Willamette Water Supply Our Reliable Water

DATE: March 9, 2018

TO: Lindsey Obermiller Clean Water Services

2550 SW Hillsboro Highway Hillsboro, Oregon 97123

FROM: John Macklin, David Evans and Associates, Inc.

SUBJECT: Application for Programmatic Master Service Provider Letter

PROJECT: Willamette Water Supply Program

CC: Niki Iverson, City of Hillsboro;

Jill Chomycia, Stantec; Jennifer Miller, DEA

Executive Summary

This memorandum constitutes an application for the Clean Water Services (CWS) Service Provider Letter (SPL) for the proposed Willamette Water Supply System (WWSS or Project) on a programmatic basis. The application is based on an October 13, 2016, memo proposing the programmatic approach, discussions with CWS, three meetings at CWS offices, and a November 28 memorandum from Stacy Benjamin of Clean Water Services requesting additional information. This application is provided in place of a Standard Site Assessment, and is intended to establish conditions under which the overall Project, within CWS jurisdiction, is authorized to temporarily impact vegetated corridors (VCs) (i.e. wetland and stream buffers) by open-trench pipe installation or by bore pits for trenchless pipe installation. Areas temporarily disturbed will be restored in place or mitigated with compensatory plantings per CWS Design and Construction Standards for Sanitary Sewer and Stormwater Management (Standards). The programmatic approach is needed because of the long linear nature of the Project, because of the varying time schedules of different Project work packages, and because the Project is expected to have temporary impacts to a number of VC locations. The project is estimated to have up to 4.54-acre of temporary VC impacts within CWS jurisdiction at 17 locations; however, no permanent VC impacts are anticipated.

Project Overview

The Tualatin Valley Water District (TVWD) and the City of Hillsboro (Hillsboro) have identified the WWSS as the best option for future delivery of drinking water to their service areas in Washington County. The WWSS will provide the region with a seismically resilient water supply to meet future water demands and provide redundancy in case of a future emergency event. The WWSS will include more than 30 miles of transmission pipelines ranging in diameter from 36 inches to 66 inches. The pipelines will extend from the Raw Water Facilities (RWF) and intake at the existing Willamette River Water Treatment Plant (WRWTP) in Wilsonville, north to tie into TVWD's and Hillsboro's existing water distribution systems. The proposed WWSS also includes the construction of Reservoir Facilities, which will include two finished water storage tanks (terminal storage), and construction of a new water treatment plant (WWSS WTP). An overall map of the project is presented as Attachment A. Attachment B presents maps identifying Water Quality Sensitive Area (WQSA) (i.e. wetlands and streams) crossing locations relative to the CWS Service Area.

On the Attachment B maps, the crossing locations noted in gray indicate either that there is no VC impact, or the crossing is outside of CWS jurisdiction. The locations noted in yellow indicate a VC impact that either is currently within the CWS boundary, or will be within the CWS boundary when that area is annexed in the future.

Project Work Packages

To facilitate Project delivery and completion by 2026, the Project has been divided into "work packages." The packages have been subdivided into multiple construction packages, which may be constructed alone, or in partnership with municipal and/or Washington County road projects. The work packages, their location relative to the CWS Service Area, and their proposed schedules are shown in Attachment A and briefly described below.

Several work packages are located entirely outside of the CWS service area boundary, and are therefore not addressed further in this memorandum. These include:

- Wilsonville Area Pipeline (work package ID Pipeline Main (PLM) 1.0);
- South Beaverton Area Water Storage Tanks (work package ID Reservoir (RES)_1.0);
- WWSS Water Treatment Plant (work package ID WTP_1.0);
- Raw Water Facilities (work package ID RWF_1.0); and
- Kinsman Road Pipeline (work package ID PLM 2.0)

The 124th Avenue Partnership Project package (work package ID PLM_3.0), located south of SW Tualatin-Sherwood Road, has already been permitted under a separate SPL, and is therefore not addressed further.

The remaining packages are partially or entirely within the CWS service area, and are described below and depicted in Attachment A.

- Tualatin-Sherwood Area Pipeline Project (PLM_4.0) Conveyance pipeline for finished/treated drinking water from 124th Avenue at SW Tualatin Sherwood Road to SW Roy Rogers Road at SW Beef Bend Road. This package includes approximately 25,200 linear feet (4.8 miles) of 66-inch diameter welded steel pipeline. Portions of this work package extend outside of the CWS service area.
- Scholls Area Pipeline Project (PLM_5.0) Conveyance pipeline for finished/treated drinking water from SW Roy Rogers Road at SW Beef Bend Road to SW Farmington Road at SW 209th Avenue. This package includes approximately 38,200 linear feet (7.2 miles) of 66-inch diameter welded steel pipeline. Only a minor portion of this package is within CWS service area. Areas recently incorporated into the City of Beaverton's South Cooper Mountain Planning Area are also likely to be annexed into the CWS service area.
- South Hillsboro Area Pipeline Project (Pipeline West (PLW)_1.0) Conveyance pipeline for finished/treated drinking water from SW Farmington Road at SW 209th Avenue to Cornelius Pass Road at SE Frances Street and the start of the Eastern Extension from Cornelius Pass Road at Kinnaman Road to Kinnaman Road at 209th Avenue. This package includes approximately 11,250 linear feet (2.1 miles) of 66-inch diameter, 2,700 linear feet (0.5 miles) of 54-inch diameter and 7,050 linear feet (1.3 miles) of 48-inch diameter welded steel pipelines. Areas recently annexed into the City of Hillsboro are likely to also be annexed into the CWS service area.
- Cornelius Pass Pipeline Project (PLW_2.0) Conveyance pipeline for finished/treated drinking
 water from Cornelius Pass Road at SE Frances Street to Cornelius Pass Road at Highway 26
 where it would connect into the existing transmission lines for Hillsboro and TVWD. This package
 includes approximately 17,475 linear feet (3.3 miles) of 48-inch diameter and 5,725 linear feet

- (1.1 miles) of 36-inch diameter welded steel pipelines. This entire work package is within the CWS service area.
- Beaverton Area Pipeline Project (Pipeline East (PLE)_1.0) Conveyance pipeline for finished/treated drinking water from SW 209th Ave at Kinnaman Rd into the City of Beaverton, where it would connect to the existing TVWD distribution system. This package includes 10,259 linear feet (1.9 miles) of 48-inch diameter and 18,975 linear feet (3.6 miles) of 54-inch diameter welded steel pipelines. This entire work package is within the CWS service area.

These packages are further subdivided as depicted in Attachment A.

CWS Environmental Compliance

Programmatic Service Provider Letter for Temporary Impacts

The proposed transmission pipelines cross a number of WQSAs and VCs throughout its extent. Open-trench pipe installation, and bore pits to be excavated for trenchless pipe installation, will create temporary impacts to VCs. Where feasible, impacts have been avoided by locating the pipeline roadways or rights-of-way, or by using trenchless methods to cross beneath WQSAs. In segments where the pipe will be installed with new roadways or road improvement projects, the roadway project will be responsible for effects to WQSA and VC resources under a separate SPL process. Disturbance or removal of native trees over six inches diameter at breast height (dbh) will be avoided where possible.

Because of the temporary impacts that will occur throughout the different Project packages on varying schedules, which may also be subject to adjustments depending on design and construction changes, the Project proponents seek to obtain a Programmatic CWS SPL Agreement. This will establish conditions under which the overall Project will be authorized for temporary impacts to VCs while accounting for any variation of actual impact extent during construction.

Estimated Temporary Impact Summary

Estimated project impacts to VCs are depicted in Table 1:

Table 1: Summary of CWS VC impacts and restoration

- 4.54 Acres total temporary impact at 17 locations
- 3.31 Acres of the total, at 13 locations, are likely to be restorable to CWS "good" condition in place after construction*
- 1.23 Acres of the total impact, at 5 locations, are likely to require mitigation off-site due to land use conflicts* At these locations, impact areas will be restored to current use conditions.
- 15 impact locations will comply with CWS temporary impact corridor width limits
- 2 locations will require exceptions to CWS temporary impact corridor width limits

No permanent impact to VC is anticipated

A delineation of WQSAs throughout the proposed Project alignment has been completed and is documented in separate wetland delineation reports prepared for each work package. The Oregon Department of State Lands (DSL) has verified wetland delineations for all work package, and the concurrence verification documents are included in Attachment C.

^{*} One of the locations contains both restorable and non-restorable areas

VCs were identified based on WQSA delineations and the CWS criteria for VC location and size as established in Chapter 3 of the Standards. Project impacts to WQSAs and VCs have been identified and are depicted in Attachment D and documented in Attachment E.

Exceptions to Temporary Impact Width Limits

Exceptions to CWS temporary impact corridor width limits will be required at two of the 17 VC disturbance locations because of access and staging requirements as explained below: 1) Beaverton Creek at Cornelius Pass Road and 2) Wetland crossings at Scholls Ferry near Vandermost Road. Section 3.05.5 of the Standards specifies that the pipeline corridor should be no more than 20 feet wide, and the total width for temporary construction access should be no more than 50 feet wide.

1. Cornelius Pass Road crossing of Beaverton Creek:

Steep slopes lead to the Beaverton Creek crossing from both sides at this location. In order to bring large equipment to the trench through this crossing, grading is necessary to reduce the slope to a maximum of 3:1. Approximately 20 feet will be needed along one side of the trench to provide access for construction equipment, haul trucks, and pipe deliveries. Approximately 15 feet will be needed on the other side of the trench for safe personnel access to the trench and staging of small equipment such as generators, pumps, and welding machines. Large equipment (include drill rigs and cranes) will be needed to construct seismic improvements on the south side of the creek. Due to steep slopes, the presence of other utilities, and location of a three-story apartment building on the south side of the crossing, large equipment will need to access from the north side, requiring an access structure across the creek. The structure will likely consist of culverts and 24-foot steel plates, but will be at the Contractor's discretion. The combined total crossing corridor width is calculated at a minimum of 47 feet. However, depending on subsurface conditions yet to be discovered, the crossing corridor width may need to be larger in some areas with a maximum potential width of 60 feet. The exact location of the 60-foot wide corridor will ultimately be determined by the contractor, but will be within the 75-foot corridor displayed on Sheet C-011 of Appendix D. Additional space beyond the 60-foot corridor will likely be needed to construct a temporary fish passage channel in compliance with Oregon Department of Fish and Wildlife (ODFW) fish passage regulations.

2. Creek Crossing at Scholls Ferry Road near Vandermost Road.

This location includes a creek as well as wetlands (Sheet P-22 in Appendix D). The pipeline will cross the deeply incised eastern creek perpendicularly. In order to bring large equipment to the trench through this crossing, grading is necessary to reduce the slope to a maximum of 3:1. Approximately 20 feet will be needed along one side of the trench to provide access for construction equipment, haul trucks, and pipe deliveries. Approximately 15 feet will be needed on the other side of the trench for safe personnel access to the trench and staging of small equipment such as generators, pumps, and welding machines. Additional width will be needed to slope the ground down to the work area and to provide areas for personnel to install erosion and sediment control and work limit delineation materials.

The combined total crossing corridor width at the eastern creek would be a maximum of 75 feet. The total construction corridor width may be further reduced at the contractor's discretion based on site conditions. Fish passage requirements for all open-trench waterway crossings will be determined through the ODFW Fish Passage Permit application process. If required, space for a fish passage channel would be within the 75-foot corridor.

Restoration

Restoration of vegetation in temporarily disturbed WQSAs and VCs is summarized in Attachment F. Mitigation planting will be implemented each year to restore temporary impacts to VCs in areas where pipe installation has been completed that year. All areas of native plantings will have the standard

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contractor's one-year warranty, in addition to a three-year performance monitoring period for trees and shrubs.

Site restoration for temporary impacts will conform to the Planting Requirements documented in Appendix A of the Standards. Topsoil will be stockpiled for use in site or trench area restoration. Topsoil will be amended with compost at the time of site restoration, if necessary, to create suitable planting medium.

VCs disturbed by earthwork or clearing will be replanted with native groundcover species and native shrubs at the densities specified in the Standards, subject to the constraints of rooting depth over the pipe and of private land use. As per Section 3.05.5 of the Standards, planting trees directly over the buried pipe will be avoided in order to prevent pipe damage from roots and allow for access to the pipeline in the future. Attachment F describes specific planting restriction zones established by the WWSP program in proximity to the pipe to avoid potential risks of disturbance and damage to the pipe due to plant roots.

Off-site Mitigation

Temporarily disturbed VCs will be planted with native trees and/or shrubs at densities specified in the Standards, wherever possible. However, such plantings may be problematic in some locations where the pipe alignment runs through private lands with uses that conflict with tree and shrub plantings such as cropland, pasture, or lawn. In these cases, the applicant will seek CWS assistance to identify equivalent areas within degraded condition VCs at off-site locations for compensatory enhancement at a 1:1 ratio.

As summarized in Table 1 and Attachment E, an estimated 1.23 acre of impact at five locations may need to be restored to existing use rather than to CWS "good condition" because current use is farming, ornamental landscaping, or is within the boundary of BPA substation property. The 1.23 acres will be mitigated off-site, and will protect the functions and values of the VC and WQSA. WWSS will coordinate with CWS to seek specific suitable locations, and these will be presented in a separate memorandum.

As-built Documentation

The impacts identified in this document are estimates of the maximum potential extent of temporary VC impact. Restoration will cover actual rather than estimated temporary impacts. An annual as-built report will be produced each year to document actual impacts and restoration implementation.

Permanent Impacts

No WWSS permanent impacts to VCs are proposed. In the unlikely event that permanent impacts become necessary during project construction, they will be documented and permitted separately from this Programmatic agreement. They may be documented either as minor pipeline-related impacts as per Section 3.05.5.c. of the Standards, or as significant permanent VC impacts requiring a separate Site Assessment document and specific mitigation.

Tier 2 Analysis

A Tier 2 Alternatives Analysis is required by CWS Design and Construction Standards Section because the project may encroach on CWS "good quality" VC and will encroach on over 30% of the depth of marginal and degraded VC, and thus does not meet the criteria for "Minor Encroachment" under Section 3.07.2.

Alternatives Analysis

Population size and municipal water needs in Washington County are expected to double in the next 50 years, with new source supplies needed as early as 2026. Although effective water conservation programs and newer low-water-use appliances have decreased water use by Washington County homes and

businesses by 15 to 20 percent compared to a decade ago, conservation alone is not enough to meet projected future demands. Without development of a new water supply source, Hillsboro and TVWD will not have the necessary water supplies to respond to increased water demand in their service areas resulting from projected population growth and development in the region.

Based on this anticipated need for additional water supplies, four water source alternatives identified by Tualatin Valley Water District (TVWD) and the City of Hillsboro were evaluated: 1) Hagg Lake, 2) Willamette River, 3) Portland Water Bureau (ultimately from Bull Run Reservoir), and 4) groundwater from the Scappoose, Oregon area. Based on the results of the criteria evaluation, the Willamette River at Wilsonville (Mid-Willamette) alternative was the highest-rated option (HDR, 2013) and was selected by the TVWD board in 2013 as the preferred supply alternative. Once Hillsboro and TVWD had both selected the Mid-Willamette alternative as the preferred supply alternative, the two agencies formed the WWSP in 2013 to partner in the development of the supply source.

Following the selection of the Mid-Willamette alternative as the preferred supply source, the Program evaluated a number of pipeline routes to determine the route that best met the purpose of the Program while avoiding and minimizing impacts to the environment and community. During the Project's preliminary design phase, the list of candidate routes was initially identified using aerial photography and mapping, and was further refined following site reconnaissance and agency coordination meetings during the routing analysis.

Potential pipeline routes were eliminated from consideration based on significant obstacles to implementation. Obstacles may have been technical in nature or due to the high likelihood of social or environmental impacts, all of which would result in significant implementation risk.

A total of 117 route alternatives were evaluated as part of the pipeline criteria evaluation. The route alternatives were divided into five geographical sections, and once the route alternatives with significant implementation risks were eliminated from consideration, a short list of three to four route options in each section were evaluated according to the criteria shown in Table 2 using the same three-tier scale as the water supply alternatives evaluation (HDR, 2016).

Table 2: Transmission Pipeline Route Evaluation Criteria

Category	Description	
Comparative costs	The estimated difference in cost between alternatives, based on the lowest cost alternative (the base cost)	
Social/community	A combination of congestion and community impacts, impacts to critical facilities (e.g., fire stations, hospitals) or community facilities (e.g., schools, churches, recreation centers), known opportunities to provide community enhancements, and areas deemed "no-cut" by the community due to sensitivity of the resource or recent construction	
Opportunities/benefits	Known proposed road projects, available property along alignment, proposed developments that may provide new roads for pipeline alignments, or other project benefits that the alignment may have for the community	
Environmental / permitting / cultural resources	Impacts to wetlands or waterways, amount of impact to Endangered Species Act (ESA)- listed or sensitive species, wildlife refuge impacts, likelihood of uncovering cultural resources, other agency ROW* (Oregon Department of Transportation (ODOT), Bonneville Power Administration, railroad), and availability of discharge locations for pipeline appurtenances	

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Category	Description	
System compatibility	Adjacency to reservoir site, access and proximity to connection points (turnouts), and compatibility with system hydraulics (particularly excess length of pipe or localized high points)	
System resiliency	Geologically active areas (seismic risk), high consequence foreign utilities (large/high pressure natural gas or petroleum mains, and water transmission mains), and accessibility of the pipe and appurtenances after a seismic even	
Constructability	Available ROW, adequate construction access, likelihood of geotechnical challenges, large utility conflicts, known future utilities, and availability of detours and ROW width for traffic control	

The extensive analyses found that there is no practicable alternative alignment that would avoid all disturbance of WQSA's and VC's. The location and site planning for the transmission pipeline minimizes incursion into VC's. Where possible, WWSS has taken opportunities to avoid impacts to WQSAs and VCs by partnering to install pipeline segments beneath previously planned and permitted road work. Much of the pipeline will also minimize impacts by installation in previously developed road rights-of-way. However, site constraints dictate that the pipelines leave developed road alignments in some locations, which results in the unavoidable temporary disturbance of WQSA's and VC's. Trenchless (ie: underground boring) approaches will be used to avoid and minimize these impacts where practicable.

Public Benefits

The proposed encroachments to VC provide public benefits. The primary public benefit of the project is to establish a reliable water supply for future populations from Wilsonville to Hillsboro, including those served by CWS. However, the project will also provide public water quality benefits by converting 4.30 acres of currently "degraded" or "marginal" condition VC to "good" condition either in-place or at mitigation sites, thus improving water quality in the adjoining WQSA's. In addition, two voluntary habitat restoration projects, Chicken Creek restoration and the Mollala Confluence Project, will be supported as part of the overall WWSS. The WWSS will support these environmental benefits projects by acting as a funding partner. Each project will be responsible for obtaining its own permits, and therefore the permits that authorize the WWSS will not authorize these projects.

The Chicken Creek restoration project is located within the CWS service area within the Tualatin River National Wildlife Refuge (the Refuge). The Project would provide funds to support this project, which currently includes the following partners: Refuge, CWS and Ducks Unlimited.

Chicken Creek historically meandered through a floodplain mosaic of wet and dry prairie, riparian forest, and wetlands to its connection with the Tualatin River. In the early part of the 20th century, the creek was channelized to the western part of the property to facilitate farming and now exists in a linear, deeply incised ditch. Once the creek was channelized, the mosaic of habitat was converted to agricultural lands that supported feed crops and a dairy farm. Agriculture operations occurred for almost 100 years, until in 1996, the property was purchased by the Refuge. Early restoration efforts emphasized creating a complex of managed wetlands to provide foraging, wintering, and some breeding habitat for migratory birds. As a part of these restoration activities, a water diversion structure was placed at the head of the channelized portion of Chicken Creek to provide water for managed herbaceous wetlands; however, rather than restoring the creek's historical connection to the Tualatin River, the creek remained channelized.

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The restoration project is currently in the design phase, with implementation anticipated to start in 2018. This project, which was identified during the Refuge's Comprehensive Conservation Plan process, would restore an approximately 1.5-mile reach of Chicken Creek and its associated floodplain, which would benefit listed steelhead trout, lamprey, and cutthroat trout, as well as migratory birds and other native species. Beaver activity would be promoted as part of long-term restoration efforts.

The Molalla confluence project is not within the CWS service area, but will restore riparian and aquatic habitat in the Molalla River State Park at the confluence of the Molalla, Pudding, and Willamette rivers.

References:

HDR. 2013. Technical Memorandum 4 – Final Non-Financial Evaluation. TVWD Long-Term Water Supply Planning. Memo to TVWD Board of Commissioners, April 10, 2013.

HDR. 2016. Task 3 – Recommended Preferred Route – FINAL. Memo to Willamette Water Supply Program, May 6, 2016.

Attachments:

- A) Map of Project Work Packages
- B) Location Map of WQSA Crossings
- C) Wetland Verifications or Delineations by Work Package
- D) VC Impact Assessment Exhibits
- E) Summary Table of VC Impacts
- F) Site Restoration Memorandum
- G) Sensitive Areas Certification Form

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Attachment A Map of Project Work Packages

CORNELIUS PASS
PIPELINE PROJECT
FRANCES RD TO HIGHWAY 26

CONSTRUCTION: 2022 - 2024

SOUTH BEAVERTON AREA
WATER STORAGE TANKS

STORAGE TANKS

CONSTRUCTION: 2022 - 2025

TUALATIN-SHERWOOD
AREA PIPELINE PROJECT
SW 124TH AVE TO BEEF BEND RD

PLM_4.1 HIGHWAY 99 CROSSING
(WASHINGTON COUNTY)
CONSTRUCTION: 2019 - 2020

PLM_4.2 TUALATIN-SHERWOOD ROAD
(WASHINGTON COUNTY)
CONSTRUCTION: 2020 - 2022

PLM_4.3 ROY ROGERS ROAD
CONSTRUCTION: 2023 - 2024

124TH AVENUE PARTNERSHIP PROJECT SW 124TH AVE EXTENSION

2.7
MILES

PLM 3.0

CONSTRUCTION: **2016 - 2018** (WASHINGTON COUNTY)

WWSS WATER TREATMENT PLANT (WTP)

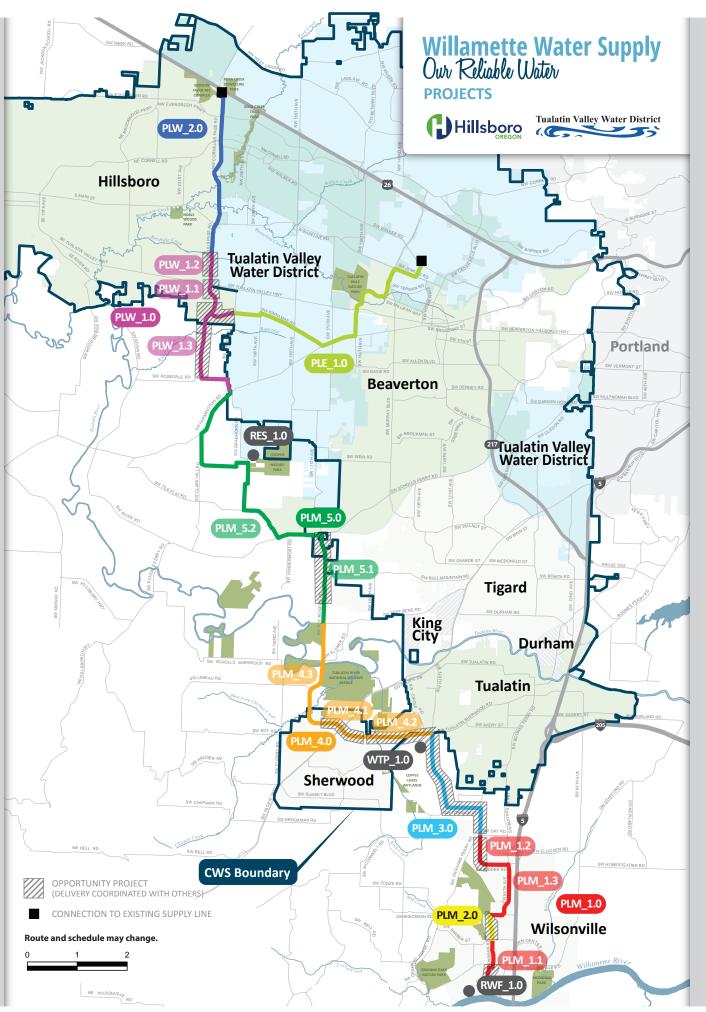
WATER TREATMENT PLANT (WTP)

CONSTRUCTION: 2022 - 2025

INCLUDES FINISHED WATER PUMP STATION PROJECT (FPS_1.0) INCLUDES DISTRIBUTED CONTROL SYSTEM PROJECT (DCS_1.0)

RAW WATER FACILITIES (RWF)

CONSTRUCTION: 2020 - 2024





BEAVERTON AREA
PIPELINE PROJECT
SW 209TH AVE TO WALKER RI

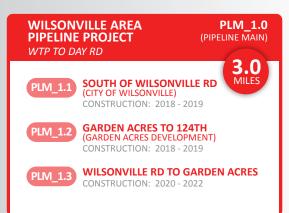
PLE_1.0 (PIPELINE EAST)

CONSTRUCTION: 2020 - 2023

SCHOLLS AREA
PIPELINE PROJECT
BEEF BEND RD TO FARMINGTON

PLM_5.1
BEEF BEND TO SCHOLLS
(WASHINGTON COUNTY)
CONSTRUCTION: 2018 - 2019

PLM_5.2
SCHOLLS TO FARMINGTON
CONSTRUCTION: 2021 - 2023

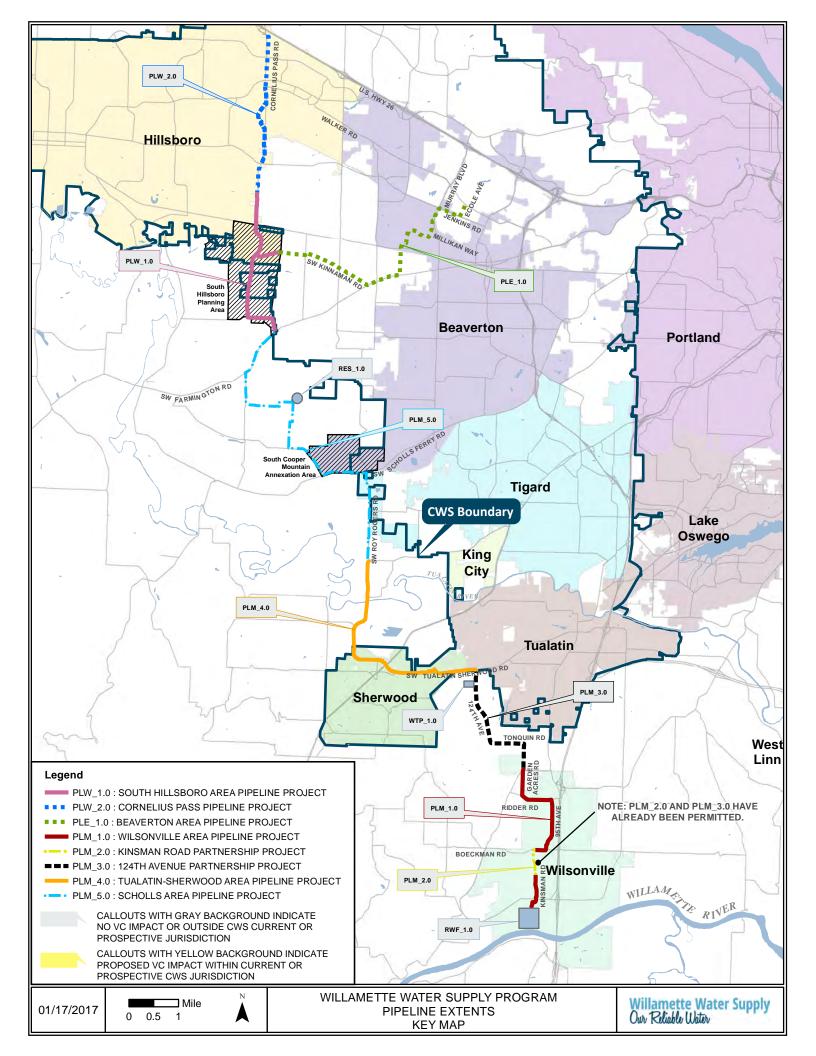


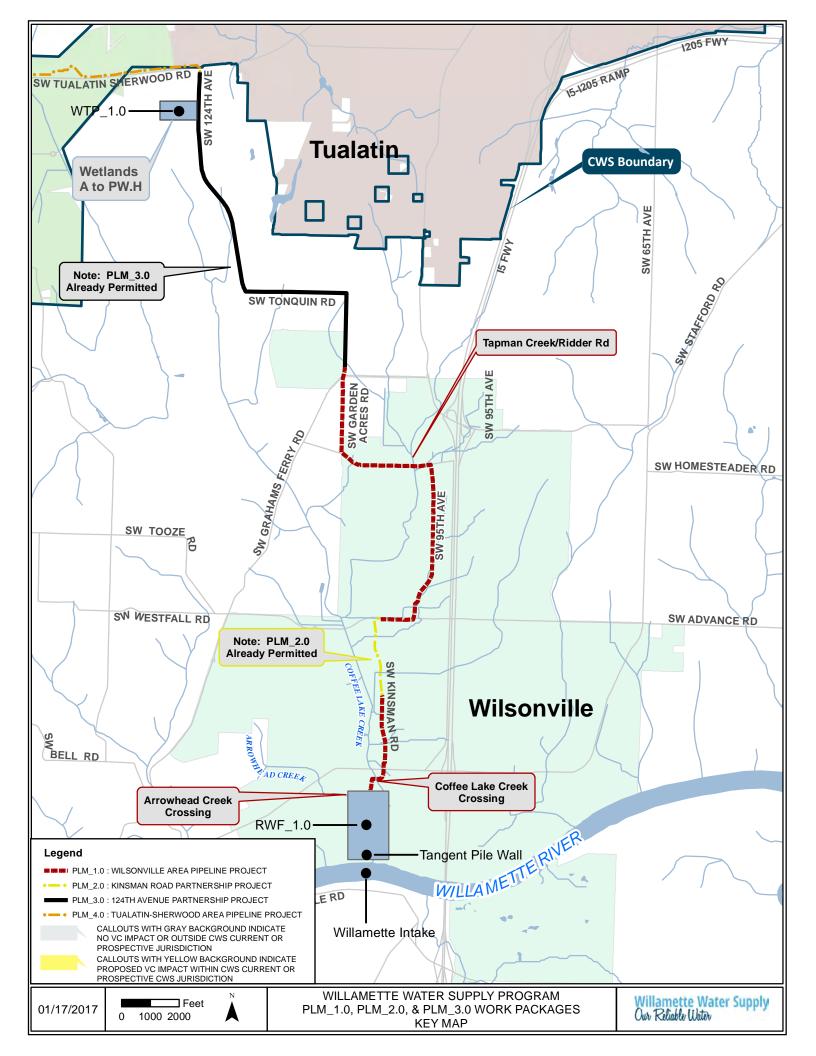
KINSMAN ROAD PARTNERSHIP PROJECT KINSMAN RD EXTENSION PLM_2.0 (PIPELINE MAIN)

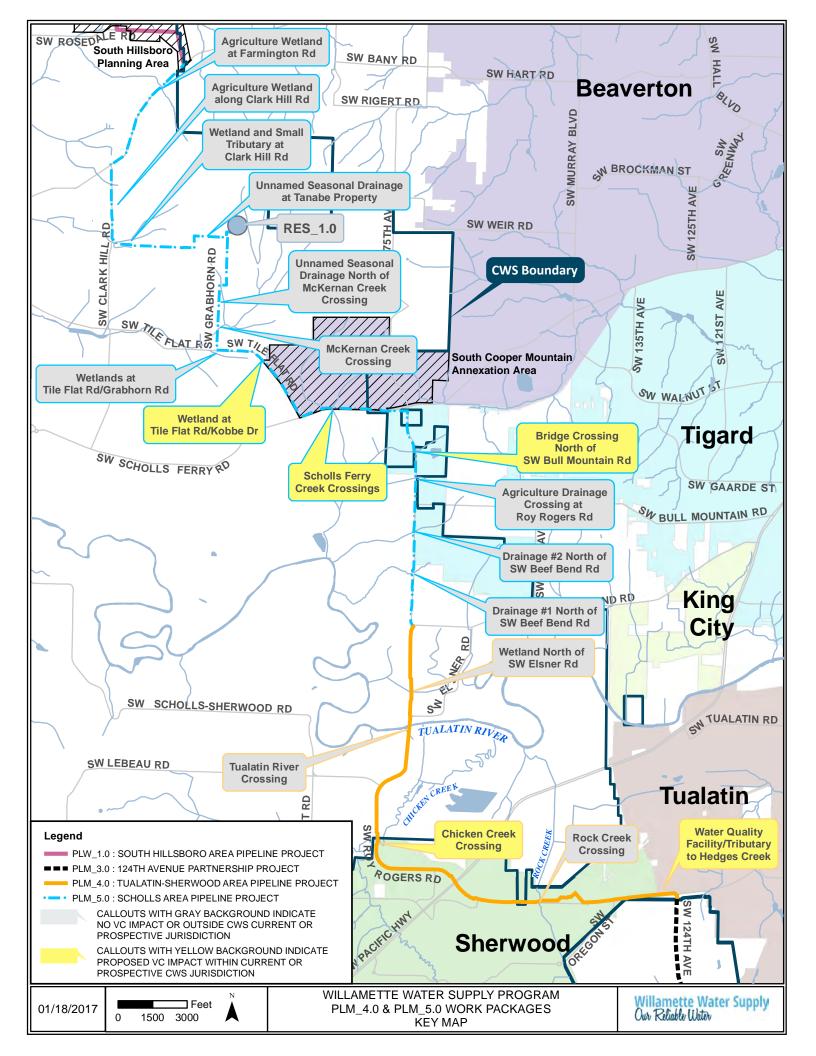
CONSTRUCTION: **2016 - 2018** (CITY OF WILSONVILLE / ODOT)

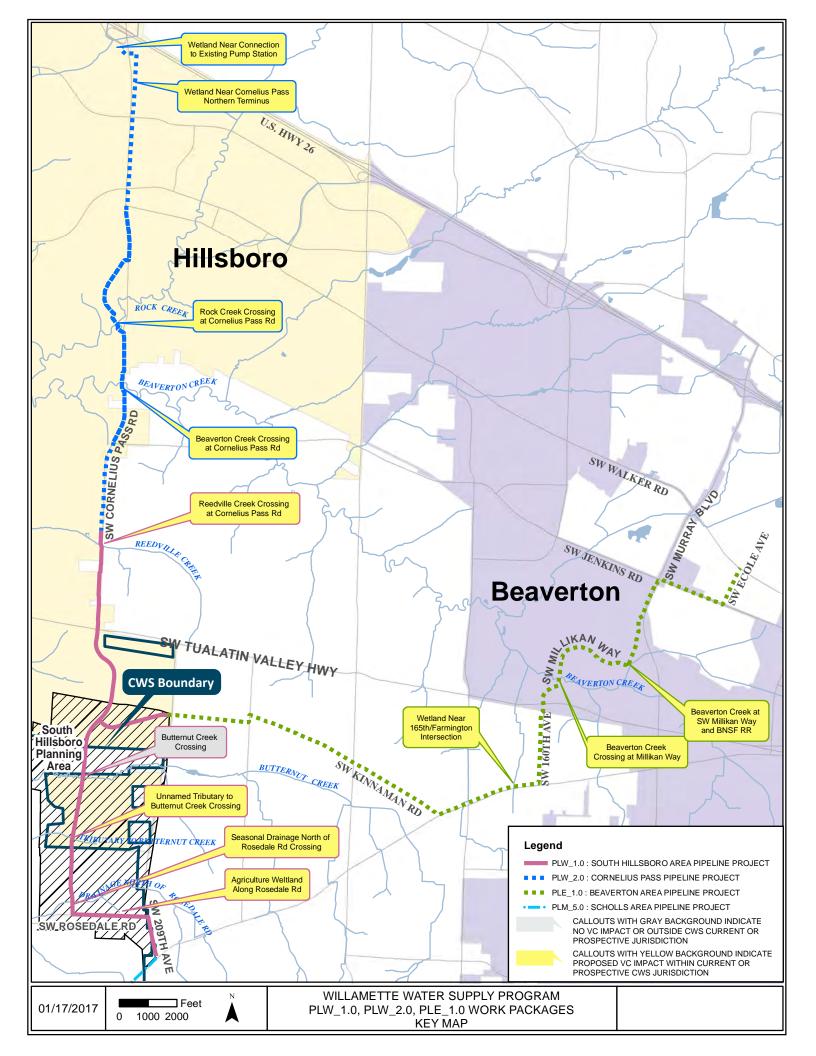
0.5 MILES

Attachment B Location Map of WQSA Crossings









Attachment C Wetland Verifications by Work Package

Pipeline East 1.0 (Beaverton Area) ODSL Wetland Verification



June 21, 2017

Attn: Niki Iverson

150 E Main Street

Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200

FAX (503) 378-4844 www.oregon.gov/dsl

State Land Board

Kate Brown

Governor

Re: WD #2017-0025 Partial Concurrence

City of Hillsboro Water Department

Wetland Delineation Report for the

Proposed Willamette Water Supply Program Project, PLE 1.0

Washington County; Multiple Sections and Tax Lots

APP #60102

Hillsboro, OR 97123-4028

City of Beaverton Local Wetlands Inventory, Wetlands BV-4,

BV-5, BV-5c, BV-6, BV-6a, BV-6b, and BV-11

Dennis Richardson Secretary of State

> Tobias Read State Treasurer

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area corridor passes through only portions of the multiple sections and tax lots shown on the attached maps. Portions of the study area for this delineation report were not field checked due to property access issues. Areas with no access were investigated and mapped using offsite wetland determination methods, therefore, are receiving Preliminary Jurisdictional Determinations (PJDs) from the Department. Since PJDs are not suitable for removal-fill permitting, areas with PJDs will need to be checked, features delineated, and a report submitted with a new cover form and fee when access is granted and prior to any construction within these properties.

Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6, Sheets 1 through 11 of the report with the exception of features identified as "Potential Wetland" or "Potential OHW" that are located outside the study area for this report and are not included in this concurrence. Within the study area corridor, two wetlands (W-E1-1 and W-4-1, totaling approximately 0.4 acres) one segment of Beaverton Creek (S-4-1), and eleven roadside ditches were identified (see Appendix B for individual features).

The wetlands and the creek are subject to the permit requirements of the state Removal-Fill Law. The roadside ditches are exempt per OAR 141-0515 (10); therefore, they are not subject to these permit requirements. Normally, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, Beaverton Creek is an essential salmonid stream; therefore, fill or removal of any amount of material below its

OHWL or within hydrologically-connected wetlands (Wetland W-4-1) may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec: Phil Rickus, David Evans and Associates, Inc.

Washington County Planning Department

Jaimee Davis, Corps of Engineers

Melinda Butterfield, DSL

Amber Wierck, Clean Water Services

WD2017-0025

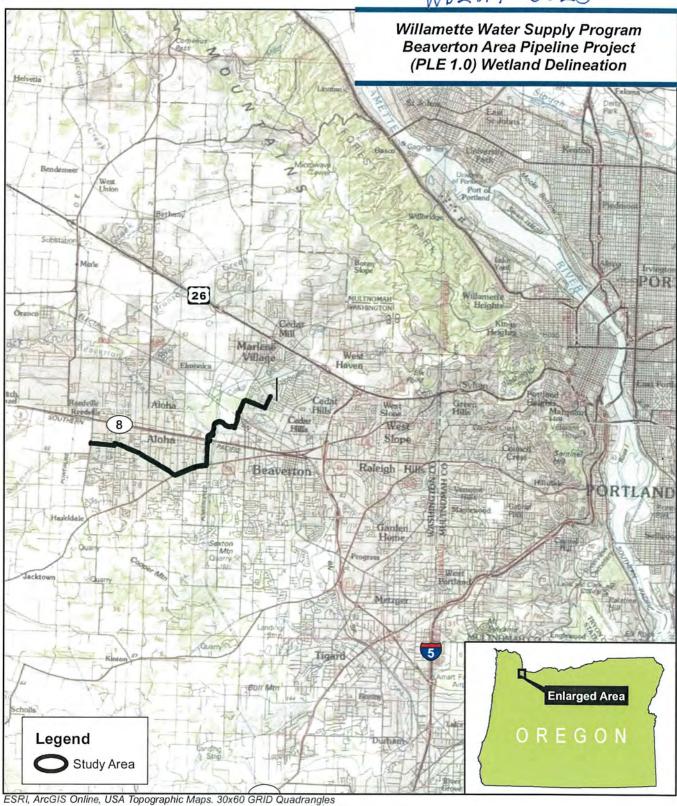
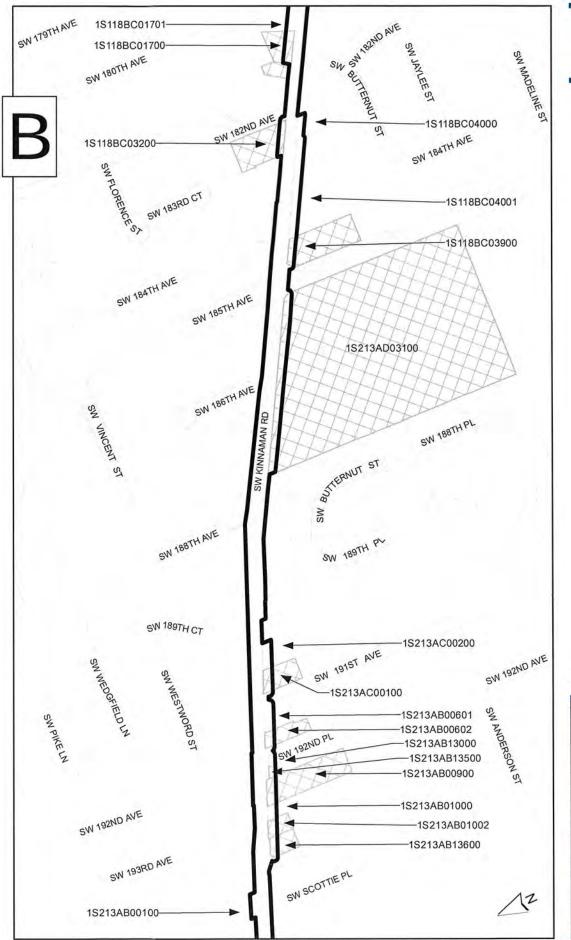


Figure 1 Vicinity Map





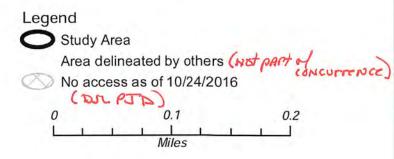
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WP2017-0025

Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

Figure 2, Sheet 1 Taxlots

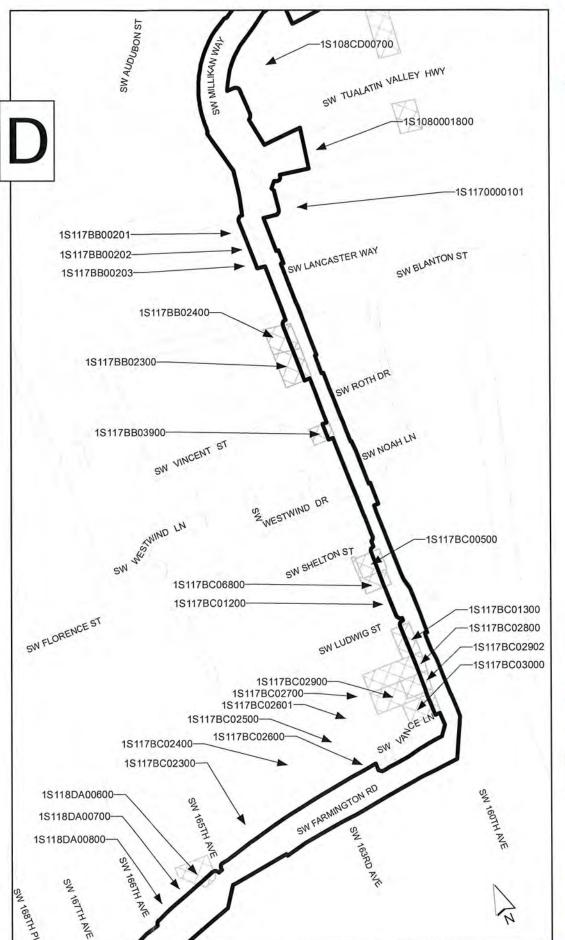


Metro RLIS Data. 2016.



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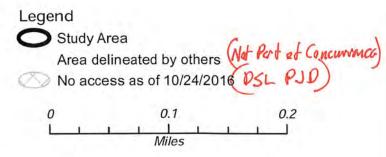
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WD2017-0025

Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

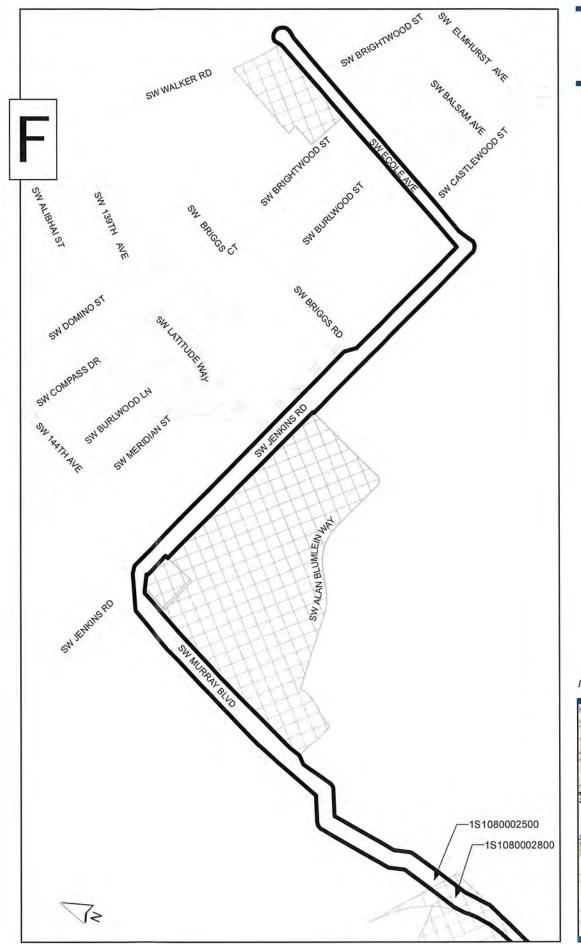
Figure 2, Sheet 2 Taxlots



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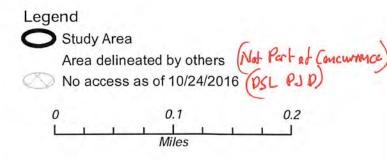
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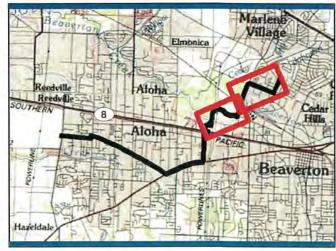
WD 2017-0025

Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

Figure 2, Sheet 3 Taxlots



Metro RLIS Data. 2016.



WD 2017-0025

Tax Lot Summary Table

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1S108DB00700	BEAVERTON	3401.00S01W08DB-000000700
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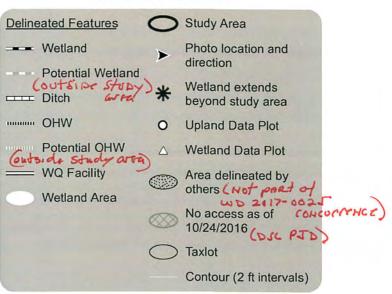
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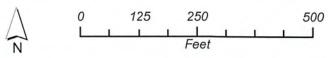
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Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 1 of 11
Delineated Wetlands



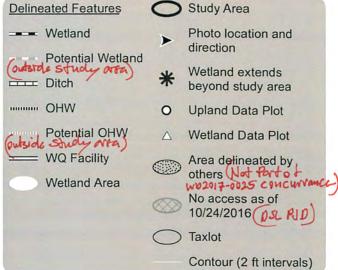


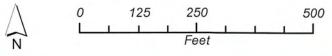


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Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 2 of 11 Delineated Wetlands



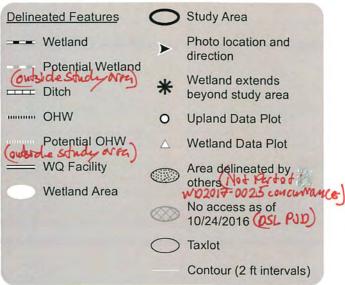


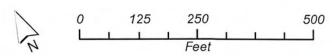


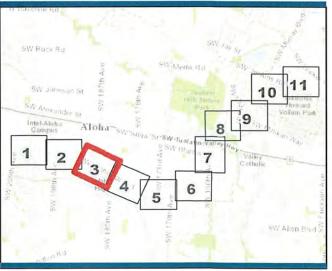
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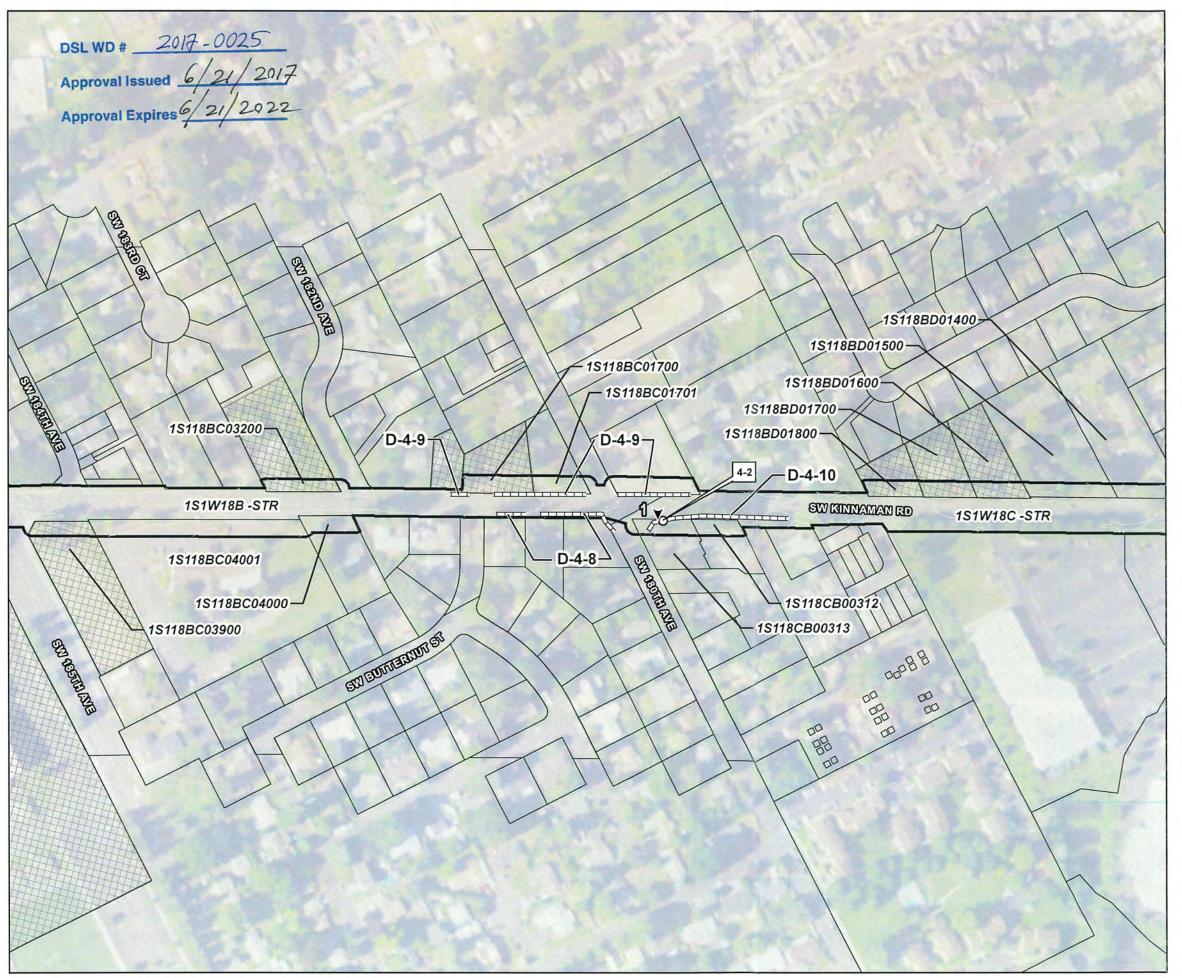
Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 3 of 11 Delineated Wetlands



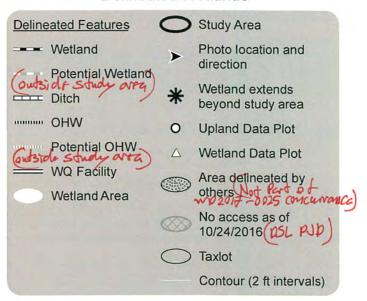


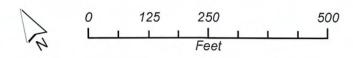


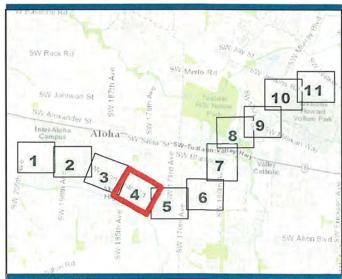


Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 4 of 11 Delineated Wetlands



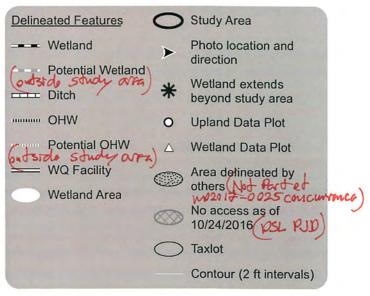




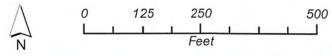
THE RUCOR WS SW CHIRIS ST EXX COUCUS COS 1S118BD01400 Potential 1S118BD01300 Wetland ords sotudy a SELL CLUCAGO MS STU FERFUING TO MED SW FARMINGTON-RD /D-4-12 CIT OCCASION INS 1S1W18C -STR-Potential Wetland RGL 2692 Study own CATEWAY ENVELLIOUS MS DSL WD# 2017-0025 Approval Issued 6 1S1W18D -STR-**Approval Expires** STUDING ST

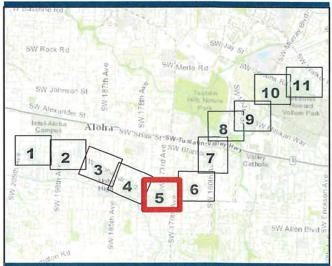
Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 5 of 11 Delineated Wetlands

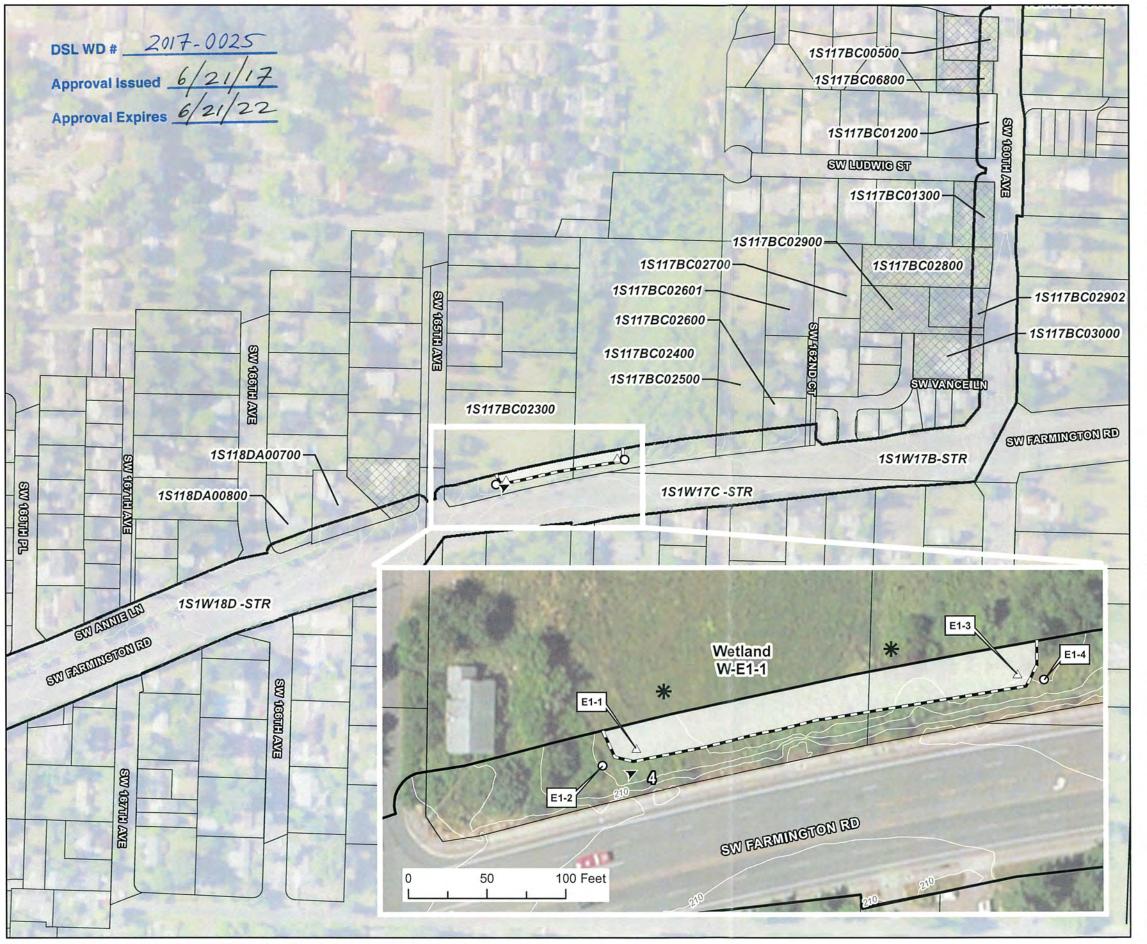


On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.



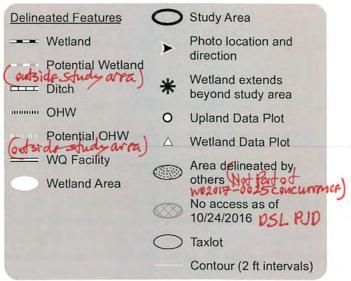


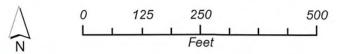
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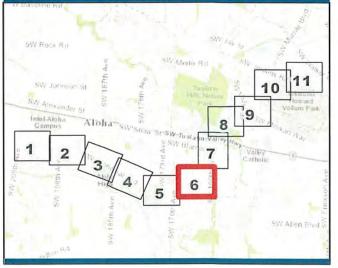


Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 6 of 11
Delineated Wetlands



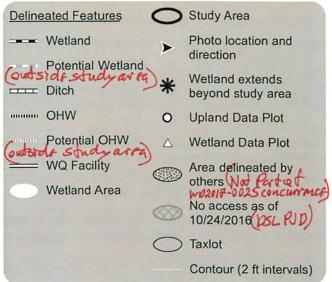




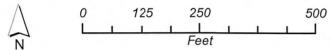
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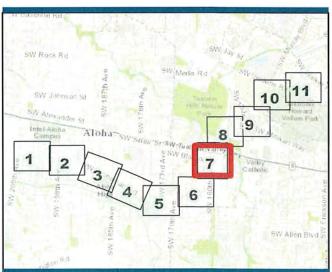
Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 7 of 11 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.



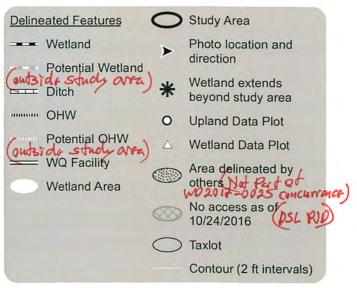


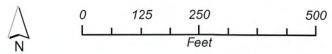
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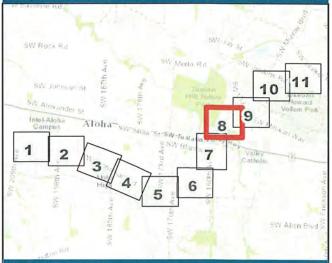


Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 8 of 11 Delineated Wetlands



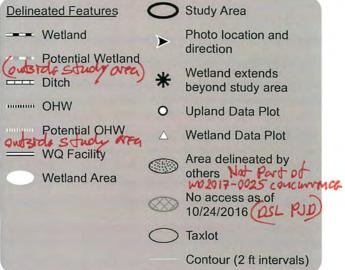




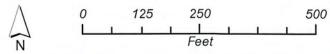
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Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 9 of 11 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.



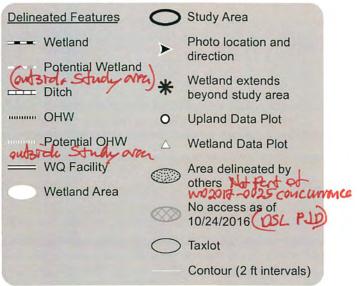


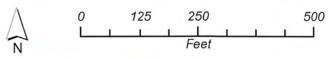
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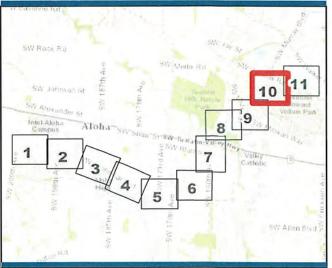
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Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 10 of 11 Delineated Wetlands



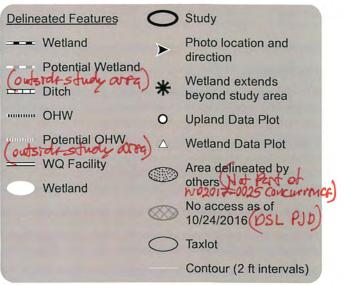


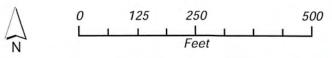


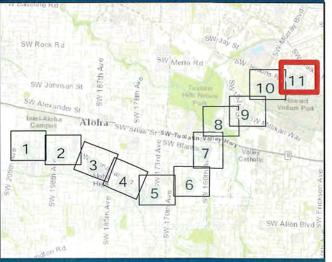
1S1W09A -STR SWEDIGHTWOOD ST SWEWRINGOD ST. 1S1W09B -STR SW JEWANS RD SWEASILEWOOD ST SW AWORNIN AVE DSL WD# 2017-0025 Approval Issued 6 Approval Expires 6/21

Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation

Figure 6, Sheet 11 of 11 Delineated Wetlands







PLE 1.0

1-W = wetland feature, S = stream feature, D = ditch feature

2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches

3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction.

4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, RIV=riverine

6-HGM Class: DEP=depressional, RFT=riverine flow-through

7- Due to imprecision in the tax lot layer, all ditches were delineated with Onsite methods, whether extending slightly outside the apparent tax lot or not

ID ¹	Latitude	Longitude	Sheet #	et de la constitución de la cons	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data	Notes (i.e., special circumstances)	
D-4-1	45.489369	-122.891891	1	Onsite	44	No	No		1 027		Upland ditch. Dry, no signs of flow. Vegetation= grasses (=facultative grasses only), geranium. Photo 4-1.	
D-4-2	45.489426	-122.892056	1	outside area	94						outside PLE 1 SA. Kept in table for numbering consistency.	
D-4-3	45.489308	-122.889519	1	Onsite	291	No	No	4	Apr 1744	4-1	Upland ditch. Dry, no signs of flow.	
D-4-4	45.489097	-122.885077	1, 2	Onsite	714	No	No		1 2	1	Upland ditch. Dry, no signs of flow. Vegetation= grasses, blackberry.	
D-4-5	45.489040	-122.881723	1, 2	Onsite	987	No	No		-		Upland ditch. Dry, no signs of flow. Vegetation= grasses, blackberry.	
D-4-6	45.488168	-122.875065	2, 3	Onsite	2,720	No	No	- C			Upland ditch. Dry, no signs of flow. Vegetation= tall orchardgrass, tall fescue, blackberry.	
D-4-7	45.486662	-122.870342	2, 3	Onsite	780	No	No	-			Upland ditch. Dry, no signs of flow. Vegetation= grasses, blackberry.	
D-4-8	45.483785	-122.862888	4	Onsite	236	No	No		3		Upland ditch. Dry, no signs of flow. Vegetation= grasses, blackberry.	
D-4-9	45.484105	-122.863398	4	Onsite	385	No	No		- 1		Upland ditch. Dry, no signs of flow. Vegetation= grasses, blackberry.	
D-4-10	45.483441	-122.862020	4	Onsite	306	No	No	4	1.022	4-2	Upland ditch. Dry, no signs of flow. Upland Plot 4-2 taken in mapped hydric soil. Photo	
D-4-11	45.481060	-122.853650	5	Onsite	620	No	No	172	1	4-3	Upland ditch. Dry, no signs of flow. Upland Plot 4-03 taken in ditch at low point where it leads outside the SA to a potential wetland. Photo 4-4.	
D-4-12	45.481335	-122.853721	5	Onsite Partrally ortside	SAB 323	Yes	No		-	4-4	Upland ditch. Dry, no signs of flow. Upland Plot 4-4 taken in ditch at low point where it leads outside the SA to a potential wetland.	
W-E1-1	45.483730	-122.845612	6	Onsite	0.15	Yes	Yes	PEM/ PSSC	Slope	E1-3, E1-5	Slope wetland. Boundary determination by steep slopes leading up from wetland to road fill, and change in vegetation and lack of hydric soils.	
S-4-1	45.489247	-122.889154	8	Onsite	50	Yes	Yes	÷.	1.5		Beaverton Creek. Incised stream with reed canarygrass wetland below OHWM. OHWM approximately 100' from steep banks, drift lines, but wetted channel only 10' wide during visit. (ESH)	
W-4-1	45.493935	-122.839660	8	Onsite	0.25	Yes	Yes	PEM/ PSSC	Riverine	E1-7	Willow/reed canarygrass wetland primarily located below OHWM of Beaverton Cr. Boundary determination by change in veg and topography.	
S-4-2	45.495542	-122.829962	9	Offsite Partially outside	134	Yes	Yes C C c	-	24	4	Beaverton Creek. Incised stream with reed canarygrass wetland below OHWM. No access. (Partially No access, Partially out sick Study area, ESH)	

Pipeline Main 4.0 (Tualatin-Sherwood Area) ODSL Wetland Verification



April 17, 2017

Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200 FAX (503) 378-4844

State Land Board

www.oregon.gov/dsl

City of Hillsboro Water Department Attn: Niki Iverson 150 E Main Street Hillsboro, OR 97123-4028

Kate Brown Governor

Re: WD #2017-0006 Wetland Delineation Report for the

Dennis Richardson Secretary of State

Proposed Willamette Water Supply Program Project, PLM 4.0

Tobias Read State Treasurer

Washington County; Multiple Sections and Tax Lots

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area corridor passes through only portions of the multiple sections and tax lots shown on the attached maps. Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6, Sheets 1 through 12 of the report. Within the study area corridor, four wetlands and two water quality facilities created from wetlands (totaling approximately 2.02 acres), and 23 waterways (including the Tualatin River, Chicken Creek, Rock Creek, and 20 ditches) were identified (see Appendix B for individual features). Additional features identified as potential wetlands or potential water quality facilities are located outside the study area for this report and are not included in this concurrence.

The wetlands, river, creeks, and one of the ditches (D-2-12) are subject to the permit requirements of the state Removal-Fill Law. The remaining 19 ditches are exempt per OAR 141-0515 (10); therefore, they are not subject to these permit requirements. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, both Chicken and Rock Creeks are essential salmonid streams; therefore, fill or removal of any amount of material below their OHWL's, or within hydrologically-connected wetlands (W-M4-1), may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec: Phil Rickus, David Evans and Associates, Inc.

Washington County Planning Department

Jaimee Davis, Corps of Engineers

Anita Huffman, DSL

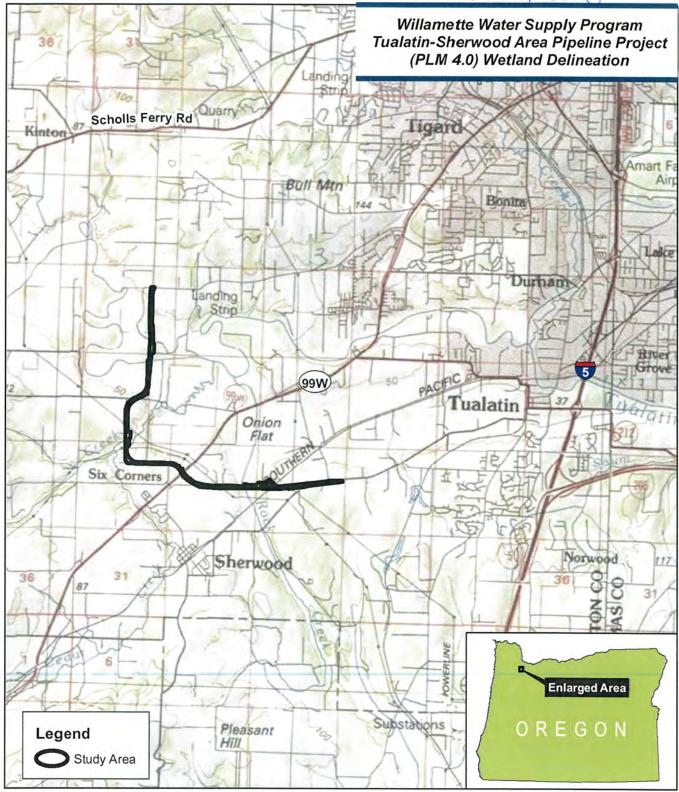
Amber Wierck, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report. A single PDF attachment of the completed cover from and report may be e-mailed to Wetland_Delineation@dsl.state.or.us.

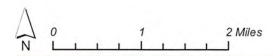
	Business phone # (503) 615-6770 Mobile phone # (optional) E-mail: niki.iverson@hillsboro-oregon.gov						
	Business phone # (503) 615-6770 Mobile phone # (optional) E-mail: niki.iverson@hillsboro-oregon.gov al authority to allow access to the property. I authorize the Department to access the or the report, after prior notification to the primary contact. Signature:						
	ns regarding site access:						
Project and Site Information (using decimal deg Project Name: Willamette Water Supply Program	n, Latitude: 45.372704 Longitude: -122.856479						
PLM 4.0	n, Lautude: 45.372704 Longitude: -122.8564/9						
Proposed Use: Pipeline Installation	Tax Map # See Attachment						
Project Street Address (or other descriptive location Between Intersection of SW Tualatin-Sherwood and SW 124th Avenue and intersection of SW FRogers Road and Beef Bend Road.	Roy Tax Lot(s) See Attachment						
City: N/A County: Washing	Waterway: Many River Mile: N/A NWI Quad(s): Several						
In A second control of the second control of	land Delineation Information						
Wetland Consultant Name, Firm and Address: Phil Rickus David Evans and Associates 2100 SW River Parkway Portland, OR 97201 The information and conclusions on this form and in the Consultant Signature:	Phone # 503-223-6663 Mobile phone # E-mail: prr@deainc.com attached report are true and correct to the best of my knowledge. Date: January 4, 2017						
Primary Contact for report review and site access							
	Study Area size: 87.9 acres Total Wetland Acreage: Approx 2.97 acres						
Check Box Below if Applicable:	Fees: 2.02 Ac						
R-F permit application submitted	Fee payment submitted \$ 419						
☐ Mitigation bank site ☐ Fee (\$100) for resubmittal of rejected report ☐ Wetland restoration/enhancement project (not mitigation) ☐ No fee for request for reissuance of an expired report ☐ Industrial Land Certification Program Site report							
Reissuance of a recently expired delineation Previous DSL # Expiration date							
Other Information:	YN						
Has previous delineation/application been made or	parcel?						
Does LWI, if any, show wetland or waters on parce							
	For Office Use Only						
DSL Reviewer: Fee Paid Da	ate: 1 1 17 1 17 DSL WD # 2017-0006						
Date Delineation Received: / //	DSL Project # DSL Site #						
Scanned: Final Scan:	DSL WN # DSL App, #						

& Electronic Submittal A

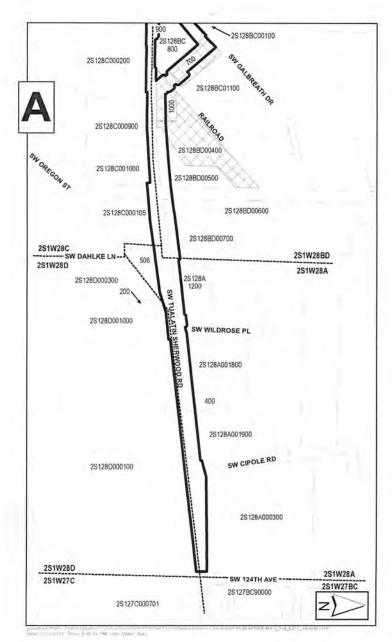


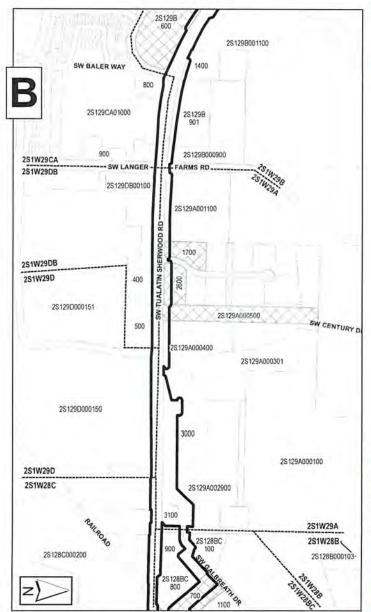
ESRI, ArcGIS Online, USA Topographic Maps. 30x60 GRID Quadrangles

Figure 1 Vicinity Map









WP2017-000G

Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 1
Tax Lots

Legend

O Study Area

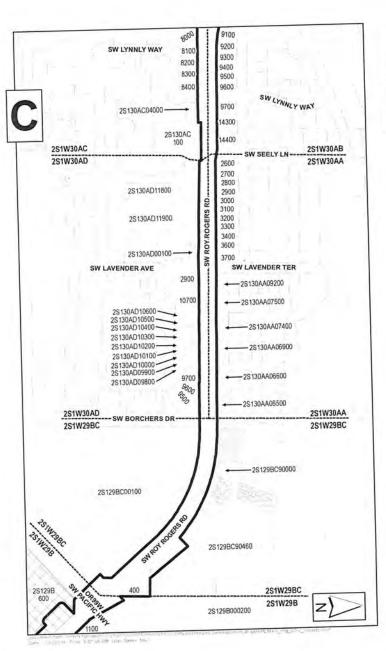
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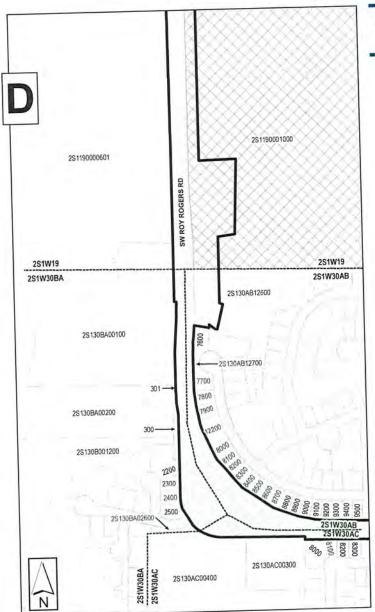
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0 0.1 Miles

Metro RLIS Data. 2016.







WD2017-0006

Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 2
Tax Lots

Legend

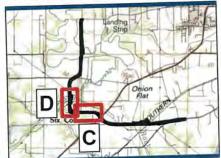
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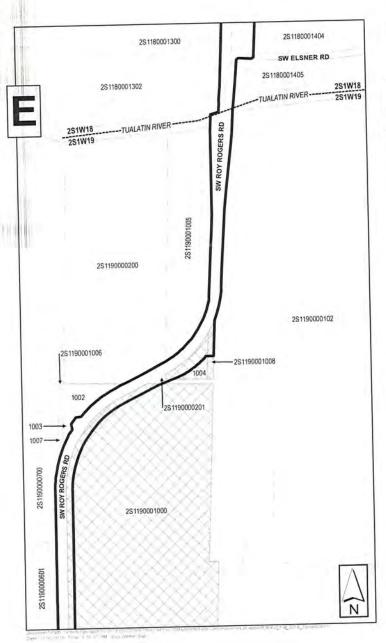
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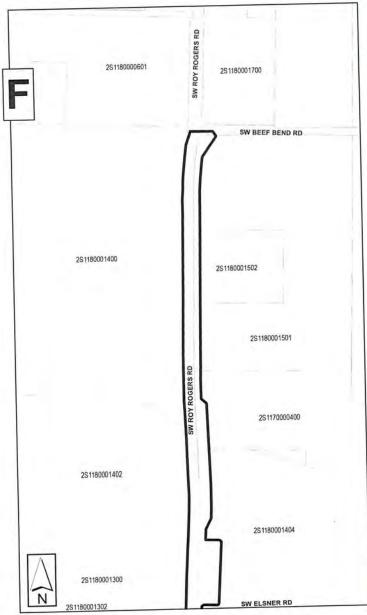
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Metro RLIS Data, 2016.







WD2017-0006

Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 3
Tax Lots

Legend

O Study Area

Area delineated by others

No access as of 10/24/2016

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Metro RLIS Data. 2016.



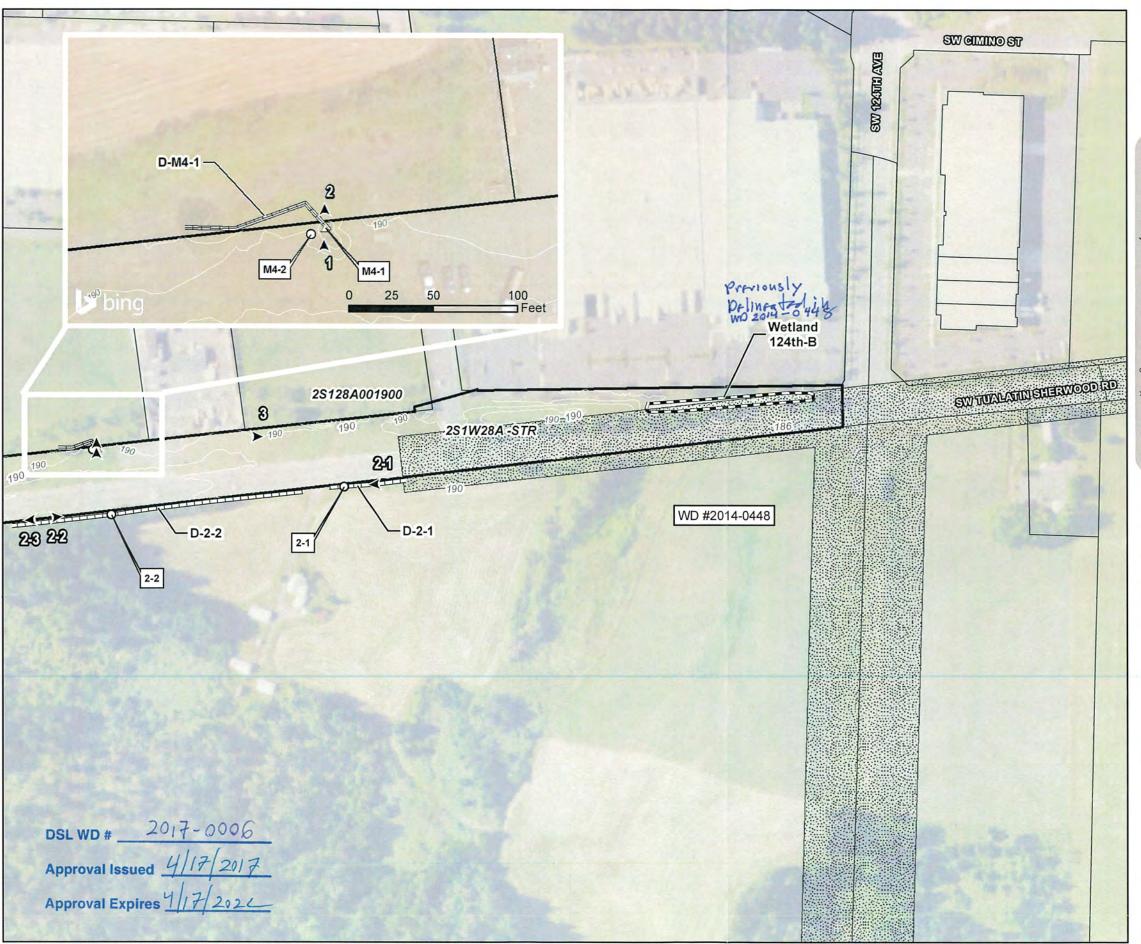
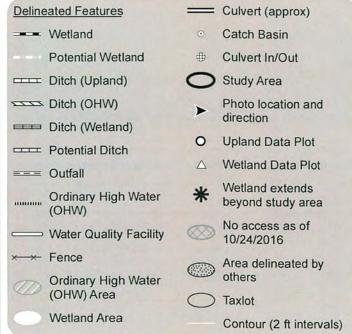
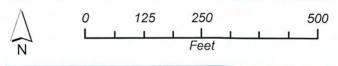


Figure 6, Sheet 1 of 12
Delineated Wetlands







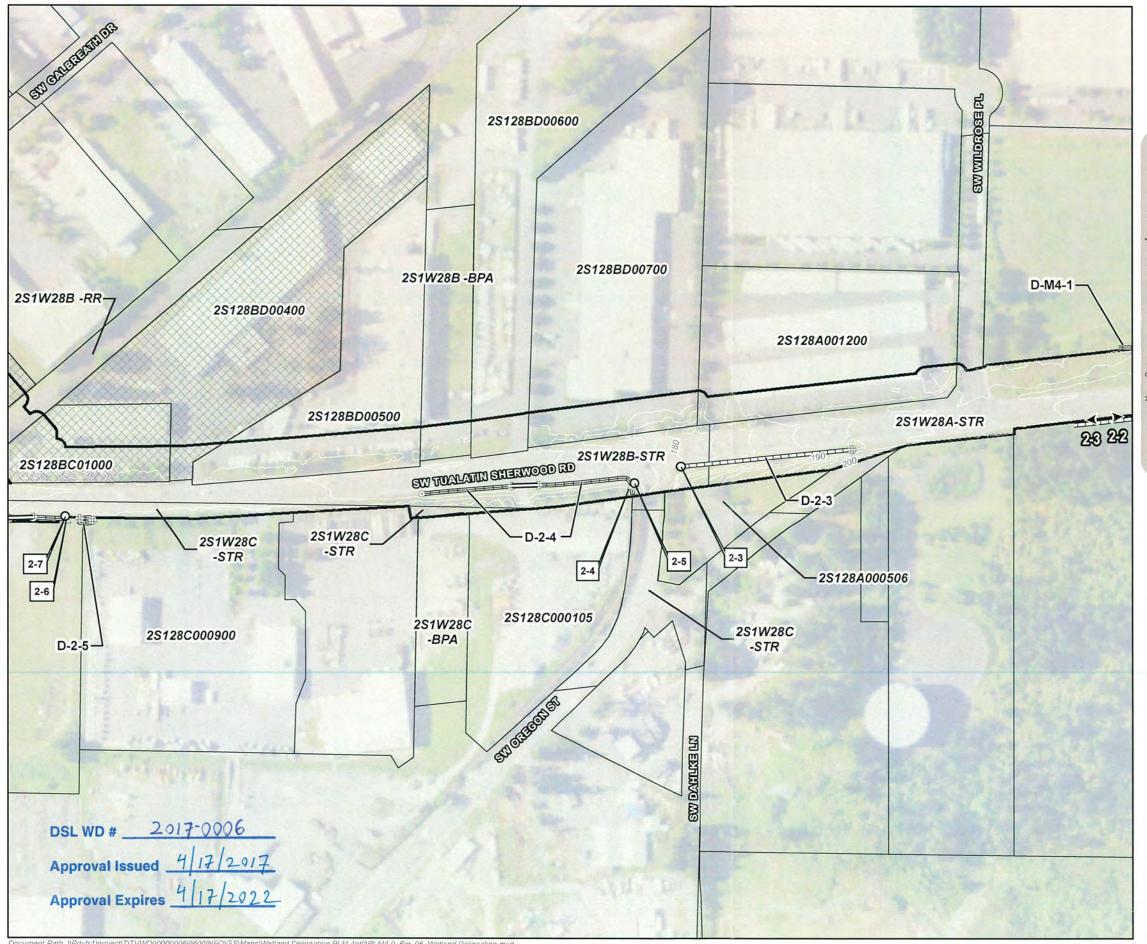
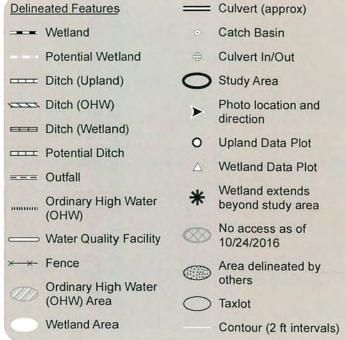
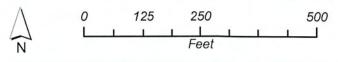
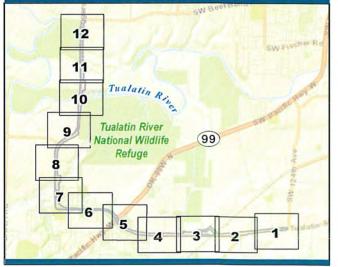


Figure 6, Sheet 2 of 12
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.





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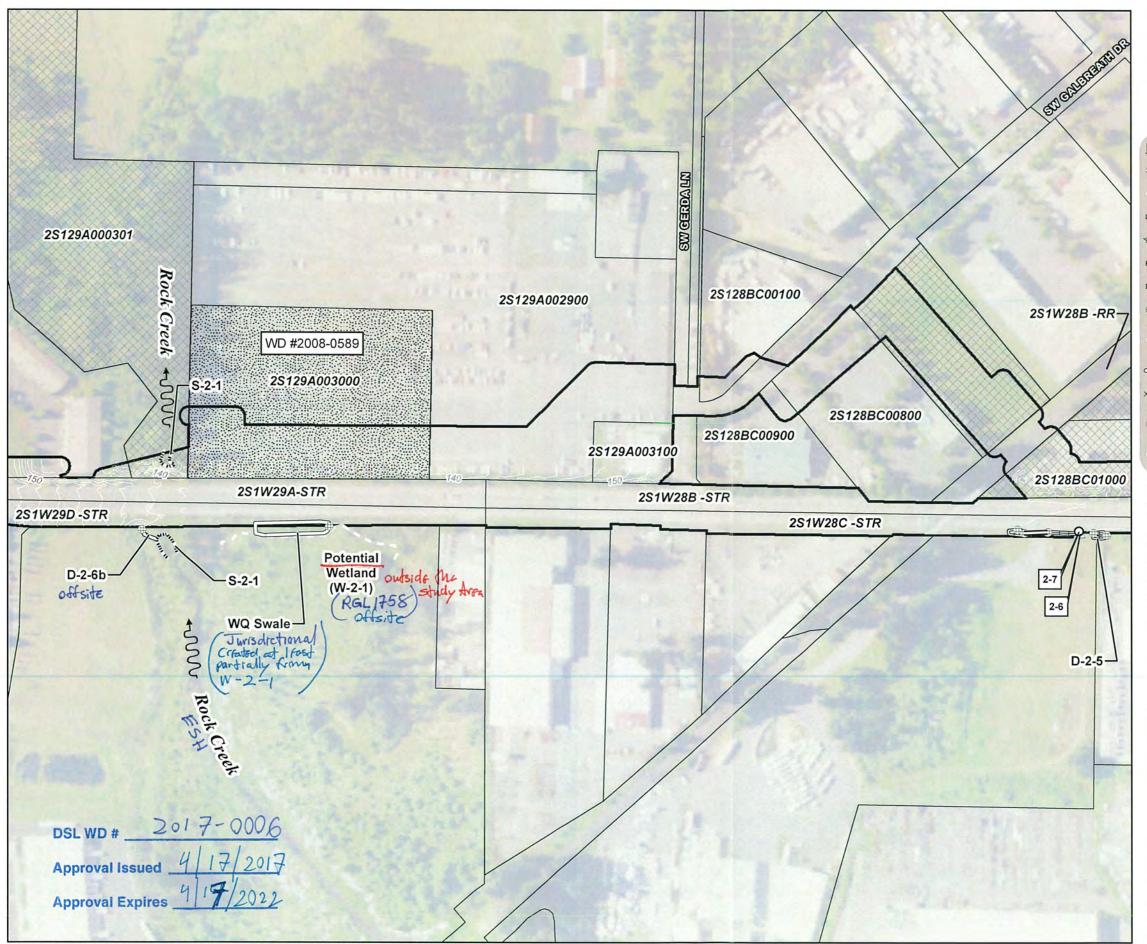
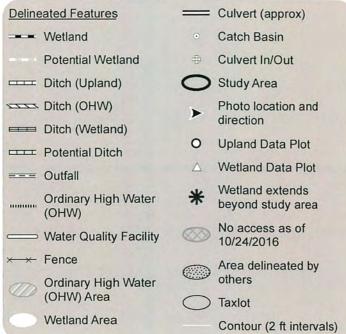
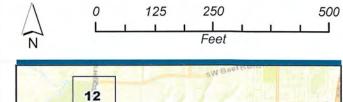
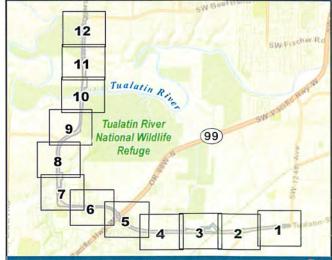


Figure 6, Sheet 3 of 12
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.





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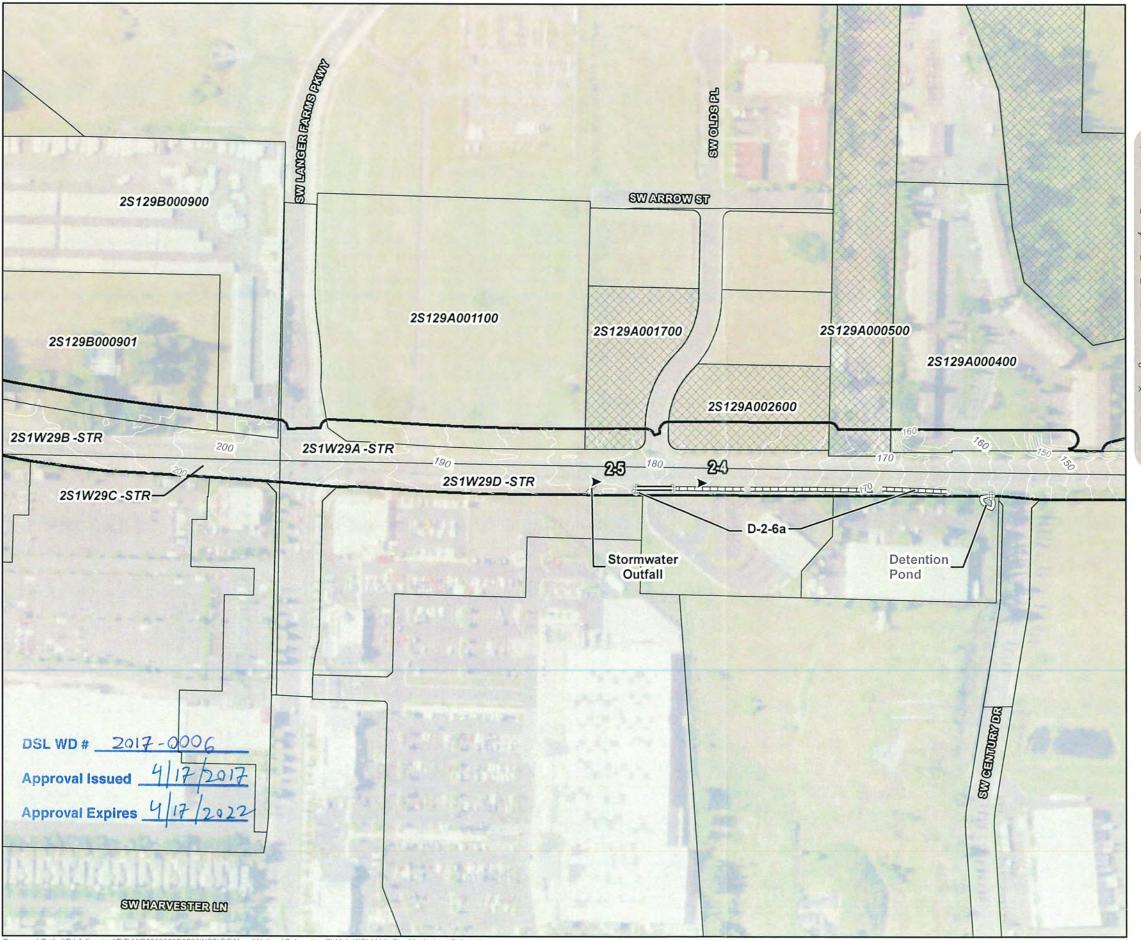
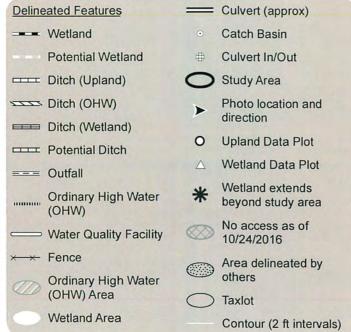
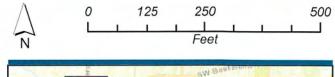
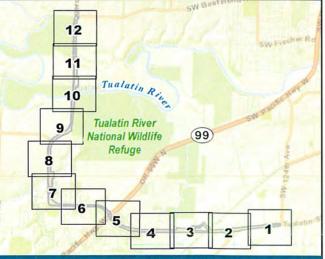


Figure 6, Sheet 4 of 12
Delineated Wetlands







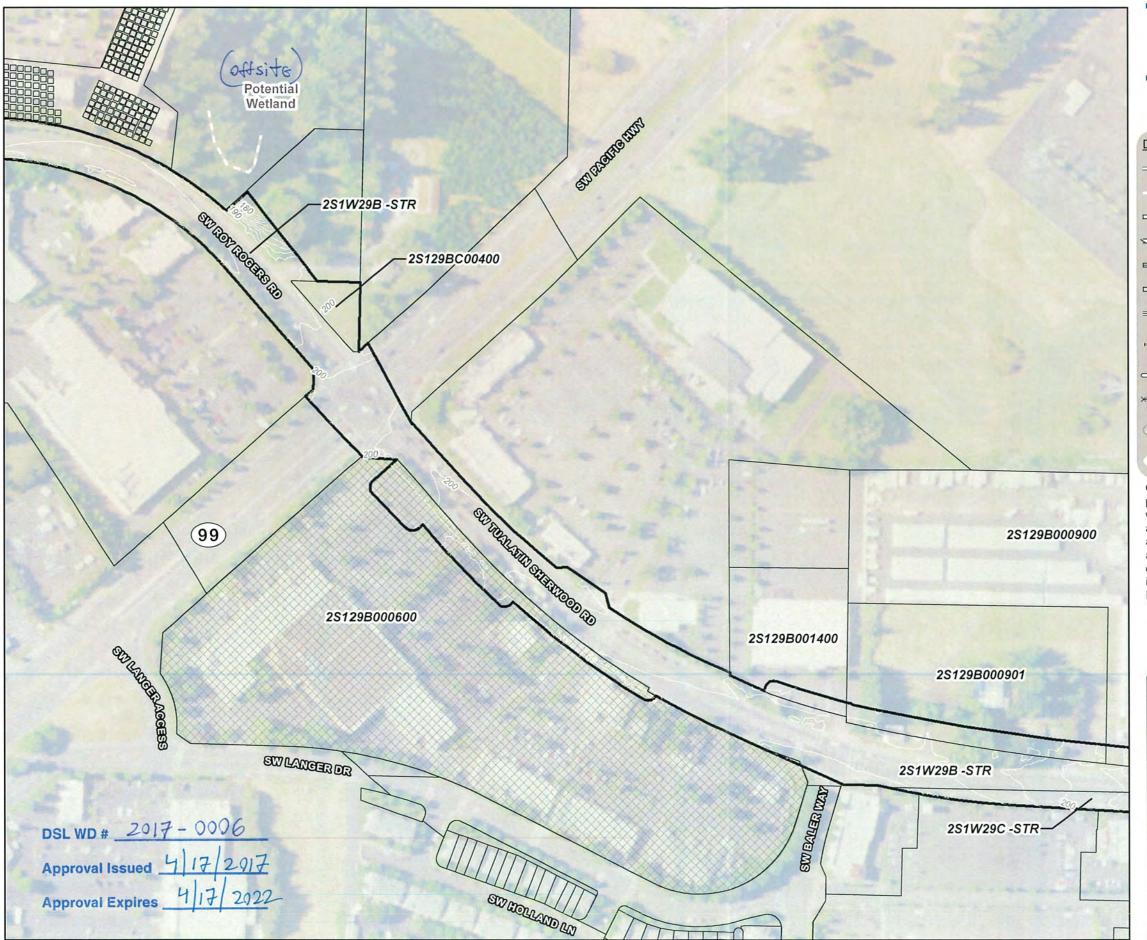
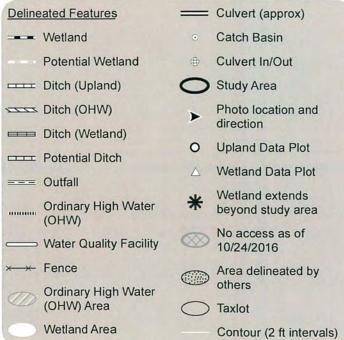
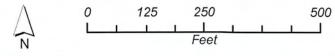
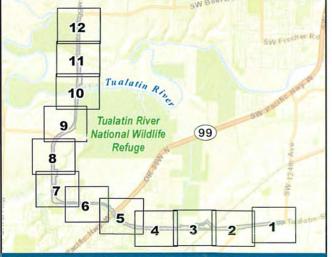


Figure 6, Sheet 5 of 12 Delineated Wetlands



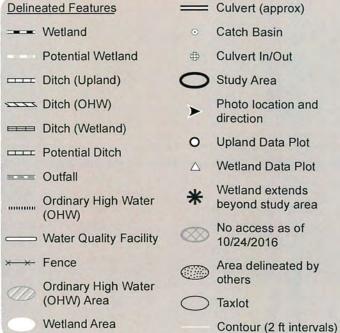


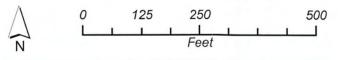


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Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 6, Sheet 6 of 12 Delineated Wetlands







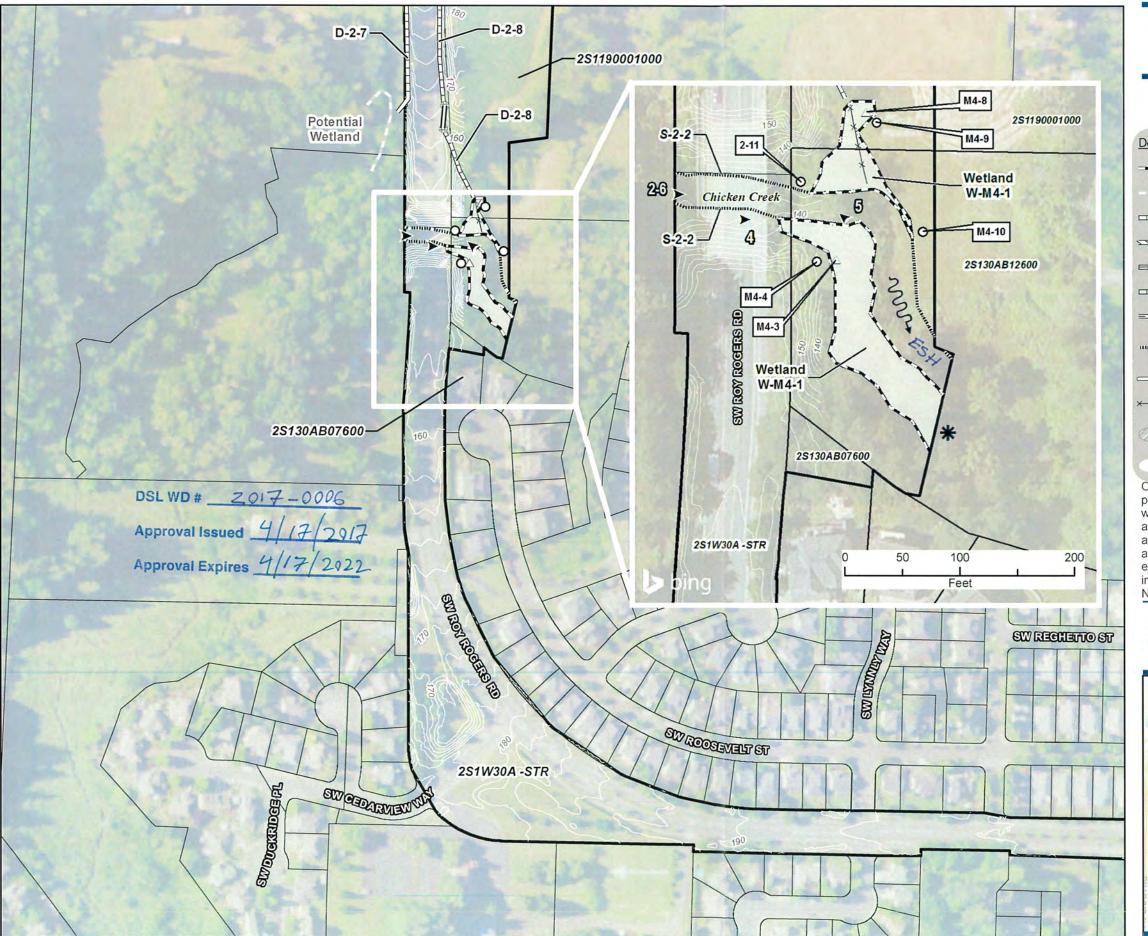
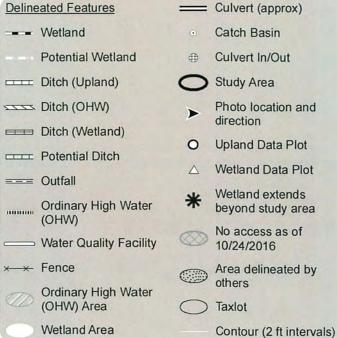
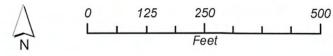
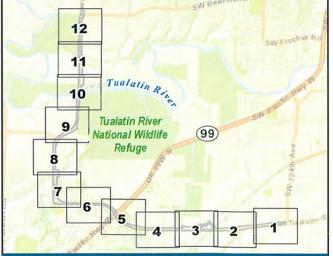


Figure 6, Sheet 7 of 12
Delineated Wetlands







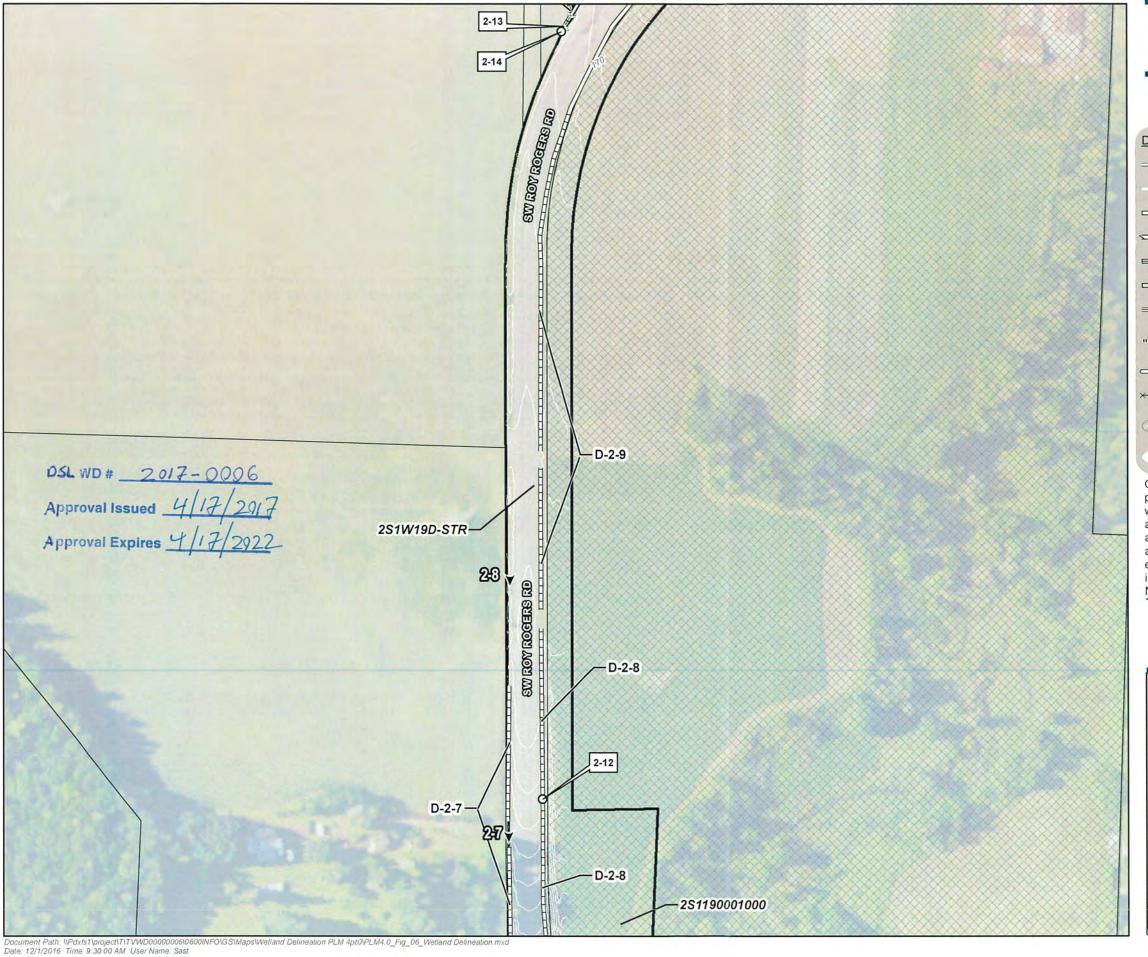
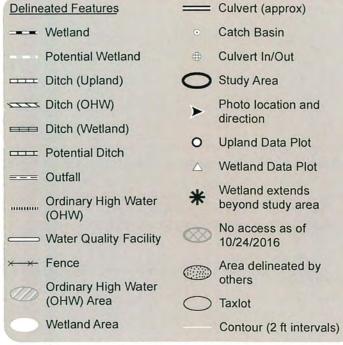
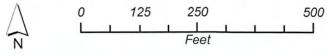


Figure 6, Sheet 8 of 12
Delineated Wetlands





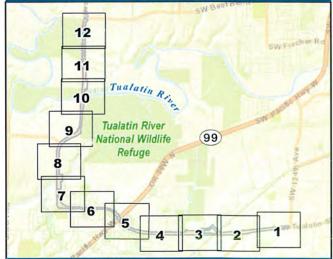
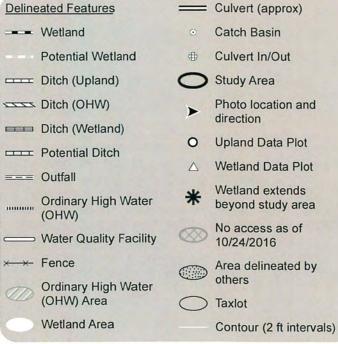
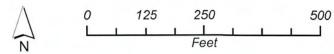




Figure 6, Sheet 9 of 12
Delineated Wetlands







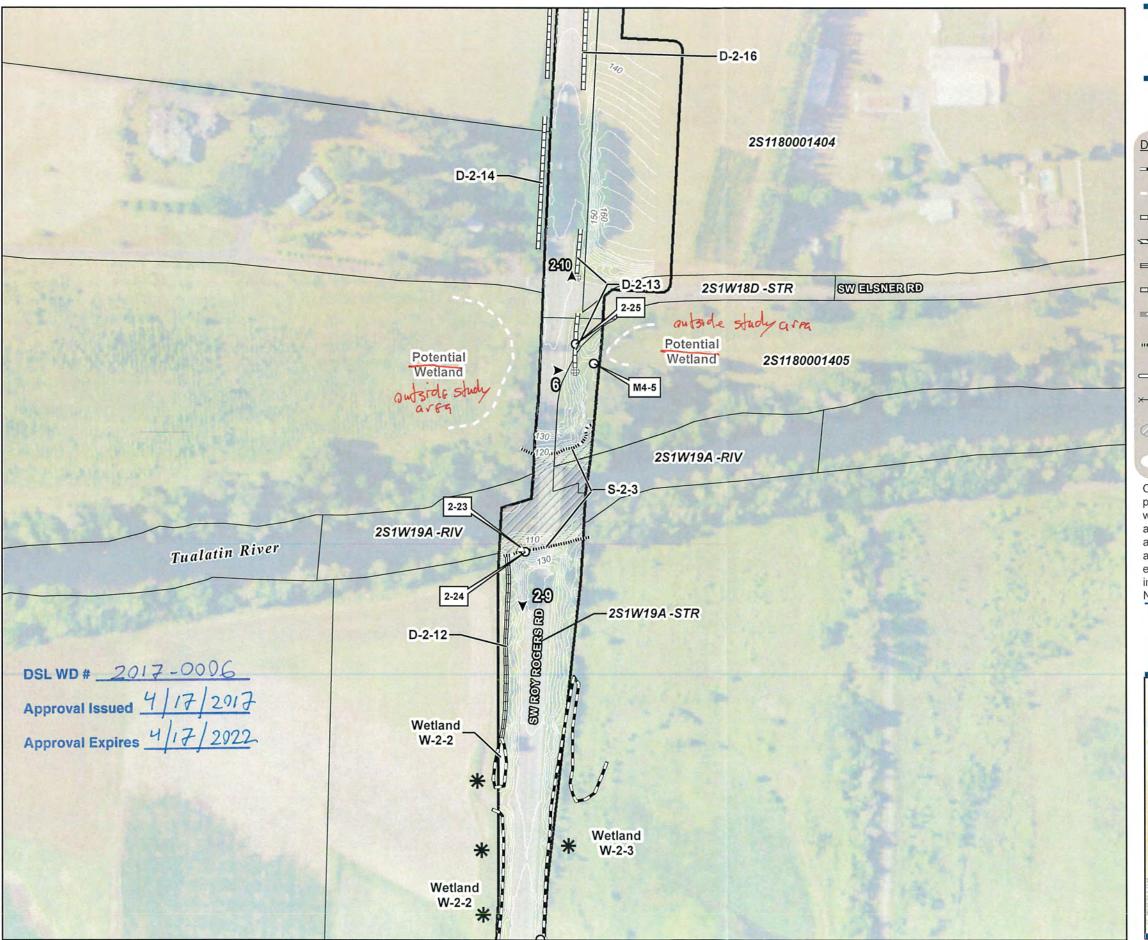
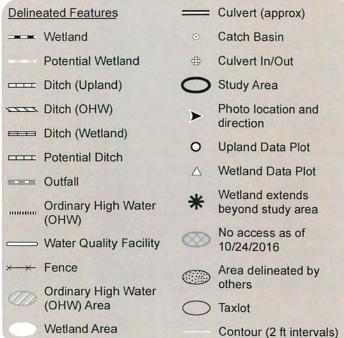
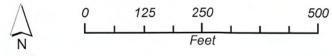
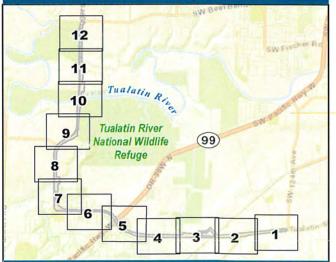


Figure 6, Sheet 10 of 12
Delineated Wetlands







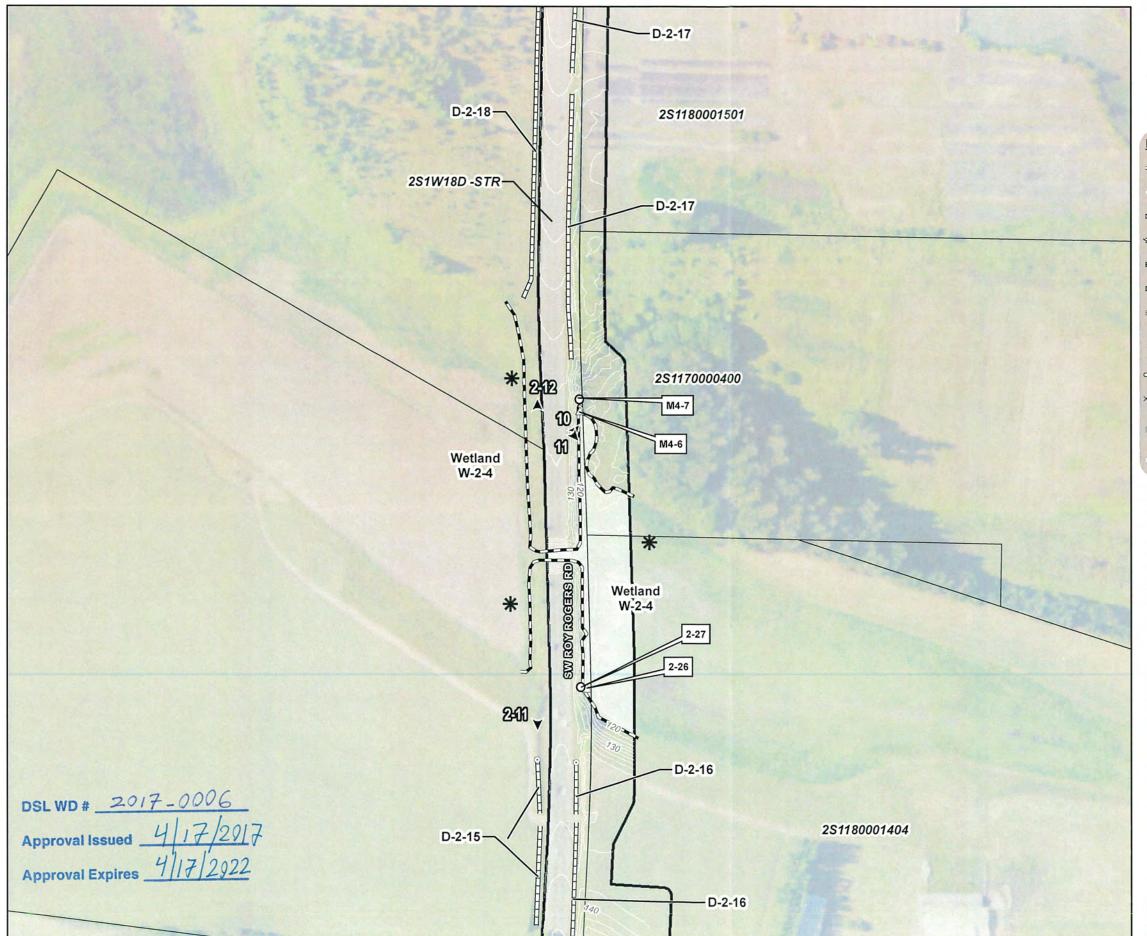
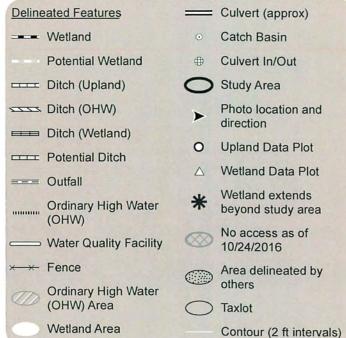
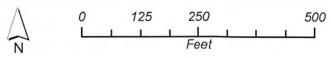


Figure 6, Sheet 11 of 12
Delineated Wetlands





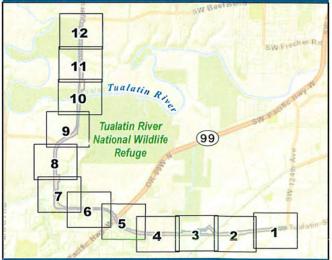
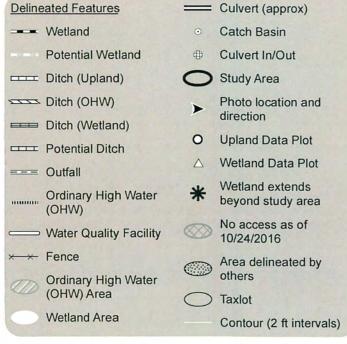
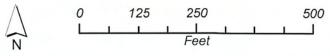
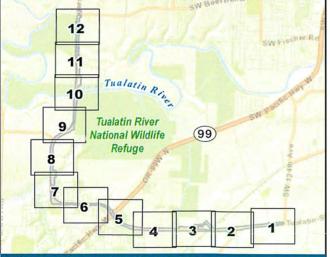




Figure 6, Sheet 12 of 12
Delineated Wetlands







PLM 4.0

1-W = wetland feature, S =stream feature, D = ditch feature

2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches. Onsite/Offsite acreage is listed in this order where appropriate.

3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction.

4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent

6-HGM Class: DEP=depressional, RFT=riverine flow-through

7- Due to imprecision in the tax lot layer, all ditches were delineated with Onsite methods, whether extending slightly outside the apparent tax lot or not

ID ¹	Latitude	Longitude	Sheet #	Delineation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
W-124th-B (WQ Swale)	45.369407	-122.806794	1	Previously Delineated	0.16	No	Yes	4	-	-	Previously delineated stormwater feature with steep constructed sides, that has not changed since concurrence in 2014 (no new data plots needed). (W2014-0448)
D-2-1	45.368858	-122.809804	1	Onsite	-	No	No		-	2-1	Dry. No signs of scour, no wetland vegetation (meaning no vegetation wetter than FAC)- disconnected from curb and gutter system
D-2-2	45.368683	-122.811552	1	Onsite	1	No	No		I	2-2	Dry. No signs of scour, no wetland vegetation (veg)- disconnected from curb and gutter system. Drains to culvert under road to N and thereby to D-M4-1.
D-M4-1	45.369038	-122.812228	1	Onsite	96	No	No	PEM	Dep	M4-1	Small, isolated ditched wetland at culvert outfall from dry ditch south of road. Mostly offsite, though culvert outfall lies within study area (SA). Disperses outside SA into weedy upland with oxeye daisy, sweet vernal grass, tall orchardgrass, blackberry.
D-2-3	45.368309	-122.815331	2	Onsite	368	No	No		-	2-3	Dry. No signs of scour, no wetland veg- disconnected from curb and gutter system. Drains to D-2-4
D-2-4	45.368110	-122.817187	2	Onsite	428	Yes	No	PEM	Slope		Ditch wetland along roadside, with steep slopes adjacent and minimal scour. 18" bottom, OHW from scour. Receives hydro from D-2-3 and ditches along OR St. Drains to catch basin and thereby to D-2-5.
D-2-5	45.367827	-122.821316	2, 3	Onsite	128	Yes	No	PEM	Slope	2-6	Ditch wetland along roadside, with steep slopes adjacent and drift lines, scour. 2.5' bottom. Receives hydro from D-2-5 and other storm pipes. Drains to culvert, then N of rd and likely eventually to Rock Creek floodplain.
WQ Swale (Unnamed)	45.367718	-122.82779	3	Onsite	0.02	No	VES	from wetl	and W-2	2-1	Water Quality swale with clearly constructed boundaries- would likely be jurisdictional due to proximity to potential wetland, but since it's clearly a constructed feature, no plots taken.
W-2-1 1758	Outside Study Area			N/A	_	- 2	4	_	-	- 4	Feature now occurs entirely outside of the study area, but retained in the table to keep numbering consecutive. Feature is a wetland mitigation site outside of right of way.
S-2-1 CYFB K - ESH-	45.367539	-122.828860	3	Offsite Qusite	223	Yes	Yes		-	h a i	Rock Creek. Incised stream and adjacent habitat is upland. Channel= 15x5', with 3' of water in btm. Flows under rd through box culverts. OHW from steep banks, washed roots. Cobble, silt, pebble.Reed canargrass fringe (w/ 80% open water) below OHW only- steep slopes to upland (Plot 2-10).
D-2-6a	45.367685	-122.833021	4	Onsite	563	No	No	-	-	77.	Dry. Veg=maintained lawn. Receives flashy but high volume stormwater from Ig parking lot outfall, and few other sources of water. OHW 1.5' with scour, drift lines (DLs). Drains to Rock Cr. Via a long underground pipe that outfalls to D-6b.
D-2-6b	45.367646	-122.828998	3	Onsite Onsite	-	No	No	-		-	Lies partially within study area, mostly bare from scour. Dry. Receives flashy but high volume stormwater from D-2-6a. OHW 1.5' with scour, DLs. Drains directly to Rock Cr.
S-2-2 Cree K - ESH-	45.374869	-122.856913	7	Onsite	345	Yes	Yes		()	2-11	Chicken Creek. Somewhat incised-adjacent habitat is upland within SA, wetland outside-Upland Plot 2-11 adj. Channel= 25x10', with cobble, silt substrate. Bridge. OHW from steep banks, washed roots.
W-M4-1 -ESH-	45.374723	-122.454998	7	Both	0.30	Yes	Yes	PFO/ PEM	Slope	M4-3	Chicken Creek bench wetland at base of steep slope, which marks the wetland boundary. Hydrology from high water table associated with creek and potentially from groundwater. Floods occassionally, but lies above OHWM.

WP2017-0006

PLM 4.0

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4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent

6-HGM Class: DEP=depressional, RFT=riverine flow-through

7- Due to imprecision in the tax lot layer, all ditches were delineated with Onsite methods, whether extending slightly outside the apparent tax lot or not

ID ¹	Latitude	Longitude	Sheet #	Delineation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)	
D-2-7	45.376404	-122.856978	7, 8	Onsite	498	No	No	-	(1)		Dry. No signs of scour. Dominant veg =blackberry, maple, Kentucky bluegrass. Drains to wetland outside SA near creek, and appears to have scour outside study area.	
D-2-8	45.376297	-122.856682	7, 8	Onsite	857	No	No	-	÷		Dry. No signs of scour. Veg=Scotch broom, blackberry, maple, Kentucky bluegrass. Drains to wetland outside SA near creek, and appears to have scour outside SA. Upland Plot taken near crest in mapped hydric soil.	
D-2-9	45.381886	-122.855015	8, 9	Onsite	2500	No	No	7120	40		Dry. No signs of scour. Veg=rye, blackberry, Kentucky bluegrass. Drains to Wetland 2-3 outside SA.	
D-2-10	45.381660	-122.856048	8, 9	Onsite	- 1	Yes	No	PEM	Slope		Ditched roadside wetland with steep slopes adjacent and no scour.	
D-2-11	45.383287	-122.852711	9	Onsite	1273	No	No	[]	124.1		Dry. No signs of scour. Lies higher than D-2-10, which is isolated from wetlands to the north (Wetland 2-2). Drains to Wetland 2-2.	
D-2-12	45.387484	-122.852161	10	Onsite	395	Yes	Yes	I			Dry, but appears to be a somewhat natural feature, with signs of scour. Drains Wetland 2-2 to the Tualatin River. OHW=1.5 ft.	
W-2-2	45.386231	-122.852132	9, 10	Onsite	0.11	Yes	Yes	PEM/ PSS	Flats	2-19	West side of road. Drains to the Tualatin River. Boundary determined by steep slope/road embankment rising from wetland and obvious change in vegetation to upland.	
W-2-3	45.386356	-122.851754	9, 10	Onsite	0.04	Yes	Yes	PEM/ PSS	Flats	2.21	East side of road within right of way, extends into adjacent wildlife refuge. May drain to the Tualatin River, but unknown (outside SA). Boundary determined by steep slope/road embankment rising from wetland and obvious change in vegetation to upland.	
S-2-3 River	45.388139	-122.851499	10	Onsite	190	Yes	Yes	-	12	2-23	Tualatin River. Incised stream. Adjacent habitat is upland. OHW approx 100' wide from steep banks, washed roots. Very narrow fringe wetland below OHW only.	
D-2-13	45.389430	-122.851634	10	Onsite	229	No	No	11-01			Dry. No signs of scour. Veg=blackberry, locust, Kentucky bluegrass. Appears to drain into uplands (blackberry), but extends outside SA.	
D-2-14	45.390217	-122.851972	10	Onsite	ŧ	No	No	194	÷	1-91	Dry. No signs of scour. Veg=orchardgrass, locust, shining geranium. Drains to foxtail wetland outside the SA to the southwest via a culvert.	
D-2-15	45.391277	-122.851942	10, 11	Onsite	144	No	No	-	-		Dry. No signs of scour. Veg=blackberry, geranium, velvetgrass. Drains to Wetland 2-4 via a catch basin.	
D-2-16	45.391255	-122.851637	10, 11	Onsite	354	1	No			-	Dry. No signs of scour. Veg=blackberry, geranium, Kentucky bluegrass. Drains to Wetland 2-4 via a catch basin.	
W-2-4	45.392808	-122.851451	11	Onsite	1.39	Yes	Yes	PEM/ PSS	Flats	2-26, M4-6	Large seasonally ponded agricultural wetland, connected by bridge under road. Boundary determined by steep slope rising from wetland and change in vegetation from wetland species to facultative species mixed with upland species. PSS portion is primarily blackberry thicket along the northern boundary. PEM portion is primarily a field plowed and planted with annual crops, except in right of way.	
D-2-17	45.394445	-122.851824	11, 12	Onsite	933	No	No		14	-	Dry. No signs of scour. Veg=blackberry, geranium, pernnial rye. Drains to Wetland 2-4.	

PLM 4.0

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See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

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ID ¹	Latitude	Longitude	Sheet #	Delineation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
D-2-18	45.396854	-122.852147	11, 12	Onsite	712	No	No		- 42		Dry. No signs of scour. Veg=blackberry, geranium, Kentucky bluegrass, Scotch broom. Drains to Wetland 2-4.
D-M4-2	45.400319	-122.851540	12	Onsite	104	No	No	T.	-	None	Dry, no signs of scour. Veg=perennial rye, Queen Anne's lace, and prickly lettuce. Drains to catch basin and thereby likely to wetlands outside study area west of road. 1' width.

Wetlands Total = 7, 6 inside Study Avea, 1 outside. Total Avea inside Study Avea = 2.02 Acves

Juvis dictional Waters = 4,

Pipeline Main 5.0 (Scholls Area) ODSL Wetland Verification



July 11, 2017

Re:

Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200 FAX (503) 378-4844 www.oregon.gov/dsl

State Land Board

City of Hillsboro Water Department Attn: Niki Iverson 150 E. Main Street Hillsboro, OR 97123-4028

Kate Brown Governor

Dennis Richardson Secretary of State

WD #2017-0024 Partial Concurrence, Wetland Delineation Report for the Proposed Willamette Water Supply Program Project, PLM 5.0

Washington County; Multiple Sections and Tax Lots

Tobias Read State Treasurer

APP #60102

Portions of the Bull Mountain and the Cooper Mountain South

Local Wetlands Inventories

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area corridor passes through only portions of the multiple sections and tax lots shown on the attached maps. The entire study area for this delineation report was not field checked due to property access issues. Areas with no access were investigated and mapped using offsite wetland determination methods, therefore, are receiving Preliminary Jurisdictional Determinations (PJDs) from the Department. Since PJDs are not suitable for removal-fill permitting, areas with PJDs will need checked, features delineated, and a report submitted with a new cover form and fee when access is granted and prior to any construction within these properties. Areas and features located outside the study area are not included in this concurrence. In addition, features in areas identified as "Delineated by Others" (QEA Creek and QEA Waters 1 through 3) were reviewed and approved in earlier reports and are also not included in this concurrence.

Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6, Sheets 1 through 21 of the report Within the study area corridor, 15 wetlands (totaling approximately 6.82 acres), segments of 14 waterways (including a portion of McKernan Creek), and 50 roadside ditches were identified (see Appendix B for individual features). Note that all or portions of Wetlands W-M5-9, W-2-7, W-M5-8, an unlabeled wetland swale, and streams S-2-5 and S-2-7 either did not have access for this study or were located just outside the study area boundary. Therefore, these features were mapped using offsite wetland determination methods and given PJDs.

The wetlands, waterways, and 9 of the roadside ditches (D-2-19, D-2-26, D-2-32, D-2-33, D-2-37, D-2-43, D-2-63, D-2-64, and D-M5-2) are subject to the permit requirements of the state Removal-Fill Law. The remaining roadside ditches are exempt per OAR 141-0515 (10); therefore, they are not subject to these permit requirements. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely.

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec: Phil Rickus, David Evans and Associates, Inc.

Washington County Planning Department Michael LaDouceur, Corps of Engineers

Anita Huffman, DSL

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submitted is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report. A single PDF attachment of the completed cover from and report may be e-mailed to Wetland Delineation@dsl.state.or.us.

Niki Iverson, Water Resource Manager City of Hillsboro Water Department 150 E. Main Street Hillsboro, OR 97123-4028 Authorized Legal Agent, Name and Address: Business phone # (503) 615-6770 Niki Iverson, Water Resource Manager Mobile phone #	M Applicant C Owner Name Firm and Address	
City of Hillsboro Water Department 196 E. Main Street Hillsboro, OR 97123-4028 Authorized Legal Agent, Name and Address: Niki Iverson, Water Resource Manager City of Hillsboro Water Department Little own the property describe below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notificatible to the primary contact. Signature: Department Name: Niki Iverson Special instructions regarding site access. Project and Site Information (using decimal degree format for latiting, enter centroid of site or start & end points of linear project) Project Name: Willamette Water Supply Program, Latitude: 48.433839 Longitude: -122.885289 Project Name: Willamette Water Supply Program, Project Name: Willamette Water Supply Program, Project Street Address (or other descriptive location): Between intersection of Beef Bend Road on SW Roy Rogers Road and intersection of SW 209° and SW Farmington Road (Approximately 7.2 miles in length). Wetland Consultant Name, Firm and Address: Politickus David Evans and Associates 2100 SW River Parkway Portiand, OR 97201 The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: Primary Contact for report review and site access is Consultant Applicant/Owner Application Submitted Metland/Owlaters Present? Premit application submitted Previous Dsl. # Expiration date Ditter Information: Has previous delineation/application been made on parcel? Pro Office Use Only Dsl. Will # Dsl. W	Applicant Owner Name, Firm and Address:	Business phone # (503) 615-6770
Sum Street Millsboro, OR 97123-4028	City of Hillshore Water Department	
Hillsboro, OR 97123-4028 Authorized Legal Agent, Name and Address: Niki Iverson, Water Resource Manager City of Hillsboro Water Department Litter own the property describe below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notificatible to the primary contact. Signature: Signature: Signature: Special instructions regarding site access. Project Ames: Will amette Water Supply Program, Latitude: 48.433839 Longitude: -122.885289 Project Name: Willamette Water Supply Program, Project Street Address (or other descriptive location): Between intersection of Beef Bend Road on SW Roy Rogers Road and intersection of SW 209 th and SW Farmington Road (Approximately 7.2 miles in length). Wetland Consultant Name, Firm and Address: Business phone # (503-223-6663) Mobile phone # E-mail: prr@deainc.com Project Street Address of the Street S		E-mail: niki.iverson@nilisboro-oregon.gov
Subsiness phone # (503) 815-6770 Mobile phone # Subsiness ph		
Niki Iverson, Water Resource Manager City of Hillsboro Water Department either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the Information in the report, after prior notificatily to the primary contact. Project and Site Information (using decimal degree format for latiforg. Signature. Signature. Signature. Project Name: Willamette Water Supply Program, Latifude: 45.433539 Longitude: -122.885289 Project Name: Willamette Water Supply Program, Latifude: 45.433539 Longitude: -122.885289 Project Name: Willamette Water Supply Program, Latifude: 45.433539 Longitude: -122.885289 Project Street Address (or other descriptive location): Detween intersection of Boef Bend Road on SW Roy Rogers Road and intersection of SW 2098 and SW Farmington Road (Approximately 7.2 miles in length). Tax Lot(s) See Attachment Wetland Consultant Name, Firm and Address: Phone # 503-223-6663 Wolfee Parkway Portland, OR 97201 Wetland Consultant Name, Firm and Address: Phone # 503-223-6663 Wolfee Parkway Portland, OR 97201 Project Parkway Parkway Parkway Parkway		Business phone # (503) 615-6770
Leither own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the Information in the report, after prior notificatible to the primary contact. Signature:		
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Project And Site Information (using decimal degree format for latificially to the primary contact. Signature: Signature:	Laither age the assessful described belowed by	
Signature: Sig	property for the purpose of confirming the information in the report	/ to allow access to the property. I authorize the Department to access the
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Project Name: Willamette Water Supply Program, PLM 5.0 Proposed Use: Pipeline Installation	Date: 01 18 17 Special instructions regard	ling site access:
Project Name: Willamette Water Supply Program, PLM 5.0 Proposed Use: Pipeline Installation	Project and Site Information (using decimal degree formal	t for lat/long, enter centraid of site or start & and points of linear resistant
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Project Street Address (or other descriptive location): Between intersection of Beef Bend Road on SW Roy Rogers Road and intersection of SW 209 th and SW Farmington Road (Approximately 7.2 miles in length). City: N/A County: Washington Wetland Delineation Information Wetland Consultant Name, Firm and Address: Phil Rickus Boavid Evans and Associates 2100 SW River Parkway Portland, OR 97201 The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature Date: 2017-01-04 Primary Contact for report review and site access is Consultant Applicant/Owner Authorized Agent Wetland/Waters Present? Yes No Study Area size: 154.4 Total Wetland Acreage: 6.45 acres Check Box Below if Applicable: R-F permit application submitted Mitigation bank site Mitigation bank site Fee (\$100) for resubmittal of rejected report Metland restoration/enhancement project (not mitigation) Previous DSL # Expiration date Other Information: Resissuance of a recently expired delineation Previous DSL # Expiration date Other Information: Resissuance of a recently expired delineation Previous DSL # Expiration date Other Information: Y N Has previous delineation/application been made on parcel? Fee Paid Date: / / DSL WD # Authorized Agent Fee Paid Date: / / DSL Site # Date Delineation Received: / / J DSL Site #		Landuc: 43.433035 Longitude: -122.665269
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Portland, OR 97201 The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: Date: 2017-01-04		L-mail. pri@deamc.com
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Tax Lots

* Electronic Submittal *

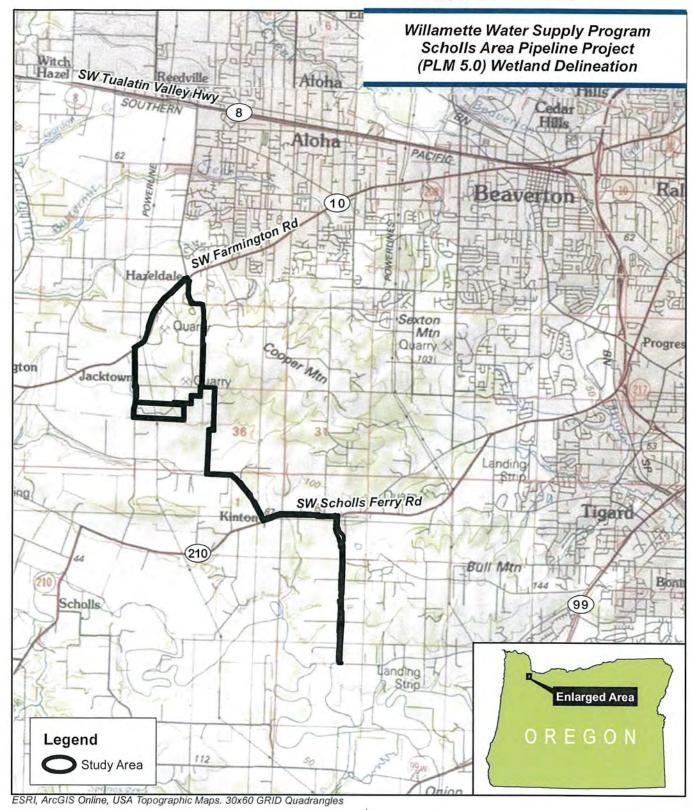


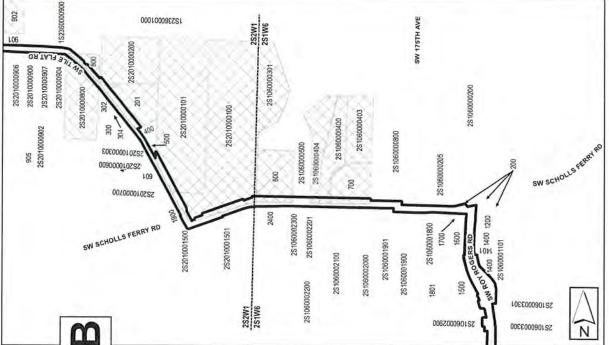
Figure 1 Vicinity Map



N 1 2 Miles

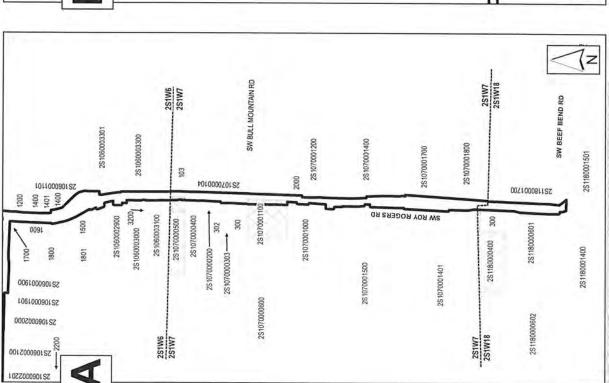
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182230002800	Unincorporated/ Beaverton	3401 00S02W2300000002800	1S2360000900	Unincorporated/ Beavedon	3401 00S02W3600000000900
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1S225BC00900	Unincorporated/ Beaverton	3401 00S02W25BC000000900	152360001000	Unincorporated/	3401 00S02W3600~00001000
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1S225CB00100	Unincorporated/	3401 00S02W25CB-000000100	2S1060000403	Beaverton/	3402 00501W0600000000403
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1S225CB01500	Unincorporated/	3401 00S02W25CB000001500	2S1060000500	Beaverion/	3402 00S01W0600-000000500
1S225CB01501	Beaverton Unincorporated/	3401 00\$02W25CB-000001501	2S1060000600	Beaverton/	3402 00501W0600000000600
1S225CB02200	Beaverton Unincorporated/			Beaverton/	EVANOVE TO PROPERTY
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1S225CB02900	Beaverton Unincorporated/	3401 00S02W25CB-000002900	2S1060000800	Beaverton Tigard/	3402 00\$01W0600-000000600
1S225CC00700	Beaverton Unincorporated/	3401 00S02W25CC-000000700	2S1060001500	Sherwood Tigard/	3402 00S01W0800000001500
1\$225CC00800	Beaverton Unincorporated/	3401 00S02W25CC-000000800	2S1060001600	Sherwood Tigard/	3402 00S01W0800-000001600
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1S226C002400	Unincorporated/ Beaverton	3401 00S02W26C0000002400	251070000300	Unincorporated/ Sherwood	3402 00501W0700000000300
1S226C002700	Unincorporated/ Beaverion	3401 00S02W26C0000002700	2S1070000302	Unincorporated/ Sherwood	3402 00S01W0700000000302
1S226C002800	Unincorporated/ Beaverton	3401 00S02W26C0000002800	251070000303	Unincorporated/ Sherwood	3402 00S01W0700-000000303
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1S2350000400	Unincorporated/	3401 00S02W3500~000000400	251070000600	Unincorporated/	3402 00S01W0700000000600
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152350000700	Unincorporated/	3401 00S02W3500000000700	281070001401	Tigard Unincorporated/	3402 00SD1W0700000001401
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152350001000	Beaverton Unincorporated/	3401 00S02W3500000001003	281070001300	Sherwood Unincorporated/	
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152360000100	Beaverton Unincorporated/	3401 00S02W3600000000100	251180000400	Sherwood Unincorporated/	3402 00S01W1800000000400
152360000200	Beaverion Unincorporated/	3401 00S02W3600-000000200	281180000601	Sherwood Unincorporated/	3402 00S01W1800000000601
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1S2360000401	Beaverton Unincorporated/	3401 00S02W3600000000401	2S2010000101	Beaverton	3402 00S02W0100000000101
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152360000501	Unincorporated/ Beaverton	3401 00S02W3600-000000501	2S2010000400	Beaverton/ Beaverton	3402 00S02W0100000000400
1\$2360000600	Unincorporated/ Beaverton	3401 00S02W3600000000600	252010000500	Beaverton/ Beaverton	3402 00S02W0100000000500
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Metro RLIS Data, 2016.



Willamette Water Supply Permitting Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

Figure 2, Sheet 2 Tax Lots

Area delineated O Study Area by others Legend

No access as of 10/24/2016

0 0.1 0.2

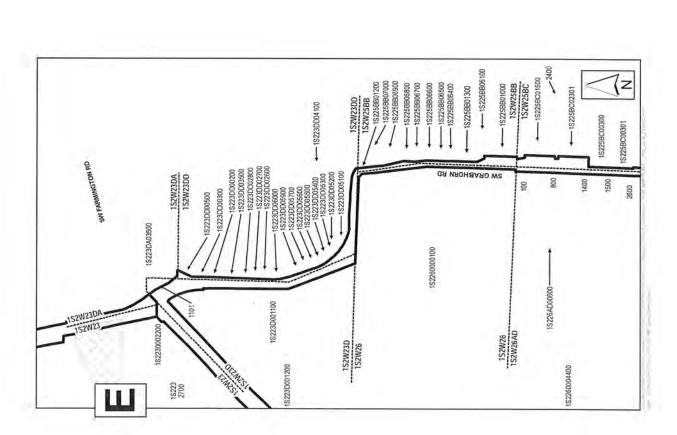
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Metro RLIS Data, 2016.

122360001000 SS2010000200 15236000100 182360000402 501 152360000801 152360000802 1S2W25CB 1S2W25CC 1S2W25BC 1S2W25CB 800 152360000600 1S2W36 800 152360000500 Þ06 +---1S225BC02400 ---1S225BC02301 152360000400 152360000200 **Z**06 -1S225CC01000 -1S225CB02900 902 152360000601 006 152360000804 301 ---1S225BC00401 -1S225CB01400 -1S225CB02200 906 1S225BC00300 200 300 902 52360000303 302 252010001000 \$2360000300 000 1800 700 600 006 ам сванови во 122320001003 2600 ая ияонаяя ws 900 152350001300 152350001201 182350001000 122260005000 152260005700 1S226DD00300 SW TILE FLAT RD 152350001202 1S226AD03500 1S226AD01400-1S226AD01500 1S226AD00600-152350000100 1203 1101 152W26AD 152W26 152W26 152W26DD 152260004400 182350000700 182350000300 1S2W35 1S2W26DD 152W2 1S2W35 182350000803 z 125320000400



Willamette Water Supply Permitting Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

Figure 2, Sheet 3
Tax Lots

Area delineated by others No access as of 10/24/2016 O Study Area Legend

0.1

Metro RLIS Data. 2016.



Revised PLM 5.0

1-W = wetland feature, S = stream feature, D = ditch feature

2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches

3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction.

4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e., <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent

6-HGM Class: DEP=depressional, RFT=riverine flow-through

ID ¹	Latitude	Longitude	Sheet #	Delieation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
D-2-19	45.401780	-122.851571	1	Onsite	770.39	Yes	Yes 🗸	PEM	Slope	2-30	Flowing water during visit. Drains to wetlands west of Study Area (SA) via culvert. Abuts Wetland 2-5.
W-2-5	45.401752	-122.851548	1	Onsite	0.04	Yes	Yes	PEM/ PFO	Flats	2-30, 2-32	Large ash-foxtail wetland (Lies mostly outside SA). Abuts D-2-19. Boundary determined by minor cover by blackberry, poison oak, and Canada thistle, and lack of hydrology in uplands.
D-2-20	45.401006	-122.851906	1	Onsite	391.18	Yes	No	PEM	Slope	2-34	Ditch that intercepts groundwater. Upland end terminates in blackberry and Douglas fir in D-2-21.
D-2-21	45.402402	-122.851845	1	Onsite	468.91	No	No	(- A)			Dry. No signs of flow, but rock present, along with blackberry and Douglas fir.
D-2-22	45.403361	-122.851526	1	Onsite	381.84	No	No	- 4		2-33	Dry. No signs of flow, but rock present, along with blackberry and geranium. Wetland 2-5 lies downslope of ditch.
D-2-23	45.405820	-122.851520	2	Onsite	328.01	No	No	+		-	Dry. No signs of flow. Rocked ditch, with facultative grasses, geranium, and blackberry.
D-2-24	45.404992	-122.851821	1, 2	Onsite	267.10	No	No			- W	Dry. No signs of flow. Rocked ditch, with facultative grasses, blackberry, and Geranium dissectum. Drains offsite to east into a possible wetland area. No known connection to S-2-4 by culvert.
D-2-25	45.406652	-122.851490	2	Onsite	157.67	Yes	No	PEM	Slope	2-36	Ditch that intercepts groundwater. Drains to north (outside SA) and appears to connect to S-2-4.
S-2-4	45.406546	-122.852138	2	Onsite	152.4	Yes	Yes	- 74 7		-	Incised perennial stream. OHW 2' after wider plunge pool. from steep banks, washed roots. Flow comes from small stream to the east and from D-2-26, which drains into S2-4 through an 18" culvert.
W-M5-10	45.406529	-122.852058	2	Onsite	0.17	Yes	Yes	PFO/PSS	Slope	M5-27	Located in ravine bottom. Intermittent stream S2-4 flows through wetland.
D-2-26	45.407494	-122.851543	2	Onsite	286.98	Yes	Yes 🗸	200		-	Rocked ditch at outfall from failed drain tile outlet that carries water from a potential wetland outside the study area into rocked ditch leading to S-2-4.
D-2-27	45.407297	-122.851789	2	Onsite	144.10	Yes	No	PEM	Slope	2-38	Wetland ditch drains to catch basin and thereby to S-2-4.
D-M5-6	45.408414	-122.851832	2	Onsite	513.92	No	No			(H) (H) (1)	Dry. No signs of flow. Veg= facultative grasses and catsear.
D-M5-7	45.408583	-122.851486	2	Onsite	602.43	No	No				Dry. No signs of flow. Rocked ditch, with facultative grasses, geranium, and blackberry.
S-M5-7	45.411675	-122.851996	3	Onsite	28.10	Yes	Yes	-	1-12-	-	Perennial stream, drains to west through steep wooded ravine. No adjacent floodplain/wetland observed. Channel is deeply incised.
S-M5-6	45.418343	-122.851892	4	Onsite/ Offsite	173.5/60.0	Yes	Partial PJ)		-	-	Ditched channel through ag field on east side of Roy Rogers Rd. Runs in ditched channel on west side for approx. 10 ft before and is then piped off-site through private property. Lies in area currently being delineated by OBEC.
D-M5-5	45.419367	-122.851623	4, 5	Onsite	708.40	Yes	No	PEMC	Slope	M5-25	Ditched wetland. Lies in area currently being delineated by OBEC.
QEA Creek	45.421156	-122.852147	5		Delineated by Others Not Part of WD2017-0024						Perennial stream, drains to west through steep wooded ravine. No adjacent floodplain/wetland observed, but stream and associated wetlands mapped by others within SA (WD#2014-0522). Delineated by QEA.
QEA Water 1 through 3	45.422643	-122.852602	5, 6		Delineated by Others Concurrence					0201 7-0 024	Delineated by QEA (WD#2015-0123).
D-M5-3	45.422409	-122.852762	5	Onsite	829.7	No	No	4		-	Dry, no scour. Dominated primarily by upland vegetation and mulched where new construction was taking placeduring the site visit. Drains to catch basin and thereby to QEA Creek. 1' width.
D-M5-4	45.424858	-122.853297	6	Onsite	1012.40	No	No	(m)			Dry, no scour. Dominated primarily by upland vegetation (tall oatgrass, velvetgrass) until lower, where QEA Water 1 starts.

Wetland Delineation Report

WD2017-0024

Revised PLM 5.0

1-W = wetland feature, S = stream feature, D = ditch feature

2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches

3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction.

4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e., <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent

6-HGM Class: DEP=depressional, RFT=riverine flow-through

ID ¹	Latitude	Longitude	Sheet #	Delieation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
D-2-28	45.425910	-122.861001	6, 7	Onsite	1464.06	Yes	No	PEM	Slope	2-40	Ditch upslope is lined with rock and has no signs of flow, and a small catchment area (only a small portion of the roadway) which indicates that flow would not be relatively permanent upslope of the wetland. Wetland extends to west until the ditch rises to a crest and wetland vegetation turns to blackberry and ivy. Portions of ditch may have been altered by recent construction (visible on aerial).
D-2-29	45.425866	-122.864607	7	Onsite	599.86	No	No	- 2		-	Dry. Scour and bare soil. Veg=blackberry, geranium, Kentucky bluegrass. Drains to S-2-5. Note- features in this area may have been recently delineated and permitted by others, based on flagging in field.
D-2-30	45.425741	-122.864805	7	Onsite	737.28	No	No				Dry. No signs of flow. Veg=blackberry, geranium, Kentucky bluegrass. Drains to S-2-5.
S-2-5	45.426006	-122.865979	7	Onsite/ Offsite	66.9/99.8	Yes	Partial f	- מני	1 = 1	-	Incised stream that outfalls outside SA, and adjacent habitat is upland. OHW 10' from steep banks, washed roots. 50% reed canarygrass below OHW on N side of road.
D-2-31	45.425640	-122.867959	7	Onsite	282.14	Yes	No	PEM	Slope	2-43	Ditch that intercepts groundwater from field to S. Drains to S-2-5. Upslope ditch feature disappears into flat roadside (Plot 2-44)
D-2-32	45.425847	-122.866512	7	Onsite	149.41	Yes	Yes 🛂	17	-	-	Deep ditch with no vegetation that receives overflow water from wetlands to the west. Drains to S-2-5. 4" standing water present on April 7, 2015.
D-2-33	45.425806	-122.867807	7	Onsite	146.69	Yes	Yes 🔽	PEM	Slope	2-45	Ditch that intercepts groundwater from field to N. Drains to S-2-5. Upslope ditch feature disappears into flat roadside (Plot 2-46
S-2-6	45.425867	-122.867265	7	Onsite	151.6	Yes	Yes			jel ,	No flow during site visit, but scour visible. Appears to be an intermittent connection from offsite 'potential OHW' by a culvert. Veg=blackberry, tall fescue. Drains to S-2-5.
D-2-34	45.426603	-122.873212	8	Onsite	1226.38	No	No		- 3- 1	44	Dry. No signs of flow. Ditch with facultative grasses, blackberry, and catsear. No apparent outlet.
Wetland Swale	45.426677	-122.873070	8	Offsite	0.06	Yes	Yes DSL PJD	PEM	Slope	-	Wetland swale mapped using offsite methods (air photos and contours). Not included in the LWI, but there may be additional delineations being conducted by others in this parcel.
D-2-35	45.427026	-122.873720	8	Onsite	1140.48	No	No		-		Dry. No signs of flow. Ditch with facultative grasses, blackberry, and St. Johnswort. No apparent outlet.
D-2-36	45.430081	-122.876804	14	Onsite	1182.33	No	No	.41	Ψ.	- 8	Dry. No signs of flow. Ditch with facultative grasses, blackberry, and Douglas fir. Drains to potential wetland in field to west (outside SA). Roadside ditch ends at crest.
W-M5-9	45.431243	-122.877832	9	Onsite/ Offsite	0.1/0.01	Yes	Portial PJD	PEM	Depr	2-47	Wetland ditch transitions to wetland east of the area in which access was allowed, so delineated with offsite methods east of fence. Small depression between SW Tile Flat Rd and SW Kobbe Dr. Dominated by PHAR, with FRLA overstory offsite.
D-2-37	45.431485	-122.878416	9	Onsite	352.86	Yes	Yes 🗸	PEM	Slope	2-47	Wetland ditch adjacent to larger ash/foxtail wetland in adjacent field. Drains to culvert under road and then toditch in field to west, and this roadside wetland ditch ends at crest.
D-2-38	45.432364	-122.880578	9	Onsite	348.71	No	No	F-640		2-50	Dry. Scour and bare soil. Veg=catsear, dandelion, and tall fescue. Drains to D-2-39
D-2-39	45.432378	-122.882768	9,10	Onsite	309.49	Yes	No	PEM	Slope	2-49	Wetland ditch drains to wetland to west.
D-2-40	45.432446	-122.880260	9	Onsite	751.15	No	No			2-52	Dry. Scour and bare soil. Veg=geranium and tall fescue. Drains to D-2-41.
D-2-41	45.432475	-122.883027	9,10	Onsite	701.52	Yes	No	PEM	Slope	2-51	Wetland ditch drains to wetland to west (W-2-7).
W-2-6	45.432386	-122.884044	9, 10	Onsite	0.04	Yes	Yes	PEM	Flats	2-53	Roadside wetland abuts an apparently large adjacent ash-foxtail wetland pasture. Boundary determined by steep road fill slope rising from wetland and obvious change in vegetation to upland.
W-2-7	45.432801	-122.885471	9, 10	Onsite/ Offsite	0.5/0.03	Yes	Yes Partial PJC	PEM/PSSC	Flats	2-55	Reed canarygrass wetland with some young ash and willow. Mapped on LWI. Extends west of Grabhorn road through culvert. Boundary determined by steep slope rising from wetland and obvious change in vegetation to upland.

W12017-0024

Revised PLM 5.0

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4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e., <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

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ID ¹	Latitude	Longitude	Sheet #	Delieation Method ⁷	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
W-M5-11	45.433263	-122.886365	10	Onsite	0.18	Yes	Yes	PSS/ PEM	Riverine/ Slope	M5-29, 31; 2-57.	Shrub wetland located along tributary south of McKernan Creek. Boundary determined by slope rising from wetland and change in vegetation from wetland veg to a mix of fac and upland veg.
S-M5-4	45.43327	-122.886326	10	Onsite	143.9	Yes	Yes	47	E 1	-	Tributary south of McKernan Creek. Flows through swale wetland. Originates at culvert draining wetland east or road (which generally lacks a defined channel east of road).
D-2-42	45.434502	-122.886070	10		84.94	No	No	+	÷ 1	₩.	No flow. Veg=blackberry, tall fescue. Drains to S-2-7.
S-2-7	45.434569	-122.886336	10	Onsite/ Offsite	143.1/119.6	Yes	Partied PJI	44-	4	2	McKernan Creek. Incised west of road.OHW 20' from steep banks, washed roots.
D-2-43	45.437830	-122.885991	10,11	Onsite	2014.30	Yes	Yes 🗸	PEM	Slope	2-59, 2-63	Ditched wetland that may be a ditched natural tributary. Originates north of road and drains to S-2-7. Also intercepts groundwater from field to E.
D-2-44	45.437000	-122.886133	10,11	Onsite	1616.13	Yes	No	PEM	Slope	2-61, 2-64	Ditched wetland that oiginates north of road and drains to S-2-7.
W-M5-8	45.435215	-122.885926	10	Onsite/ Offsite	0.5/0.2	Yes	Yes Protest P))	PFO/PSS	Riverine/ Slope	M5-33, M5-37	Forested wetland located along McKernan Creek (S-2-7) on both the east and west side of road. Some shrub portions maintained under power lines west of road. No access as of 11/16/16 for wetland southeast of McKernan Creek.
D-2-45	45.443750	-122.884866	11, 12, 13	Onsite/ Offsite	2493.6/111.1	No	Partrel PJ	0 -	-	2-64	Scour and bare soil. Veg=blackberry, geranium, Kentucky bluegrass. Drains to D-2-43.
D-2-46	45.447668	-122.886822	13	Onsite	585.18	No	No		-		Rocked ditch, with no veg. Appears to drain east to D-2-45.
W-M5-5	45.447369	-122.888339	13	Onsite	0.13	Yes	Yes	PEM/ PSS	Slope	M5-15	Wetland swale in a ruderal area in NE corner of parcel, delineated by others (09-0417) but expired, redelineated by DEA. Fed by culvert outfall from roadside ditch D-2-47. This wetland extends to the east where it is included in a separate DEA WWSP wetland delineation (Reservoir Delineation).
S-M5-1	45.446557	-122.888315	13	Onsite	300	Yes	Yes	-		-	Previously delineated (09-0417). OHW by the presence of scattered signs of scour and bed and bank characteristics of the shallow intermittent drainage.
D-2-47	45.448532	-122.888214	13, 14	Onsite	1685.43	No	No		-	-	Rocked heavily with minimal vegetation. Drains to catch basin and thereby to wetlands south of road.
D-2-48	45.450221	-122.888065	13, 14	Onsite	1618.87	No	No	-			Rocked heavily with minimal vegetation. Drains to catch basin and thereby to wetlands south of road.
W-M5-6	45.450624	-122.887825	13	Onsite	0.23	Yes	Yes	PSS	Depr	M5-17	Large impounded wetland that appears to have been altered historically based on the NWI mapping, which shows a smaller, circular feature in the same location. Water drains south in a short culvert, outfalling to slope wetland.
W-M5-7	45.450045	-122.887780	13	Onsite	0.01	Yes	Yes	PSS	Slope	M5-19	Constructed slope wetland dominated by planted species. Hydro from culvert and groundwater from adjacent wetland. Drains to catch basin, then west of road.
D-2-49	45.453585	-122.888191	14	Onsite	621.63	No	No	-			Rocked heavily with minimal vegetation, but appears to carry stormwater. Drains to W-2-8 and thereby apparently to quarry to the west.
D-2-50	45.457365	-122.888034	14, 15	Onsite	1406.29	No	No	-		-	Rocked heavily with minimal vegetation, but appears to carry stormwater. Drains oustide study area to east.
D-2-51	45.459391	-122.888182	14, 15	Onsite	1799.08	No	No	2	9.5	- 1	Rocked heavily with minimal vegetation, but appears to carry stormwater. Drains downslope and appears to infiltrate into ditch bottom, since no catch basin present, and ground slopes up where D-2-52 begins.
D-2-52	45.462061	-122.891189	15, 16	Onsite	1270.66	No	No	144	1- 12	14	Rocked heavily with minimal vegetation, but appears to carry stormwater. Drains oustide study area to a forested wetland.
D-2-53	45.462507	-122.891433	15, 16	Onsite	763.81	No	No	7-	2 ± 1	(T)	Rocked heavily with minimal vegetation, but appears to carry stormwater. Drains through culvert oustide study area to a forested wetland.
D-2-54	45.464406	-122.892069	16	Onsite	248.27	No	No		-	14	Rocked, with minimal vegetation. Drains to culvert to north outside study area to a potential WQ swale.

W02017-0024

Revised PLM 5.0

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See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

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W-M5-1	45.463678	-122.896455	16	Onsite	0.31	Yes	Yes	PEM/ PSS	Slope	M5-1	Wetland swale. Boundary by topography and slight change in vegetation to include dandelion.
D-2-63	45.464066	-122.895985	16	Onsite	742.90	Yes	Yes (portions that abut wetland)	PEM	Slope	2-71	Wetland ditch. Portions adjacent to off-site wetland =DSL jurisdictional.
D-2-64	45.463833	-122.896584	16	Onsite	967.02	Yes	Yes V (portions that abut wetland)	PEM	Slope	2-69	Wetland ditch. Portions adjacent to off-site wetland =DSL jurisdictional.
W-M5-4	45.442691	-122.892282	17	Onsite	0.15	Yes	Yes	PFO/PEM	Slope	M5-13	Ash swale wetland. Previously delineated (09-0417).
S-M5-2	45.441845	-122.893389	17	Onsite	152	Yes	Yes			-	2' wide intermittent stream. Previously delineated (09-0417).
W-M5-3	45.444719	-122.902661	17, 18	Onsite	3.98	Yes	Yes	PFO/PEM	Slope	M5-11, M5-9	Previously delineated (09-0417) portion consists primiarly of a large, intact, forested wetland, with pasture wetland on the east end under BPA powerlines. Wetland extends into pasture to the north, with no access (onsite/offsite acreage given).
W-M5-2	45.446493	-122.904159	18	Onsite	0.18	Yes	Yes	PEM	Slope	M5-5, M5-6	Swale wetland in active pasture. Drains under road to wetland south of the study area.
S-M5-3	45.444506	-122.902799	18	Onsite	844.1	Yes	Yes				3' wide perennial stream that flows into forested wetland and through a culvert under Clark Hill Road. Portion of stream was previously delineated (09-0417). Portions of wetland in pasture with no access, mapped as potential.
D-M5-2	45.445861	-122.904295	18	Onsite	349.283	Yes	Yes 🗸	PEM	slope	M5-7	Upland ditch, as illustrated by Plot M5-8.
D-M5-1	45.447258	-122.904345	18, 19	Onsite	45.29	No	No		34		Veg=blackberry, geranium, Kentucky bluegrass. Drains to culvert and to south of road.
D-2-58	45.448062	-122.904361	19	Onsite	272.90	No	No				Upland ditch with scour, upland veg. Drains to east.
D-2-59	45.450546	-122.904500	19, 20	Onsite	1320.97	No	No		1,22,1	-	Upland ditch with scour, upland veg. Drains to west.
D-2-60	45.454367	-122.904310	20	Onsite	854.82	No	No				Upland ditch with flow, vegetation= blackberry, tall fescue. Drains to CB.
D-2-61	45.456875	-122.901814	20, 21	Onsite	323.31	No	No		(a)	44	Upland ditch with scour, upland veg. Recently dug out. Drains to culvert to west of road.
D-2-62	45.460291	-122.900373	16, 21	Onsite	1169.28	No	No			See.	Upland ditch with scour, upland veg. Recently dug out. Drains to culvert to west of road.

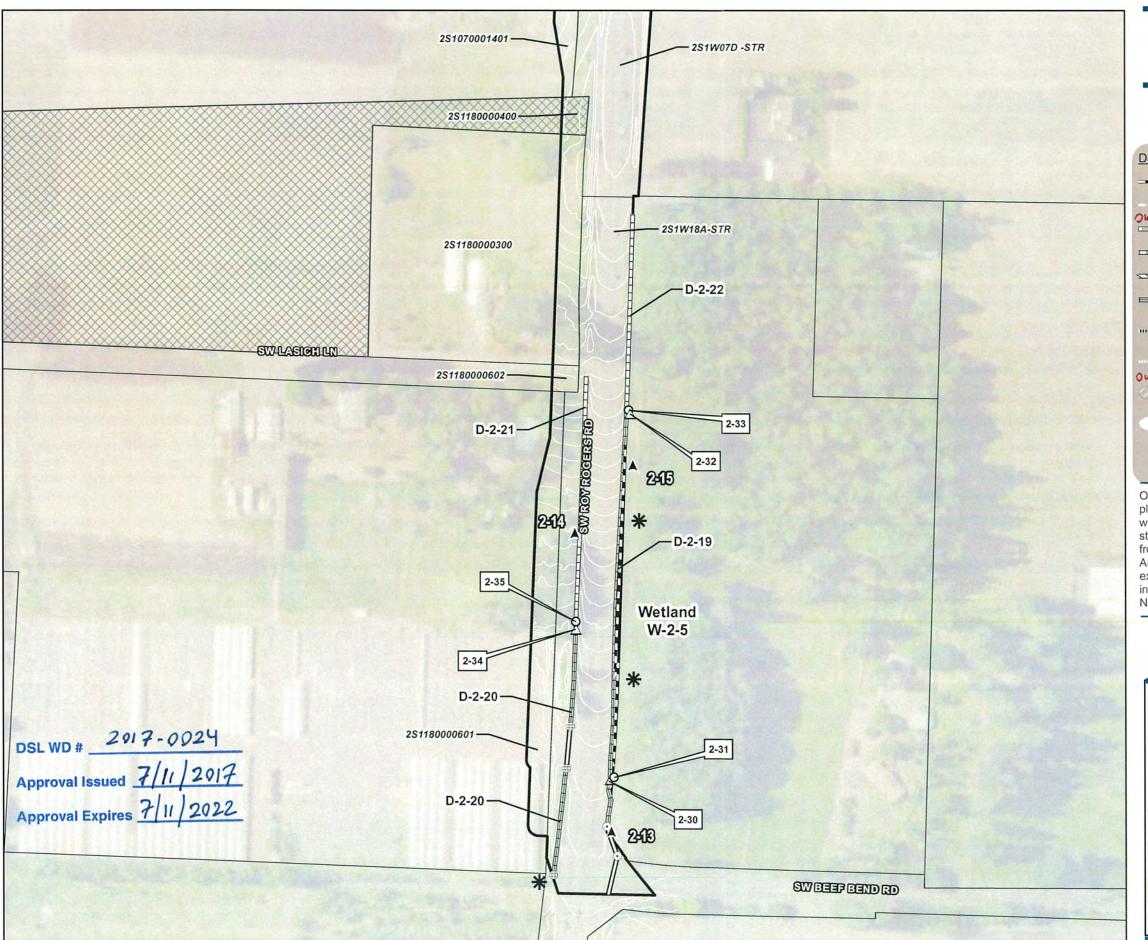
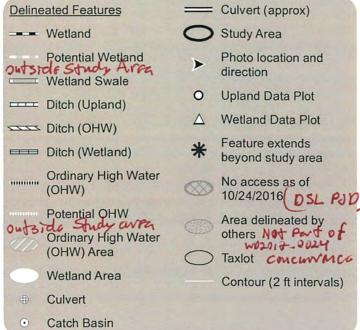
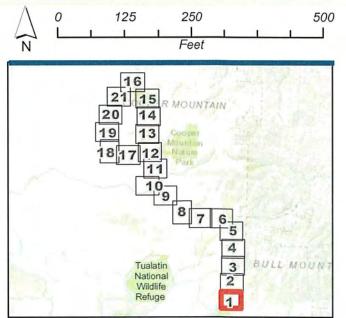


Figure 6, Sheet 1 of 21
Delineated Wetlands





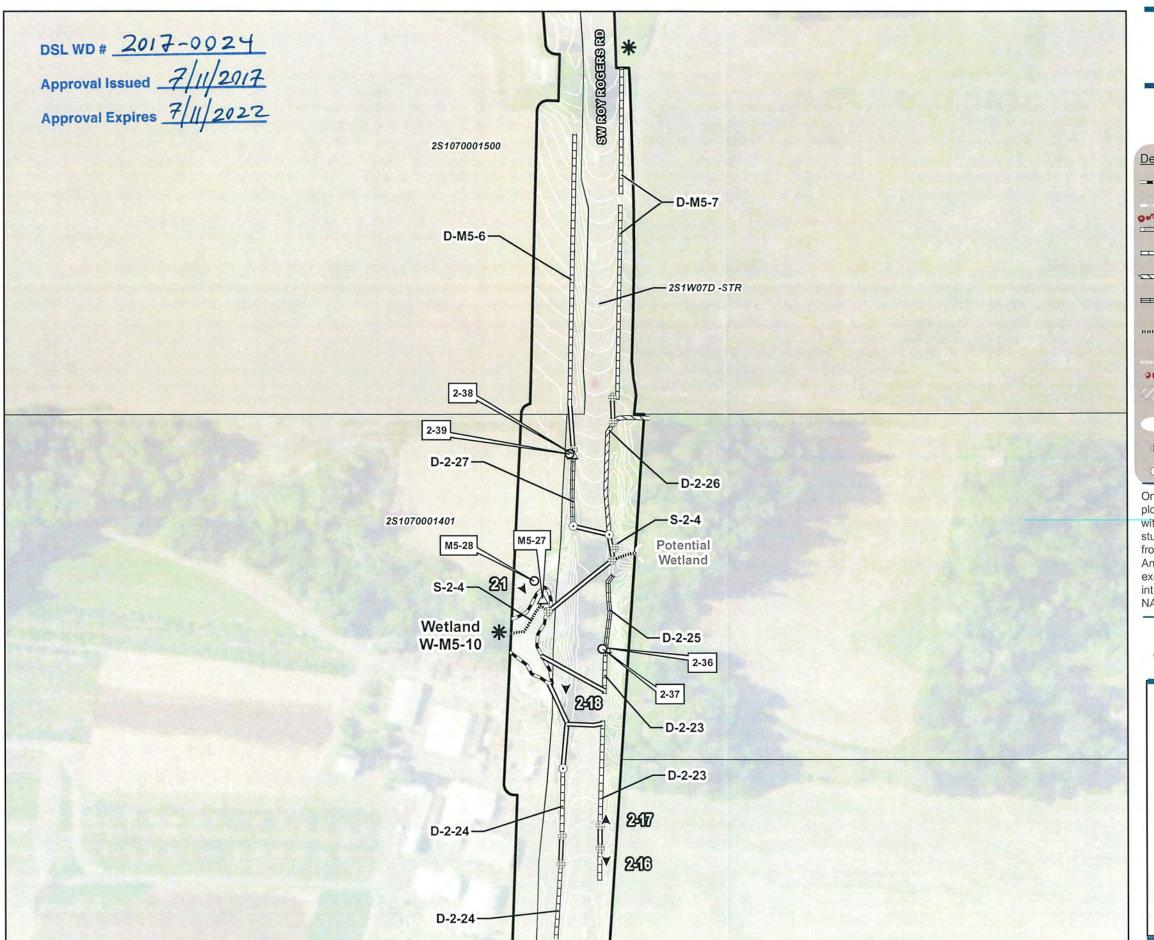
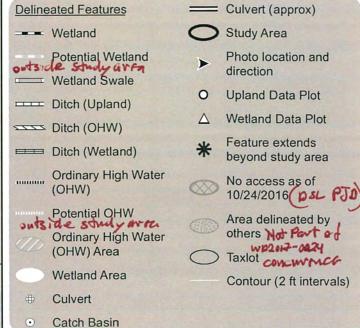
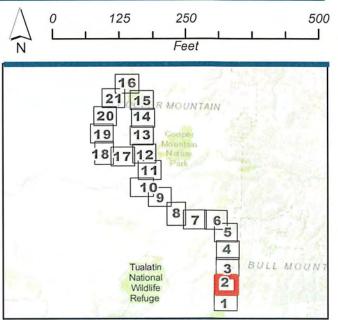


Figure 6, Sheet 2 of 21
Delineated Wetlands





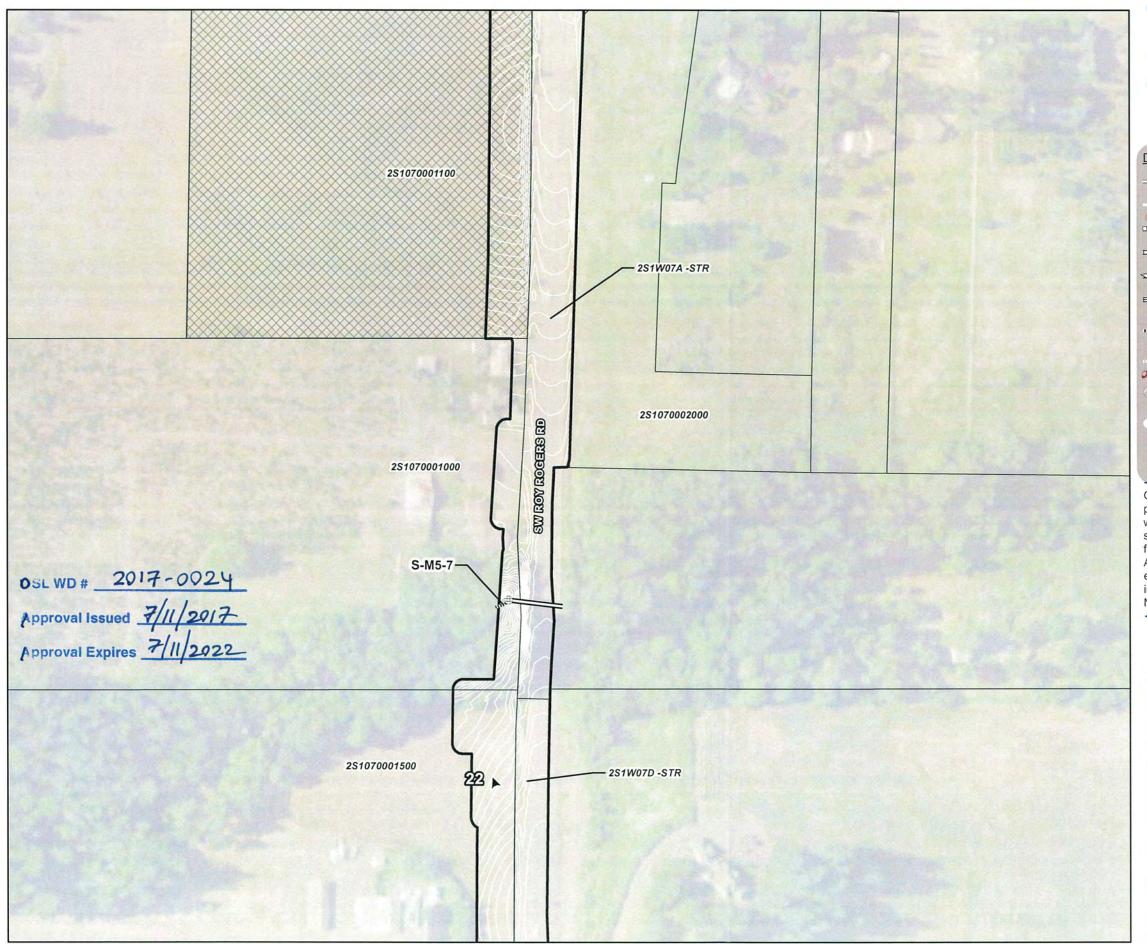
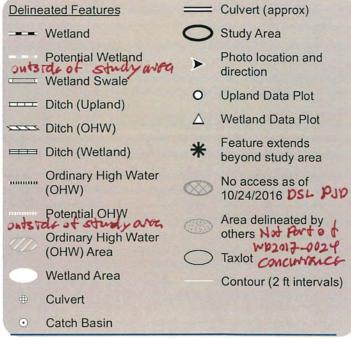
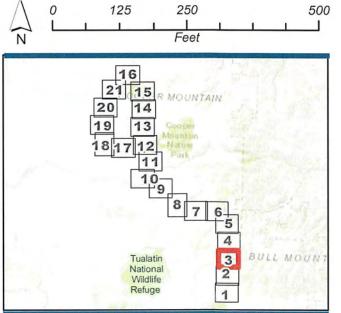


Figure 6, Sheet 3 of 21
Delineated Wetlands





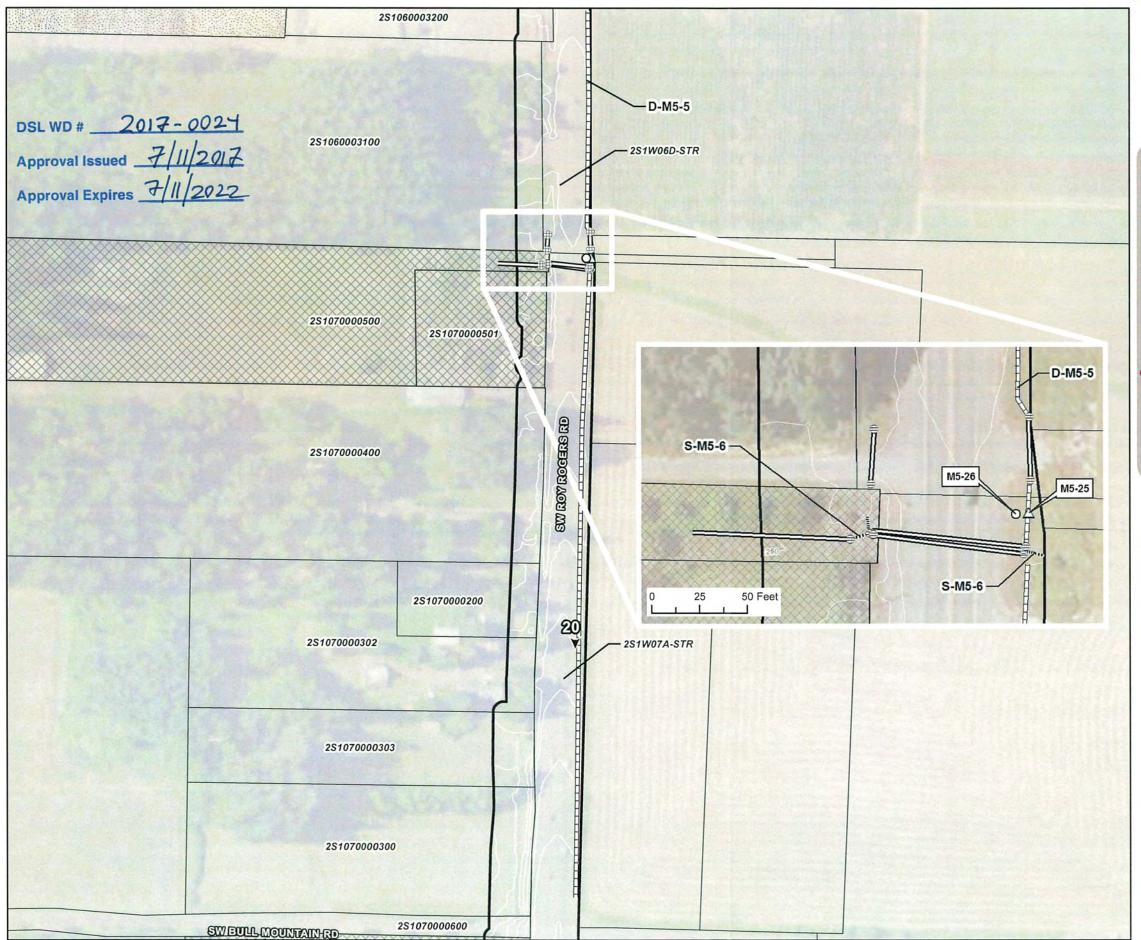
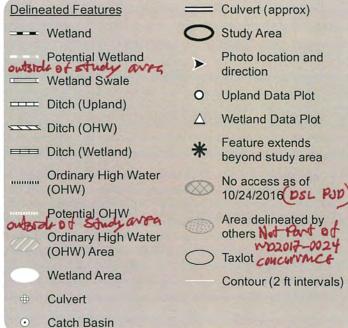
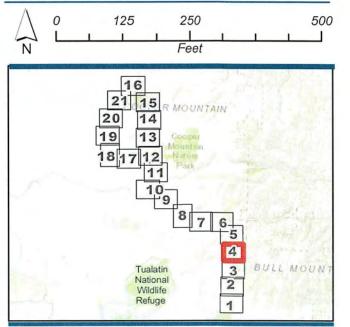


Figure 6, Sheet 4 of 21 Delineated Wetlands





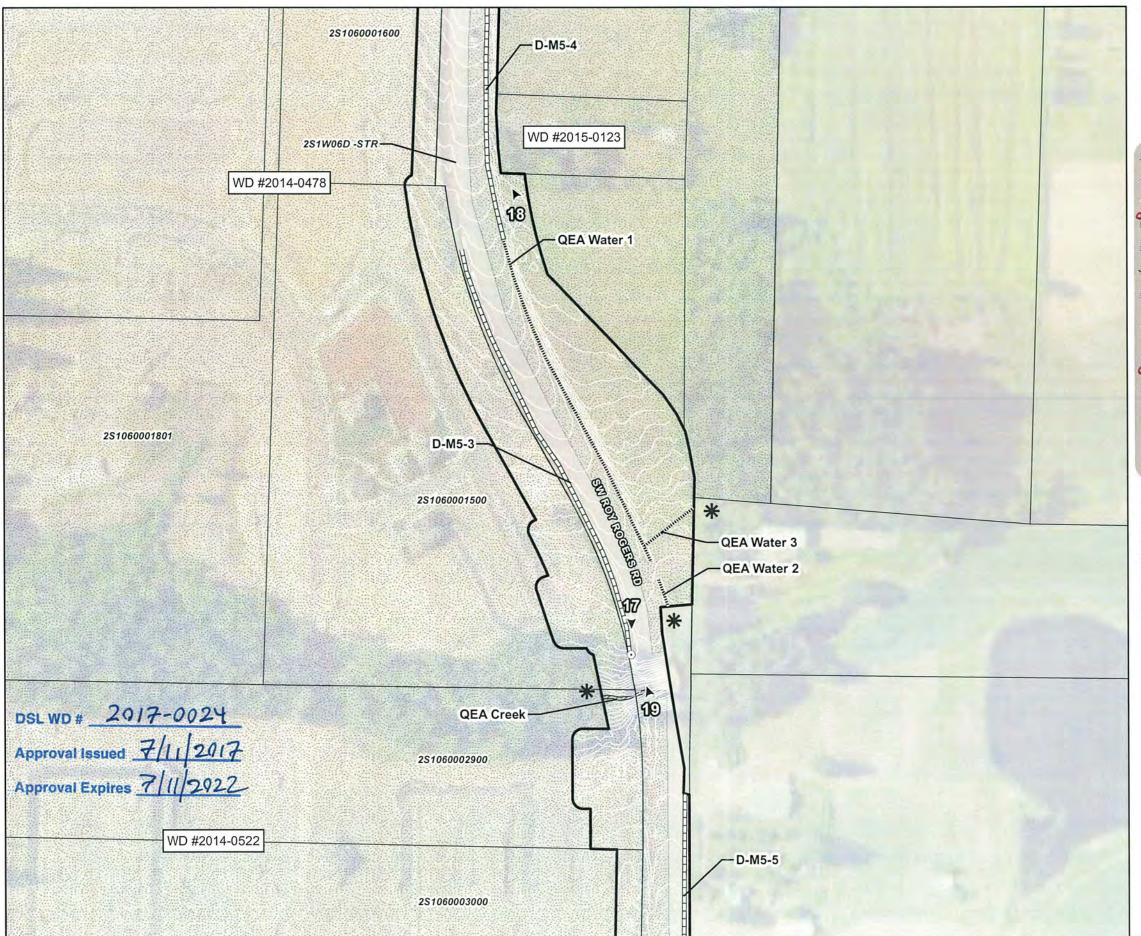
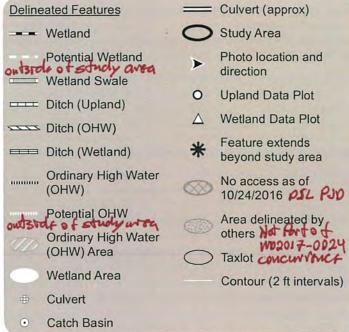
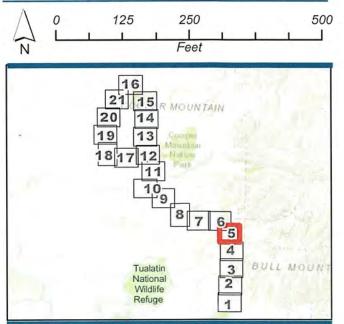


Figure 6, Sheet 5 of 21 Delineated Wetlands





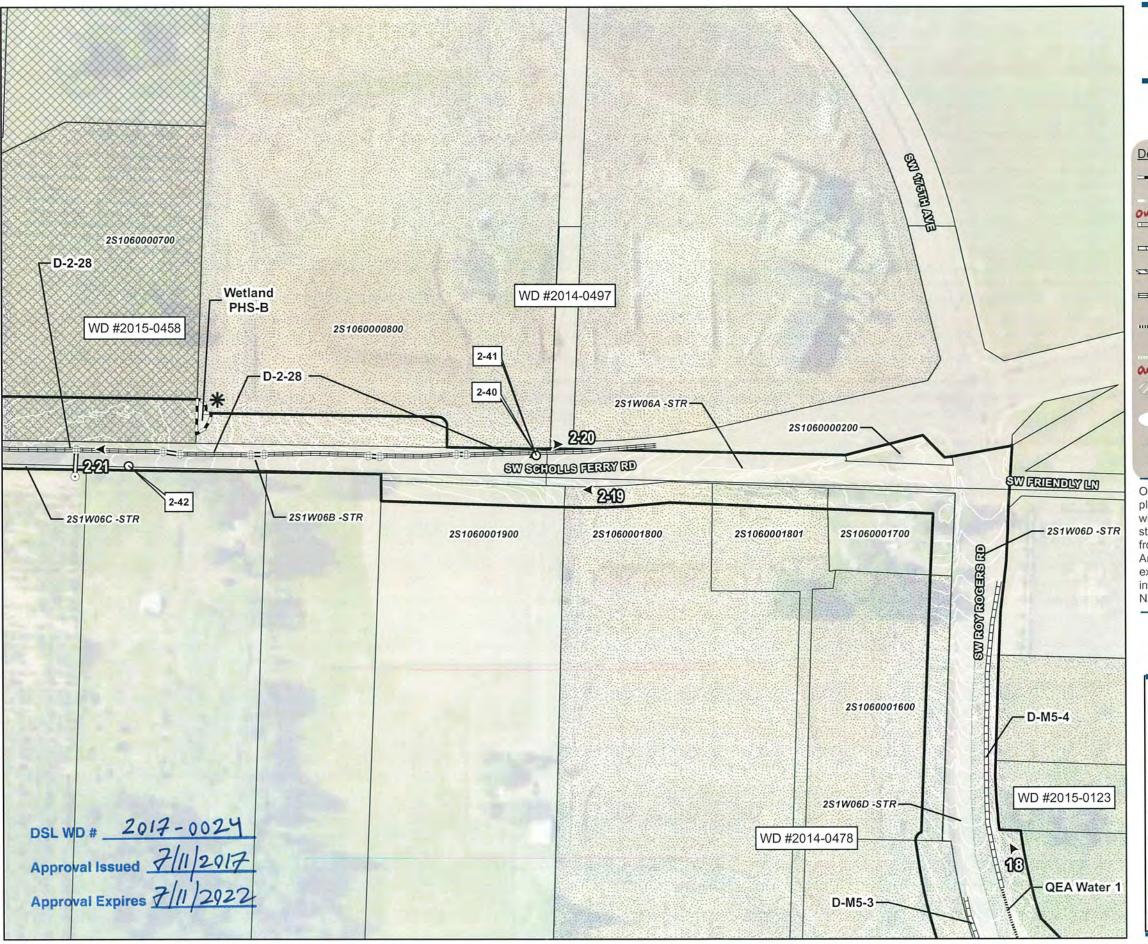
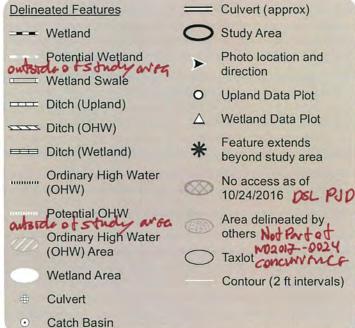
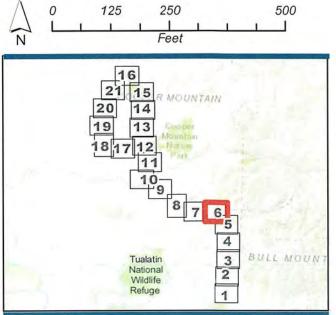


Figure 6, Sheet 6 of 21 Delineated Wetlands





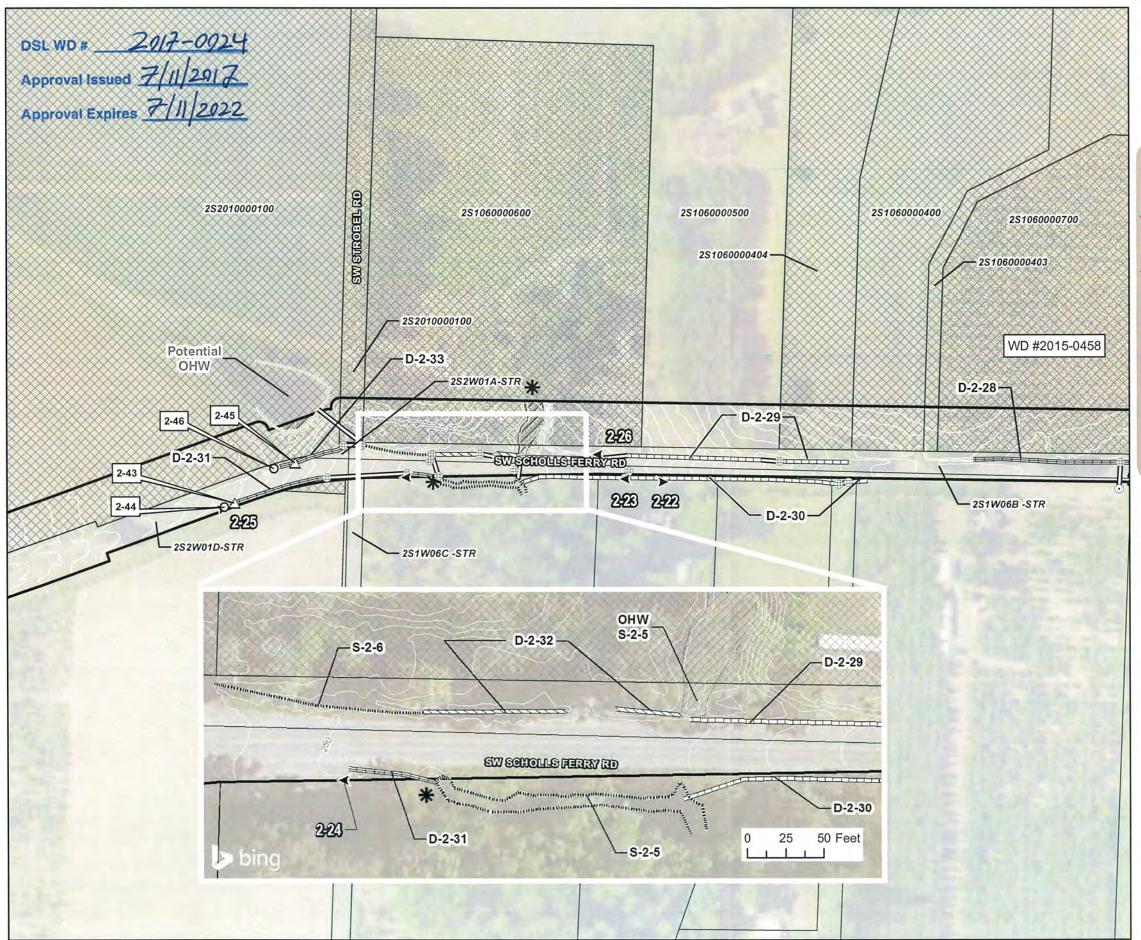
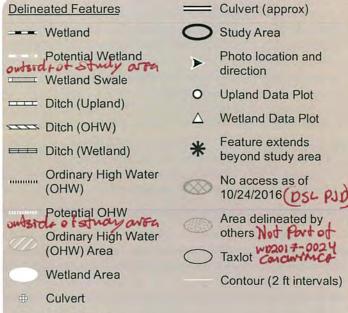
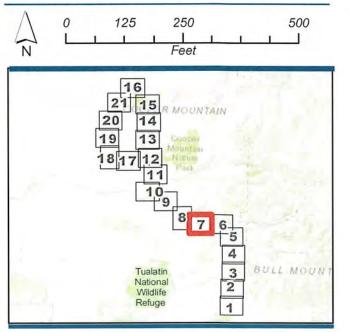


Figure 6, Sheet 7 of 21
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.

Catch Basin



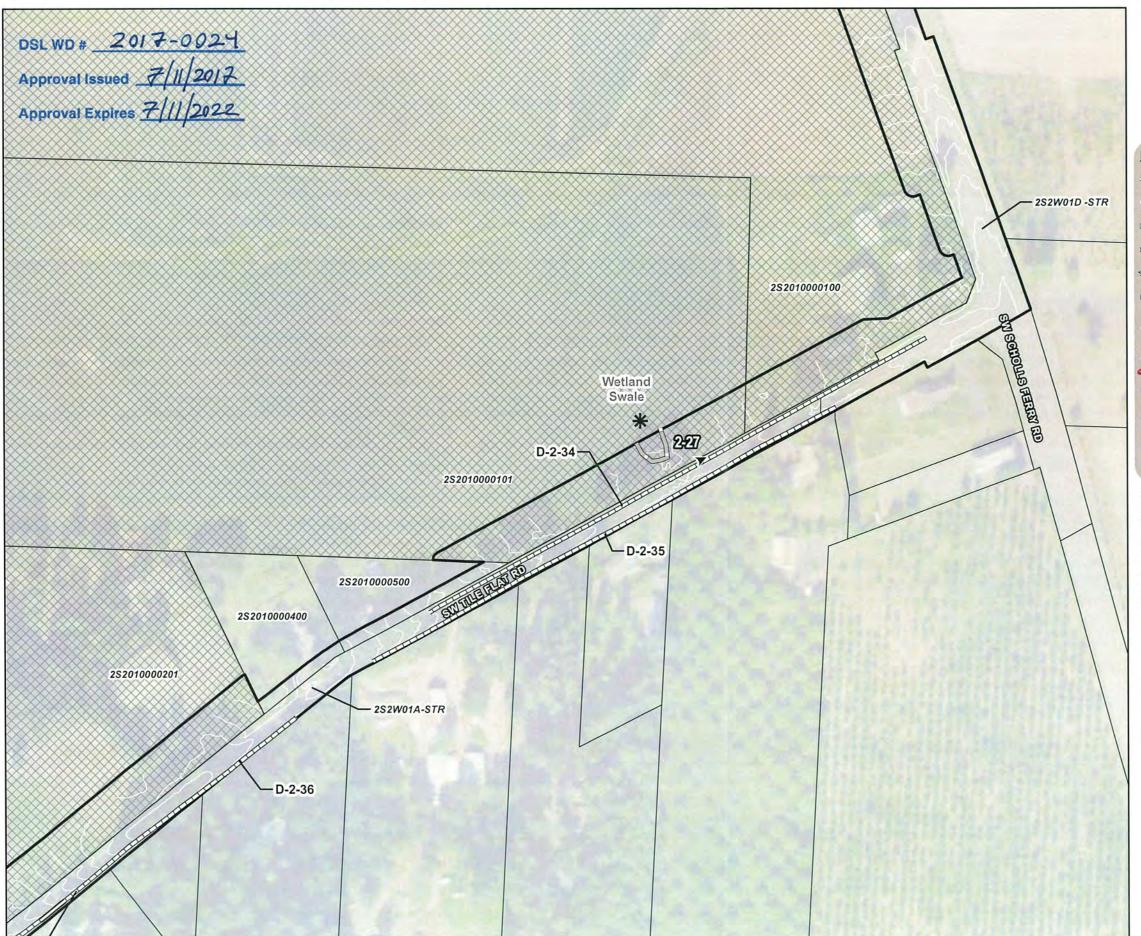
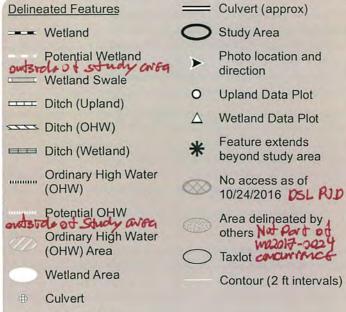
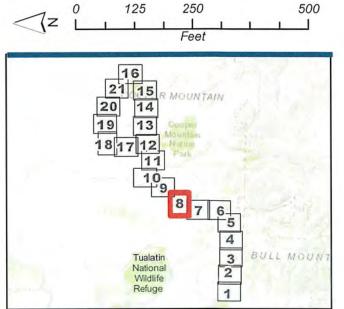


Figure 6, Sheet 8 of 21
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.

Catch Basin



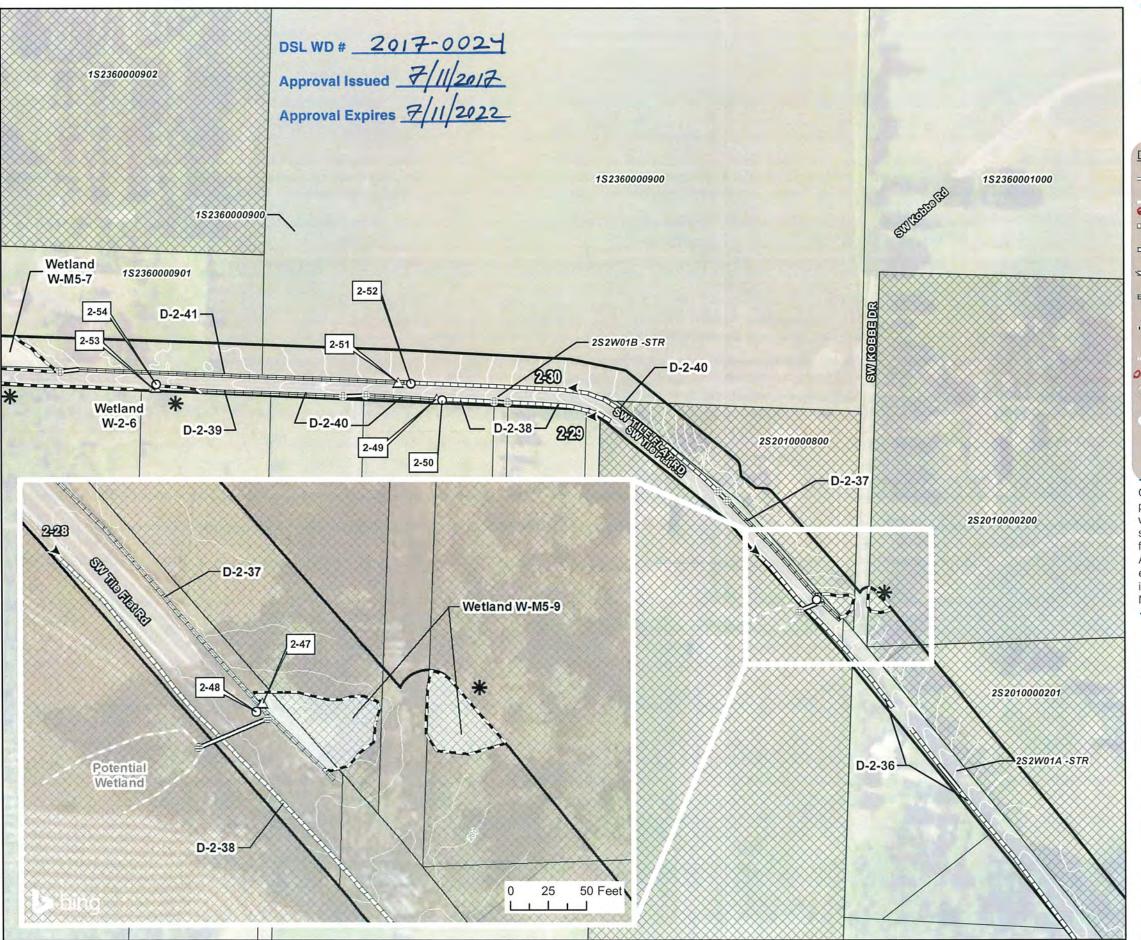
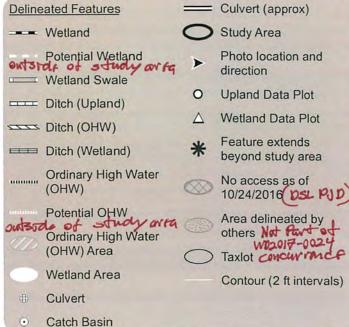
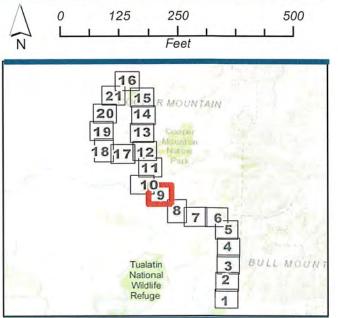


Figure 6, Sheet 9 of 21 Delineated Wetlands





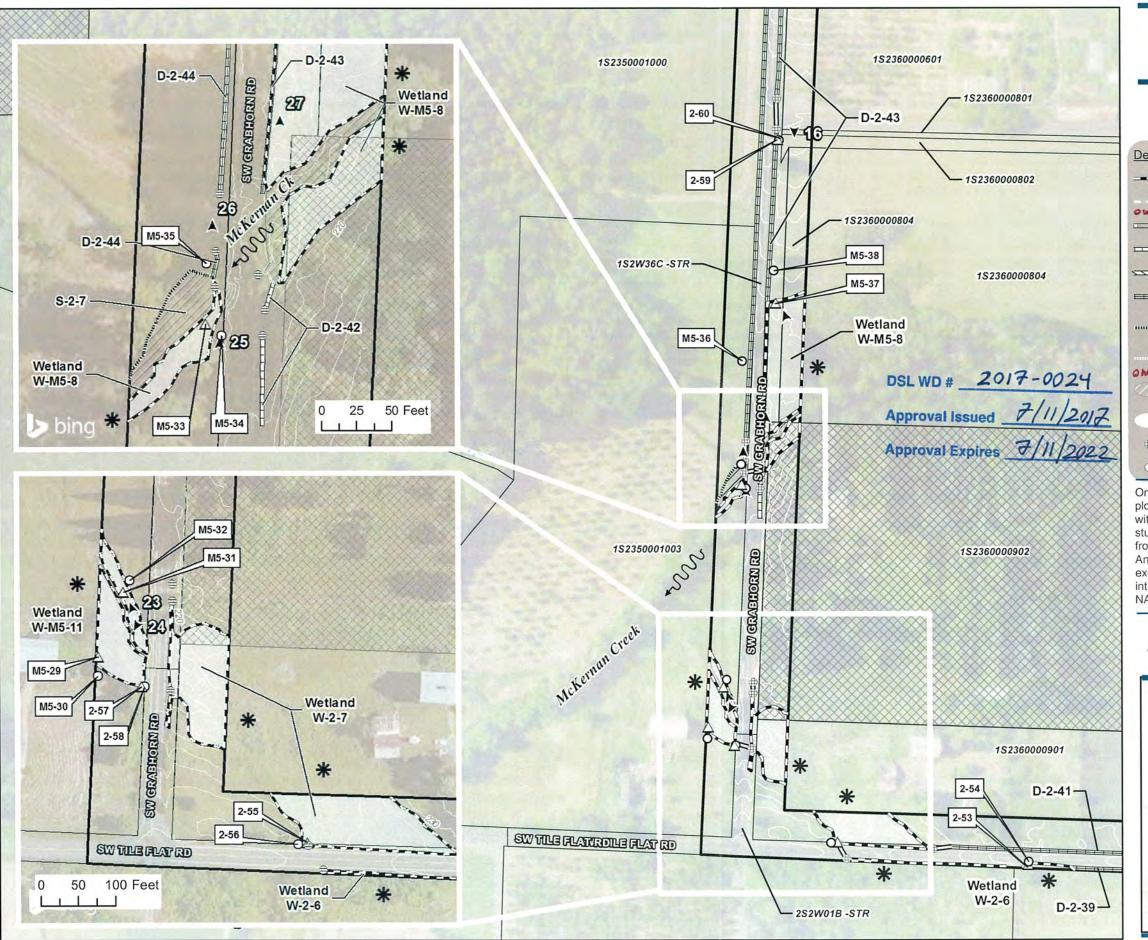
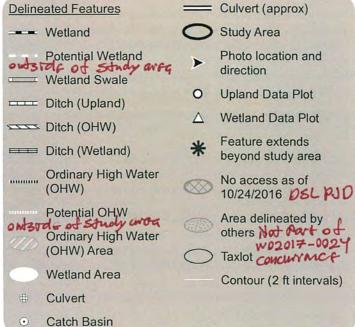
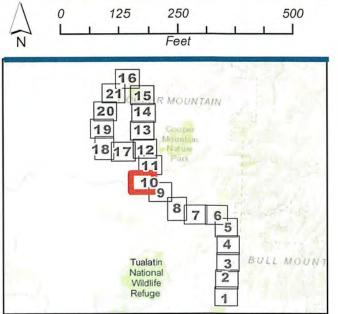


Figure 6, Sheet 10 of 21
Delineated Wetlands





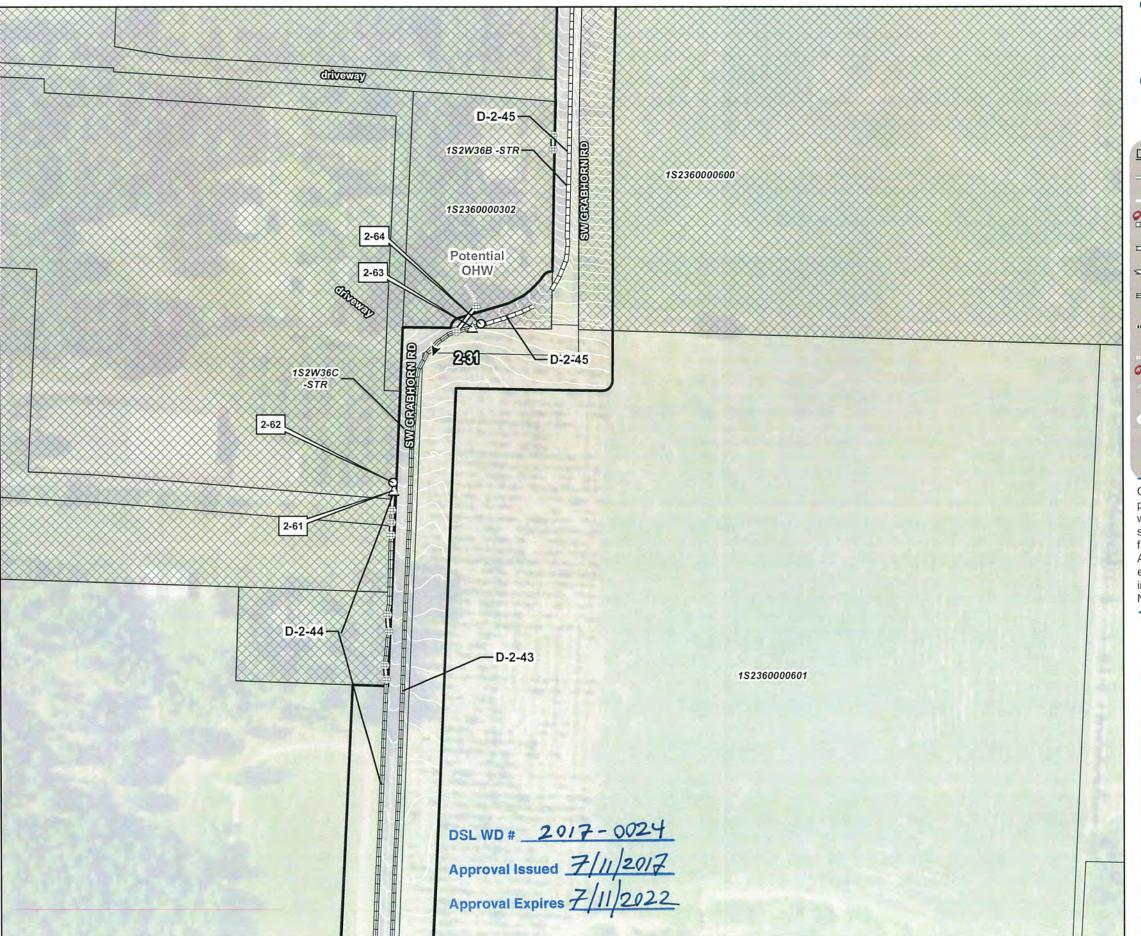
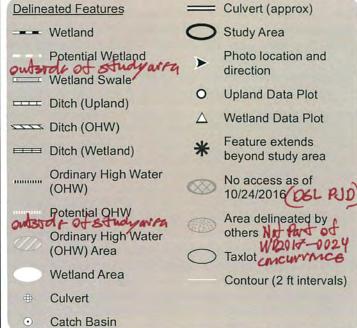
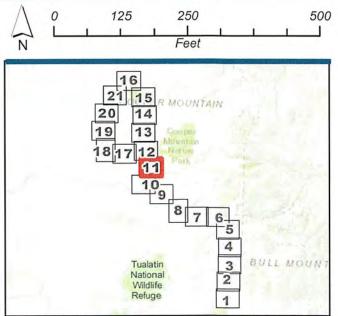
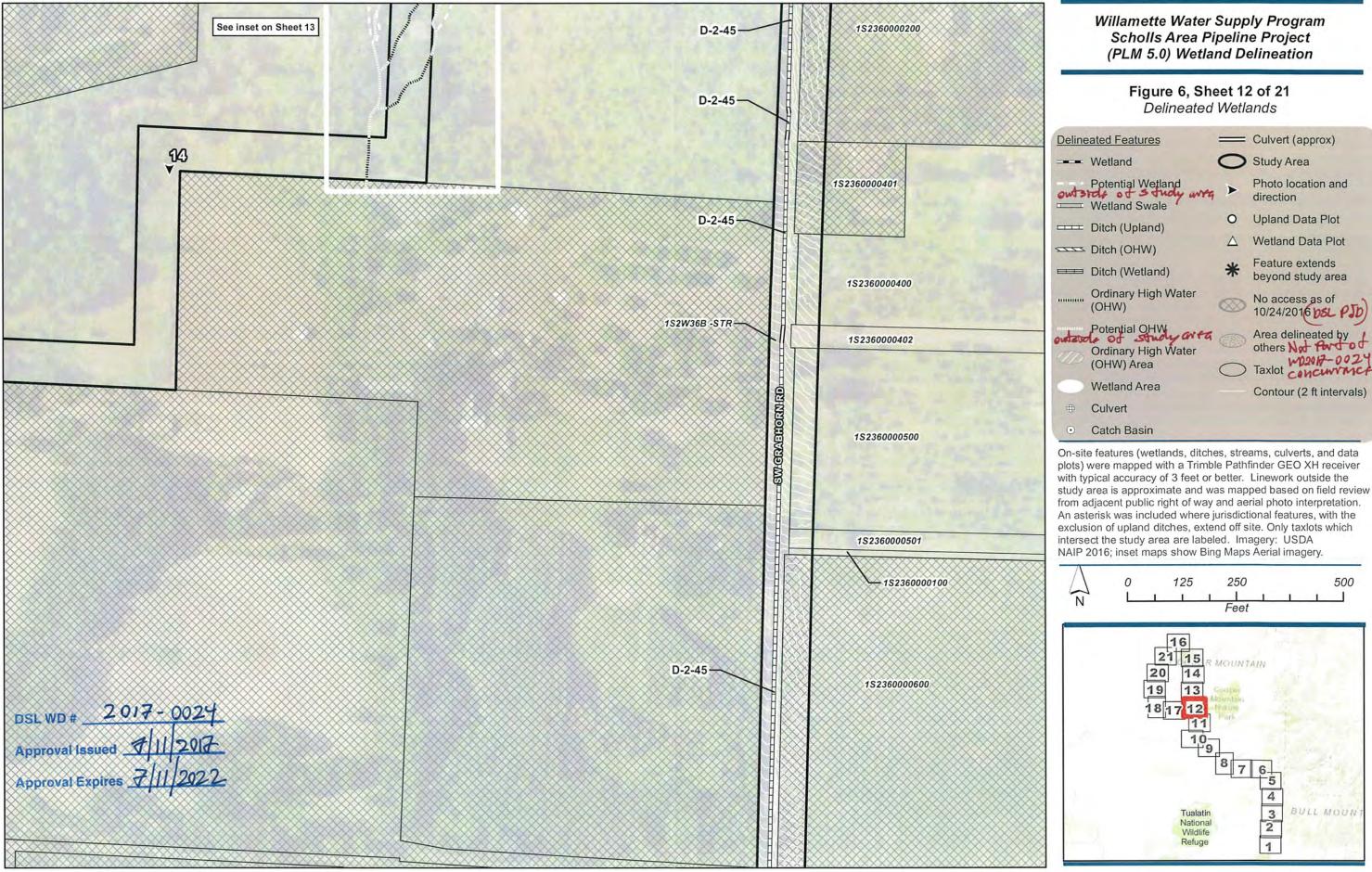


Figure 6, Sheet 11 of 21

Delineated Wetlands







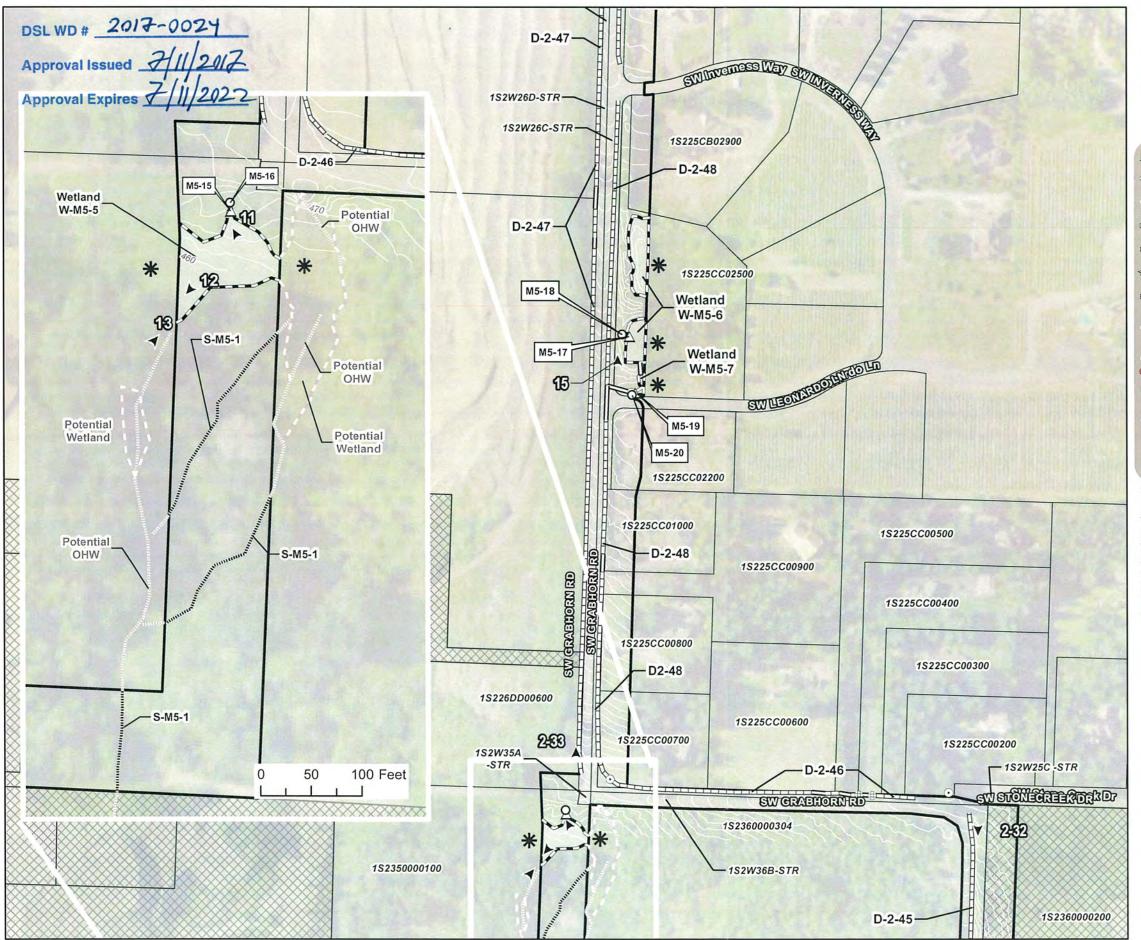
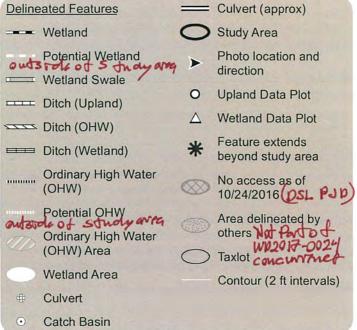
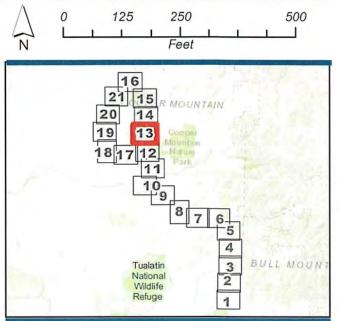


Figure 6, Sheet 13 of 21

Delineated Wetlands





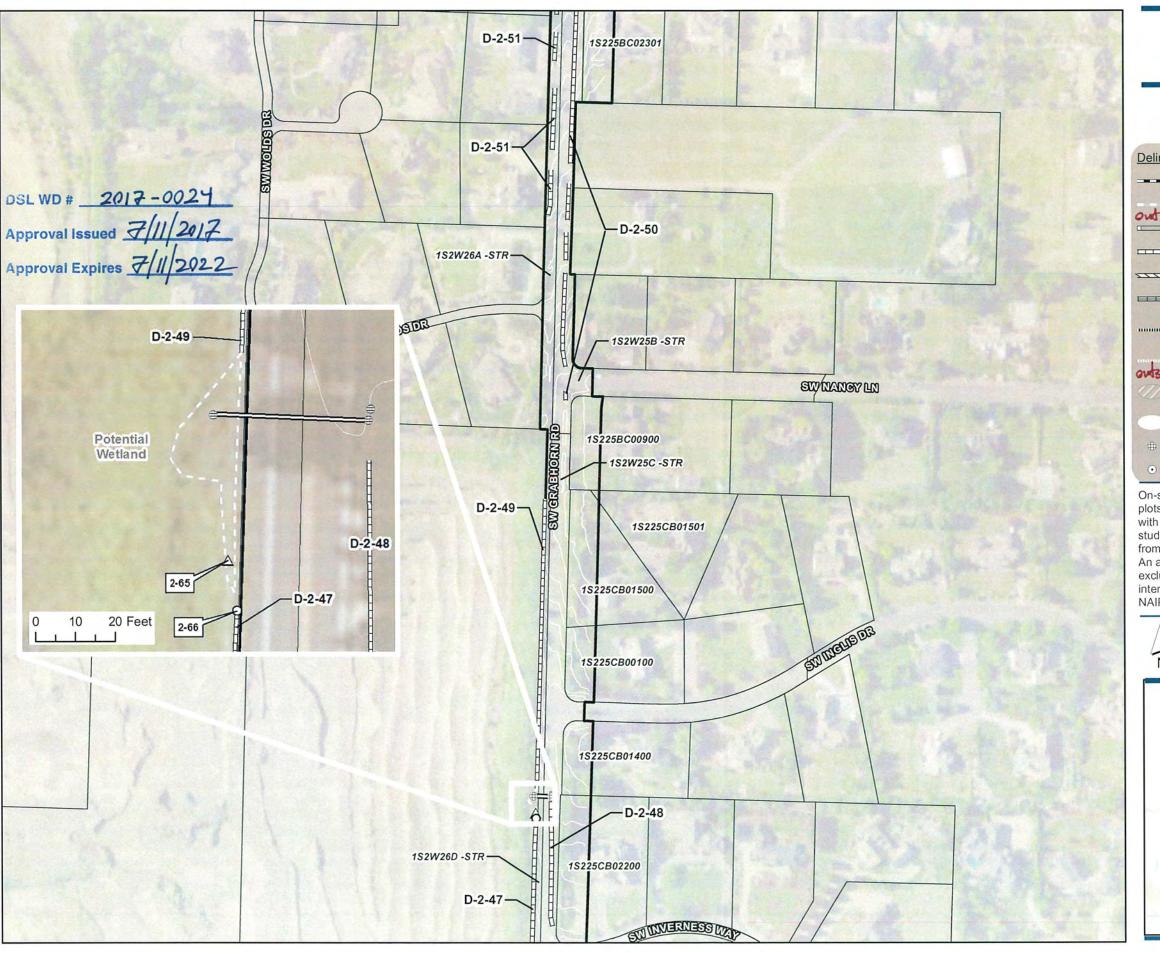
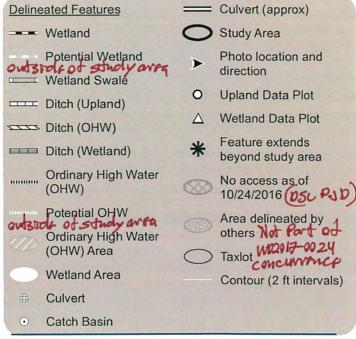
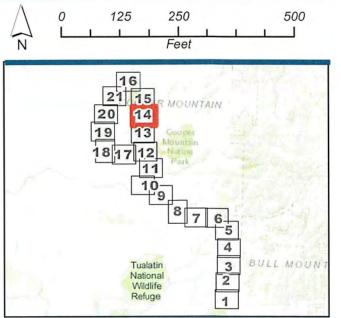


Figure 6, Sheet 14 of 21
Delineated Wetlands





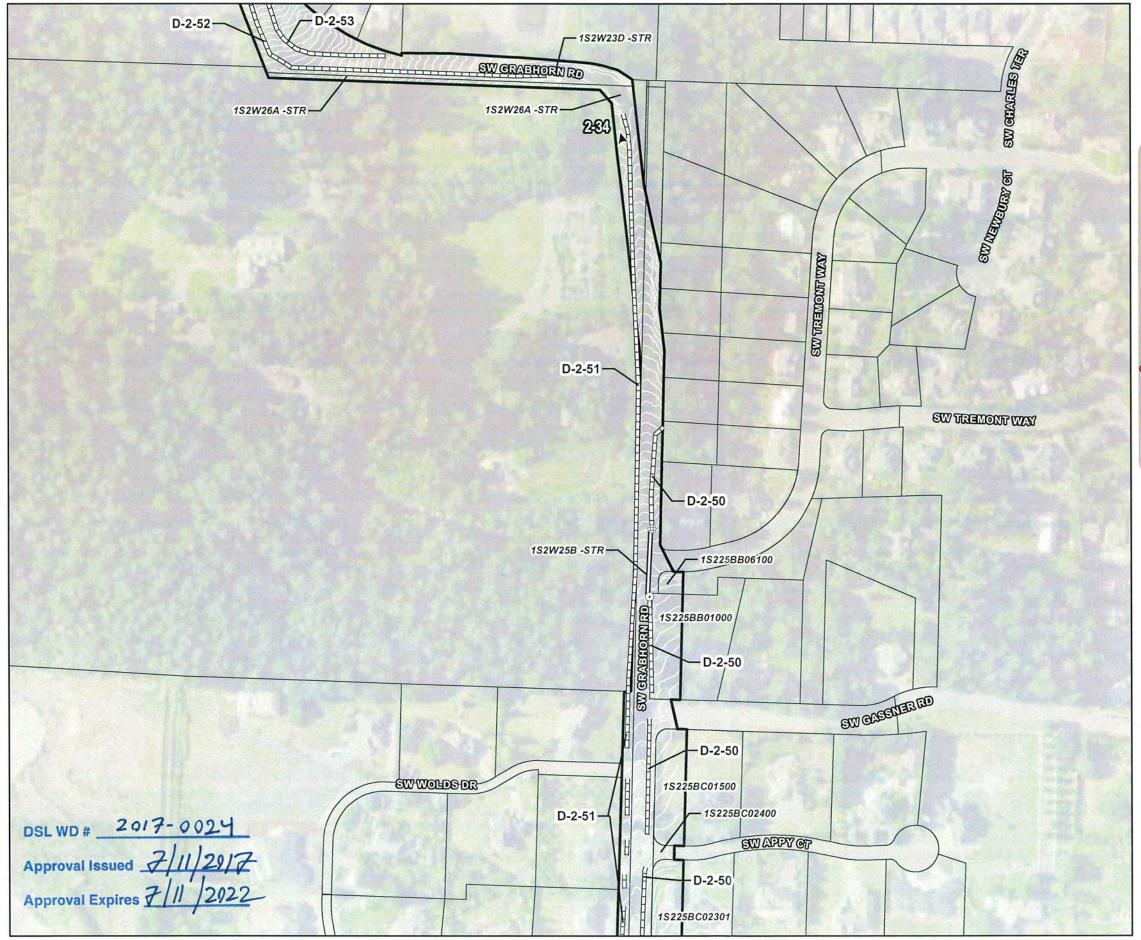
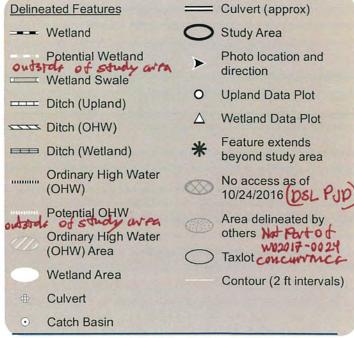
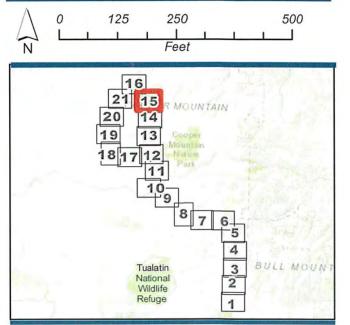


Figure 6, Sheet 15 of 21

Delineated Wetlands





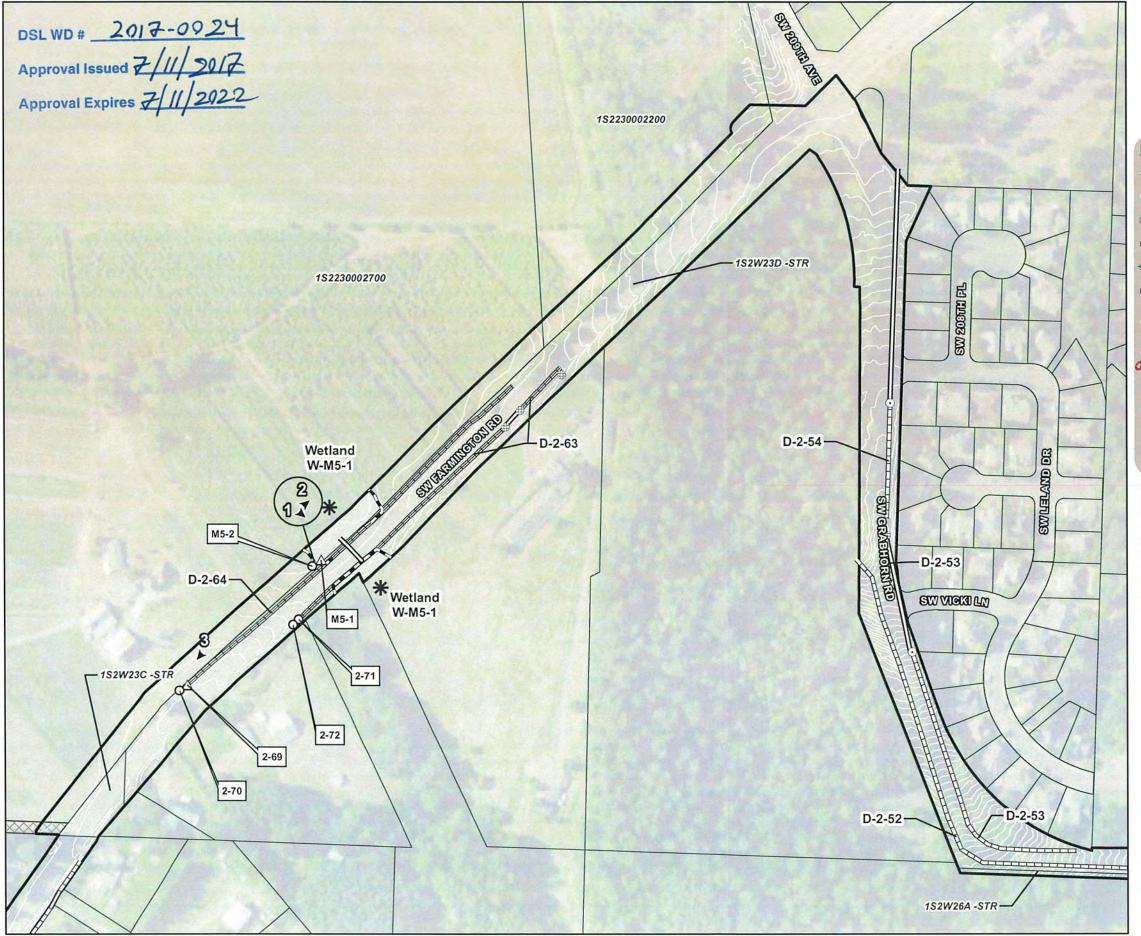
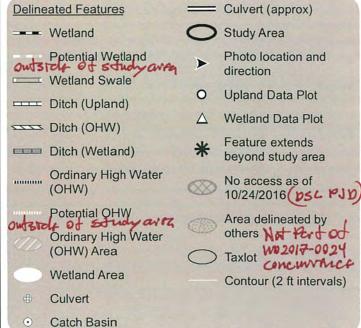


Figure 6, Sheet 16 of 21 Delineated Wetlands



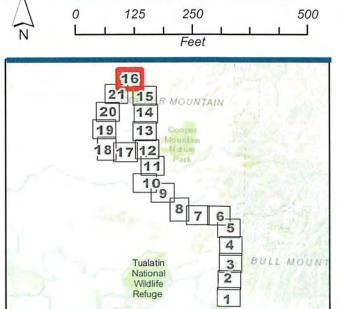
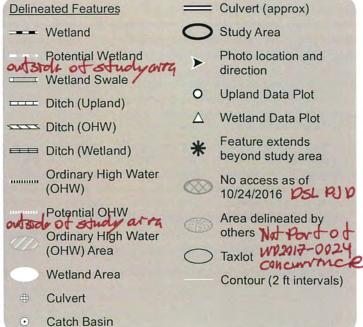
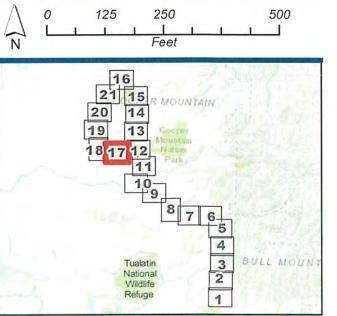




Figure 6, Sheet 17 of 21
Delineated Wetlands





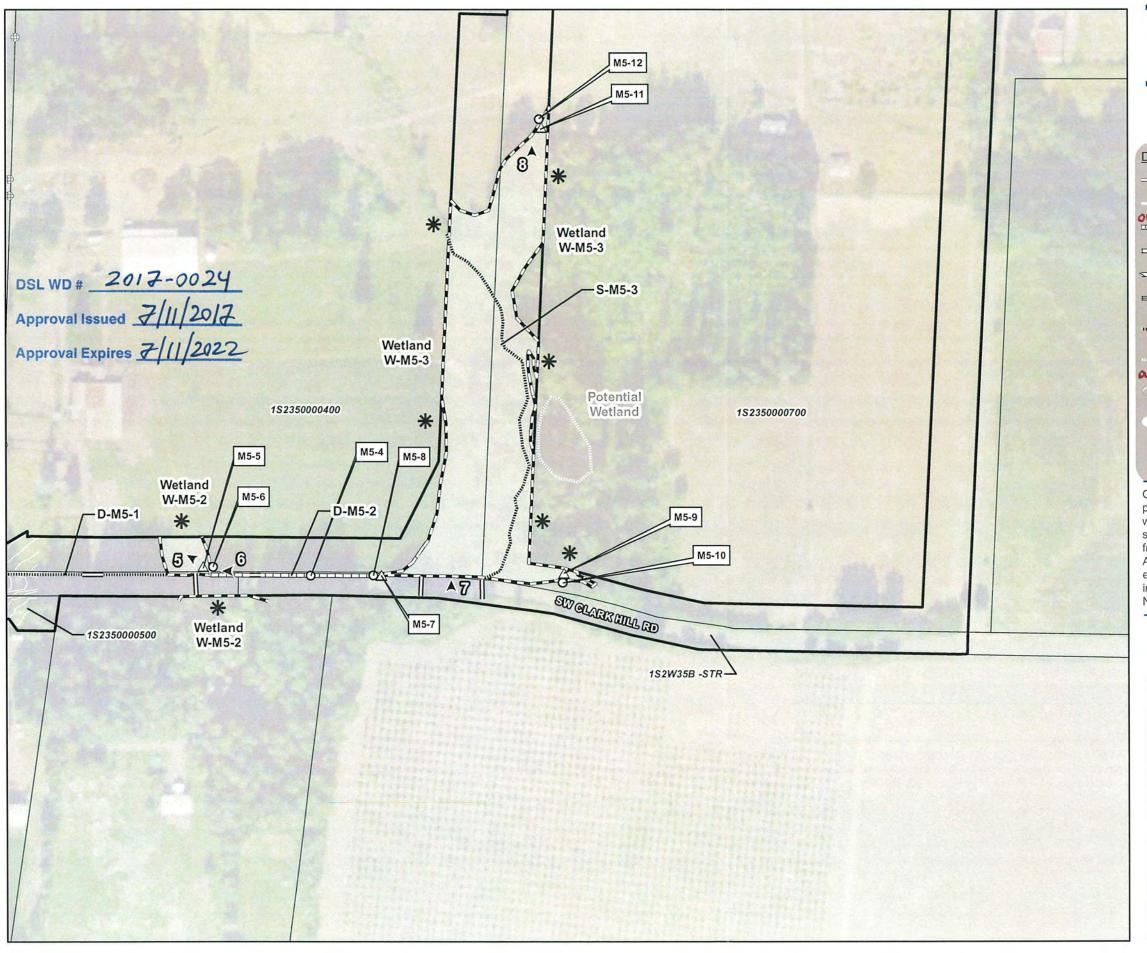
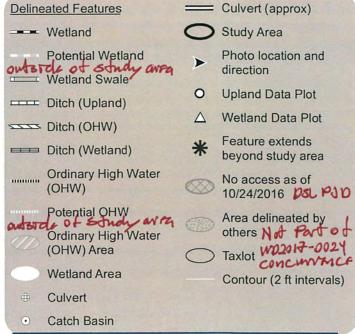
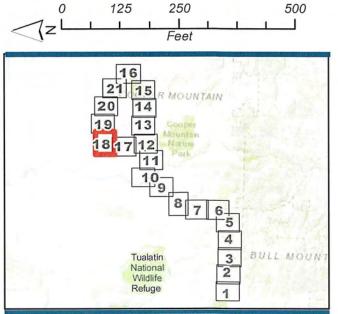


Figure 6, Sheet 18 of 21

Delineated Wetlands





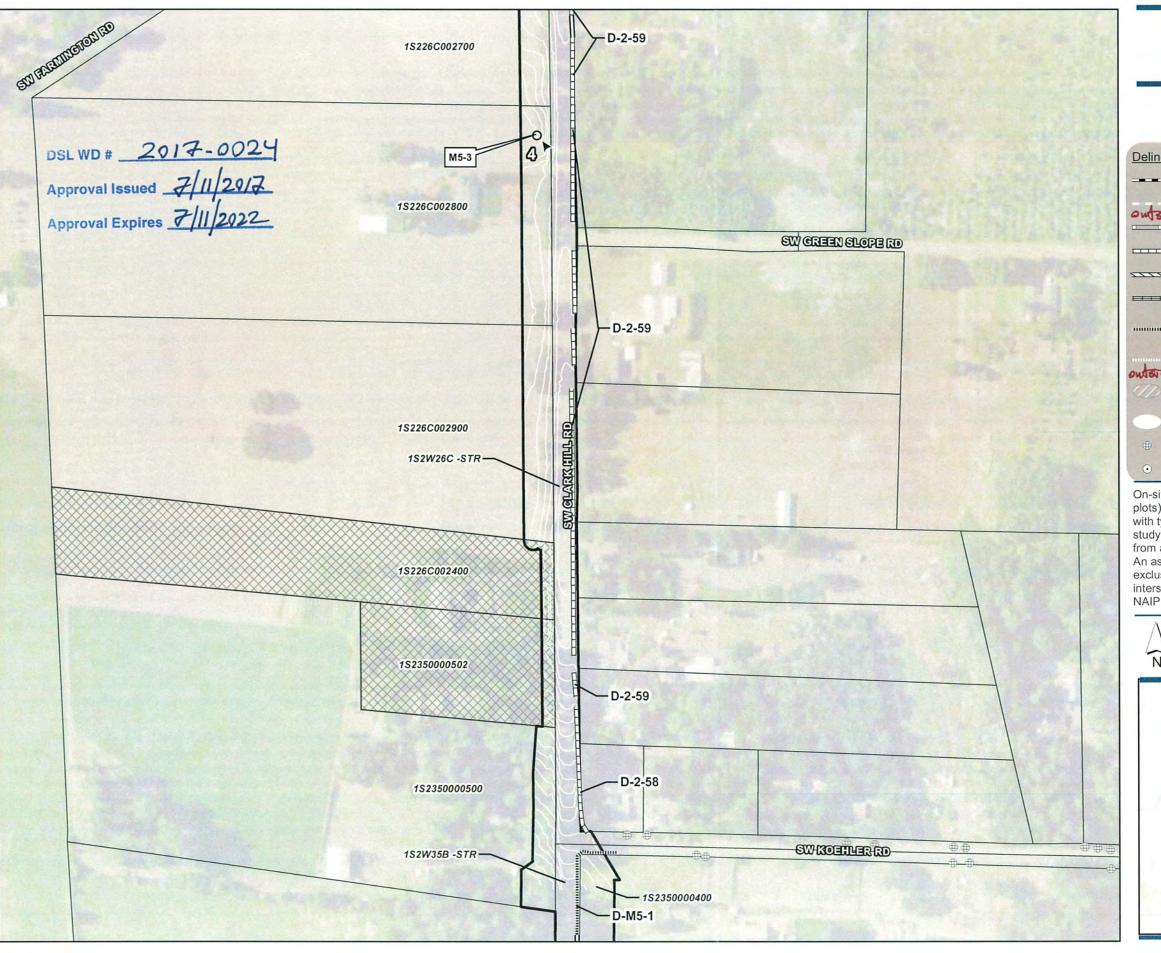
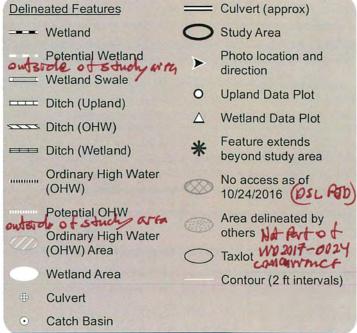
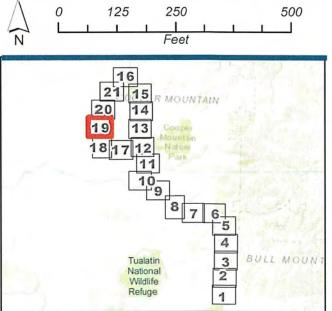


Figure 6, Sheet 19 of 21
Delineated Wetlands





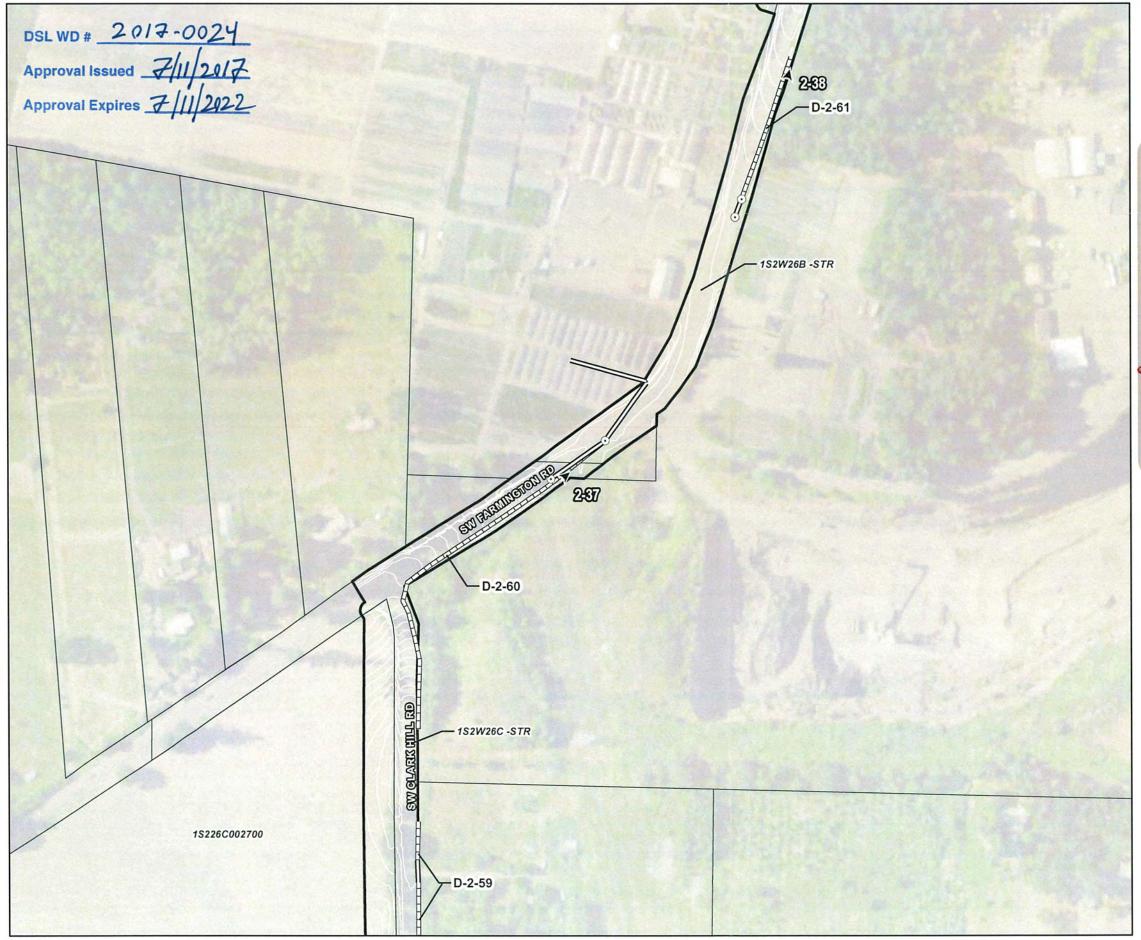
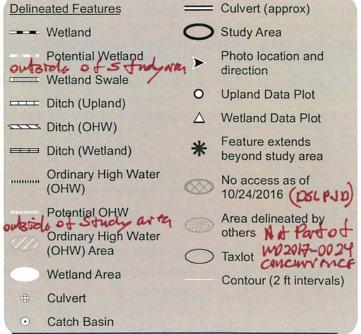
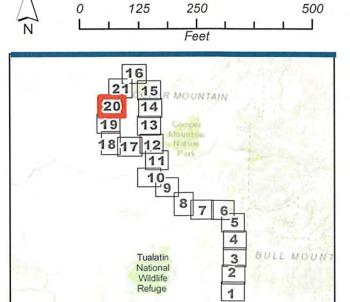


Figure 6, Sheet 20 of 21 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the study area is approximate and was mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.



National Wildlife Refuge

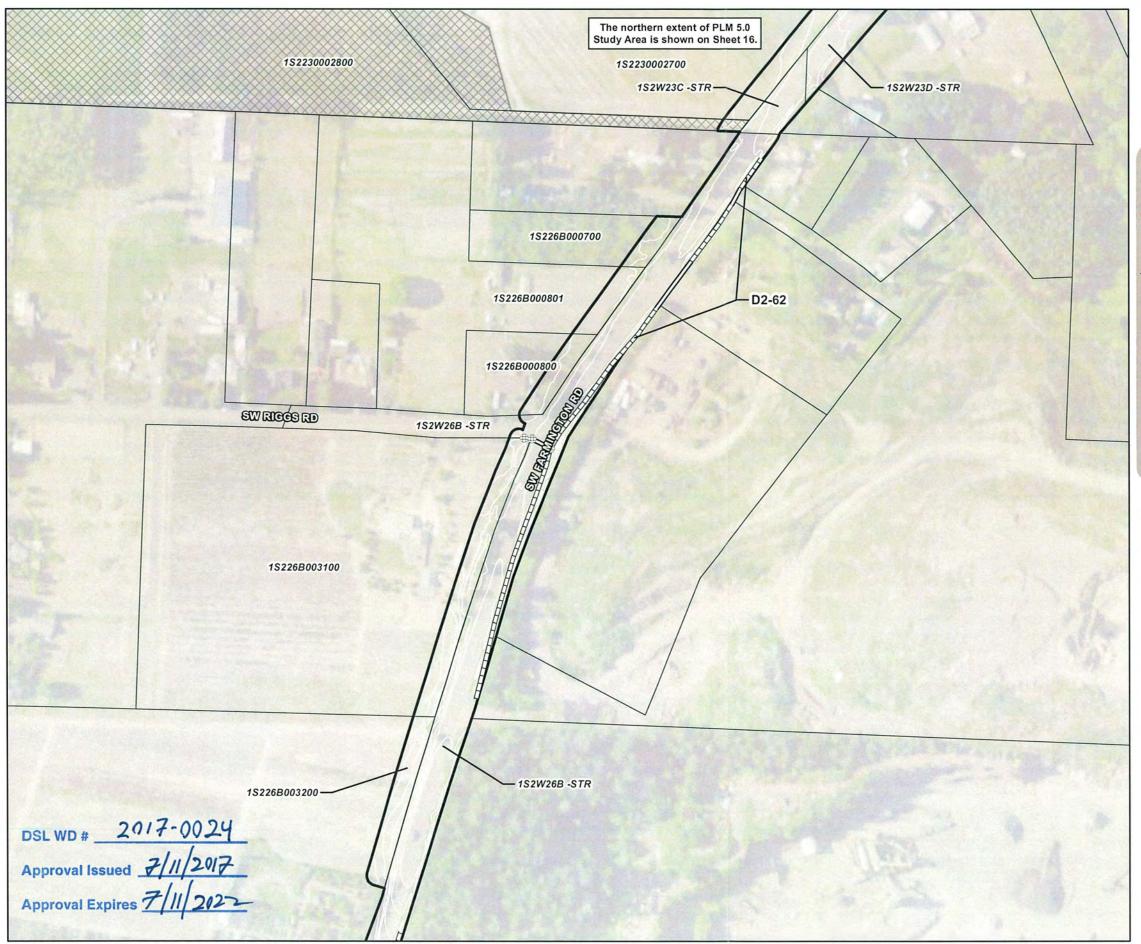
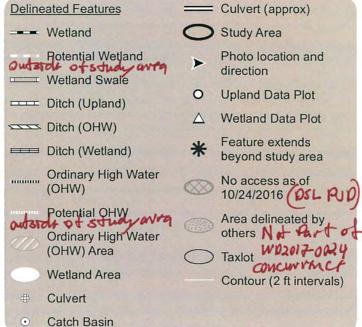
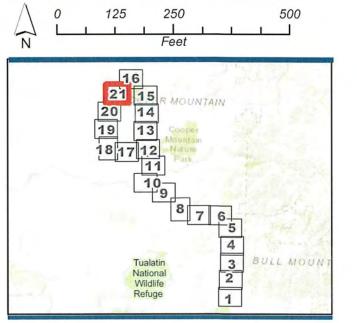


Figure 6, Sheet 21 of 21
Delineated Wetlands





Pipeline West 2.0 (Cornelius Pass Road Area) ODSL Wetland Verification



April 13, 2017

Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200 FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

City of Hillsboro Water Department Attn: Niki Iverson 150 E. Main Street Hillsboro, OR 97123-4028

Kate Brown Governor

Re: WD # 2017-0007 Wetland Delineation Report for the

Dennis Richardson Secretary of State

Proposed Willamette Water Supply Program Project, PLW 2.0 Washington County; Multiple Sections and Tax Lots

Tobias Read State Treasurer

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area corridor passes through only portions of the multiple sections and tax lots shown on the attached maps. Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6, Sheets 1 through 9 of the report. Within the study area corridor, three wetlands (totaling approximately 1.45 acres) two waterways, including segments of Beaverton and Rock Creeks, and one water quality facility were identified (see Appendix B for individual features). Two additional wetlands, CornPass-C and CornPass-E (see Figure 6, Sheet 9), were delineated in an earlier delineation report (WD #2014-0226); therefore, they are not included in this concurrence.

The wetlands and creeks are subject to the permit requirements of the state Removal-Fill Law. The water quality facility is exempt per OAR 141-0515 (6); therefore, it is not subject to these permit requirements. Normally, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, Beaverton and Rock Creeks are essential salmonid streams; therefore, fill or removal of any amount of material below their OHWL's, or within hydrologically-connected wetlands (W-W2-1 and W-W2-2), may require a state permit. In addition, Wetland W-W2-2, along with several adjacent riparian enhancement strips, were previously identified as a compensatory wetland mitigation site (RGL 2129), and like essential salmonid habitat, any amount of removal-fill activity within these areas may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of

this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec:

Phil Rickus, David Evans and Associates, Inc.

Washington County Planning Department

Jaimee Davis, Corps of Engineers Amber Wierck, Clean Water Services

Anita Huffman, DSL

2-Size in	n-welland leature, 3 = stream leature, 9 = ditch reature 2-Size in study area is given in acres for wetlands, and in length in feet for streams.	S =strea	1-W = wetland feature, S =stream feature, D = ditch feature 2-Size in study area is given in acres for wetlands, and in len	= ditch fea nds, and ir	iture n length in fe	et for strear	ms.			
3-Ditches 4-All ditc See meth	3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Cor 4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fi See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.	eet wetla sa, excep report for	nd criteria or d t where specifi additional infe	id not have cally notec	e signs of relations of met DSL ex	atively perma cemption crite n of Corps an	eria for roads	ide ditches (i	i.e. <10	3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction. 4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fish, etc.) See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.
5-Cowar	5-Cowardin Class: PEM=palustrine emergent, PS	=palustri	ne emergent,	PSS=palus	strine scrub-	shrub, PFO=	palustrine fo	rested, R3E	M=rive	S=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent
9-HGM (6-HGM Class: DEP=depressional, RFT=riverine flow-through	ressiona	, RFT=riverine	: flow-thro	hgh					
D.	Latitude/ Longitude	Sheet #	Sheet Delineation # Method	Size in Study Area ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
S-W2-1	45.520935, - 122.900152	ю	Onsite	26	Yes	Yes	1	1	1	Beaverton Creek. OHW approx 20' from scour, lies just below the incised bank. ESH
W-W2-1	45.520936, - 122.900154	м	Onsite	0.18	Yes	Yes	PEM	Slope/RFT	W2-1	Large level reed canarygrass-dominated terrace above OHW of Beaverton Creek, but sporacically accessed by flood waters, based on drift lines from previous winter floods. \vec{ESH}
W-W2-2	45.526089, -	4	Onsite	0.01	Yes	Yes	PFO/ PSS	Slope/RFT	W2-3	Old oxbow of Rock Creek, above OHW, but sporacically accessed by flood waters, based on drift lines from previous winter floods. ESH Boundary follows mapping from DSL WD2006-0057 and redelinated by DEA in 2016. Partim of RGL 2129 flactudes upland Rip
S-W2-2	45.526191, - 122.900644	4	Onsite	258	Yes	Yes			1	Rock Creek. OHW approx 20' from scour. Boundary follows mapping from DSL WD2006-0057 as redlineated by PHS in 2015 and confirmed by DEA in 2016. $\not\equiv$ S $\not\parallel$
W-W2-3	45.552969, - 122.902016	თ	Onsite	0.82	Yes	Yes	PEM	Slope/Flats	W2-6	Wetland swale in relatively level mixed grass/blackberry field just south of Hwy 26. Drains to northwest outside study area. Assumed to connect to other waters.
VaFail	Wa Facility 45.525786	36 4	onside	1	2.	No				Facility built after location destermined to be

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report. A single PDF attachment of the completed cover from and report may be e-mailed to Wetland_Delineation@dsl.state.or.us.

		Mobi	ness phone # (5 le phone # (opti ail: niki.iverson		on.gov	
Niki Iverson, Water City of Hillsboro W I either own the proper property for the purpos Typed/Printed, Name Date: () 5 12	rty described below or I have legal authority se of confirming the information in the repor e: Niki Iverson Special instructions regard	Mobi E-ma to allow access to t, after prior notific Signature: ng site access:	the property. I a	ional) @hillsboro-oregouthorize the Departrary contact.	nent to access the	
Project And Site Project Name: Willa PLW 2.0	Information (using decimal degree format mette Water Supply Program,	Latitude: 45.52		r start & end points Longitude: -12		
Proposed Use: Pipe	line Installation	Tax Map # Sec	e Attachment	4		
Approximately 4.4 i south end of Hillsb	ss (or other descriptive location): miles in length, begins near the oro at Reedville Creek, and follows Road north to US Hwy 26	Township Tax Lot(s) See	Range Attachment	Section	QQ	
Waterway: Many River Mile: N/A City: N/A County: Washington NWI Quad(s): Several						
Oity. NIA		neation Informa			and an arrangement of the second	
Phil Rickus David Evans and As 2100 SW River Park Portland, OR 97201 The information and co Consultant Signature	way onclusions on this form and in the attached	E-ma	e phone # il: prr@deainc. correct to the be anuary 4, 2017			
	report review and site access is 🛛 C			☐ Authorized A		
Wetland/Waters Pres		size: 57.1 acres		nd Acreage: Appro	ox. 1.45 acres	
Check Box Below			es:			
☐ Mitigation bank si			e payment sub	AND A PROPERTY.	A LOUIS	
☐ Wetland restoration ☐ Industrial Land Ce	on/enhancement project (not mitigation) ertification Program Site	□ No		submittal of rejecte t for reissuance of		
Reissuance of a reprevious DSL #	ecently expired delineation Expiration date					
Other Information:		YN	THE THIRD	111		
Has previous delinea	tion/application been made on parcel?		If known, previo	ous DSL # See Re	port	
Does LWI, if any, sho	ow wetland or waters on parcel?					
100		ice Use Only				
DSL Reviewer:	Fee Paid Date:	117 117	DS	SLWD# 201	7-0007	
Date Delineation Rec	eived: _/ / 9 / _/7 DSL Pro	oject #	DS	SL Site #		
Scanned: Final	Scan: FI DSI WI	N#	D	CI Ann #		

* Electronic Submittal *

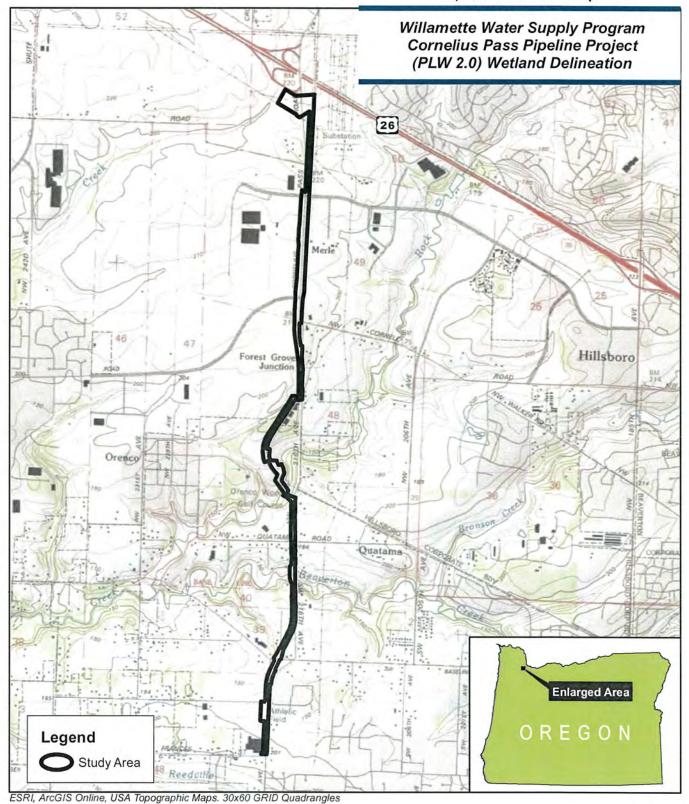
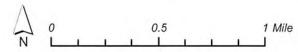


Figure 1 Vicinity Map





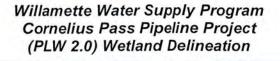


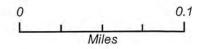
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Legend

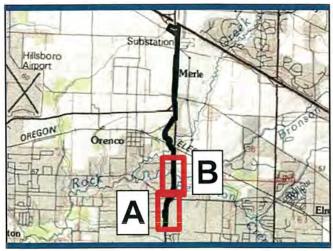
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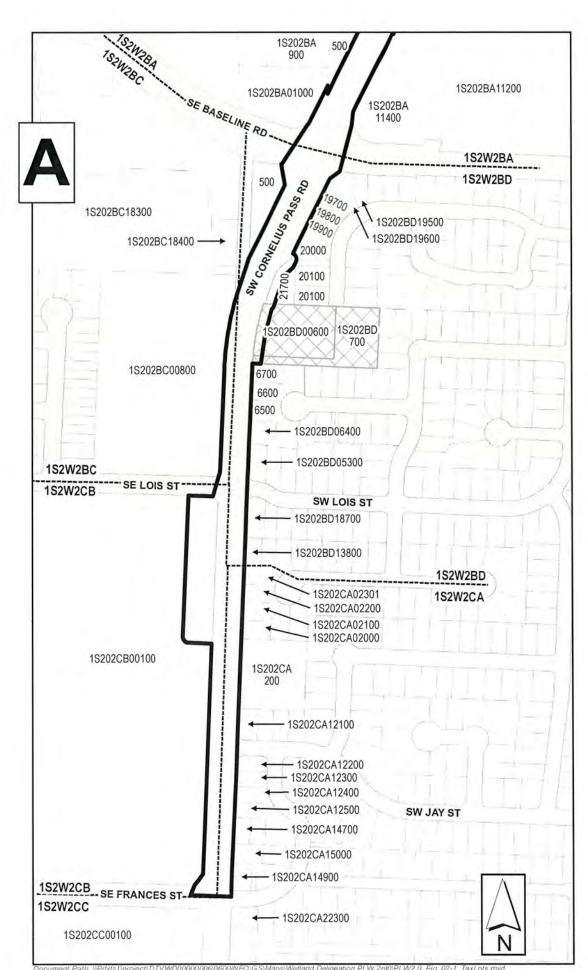
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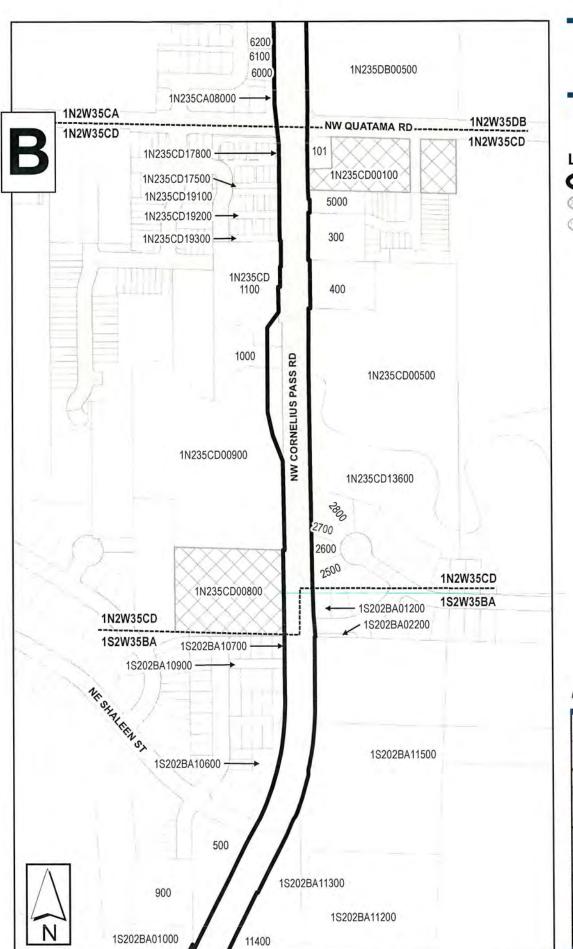
Area delineated by others



Metro RLIS Data. 2016.







Document Path: \\Pdxfs1\project\T\TVWD000000006\060 Date: 11/30/2016 Time: 6:23:43 PM User Name: Sast

> Figure 2, Sheet 2 Tax Lots

Legend

Study Area

Area delineated by others

No access as of 10/24/2016

0.1 Miles

1N226DB00700 1N226C000500 1N226DB00600 1N226DB00701 WAWAGE , NE BUTLER ST--- NW AMBERWOOD DR. ___ 1N2W26DB 1N2W26DC 1N226CD00600 NE CORNELIUS PASS RD

1N226C000950

1N226C000850

NE CORNELL RD

1N226CD00400

1N235BA00100

1N235BA00300

1N235BA01000

1N235BA

600

N235BA00700

3700 -

2700

2800 -

2900

3000

3100 -

1N2W26CD

1N2W35BA

1N226D000200

1N226DC

900

1N226DC

1N235AB00200

1N235AB00300

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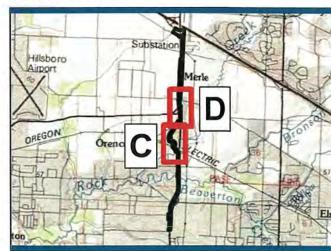
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Metro RLIS Data. 2016.



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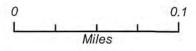
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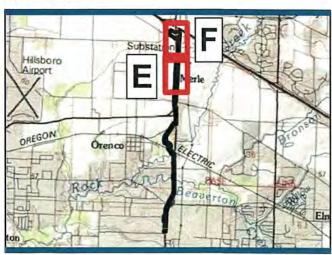
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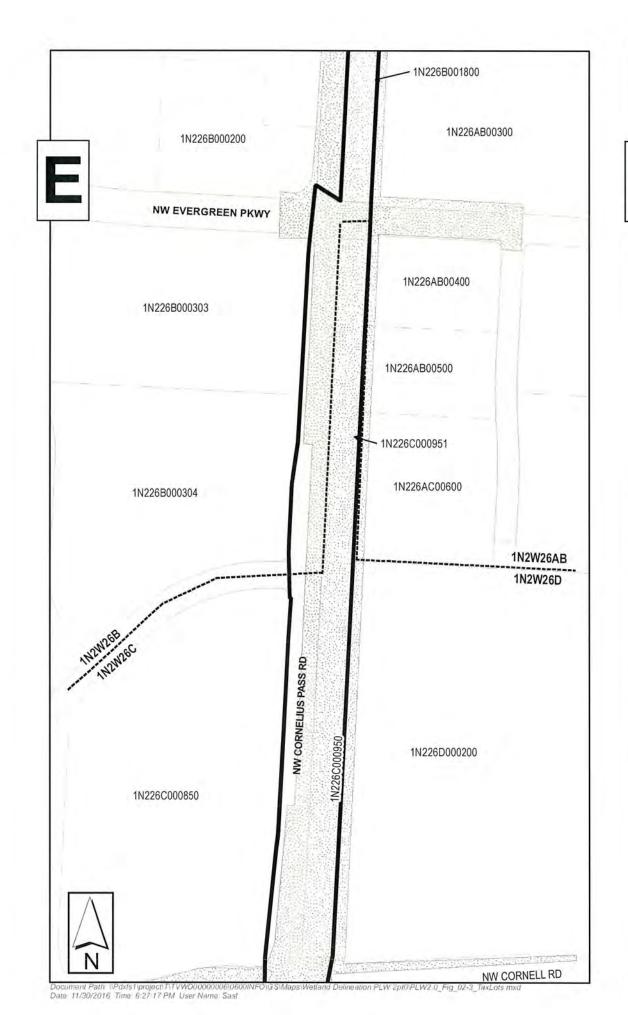
O Study Area

Area delineated by others

No access as of 10/24/2016







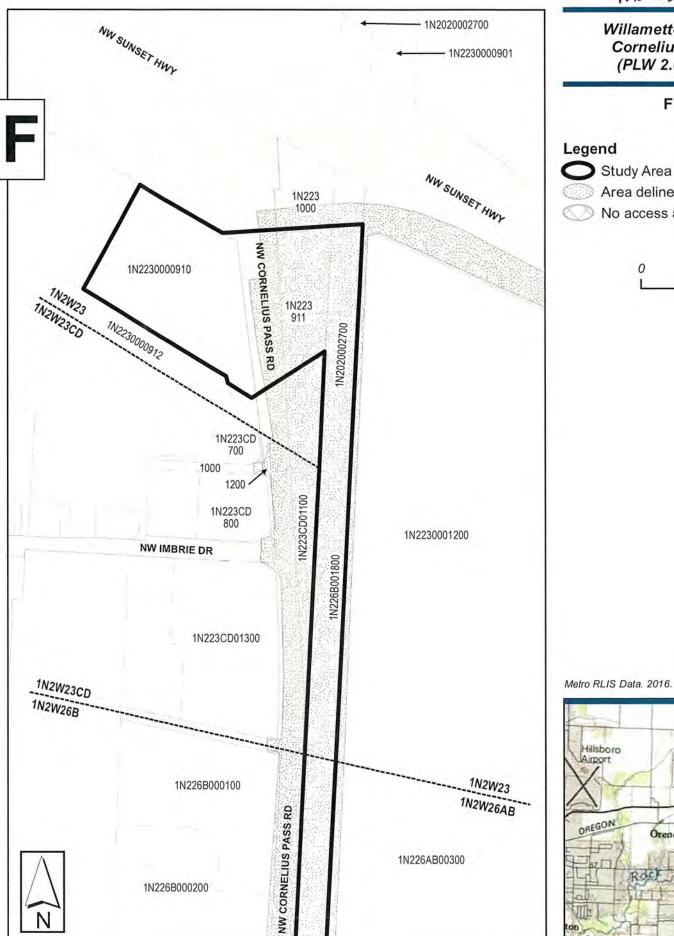
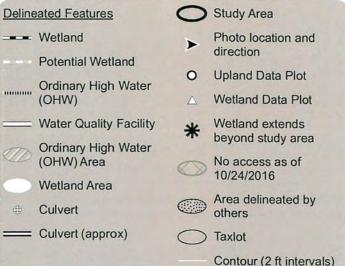
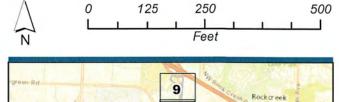
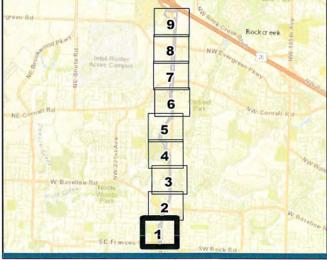




Figure 6, Sheet 1 of 9
Delineated Wetlands







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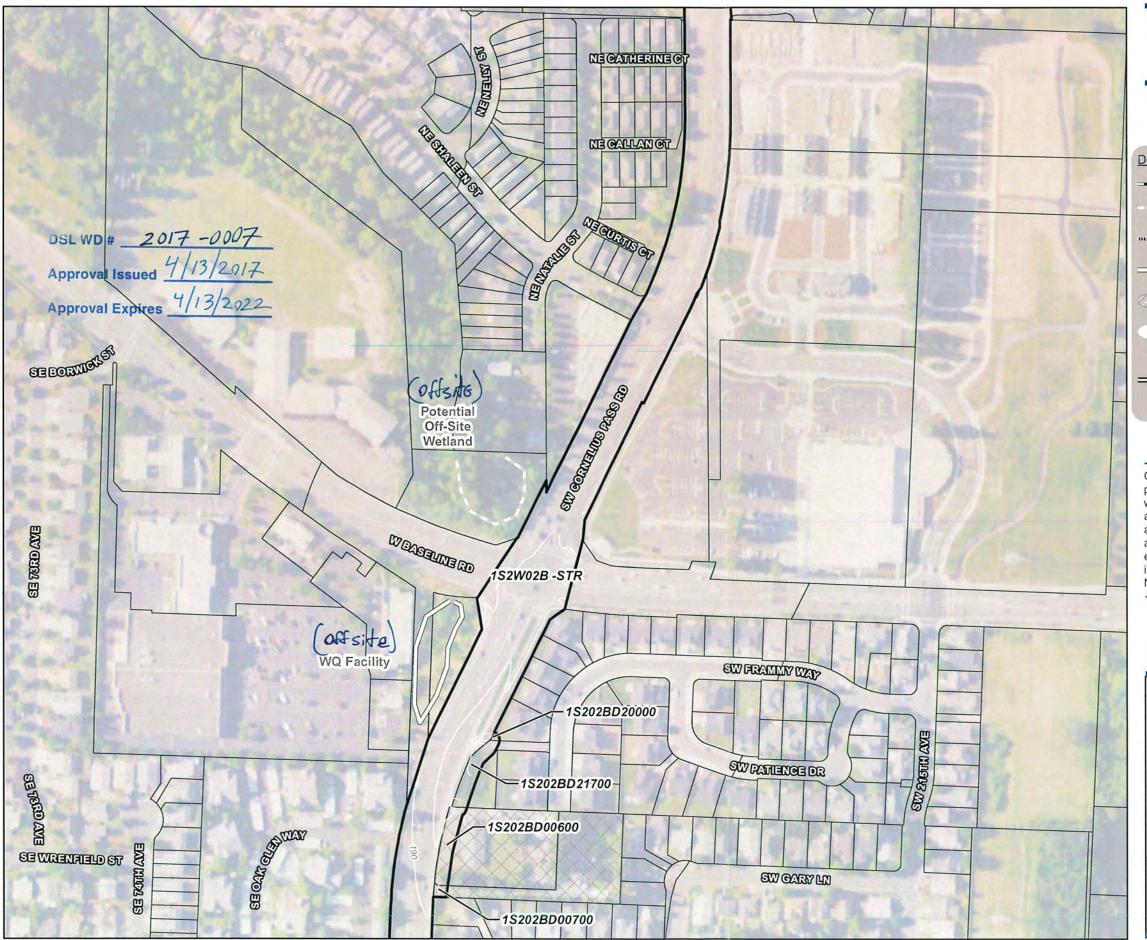
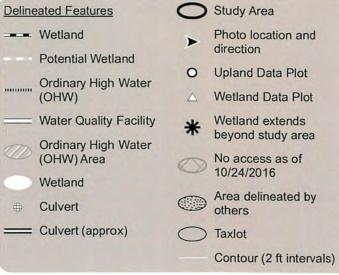
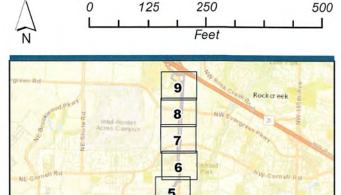


Figure 6, Sheet 2 of 9
Delineated Wetlands





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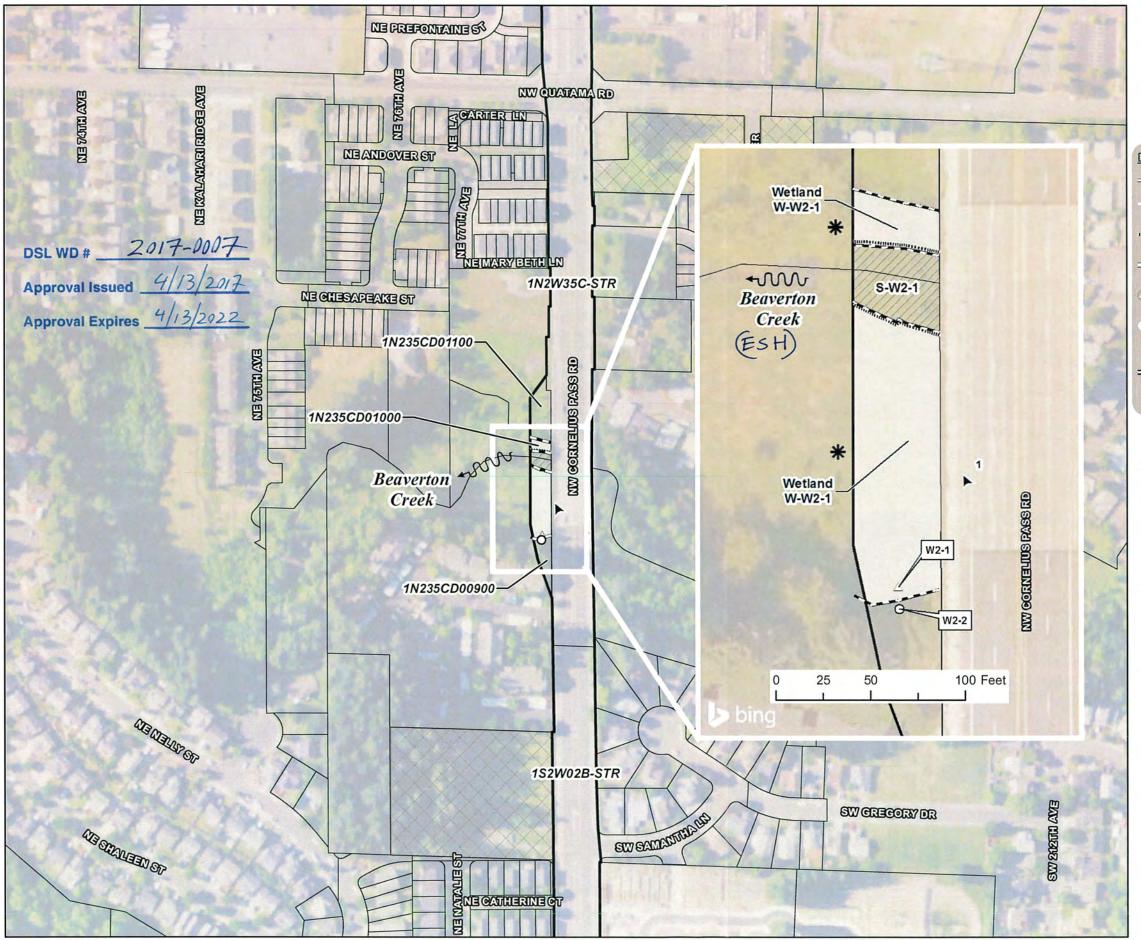
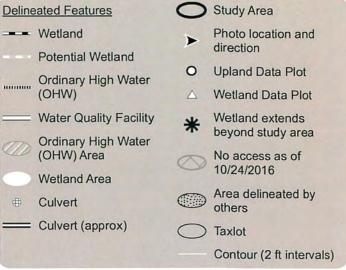
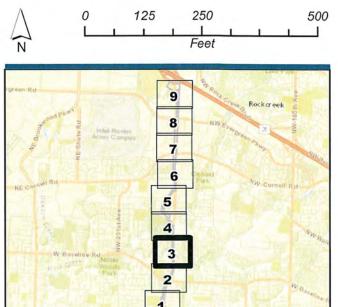


Figure 6, Sheet 3 of 9
Delineated Wetlands





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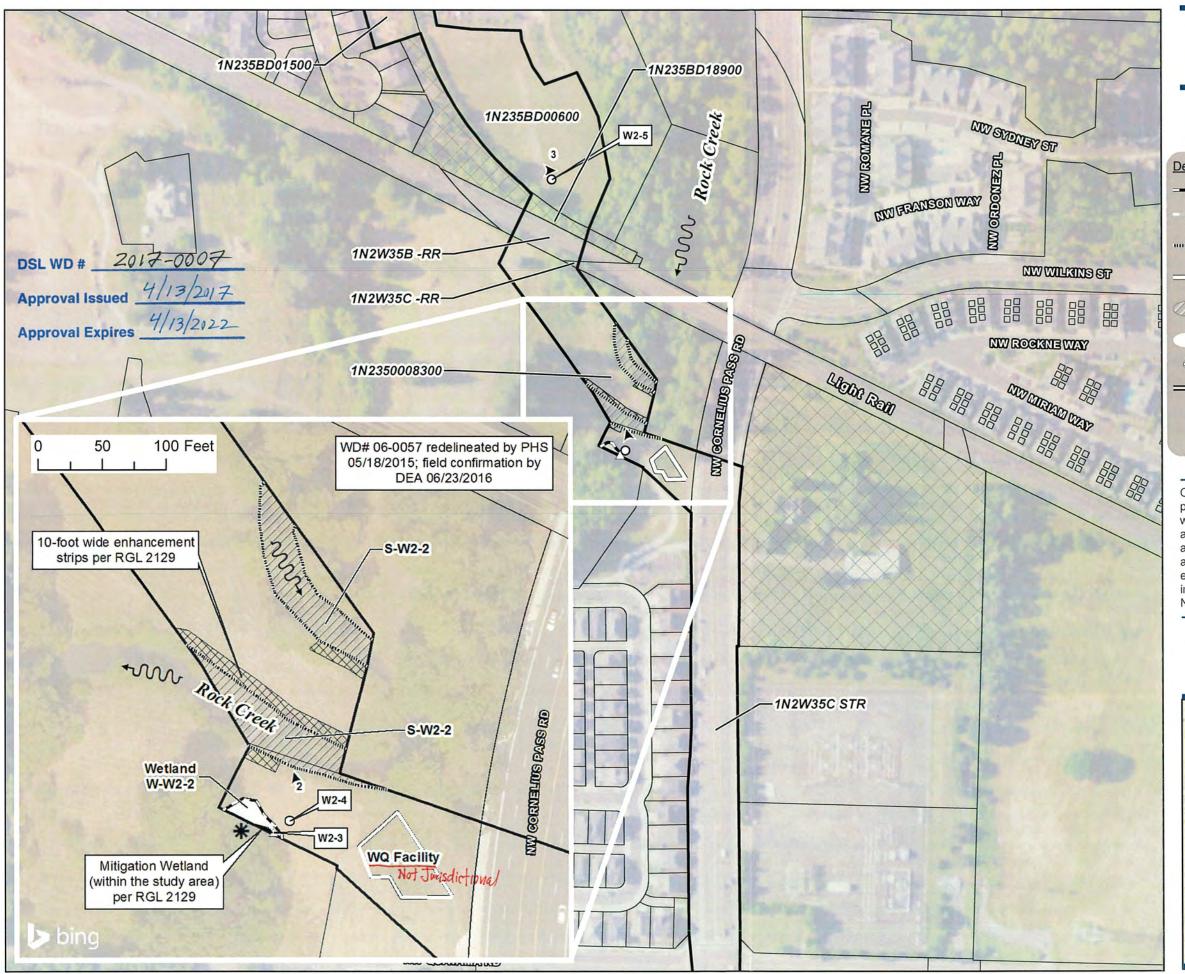
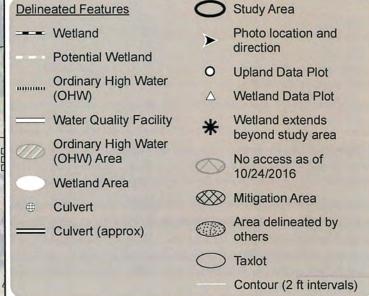
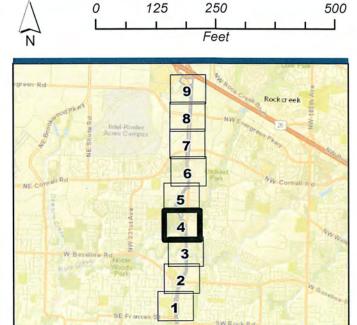


Figure 6, Sheet 4 of 9
Delineated Wetlands





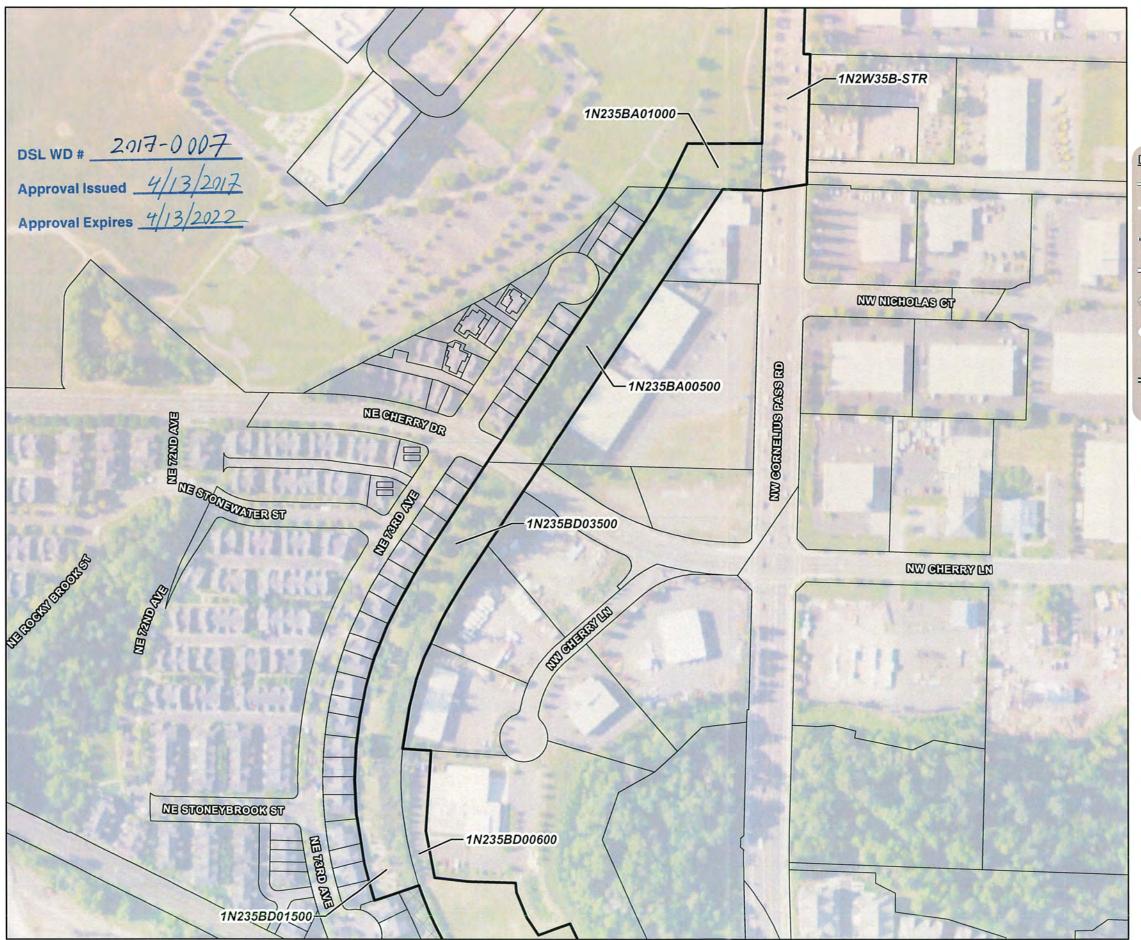
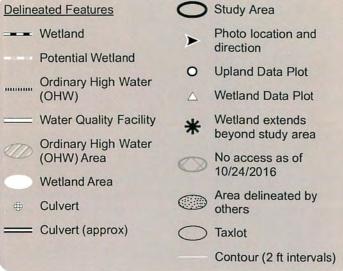
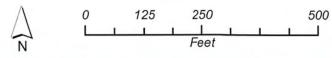


Figure 6, Sheet 5 of 9
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.





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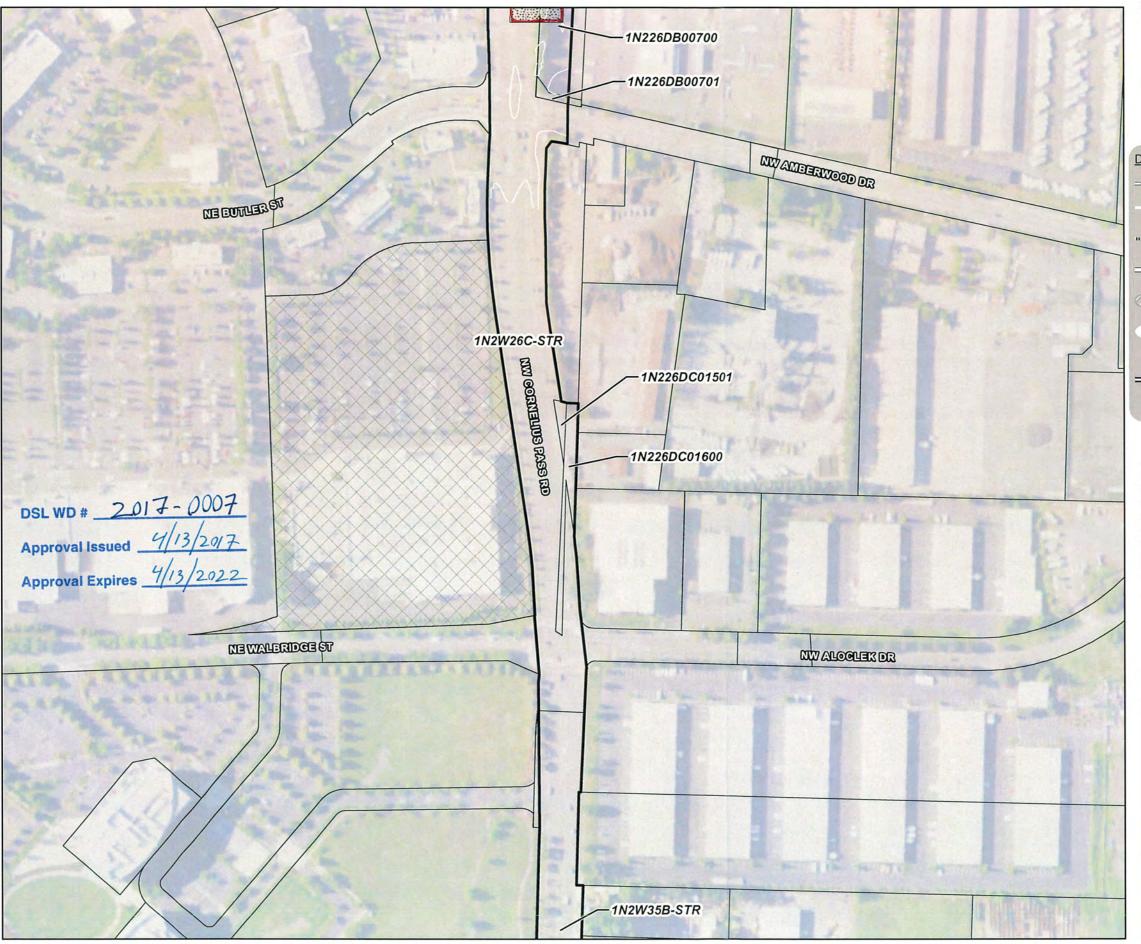
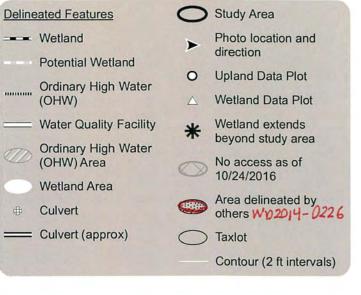
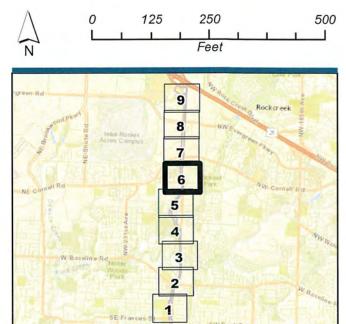


Figure 6, Sheet 6 of 9
Delineated Wetlands





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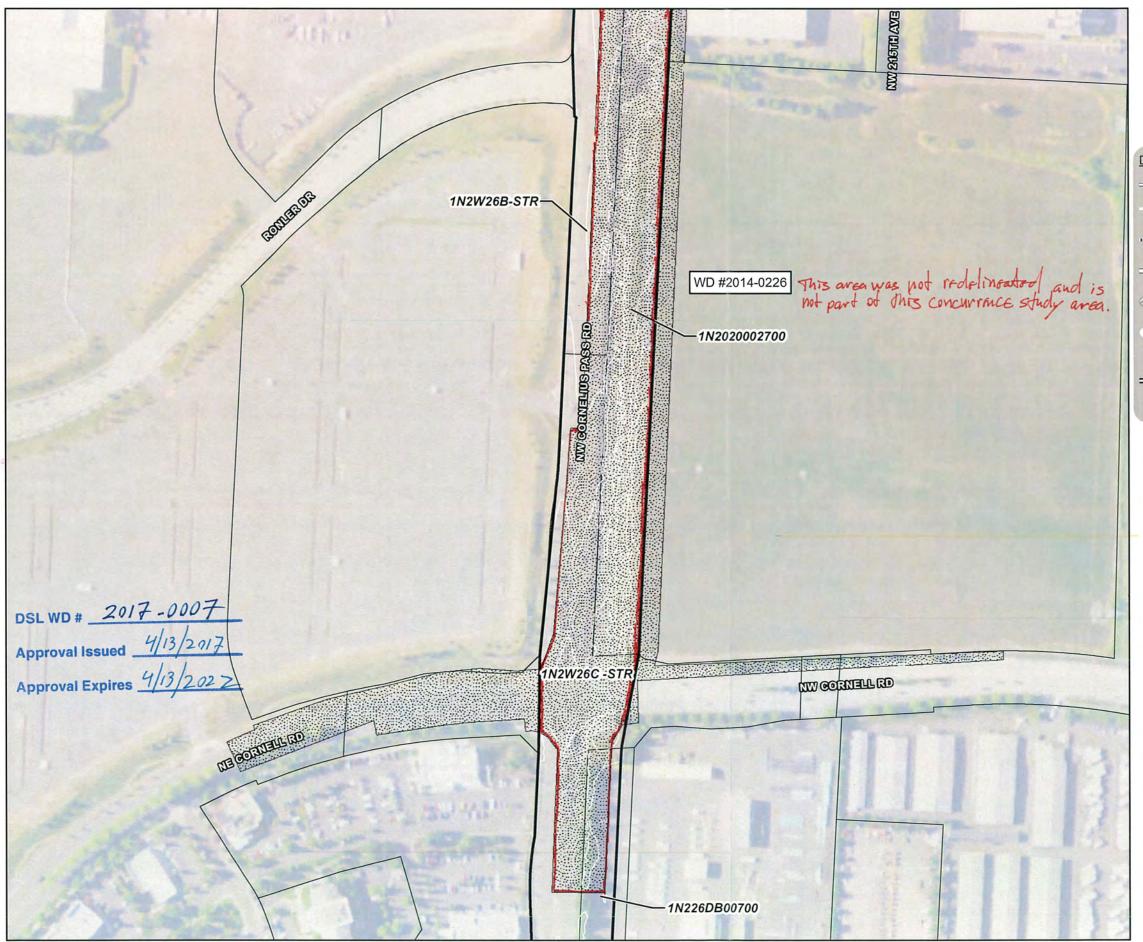
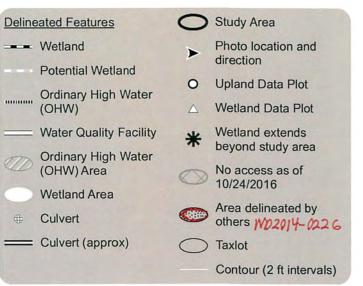
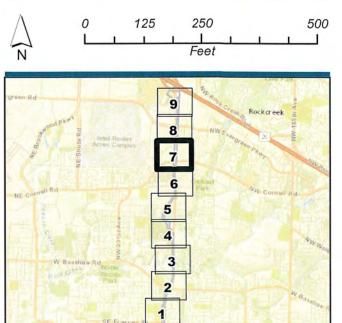


Figure 6, Sheet 7 of 9
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.



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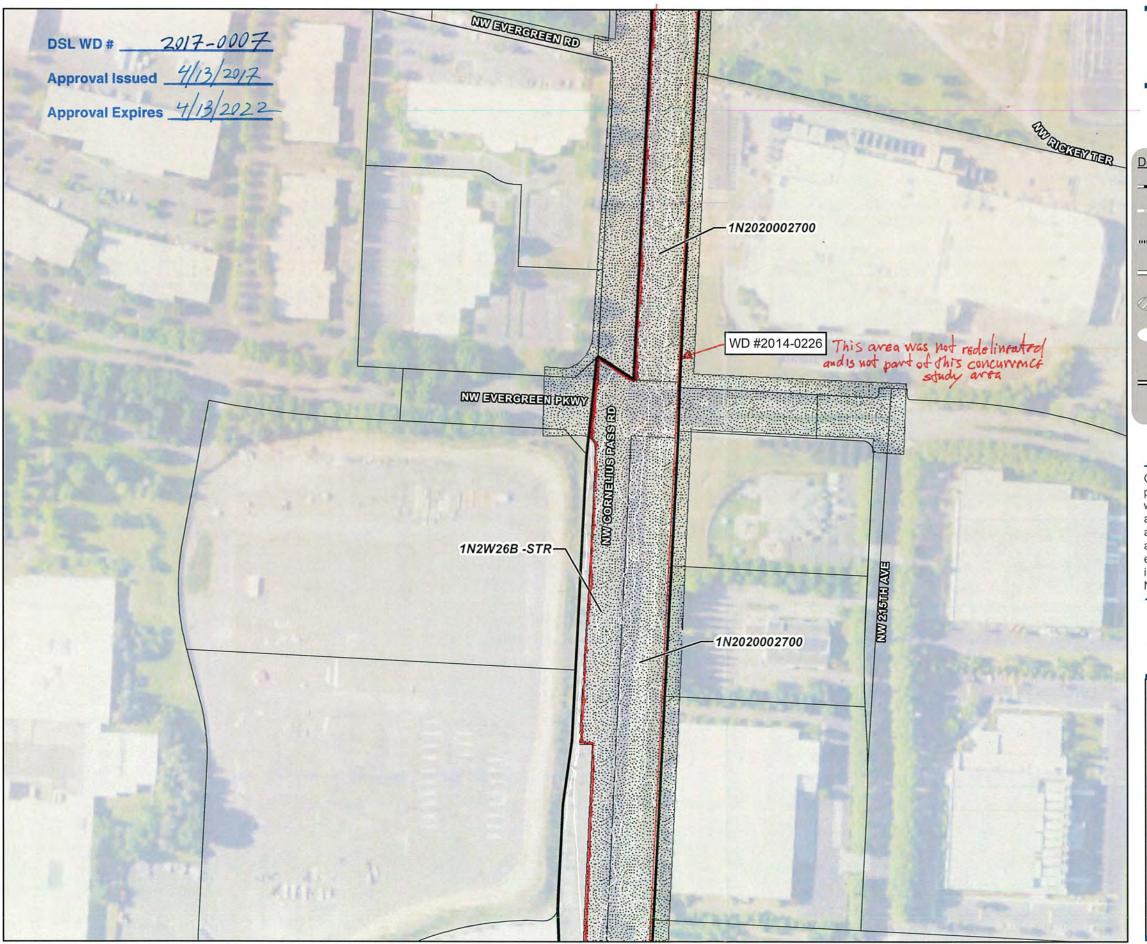
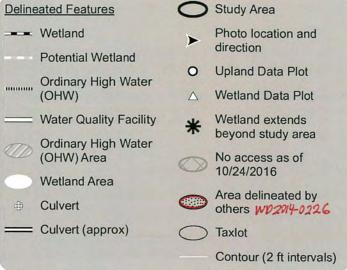
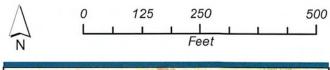
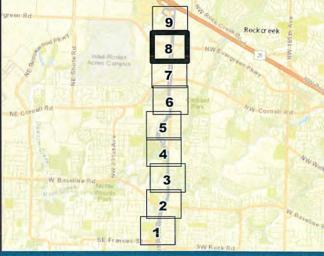


Figure 6, Sheet 8 of 9
Delineated Wetlands







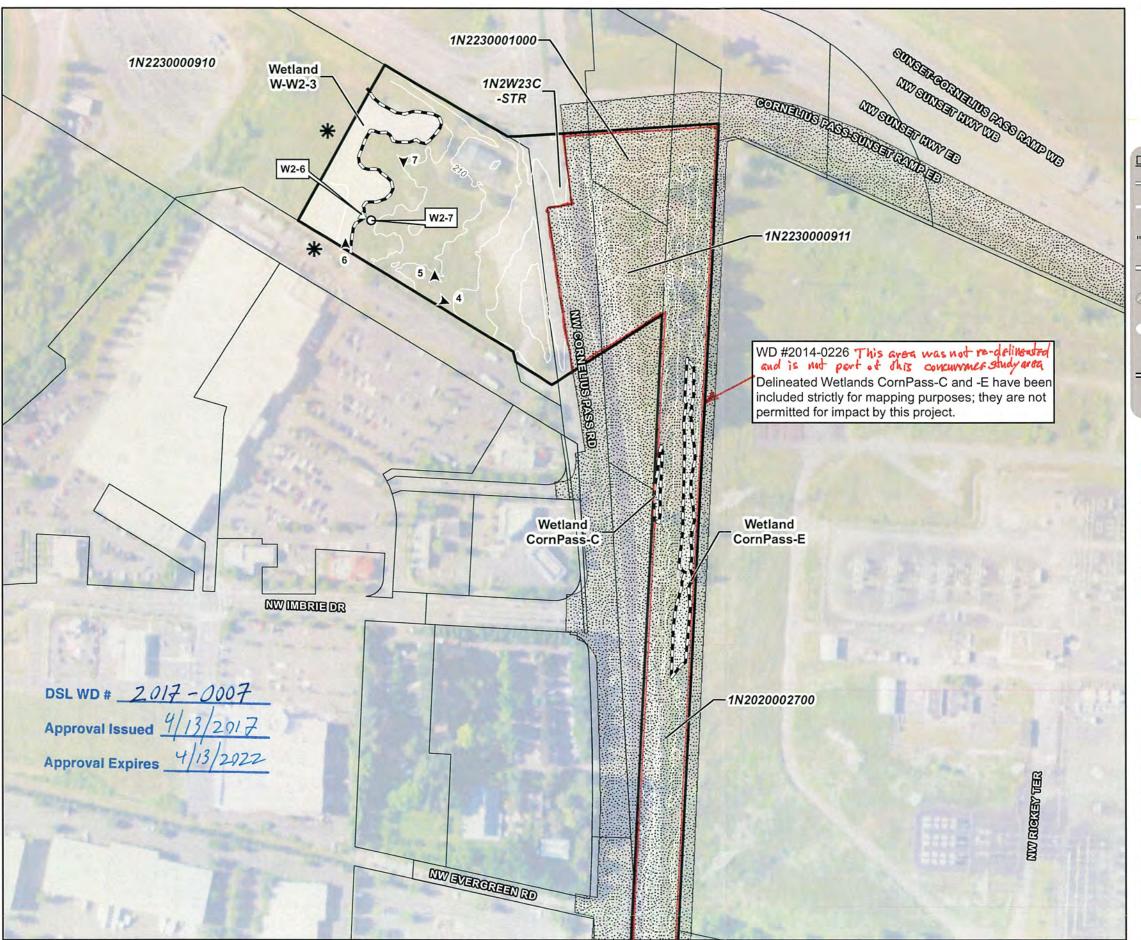
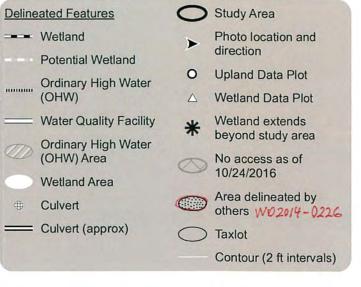
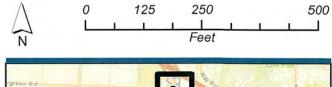


Figure 6, Sheet 9 of 9
Delineated Wetlands







Pipeline West 1.0 (South Hillsboro Area) ODSL Wetland Verification



June 21, 2017

Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200 FAX (503) 378-4844

State Land Board

www.oregon.gov/dsl

City of Hillsboro Water Department Attn: Niki Iverson 150 E. Main Street Hillsboro, OR 97123-4028

Kate Brown Governor

Re:

WD # 2017-0027 Partial Concurrence Wetland Delineation Report

for the Proposed Willamette Water Supply Program Project, PLW 1.0

Washington County; Multiple Sections and Tax Lots

APP # 60102

City of Hillsboro Local Wetlands Inventory, Wetland ReC

Dennis Richardson Secretary of State

> Tobias Read State Treasurer

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area corridor passes through only portions of the multiple sections and tax lots shown on the attached maps. Portions of the study area for this delineation report were not field checked due to property access issues. Areas with no access were investigated and mapped using offsite wetland determination methods, therefore, are receiving Preliminary Jurisdictional Determinations (PJDs) from the Department. Since PJDs are not suitable for removal-fill permitting, areas with PJDs will need to be checked, features delineated, and a report submitted with a new cover form and fee when access is granted and prior to any construction within these properties.

Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6, Sheets 1 through 10 of the report with the exception of areas and features that are located outside the study area for this report and are not included in this concurrence. Within the study area corridor, four wetlands (totaling approximately 0.91 acres) two streams including a segment of Reedville Creek, and eight roadside ditches were identified (see Appendix B for individual features). Note that portions of Wetland W-W1-2 (shown on Figure 6, Sheet 1), did not have access for this study. Therefore, a portion of this features was mapped using offsite wetland determination methods and given a PJD.

The wetlands, streams, and two of the eight ditches (D-W1-4 and D-W1-5) are subject to the permit requirements of the state Removal-Fill Law. The remaining roadside ditches are exempt per OAR 141-0515 (10); therefore, they are not subject to these permit requirements. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary

high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely.

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec: Phil Rickus, David Evans and Associates, Inc.

Washington County Planning Department

Jaimee Davis, Corps of Engineers

Melinda Butterfield, DSL

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report. A single PDF attachment of the completed cover from and report may be e-mailed to Wetland_Delineation@dsl.state.or.us.

Applicant Owner Name, Firm and Address:	Business phone # (503) 615-6770
Niki Iverson, Water Resource Manager	Mobile phone # (optional)
City of Hillsboro Water Department	E-mail: niki.iverson@hillsboro-oregon.gov
150 E. Main Street Hillsboro, OR 97123-4028	
Authorized Legal Agent, Name and Address:	Business phone # (503) 615-6770
Niki Iverson, Water Resource Manager	Mobile phone # (optional)
City of Hillsboro Water Department	E-mail: niki.iverson@hillsboro-oregon.gov
l either own the property described below or I have legal authority property for the purpose of confirming the information in the report Typed/Printed Name: Niki Iverson Date: \(\) \(Signature: THY WA
Project and Site Information (using decimal degree format	for lat/long.,enter centroid of site or start & end points of linear project)
Project Name: Willamette Water Supply Program, PLW 1.0	Latitude: 45.492589 Longitude: -122.902167
Proposed Use: Pipeline Installation	Tax Map # See Attachment
Project Street Address (or other descriptive location): Begins at SW Farmington Road in Hazeldale south of Hillsboro, and ends on NW Cornelius Pass Road in Reedville (approximately 3.9 miles in length).	Township Range Section QQ
	Tax Lot(s) See Attachment
City: N/A County: Washington	Waterway: Many River Mile: N/A NWI Quad(s): Several
	neation Information
Wetland Consultant Name, Firm and Address: Phil Rickus David Evans and Associates 2100 SW River Parkway Portland, OR 97201 The information and conclusions on this form and in the attached Consultant Signature	Phone # 503-223-6663 Mobile phone # E-mail: prr@deainc.com report are true and correct to the best of my knowledge. Date: January 4, 2017
Primary Contact for report review and site access is 🛛 C	Consultant
	a size: 71.0 acres Total Wetland Acreage: 0.90 acres
Check Box Below if Applicable:	Fees:
R-F permit application submitted	
☐ Mitigation bank site	Fee (\$100) for resubmittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	
Industrial Land Certification Program Site	No fee for request for reissuance of an expired report
Reissuance of a recently expired delineation Previous DSL # Expiration date	
Other Information:	Y N
Has previous delineation/application been made on parcel?	☐ If known, previous DSL # See Report
Does LWI, if any, show wetland or waters on parcel?	□ □
	ice Use Only
DSL Reviewer: PR Fee Paid Date: /	_1_25_1/7 DSLWD#
Date Delineation Received: / / DSL Pro	oject # <u>58449</u> DSL Site #
Scanned: Final Scan: DSL W	N# DSL App. # 60102_

* Electronic Submittal *



Tax Lots

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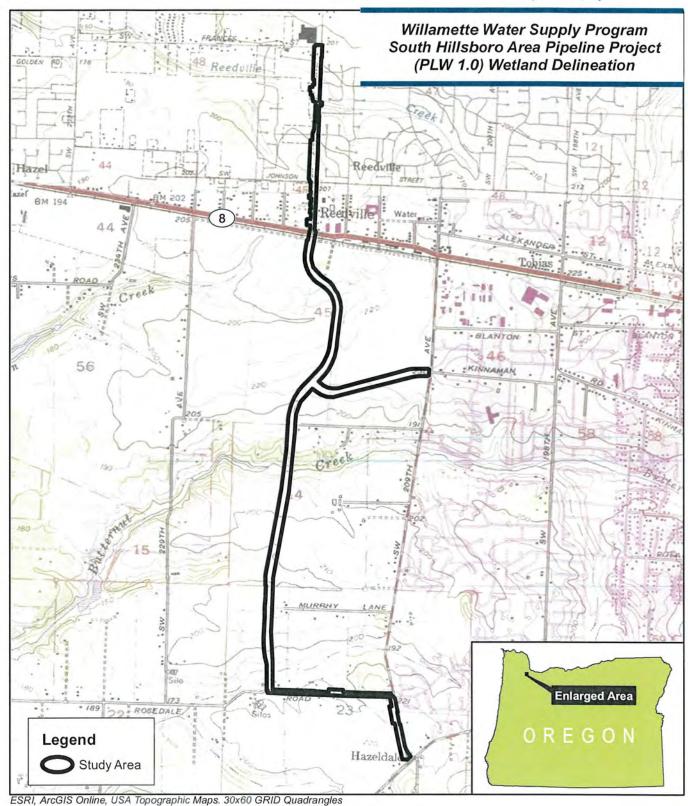
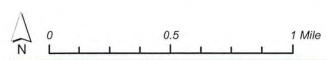
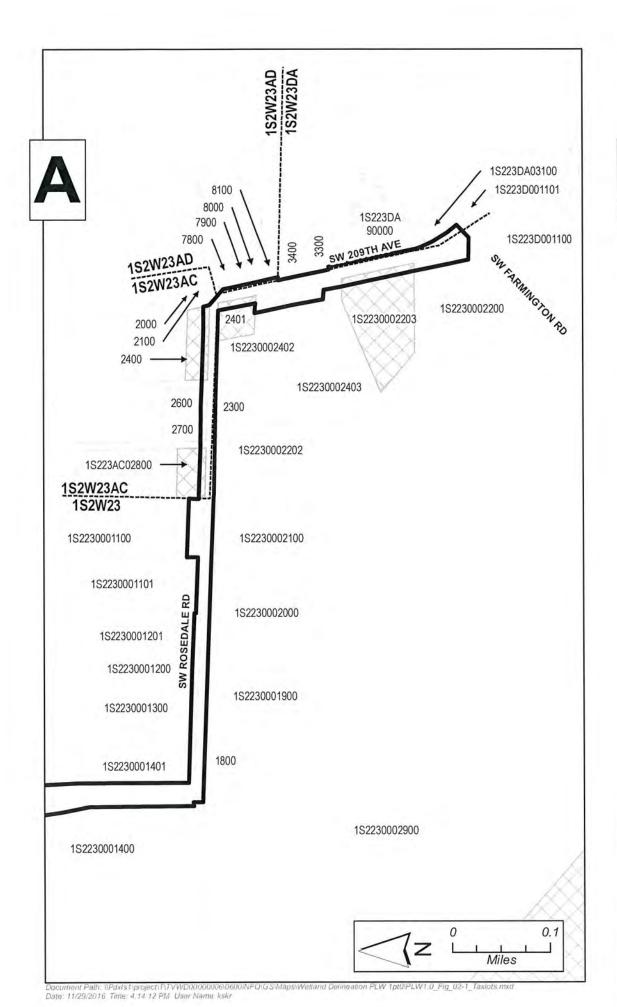


Figure 1
Vicinity Map







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WW2017-0027

Willamette Water Supply Permitting South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 2 Tax Lots, Sheet 1

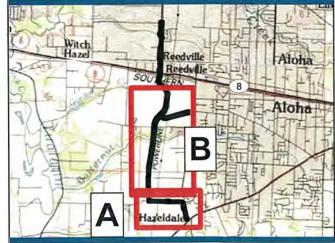
Legend

Study Area

Area delineated by others

No access as of 10/24/2016

Metro RLIS Data. 2016.



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1S202CA15000 1S2W02CB 1S202CB00100 1S2W02CC "SW FRANCES ST" __ 22100 1S2W02CA 1S202CC00100 1S2W02CD 6200 ROCK RD **—** 6300 - 6400 16900 700 16800 7400 17100 ← 8300 8400 18500 17800 18400 11600 17700 17600 1S2W02CC 17500 ---1S2W02CD 1S2W11BB 12900 1S2W11BA 24700 24800 24900 - 25000 25100 SW AUGUSTA LN - 25200 25300 25400 25500 1600 25600 - 25700 25800 25900 26000 26100 26200 26300 26400 1S211BB01700 1300 1500 1700 1S2W11BB 1900 1S2W11BA 1S2W11BC -- SW JOHNSON S **—** 1600 1S2W11BD 103 102 100 700 1900 1800 1703 1900 1700 1702 1701 1600 2300 1S2W11BC SE TUALATIN VALLEY HWY 1S2W11C SE TUALATIN VALLEY HWY 1S2W11BD 1S2W11 1S2110001600 N

WD2017-0027

Willamette Water Supply Permitting South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 2

Tax Lots, Sheet 2

Legend

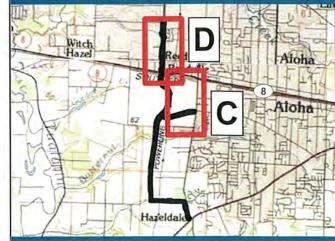
Study Area

Area delineated by others

No access as of 10/24/2016



Metro RLIS Data. 2016.



PLW 1.0

1-W = wetland feature, S = stream feature, D = ditch feature

2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches

3-Ditches that did not meet wetland criteria or did not have signs of relatively permanent flow were not assumed to be under Corps jurisdiction.

4-All ditches in study area, except where specifically noted, met DSL exemption criteria for roadside ditches (i.e. <10ft wide, no fish, etc.)

See methods section of report for additional information on assumption of Corps and DSL jurisdictional determination of dithes.

5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent

6-HGM Class: DEP=depressional, RFT=riverine flow-through

7-Due to imprecision in the tax lot layer, all ditches were delineated with Onsite methods, whether extending slightly outside the apparent tax lot or not

ID ¹	Latitude/ Longitude	Sheet #(s)	Delineation Method ⁷	Size in Study Area 6 ²	Assumed Corps JD ³	Assumed DSL JD ⁴	Cowardin Class ⁵	HGM Class ⁶	Data Plot ID	Notes (i.e., special circumstances)
D-3-1	45.468987, - 122.893970	1	Onsite	927	No	No	1-1	-		Dry. No signs of scour. Veg=poison oak, blackberry, Kentucky bluegrass. Infiltrates.
D-3-2	45.469035, - 122.893787	1	Onsite	247	No	No	-		-	Dry. No signs of scour. Veg=sweet vernal grass, blackberry, Kentucky bluegrass. Drains to D-3-1 and infiltrates.
D-W1-1a	45.470145, - 122.895561	1	Onsite	667	No	No		4		No signs of scour, no wetland vegetation- dominated primarily by upland vegetation. Drains to W-W1-1 and thereby to wetlands north of road. 1' width.
D-W1-1b	45.470245, - 122.896827	1	Onsite	292	No	No			144	No signs of scour, no wetland vegetation- dominated primarily by upland vegetation. Drains to W-W1-2. 1' width.
W-W1-1	45.470149, - 122.897863	1	Onsite	0.03	Yes	Yes	PEM	Slope/Flats	M4-1	Pasture in low area used for grazing. Boundary from steep road fill. Dry ditch from east (D-W1-1) drains into it from the east during storm flows. Drains to wetland across road through culvert.
W-W1-2	45.470035, - 122.898458	1	Onsite and Offsite	0.11	Yes	Partial PJD	PEM	Slope/Flats	M4-3	Low pasture area similar to W-W1-1. Extends offsite under fence. Boundary from change in veg and lack of hydric soil.
D-W1-2	45.470259, - 122.899635	1, 2	Onsite	392	No	No	-	-		Dry. No signs of scour, no wetland vegetation- dominated primarily by upland vegetation. 1' width.
D-W1-3	45.470181, - 122.901755	2	Onsite	817	No	No	-		-	Dry. No signs of scour, no wetland vegetation- dominated primarily by upland vegetation. 1' width. Drains to W-W1-3.
W-W1-3	45.470172, - 122.903459	2	Onsite	0.01	Yes	Yes	PEM	Slope/Flats	M4-5	Wetland swale in mapped hydric soil extending north through an oat field and mowed front yard with drain tiles. Drains to bare ditch with scour (D-W1-4) and across road through culvert west of study area. Boundary from change in veg and swale topography.
D-W1-4	45.470199, - 122.904132	2	Onsite	342	Yes	NO YES		-		OHW from scour. Carries flow from W-W1-3 to culvert west of study area. 1.5' width.
D-W1-5	45.470286, - 122.904607	2	Onsite	100	Yes	Yes	PEM	Slope/Flats	M4-7	Ditched wetland with steep sides. Drains offsite to other waters. 2' OHW from drift lines.
W-W1-5	45.471395, - 122.904695	2	Onsite	0.51	Yes	Yes		Slope/RFT	M4-11, 4-13	Wetland swale in mapped hydric soil extending north through a grazed pastures. Drains to S-W1-2 Boundary from change in veg to Douglas fir and swale topography.
S-W1-2	45.471032, - 122.905293	2	Onsite	170	Yes	Yes	-	-	1 4	Unnamed drainage flowing west through wetland. OHW approx 5' from drift lines in the adjacent vegetated wetland.
W-W1-4	45.505631, - 122.902476	10	Onsite	0.25	Yes	Yes		Slope/RFT	M4-9	Wetland on north bank of Reedville Creek within City of Hillsboro mitigation wetland. Boundary from steep slopes leading up to level fill 4 feet above wetland.
S-W1-1	45.505431, - 122.902374	10	Onsite	78	Yes	Yes	-		- -	Reedville Creek. OHW approx 15' from drift lines, water staining on rock. LVI Walland Rec

& pitoling

5 westlands (0.91 A

2 Streams

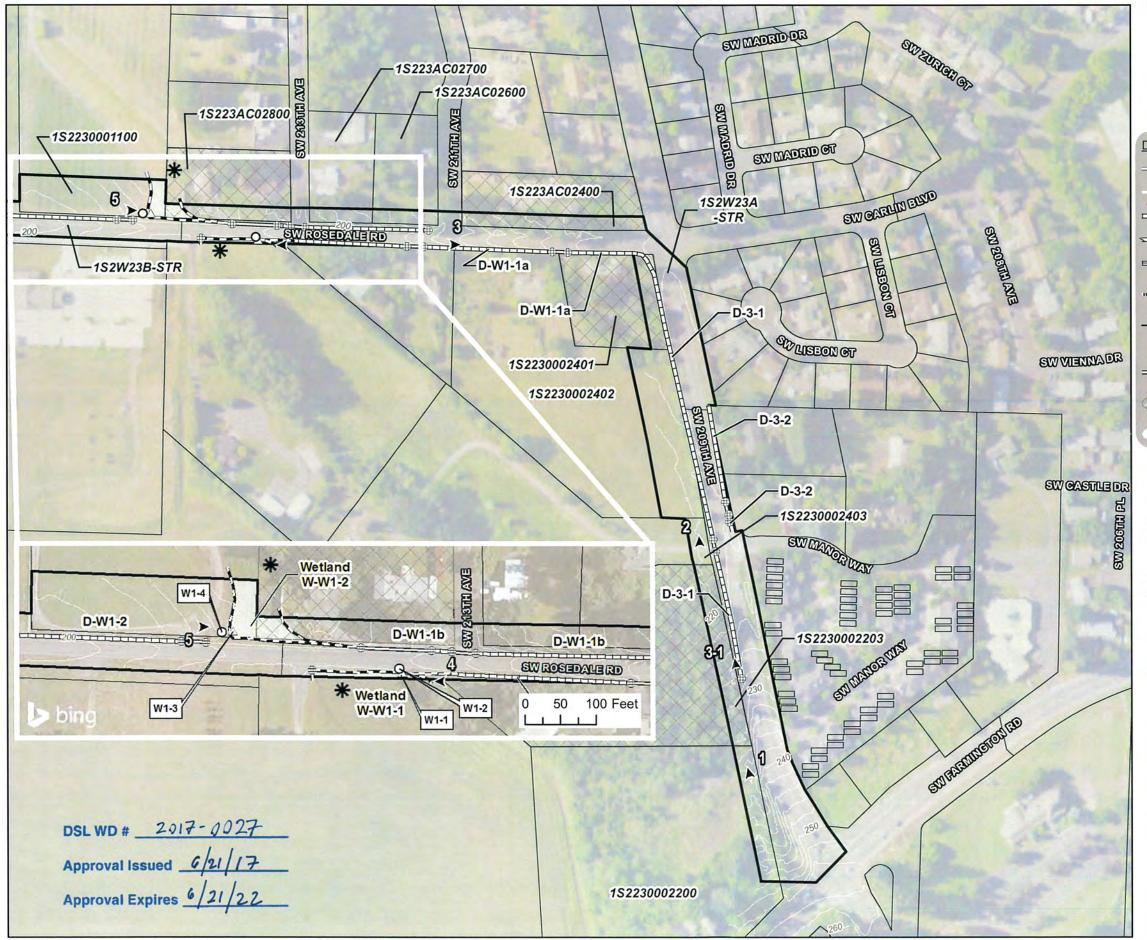
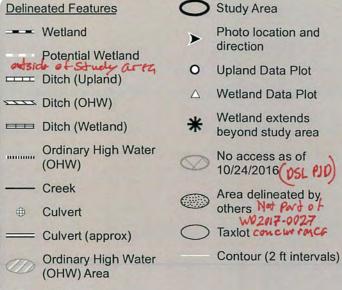
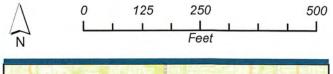


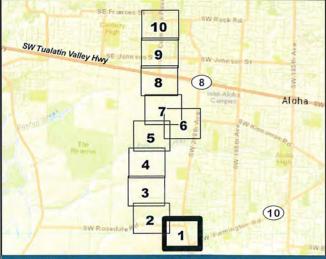
Figure 6, Sheet 1 of 10 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial Imagery.

Wetland Area





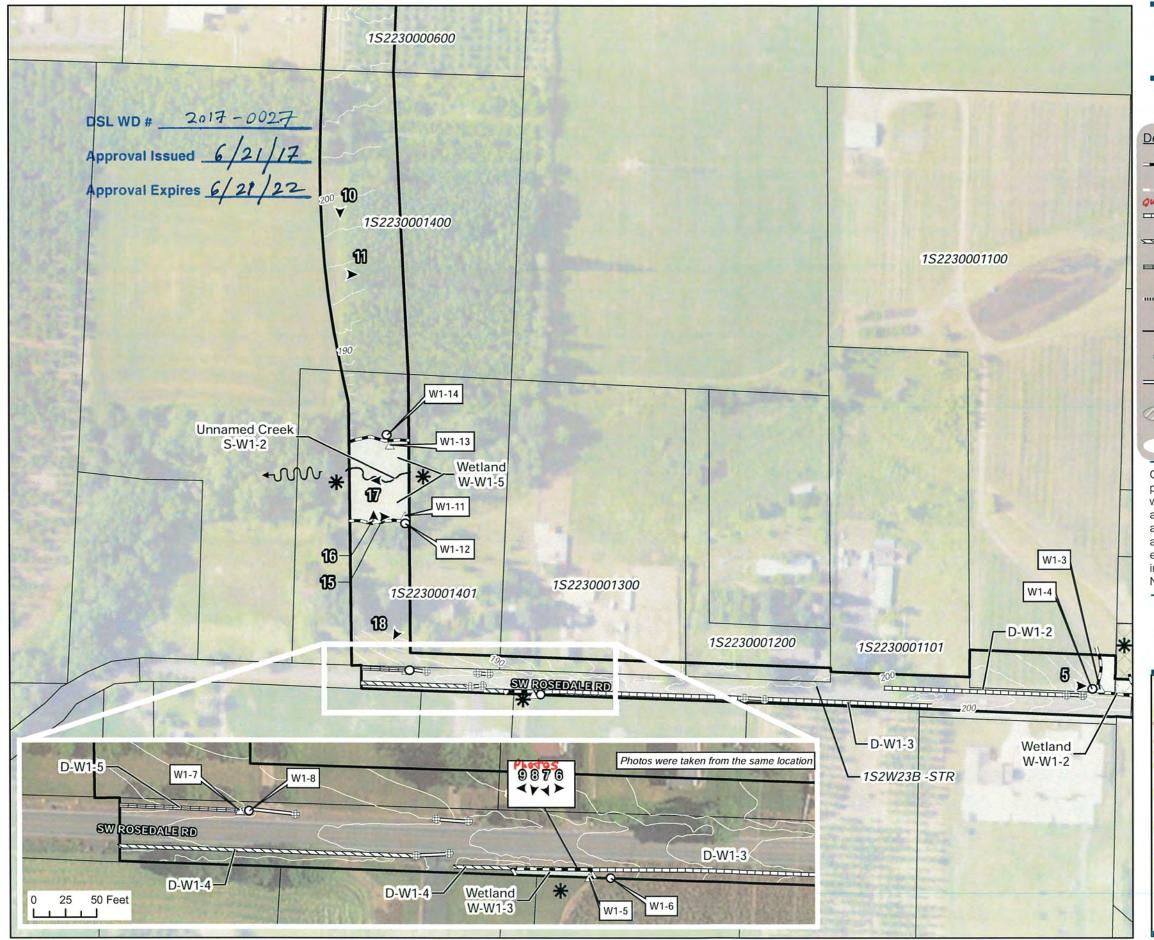
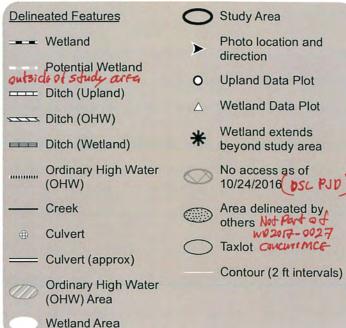
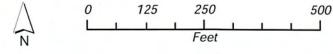
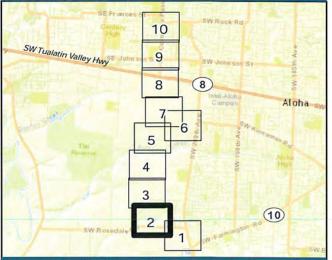


Figure 6, Sheet 2 of 10 Delineated Wetlands







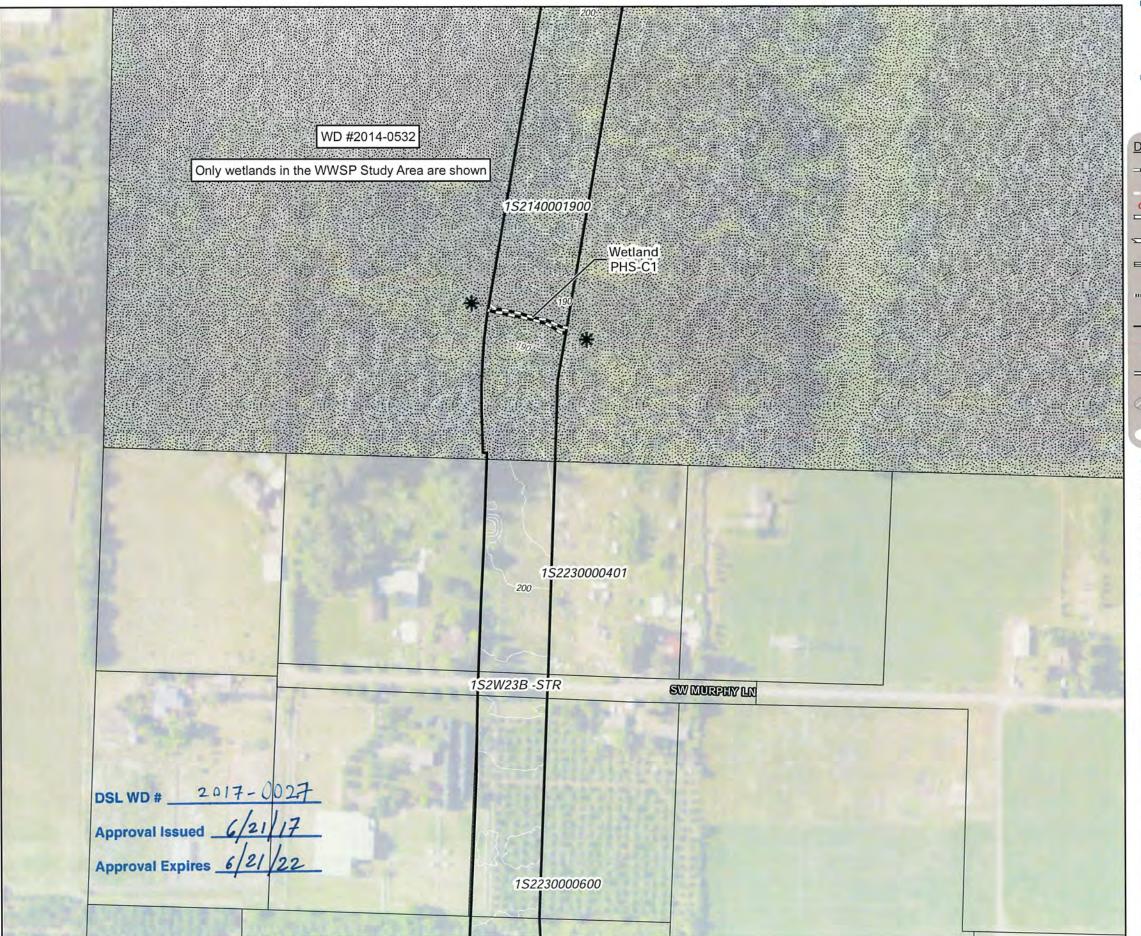
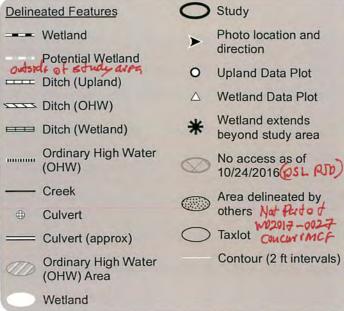
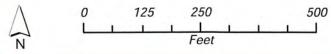


Figure 6, Sheet 3 of 10 Delineated Wetlands





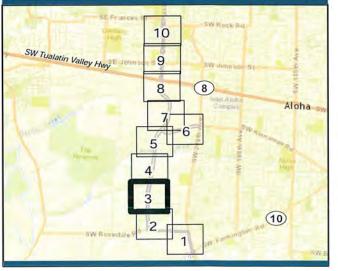
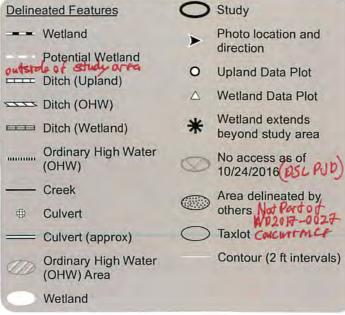
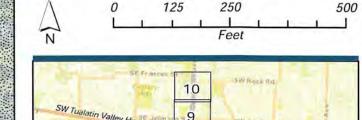
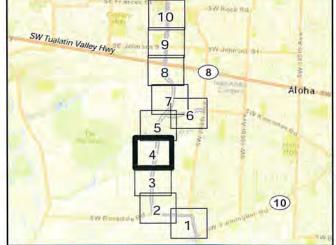




Figure 6, Sheet 4 of 10 Delineated Wetlands







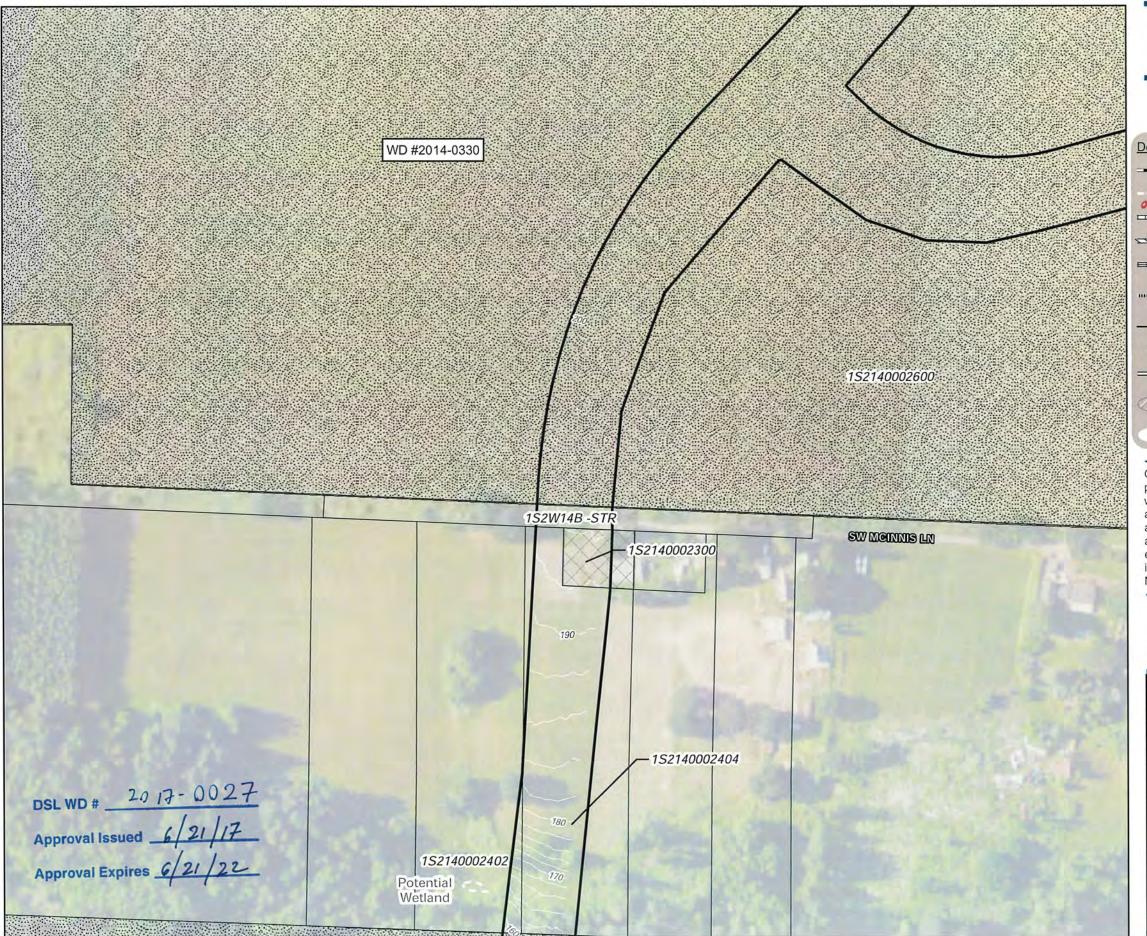
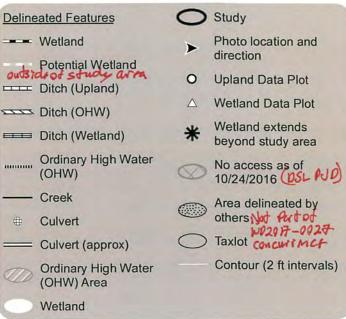
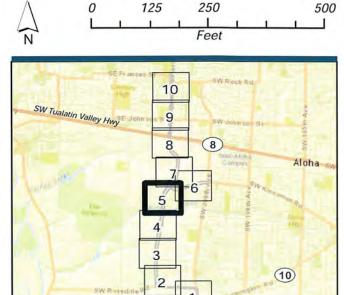


Figure 6, Sheet 5 of 10 Delineated Wetlands





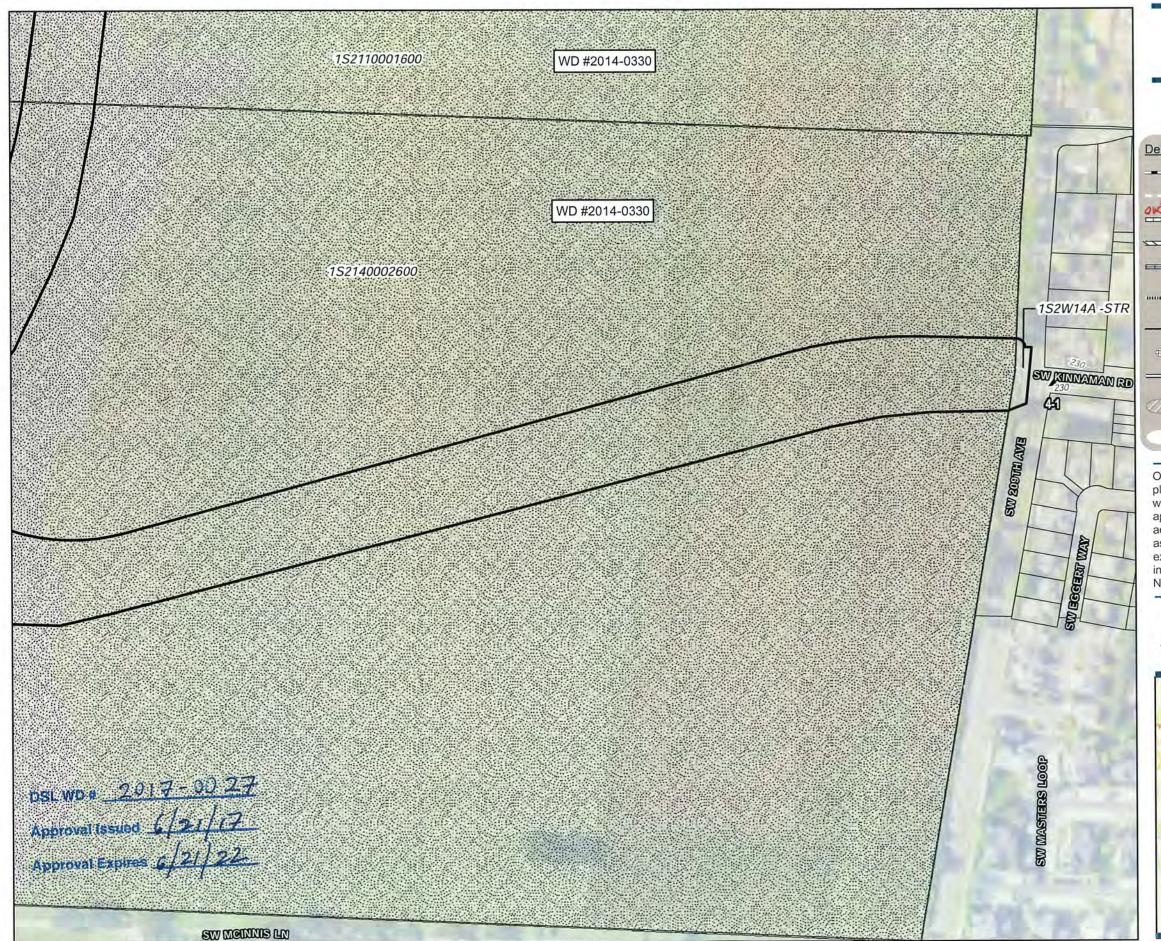
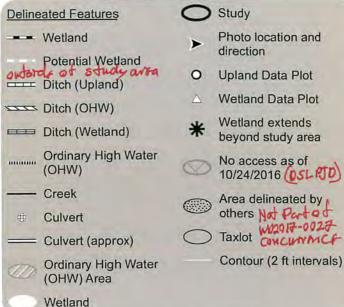
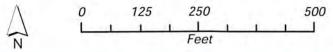
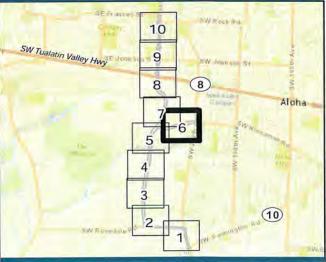


Figure 6, Sheet 6 of 10 Delineated Wetlands







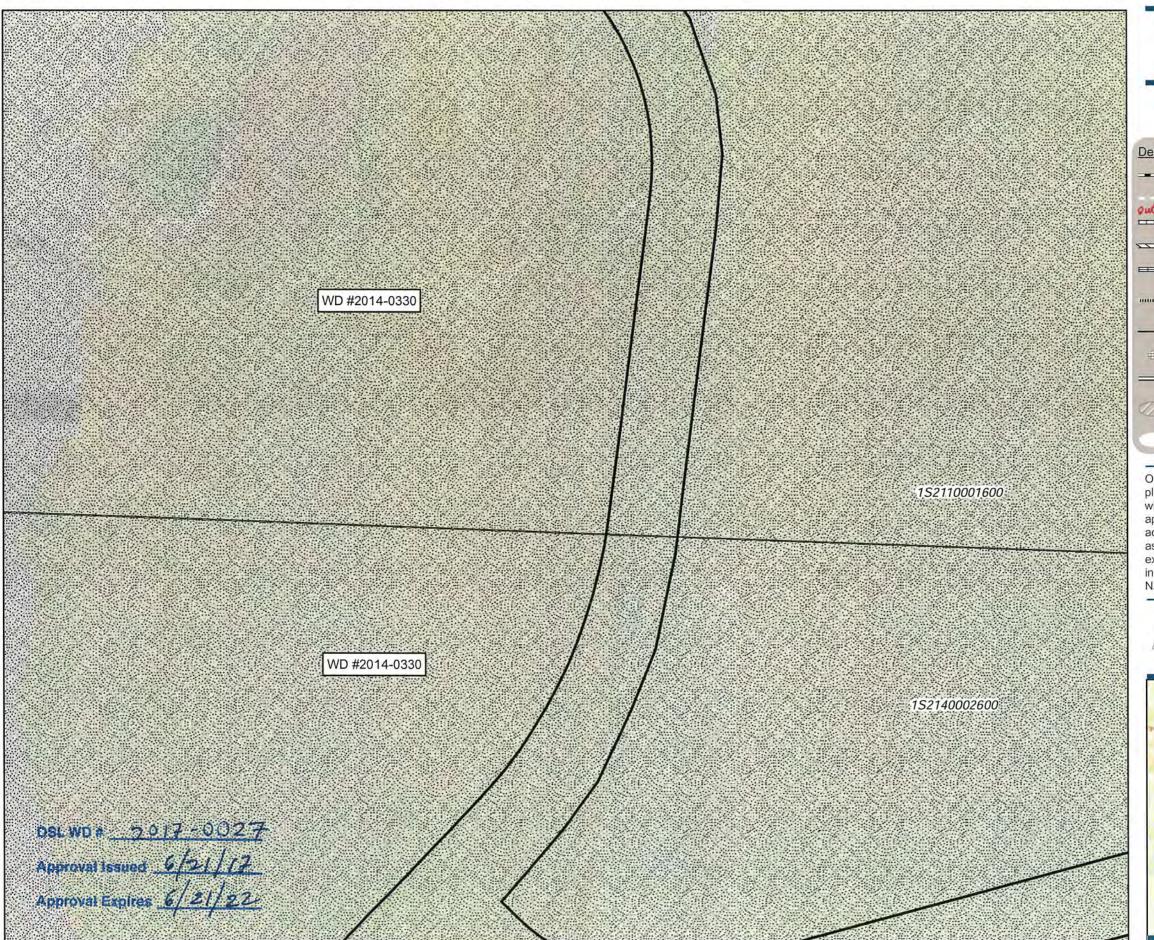
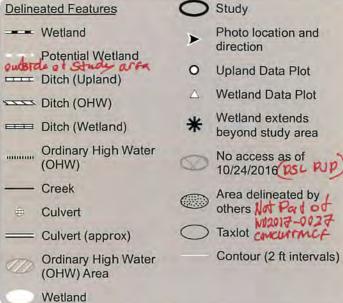
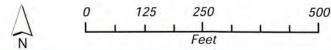
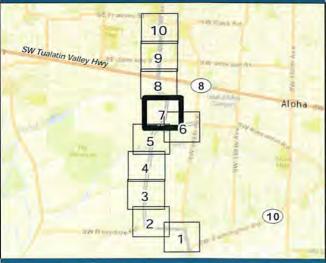


Figure 6, Sheet 7 of 10 Delineated Wetlands



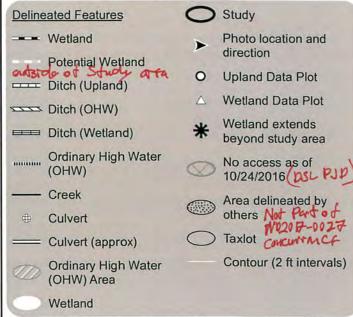




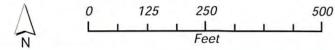


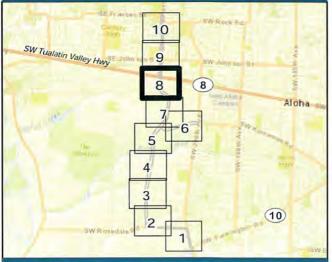
Willamette Water Supply Program South Hillsboro Area Pipeline Project (PLW1.0) Wetland Delineation

Figure 6, Sheet 8 of 10 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial Imagery.

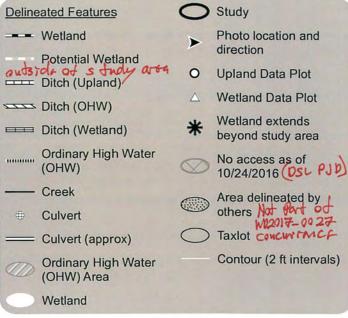




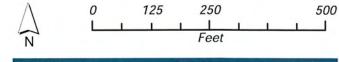


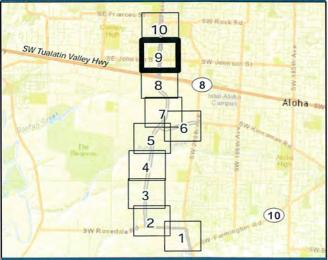
Willamette Water Supply Program South Hillsboro Area Pipeline Project (PLW1.0) Wetland Delineation

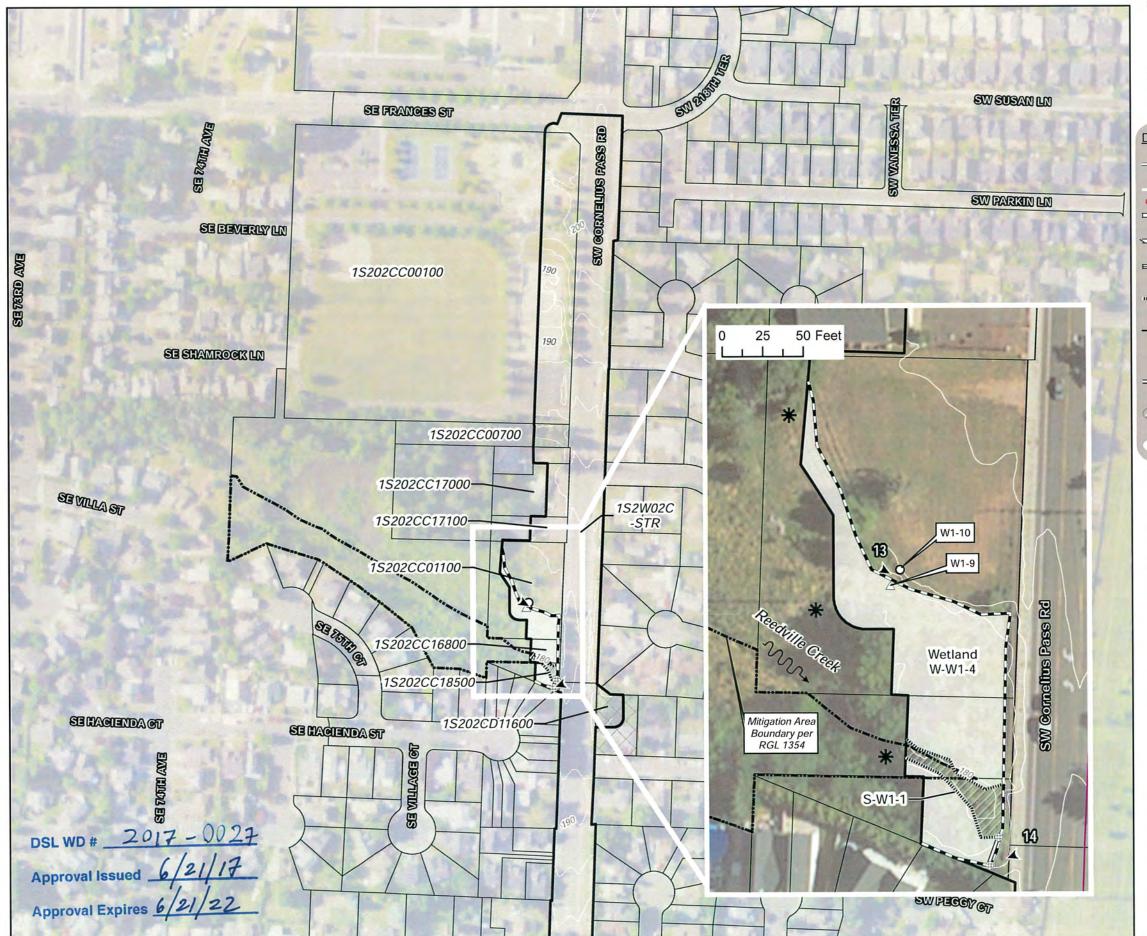
Figure 6, Sheet 9 of 10 Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial Imagery.

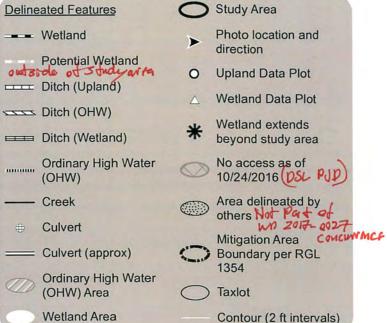




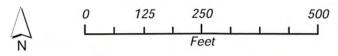


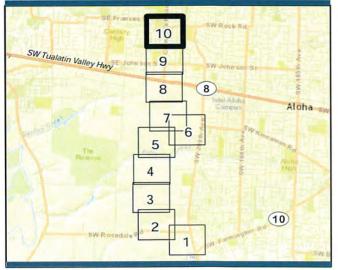
Willamette Water Supply Program South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 6, Sheet 10 of 10 Delineated Wetlands

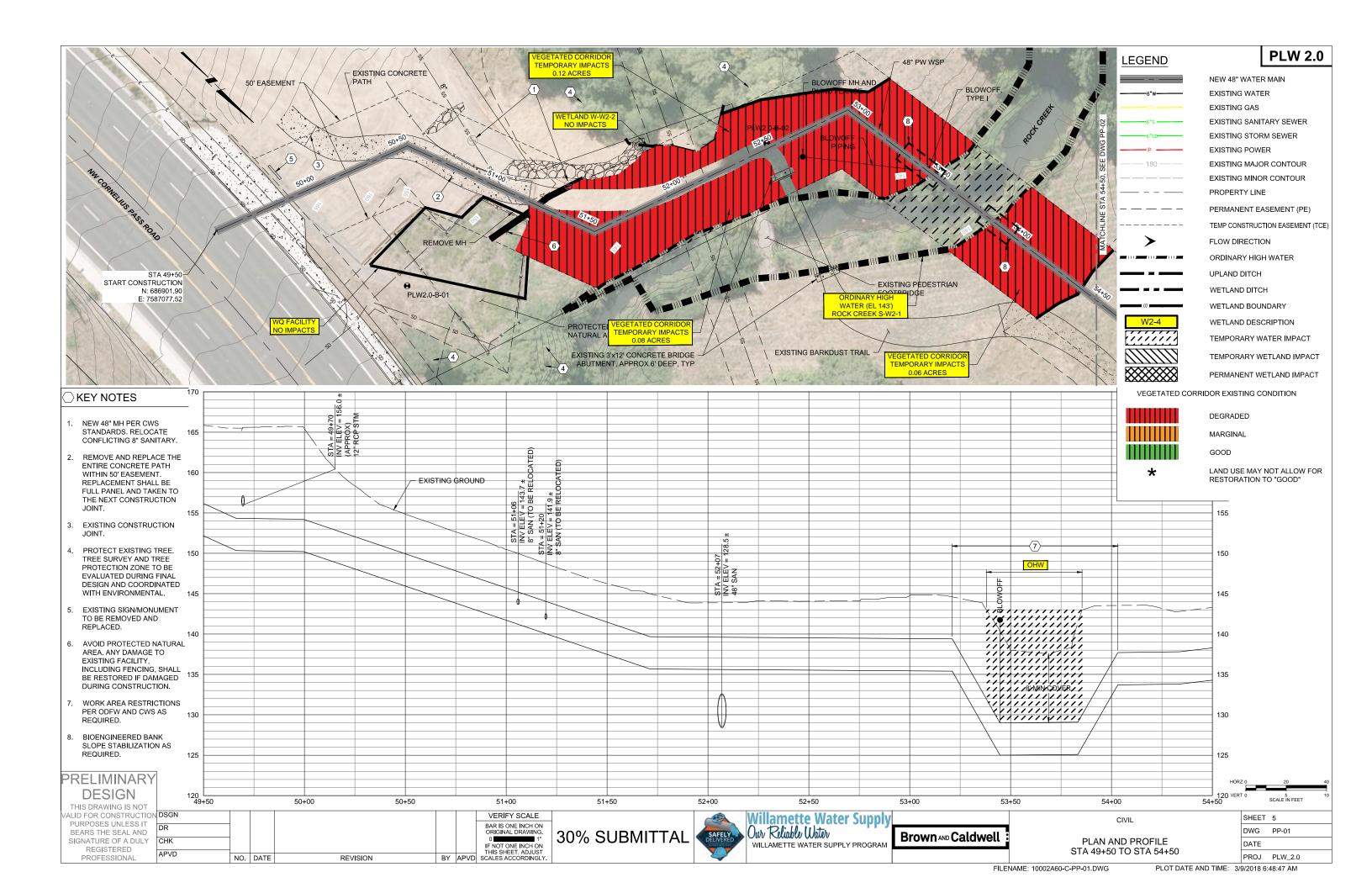


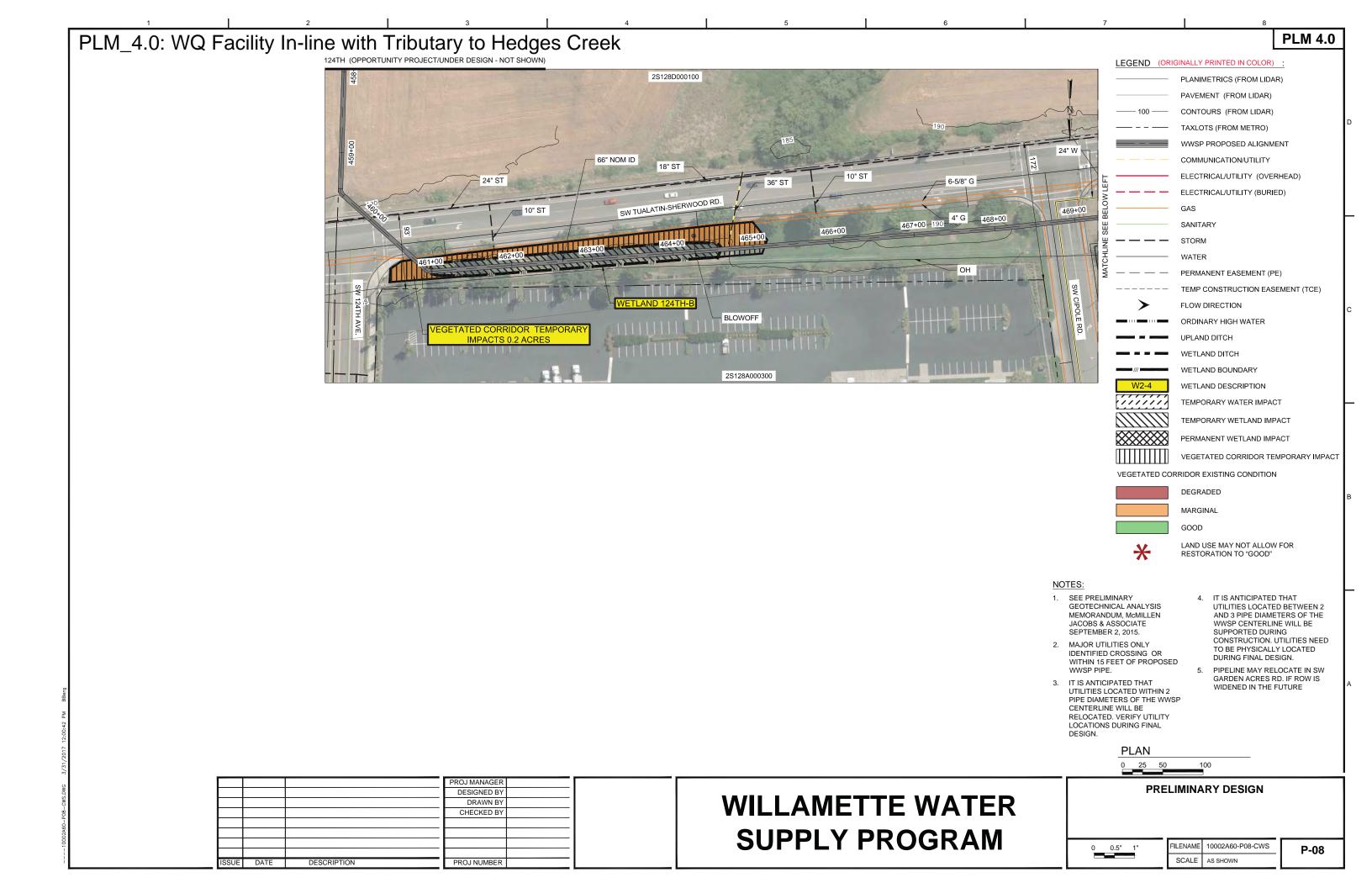
On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial Imagery.

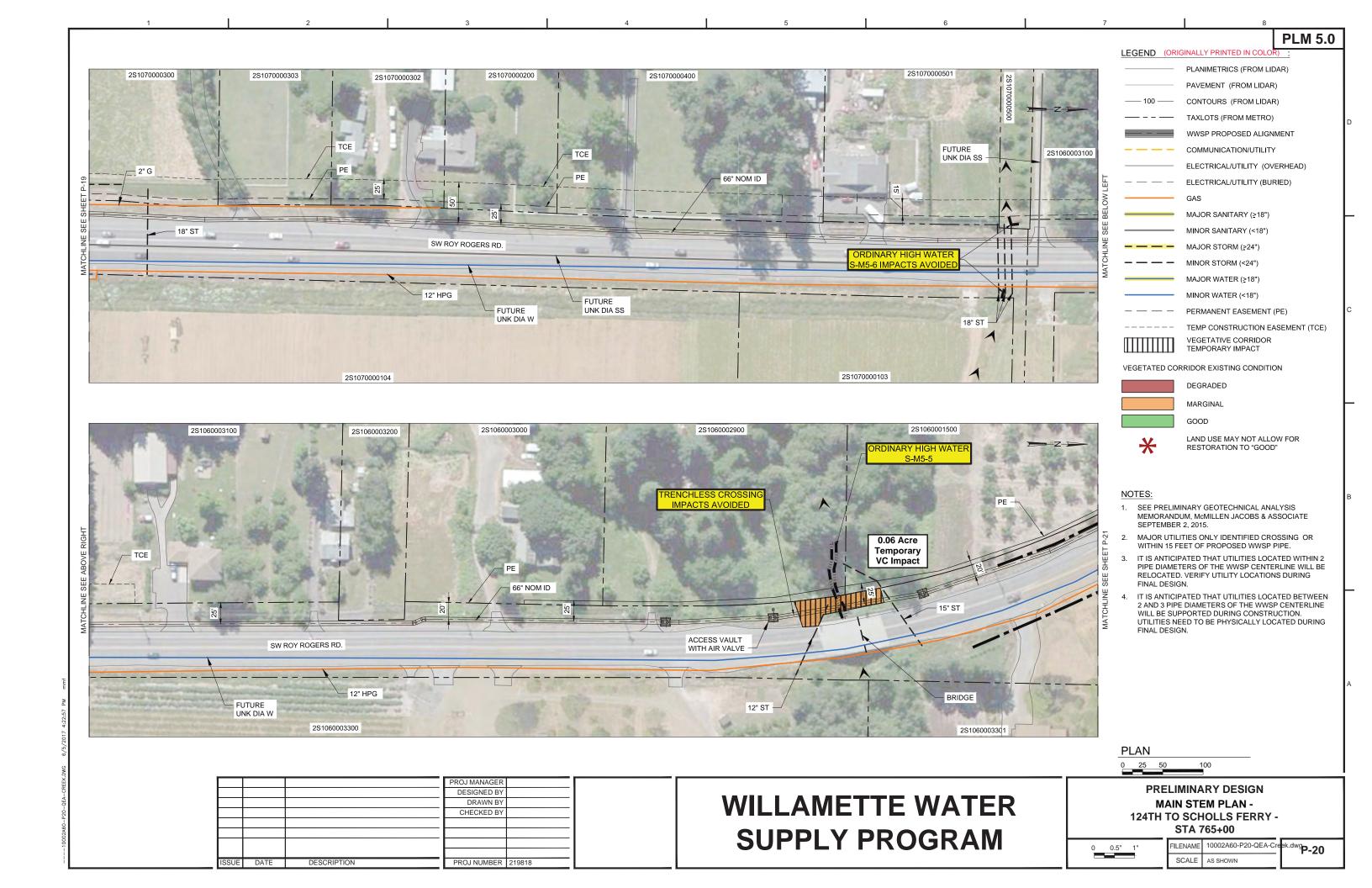


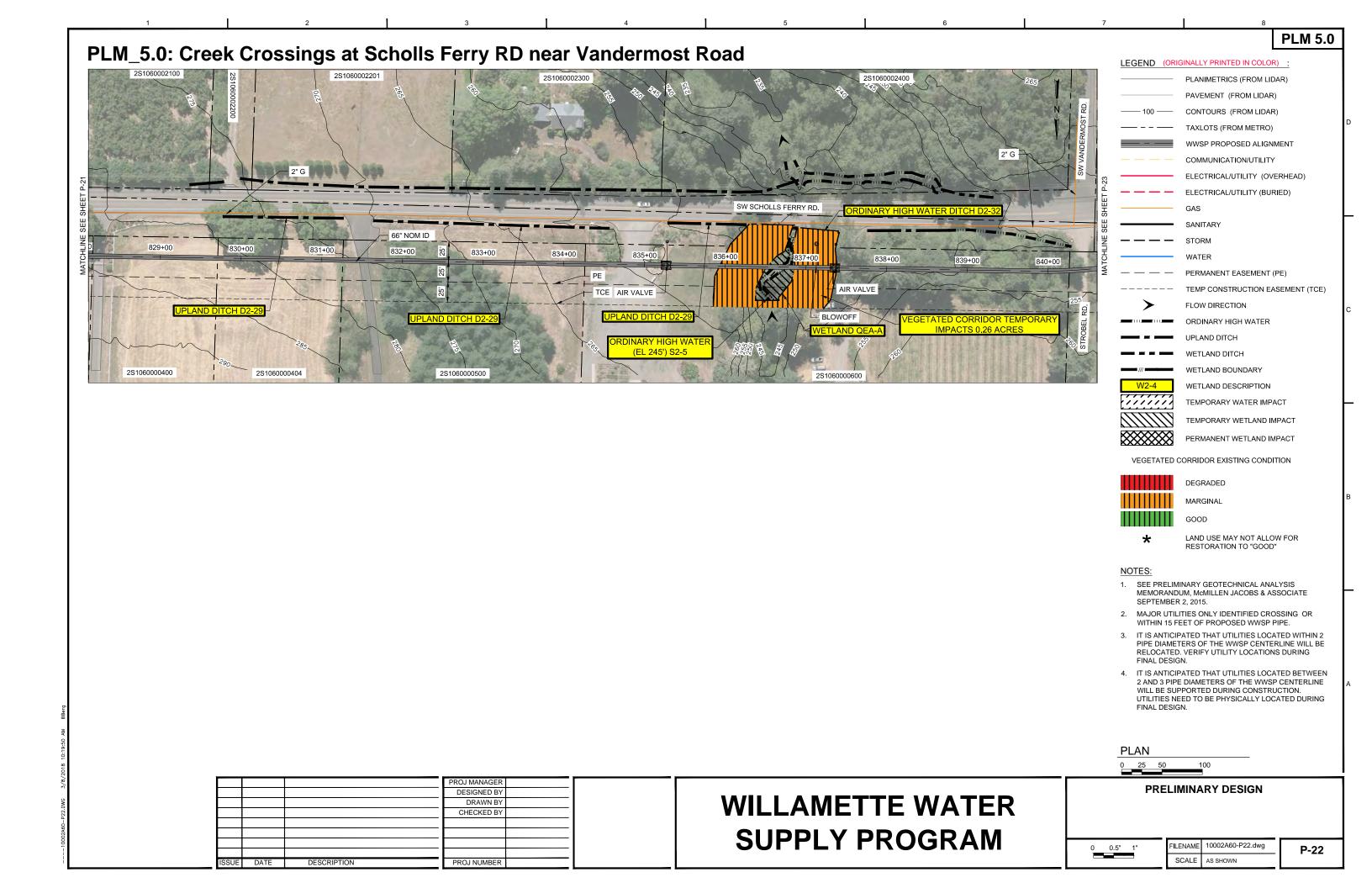


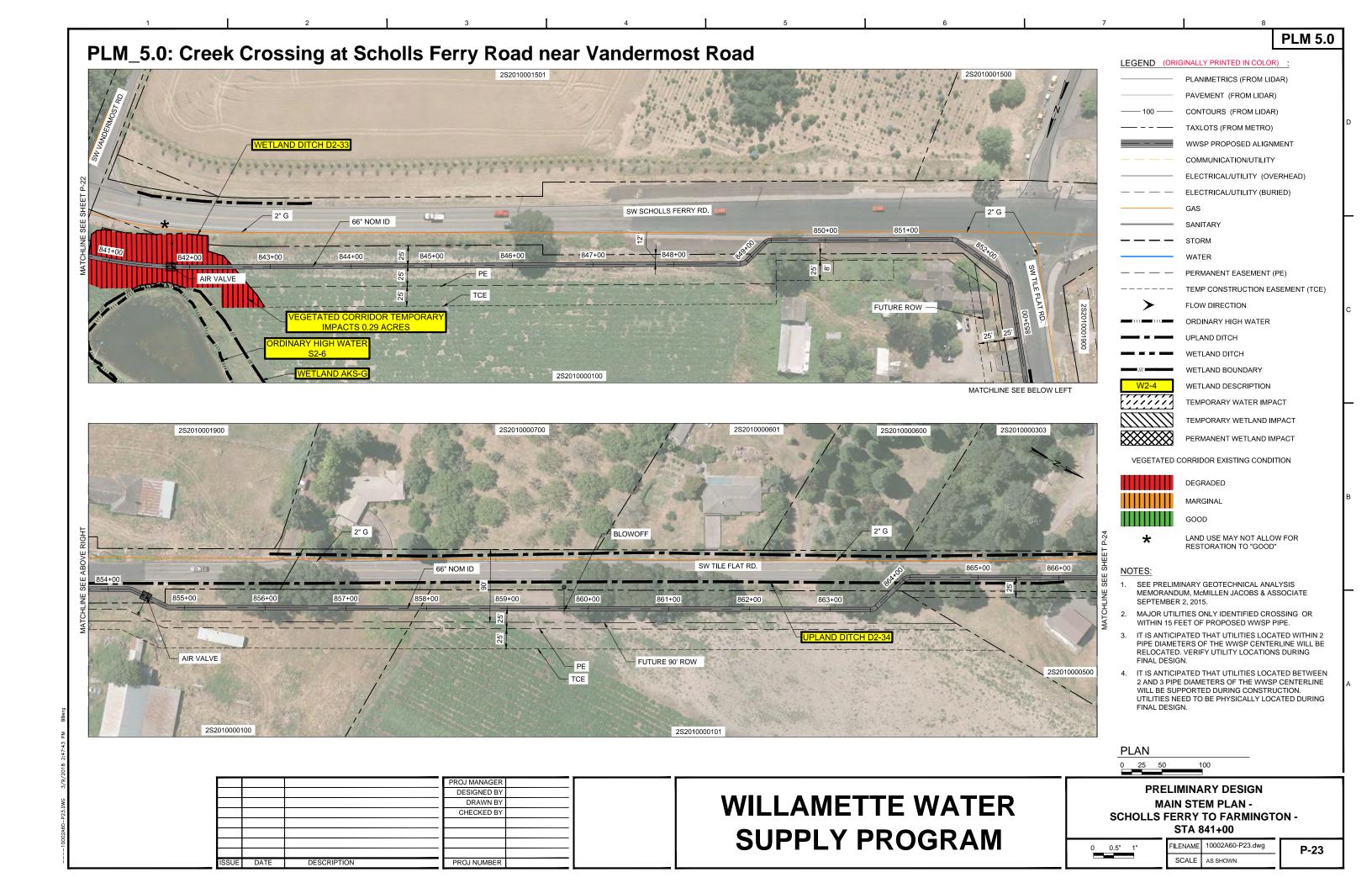
Attachment D VC Impact Assessment Exhibits

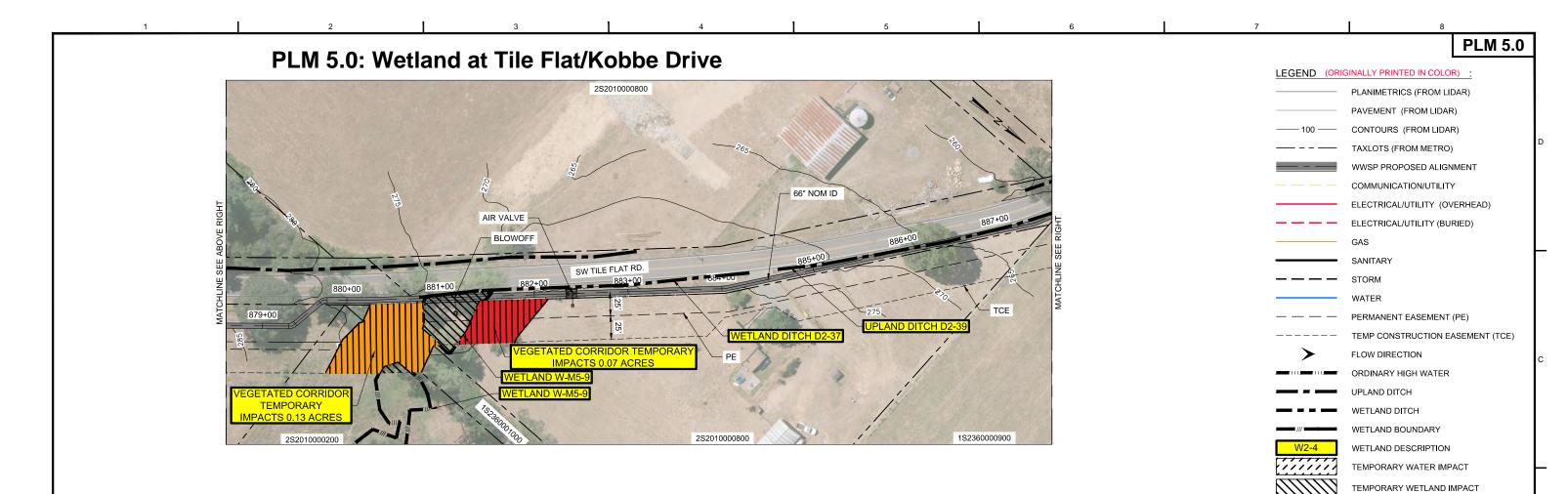












DEGRADED MARGINAL

GOOD

LAND USE MAY NOT ALLOW FOR RESTORATION TO "GOOD"

PERMANENT WETLAND IMPACT

NOTES:

*

 SEE PRELIMINARY GEOTECHNICAL ANALYSIS MEMORANDUM, McMILLEN JACOBS & ASSOCIATE SEPTEMBER 2, 2015.

VEGETATED CORRIDOR EXISTING CONDITION

- 2. MAJOR UTILITIES ONLY IDENTIFIED CROSSING OR WITHIN 15 FEET OF PROPOSED WWSP PIPE.
- 3. IT IS ANTICIPATED THAT UTILITIES LOCATED WITHIN 2 PIPE DIAMETERS OF THE WWSP CENTERLINE WILL BE RELOCATED. VERIFY UTILITY LOCATIONS DURING FINAL DESIGN.
- 4. IT IS ANTICIPATED THAT UTILITIES LOCATED BETWEEN 2 AND 3 PIPE DIAMETERS OF THE WWSP CENTERLINE WILL BE SUPPORTED DURING CONSTRUCTION. UTILITIES NEED TO BE PHYSICALLY LOCATED DURING FINAL DESIGN.

PL	_AN			
0	25	50	100	

DESIGNED BY
DRAWN BY
CHECKED BY

ISSUE DATE DESCRIPTION

PROJ NUMBER

PROJ MANAGER

WILLAMETTE WATER
SUPPLY PROGRAM

PRELIMINARY DESIGN

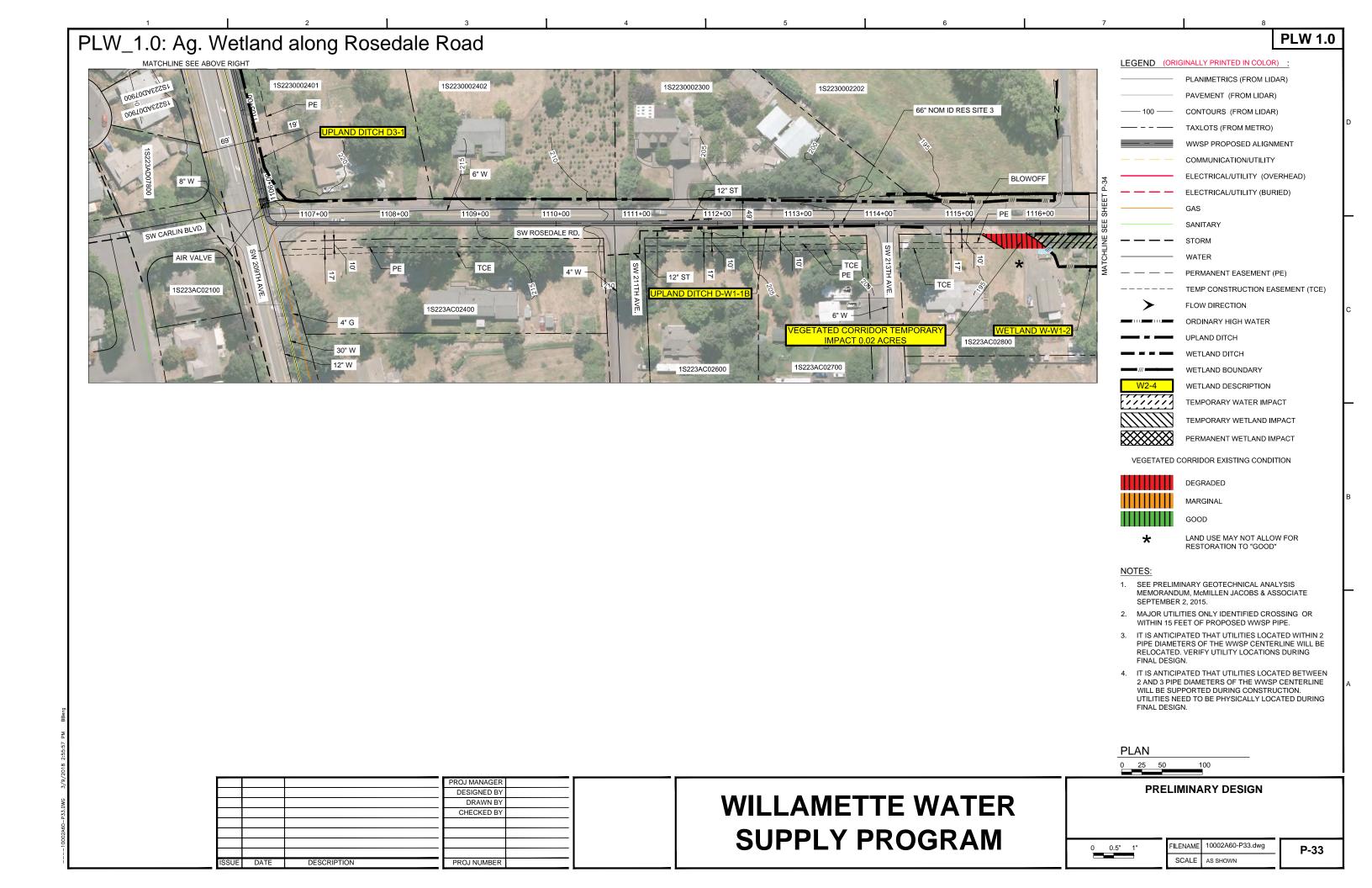
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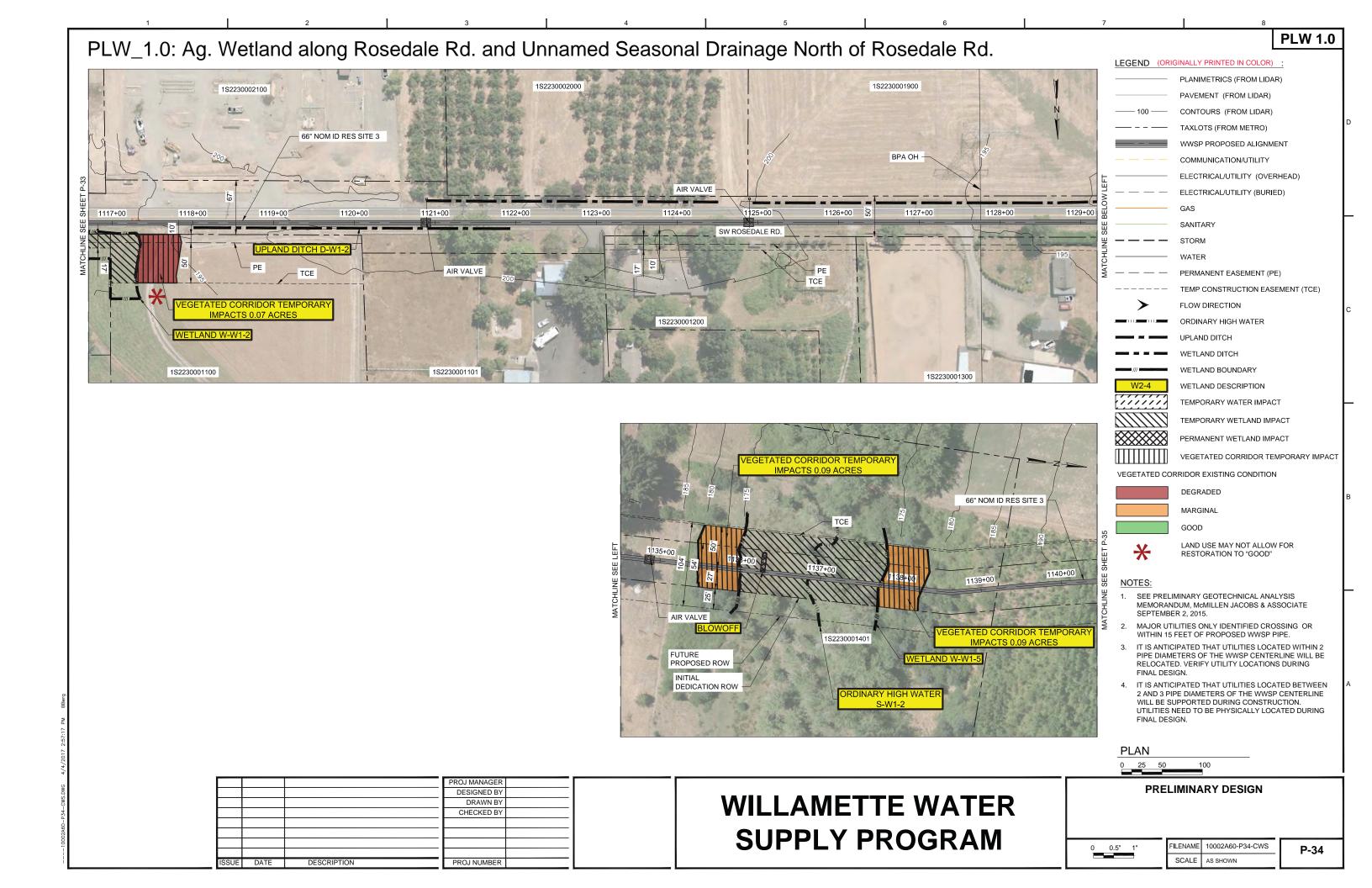
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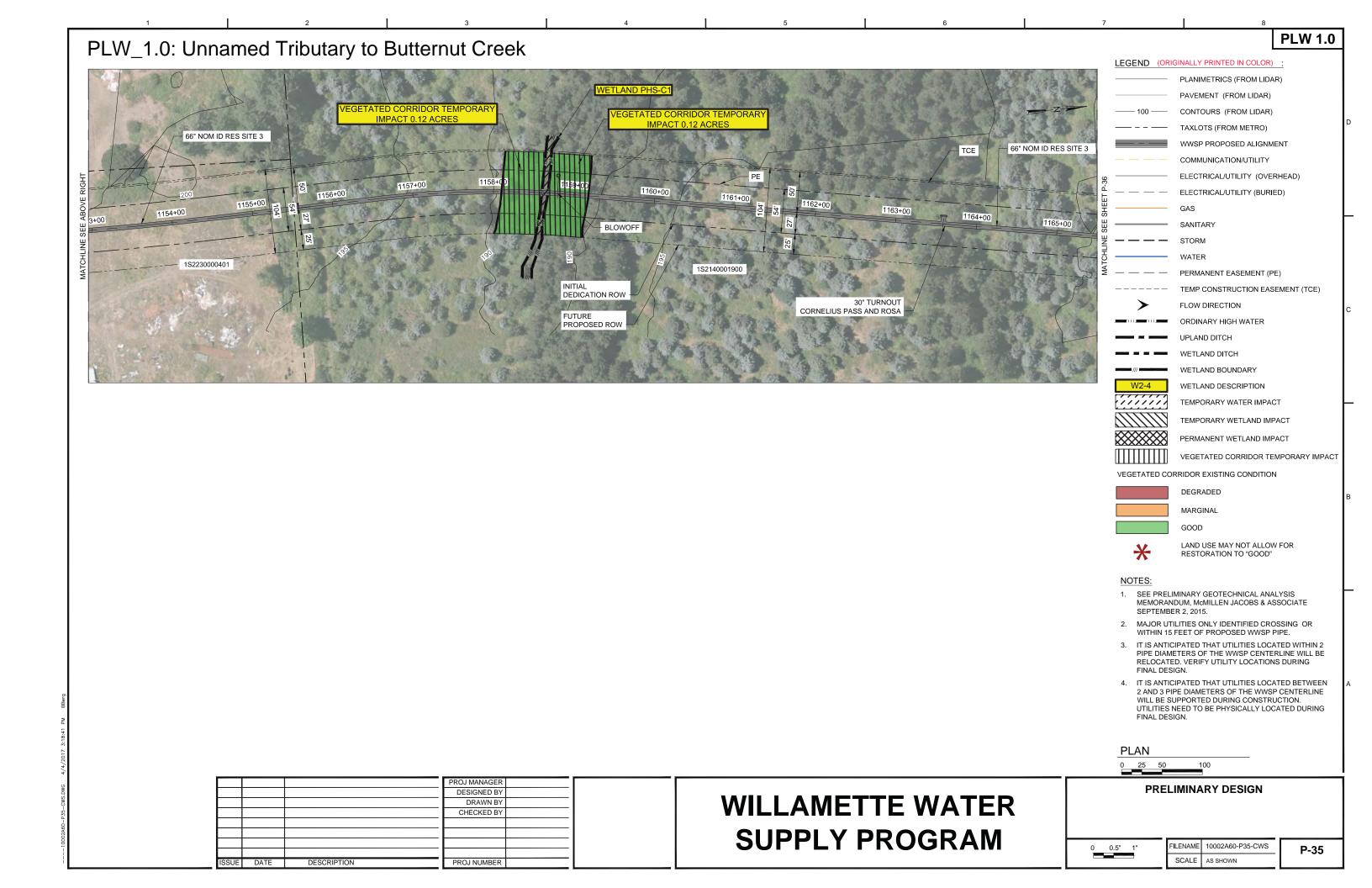
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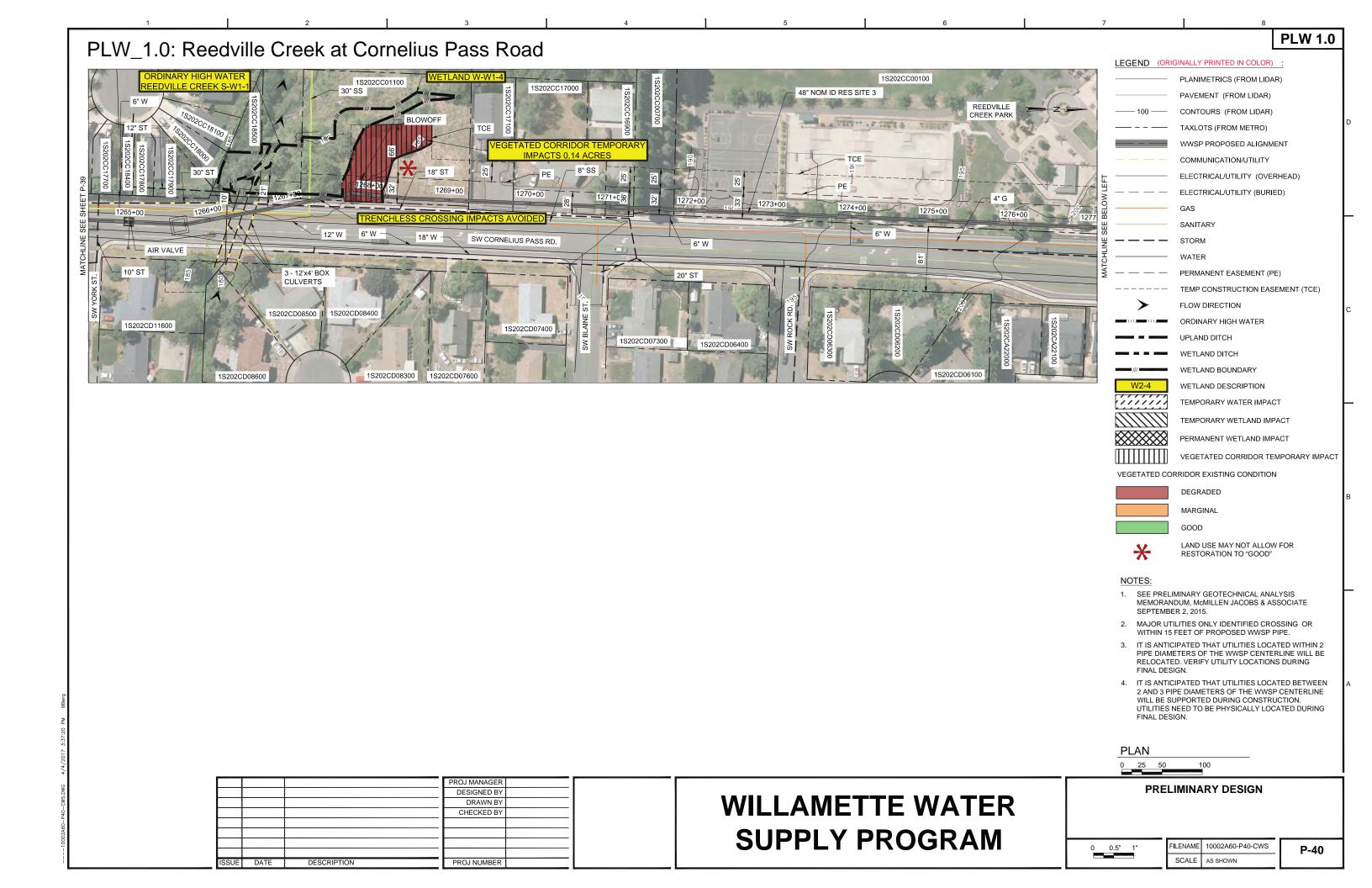
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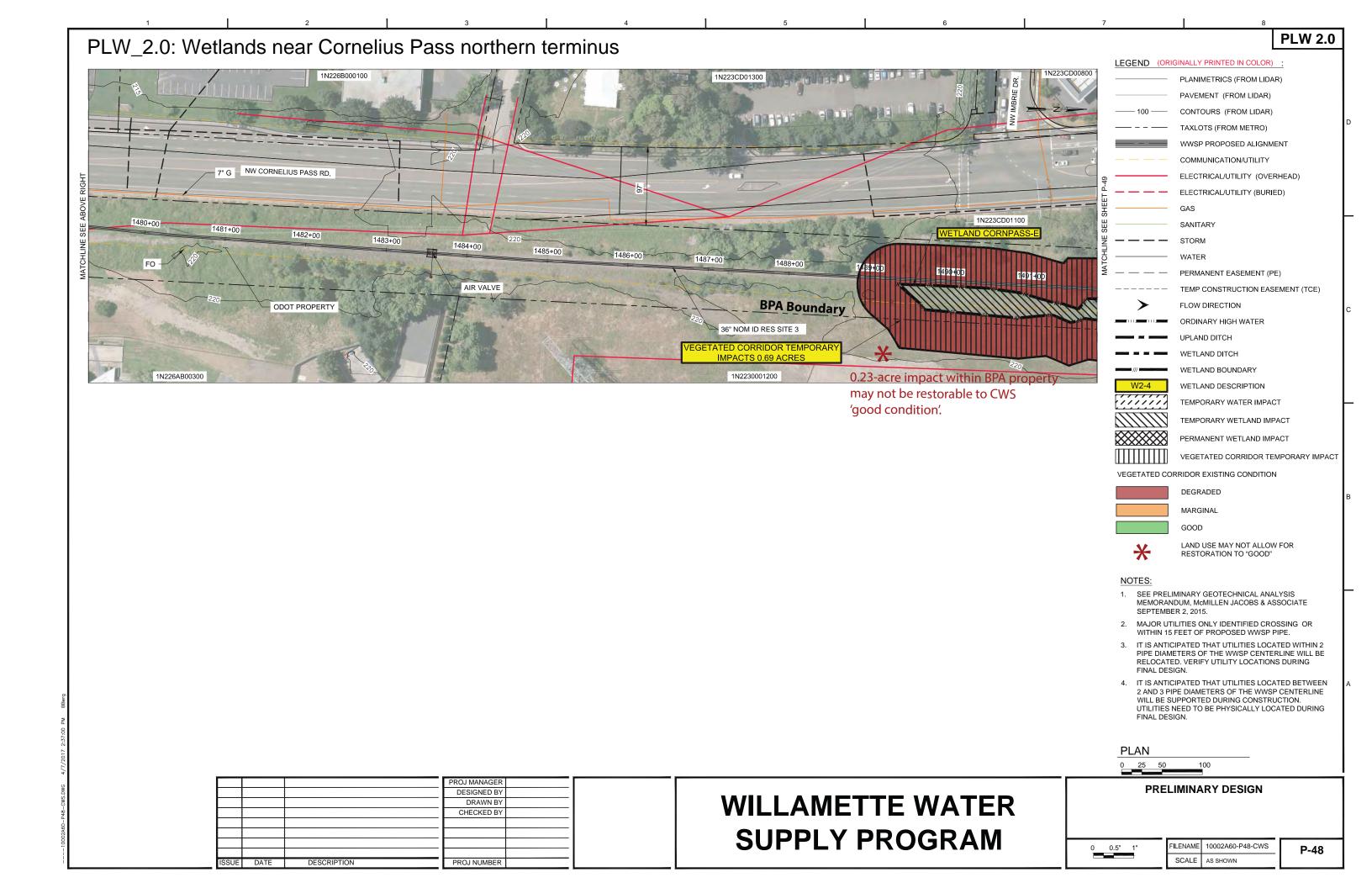
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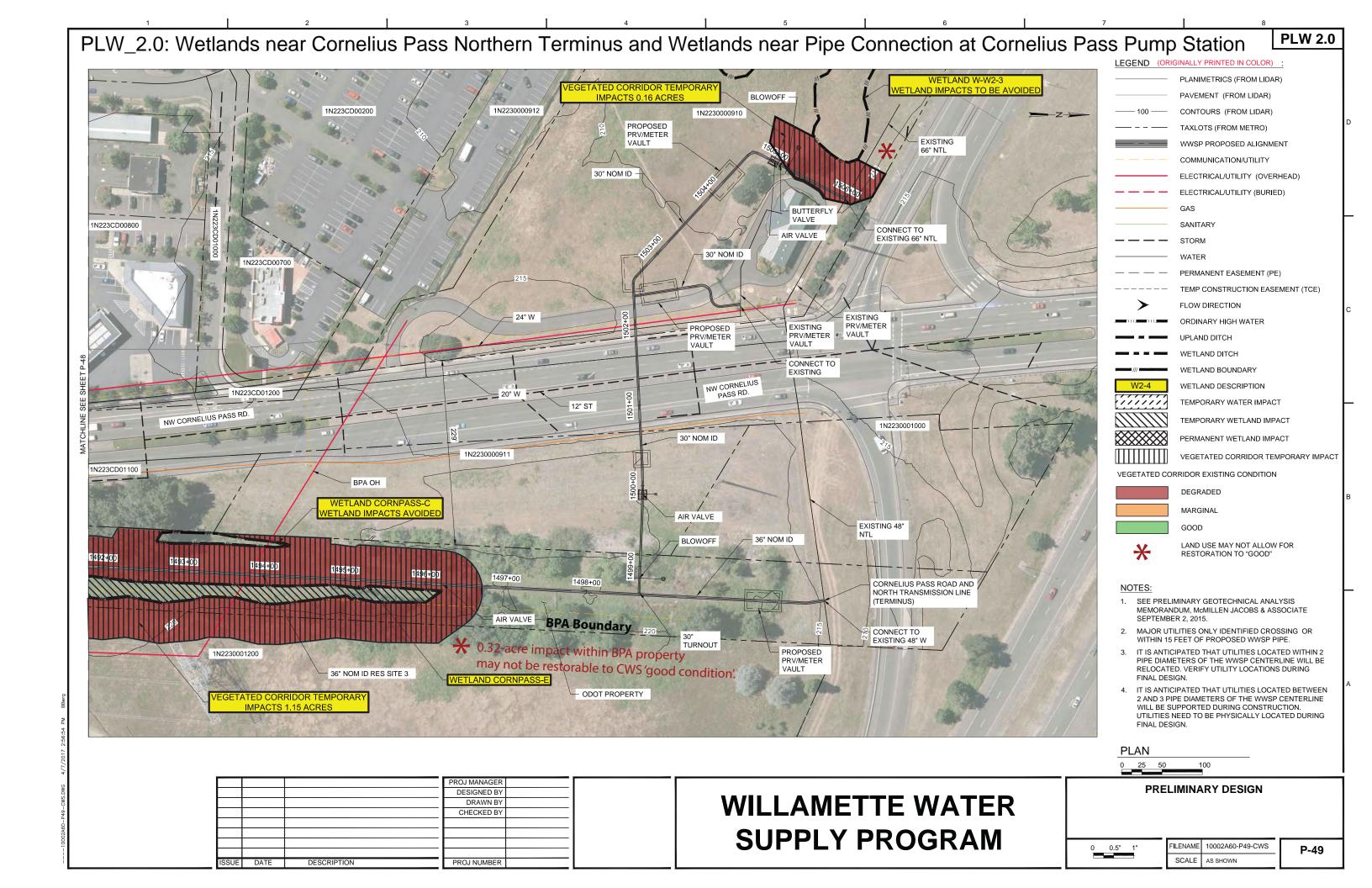


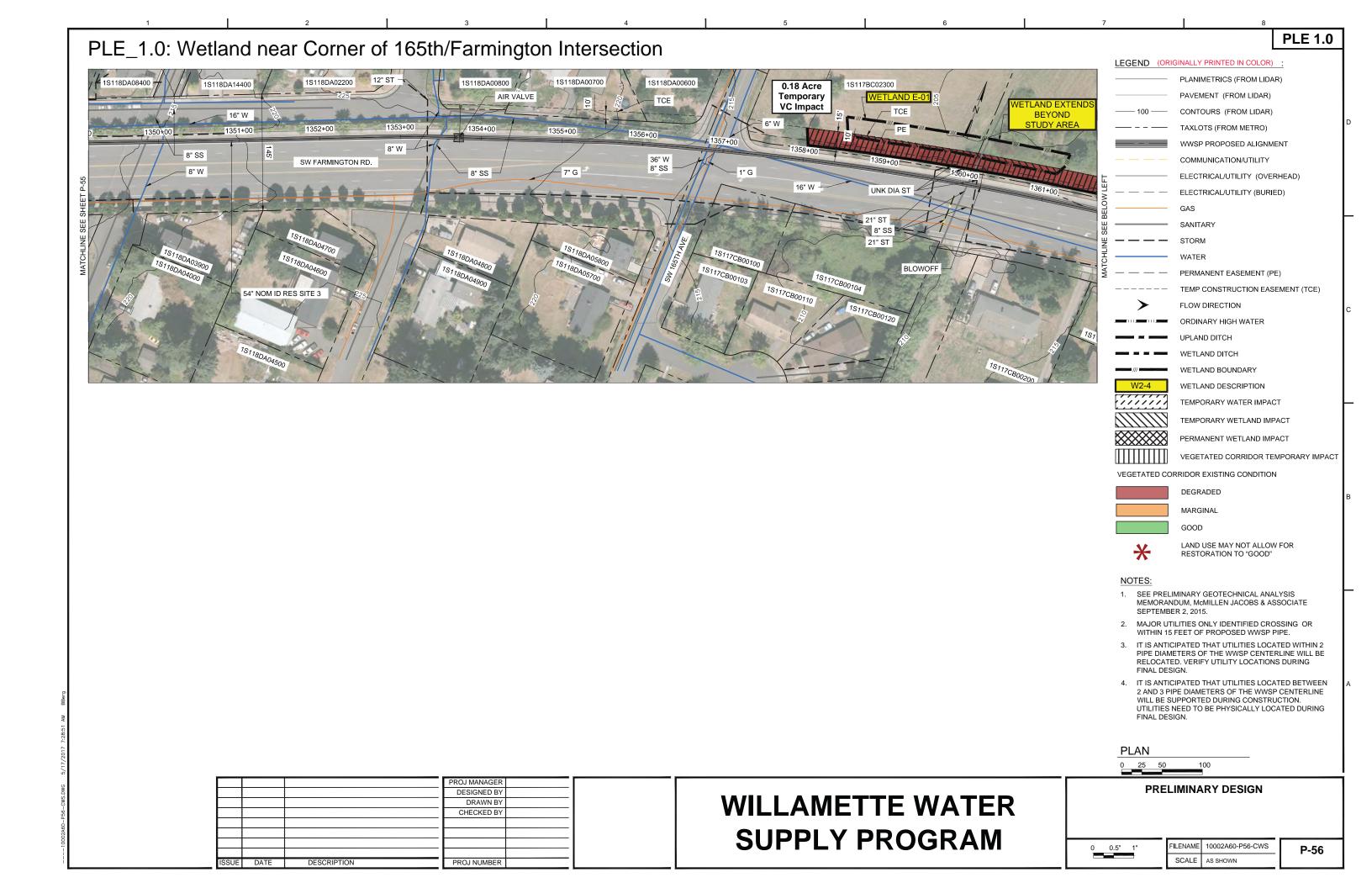


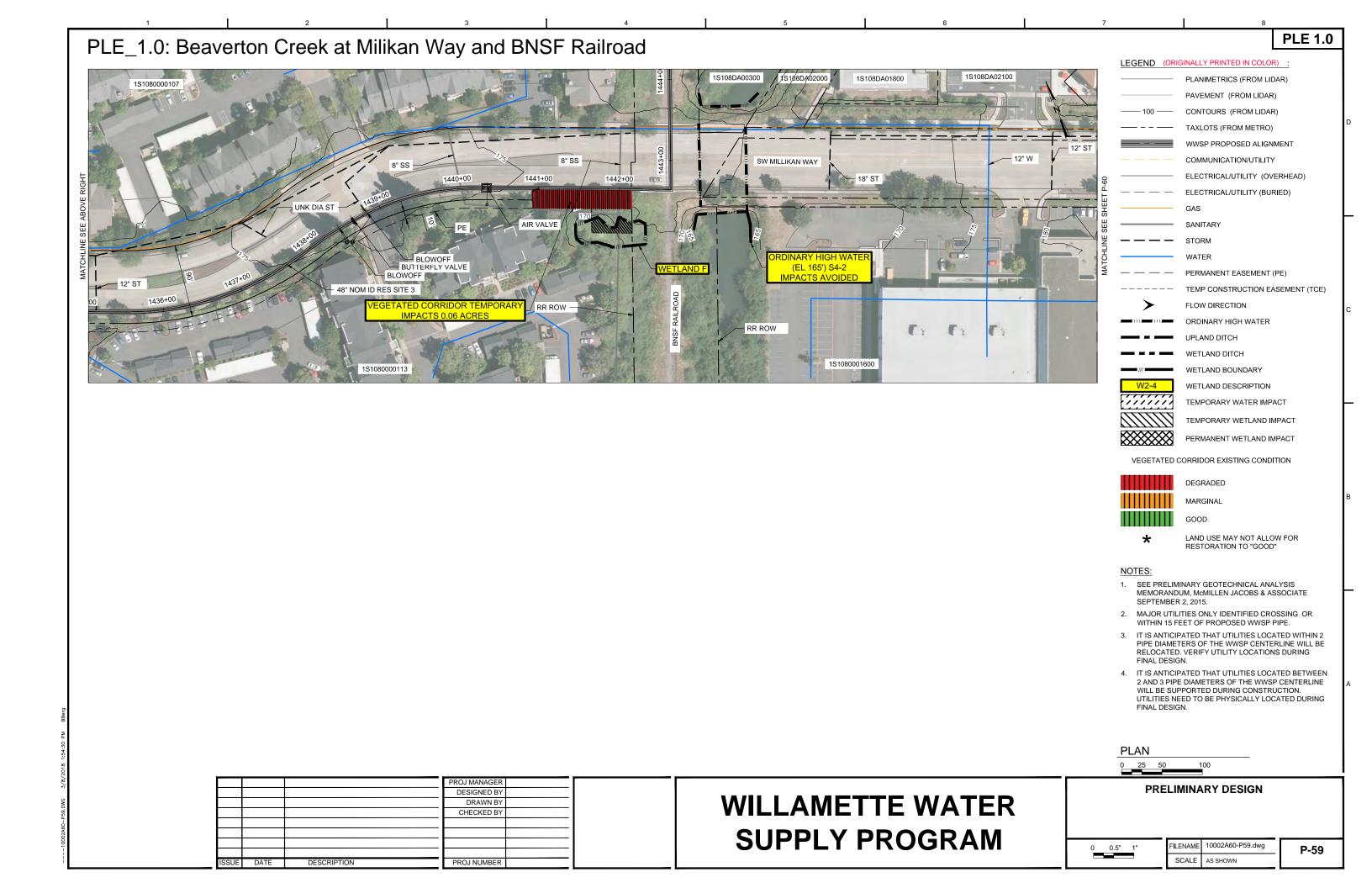


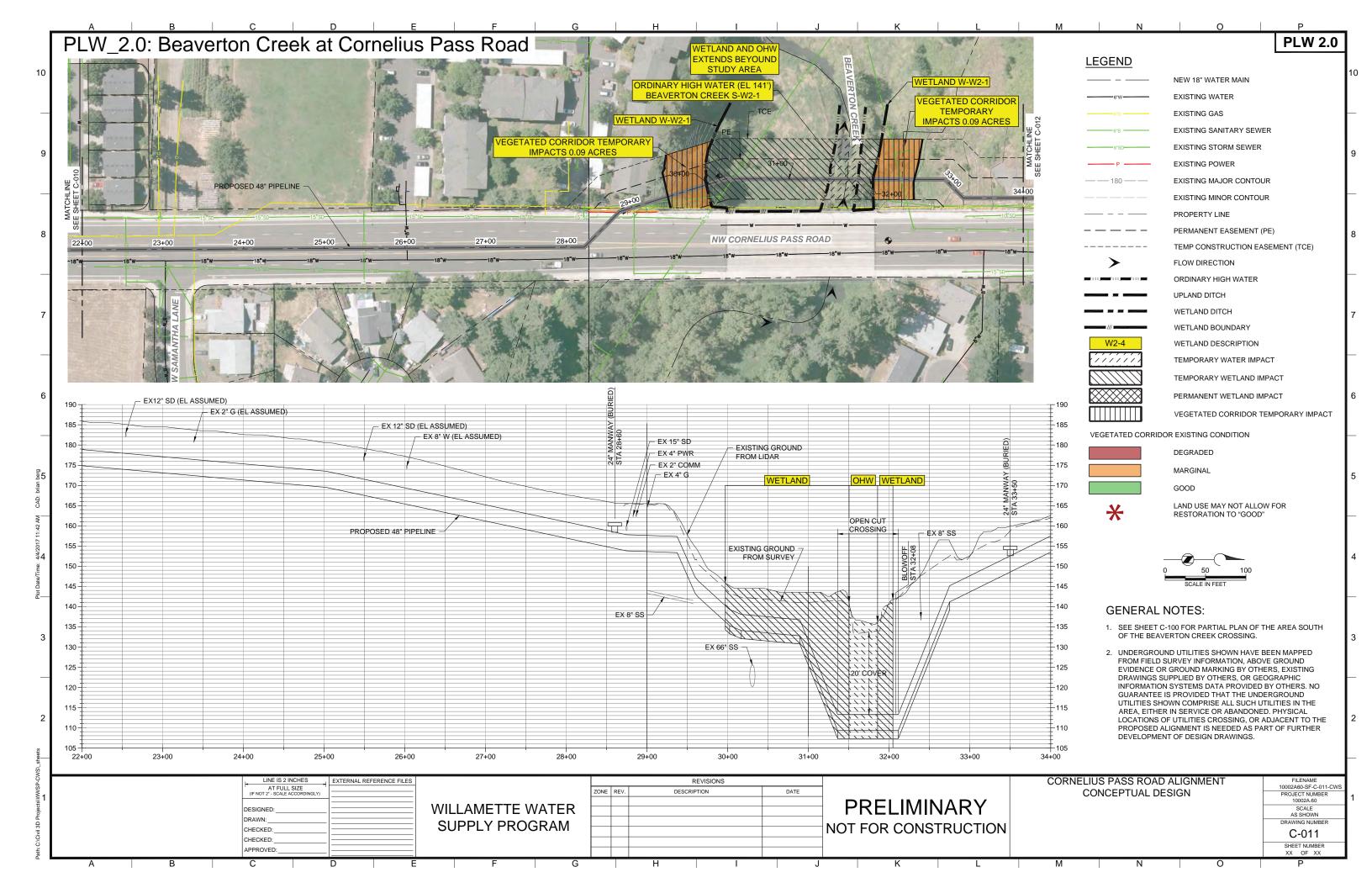


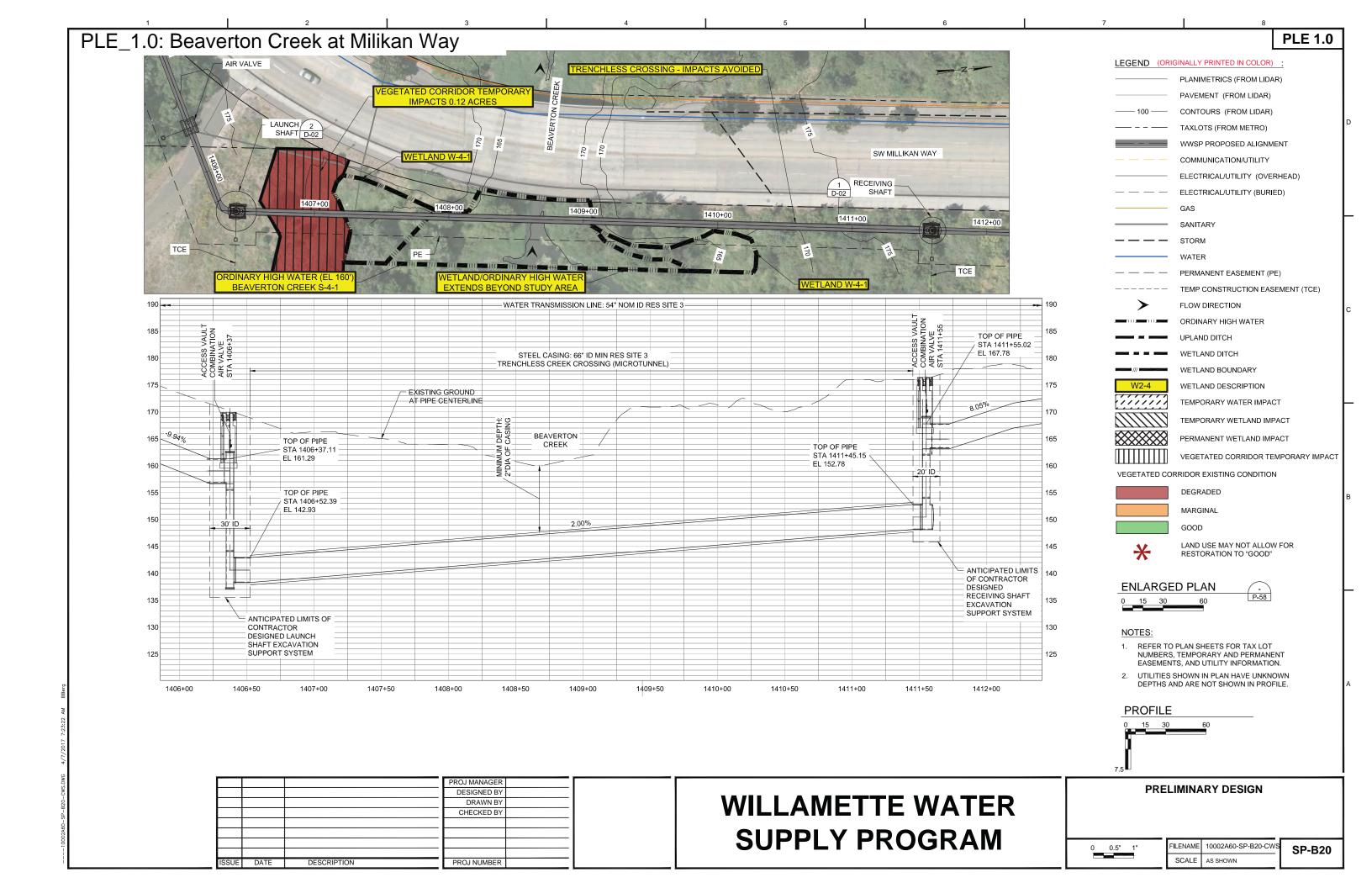


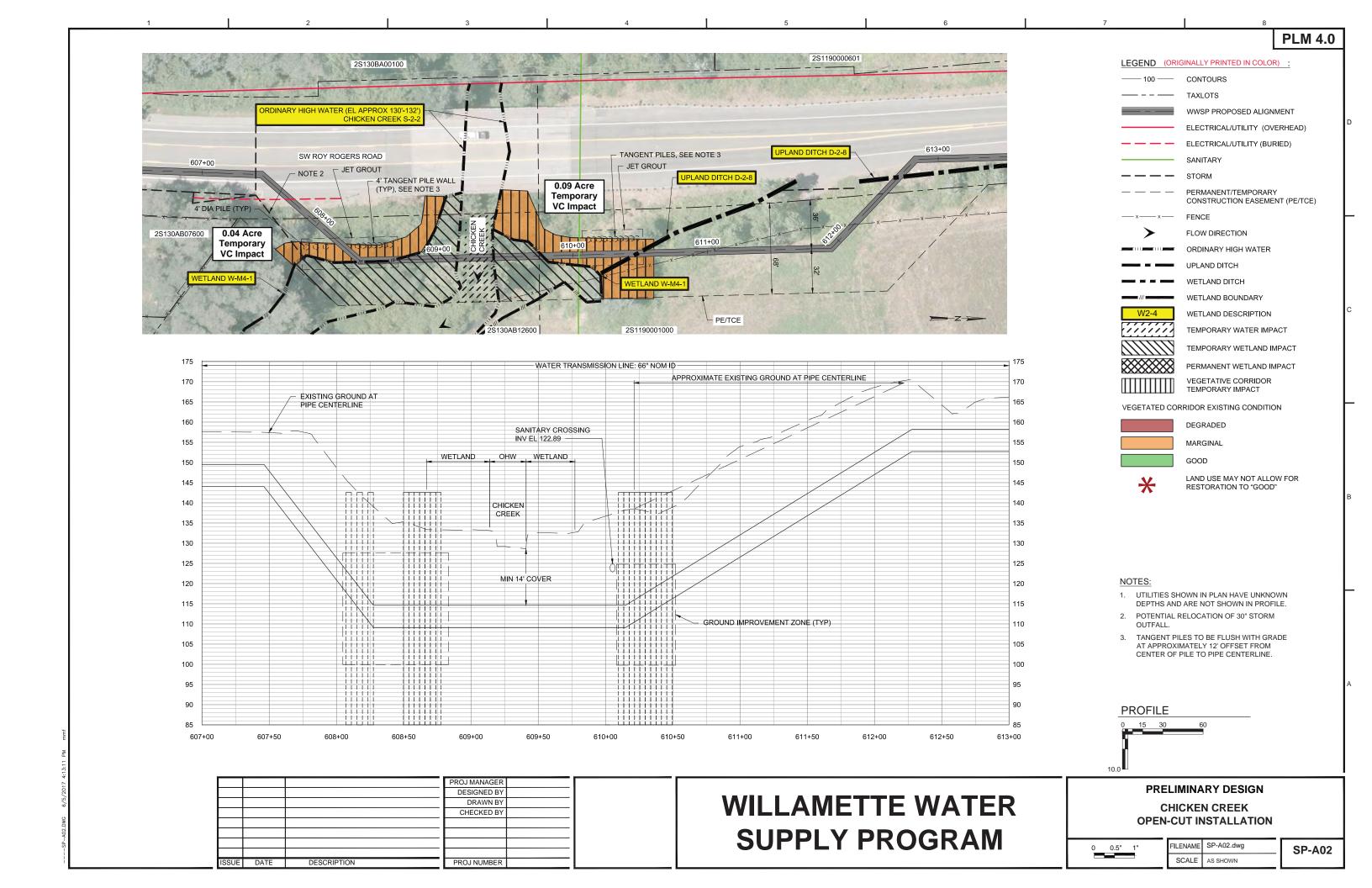












Attachment E Table of VC Impacts

Attachment E: WWSS Water Quality Sensitive Area and Vegetated Corridor crossings within CWS Service Area

Work Package; Sheet Number	Location/WQSA/setting	Delineaton Feature ID's	Planned Crossing Method or Activity	Impacts to VC**	Schedule for Construction	Tax Lots	VC Condition	restoration to in place to CWS "good condition" ?
PLM_4.2; P-08	Jurisdictional stormwater management pond in-line on unnamed Creek	124th-B	Open trench	0.20 acre Temporary	2020 - 2022	2S128A000300	marginal; impact to landscaping	Y
PLM_4.3; SP-A02	Chicken Creek at Roy Rogers Road	S2-2 and W-M4-1	Open trench	0.09-acre temporary	2023-2024	2S11900010000, 2S130AB12600	marginal	Y
PLM_5.1; P-20	Creek North of Bull Mountain Road	S-M5-5	Trenchless	0.06-acre temporary	2018 - 2019	2S1060002900, 2S1060001500	marginal	Y
PLM_5.2; P-22**	Creek Crossing at Scholls Ferry Road east of Vandermost Road* private farm use	S2-5 and S2-6	Open trench	0.25-acre temporary**	2021 -2023	2S1060000600	marginal	Υ
PLM_5.0; P-23	Wetland Crossing at Scholls Ferry Road west of Vandermost Road* private farm use	S-26	Open trench	0.29-acre temporary	2021 -2023	2S2010000100	degraded	N
PLM_5.2; P-24	Wetland at Tile Flat Road/Kobbe Drive* VC is private grove of trees	W-M5-9	Open trench	0.20 acre temporary	2021-2023	2S2010000200, 1S2360000200, 2S2010000800	0.13 ac marginal 0.7 ac degraded	Y
PLW_1.3; P-33-34	Ag wetland along Rosedale Road* VC includes private lawn	W-W1-1	Open trench	0.09 acre temporary	2019-2021	1S223Ac02800	degraded	N
PLW_1.3; P-34	Unnamed Seasonal Drainage North of Rosedale Road*	W-W1-5, S-W1-2	Open trench	0.18 acre temporary	2019-2021	1S2230001401	marginal	Y
PLW_1.3; P-35	Unnamed Tributary to Butternut Creek*	PHS-C1	Open trench	0.24 acre temporary	2019-2021	1S2140001900	good	Y
PLW_1.2; P-40	Reedville Creek at Cornelius Pass Road VC includes private pasture	W-W1-4	Trenchless	0.14 acre temporary	2018-2019	1S202CC0100	degraded	N
PLW_2.0; C-011**	Beaverton Creek at Cornelius Pass Road VC includes undeveloped floodplain	W-W2-1 and S-W2-1	Open trench	0.18 acre temporary**	2022-2024	1N235CD00900 1N235CD01000 1N235CD01100	marginal	Y
PLW_2.0; C-013	Rock Creek at Cornelius Pass Road, VC includes undeveloped floodplain	W-W2-2 and-S-W2-2	Open trench	0.26 acre temporary	2022-2024	1N2350008300 1N235CA07300	degraded	Y
PLW_2.0; P-48-49	Wetlands near Cornelius Pass Rd northern terminus (east side of Cornelius Pass) VC includes BPA property and powerline crossing.	CornPass-C and ConPass-E	Open trench	1.84 acre temporary	2022-2024	1N2230001200	degraded	1.29 acre of the 1.84 acre impact can be restored
PLW_2.0; P-49	Wetlands near pipe connection at existing Corn Pass pump station VC includes landscaped area	W-W2-3	Open trench	0.16 acre temporary	2022-2024	1N223000910	degraded	N
PLE_1.0; P-56	Wetland at NW Corner of 165th/Farmington intersection, VC impact to roadside landscaping	E-01	Open trench	0.18- acre temporary	2020-2023	1S117BC02300	degraded	Y
PLE_1.0; SP-B20	Wetland at Beaverton Creek at Millikan Way; VC impact to private pasture		Trenchless bore pit	0.12 acre temporary	2020-2023	1S1080000501	degraded	Y
PLE_1.0; P-59	Beaverton Creek at Millikan Way and BNSF RR, VC impact to abandoned rail ROW	S4-2	open trench	0.06-acre temporary	2020-2023	1S1080002800	degraded	Υ
Totals				4.54 Acre				3.31 acre can be restored in place

^{*} Located within South Cooper Mountain and South Hillsboro Plan Areas, which are not currently within the CWS service area, but are likely to be annexed before pipeline construction occurs.

^{**} denotes locations where the temporary disturbance corridor will exceed CWS 50-foot limit.

NOTE: off-site mitigation will be required for 1.23 acre of impact

Attachment F Site Restoration Memorandum





DATE: February 28, 2017

TO: Niki Iverson

Willamette Water Supply Program (WWSP)

FROM: Ethan Rosenthal

David Evans and Associates, Inc. (DEA)

SUBJECT: Willamette Water Supply Program—Conceptual Post-Construction Site Restoration Plan

CC: Sarah Betz, DEA and Jill Chomycia, MWH

Introduction

This memorandum provides a conceptual post-construction site restoration plan for proposed pipeline resources crossings (i.e., wetlands, creeks, and riparian areas) associated with the Willamette Water Supply Program (Program). This plan is considered conceptual and intended to provide overall site restoration guidance, specifically site revegetation guidance, along proposed pipeline construction corridors. Site specific resource crossing restoration design work will be required as part of final design for each Program work package and will need to take into consideration local site conditions, engineering constraints, local regulatory requirements (e.g., Clean Water Services (CWS) and local land use code requirements), and conditions associated with any issued Program wide permits (e.g., US Army Corps of Engineers 404 permit, Department of State Lands removal-fill permit).

Site Restoration Concept

Typical Planting Plan

The site restoration concept provides planting plans for disturbed riparian and wetlands areas at proposed resource crossings (Attachment 1). The Program has established planting restrictions in proximity to the pipe to avoid potential risks of disturbance and damage to the pipe due to plant roots. This results in the following planting zones:

- **Restricted Zone:** This is typically a 12-foot-wide corridor over the pipe in which only shallow rooting vegetation may be planted. An exception is along stream banks where the pipe will be buried deeper and medium rooting vegetation will be allowed.
- **Safety Zone:** This consists of the permanent easement area beyond the Restricted Zone. Medium rooting vegetation is allowed in this zone.
- Temporary Easement: Temporary easement areas may be planted with deep rooting vegetation.



Planting Plan Exceptions

Conceptual planting plans are provided in Attachment 1 and represent the typical planting plan for the majority of resource crossings. However, there are a few exceptions where the typical planting plan may be adjusted to accommodate current land use and land owner needs. Exceptions occur in areas of existing managed pasture or other agricultural wetlands.

Planting Plan by Resource Crossing

Attachment 2 provides a table listing of each crossing and whether or not the typical plan is likely to be applied. The presence of existing utilities at some locations could also result in modifications to the typical planting plan; however, although mentioned in some instances, this is beyond the level of detail provided in this conceptual plan and will be addressed during the final design stage for each work package.

Planting Densities

Planting densities shall be based on CWS design guidelines regardless of jurisdiction, unless local jurisdiction requirements specify otherwise or site specific habitat conditions warrant adjustments to CWS guidelines. The intent of CWS plant density guidelines is to assure the establishment of a dense cover by native plantings, with the understanding that some plantings will die off naturally.

Irrigation

Irrigation is not required by this plan unless required by the respective local jurisdiction or desired by the Partners to promote plant establishment. Success criteria described below allow for a 20-percent mortality rate.

Invasive Species Control

Most project crossings currently contain extensive coverage by invasive species, both at and adjacent to the crossing locations. The most prominent invasive species include Himalayan blackberry (*Rubus armeniacus*), reed canarygrass (*Phalaris arundinacea*), and English ivy (*Hedera helix*). Non-native pasture grasses are also ubiquitous throughout the project area. It is not reasonable to completely remove and eradicate these species from the project area. However, the Program shall be responsible for controlling such species within reason, so as to allow successful establishment of native plantings during the monitoring period described below.

Success Criteria

The following success criteria are proposed:

Areas with Native Plantings

- 1. For areas in which the typical or similar native plantings are proposed, tree and shrub survival will at a minimum be 80 percent of the initial installed total at each crossing (e.g. not on a parcel by parcel breakdown but for the entire crossing) by the end of the monitoring period. Native volunteer recruits may be included in plant counts.
- 2. For areas in which the typical or similar native plantings are proposed, invasive species shall be controlled to prevent them from smothering or otherwise preventing the successful establishment of planted native species during the monitoring period.



Managed Pasture Areas or Similar

3. Areas of managed pasture that will be replanted to pasture shall at a minimum have 90-percent coverage after the first growing season.

Areas of cropland shall be restored in accordance with landowner agreements. Success criteria, which are intended to serve regulatory requirements, are not included for croplands.

Monitoring and Reporting

Monitoring and reporting of all areas receiving native plantings shall occur for a minimum of three years post installation, which is the typical minimum requirement of the USACE and DSL. Individual jurisdictions may require longer monitoring periods. If plantings are unsuccessful, then permitting agencies may require new plantings and the monitoring period to be extended. Areas receiving pasture seeding shall only be monitored for one year (as-built plus end-of-year monitoring), assuming successful plant establishment. Monitoring and reporting for cropland areas are not included as part of this plan, which is intended for regulatory purposes.

The following monitoring schedule is proposed for areas receiving native plantings:

Monitoring	Protocol	Timing
As-built monitoring	Total plant count	Within 2 weeks of planting
Year 1	Total plant count	Summer to early Fall following initial planting season
Year 2	Total plant count	Summer to early Fall
Year 3	Total plant count	Summer to early Fall

A monitoring report or memo shall be prepared for each monitoring event. Monitoring shall compare findings relative to the success criteria outlined in this memorandum or as required by authorized permits. Site photos shall be taken and included in monitoring reports.

Attachments

Attachment 1: Typical Site Restoration Plans for Wetland and Riparian Areas Attachment 2: Table 1: Site Restoration by Resource Crossing

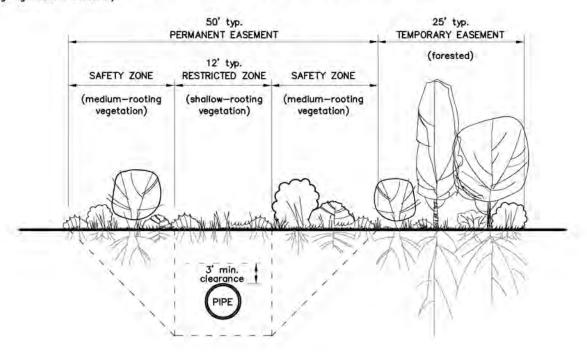
 $P:\T\TVWD00000008\0600INFO\0670Reports\Site\ Revegetation\ Memo\Final\2017-02-28\ Site\Restoration\Memo.docx\Constraints\Con$



Attachment 1: Typical Site Restoration Plans for Wetland and Riparian Areas

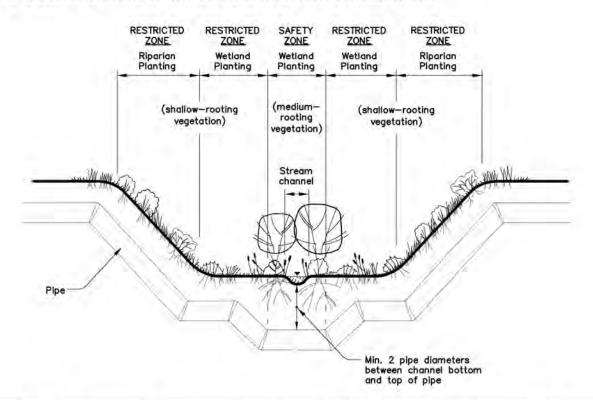
TYPICAL SITE RESTORATION IN WETLAND AND RIPARIAN RESOURCE CROSSINGS

- See plant communities for Wetland Areas and Riparian Areas on sheets 2 and 3. Refer to Crossings spreadsheet for areas where exceptions to typical site restoration apply (e.g. agricultural wetlands).



TYPICAL PROFILE ALONG RESTRICTED ZONE

- See plant communities for Restricted Zones and Safety Zones on sheets 2 and 3. Refer to Crossings spreadsheet for areas where exceptions to typical site restoration apply.



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Willamette Water Supply Our Reliable Water

RESOURCE CROSSING SITE RESTORATION PLAN

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WILLAMETTE WATER SUPPLY PROGRAM

TYPICAL SITE RESTORATION IN WETLANDS

WETLAND PLANT COMMUNITIES, TYPICAL *

	Common Name	Botanical Name	Plant Category
	Slough Sedge	Carex obnupta	Herb
	Spreading Rush	Juncus patens	Herb
	Small Fruited Bulrush	Scirpus microcarpus	Herb
	Creeping Spike Rush	Elocharis palustris	Herb
	Tufted Hairgrass	Deschampsia cespitosa	Grass
	Meadow Barley	Hordeum brachyantherum	Grass
	Rice Cutgrass	Leersia oryzoides	Grass
	Spike Bentgrass	Agrostis exarata	Grass
Safe	ety Zone" (medium-rootin	g vegetation) WETLAND	
	Common Name	Botanical Name	Plant Category
	Swamp Rose	Rosa pisocarpa	Shrub
	Douglas Spirea	Spirea douglasii	Herb
	Redtwig Dogwood	Cornus sericea	Herb
	Pacific Ninebark	Physocarpus capitatus	Herb
	Small Fruited Bulrush	Scirpus microcarpus	Herb
	Slough Sedge	Carex obnupta	Herb
	Tufted Hairgrass	Deschampsia cespitosa	Grass
	Meadow Barley	Hordeum brachyantherum	Grass
	Rice Cutgrass	Leersia oryzoides	Grass
	Spike Bentgrass	Agrostis exarata	Grass
Tem	porary Easement" (forest	ed) WETLAND	
	Common Name	Botanical Name	Plant Category
	Red Alder	Alnus rubra	Tree
	Douglas Hawthorn	Crataegus douglasii	Tree
	Oregon Ash	Fraxinus latifolia	Tree
	Pacific Willow	Salix lasiandra	Shrub
	Pacific Ninebark	Physocarpus capitatus	Shrub
	Red-osier Dogwood	Cornus sericea	Shrub
	Snowberry	Symphoricarpos albus	Shrub
	Slough Sedge	Carex obnupta	Herb
		- 100 - 400 - 50 - 50	1000 000
	Dewey's Sedge	Carex deweyana	Herb
	Dewey's Sedge Small Fruited Bulrush	Scirpus microcarpus	Herb Herb

^{*} Typical plant communities. Species substitutions may occur during final design so long as substitute species are listed as native by Clean Water Services, Metro, or City of Portland plant lists and are consistent with the proposed habitat type.

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PLOT DATE AND TIME:

TYPICAL SITE RESTORATION IN RIPARIAN AREAS

RIPARIAN PLANT COMMUNITIES, TYPICAL *

	Common Name	Botanical Name	Plant Category
	Snowberry	Symphoricarpos albus	Shrub
	Kelsey's Dwarf Red-osier Dogwood	Cornus sericea 'Kelseyi'	Dwarf shrub
	Western Swordfern	Polystichum munitum	Groundcover
	Dewey's Sedge	Carex deweyana	Herb
	Bigleaf lupine	Lupinus polyphillus	Herb
	Yarrow	Achillea mellefolium	Herb
	Canada Goldenrod	Solidago elongata	Herb
	Spike Bentgrass	Agrostis exarata	Grass
	Blue Wildrye	Elymus glaucus	Grass
	Native California Brome	Bromus carinatus	Grass
	Common Name	Botanical Name	Plant Category
	Vine maple		_
	Red elderbery	Acer circinatum Sambucus racemosa	Shrub Shrub
	Snowberry	Symphoricarpos albus	Shrub
	Salmonberry	Rubus spectabilis	Shrub
	Swamp Rose	Rosa pisocarpa	Shrub
	Dewey's Sedge	Carex deweyana	Herb
	Bigleaf lupine	Lupinus polyphillus	Herb
	Spike Bentgrass	Agrostis exarata	Grass
	Blue Wildrye	Elymus glaucus	Grass
	Native California Brome	Bromus carinatus	Grass
Tem	porary Easement" (forested) RIF		01033
	Common Name	Botanical Name	Plant Category
	Red Alder	Alnus rubra	Tree
	Douglas Hawthorn	Crataegus douglasii	Tree
	Western Red Cedar	Thuja plicata	Tree
	Red Elderberry	Sambucus racemosa	Shrub
	Red-osier Dogwood	Cornus stolonifera	Shrub
	Indian Plum	Oemleris cerasiformis	Shrub
	Snowberry	Symphoricarpos albus	Shrub
	Salmonberry	Rubus spectabilis	Shrub
	Spike Bentgrass	Agrostis exarata	Grass
	Native California Brome	Bromus carinatus	Grass

^{*} Typical plant communities. Species substitutions may occur during final design so long as substitute species are listed as native by Clean Water Services, Metro, or City of Portland plant lists and are consistent with the proposed habitat type.

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Willamette Water Supply Our Reliable Water RESOURCE CROSSING
SITE RESTORATION PLAN

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WILLAMETTE WATER SUPPLY PROGRAM



Attachment 2: Table 1: Site Restoration by Resource Crossing

Work Package	Resource Crossing	Delineation Feature ID's	Resource Description	Apply Typical Revegetation Plan	Notes
RWF 1.0	Willamette River	Willamette River	Steep upland forested bluff leads down to a narrow moderate to gradual sloping flood bench adjacent to open water/channel of Willamette River. OHW extends beyond the channel and onto the floodbench as evidenced by flood deposits, drift lines, and a break between persistent vegetation cover in the herbaceous layer. The intake is located in the river proper, with no above ground structures.	Yes, riparian plantings along slope. See notes.	Plant with forested riparian community. Pipe buried deep enough, no need for planting limitations (i.e. rooting depth).
RWF 1.0	Arrowhead Creek at Arrowhead Creek Lane	Arrowhead Creek	Perennial stream that drains to Coffee Lake Creek. Forested riparian corridor in most areas, but dominated by blackberry at proposed crossing location.	Yes, riparian plantings along slope.	No wetland impacts at this location. Limits of riparian plantings to be determined per City of Wilsonville land use code or top of slope at a minimum.
PLM_1.0	Coffee Lake Creek at Industrial Way/Ore- Pac Avenue	S-M1-1 and W-M1-1	Creek is small and sparsely vegetated in this location. Contains fringe of riverine palustrine emergent wetland dominated by reed canarygrass.	Yes, wetland and riparian plantings.	Limits of riparian plantings to be determined per City of Wilsonville land use code.
PLM_1.0	Tapman Creek at SW Ridder Road	51-2	Highly degraded, ditched section of creek that is a tributary to Coffee Lake Creek. Creek is mostly piped north of Ridder road accept at small pond outlet point, surrounded by parking lot, adjacent to north side of road.	No plantings. All work in existing roadway.	Impacts Avoided
PLM_4.0	WQ facility in line with tributary to Hedges Creek at SW 124th Ave/Tualatin-Sherwood Rd intersection	124th-B	Water detention pond in-line with natural intermittent drainage feature. Outflows are piped from this feature to unknown location but are assumed to make their way to Hedges Greek.	No, see notes.	Replace with existing WQ facility plantings (e.g. cattails) and adjacent landscaping.
PLM_4.0	Rock Creek at Tualatin- Sherwood Road	52-1	Crossing to occur over existing box culverts in roadway. Fairly degraded stream corridor on north side of proposed crossing. Stream is ditched in a ravine formed in part by adjacent development fills. Riparian corridor consists of extensive Himalayan blackberry thickets with some tree canopy. Stream has perennial flow. Flows to the Tualatin National Wildlife Refuge. South side of crossing consists of extensive floodplain with relatively degraded habitat and permitted mitigation site.	No plantings. All work in existing roadway.	Impacts Avoided
PLM_4.0	Chicken Creek at Roy Rogers Road	S2-2 and W-M4-1	Chicken Creek is a perennial stream. Flows to the Tualatin National Wildlife Refuge. Slope wetland with palustrine emergent wetland dominated by invasive reed cananygrass occupies most of the floodplain on north side of creek. Narrower flood bench with forested wetland occurs on south side of creek, with forested riparian community and blackberry thickets continuing along the adjacent steep slope.	Yes, wetland and riparian plantings.	Limits of riparian plantings on south side to be determined per City of Sherwood and CWS code or top of slope at a minimum. North side is per Washington County code.
PLM_4.0	Tualatin River at Roy Rogers Road	S2-3 and W2-3	River crossing adjacent to Tuallatin River National Wildlife Refuge. The refuge consists of managed wet pasture/ag fields in this area. The river has a relatively narrow band of forested riparian vegetation along both banks.	No, see notes.	Impacts Avoided. Staging areas are in upland areas and shall be seeded with erosion control seed mix or planted as agreed to with property owners.
PLM_4.0	Wetland North of Elsner Road	W2-4	Depressional agricultural wetland that floods in winter providing potential winter time waterfowl habitat. Likely connects to Tualatin River off-site to the west of Roy Rogers Road during periods of river flooding, but otherwise likely no direct surface water connection.	Yes, riparian plantings	Wetland area is an agricultural wetland that is plowed annually. Restore per agreement with landowner. Limits of riparian area plantings to be determined per Washington County code.
PLM_5.0	Drainage North of Beef Bend Road #1	S2-4 and W-M5-10	Small intermittent drainage that runs through forested slope wetland in ravine bottom. Ravine slopes are forested.	Yes, wetland and riparian plantings.	Limits of riparian plantings per Washington County code or top of slope at a minimum.
PLM_5.0	Drainage North of Beef Bend Road #2	S-MS-7	Unnamed creek in steep v-shaped ravine with no floodplain in bottom at crossing location. Channel is deeply incised. Creek is perennial but with very minimal flow in summer. Ravine slopes are forested.	No, see notes.	Impacts Avoided. Restoration of upland staging areas to be coordinated with landowner.
PLM_5.0	Agricultural drainage crossing at Roy Rogers Road	9-SM-S	Agricultural drainage ditch mostly on east side of Roy Rogers Road, but small section is exposed on west side before being piped further west through private property.	No, see notes.	Apply erosion control see mix. Impacts are to a very short section of agricultural ditch situated between roadway and development fill.
PLM_5.0	Bridge North of Bull Mountain Road	S-M5-5	Unnamed perennial creek in steep v-shaped ravine with no floodplain in bottom at crossing location. Ravine slopes are forested.	No, see notes.	Impacts Avoided. Restoration of upland staging areas to be coordinated with landowner.
PLM_5.0	Wetland at Scholls Ferry Road	M5-PW1, M5-PW2	Potential agricultural wetlands (hay field) situated in depressions along north side of Scholls Ferry Road.	No, see notes.	Agricultural wetland. Restore per landowner agreement.
PLM_5.0	Creek Crossings at Scholls Ferry Road near Vandermost Road	S2-5 and S2-6	Confluence of two drainages. Eastern drainage is a perennial creek with forested areas on both sides of road, although only a very narrow band of trees on the north side. West drainage near Vandermost Road flows from in-line irrigation pond, then along north side of Scholls Ferry road in ditch, and then flows under road via culvert, continues along south side of road until joins the eastern creek. Stream corridors are fairly degraded although habitat quality appears better on south side of road.	Yes, riparian plantings.	Limits of riparian plantings to be determined per City of Beaverton and CWS code.
PLM_5.0	Wetland at Tile Flat Road/Kobbe Drive	W-M5-9	Small isolated depressional wetland dominated by emergent species bordered by trees. Bordered by roads and pasture.	Yes, wetland and riparian plantings.	Limits of riparian plantings per Washington County code.
PLM_5.0	Wetlands near Intersection of Tile Flat and Grabhorn Roads	W2-7	Emergent wetlands dominated by reed canarygrass bordered by upland pasture. Drains west via an eroding channel through culverts under Grabhorn Road.	Yes, wetland and riparian plantings.	Limits of riparian plantings per Washington County code.

Work Package	Resource Crossing	Delineation Feature ID's	Resource Description	Apply Typical Revegetation Plan	Notes
PLM_5.0	McKernan Creek at Grabhorn Road	S2-7 and W-M5-8	Perennial creek parallels east side of road before crossing the road via a culvert. Forested/scrub-shrub wetlands border the creek on east side of road. Lower quality riparian corridor found on west side of road.	Yes, wetland and riparian plantings.	Limits of riparian plantings per Washington County code.
PLM_5.0	Unnamed Seasonal Drainage North of McKernan Creek	D2-43	Seasonal drainage at bend in Grabhorn Road on west side that connects to drainage ditch along east side of road. Drainage ditch may be historic/shifted seasonal channel. Drains to McKernan Creek.	No, see nates.	No earthwork proposed in roadside ditch. Restore adjacent areas with erosion control seed mix or per landowner agreement.
PLM_5.0	Unnamed Seasonal Drainage at Tanabe Property	S-M5-1	Poorly defined seasonal drainage. Bordered by a mix of native forest and invasive Himalayan blackberry thickets.	Yes, riparian plantings.	Limits of riparian plantings per Washington County code.
PLM_5.0	Wetland and small tributary at Clark Hill Road	W-M5-3	Pasture wetland and swale/drainage connected to high quality forested wetland with large trees. Notable beaver activity. Wetland is wet year round. Very poor fish habitat further downstream across Clark Hill Road due to ditching and	No, see notes.	Restore pasture wetland back to pasture per landowner agreement.
PLM_5.0	Agricultural wetland along Clark Hill Road	W-M5-2	Agricultural wetland. Drains to forested wetland on west side of Clark Hill Road.	No, see notes.	Agricultural wetland. Restore per landowner agreement.
PLM_5.0	Agricultural wetland along Farmington Road	W-M5-1	Agricultural wetland planted with willows, potentially as nursery stock.	No, see notes.	Agricultural wetland. Restore per landowner agreement.
PLW_1.0	Agricultural wetland along Rosedale Road	W-W1-1	Agricultural wetland planted to grass, extends into residential front yard.	No, see notes.	Agricultural wetland. Restore per landowner agreement.
PLW_1.0	Unnamed Seasonal Drainage North of Rosedale Road	W-W1-5, S-W1-2	Wetland swale through grazed pasture. Contains a small channel approx. 3 ft wide by 6 inch deep. OHW extends beyond top of bank and is approx. 5 ft wide.	Yes, wetland and riparian plantings.	Limits of riparian plantings per City of Hillsboro and CWS codes.
PLW_1.0	Unnamed Tributary to Butternut Creek	PHS-C1	Forested wetland swale that drains to Butternut Creek beyond the project area.	Yes, wetland and riparian plantings.	Limits of riparian plantings per City of Hillsboro and CWS codes.
PLW_1.0	Butternut Creek	PHS-A	Creek crossing along future Cornelius Pass Road in South Hilsboro development. High quality habitat, meandering creek through wetland floodplain with intact forested riparian corridor.	No, see notes.	Trenchless crossing, impacts avoided. If staging areas cannot avoid riparian zone, then riparian plantings will be needed per City of Hillsboro and CWS code.
PLW_1.0	Reedville Creek at Cornelius Pass Road	W-W1-4	Small creek with forested wetland immediately adjacent on west side of road. Wetland is part of a mitigation site.	Yes, riparian plantings	Trenchless crossing. Restore northern staging area with riparian plantings per City of Hillsboro and CWS code. Southern staging area is in roadway.
PLW_2.0	Beaverton Creek at Cornelius Pass Road	W-W2-1 and S-W2-1	Reed canarygrass dominated floodplain wetlands with perennial creek. Steep slopes to floodplain are forested on south side, but with some clearing from previous utility work. Slopes on north side of creek mostly consist of non-native shrubs and herbs, with limited number of native trees.	Yes, wetland and riparian plantings.	Adjustments may be needed due to existing utilities (i.e., sewer line) adjacent to proposed crossing. Limits of riparian plantings per City of Hillsboro and CWS code.
PLW_2.0	Rock Creek at Cornelius Pass Road	W-W2-2 and-S-W2-2	Perennial creek with narrow fringe of native riparian shrub vegetation. Forested wetland occurs at edge of study area approximately 35 feet from OHW of the creek. Active restoration (i.e. native plantings) has recently taken place and trail is proposed through this area.	Yes, wetland and riparian plantings.	Coordinate potential planting adjustments with City of Hillsboro and Merro at this public park. Limits of riparian plantings per City of Hillsboro and CWS code. Additional plantings may be needed in park per landowner agreement.
PLW_2.0	Wetlands near Cornelius Pass northern terminus (east side of Corn Pass)	Corn Pass-C and Corn Pass-E	Small depressional emergent wetlands adjacent to former rail grade. Generally of low quality due to invasives and surrounding disturbance.	Yes, wetland and riparian plantings.	Check for planting height restrictions due to nearby powerlines. Limits of riparian plantings per City of Hillsboro and CWS code.
PLW_2.0	Wetlands near pipe connection near existing Cornelius Pass pump station	W-W2-3	Wetland pasture mostly dominated by non-native grasses and forbs. Contains non-listed checkermallow species. Bordered by development, but abuts Dawson Creek off-site to the west.	Potentially, riparian plantings. See notes.	Wetlands avoided. Riparian plantings could be required per City of Hilsboro and/or CWS codes.
PLE_1.0	Wetland at NE Corner of 165th/Farmington intersection	E-01	Wetland pasture mostly dominated by non-native grasses.	Yes, wetland and riparian plantings.	Limits of riparian plantings per City of Beaverton and CWS codes.
PLE_1.0	Beaverton Creek at Millikan Way	W4-1 and S4-1	Emergent reed canarygrass dominated wetland floodplain of perennial creek. Near Tualatin Hills Nature Park	Potentially, riparian plantings. See notes.	Trenchless crossing, wetland impacts avoided. If staging in riparian areas, then restore with riparian plantings per City of Beaverton and CWS codes. Staging areas in upland areas and shall be seeded with erosion control seed mix or planted as agreed to with property owners.
PLE_1.0	Beaverton Creek at Millikan Way and BNSF RR	S4-2	Deep and wide channelized creek section.	No, see notes.	Impacts avoided. Feature locate adjacent to, but outside of project limits.

Work Package	Vork Package Resource Crossing	Delineation Feature ID's	Resource Description	Apply Typical Revegetation Plan	Notes
WWSS WTP	Wetland A	¥	Small isolated depressional palustrine scrub-shrub wetland, roughly half of which is surrounded by rocky scipoes and rock overhangs. Dominated by native vegetation including Douglas spirea, Oregon ash, Pacific schapple, slough sedge, swamp rose, and Pacific willow. Bordered by Oregon oak/madrone and Douglas fir habitats.	No, see notes.	Permanent impact to entire wetland.

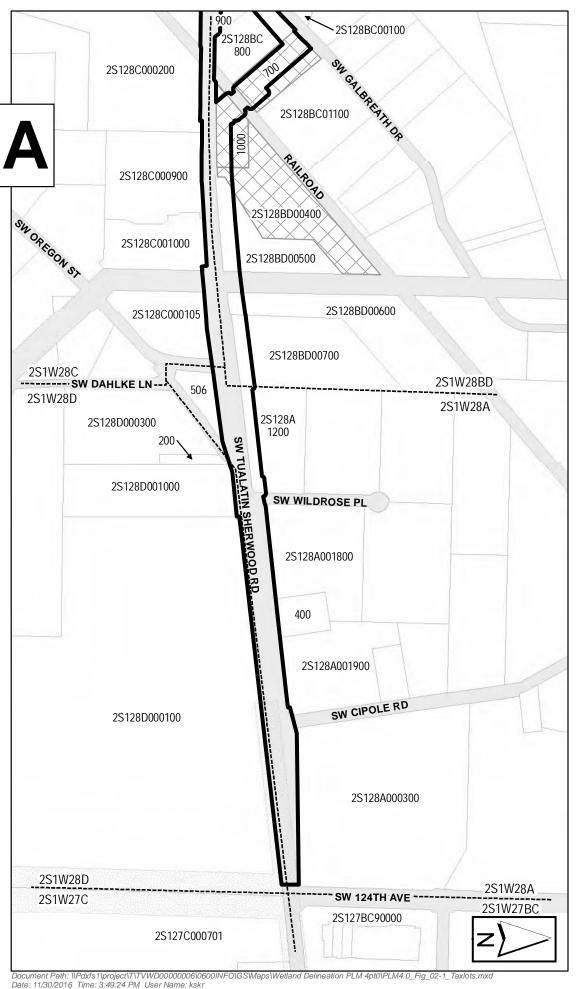
Attachment G Sensitive Areas Certification Form

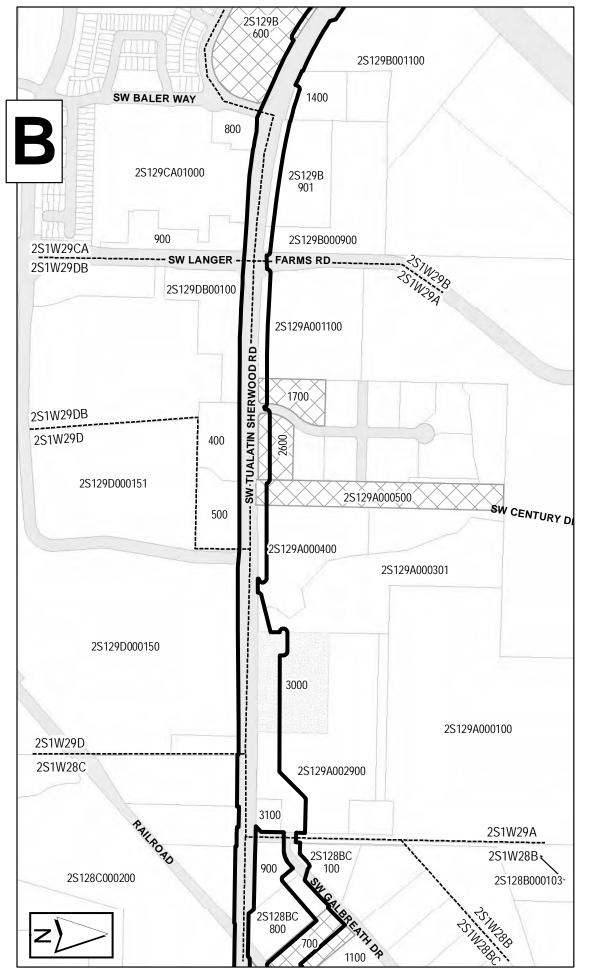
	Sensitive Areas Ce	ertification Form
1.	Property Information (example 1S234AB01400) Tax lot ID(s): See attached tax lot maps Site Address: See attached tax lot maps City, State, Zip: Beaverton, Hillsboro, and Unincorporated WA county. Nearest Cross Street:	2. Owner Information Name: Niki Iverson Company: Willamette Water Supply Program Address: 1500 NW Bethany Boulevard, #305 City, State, Zip: Beaverton, Oregon 97006 Phone/Fax: 503 615-6770 E-Mail: Niki.iverson@hillsboro-oregon.gov
3.	Development Activity (check all that apply) ☐ Addition to Single Family Residence (rooms, deck, garage) ☐ Lot Line Adjustment ☐ Minor Land Partition ☐ Residential Condominium ☐ Commercial Condominium ☐ Residential Subdivision ☐ Commercial Subdivision ☐ Single Lot Commercial ☐ Multi Lot Commercial Other Linear Utility Line Installation	4. Applicant Information Name: John Macklin Company: David Evans and Associates Address: 2100 SW River Parkway City, State, Zip: Portland, Oregon 97201 Phone/Fax: 503 223-6663 E-Mail: jdm@deainc.com
5.	 Check any of the following that apply to this project. ☑ Adds less than 500 square feet of impervious surface. ☑ Does not encroach closer to the Sensitive Area than existing development on the property. ☑ Is not located on a slope greater than 25%. 	6. Applicant Information Name:
7.	Will the project involve any off-site work? Yes No If yes, location and description of off-site work Vegetated Corridor mitigation	
8.	Additional comments or information that may be needed to The project consists of the installation approximately 26 miles of underground water supply property property property in the project consists of the installation approximately 26 miles of underground water supply property property in the project consists of the linear sature of the project, vegetated corridors are reported as areas impacted. Non-standard "programmatic" Site Assessment documentation has been negotiated with CW	Dipe extending from Sherwood to Hillsboro, Oregon. I be temporary. Ed within the alignment, and not for the entirety of each tax lot crossed.



			Clean Water Services File Number				
Sen	sitive Areas Certification Form	(continued)					
	an on-site, water quality sensitive area reconnais ate 4-5/15 & ੴBy Phil Rickus	ssance was completed on: Title Biologist	Company Willamette Water				
	Existence of Water Quality Sensitive Areas (check all appropriate boxes) As defined in the Districts Design and Construction Standards:						
Α	. Water-quality-sensitive areas 🖸 do 🔲 do not	exist on the tax lot.					
	. Water-quality-sensitive areas ☑ do ☐ do not adjacent property.						
С	. Vegetated corridors \square do (4.54 acres impact $_$ s	SF) \square do not exist on the tax le	ot.				
D	D. Vegetated corridors 🖸 do not exist within 200' on adjacent properties, or 🔲 unable to evaluate adjacent property.						
Е	. Impacts to sensitive areas and/or vegetated corrid		off-site				
F.	. If impacts, mitigation is 🔲 On-site 🔲 Off-site	Other both on and off site					
44 6	implified City Assessment containing the following	ving information. (about only i	tome out mitted				
	implified Site Assessment containing the follow		•				
P	lease refer to Design and Construction Standards	17-05 Section 3.02.2 for applicat	tion requirements.				
	Complete Certification Form (2 pages)						
_	Written description of the site and proposed active	vity.					
_	- ' ' '						
	Photographs of the site labeled and keyed to the	e site plan.					
12. S	tandard Site Assessment containing the followi	ing information: (check only ite	ems submitted).				
	lease refer to Design and Construction Standards						
	Complete Certification Form (2 pages)		•				
	Written description per Design and Construction	Standards 17-05 section 3.13.3	3 b. 1				
	Wetland Data sheets						
_	Vegetated Corridor Data sheets						
_	Existing Site Condition Figures						
<u> </u>							
_	1 Toposed Development Figures						
of Clea	ning this form the Owner, or Owner's authorized an Water Services have authority to enter the pr t site conditions and gathering information rela	oject site at all reasonable tin					
	y that I am familiar with the information contain formation is true, complete, and accurate.	ed in this document, and to the	he best of my knowledge and belief,				
Applic	ant:						
	Macklin	Biologist					
Print/T	ype Name	Print/Type Title					
		3/14/2018					
Signati	ure	 Date					







Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 1
Tax Lots

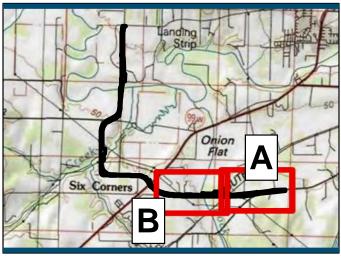
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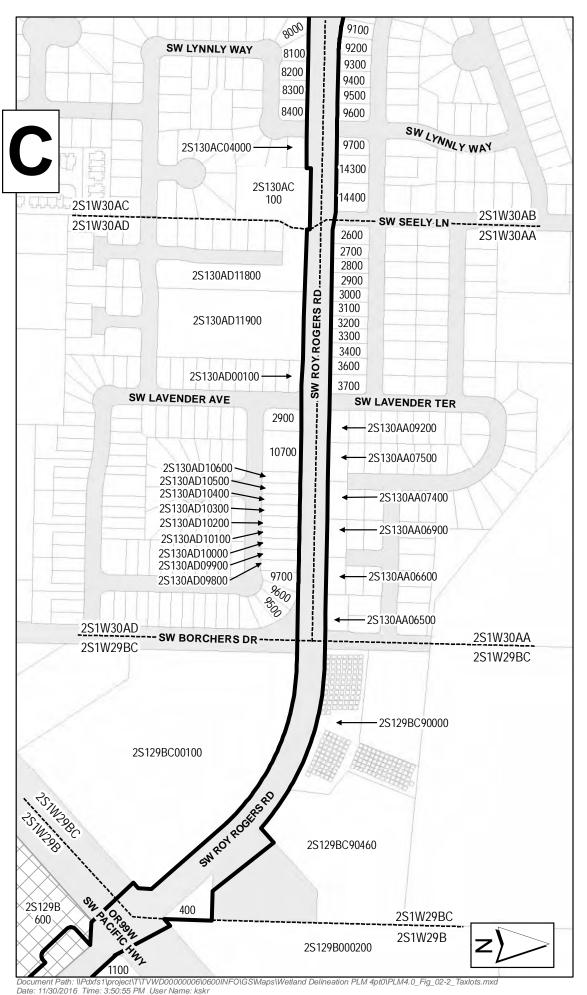
Study Area

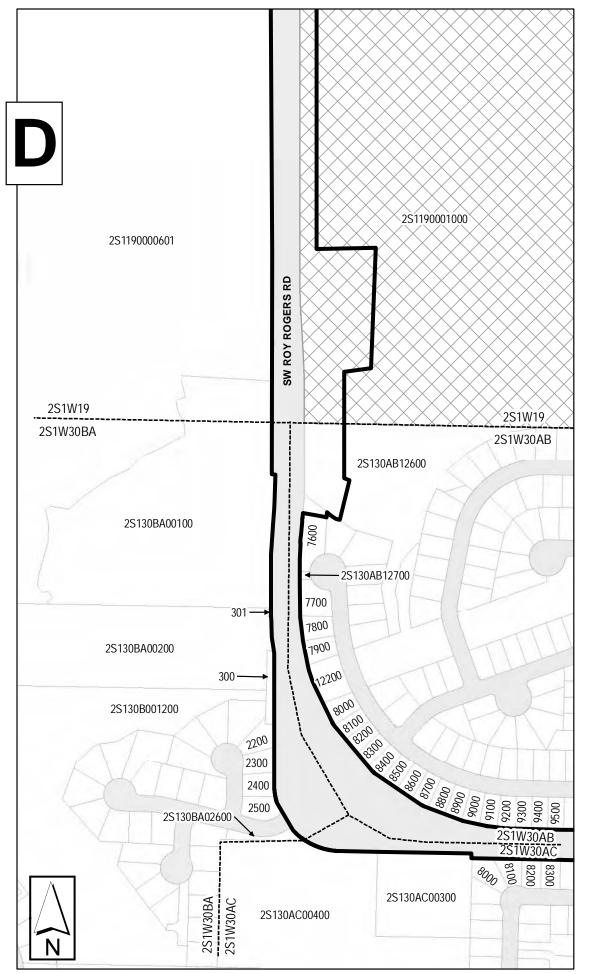
Area delineated by others

No access as of 10/24/2016

Metro RLIS Data. 2016.







Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 2 Tax Lots

Legend

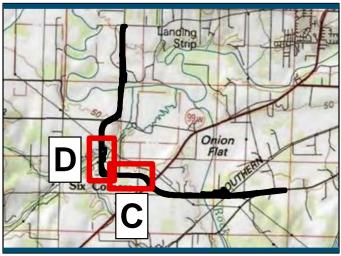
Study Area

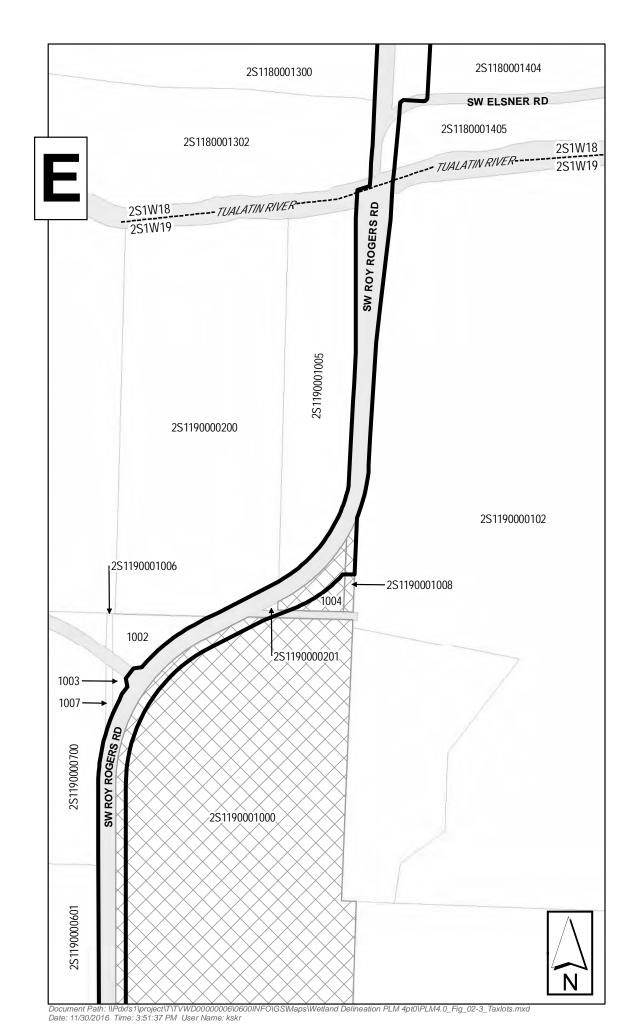
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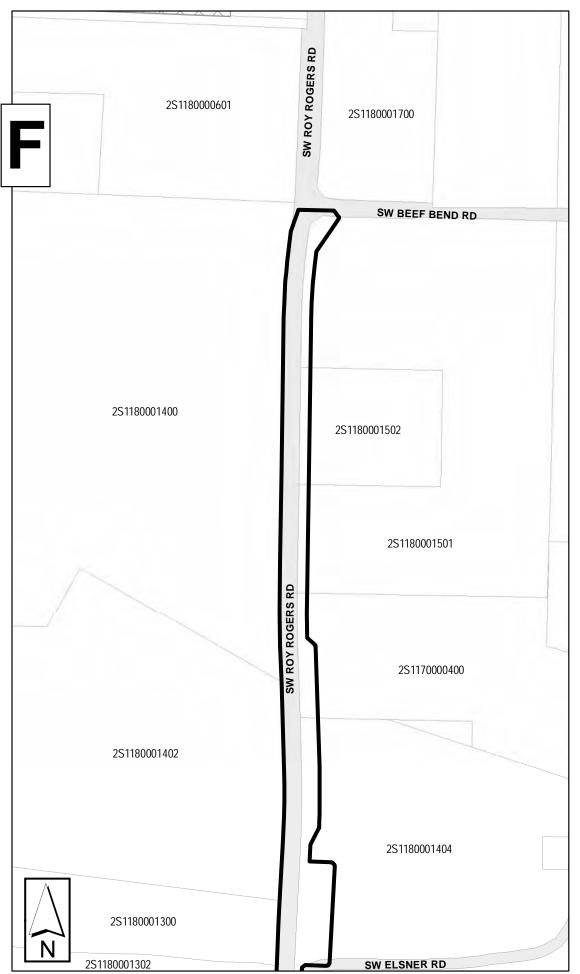
No access as of 10/24/2016

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Metro RLIS Data. 2016.







Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation

Figure 2, Sheet 3
Tax Lots

Legend

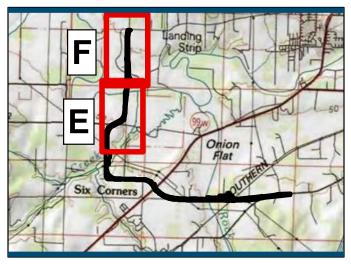
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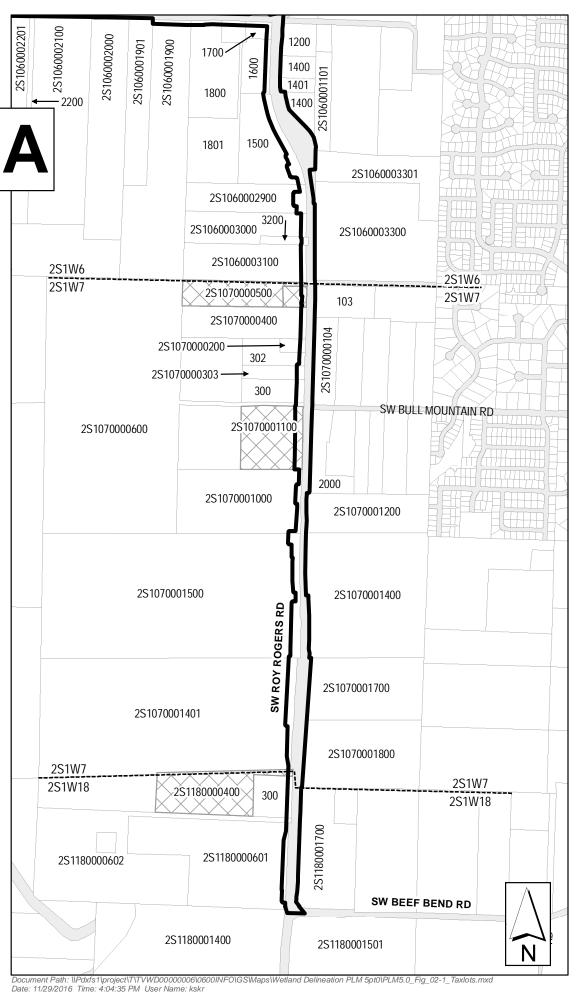
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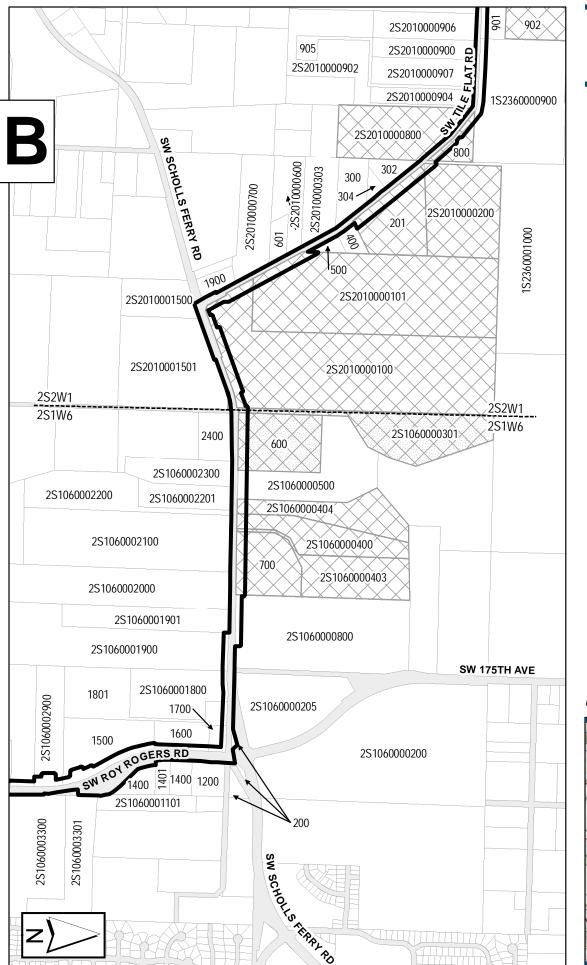
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Metro RLIS Data. 2016.





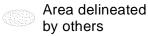


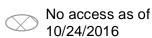
Willamette Water Supply Program Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

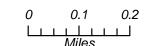
Figure 2, Sheet 1 Tax Lots

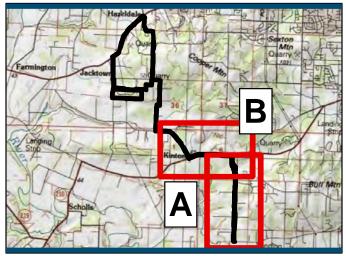
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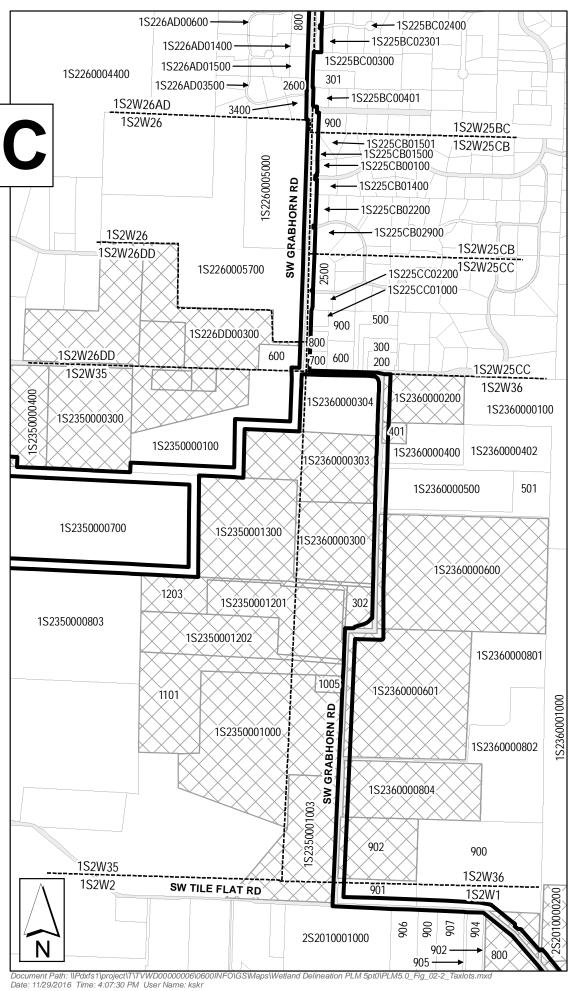
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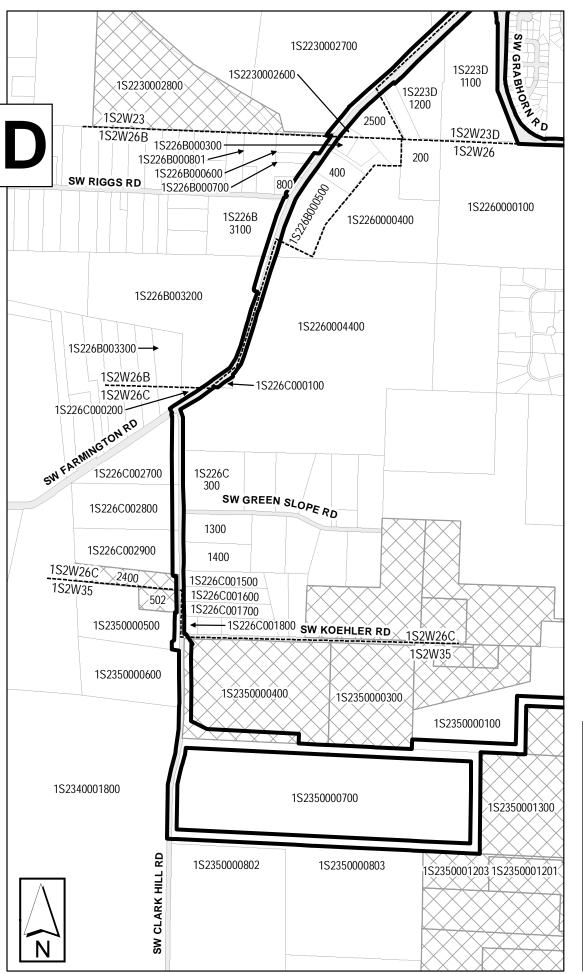










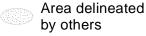


Willamette Water Supply Permitting Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

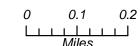
Figure 2, Sheet 2 Tax Lots

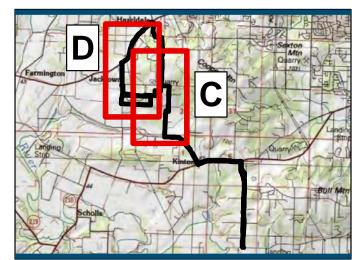
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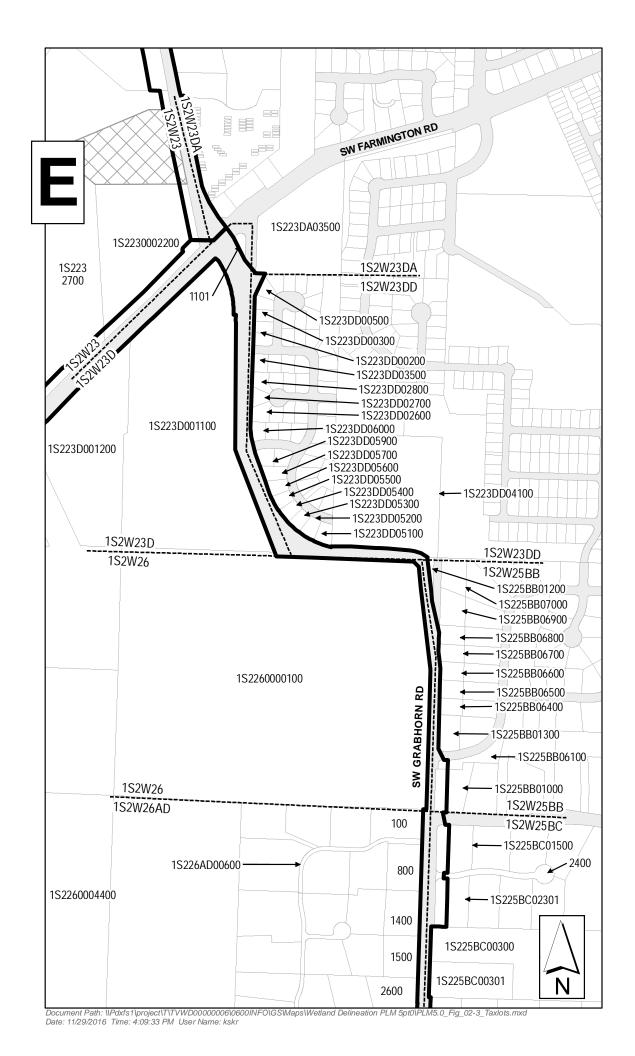
Study Area



No access as of 10/24/2016





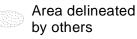


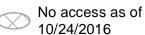
Willamette Water Supply Permitting Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

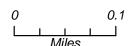
Figure 2, Sheet 3
Tax Lots

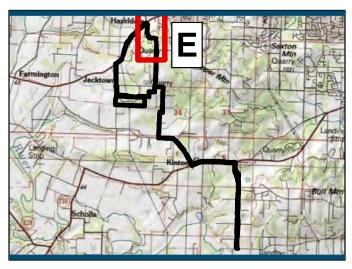
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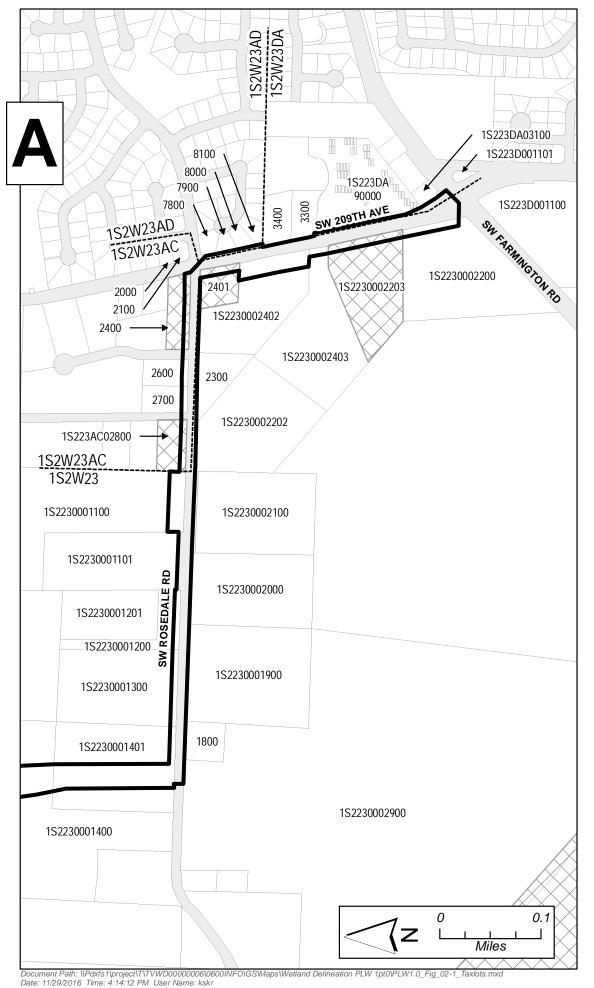
Study Area

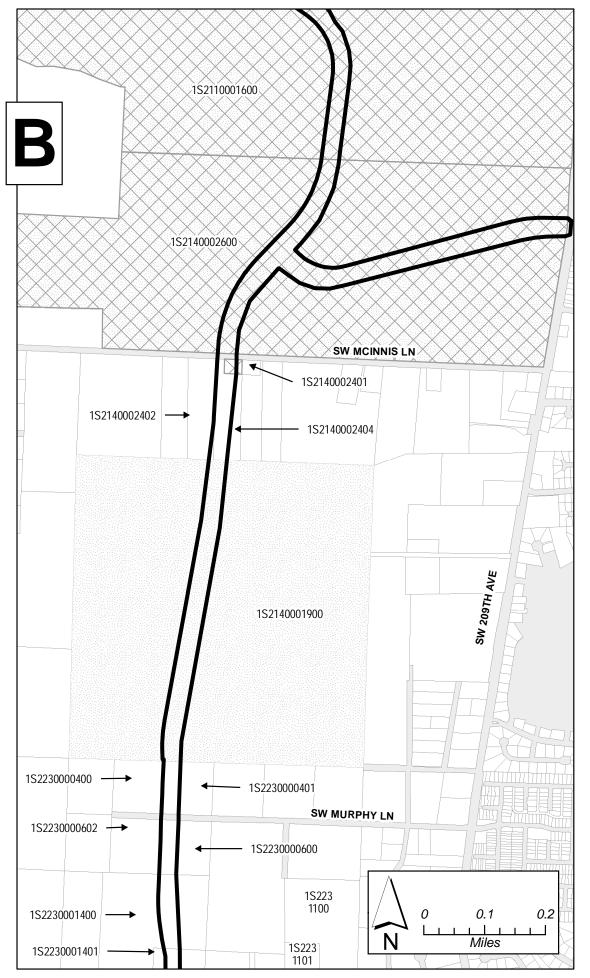












Willamette Water Supply Permitting South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 2
Tax Lots, Sheet 1

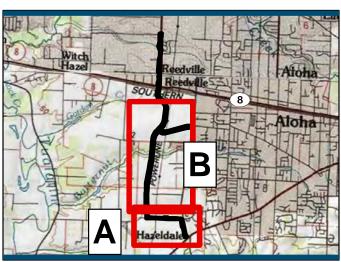
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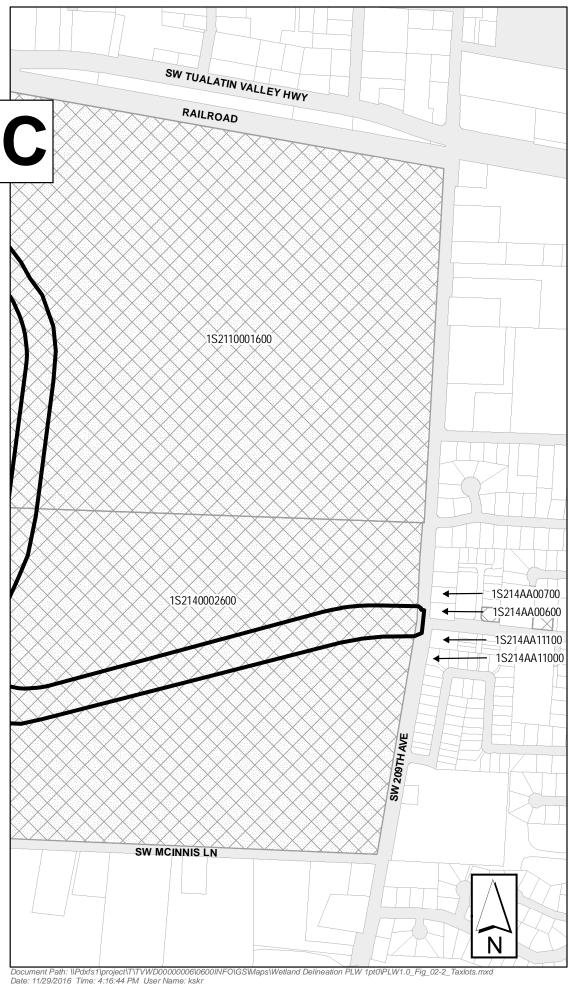
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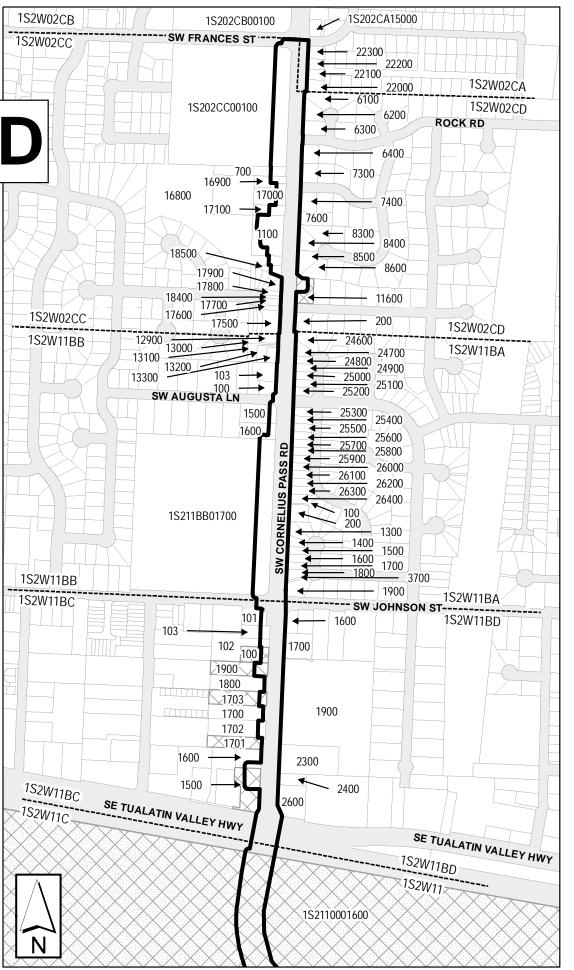
Area delineated by others

No access as of 10/24/2016

Metro RLIS Data. 2016.







Willamette Water Supply Permitting South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 2
Tax Lots, Sheet 2

Legend

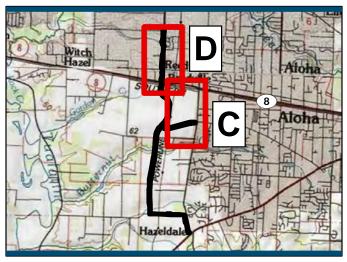
Study Area



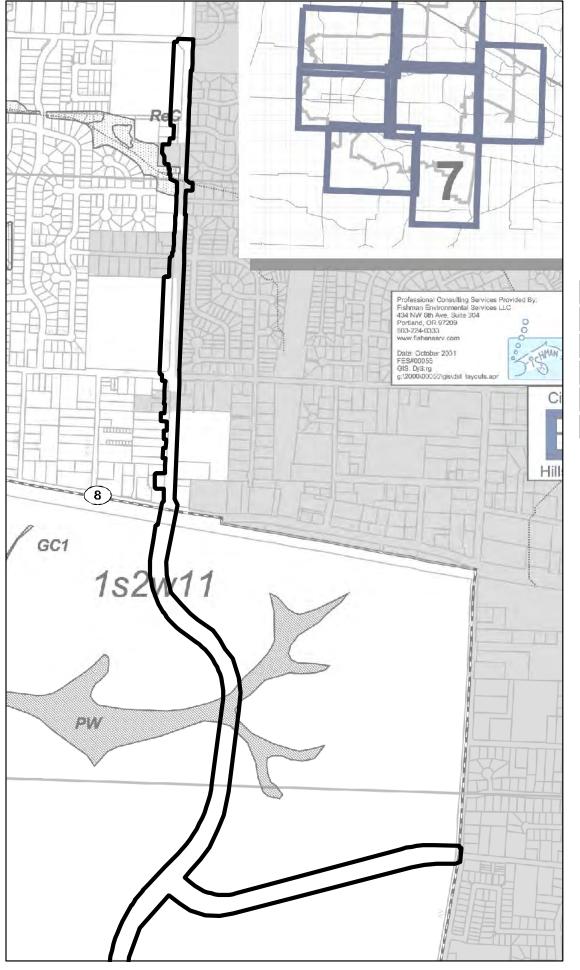
Area delineated by others



No access as of 10/24/2016 Miles

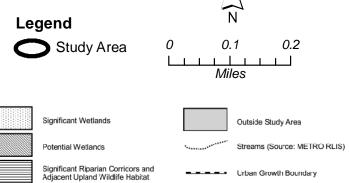


BuC-R/U BuC BuC BuC 1s2w14 PW **BuCTrib1** 1s2w23



Willamette Water Supply Program South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation

Figure 3a Local Wetlands Inventory

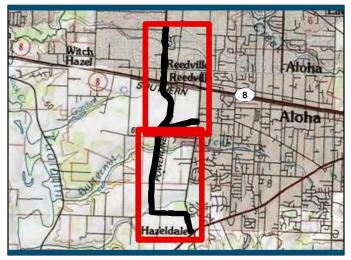


Significant Upland Wildlife Habitat Non-Significant Isolated Upland Wildlife Habitat

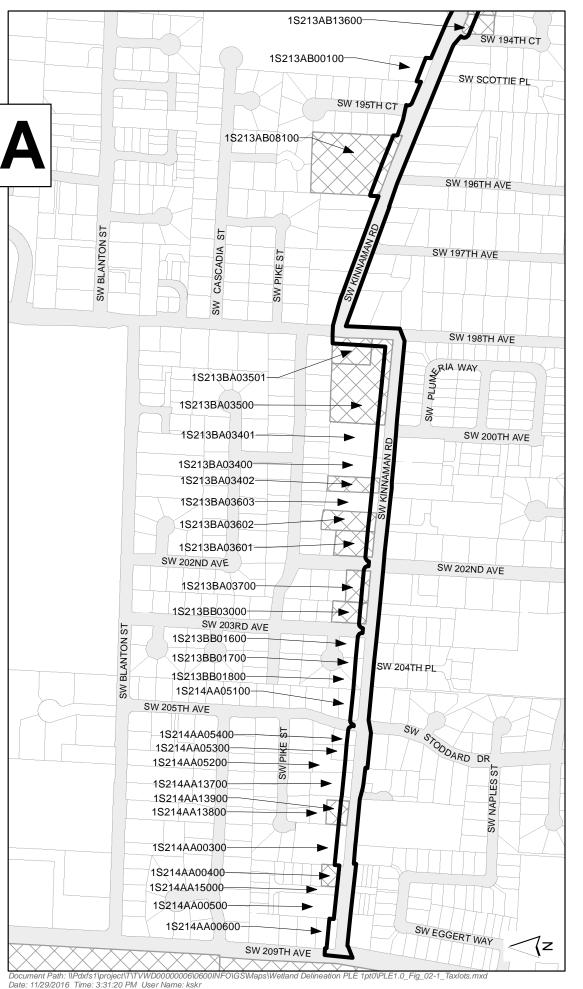
Non-Significant Wetlands

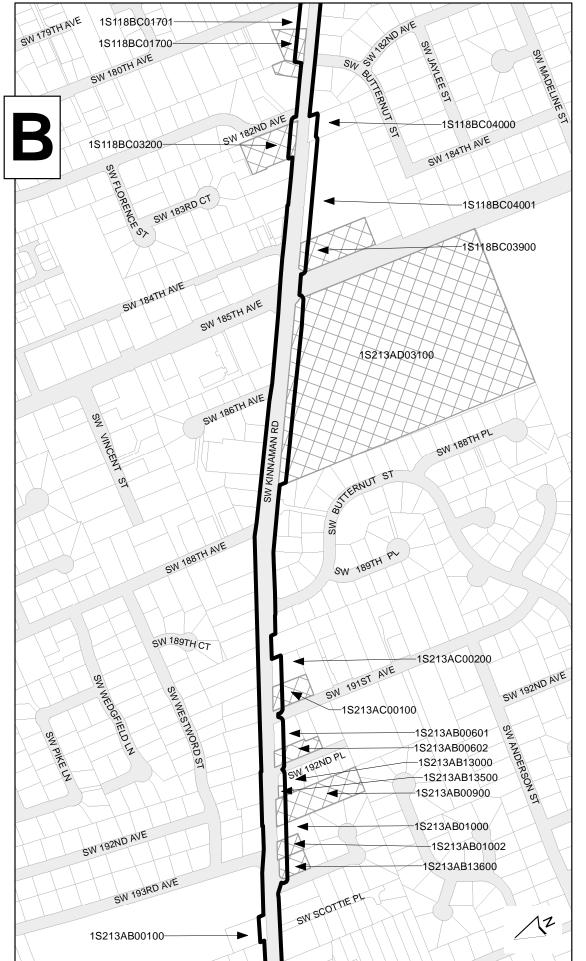
TSIV = Too Smell Wetland (wetlands less than 0.5 acres were not evaluated under OFWAM.)
SWP = Stormwater Pond (man-made)
STP = Sewage Treatment Pond (man-made)
MMP = Man-made Ponds (not stormwater ponds or sewage treatment ponds.)

Natural Resource Inventory. City of Hillsboro, Oregon. October 2001.



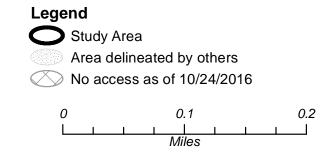
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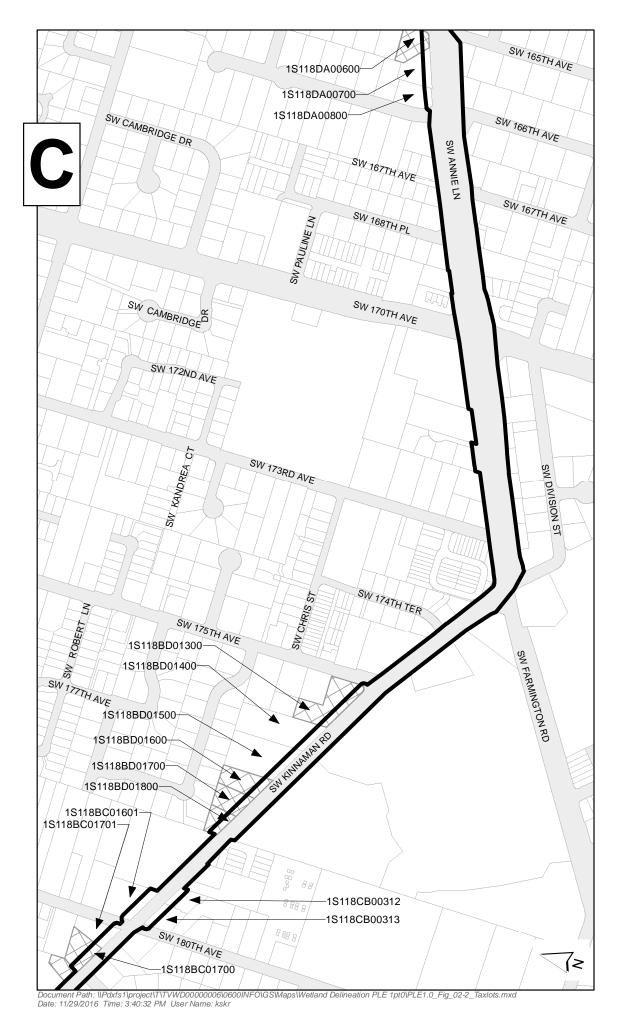
Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

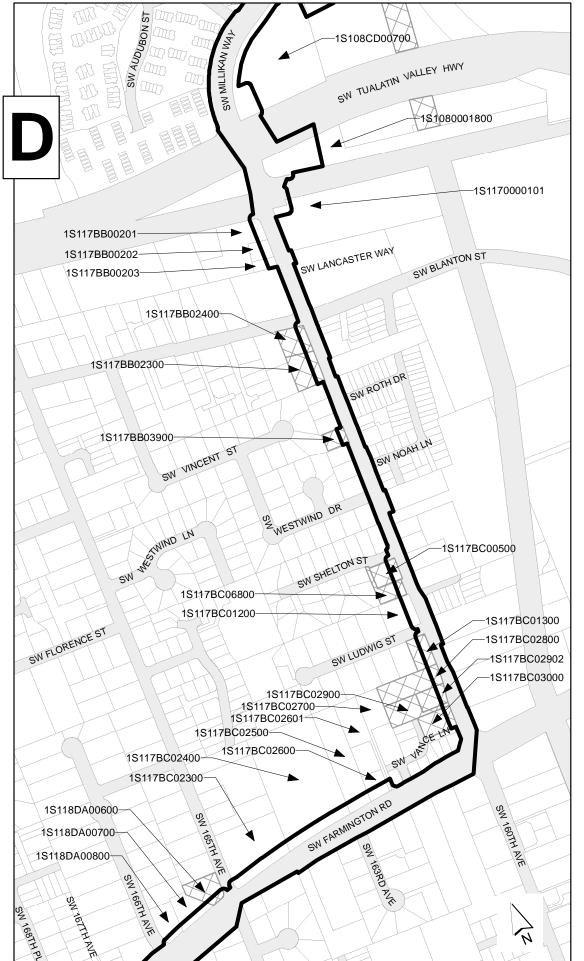
Figure 2, Sheet 1 **Taxlots**



Metro RLIS Data. 2016.

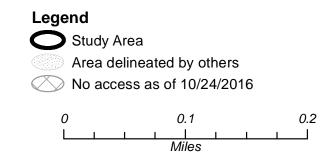






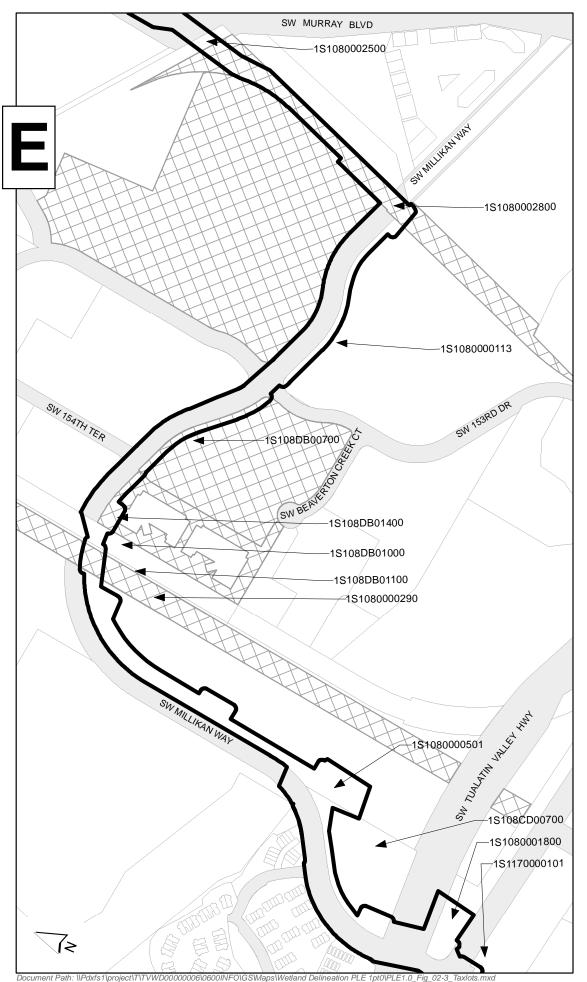
Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

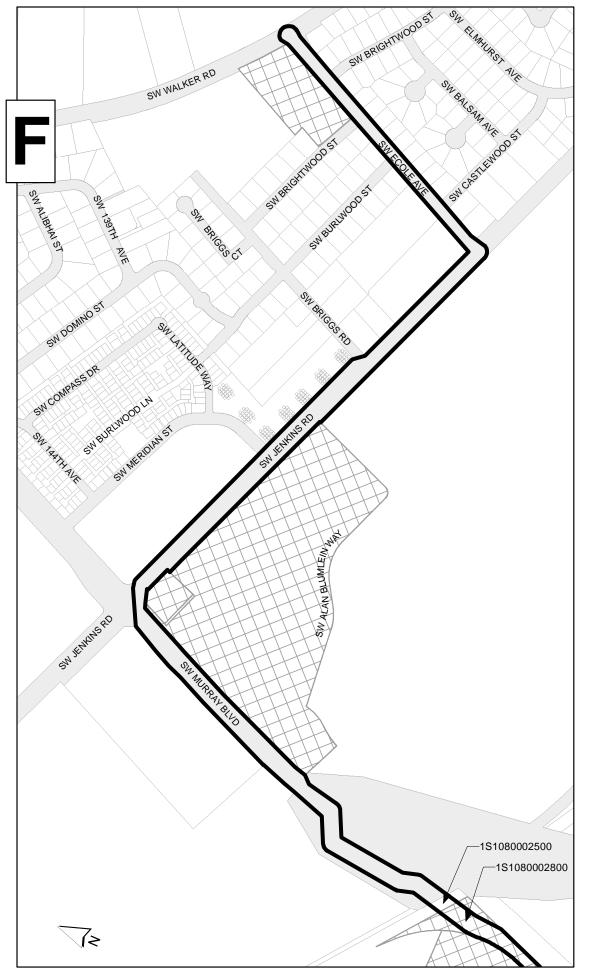
Figure 2, Sheet 2
Taxlots



Metro RLIS Data. 2016.

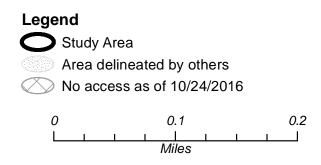






Willamette Water Supply Program Beaverton Area Pipeline Project (PLE1.0) Wetland Delineation

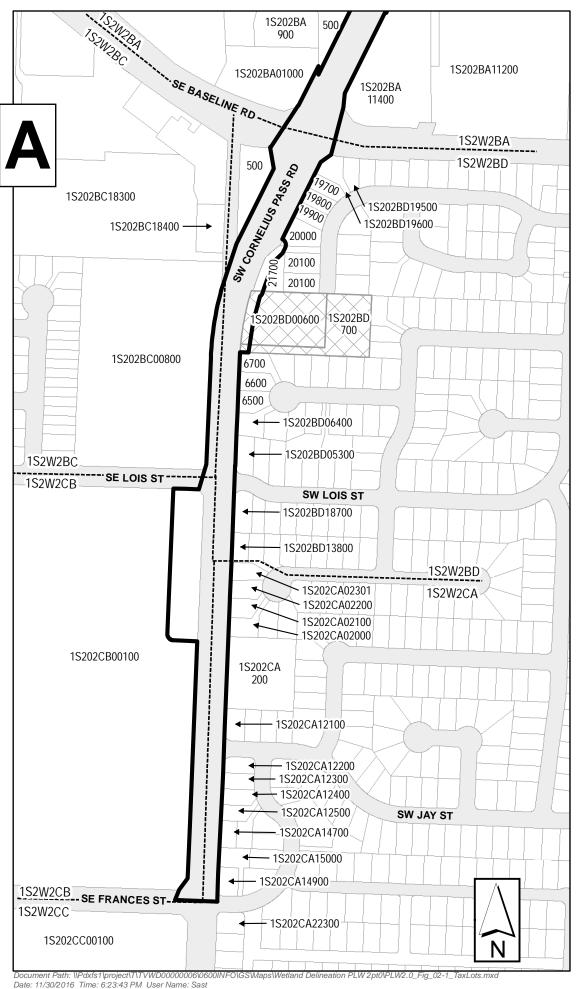
Figure 2, Sheet 3
Taxlots

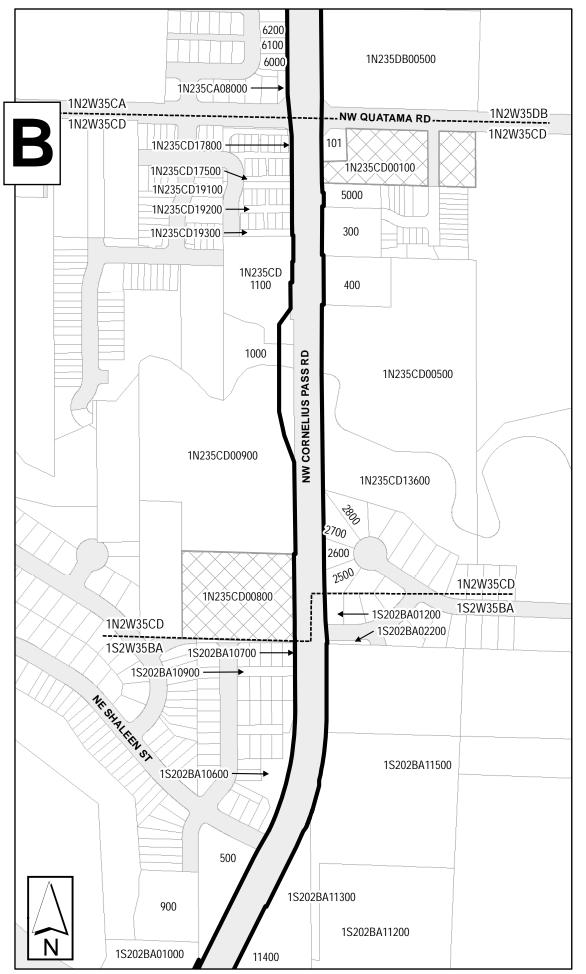


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Willamette Water Supply Program Cornelius Pass Pipeline Project (PLW 2.0) Wetland Delineation

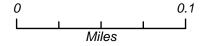
Figure 2, Sheet 1 Tax Lots

Legend

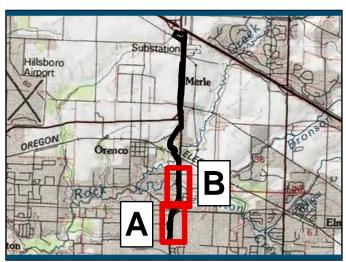
Study Area

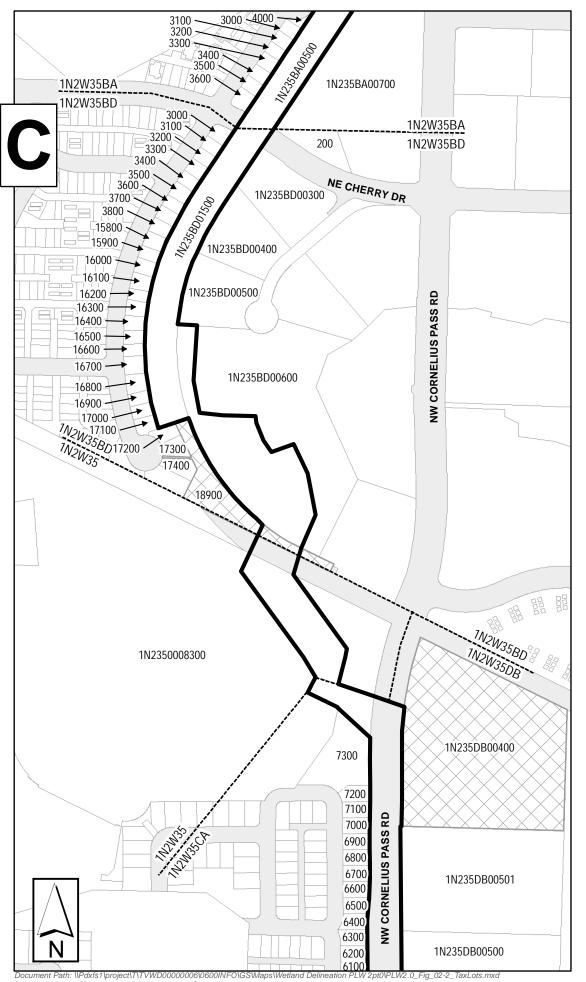
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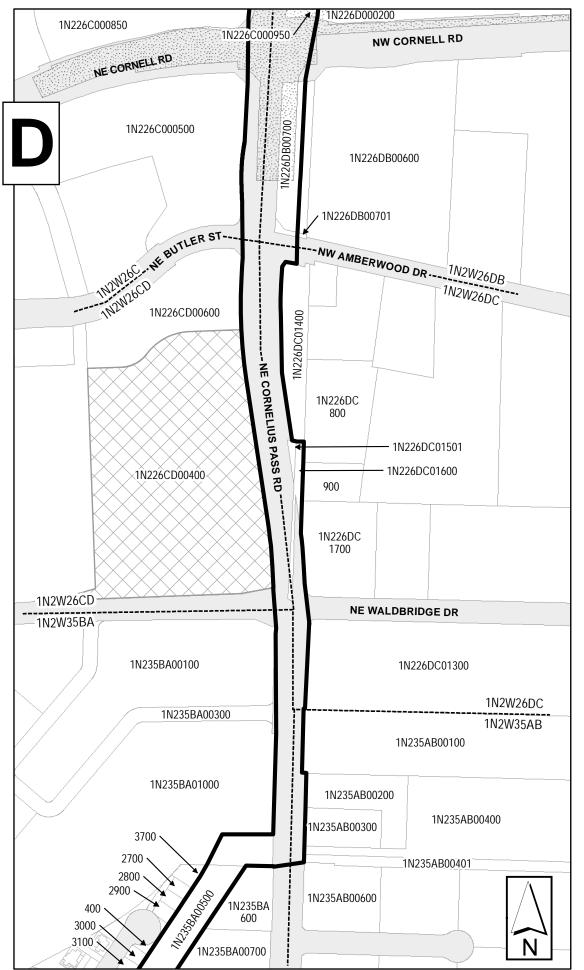
Area delineated by others



Metro RLIS Data. 2016.







Willamette Water Supply Program Cornelius Pass Pipeline Project (PLW 2.0) Wetland Delineation

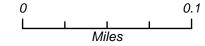
Figure 2, Sheet 2
Tax Lots

Legend

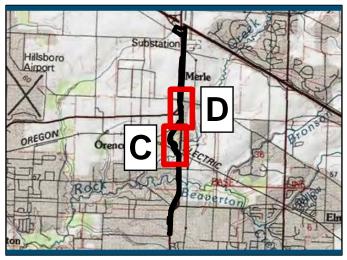
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Area delineated by others

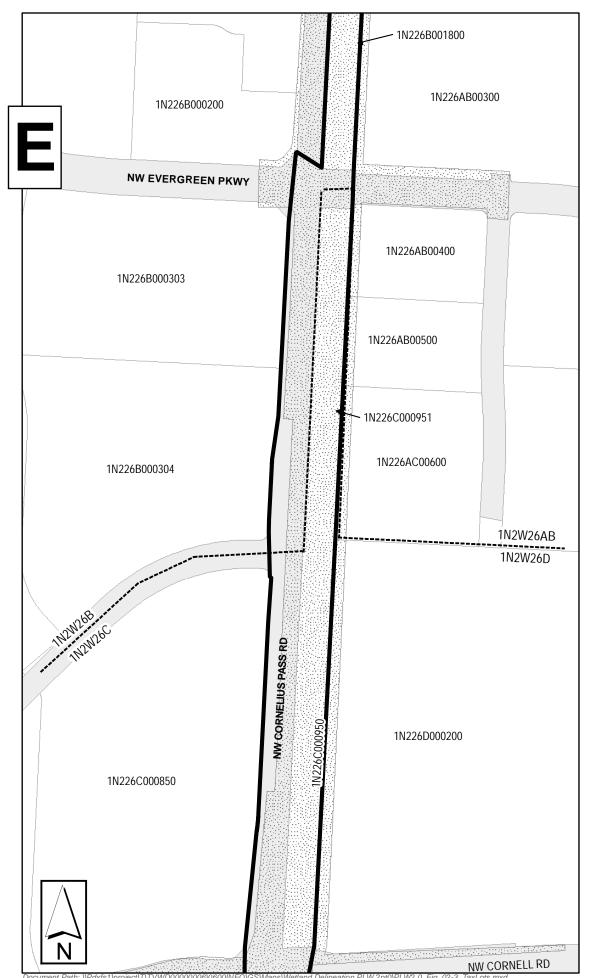
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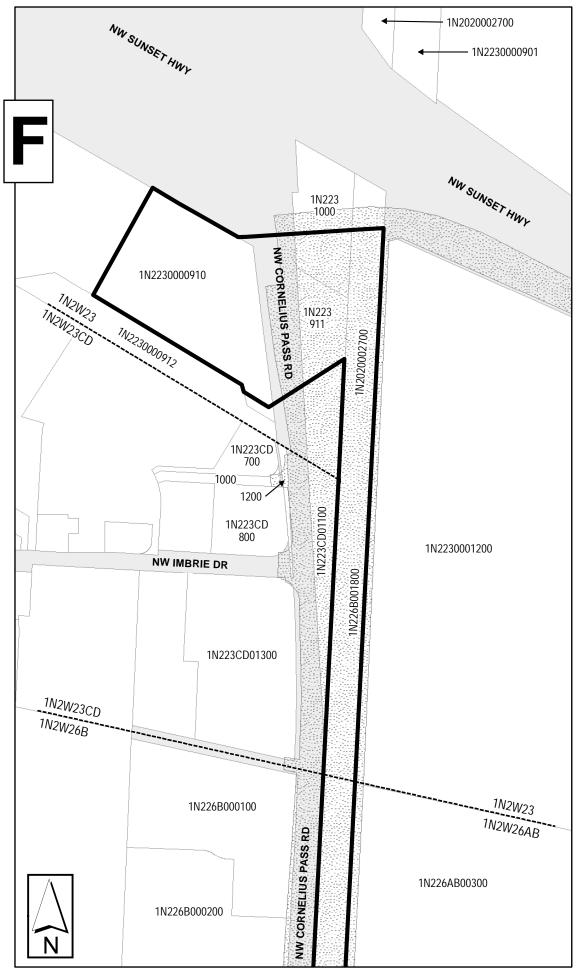


Metro RLIS Data. 2016.



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Willamette Water Supply Program Cornelius Pass Pipeline Project (PLW 2.0) Wetland Delineation

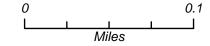
Figure 2, Sheet 3
Tax Lots

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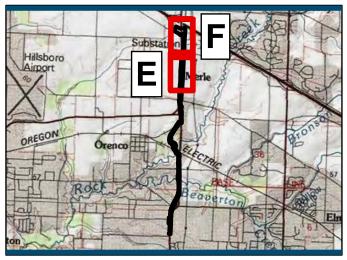
Study Area

Area delineated by others

No access as of 10/24/2016



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