## Willamette Water Supply <br> Our Relioble Watar

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 $124^{\text {th }}$ Avenue Partnership Project package (work package ID PLM_3.0), located south of SW TualatinSherwood 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. Opentrench 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

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

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.

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 C011 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
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 I mpacts

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


| Category | Description |
| :--- | :--- |
| System compatibility | Adjacency to reservoir site, access and proximity to connection points (turnouts), <br> and compatibility with system hydraulics (particularly excess length of pipe or <br> localized high points) |
| System resiliency | Geologically active areas (seismic risk), high consequence foreign utilities <br> (large/ high pressurea natural gas or petroleum mains, and water transmission <br> mains), and accessibility of the pipe and appurtenances after a seismic event |
| Constructability | Available ROW, adequate construction access, likelihood of geotechnical <br> challenges, large utility conflicts, known future utilities, and availability of <br> 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.

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

File Path: P:\T\TVWD00000008\0600INFO\0640Permits\CWS SPL\SPL application\March 2018 final versions\CWS_SPL_application document_rev 9 03-14-2018 final_srha .docx

Attachment A
Map of Project Work Packages

| CORNELIUS PASS | PLW_2.0 |
| :--- | ---: |
| PIPELNE PROJECT | (PIPELNE WEST) |
| FRANCES RD TO HIGHWAY 26 | $\mathbf{3 . 4}$ |
| CONSTRUCTION: 2022-2024 | MLLES |


| SOUTH BEAVERTON AREA | RES_1.0 |
| :--- | :--- |
| WATE STORAGE TANKS |  |
| STORAGE TANKS |  |
| CONSTRUCTION: 2022-2025 |  |


| TUALATIN-SHERWOOD AREA PIPELINE PROJECT SW 124TH AVE TO BEEF BEND RD |  | $\begin{aligned} & \text { PLM_4.0 } \\ & \text { (PIPELINE MAIN) } \end{aligned}$ |
| :---: | :---: | :---: |
|  |  |  |
| PLM_4.1 | HIGHWAY 99 CROSS WASHINGGON COUS CONSTRUCTION 2019 |  |
| PLM_4.2 | TUALATIN-SHERWOO CONSTRUCTION: 2020 |  |
| PLM_4.3 | ROY ROGERS ROAD CONSTRUCTION: 2023 |  |



WWSS WATER
TREATMENT PLANT WTP_1.0

$$
\begin{aligned}
& \text { TREATMENT PLANT } \\
& \text { WATER TREATMENT PLANT (WTP) }
\end{aligned}
$$

CONSTRUCTION: 2022-2025
INCLUDES FINISHED WATER PUMP STATON PROJECT (FPS_1.C

## RAW WATER FACIIITES

RWF_1.0

CONSTRUCTION: 2020-2024


## Attachment B

## Location Map of WQSA Crossings






## Attachment C

Wetland Verifications by Work Package

Pipeline East 1.0 (Beaverton Area) ODSL Wetland Verification

Kate Brown, Governor

Re: WD \#2017-0025 Partial Concurrence

Washington County; Multiple Sections and Tax Lots
APP \#60102
City of Beaverton Local Wetlands Inventory, Wetlands BV-4, BV-5, BV-5c, BV-6, BV-6a, BV-6b, and BV-11

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,

Peterkyan, PWS Jurisdiction Coordinator
Approved by Neatly Vuble
Kathy Verble, CPSS
Aquatic Resource Specialist

## Enclosures

ec: Phil Rickus, David Evans and Associates, Inc Washington County Planning Department Jaimee Davis, Corps of Engineers<br>Melinda Butterfield, DSL<br>Amber Wierck, Clean Water Services

Figure 1
Vicinity Map

w102017-0025


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

Figure 2, Sheet 1

## Legend

## Study Area

Area delineated by others (not part of concurrence) No access as of 10/24/2016

$$
0_{0.1}
$$

$1,0.1,0.1$



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

Figure 2, Sheet 2

## Legend

## Study Area

Study Area
Area delineated by others (Not Port ef Concurvanca) No access as of 10/24/2016 (DL PJD)



## Legend

## Study Area

Area delineated by others (Nat Port at Concurnace) No access as of 10/24/2016 (DSL PJ D)


Tax Lot Summary Table



| TLID | JURIS_CITY | ORTAXLOT |
| :---: | :---: | :---: |
| 1S118BC01701 | BEAVERTON | 3401,00S01W18BC--000001701 |
| 1S118BC03200 | BEAVERTON | 3401 00S01W18BC--000003200 |
| 1S118BC03800 | BEAVERTON | 3401 00S01W18BC-000003800 |
| 1S118BC03900 | BEAVERTON | 3401.00S01W18日C-000003900 |
| 1S118BC04000 | BEAVERTON | 3401.00S01W18BC-000004000 |
| 1S118EC04001 | BEAVERTON | $3401.00 S 01 W 18 B C-000004001$ |
| 1S118EC11800 | BEAVERTON | 3401.00S01W18BC-000011800 |
| 1S118BD01300 | BEAVERTON | 3401.00S01W18BD-000001300 |
| 1S118BD01400 | BEAVERTON | 3401.00 S01W18BD --000001400 |
| 1S118BD01500 | BEAVERTON | 3401.00S01W18BD-000001500 |
| 1S118BD01600 | BEAVERTON | 3401.00S01W18BD-000001600 |
| 1S118BD01700 | BEAVERTON | 3401.00S01W18BD-000001700 |
| 1S118BD01800 | BEAVERTON | 3401.00S01W18BD--000001800 |
| 1S118CA00101 | BEAVERTON | 3401.00S01W18CA-000000101 |
| 1S118CB00312 | BEAVERTON | 3401.00S01W18CB-000000312 |
| 1S118CB00313 | BEAVERTON | 3401.00 S01W18CB--000000313 |
| 1S118CB02200 | BEAVERTON | 3401.00S01W18CB-000002200 |




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

Figure 6, Sheet 1 of 11
Delineated Wetlands

| Delineated Features | Study Area |
| :--- | :--- |
| Photo location and |  |
| direction |  |

n-site features (wetlands, ditches, streams, culverts, and data
On-site eatures (wellands, 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 interpetation from adjacent public light of way and derial photo interpretation
An asterisk was included where jurisdictional features, with the 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.




Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation
Figure 6, Sheet 2 of 11
Delineated Wetlands

| Delineated Features |  | Study Area |
| :---: | :---: | :---: |
| -. Wetland | - | Photo location and direction |
| (oubside Potential Wetland study orra) Dirr Ditch | * | Wetland extends beyond study area |
| ..".un" OHW | $\bigcirc$ | Upland Data Plot |
| (outside Potential OHW Study ovia) | $\triangle$ | Wetland Data Plot |
| WQ Facility <br> Wetland Area | *) | Area delineated by others Not Porto of wb2017-0025 concurvance <br> No access as of 10/24/2016 (DSL PJD) |
|  |  | Taxlot |
|  |  | Contour (2 ft intervals) |

On-site features (wetlands, ditches, streams, culverts, and data
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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

| Delineated Features | Study Area |
| :--- | :--- | :--- |
| Photo location and |  |
| direction |  |

On-site features (wetlands, ditches, streams, culverts, and data
plots) were mapped with a Trimble Pathfinder GEO XH receiver plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Linework outside the
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Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0)

Wetland Delineation


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Willamette Water Supply Program
Beaverton Area Pipeline Project (PLE 1.0)
Wetland Delineation
Figure 6, Sheet 5 of 11
Delineated Wetlands

(.) Potential Wetland

Photo location and direction
Dinside study arfa

* Wetland extends

Wetland extends
O Upland Data Plot
(ivi. Potential OHW
Entsido study OH ara
WQ Facility
$\triangle$ Wetland Data Plot
Area delineated by
Area detineated by
others(Not Part et
Wh20 If 0.25 concurrmces)
No access as of
10f 10/24/2016 PSL PJD)
(Taxlo
Contour (2 ft intervals)

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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 |  |

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

 Wetland Delineation

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

Figure 6, Sheet 9 of 11
Delineated Wetlands

| Delineated Features |  | Study Area |
| :---: | :---: | :---: |
| -. Wetland |  | Photo location and direction |
| Puotential Wetlang Qutside study aria | * | Wetland extends beyond study area |
| ".""w" OHW | $\bigcirc$ | Upland Data Plot |
| Potential OHW ontzio study area WQ Facility | $\triangle$ | Wetland Data Plot |
| Wetland Area | 『) | Area delineated by others Nat Part of WO2017-0025 concurvinca No access as.of 10/24/2016 (DSL PJD) |
|  | $\bigcirc$ | Taxlot |
|  |  | Contour (2 ft intervals) |

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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

## Delineated Feature

- WetlandStudy Area
Cut Potential Wetland
Ontsidet Study oria)
- $\begin{aligned} & \text { Photo loc } \\ & \text { direction }\end{aligned}$
.."."..". OHW
Wetland extends
Wetland extends
- Potential OHW $\stackrel{\text { qut3id }}{=}$ Stubly aren $\xlongequal{=} W Q$ Facility

Wetland Area

- Upland Data Plot



Willamette Water Supply Program Beaverton Area Pipeline Project (PLE 1.0) Wetland Delineation
Figure 6, Sheet 11 of 11
Delineated Wetlands

| Delineated Features | Study |
| :--- | :--- |
| Photo location and |  |
| direction |  |


| On-site features (wetlands, ditches, streams, culverts, and data |
| :--- | On-site features (wellands, atches, steams, cuvers, and cata

plots) were mapped with a Trimble Pathinder GEO XH receiver
with typical accuracy of 3 feet or better. Linework outside the with typical accuracy of 3 feet or better. Linework outside the
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## 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


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

City of Hillsboro Water Department
Attn: Niki Iverson
150 E Main Street
Kate Brown
Governor
Hillsboro, OR 97123-4028
Re: WD \#2017-0006 Wetland Delineation Report for the Proposed Willamette Water Supply Program Project, PLM 4.0 Washington County; Multiple Sections and Tax Lots

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. 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


## Enclosures

ec: Phil Rickus, David Evans and Associates, Inc Washington County Planning Department Jaimee Davis, Corps of Engineers<br>Anita Huffman, DSL<br>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.


| Project Name: Willamette Water Supply Program, PLM 4.0 | Latitude: $\mathbf{4 5 . 3 7 2 7 0 4}$ | Longitude: -122.856479 |
| :---: | :---: | :---: |
| Proposed Use; Pipeline Installation | Tax Map \# See Attachment |  |
| Project Street Address (or other descriptive location): Between intersection of SW Tualatin-Sherwood Road and SW 124th Avenue and intersection of SW Roy Rogers Road and Beef Bend Road. | Township Range Tax Lot(s) See Attachment | Section QQ |
| City: N/A County: Washington | Waterway: Many NWI Quad(s): Several | River Mile: N/A |

Wetland Delineation Information


For Office Use Only

| DSL Reviewer: $\quad$ O/R | Fee Paid Date: 1 | DSL WD \# $2017-0006$ DSL Site \# |
| :---: | :---: | :---: |
| Date Delineation Received: | DSL Project \# |  |
| Scanned: ${ }^{\text {易 Final Scan: } \square \square}$ | DSL WN \# | DSL App. \# |

W02017-0006


ESRI, ArcGIS Online, USA Topographic Maps. 30×60 GRID Quadrangles
Figure 1
Vicinity Map


## WP2017-0DOG



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

Figure 2, Sheet 1
Tax Lots

## Legend

## Study Area

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



(2s)

## WD2017-0006

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

Figure 2, Sheet 3 Tax Lots

## Legend

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




|  | Willamette Water Supply Program <br> Tualatin-Sherwood Area Pipeline <br> Project (PLM 4.0) |
| :--- | :--- |
| Figure 6, Sheet 1 of 12 |  |
| Delineat Ded 12 |  |

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. A 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. intersect the study area boundary are labeled. Imagery: US
NAIP 2016; inset maps show Bing Maps Aerial imagery.



|  | Willamette Water Supply Program <br> Tualatin-Sherwood Area Pipeline <br> Project (PLM 4.0) |
| :--- | :--- |
| Figure 6, Sheet 2 of 12 |  |
| Delineand Delineation |  |

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

| Figure 6, Sheet 3 of 12 <br> Delineated |  |  |
| :--- | ---: | :--- |
|  | $=$ | Culvert (approx) |
| Detlands |  |  |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathinder GEO XH receiver
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NADA




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

| Figure 6, Sheet 4 of 12 Delineated Wetlands |  |  |
| :---: | :---: | :---: |
| Delineated Features |  | Culvert (approx) |
| - Wetland |  | Catch Basin |
| - Potential Wetland |  | Culvert In/Out |
| $\ldots$ Ditch (Upland) |  | Study Area |
| $\ldots$ Ditch (OHW) |  | Photo location and direction |
| $\Longrightarrow$ Ditch (Wetland) |  |  |
| mratential Ditch |  | Upland Data Plot |
| =-e Outfall | $\triangle$ | Wetland Data Plot |
| Ordinary High Water (OHW) (OHW) | 米 | Wetland extends beyond study area |
| Water Quality Facility | Q 8 | No access as of 10/24/2016 |
| $\times$ * Fence |  | Area delineated by |
| Ordinary High Water (OHW) Area |  | others |
| Wetland Area |  | Contour (2 ft intervals) |

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 with typical accuracy of 3 feet or better. Off-site boundaries adproximate and were mapped bight of way and aerial photo interpretation. A asterisk was included where juriscictional features, with the
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NAIP 2016; inset maps show Bing Maps Aerial imagery.




| Figure 6, Sheet 5 of 12 Delineated Wetlands |  |  |
| :---: | :---: | :---: |
| Delineated Features | [ | Culvert (approx) |
| - Wetland |  | Catch Basin |
| Potential Wetland | ¢ | Culvert In/Out |
| $\cdots$ Ditch (Upland) |  | Study Area |
| $\ldots$ Ditch (OHW) |  | Photo location and direction |
| Ditch (Wetland) |  | Upland Data Plot |
| = | $\triangle$ | Wetland Data Plot |
| Ordinary High Water (OHW) | * | Wetland extends beyond study area |
| Water Quality Facility | (8) | No access as of 10/24/2016 |
| * Fence Ordinary High Water | (3) | Area delineated by others |
| (OHW) Area |  | Taxlot |
| Wetland Area |  | Contour (2 ft intervals) | On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver

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int





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

## Figure 6, Sheet 6 of 12

Delineated Wetlands

| Delineated Features |  | Culvert (approx) |
| :---: | :---: | :---: |
| Wetland |  | Catch Basin |
| - Potential Wetland | ¢ | Culvert In/Out |
| $\square$ Ditch (Upland) | $\bigcirc$ | Study Area |
| $\ldots$ Ditch (OHW) | - | Photo location and direction |
| Ditch (Wetland) | $\bigcirc$ | Upland Data Plot |
| Ir Potential Ditch |  | Wetland Data P |
| ==- Outfall |  | Welland Dala Plot |
| I.IU" Ordinary High Water (OHW) | * | Wetland extends beyond study area |
| Water Quality Facility | (8) | No access as of 10/24/2016 |
| * Fence | 13 | Area delineated by others |
| Ordinary High Water (OHW) Area |  | Taxlot |
| Wetland Area |  | Contour (2 ft intervals) |

On-site features (wetlands, ditches, streams, culverts, and data On-site features (wetlands, ditches, streams, culverts, and data
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Willamette Water Supply Program Tualatin-Sherwood Area Pipeline Project (PLM 4.0) Wetland Delineation
Figure 6, Sheet 8 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 with typical accuracy of 3 feet or better. Off-site boundaries
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|  | Willamette Water Supply Program <br> Tualatin-Sherwood Area Pipeline <br> Project (PLM 4.0) |  |
| :--- | :--- | :---: |
| Figure 6, Sheet 9 of 12 |  |  |
| Delineated |  |  |

Willamette Water Supply Program Tualatin-Sherwood Area Pipeline

Figure 6, Sheet 9 of 12
$=$ Culvert (approx) Culver

Study Area

- Photo location and

O Upland Data Plot

Wor-

No access as
$\ldots$ Area de others

Contour (2 ft intervals)
On-site features (wetlands, ditches, streams, culverts, and data
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|  | Willamette Water Supply Program <br> Tualatin-Sherwood Area Pipeline <br> Project (PLM 4.0) |
| :--- | :--- |
| Figure 6, Sheet 10 of 12 |  |
| Delineated Delineation |  |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver
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intersect the study area boundary are labeled. Imagery: USDA NAIP 2016; inset maps show Bing Maps Aerial imagery.




|  | Figure 6, Sheet 12 of 12 <br> Delineated |  |
| :--- | :--- | :--- |
|  | $=$ | Culvert (approx) |
| Detlands |  |  |

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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

| 7- Due to | ecision in t | ax lot layer, a | itches | re delineate | with On | te methods | whether | ending sli | tly outs | the ap | not |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ID ${ }^{1}$ | Latitude | Longitude | Sheet \# (s) | Delineation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps $\mathrm{JD}^{3}$ | Assumed DSL JD ${ }^{4}$ | $\begin{gathered} \text { Cowardin } \\ \text { Class }^{5} \end{gathered}$ | $\begin{gathered} \text { HGM } \\ \text { Class }^{6} \end{gathered}$ | Data <br> Plot ID | Notes (i.e., special circumstances) |
| $\begin{array}{\|l\|} \hline \text { W-124th-B } \\ \text { (WQ Swale) } \end{array}$ | 45.369407 | -122.806794 | 1 | Previously Delineated | 0.16 | No | Yes | -- | - | - | Previously delineated stormwater feature with steep constructed sides, that has not changed since concurrence in 2014 (no new data plots needed). (W0 2014-0448) |
| 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 | -- | No | No | -- | -- | 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 $\mathrm{D}-\mathrm{M} 4-1$. |
| 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 | 2-4 | 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 | YES crrated | wnot | d W | $1^{-}$ | 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. |
| $\begin{array}{ll} \hline & R G L \\ \hline W-2-1 & 7558 \end{array}$ |  | side Study Area |  | N/A | -- | - | - | - | -- | -- | 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. |
| Rook s-2-1 CIFBK - ESH- | 45.367539 | -122.828860 | 3 | $\begin{aligned} & \text { Offsite } \\ & \text { 乘 Onsite } \end{aligned}$ | 223 | Yes | Yes | -- | -- | -- | Rock Creek. Incised stream and adjacent habitat is upland. Channel $=15 \times 5^{\prime}$, with $3^{\prime}$ of water in btm. Flows under rd through box culverts. OHW from steep banks, washed roots. Cobble, silt, pebble.Reed canargrass fringe ( $\mathrm{w} / 80 \%$ open water) below OHW only- steep slopes to upland (Plot 2-10). ESH |
| D-2-6a | 45.367685 | -122.833021 | 4 | Onsite | 563 | No | No | -- | -- | -- | Dry. Veg=maintained lawn. Receives flashy but high volume stormwater from Ig parking lot outfall, and few other sources of water. OHW $1.5^{\prime}$ 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 | oftsite 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. |
| Chicken S-2-2 Creek - 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 $=25 \times 10^{\prime}$, with cobble, silt substrate. Bridge. OHW from steep banks, washed roots. |
| $\begin{array}{\|c\|} \hline \text { W-M4-1 } \\ \hline \end{array}$ | 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. |


| PLM 4.0 |
| :--- |
| 1-W = wetland feature, $S=$ stream feature, $D=$ ditch feature |
| $2-S i z e$ |

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

| 7-D | cision in th | lot layer |  | - | th O | metho | whether | anding sli | O | the | parent tax lot or not |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ID ${ }^{1}$ | Latitude | Longitude | Sheet \# (s) | Delineation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps JD ${ }^{3}$ | Assumed DSL $J^{4}$ | Cowardin Class ${ }^{5}$ | HGM <br> Class ${ }^{6}$ | Data <br> Plot ID | Notes (i.e., special circumstances) |
| D-2-7 | 45.376404 | -122.856978 | 7, 8 | Onsite | 498 | No | No | -- | -- | -- | 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 | -- | -- | 2-12 | 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 | -- | -- | $\begin{gathered} 2-16,2- \\ 17 \end{gathered}$ | 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 | -- | Yes | No | PEM | Slope | 2-13 | Ditched roadside wetland with steep slopes adjacent and no scour. |
| D-2-11 | 45.383287 | -122.852711 | 9 | Onsite | 1273 | No | No | -- | -- | $\begin{array}{\|c\|} \hline 2-15,2- \\ 18 \end{array}$ | 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 | -- | -- | 2-18 | Dry, but appears to be a somewhat natural feature, with signs of scour. Drains Wetland 2-2 to the Tualatin River. $\mathrm{OHW}=1.5 \mathrm{ft}$. |
| 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. |
| Tualatin River | 45.388139 | -122.851499 | 10 | Onsite | 190 | Yes | Yes | -- | -- | 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 | -- | -- | 2-25 | 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 | -- | No | No | -- | -- | -- | 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 | -- | No | No | -- | -- | -- | Dry. No signs of scour. Veg=blackberry, geranium, velvetgrass. Drains to Wetland 24 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 | $\begin{aligned} & 2-26, \\ & \text { M4-6 } \end{aligned}$ | 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 | -- | -- | -- | Dry. No signs of scour. Veg=blackberry, geranium, pernnial rye. Drains to Wetland 24. |

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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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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 \# <br> (s) | Delineation <br> Method $^{7}$ | Size in <br> Study <br> Area $^{2}$ | Assumed <br> Corps <br> JD $^{3}$ | Assumed <br> DSL <br> JD $^{4}$ | Cowardin <br> Class $^{5}$ | HGM <br> Class $^{6}$ | Data <br> Plot ID | Notes (i.e., special circumstances) |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

WetlaudsTotal $=7,6$ insida Study Arfa, 1 outside. Total Arfa inside Study Arfa $=2.02$ Acres
Juris diotional Waters $=4$

## Pipeline Main 5.0 (Scholls Area) ODSL Wetland Verification

Oregon
Kate Brown, Governor

July 11, 2017

# City of Hillsboro Water Department 

Attn: Niki Iverson
Kate Brown
150 E. Main Street
Governor
Hillsboro, OR 97123-4028
$\begin{array}{llr}\text { Re: } & \text { WD \#2017-0024 Partial Concurrence, Wetland Delineation Report } & \text { Secretary of State } \\ \text { for the Proposed Willamette Water Supply Program Project, PLM 5.0 } & \\ \text { Washington County; Multiple Sections and Tax Lots } & \text { Tobias Read } \\ \text { APP \#60102 } & \text { State Treasurer } \\ & \text { Portions of the Bull Mountain and the Cooper Mountain South }\end{array}$ 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-233, 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


## 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 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.


Date: OL| $18 / 17$ Special instructions regarding site access: $\qquad$
Project and Site Information (using decimal degree format for latlong, enter centroid of site or start \& end points of linear project)

| Project Name: Willamette Water Supply Program, <br> PLM 5.0 | Latitude: $\mathbf{4 5 . 4 3 3 6 3 9}$ | Longitude: -122.885289 |  |
| :--- | :--- | :--- | :--- |
| Proposed Use: Pipeline Installation | Tax Map\# See Attachment |  |  |

Wetland Delineation Information


For Office Use Only

| DSL Reviewer: $¢$ | Fee | DSLWD \# 2017-01204 |  |
| :---: | :---: | :---: | :---: |
| Date Delineation Received: | DSL Project\# | DSL Site \# |  |
| Scanned: $\square$, Final Scan: $\square$ | DSL WN\# | DSL App. \# |  |

## Tax Lots

WD2017-0024


ESRI, ArcGIS Online, USA Topographic Maps. 30x60 GRID Quadrangles
Figure 1
Vicinity Map

W02017-0024

W02917-0.024

| Willamette Water Supply Program Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation |  |  |
| :---: | :---: | :---: |
| Figure 2, Sheet 1 Tax Lots |  |  |
| Legend <br> Study Area |  |  |
| Area delineated by others |  |  |
| No access as of $10 / 24 / 2016$ | $\begin{array}{cc} 0 & 0.1 \\ \mathrm{~L}_{1} & 1 \\ \text { Miles } \end{array}$ |  |




| Willamette Water Supply Permitting Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation |  |  |
| :---: | :---: | :---: |
| Figure 2, Sheet 2 Tax Lots |  |  |
| Legend |  |  |
| Study Area |  |  |
| Area delineated by others |  |  |
| No access as of 10/24/2016 | $\begin{array}{lc} 0 & 0.1 \\ L_{1} & 1 \\ \text { Miles } \end{array}$ |  |




| WD2017-0024 |
| :---: |
| $\begin{array}{c}\text { Willamette Water Supply Permitting } \\ \text { SchoIls Area Pipeline Project } \\ \text { (PLM 5.0) Wetland Delineation }\end{array}$ |
| Taxure 2, Sheet 3 |
| Legend |
| $\begin{array}{l}\text { Study Area } \\ \text { Area delineated } \\ \text { by others } \\ \text { No access as of } \\ \text { 10/24/2016 }\end{array}$ |



## Revised PLM 5.0

$1-\mathrm{W}=$ wetland feature, $\mathrm{S}=$ stream feature, $\mathrm{D}=$ ditch feature
2-Size in study area is given in acres for wetlands, and in length in feet for streams and ditches
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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 <br> \# | Delieation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps $\mathrm{JD}^{3}$ | $\begin{array}{\|c} \hline \text { Assumed } \\ \text { DSL } \\ J D^{4} \\ \hline \end{array}$ | Cowardin Class $^{5}$ | HGM Class ${ }^{6}$ | $\begin{aligned} & \text { Data Plot } \\ & \text { ID } \end{aligned}$ | Notes (i.e., special circumstances) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| D-2-19 | 45.401780 | -122.851571 | 1 | Onsite | 770.39 | Yes | Yes ${ }^{\text {d }}$ | 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 | -- | -- | -- | 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 | -- | -- | 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 | -- | -- | - | 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 | -- | -- | - | 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 S--2-4 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 $\mathrm{S} 2-4$ flows through wetland. |
| D-2-26 | 45.407494 | -122.851543 | 2 | Onsite | 286.98 | Yes | Yes $\checkmark$ | -- | -- | -- | 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 $\mathrm{S}-2-4$. |
| 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 |  |  | -- | 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 | - | -- | - | 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 | Powtral pulp | - | -- | - | 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 |  |  |  |  |  |  | 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 Concurronce |  |  |  |  |  |  | Delineated by QEA (WD\#2015-0123). |
| D-M5-3 | 45.422409 | -122.852762 | 5 | Onsite | 829.7 | No | No | -- | - | - | Dry, no scour. Dominated primarily by upland vegetation and mulched where new construction was taking place during 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 | - | - | - | Dry, no scour. Dominated primarily by upland vegetation (tall oatgrass, velvetgrass) until lower, where QEA Water 1 starts. |

## Revised PLM 5.0

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

| 7- Due to | sion | ot la | Ill ditches | re delineat | d with Onsite m |  |  | ng slightly ou | de the app | tax lot |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ID ${ }^{1}$ | Latitude | Longitude | Sheet \# | Delieation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps $\mathrm{JD}^{3}$ | $\begin{gathered} \text { Assumed } \\ \text { DSL } \\ J D^{4} \\ \hline \end{gathered}$ | 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 | -- | -- | -- | 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 | $\begin{gathered} \text { Yes } \\ \text { Partial } \end{gathered}$ | 0 - | - | - | 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 $\mathrm{S}-2-5$. Upslope ditch feature disappears into flat roadside (Plot 2-44) |
| D-2-32 | 45.425847 | -122.866512 | 7 | Onsite | 149.41 | Yes | Yes $V$ | - | -- | -- | 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 2 | PEM | Slope | 2-45 | Ditch that intercepts groundwater from field to N . Drains to $\mathrm{S}-2-5$. Upslope ditch feature disappears into flat roadside (Plot 2-46 |
| S-2-6 | 45.425867 | -122.867265 | 7 | Onsite | 151.6 | Yes | Yes | -- | - | -- | 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 | - | - | - | 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 | $\begin{gathered} \text { Yes } \\ \text { CSL PJD } \end{gathered}$ | 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 | - | - | - | 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 | $\begin{gathered} \text { Yes } \\ \text { Pantial Pup } \\ \hline \end{gathered}$ | 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 $\checkmark$ | 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 | -- | -- | 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 | $\begin{gathered} \text { Yes } \\ \text { Pantral PJd } \end{gathered}$ | 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. |

## Revised PLM 5.0

$1-\mathrm{W}=$ wetland feature, $\mathrm{S}=$ stream feature, $\mathrm{D}=$ 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, $\mathrm{PSS}=$ palustrine scrub-shrub, $\mathrm{PFO}=$ palustrine forested, $\mathrm{R} 3 \mathrm{EM}=$ riverine upper perennial emergent
6-HGM Class: DEP=depressional, RFT=riverine flow-through

| 7- Due to | cision in | $x$ lot layer | tch | delin | Onsit | ds, w | tendin | ightly | de the ap | ttax lot 0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ID ${ }^{1}$ | Latitude | Longitude | Sheet \# | Delieation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps JD ${ }^{3}$ | $\begin{gathered} \text { Assumed } \\ \text { DSL } \\ J D^{4} \end{gathered}$ | Cowardin Class $^{5}$ | HGM Class ${ }^{6}$ | $\begin{aligned} & \text { Data Plot } \\ & \text { ID } \end{aligned}$ | 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 | -- | -- | - | Tributary south of McKernan Creek. Flows through swale wetland. Originates at culvert draining wetland east of road (which generally lacks a defined channel east of road). |
| D-2-42 | 45.434502 | -122.886070 | 10 |  | 84.94 | No | No | -- | -- | - | 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 | Yes poult | -- | - | - | McKernan Creek. Incised west of road. $\mathrm{OHW} 20{ }^{\prime}$ from steep banks, washed roots. |
| D-2-43 | 45.437830 | -122.885991 | 10,11 | Onsite | 2014.30 | Yes | Yes V | 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 | $\begin{aligned} & \text { Yes } \\ & \text { Postral } p, p \end{aligned}$ | $b^{\text {PFO/PSS }}$ | 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 | $\begin{gathered} \hline 11,12, \\ 13 \\ \hline \end{gathered}$ | Onsite/ Offsite | 2493.6/111.1 | No | Pantrad psl | -- | - | 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 cary stormwater. Drains oustide study area to east. |
| D-2-51 | 45.459391 | -122.888182 | 14, 15 | Onsite | 1799.08 | No | No | -- | - | -- | 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 | -- | -- | -- | 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 | - | - | - | 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 | -- | -- | - | Rocked, with minimal vegetation. Drains to culvert to north outside study area to a potential WQ swale. |

## Revised PLM 5.0

$1-\mathrm{W}=$ wetland feature, $\mathrm{S}=$ stream feature, $\mathrm{D}=$ 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
6- 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

| --Due to | sion in |  |  | - | 促 | , |  |  | 硣 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ID ${ }^{1}$ | Latitude | Longitude | Sheet \# | Delieation Method ${ }^{7}$ | Size in Study Area ${ }^{2}$ | Assumed Corps $\mathrm{JD}^{3}$ | Assumed DSL $J^{4}$ | Cowardin Class ${ }^{5}$ | HGM Class ${ }^{6}$ | Data Plot ID | Notes (i.e., special circumstances) |
| 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 $\sim$ (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 | $\begin{gathered} \text { Yes V } \\ \text { (portions } \\ \text { that abut } \end{gathered}$ 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 | -- | -- | -- | $3^{\prime}$ 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 $\checkmark$ | 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 | -- | -- | -- | 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 | -- | -- | -- | 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 | -- | -- | -- | 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 | -- | -- | - | Upland |



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




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



Willamette Water Supply Program Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation
Figure 6, Sheet 4 of 21
Delineated Wetlands

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

Figure 6, Sheet 5 of 21 Delineated Wetlands
$\left.\begin{array}{lll} & & \text { Culvert (approx) } \\ \text { Delineated Features } & \text { Study Area } \\ \text { Wetland } & & \begin{array}{l}\text { Photo location and } \\ \text { direction }\end{array} \\ \text { Wotential Wetland }\end{array}\right)$

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 with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review study area is approximate and was mapped based on field review from adjacent pubic right of way and aerial photo interpretation
An asterisk was included where jurisdictional features, with the An asterisk was included where juriscictional eatures, 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 Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

Figure 6, Sheet 6 of 21
Delineated Wetlands

| Delineated Features  <br> Wetland  | Culvert (approx) |
| :--- | :--- | :--- |
| Study Area |  |

On-site features (wetlands, ditches, streams, culverts, and data
plots) were mapped with a Trimble Pathfinder GEO XH receiver plots) were mapped with a Trimble Pathfinder GEO XH receiver
with typical accuracy of 3 feet or better. Linework outside the with typical accuracy of 3 feet or better. Linework outside tive
study area is approximate and was mapped based on field review study 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. |  |  |
| :---: | :---: | :---: | :---: |
|  | 0 | 125 | 250 |

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

Figure 6, Sheet 7 of 21 Delineated Wetlands

| Delineated Features |  | Culvert (approx) |
| :---: | :---: | :---: |
| --Wetland |  | Study Area |
| - Potential Wetland <br> outsidtot stumy arta <br> $\Longrightarrow$ Wetland Swale | $\checkmark$ | Photo location and direction |
| $\ldots$ Ditch (Upland) | $\bigcirc$ | Upland Data Plot |
| $\ldots$ Ditch (OHW) | $\triangle$ | Wetland Data Plot |
| $\ldots$ Ditch (Wetland) | * | Feature extends beyond study area |
| Ordinary High Water (OHW) | $\otimes$ | No access as of 10/24/2016 (DSL PJD) |
| outsid Potential OHW Ordinary High Water (OHW) Area | C | Area delineated by others Not Port of Taxlot $\begin{gathered}\text { w2001 } \\ \text { Condininco }\end{gathered}$ |
| Wetland Area |  | Contour (2 ft intervals) |
| \# Culvert |  |  |
| - Catch Basin |  |  |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Path finder GEO XH receive with typical accuracy onte and was mapped based on field review
study area is approximate and 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.



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Willamette Water Supply Program Scholls Area Pipeline Project

## 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 with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review 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.
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Willamette Water Supply Program Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

Figure 6, Sheet 9 of 21
Delineated Wetlands

| Delineated Features |  | Culvert (approx) |
| :---: | :---: | :---: |
| -- Wetland | - | Study Area |
| - - Potential Wetland ontsidt of study orfa Wetland Swale | $\checkmark$ | Photo location and direction |
| Ditch (Upland) | $\bigcirc$ | Upland Data Plot |
| $\square$ Ditch (OHW) | $\triangle$ | Wetland Data Plot |
| $\ldots$ Ditch (Wetland) | * | Feature extends beyond study area |
| Ordinary High Water (OHW) | (8) | No access as of 10/24/2016 (DSL PJD) |
| Potential OHW <br> ontsode of study arra Ordinary High Water (OHW) Area | $\bigcirc$ |  |
| Wetland Area |  | Contour (2 ft intervals) |
| Culvert |  |  |
| - Catch Basin |  |  |

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 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.


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


Figure 6, Sheet 11 of 21
Delineated Wetlands

| Delineated Features | $=$ | Culvert (approx) |
| :--- | :--- | :--- |
| Study Area |  |  |

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 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 th 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 Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation
Figure 6, Sheet 13 of 21
Delineated Wetlands

| Delineated Features | $=$ | Culvert (approx) |
| :--- | :--- | :--- |
| Study Area |  |  |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receive 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 jurisctictional features, with the exclusion of upland ditches, extend off site. Only taxlots which NAIP 2016; inset maps show Bing Maps Aerial imagery.



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

Figure 6, Sheet 14 of 21
Delineated Wetlands

| Delineated Features |  | Culvert (approx) |
| :--- | :--- | :--- |
| Study Area |  |  |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receive 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 An asterisk was included where jithiscictional eatures, with the intersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial imagery
NAIP 2016; inset maps show Bing Maps Aerial imagery.



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

## Figure 6, Sheet 15 of 21

Delineated Wetlands


On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receive
with tyeical accuracy of 3 feet or better. Linework outside the with hypical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review 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
NAIP 2016; inset maps show Bing Maps Aerial imagery.




Willamette Water Supply Program

Figure 6, Sheet 16 of 21
Delineated Wetlands


On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathinder GEOO XH receiver
with typical accuracy of 3 feet or better. Linework outside the with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review study area as approximate and was maped tight of way and aerial photo interpretation.
from adjacent put 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.
NAIP 2016; inset maps show Bing Maps Aerial imagery.



Willamette Water Supply Program Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation
Figure 6, Sheet 17 of 21
Delineated Wetlands


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

Figure 6, Sheet 18 of 21 Delineated Wetlands

| Delineated Features  <br> Culvert (approx)  <br> Study Area  |  |
| :--- | :--- | :--- |
| Wetland | Photo location and |
| direction |  |

On-site features (wetlands, ditches, streams, culverts, and data On-site features (wettands, ditches, streams, culverts, and dat
plots) were mapped with a Trimble Pathfinder GEO XH receive with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review study area is approximate and was mapped based on field review
from adjacent public right of way and aerial photo interpretation. from adjacent public right of way and aerial photo interpetation.
An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which itersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial imagery
$\begin{array}{llll}0 & 125 & 250 & 500\end{array}$
$\rightarrow z \stackrel{\perp}{\text { Feet }}$



Figure 6, Sheet 19 of 21
Delineated Wetlands

| Delineated Features |  |
| :--- | :--- |
| Culvert (approx) <br> Study Area |  |
| Wetland | Pontial Wetland |

On-site features (wetlands, ditches, streams, culverts, and data On-site features (weltands, atches, streams, culverts, and data
plots) were mapped with a Trimble Pathfinder GEO XH receive
with typical accuracy of 3 feet or better with typical accuracy of
study area is approximate and was mapped based on field review 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.

| NAIP 2016; inset maps show Bing Maps Aerial imagery. |
| :---: |
| N |



DSLWD\# $2017-0024$ Approval lssued $7 / 11 / 20 / 7$ Approval Expires $7 / 11 / 2022$


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

Figure 6, Sheet 20 of 21
Delineated Wetlands


Catch Basin
On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receive with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review study area is approximate and was mapped based on fier review
from adjacent public right of way and aerial photo interpretation. 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 Scholls Area Pipeline Project (PLM 5.0) Wetland Delineation

Figure 6, Sheet 21 of 21
Delineated Wetlands

| Delineated Features |  | Culvert (approx) |
| :---: | :---: | :---: |
| - Wetland |  | Study Area |
| - Botential Wetland Qutsidt of study owta —Wetland Swale | $\checkmark$ | Photo location and direction |
| $\sim$ Ditch (Upland) | $\bigcirc$ | Upland Data Plot |
| $\ldots$ Ditch (OHW) | $\triangle$ | Wetland Data Plot |
| $\ldots$ Ditch (Wetland) | * | Feature extends beyond study area |
| Ordinary High Water (OHW) | * | 10/24/2016 (DSL RUD) <br> No access as of |
| outsidit of stial OHW Ordinary High Water (OHW) Area |  | Area delineated by others Nat part of Taxlot WD2017-0024 |
| Wetland Area |  | concurrmct <br> Contour (2 ft intervals) |
| \# Culvert |  |  |
| - Catch Basin |  |  |

On-site features (wetlands, ditches, streams, culverts, and data On-site features (wellands, ditches, streams, culverts, and data
plots) were mapped with a Trimble Pathinder GEO XH receiver
with typical accuracy of 3 feet or better. with typical accuracy of 3 feet or better. Linework outside the
study area is approximate and was mapped based on field review study adea is approximate and was maped based on fiel from adjacent pubic right of whoto interpetation. 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.
NAIP 2016; inset maps show Bing Maps Aerial imagery.


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

Oregon
Kate Brown, Governor
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
Kate Brown
Governor
Hillsboro, OR 97123-4028
Re: WD \# 2017-0007 Wetland Delineation Report for the Proposed Willamette Water Supply Program Project, PLW 2.0 Washington County; Multiple Sections and Tax Lots

Dear Ms. Iverson:
Dennis Richardson
Secretary of State

Tobias Read
State Treasurer

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 RemovalFill 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 removalfill 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


## Enclosures

ec: Phil Rickus, David Evans and Associates, Inc.<br>Washington County Planning Department<br>Jaimee Davis, Corps of Engineers<br>Amber Wierck, Clean Water Services<br>Anita Huffman, DSL

## PLW2.0

$1-W=$ wetland feature, $S=$ stream feature, $D=d$ dize
2 -Size in study area is given in acres for wetlands, and in length in feet for streams.
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. < 10 ft wide, no fish, etc.)
5-Cowardin Class: PEM=palustrine emergent, PSS=palustrine scrub-shrub, PFO=palustrine forested, R3EM=riverine upper perennial emergent


| ID ${ }^{1}$ | Latitude/ <br> Longitude | Sheet <br> $\#$ | Delineation <br> Method | Size in <br> Study <br> Area $^{2}$ | Assumed <br> Corps <br> JD $^{3}$ | Assumed <br> DSL <br> JD $^{4}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S-W2-1 | $45.520935,-$ <br> 122.900152 | 3 | Onsite | 97 | Yes | Yes |
| W-W2-1 | $45.520936,-$ <br> 122.900154 | 3 | Onsite | 0.18 | Yes | Yes |
| W-W2-2 | $45.526089,-$ <br> 122.900886 | 4 | Onsite | 0.01 | Yes | Yes |
| S-W2-2 | $45.526191,-$ <br> 122.900644 | 4 | Onsite | 258 | Yes | Yes |
| W-W2-3 | $45.552969,-$ <br> 122.902016 | 9 | Onsite | 0.82 | Yes | Yes |

facility built after locostion determinfed to be uplandin 2006. (wis2006.0057)

## 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.

| 区 Applicant $\square$ 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 |  |
| Q 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 |
| I either own the property described below or I have leg property for the purpose of confirming the information | cess to the property. I authorize the Department to access the notification to the primary contact. |
| Typed/Printed Name: Niki lverson | ture: N |
| Date: $1 / 5 / 17$ Special instructio | cess: |

Project and Site Information (using decimal degree format for lavlong, enter centroid of site or start \& end points of linear project)

| Project Name: Willamette Water Supply Program,  <br> PLW 2.0  |  | Longitude: $\mathbf{- 1 2 2 . 8 9 9 8 0 8}$ |
| :--- | :--- | :--- |
| Proposed Use: Pipeline Installation | Tax Map \# See Attachment |  |

## Wetland Delineation Information




W02017-0007


ESRI, ArcGIS Online, USA Topographic Maps. $30 \times 60$ GRID Quadrangles
Figure 1
Vicinity Map


Figure 2, Sheet 1

## Legend <br> Study Area

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




WD2017-0007
Willamette Water Supply Program
Cornelius Pass Pipeline Project
(PLW 2.0) Wetland Delineation

Figure 2, Sheet 3
Tax Lots

## Legend

## Study Area

No access as of 10/24/2016





| Willamette Water Supply Program Cornelius Pass Pipeline Project (PLW 2.0) Wetland Delineation |  |
| :---: | :---: |
| Figure 6, Sheet 2 of 9 Delineated Wetlands |  |
| Delineated FeaturesWetland$\qquad$ Potential Wetland$\qquad$$\qquad$ Ordinary High Water (OHW) | Study Area |
|  | Photo location and direction |
|  |  |
|  | O Upland Data Plot |
|  | Wetland Data Plot |
| $\qquad$ Water Quality Facility <br> Ordinary High Water (OHW) Area | Wetland extends beyond study area |
|  | No access as of 10/24/2016 |
| Culvert | Area delineated by others |
| 工 Culvert (approx) | ( Taxlot |
|  | - Contour (2 ft intervals) |

$\bar{O}$-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimbles Patheams, culverts, and data
with typical accuracy of 3 feet or better. Off-site bound receiver with typical accuracy of 3 feet or better. Off-site boundaries
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
AN




| Delineated Features | Study Area |
| :---: | :---: |
| - Wetland | Photo location and direction |
| Ordinary High Water | O Upland Data Plot |
| (OHW) | $\triangle$ Wetland Data Plot |
| Water Quality Facility | * Wetland extends beyond study area |
| Ordinary High Water (OHW) Area <br> Wetland Area | No access as of 10/24/2016 |
| @ Culvert | Area delineated by others |
| $=$ Culvert (approx) | $\bigcirc$ Taxlot |
|  | - Contour (2 ft intervals) |

On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble P 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. A asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which ittersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial imagery




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

Figure 6, Sheet 4 of 9
Delineated Wetlands


Delineated Features
-Wetland

- Potential Wetland
.unum" Ordinary High Water (OHW)
= Water Quality Facility Ordinary High Water (OHW) Area
D Wetland Area
$\oplus$ Culvert
$=$ Culvert (approx)


Study Area

- Photo location and

O Upland Data Plot Wetland Data Plot


Wetland extends beyond study area
 No access
10/24/2016
\& Mitigation Are
The $\begin{aligned} & \text { Area de } \\ & \text { others }\end{aligned}$
Taxlot
Contour (2 ft intervals)
$\overline{\text { On-site features (wetlands, ditches, streams, culverts, and data }}$ 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 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. A 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 <br> Cornelius Pass Pipeline Project <br> (PLW 2.0) |
| :--- | :--- |
| Wetland Delineation |  |
| 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 fret or better. Off-site boundaries are with typical accuracy of 3 feet or better. Off-site boundaries
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 <br> Cornelius Pass Pipeline Project <br> (PLW 2.0) Wetland Delineation |  |
| :--- | :--- | :---: |
| Figure 6, Sheet 6 of 9 |  |  |
| Delineated Wetlands |  |  |





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

## Figure 6, Sheet 7 of 9

Delineated Wetlands

| Delineated Features | Study Area |
| :--- | :--- |
| Photo location and |  |
| direction |  |

$\overline{O n}$-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. A asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which itersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial imagen.

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 0 | 125 | 250 | 500 |




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


|  | Willamette Water Supply Program <br> Cornelius Pass Pipeline Project <br> (PLW 2.0) Wetland Delineation |  |
| :--- | :--- | :---: |
| Figure 6, Sheet 9 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 approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. A 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



# Pipeline West 1.0 (South Hillsboro Area) ODSL Wetland Verification 

Oregon
Kate Brown, Governor
(503) 986-5200

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

Kate Brown
Governor

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,


## 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 $\square$ Owner Name, Firm and Address: Niki lverson, Water Resource Manager City of Hillsboro Water Department 150 E. Main Street Hillsboro, OR 97123-4028 | Business phone \# (503) 615-6770 |
| :---: | :---: |
|  | Mobile phone \# (optional) |
|  | E-mail: niki.iverson@hillsboro-oregon.gov |
|  |  |
| Authorized Legal Agent, Name and Address: Niki Iverson, Water Resource Manager City of Hillsboro Water Department | Business phone \# (503) 615-6770 |
|  | Mobile phone \# (optional) |
|  | E-mail: niki.iverson@hillsboro-oregon.gov |
| I 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 confiming the information in the report, after prior notifichtion to the primary contact. <br> Typed/Printed Name: Niki Iverson <br> signature: $5=10$ $\qquad$ |  |
|  |  |

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 Tax Lot(s) See Attachment | Section QQ |
| City: N/A County: Washington | Waterway: Many NWI Quad(s): Several | River Mile: N/A |

Wetland Delineation Information


For Office Use Only


Tax Lots

| TLID | JURISDICTION ICITY | ORTAXLOT | TLID | JURISDICTION ICITY | ORTAXLOT |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 15202CC00100 | Hillsboro thillsboro | 3401 O0S02W02CC-000000100 | 152230001100 | Unincorporated PBeaverton | 3401 00S02W2300-00000 100 |
| 152020600100 | $\begin{aligned} & \text { Hillsboro } \\ & \text { Ahillsboro } \end{aligned}$ | 3401 C0S02W02CC-000000100 | 152230001200 | Unincorporated /Beaverton | 3401 00S02W2300-000001200 |
| 1S202CC00700 | $\begin{aligned} & \text { Hillsboro } \\ & \text { thilisboro } \end{aligned}$ | 3401 00S02W02CC-000000700 | 152230001300 | Unincorporatea IBeavorton | 3401 00S02W2300-000001300 |
| 1S202CC01100 | Unincorporated IHilisboro | 3401 00502WO2CC-000001100 | 1 $\$ 2230001400$ | Unincorporated IBeavertion | 340100502 W 2300.000001400 |
| 1 S202CC01100 | Unincorporated 1Hillsboro | 3401 O0S02WO2CC--000001100 | 152230001401 | Unincorporaled /Beaverion | 3401 00SO2W2300-000001401 |
| 1S202CC18800 | $\begin{aligned} & \text { Hillisboro } \\ & \text { Alillisboro } \end{aligned}$ | 3401 00SO2WO2CC-000018800 | 1S2230001900 | Unincorporated /Beavertion | 3401 00S02W2300-000001900 |
| 15202CC18900 | $\begin{aligned} & \text { Hillsboro } \\ & \text { IHillsboro } \end{aligned}$ | 3401 00S02W02CC-000018900 | 152230002000 | Unincorporated /Begverton | $3401.00 S 02 \mathrm{~W} 2300-000002000$ |
| 1S202CC17000 | $\begin{aligned} & \text { Hilisboro } \\ & \text { flilisboro } \end{aligned}$ | 3401 ODS02WO2CC--000017000 | 152230002200 | Unincorparated /Beaverton | 3401 OJS02W2300-000002200 |
| 1 S202CC17100 |  | 3401 00S02W02CC-000017100 | 1S2230002200 | Unincarparated /Beavartan | $340100502 \mathrm{~W} 2300-000002200$ |
| $15202 \mathrm{CC18500}$ | Hillsboro fhillsboro | 3401 O0S02W02CC- 000018500 | 1 22230002203 | Unincorporated /Beaverton | 3401 00502W2300-000002203 |
| 15202CD07400 | Unincorporated 1Beaverton | 3401 COSO2WO2CO -000007400 | 152230002203 | Unincorporated 1Beaverton | 3401 00S02W2300-000002203 |
| 1S202C.008400 | Unincorporated /Beaverton | 3401 OOSO2WO2CD-000008400 | 1 \$2230002401 | Unincorparated /Beaverton | 3401 00S02W2300-000002401 |
| 1S202CD11800 | Unincorporated Beaverton | $3401.00502 \mathrm{~W} 02 \mathrm{CD}-000011600$ | 152230002401 | Unincarporated fBeavarton | 3401 O0S02W2300-000002401 |
| 152110001600 | Unincorporated JBeaverton | 3401 00S02W1100.000001600 | 1S2230002402 | Unincorparated /Beavarton | 3401 00502W2300-000002402 |
| 1\$2118A00200 | Unincorporated SBeaverion | 3401 00S02W118A-000000200 | 152230002402 | Unincomporated /Beaverton | 3401 O0S02W2300-000002402 |
| 1S2118A01300 | Unincorporated Beaverion | 3401 00S02W118A-000001300 | 1\$2230002403 | Unincorporated /Beaverton | 3401 O0SO2W2300-000002403 |
| 1S2118A26400 | Unincorporated /Beaverton | 3401 00S02W118A-000026400 | 1S223AC02400 | Unincorporated /Beaverton | 3401 00502W23AC--000002400 |
| 152118801500 | Unincorporated IHillsboro | 3401 00SD2W1188-000001500 | 1S223AC02800 | Unincorporated /Beaverton | 3401 00S02W23AC-000002600 |
| 1S2118801800 | Unincorporated fililsboro | 3401 00S02W11BE-.000001600 | 1S223AC02700 | Unincorporaled /Beaverton | 3401 O0S02W23AC-000002700 |
| 152118801700 | $\begin{aligned} & \text { Hillsboro } \\ & \text { fhillsboro } \end{aligned}$ | 3401 00502W118B-000001700 | 15223AC02800 | Unincorporated 1Bazverion | 3401 00S02W23AC-000002800 |
| 152118801700 | $\begin{aligned} & \text { thillsDoro } \\ & \text { IHillsboro } \\ & \hline \end{aligned}$ | 3401 00502W1188-000001700 | 15223DA90000 | Unincorporaled /Beaverion | 3401 00S02W23LA-000090000 |
| 152118C00100 | Unincorporated IHillsboro | 3401 00S02W11BC. 000000100 | 1S2W02C-STR | Hillsboro AHillsboro |  |
| 1S2118C00101 | Hillsboro IHillstara | 3401 D0S02W118C.-n00000101 | 1S2WORC -STR | $\begin{aligned} & \text { Hillsboro } \\ & \text { IHillsboro } \end{aligned}$ |  |
| 1S2118C00102 | Unincorporated fillisbera | 3401 O0S02W118C-000000102 | 1S2W02C-STR | Hilisboro Hililsboro |  |
| 152118C00103 | Unincorporated AHillsboro | 3401 O0S02W118C-000000103 | 1S2W118-STR | Hillsboro IHillsooro |  |
| 1S2118C01500 | Hillsboro Itillsboro | $340100502 \mathrm{~W} 11 \mathrm{BC}-000001500$ | 1S2W118-STR | Hilisboro IHillaboro |  |
| 152118C01600 | Hilisboro /Hillisboro | $340100502 \mathrm{~W} 11 \mathrm{BC}-000001800$ | 1S2W11C.STR | Hillisboro Itililsbero |  |
| 152118 COH 702 | Hilisbara AHillisboro | 3401 00SO2W 11BC-000001702 | 1S2W14A -STR | Unincorporated /Beaverton |  |
| 1S2118C01703 | Filistsora 1 Hililsboro | 3401 O0S02W11BC-.000001703 | 1S2W148-STR | Unincorporaled /Beaverton |  |
| 1S2118C01800 | Hillsboro Hillshoro | 3401 D00S02W11BG..000001900 | IS2W23A-STR | Unincorporaled IBaAverton |  |
| 1S2140001900 | Unincorporated IBaavarton | 3401 00502W1400-000001800 | 1S2W23A-STR | Unincorporatod Beaverton |  |
| 152140002300 | Unincorporated /Beavertor | 3401 ODS02W 1400-000002300 | 152W23B-STR | Unincorporated /Beaverton |  |
| 1S2140002402 | Unincorporated /Beaverton | 340100S02W1400-000002402 | 1S2W230-STR | Unincorporated 18asverton |  |
| 1S2140002404 | Unincorporated /Boaverton | 3401 00S02W1400-000002404 | 1S2W230.STR | Unincorporated Peaverton |  |
| 152140002600 | Unincorporated /Beavenorn | 3401 00S02W1400-000002600 | 152W230.STR | Unincorporated leativerton |  |
| 1S2230000401 | Unincorporated /Beaverion | 3401 O0S02W2300-000000401 | 1S2W230-STR | Unincorporated /Benverton |  |
| 182230000600 | Unincorporaled 7 Beaverion | 3401.00S02W2300-000000600 |  |  |  |

WD2017-0027


Figure 1
Vicinity Map



W1)2017-0027


## Figure 2 <br> Tax Lots, Sheet 1

## Legend

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


$1-W=$ 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 | $\begin{aligned} & \hline 45.468987,- \\ & 122.893970 \\ & \hline \end{aligned}$ | 1 | Onsite | 927 | No | No | -- | -- | -- | Dry. No signs of scour. Veg=poison oak, blackberry, Kentucky bluegrass. Infiltrates. |
| D-3-2 | $\begin{aligned} & 45.469035,- \\ & 122.893787 \end{aligned}$ | 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 | $\begin{aligned} & 45.470145,- \\ & 122.895561 \\ & \hline \end{aligned}$ | 1 | Onsite | 667 | No | No | -- | -- | -- | 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 | $\begin{aligned} & 45.470245,- \\ & 122.896827 \\ & \hline \end{aligned}$ | 1 | Onsite | 292 | No | No | -- | -- | - | No signs of scour, no wetland vegetation-dominated primarily by upland vegetation. Drains to W-W1-2. 1' width. |
| W-W1-1 | $\begin{aligned} & \text { 45.470149, - } \\ & 122.897863 \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.470035,- \\ & 122.898458 \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.470259,- \\ & 122.899635 \\ & \hline \end{aligned}$ | 1,2 | Onsite | 392 | No | No | -- | -- | -- | Dry. No signs of scour, no wetland vegetation- dominated primarily by upland vegetation. 1' width. |
| D-W1-3 | $\begin{aligned} & \hline 45.470181,- \\ & 122.901755 \\ & \hline \end{aligned}$ | 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 | $\begin{aligned} & \text { 45.470172,- } \\ & 122.903459 \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.470199,- \\ & 122.904132 \\ & \hline \end{aligned}$ | 2 | Onsite | 342 | Yes | Nó Y ${ }_{\text {Ps }}$ | -- | - | -- | OHW from scour. Carries flow from W-W1-3 to culvert west of study area. 1.5' width. |
| D-W1-5 | $\begin{aligned} & 45.470286,- \\ & 122.904607 \\ & \hline \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.471395,- \\ & 122.904695 \\ & \hline \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.471032, \\ & 122.905293 \\ & \hline \end{aligned}$ | 2 | Onsite | 170 | Yes | Yes | - | -- | -- | Unnamed drainage flowing west through wetland. OHW approx 5 ' from drift lines in the adjacent vegetated wetland. |
| W-W1-4 | $\begin{aligned} & 45.505631,- \\ & 122.902476 \\ & \hline \end{aligned}$ | 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 | $\begin{aligned} & \hline 45.505431,- \\ & 122.902374 \end{aligned}$ | 10 | Onsite | 78 | Yes | Yes | -- | -- | -- | Reedville Creek. OHW approx 15' from drift lines, water staining on rock. LW I W phand ReC |

8 Ditcliss $(0.91 \mathrm{~A})$
2 streams


Willamette Water Supply Program South Hillsboro Area Pipeline Project (PLW 1.0) Wetland Delineation
Figure 6, Sheet 1 of 10
Delineated Wetlands



- Wetland
outsidí otential Wetland
$\ldots$ Ditch (Upland)
$\Longrightarrow$ Ditch ( OHW )
- Photo lo

O Upland Data Plot
$\triangle$ Wetland Data Plot

* Wetland extends

No access as of 10/24/2016 (DSC PJD) Area delineated by
WD2017-0027 Contour (2 ft intervals)


On-site features (wetlands, ditches, streams, culverts, and data
plots) were mapped with a Trimble Pathfinder GEO XH receiver plots) were mapped with a Trimble Pathfinder GEO XH receiver
with typical accuracy of 3 feet or better. Off-site boundaries are with typical accuracy of 3 feet or better. Off-site boundaries
approximate and were mapped based on field review from approximate and were mappend based on field review from
adjacent public right of way and aerial photo interpretation. A 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

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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. A asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots whic intersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial Imagery.

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

| Figure 6, Sheet 5 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 appraximate 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





Figure 6, Sheet 7 of 10
Delineated Wetlands

|  | Study |
| :--- | :--- |
| Delineated Features | Photo location and <br> direction |
| Wetland | 0 |
| Upland Data Plot |  |

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

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Willamette Water Supply Program South Hillsboro Area Pipeline Project

| Figure 6, Sheet 8 of 10 Delineated Wetlands |  |
| :---: | :---: |
| Delineated Features | Study |
| -. Wetland | Photo location and direction |
| - Potential Wetland ondside of study orta mir Ditch (Upland) | - Upland Data Plot |
| $\leadsto$ Ditch (OHW) | $\triangle$ Wetland Data Plot |
| $\ldots$ Ditch (Wetland) | * Wetland extends beyond study area |
| Ordinary High Water (OHW) | No access as of 10/24/2016 (DSL PJD) |
| Creek | \%. $\begin{aligned} & \text { Area delineated by } \\ & \text { others Not Part of }\end{aligned}$ |
| ivert | Taxlot <br> N02017-0027 |
| Ordinary High Water (OHW) Area | Contour (2 ft intervals) |
| W Wetland |  |

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 with typical accuracy of 3 feet or better. Off-site boundaries
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 <br> South Hillsboro Area Pipeline Project <br> (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 typoical accuracy of 3 feet or better Offsite 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

$$
\left.\begin{array}{lcl}
\hline \text { Delineated Features } & \text { Study Area } \\
\text { Wetland } & \begin{array}{l}
\text { Photo location and } \\
\text { direction }
\end{array} \\
\text { Potential Wetland }
\end{array}\right)
$$

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 exclusion of upland ditches, extend off site. Only taxlots whic
itersect the study area are labeled. Imagery: USDA intersect the study area are labeled. Imagery: USDA
NAIP 2016; inset maps show Bing Maps Aerial Imagery


Attachment D
VC I mpact Assessment Exhibits





LEGEND PANMETRICS（FROMIDAB）
－PAVEMENT（FROM LIDAR）
－ 100 －CONTOURS（FROMLIDAR）
－－－－TAXLOTS（FROM METRO）
WWSP PROPOSED ALIGNMENT COMMUNICATIONUTLLTY electricalutluty（overhead）
 $----{ }^{\text {GAS }}$－－－－storm
——mater
---- permanent easement（PE）
temp construction easement（TCE）
$>$ FLOW DIRECTION
ー＂一＂一 ordinary high water
－$=$ UPLAND DITCH
ーローー wetland ditch
－＂I工 Wetland boundary

TLIVMPORARY wetland impact
x Perxmanent wetland impact
vegetated corridor existing condition

degraded

MARGIN

LAND USE MAY NOT ALLOW FOR
RESTORATION TO＂GOOD＂
notes：
 MEMORANDUM，MCM
SEPTEMER 2,2015 ．

IT IS ANTICIPATED THAT UTLUTIES LOCATED WITHIN 2 RIPE DAAEETRSRF THELTIT LOCATIONS DURING RELOCATED．VER
FINAL DESIGN．
IT IS ANTIIIPATED THAT UTLITIES LOCATED BETWEEN
2 AND 3 PIPE DIAMETERS OF THE WWSP CENTERLINE 2 AND 3 PIPE DAMETERS OF THE WWSP CENTERLINE
WILL BE SUPPORTED DURING CONSTRUCTION． UTLITIES NEED TO BE PHYSICALLY LOCATED DURING

## PLAN



PRELIMINARY DESIGN MAIN STEM PLAN－
SCHOLLS FERRY TO FARMINGTON－ STA 841＋00 SUPPLY PROGRAM



PLW＿1．0：Ag．Wetland along Rosedale Rd．and Unnamed Seasonal Drainage North of Rosedale Rd．



LEGEND（ORIGINALLY PRINTED IN COLOR）：

－ 100 －CONTOURS（FROM LIDAR
－TAXLOTS（FROM METRO）
WWSP PROPOSED ALIGNMENT COMMUNICATIONUTLLTY electricalutlity（overhead） ELECTRICALUTLITY（BURIED）

gas
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permanent tasement（pE） temp construction easement（tce）

| $>$ |
| :---: |
| $-=-$ | flow direction

－＝－UPLAND DITCH
ーローー wetland ditch
－＂I－WETLAND BOUNDARY

wettand description
$\boxed{\square 1 L D}$
temporary wetland impact
IIIIIII
PERMANENT WETLAND IMPACT
VEGETATED corridor Existing condion

$\square$
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degraded
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GOOD
LAND USE MAY NOT ALLOW FOR

Notes：
SEE PRELIMINARY GEOTECHNICAL ANALYSIS
MEMORANUM，MCMILLEN JACOBS \＆ASSOCIATE MEMORANDUM，MCMII
SEPTEMERR 2 ，2015．
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WITHIN 15 FEET OF PROPOSED WWSP PIPE．
．IT II ANTIIIPATED THAT UTILTTES LOCATED WITHIN 2 PIPE DIAMETERS OF THE WWSP CENTERLINE WILL BE
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4．IT I ANTCIPATED THAT UTLITTES LOCATED BETWEEN WIL BE EUPPORTED DURING CONSTRUCTION． UTLLTIES NEED
FINAL DESIGM．

| PLAN |
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PRELIMINARY DESIGN

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WILLAMETTE WATER


PLW＿1．0：Unnamed Tributary to Butternut Creek
－ーーー SANITARY storm water Permanent Easement（pe） temp construction easement（tce） flow direction
－＝－URIAND DITCH
－＝－＝wetland ditch
－＂＿WETLAND BOUNDARY

$\frac{\mathrm{NWIV}}{8 \times x \times x}$ wetLand description

IT IS ANTICIPATED THAT UTULTITES LOCATED BETWEEN
2 AND 3 PIPE DIAMETERS OF THE WWSP CENTERLNE
 UTLLTIIES NEED
FINAL DESIGN．

## PLW_1.0: Reedville Creek at Cornelius Pass Road



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LEGEND (ORIGINALLY PRINTEDINCOLOR)


## $\square$ DEGRADED

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G000
LAND USE MAY NOT ALLOW FOR
RESTORATION TO "GOOD" NOTES:
SEE PRELIMINARY GEOTECHNICAL ANALYSIS
MEOORADOU, MMMLLEN JACOBS \& ASSOCIATE
SEPTEMEDR
2. MAJOR UTLITIES ONLY IDENTIFED CROSSING OR
3. IT IS AITICIPTTED THAT UTLITITES LOCATED WITHIN 2 RELOCATEDV.VERFF THE UTITY LOCATIONS DURING
Final design.
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FINLL DESIGN.



PLW_2.0: Wetlands near Cornelius Pass Northern Terminus and Wetlands near Pipe Connection at Cornelius Pass Pump Station PLW 2.0


WILLAMETTE WATER SUPPLY PROGRAM

| PRELIMINARY DESIGN |  |  |  |
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PAVEMENT (FROM LIDAR)

-     -         - CONTOURS (FROM LIDAR)

WWSP PROPOSED ALIGNMEN соммUnicationvtility
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NOTES
SEE PRELIMINARY GEOTECHNICAL ANALYSIS
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LAND USE MAY NOT ALLOW FOR
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NOTES：
REFER TO PLAN SHEETS FOR TAX LOT NUMBERS，TEMPORARY AND PERMANENT
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2．UTLITES SHOWN IN PLAN HAVE UNKNOWN
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|  | scale | As shown |  |



## Attachment E

## Table of VC I mpacts

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

| Work <br> 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 | 25128A000300 | 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, <br> 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, <br> 251060001500 | 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 | Y |
| 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 | 252010000100 | degraded | N |
| PLM_5.2; P-24 | Wetland at Tile Flat Road/Kobbe Drive* Vc is private grove of trees | W-м5-9 | Open trench | 0.20 acre temporary | 2021-2023 | 2S2010000200, 1S2360000200, 252010000800 | 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 | 15223Ac02800 | 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 | 152230001401 | marginal | Y |
| PLW_1.3; P-35 | Unnamed Tributary to Butternut Creek* | PHS-C1 | Open trench | 0.24 acre temporary | 2019-2021 | 152140001900 | 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 | 15202CC0100 | 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 <br> 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 | 15117BC02300 | 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 | 151080000501 | degraded | Y |
| PLE_1.0; P-59 | Beaverton Creek at Millikan Way and BNSF RR, VC impact to abandoned rail ROW | 54-2 | open trench | 0.06-acre temporary | 2020-2023 | 151080002800 | degraded | Y |
| 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 curren
** denotes locations where the temporary disturbance corridor will exceed cWs 50 -foot limit.
** denotes Iocations where the temporary disturbance corridor
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 <br> 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

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 Sofety Zones on sheets 2 and 3 .
- Refer to Crossings spreadsheet for areas where exceptions to typical site restoration apply.




## TYPICAL SITE RESTORATION IN WEILANDS

WETLAND PLANT COMMUNITIES, TYPICAL*

| "Restricted Zone" (shallow-rooting vegetation) WETLAND |  |  |  |
| :---: | :---: | :---: | :---: |
|  | 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 |
| "Safety Zone" (medium-rooting 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 |
| "Temporary Easement" (forested) 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 |
|  | Dewey's Sedge | Carex deweyana | Herb |
|  | Small Fruited Bulrush | Scirpus microcarpus | Herb |
|  | Tall Managrass | Glyceria elata | 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 Portiand plant lists and are consistent with the proposed habitat type.

RIPARIAN PLANT COMMUNITIES, TYPICAL*


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

Attachment 2: Table 1: Site Restoration by Resource Crossing
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/OrePac 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 | S1-2 | 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/TualatinSherwood 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 Creek. | No, see notes. | Replace with existing WQ facility plantings (e.g. cattails) and adjacent landscaping. |
| PLM_4.0 | Rock Creek at Tualatin Sherwood Road | S2-1 | 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 canarygrass 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 Tualatin 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-M5-7 | 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 | S-M5-6 | 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 notes. | 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 Hillsboro 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-5-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 Metro 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 Hillsboro and/or CWS codes. |
| PLE_1.0 | Wetland at NE Corner of 165 th/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 | Resource Crossing | Delineation Feature ID's | Resource Description | Apply Typical Revegetation Plan | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: |
| wwss wTP | Wetland A | A | Small isolated depressional palustrine scrub-shrub wetland, roughly half of which is surrounded by rocky slopes and rock overhangs. Dominated by native vegetation including Douglas spirea, Oregon ash, Pacific crabapple, 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 Certification Form

1. Property Information (example 1S234AB01400)

Tax lot ID(s): See attached tax lot maps
$\qquad$
Site Address: See attached tax lot maps
City, State, Zip: Beaverton, Hillsboro, and Unincorporated WA county.
Nearest Cross Street: $\qquad$
3. Development Activity (check all that apply)
$\square$ Addition to Single Family Residence (rooms, deck, garage)
$\square$ Lot Line Adjustment
$\square$ Minor Land Partition

- Residential Condominium
- Commercial Condominium
$\square$ Residential Subdivision
- Commercial Subdivision
- Single Lot Commercial
- Multi Lot Commercial

Other Linear Utility Line Installation
5. Check any of the following that apply to this project.
$\square$ Adds less than 500 square feet of impervious surface.
$\square$ Does not encroach closer to the Sensitive Area than existing development on the property.
$\square$ Is not located on a slope greater than 25\%.

## 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

## 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
6. Applicant Information

Name: $\qquad$
Company: $\qquad$
Address: $\qquad$
City, State, Zip: $\qquad$
Phone/Fax: $\qquad$
E-Mail: $\qquad$
Unknown (check appropriate box)
7. Will the project involve any off-site work? $\square$ Yes No
If yes, location and description of off-site work Vegetated Corridor mitigation at locations not yet identified.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
8. Additional comments or information that may be needed to understand your project $\qquad$
The project consists of the installation approximately 26 miles of underground water supply pipe extending from Sherwood to Hillsboro, Oregon.
Pipe diameter ranges from 36 inch to 66 inch diameter. All impacts to vegetated corridor will be temporary.
Because of the linear nature of the project, vegetated corridors are reported as areas impacted within the alignment, and not for the entirety of each tax lot crossed.
Non-standard "programmatic" Site Assessment documentation has been negotiated with CWS, and is attached.

## Sensitive Areas Certification Form (continued)

$\square$
9. An on-site, water quality sensitive area reconnaissance was completed on:

Date 4-5/15 \& $\ddagger \ddagger$ By Phil Rickus
Title Biologist
Company Willamette Water+
10. Existence of Water Quality Sensitive Areas (check all appropriate boxes)

As defined in the Districts Design and Construction Standards:
A. Water-quality-sensitive areas $\square$ do do not exist on the tax lot.
B. Water-quality-sensitive areas $\square$ do $\square$ do not exist within 200 ' on adjacent properties, or $\square$ unable to evaluate adjacent property.
C. Vegetated corridors $\square$ do ( 4.54 acres impact SF) $\square$ do not exist on the tax lot.
D. Vegetated corridors $\square$ do $\square$ do not exist within 200' on adjacent properties, or $\square$unable to evaluate adjacent property.
E. Impacts to sensitive areas and/or vegetated corridors will occurOn-siteOff-siteNone proposed at this time.
F. If impacts, mitigation isOn-siteOff-siteboth on and off site
11. Simplified Site Assessment containing the following information: (check only items submitted). Please refer to Design and Construction Standards 17-05 section 3.02 .2 for application requirements.
$\square$ Complete Certification Form (2 pages)
$\square$ Written description of the site and proposed activity.
$\square$ Site plan of the entire property.
$\square$ Photographs of the site labeled and keyed to the site plan.
12. Standard Site Assessment containing the following information: (check only items submitted).

Please refer to Design and Construction Standards 17-05 section 3.02 .2 for application requirements.
$\square$ Complete Certification Form (2 pages)
( Written description per Design and Construction Standards 17-05 section 3.13 .3 b. 1
$\square$ Wetland Data sheets
$\square$ Vegetated Corridor Data sheets
Existing Site Condition Figures
$\square$ Proposed Development Figures

By signing this form the Owner, or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site.

I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

## Applicant:

John Macklin
Print/Type Name
Biologist
Print/Type Title
3/14/2018
Signature
Date






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

Figure 2, Sheet 2
Tax Lots

## Legend

Study Area Area delineated by others
$\propto$ No access as of 10/24/2016

Metro RLIS Data. 2016.



## Legend

Study AreaArea delineated Area deline
by othersNo access as of
10/24/2016






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

Figure 2, Sheet 1
Taxlots
Taxlots

## Legend <br> Study Area

Area delineated by others
$\otimes$ No access as of 10/24/2016



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

Figure 2, Sheet 2
Taxlots
Taxlots

## Legend <br> Study Area <br> Area delineated by others <br> No access as of 10/24/2016

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




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

Figure 2, Sheet 3

## Tax Lots

Legend

## Study Area

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



[^0]:    

[^1]:    

