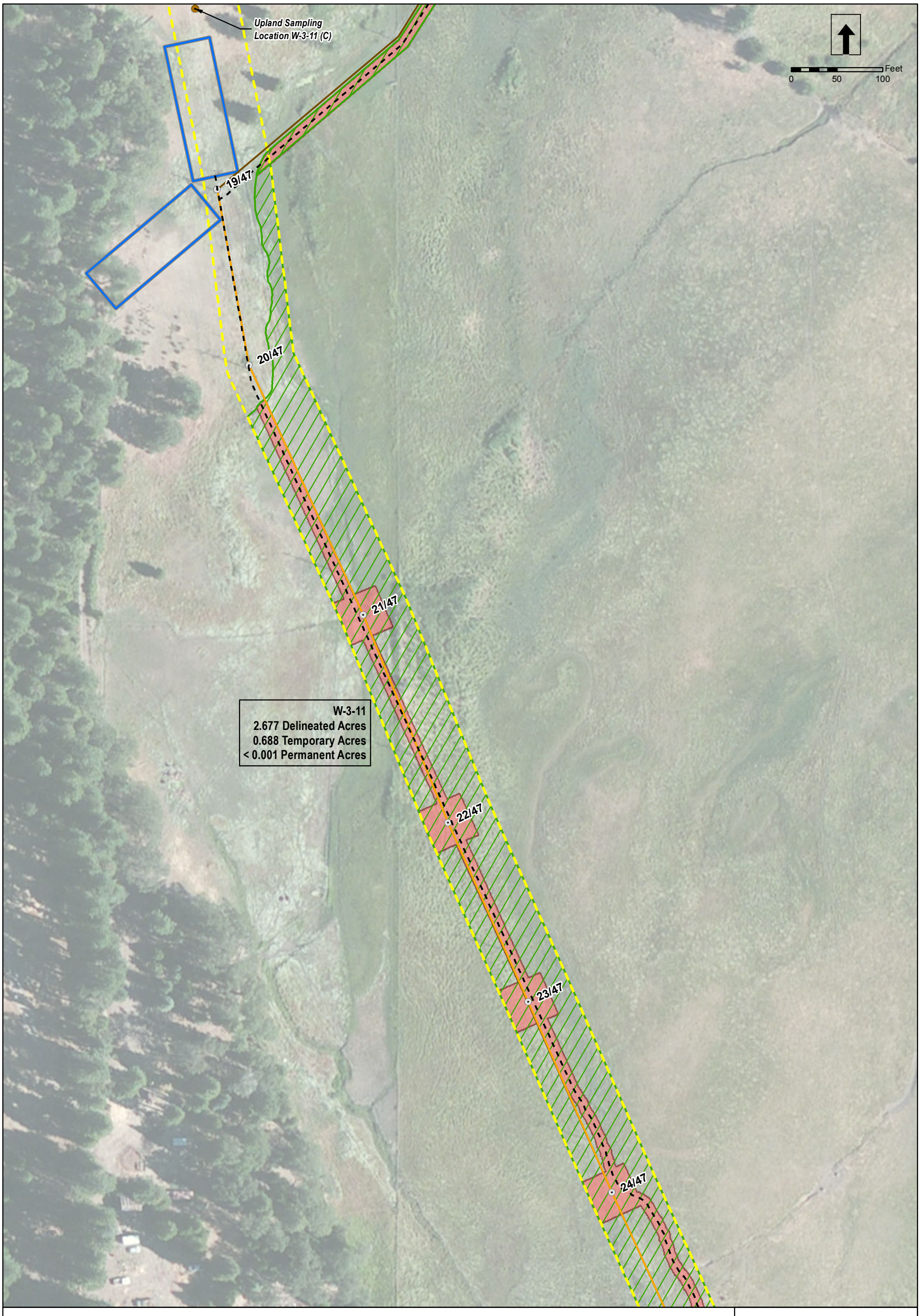

LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- PULLING AND TENSIONING SITE
- TEMPORARY ACCESS ROUTE
- RIGHT OF WAY (ROW)
- UPLAND SAMPLING LOCATION
- DELINEATED WETLAND
- WETLAND IMPACTS

FIGURE 5F
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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LEGEND

- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- EXISTING OVERHEAD DISTRIBUTION
- PULLING AND TENSIONING SITE
- TEMPORARY ACCESS ROUTE
- RIGHT OF WAY (ROW)
- WETLAND SAMPLING LOCATION
- UPLAND SAMPLING LOCATION
- DELINEATED WETLAND
- WETLAND IMPACTS

FIGURE 5G
WETLAND DELINEATION

PACIFICORP
LASSEN SUBSTATION
PROJECT

Source: ArcGIS Imagery, 2010.

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7.0 OBSERVED JURISDICTIONAL STATUS

Using the above definitions identified in Section 3.1 of this document, the preliminary determination was made that wetlands W-1-11, W-2-11, W-3-11, and W-1-15 are jurisdictional to the USACE under Section 404 CWA because each wetland flows, directly or indirectly, into Cold Creek, a tributary of the Sacramento River via Lake Siskiyou, and thus meet the definition of *adjacent waters*.

Final jurisdictional status will be provided by the USACE. Figures 5A through 5G depict the boundaries of the wetlands comprising waters of the U.S. that were delineated within the ROW.

For supporting information refer to the wetland determination data forms provided in Appendix A. Photographs of each wetland site are provided in Appendix B.

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8.0 REFERENCES

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APPENDIX A WETLAND DETERMINATION DATA FORMS

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W-1-11 (A)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 16Sep2011
Applicant/Owner: Pacific Corp State: CA Sampling Point: ~~In Wetland~~
Investigator(s): Carver, Lippincott Section, Township, Range: S21NW, T40N, R4W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): ~5%
Subregion (LRR): 22B Lat: 41.300068° Long: -122.317683° Datum: NAD83
Soil Map Unit Name: Ponto-Nus complex, 2 to 15 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
UPLAND SAMPLE POINT,
* Between 22/48 and 23/48

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	85	Y	FACW
2. Agrostis stolonifera	10	N	FAC
3. Phalaris arundinacea	2	N	FACW
4. Poa pratensis	1	N	FAC
5. Carex barbarae	25	Y	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	123 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	Ø = 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	0	x 1 =	0
FACW species	87	x 2 =	174
FAC species	36	x 3 =	108
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	123 (A)		282 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-1-UA

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 2/3	100	—	—	—	—	Sandy loam	Slightly moist but no saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

First inch is still slightly moist from rainstorm yesterday, but soil is very dry and rocky below that.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

W-1-U (B)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 11 Sep 2011

Applicant/Owner: Pacific Coop State: CA Sampling Point: ~~W-1-U~~ W-1-U/B

Investigator(s): Carver, Lippincott Section, Township, Range: S21, T40N, R4W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR): 22B Lat: 41.299728° Long: -122.312185° Datum: NAD83

Soil Map Unit Name: Diyan loam, past substratum NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
South of 23/46

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eleocharis sp.	5	N	NI
2. Juncus balticus	55	Y	FACW
3. Agrostis stolonifera	15	Y	FAC
4. Poa bulbosa	1	N	FACU
5. Holcus lanatus	5	N	FAC
6. Phleum pratense	1	N	FAC
7. Trifolium sp.	1	N	NI
8. Ranunculus flipus	2	N	FAC
9. Juncus effusus	20	Y	FACW
10. Carex barbarae	2	N	FAC
11. Mentha arvensis	2	N	FACW
	109 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0 = 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	0	x 1 =	0
FACW species	77	x 2 =	154
FAC species	25	x 3 =	75
FACU species	1	x 4 =	4
UPL species	0	x 5 =	
Column Totals:	103 (A)		233 (B)

Prevalence Index = B/A = 2.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

Y 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
NI = No Indicator, unable to identify to species.

SOIL

Sampling Point: WM-11B

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 3/1	80	2.5 4/6	20	RM	M	Greasy	Saturation at 3 inches
7-11	7.5YR 3/1	80	2.5YR 4/6	20	RM	M	Greasy	Hit restrictive layer @ 7"; water @ 7 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Unable to identify

Depth (inches): 11

Hydric Soil Present? Yes X No ___

Remarks:
Saturation began within 3 inches of the surface; free water @ 7 inches

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Sampling location is app. 10-15 feet from an ag ditch; the standing water in the pit looked like it is on the same elevation as the water in the ditch.

W-1-11(C)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta / Siskiyou Sampling Date: 16 Sep 2011

Applicant/Owner: Pacific Corp State: CA Sampling Point: W-1-11C

Investigator(s): Carver, Lippincott Section, Township, Range: S21, T40N, R4W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): ~3/1

Subregion (LRR): 22B Lat: 41.299732° Long: -122.316737° Datum: NAD83

Soil Map Unit Name: Diggs loam, peat substratum NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Ref 24/48

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex barbarae	95	Y	FAC
2. Juncus balticus	10	N	FACW
3. Agrostis stolonifera	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0 = 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	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	100	x 3 =	300
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	110 (A)		320 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: WP-11C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 2.5/1	100	—	—	—	—	loam	
7-17	10YR 2/1	90	7.5YR 3/6	10	C	PL	loamy clay	Groundwater @ 17 inches Saturation @ 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 4B**)
- ___ Drainage Patterns (B10)
- X 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 (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 17

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 12

Wetland Hydrology Present? Yes X No _____

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

Remarks:

W-2-11 (A) 13/48

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 15/10/2011
Applicant/Owner: PacifiCorp State: CA Sampling Point: W-2-11(A)
Investigator(s): Carver, Lippincott Section, Township, Range: S21NW, T40N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2%
Subregion (LRR): 22B Lat: 41.305041° Long: -122.321854° Datum: NAD83
Soil Map Unit Name: Pastro-Nuss Complex, 2-5 percent slopes NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: Proximity of the substation drainage ditch to the upland site may have skewed the wetland/upland vegetation results. => UPLAND SITE

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	1	Y	FACW
2. Quercus kelloggii	1	Y	FAC
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Cornus occidentalis	5	N	FACW
2. Crataegus douglasii	20	Y	FAC
3. Rosa sp.	10	N	FACU
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. Juncus effusus	20	Y	FACW
2. Juncus balticus	5	N	FACW
3. Epilobium ciliatum	5	N	FACW
4. Carex barbarae	5	N	FAC
5. Holcus lanatus	5	N	FAC
6. Agrostis stolonifera	10	Y	FAC
7. Phalaris arundinacea	15	Y	FACW
8. Mimulus guttatus	1	N	OBL
9. Cicuta douglasii	2	N	OBL
10. Cirsium arvense	5	N	FAC
11. Equisetum arvense	5	N	FAC
	= Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1. Rubus armeniacus	10	Y	FACU
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	61	x 2 =	122
FAC species	51	x 3 =	153
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	177 (A)		400 (B)

Prevalence Index = B/A = 2.26

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-211

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
10	10YR 2/1	100	—	—	—	—	loamy	Hit hardpan @ 10", likely concrete from substantial construction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Concrete

Depth (inches): 10

Hydric Soil Present? Yes ____ No X

Remarks:

Restrictive layer is concrete, probably part of the substation foundation. Layer is not an actual aquitard.

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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 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 (D7)

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Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

W-2-11(B) 13/48-D

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 16Sep2014
Applicant/Owner: Pacific Corp State: CA Sampling Point: W-2-11 B
Investigator(s): Cassis, Lippincott Section, Township, Range: S21 NW, T40N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR): E2B Lat: 41.305254° Long: -122.324668° Datum: NAD 83
Soil Map Unit Name: Pondo-Nuss complex, 2 to 5 percent slopes NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex barbarae	35	Y	FAC
2. Juncus balticus	75	Y	FACW
3. Epilobium ciliatum	5	N	FACW
4. Lathyrus latifolium	1	N	OBL
5. Sidalcea sp.	10	N	NI
6. Dipsacus fullonum	10	N	FAC
7. Cirsium arvense	10	N	FAC
8. Hypericum perforatum	3	N	FACU
9. Myosotis sp.	1	N	NI
10.			
11.			
	150 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0 = 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	1	x 1 =	1
FACW species	80	x 2 =	160
FAC species	55	x 3 =	165
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	139 (A)		338 (B)

Prevalence Index = B/A = 0.99

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
NI = No Indicator, unable to identify to species

SOIL

Sampling Point: W-2-11B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100	—	—	—	—	loam	Saturation @ 13 inches
13-20	7.5YR 2.5/1	90	7.5YR 3/4	10	RM	M	loamy	Barely visible redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 Y 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 13 inches

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Sample point is in a slight toeslope area resulting from the fill from the substation. Two secondary indicators observed so calling this a wetland.

W-2-11(C)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: W. Shasta/Siskiyou Sampling Date: 6/15/2011
Applicant/Owner: Pacific Corp State: Ca Sampling Point: W-2-11 C (1/48)
Investigator(s): Carver, Lippincott Section, Township, Range: S11 SE, T40N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2%
Subregion (LRR): 22B Lat: 41.30619° Long: -122.32745° Datum: NAD83
Soil Map Unit Name: Dyar loam, peat substratum NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Sample site is located on a mitigation wetland created in 90's mid-90's. See remarks other side of page.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Crataegus douglasii	3	Y	FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex rostrata	25	Y	FAC
2. Juncus effusus	50	Y	FACW
3. Phalaris arundinacea	5	N	FACW
4. Agrostis stolonifera	75	Y	FAC
5. Cirsium arvense	35	Y	FAC
6. Sidalcea sp.	1	N	NI
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
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: 5 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 55	x 2 = 110
FAC species 88	x 3 = 264
FACU species 10	x 4 = 40
UPL species 0	x 5 = 0
Column Totals: 153 (A)	414 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
NI = No Indicator, could not identify to species (not flowering)

SOIL

Sampling Point: WT-2-11C

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 2/1	100	—	—	—	—	loam	Saturated @ 18 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Soil was saturated at 18 inches, Site is on a terrace approximately 275 feet southeast Cold Creek; Slope is <2%. This property is a created mitigation wetland dating from the mid-90s, when 24 inches were removed to provide water to the site.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 18

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

W-2-11(D) 10/12

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Recapture City/County: Mt. Shasta (Siskiyou) Sampling Date: 15 Sept 2011
Applicant/Owner: Boyscard State: CA Sampling Point: W-2-11 D
Investigator(s): Cavis, Lippincott Section, Township, Range: S11SE, T40N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1%
Subregion (LRR): C Lat: 41.30610830 Long: -122.32315550 Datum: NAD83
Soil Map Unit Name: Dupai loam, peat substratum NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Sampling point is in created wetland mitigation area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Castanopsis chrysophylla	1	Y	FAC
2.			
3.			
4.			
5.			
	1	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. Scirpus pungens	95	Y	OBL
2. Dipsacus fullonum	5	N	FAC
3. Aster sp.	5	N	NI
4. Lupinus sp.	5	N	NI
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. Rubus armeniacus	5	Y	FACU
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum 0

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	95	x 1 =	95
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	106 (A)		133 (B)

Prevalence Index = B/A = 1.25

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
NI = No Indicator, can't identify to species

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	100					loam	
7-20	10YR 2/2	95	5YR 4/4	5	C	PL	loam-clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No _____

Remarks:

Concentrations are prominent but found in only about 5% of the soil using a hand lens. Area is ponded only seasonally.

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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

Site was visited mid-summer during an ongoing, long-term drought. Slope is nearly level.

W-2-11 (E) 9/08

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Vegetation City/County: Mt. Shasta / Siskiyou Sampling Date: 14 Sept 2011
Applicant/Owner: Pacific Corp State: CA Sampling Point: W-2-11 E
Investigator(s): Carver, Lippincott Section, Township, Range: S14 SW, T40N, R4W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): 4-3%
Subregion (LRR): 22B Lat: 41.307149° Long: -122.323479° Datum: NAD83
Soil Map Unit Name: Dixon loam, peat substratum NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Dry & dense vegetation, microtopography is different to assess w/certainty, but this area felt concave when walking in, despite proximity to Cold Creek. Wetland may be marginal at this sample location, but still calling it based on surroundings.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Crataegus douglasii	2	Y	FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex barbarae	100	Y	FAC
2. Distichlis spicata	10	N	FAC
3. Cirsium arvense	10	N	FAC
4. Carex senta	1	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	121 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1. Rubus armeniacus	2	Y	FACU
2.			
	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: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	122	x 3 =	366
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	125 (A)		376 (B)

Prevalence Index = B/A = 3.008

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Passed Dominance Test, barely failed Prevalence Index... hydrophytic veg is mostly present (for the most part), mostly.

SOIL

Sampling Point: WP-11E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 2.5/2	100	-	-	-	-	loamy	Saturation begins @ 7 inches
7-20	7.5YR 3/2	100	-	-	-	-	loamy	Saturation continues, but no H2O

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Saturation begins @ ~7 inches; became heavier toward 20 inches but no free H2O was encountered.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 7

Wetland Hydrology Present? Yes X No ___

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

Remarks:

This location is app. 50 feet north of Cold Creek, and in a slightly concave area near the confluence of Cold Creek and an unnamed stream to the west (app. 300 feet west).

W-3-11(A) 3/48

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 11/5/2011
Applicant/Owner: PacifiCorp State: CA Sampling Point: W-3-11A
Investigator(s): Caves, Lippincott Section, Township, Range: S11E, T40N/R4W)
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): ~3%
Subregion (LRR): 22B Lat: 41.310116° Long: -122.325143° Datum: NAD83
Soil Map Unit Name: Dupo loam, pedisubstratum NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: This property is used for cattle grazing - vegetation is very heavily grazed, almost to bare ground

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex barbarae	65	Y	FAC
2. Juncus balticus	35	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0 = 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	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	165	x 3 =	130
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Vegetation is very heavily grazed; almost to bare ground.

SOIL

Sampling Point: W3-UA

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100	—	—	—	—	loamy	
6-11	10YR 2/1	90	7.5YR 3/6	10	C	M	loamy	Saturation ~ 11 inches
11-20	10YR 2/1	75	2.5YR 4/6	25	C	M	loamy-clay	Free H_2O at 17 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 4B**)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 17

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 11

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Site is near the bottom of a broad, sloping field, but on slightly higher ground adjacent to pole. Expected this to be upland data point, but these wetlands continue to flow south under Hatchery lane. Only upland is access roads; landowners asked us not to dig on the access road.

W-3-11 (3) 2/48

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 16Sep2011
Applicant/Owner: Pacific Corp State: CA Sampling Point: W-3-11B
Investigator(s): Carver, Kipperman Section, Township, Range: S11&S6, T40N, R2W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): ~2%
Subregion (LRR): 22B Lat: 41.310532° Long: -122.325363 Datum: NAD83
Soil Map Unit Name: Diyal loam, peat substratum NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5'radius)			
1. Ranunculus repens	40	Y	FAC
2. Glyceria declinata	30	Y	FACW
3. Epilobium ciliatum	20	Y	FACW
4. Polygonum arenastrum	2	N	FAC
5. Mentha arvensis	5	N	FACW
6. Sisyrinchium sp.	1	N	NI
7. Mimulus guttatus	1	N	OBL
8. Carex barbarae	5	N	FAC
9. Trifolium wildenowii	2	N	FACU
10. Trifolium sp.	2	N	NI
11. Juncus balticus	1	N	FACW
	129 = Total Cover		
Woody Vine Stratum (Plot size: 30'radius)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

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	1	x 1 =	1
FACW species	74	x 2 =	152
FAC species	47	x 3 =	141
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	124 (A)		302 (B)

Prevalence Index = B/A = 2.39

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
NI = No Indicator, unable to identify to species

SOIL

Sampling Point: W-3-UB

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/1	100	-	-	-	-	loam	Saturation just below surface.
1-13	10YR 2/1	90	2.5YR 2.5/4	10	C	M	loamy clay	Free H2O at 13 inches
13-20	10YR 2/1	70	2.5YR 2.5/4	30	C	M	loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 4B)**
- X Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 13

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 1

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface H2O is visible within 10-15 feet of this site.

W-3-11(C) 9/47

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 10 Sep 2021
Applicant/Owner: PG&E & Corp State: CA Sampling Point: W-3-11C
Investigator(s): Davis, Lippincott Section, Township, Range: S17 NE, T40N, R4W
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10-15%
Subregion (LRR): Z23 Lat: 41.315065° Long: -122.327605° Datum: NAD83
Soil Map Unit Name: Cotas sandy loam NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 X	
Hydric Soil Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
UPLAND SAMPLE POINT. NWI 10/47

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa	1	Y	FACU
2. Calocedrus decurrens	1	Y	UPL
3.			
4.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. Poa annua	50	Y	FAC
2. Festuca californica	35	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	36	x 4 =	144
UPL species	1	x 5 =	5
Column Totals:	87 (A)		299 (B)

Prevalence Index = B/A = 3.43

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
This property is used for horse grazing, and vegetation is heavily grazed.

SOIL

Sampling Point: W-3-11C

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	5Y 2.5/1	100	—	—	—	—	loamy	Unable to dig below 14"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Soil is very dry and difficult to dig in all the sample locations. Unable to dig below 14 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Hillslope, near 19/17 (just south app. 25 feet).

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Dist Line City/County: Mt. Shasta/Siskiyou Sampling Date: 14 Jul 2015
Applicant/Owner: State: CA Sampling Point: W-1-15(A)
Investigator(s): Carter, Lippincott Section, Township, Range: S11 NW, T40 N, R4W
Landform (hillslope, terrace, etc.): Gentle slope Local relief (concave, convex, none): concave Slope (%): 20
Subregion (LRR): CA Lat: 41° 19' 04.022" Long: -122° 19' 30.552 Datum:
Soil Map Unit Name: Boundary of Oliver loam, peat substratum and Deetz gravelly loamy sand, 5 to 15 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa (plus seedlings)	1	✓	FACU
2. cedar Calocedrus decurrens	1	✓	UPL
3. Quercus kelloggii	1	✓	NI
4.			
	3	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Rosa sp	5	✓	NI
2.			
3.			
4.			
5.			
	5	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. carex sp. brevicaulis	60	✓	FAC
2. Juncus sp. hesperus	30	✓	FACW
3. minulus guttatus	5		FACW
4. Timothy grass Phleum pratense	2		FAC
5. Rumex salicifolius	1		FACW
6. Solomons Seal	2		NI
7. Viola	5		
8. Festuca ~~sp~~ bromoides	20	✓	FACU
9. Blue Borage	3		
10. Muhlenbergia filiformis	5		FACW
11. Nasturtium aquatica (Watercress)	2		OBL
12 Hulcus lanatum 5' (abnormal)	135	= Total Cover	FAC

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0	= 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: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.29 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 2	x 1 = 2
FACW species 36	x 2 = 72
FAC species 67	x 3 = 201
FACU species 26	x 4 = 104
UPL species 1	x 5 = 5
Column Totals: 137 (A)	384 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
NI = No Indicator; unable to identify to species.
* Plot size was larger than used on other surveys here and took in a lot of the adjacent upland area to the north. This may account for the non-wetland vegetation.

SOIL

Sampling Point: W-1-15(A)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100	—	—	—			Saturation begins @ surface
10-16	10YR 2/1	90	2.5YR 3/1	10	C	M	Clayey	Free H2O @ 16 inches
16-20	10YR 2/1	90	2.5YR 3/1	10	C	M	Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Unknown

Depth (inches): 16"

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ 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, and 4B)**
- X Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6 inches

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface waters within 5 feet of this site. Site also receives flow from a culvert that appears to go east under I-5; flow from culvert creates small stream that flows south through wetland and out of row.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lassen Substation City/County: Mt. Shasta/Siskiyou Sampling Date: 16 JUN 2015
Applicant/Owner: PacifiCorp State: CA Sampling Point: W-1-15(B)
Investigator(s): Carns, Lippencott Section, Township, Range: S16 NW, T40 N, R4W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): ~3%
Subregion (LRR): 22B Lat: 41°19'04.97" Long: -122°19'31.32" Datum: NAD83
Soil Map Unit Name: Dutz gravelly sandy loam, 5 to 15 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks: UPLAND SAMPLE POINT

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa	1	X	FACU
2. Calocedrus decurrens	1	X	UPL
3.			
4.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. Holcus lanatus	20	X	FAC
2. Poa annua	20	X	FAC
3. Carex barbarae	10		FAC
4. Bromus diandrus	5		FACU
5. Festuca bromoides	20	X	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	26	x 4 =	104
UPL species	1	x 5 =	5
Column Totals:	77 (A)		259 (B)

Prevalence Index = B/A = 3.36

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Percent bare ground includes edge of pavement of Smith Road.

SOIL

Sampling Point: W-1-15(TP)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	5Y 2.5/1	100	—	—	—	—	—	Saturation @ 14 inches
14-20	5Y 2.5/1	100	—	—	—	—	—	Saturation but no sulfide

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): —

Water Table Present? Yes ____ No X Depth (inches): —

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 14 inches

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

APPENDIX B PHOTOS

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Photo 1. Wetland W-1-11. View is northeast toward the agricultural ditch, from approximately 85 feet (26 meters) southeast of pole 23/48 (taken September 16, 2011).

Photo 2. Wetland W-1-11. View is southwest from edge of ROW, approximately 25 feet east of pole 24/48 (taken September 16, 2011).

Photo 3. Wetland W-2-11. View is to the north looking across the man-made mitigation wetland from pole 13/48 (taken September 20, 2011).

Photo 4. Wetland W-2-11. View is to the north from pole 12/48 across the man-made wetland toward Cold Creek (taken September 20, 2011).

Photo 5. Wetland W-2-11. View is north toward the riparian vegetation along Cold Creek, from approximately 25 feet north of pole 10/48 (taken September 20, 2011).

Photo 6. Wetland W-2-11. View is south across the slope wetland toward Cold Creek (taken September 14, 2011).

Photo 7. Wetland W-2-11. View is south across the slope wetland from pole 5/48 (taken September 14, 2011).

Photo 8. Wetland W-2-11. View is from the berm at Hatchery Lane, looking south across the slope wetland. The observed freshwater marsh is visible around pole 5/48 (taken September 14, 2011).

Photo 9. Wetland W-3-11. View is from pole 3/48, looking north across the slope wetland. A portion of the reference sample site is visible on the left (taken September 16, 2011).

Photo 10. Wetland W-3-11. View is from pole 2/48 west toward the wetland swale that connects W-3-11 with W-2-11 and Cold Creek (taken September 14, 2011).

Photo 11. Wetland W-3-11. View is north across the slope wetland from pole 1/48 (taken September 16, 2011).

Photo 12. Wetland W-3-11. View is south from pole 21/48 across the exclusion fencing that protects the freshwater mitigation marsh (taken September 16, 2011).

Photo 13. Wetland W-3-11. View is north from pole 21/48 across the northern edge of the slope wetland (taken September 16, 2011).

Photo 14. Wetland W-1-15. View is south along the distribution line from the culvert that contributes water to this slope wetland.

Photo 15. Wetland W-1-15. View is south across the slope wetland from the wetland/upland boundary. The transmission line and wetland W-3-11 are visible in the distance.