Request for AARP/Regional General Permit for Selected Industrial Sites in The Dalles and Wasco County, Oregon

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TSI 2014-0323

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VOLUME 2: Final Oregon Rapid Wetland Assessment Protocol (ORWAP) Report

VOLUME 3: Development and compensatory Mitigation Feasibility Report

INTRODUCTION

The Port of The Dalles (Port) is seeking an Advance Aquatic Resource Plan (AARP) approval/ Regional General Permit for development that will impact wetlands on six participating industrial parcels (six-site study area) located in the City of The Dalles and Wasco County, Oregon. This request includes approximately 316 acres of land within five zoned industrial sites and one site within the Columbia River Gorge National Scenic Area, that has been identified for future inclusion within the City of The Dalles' Urban Growth Boundary.

It is expected that up to 237.6 acres of this 316-acre industrial lands inventory will be committed for development over the next twenty years (through 2035). However, 32.6 acres of this potentially developable space currently lies within the Columbia River Gorge National Scenic Area, meaning the land will not be available for industrial development without a jurisdictional change (inclusion within The Dalles' Urban Growth Boundary).

Development needs have been balanced with the need for aquatic resource protection. The aquatic resources within each site have been identified. The functions and values of wetlands within each of the sites have been assessed. Streams and their riparian areas have also been assessed. Of a total 20.37 acres of wetlands within the proposed permit area, 16.7 acres, or 82% percent have been identified for protection.

The remaining acreage within the six sites, excluding areas designated for development or wetlands is unsuitable for development either because of existing easements, topography, potential for mitigation, remaining size or other considerations.

The Port has coordinated a multi-year effort to find the best approach for balancing protection of high-value natural resources with the need for land on which to site larger-scale industrial development. The collaborative effort has been conducted in partnership with the State of Oregon, five local governments, economic development partners, and industrial land owners.

The Port of The Dalles serves the northern third of Wasco County as the area's primary economic development authority. The Port's function includes developing industrial lands to create jobs and development.

The State of Oregon has provided funding and significant staff resources toward this effort. The Governor's Regional Solutions Team, Department of State Lands (DSL), Business Oregon, Department of Land Conservation and Development, Oregon Department of Transportation and the Infrastructure Finance Authority have all been active partners.

The partners have worked through a multi-phased effort to qualify and quantify the best approach for balancing economic development and natural resource interests.

The Dalles serves as the primary industrial driver of the Wasco County economy and the properties included within the proposed six-site study area make up the entirety of available large industrial sites (10 acres and larger) and identified potential industrial sites. The Department of State Lands originally evaluated this land inventory in 2011and found that all six of the sites likely had wetlands on them. Closer review established that the location of wetlands severely limited access to some of these sites and that a complete wetland impact avoidance approach would be unlikely to result in developable acreage that would be necessary to meet industrial siting requirements.

Terra Science Inc. (TSI) was contracted to assess environmental conditions on the selected sites. Onsite evaluations, records research, and outreach to regulatory agencies were used to document site conditions and development considerations. TSI's findings were analyzed to

determine those aquatic resources that were best suited for avoidance, additional buffering, and enhancement, and those best suited for development.

This analysis of aquatic resources identified the need to protect 16.7 acres of wetlands and waterways, leaving approximately 237.6 acres in the inventory of developable lands. TSI's work also defined multiple development requirements, which have been incorporated into this proposal.

The Port submits that it is important that future developers on these sites have the option to freely pursue an Individual Permit at their discretion. As such, the Port intends that use of any AARP/Regional General Permit granted to impact wetlands through approval of this proposal be voluntary.

1.0 AARP REGIONAL GENERAL PERMIT SPONSOR

The Port of The Dalles proposes to serve as the AARP/Regional General Permit sponsor under this application.

The Port's primary task within its economic development mission is to prepare industrial land for the purpose of recruiting jobs and industrial development, which makes the Port an appropriate sponsor for the AARP. In addition, the Port's longevity as an organization and industrial property owner allows it to supersede transient ownership considerations.

As AARP Sponsor, the Port has: coordinated land owner and local government participation in Plan development; coordinated with the Department of State Lands (DSL)and other affected local, state (DEQ, DLCD, ODFW, OBDD/IFA) and federal agencies (Corps of Engineers, NMFS, EPA) through the Plan development process; administered the Technical Advisory Committee created pursuant to Division of State Lands OAR 141-085-0768(3)(a)(A); and will be responsible for AARP content, execution, reporting, amendments, and renewals as may be required.

2.0 NEED, PURPOSE AND GOALS

The purpose of this project is to improve the development-readiness of The Dalles' remaining supply of 10-acre and larger industrial sites while simultaneously protecting high-value aquatic resources.

Past and current development projects highlight the need to comprehensively inventory aquatic resources on the remaining large-lot industrial land in The Dalles. Developers reported uncertain time frames and cost schedules threatened the viability of their projects, while resource protection agencies are often frustrated by a standard permitting process that does not adequately consider the broader environmental context.

2.1 Development Challenges: Challenges to timely permitting have been experienced by at least two industrial development projects, including lack of identified mitigation options and prolonged appeal processes. One project is still going through appeals seven years after application, the other was cancelled as a consequence of the prolonged timeline, though it eventually secured mitigation credits.

Establishment of an AARP/Regional General Permit would assure that much of the process is completed before a potential developer arrives on scene, including mitigation identification and much of the public review.

2.2 Significant Constraints: Additionally, the limited remaining industrial land within the Urban Growth Boundary (UGB) is significantly constrained by existing wetlands. The challenge to properly manage developable land while protecting natural resources threatens the long-term ability for the region to sustain its environment and economy. In order to advance economic and conservation objectives, The Dalles, with the help of North Central Regional Solutions Team, sought to comprehensively inventory aquatic resources, make strategic decisions now about aquatic resources avoidance and impact minimization, determine suitable areas for industry to develop and find suitable mitigation opportunities.

Opportunities to bring more land into the UGB for industrial development are extremely limited. The Dalles is surrounded by Columbia River Gorge National Scenic Area and Exclusive Farm Use land, which severely limits opportunities for expansion. This situation re-enforces the importance of making the most efficient use possible of the city's remaining buildable lands inventory.

2.3 Need for a Comprehensive View: The AARP/Regional General Permit aligns with the intent of Oregon's land use system to balance development need with protection of high-value resource lands. The proposed programmatic assessment and approval allows for a comprehensive look at aquatic resources across a broader landscape than the standard permit-by-permit approach. This more informed method, in turn, allows for strategic decisions to be made now about protecting the most important aquatic resources.

The comprehensive view afforded through this proposal also allows for more thorough analysis without the immediate review and approval pressures that may occur during site-by-site development proposal consideration. This approach provides more room for consideration of alternatives — from proposal development, where multiple locations and protection scenarios were tested and evaluated, through to final review of this proposal.

Programmatic approval also more efficiently uses regulatory staff time compared with the project-by-project approach.

2.4 Meeting Public Need: The Dalles and Wasco County have learned from experience the risks of having an economic base of limited diversity. When the aluminum smelter that once provided the county's major source of living-wage employment shut down in the mid-1980s as a consequence of a global economic recession, the county was plunged into sudden and severe economic distress.

- Since that time, the focus on The Dalles' industrial lands has been to strengthen the economy through ongoing diversification. The emphasis on industrial businesses is deliberate:
- Oregon is heavily dependent on personal income tax for public revenue. For wage generation, industrial development generally provides the most efficient land us on a square footage basis, with average industrial wage rates in Oregon at about $14,600 greater than non-industrial jobs.
- City and county governments in Oregon are almost totally dependent on revenues provided through property taxation for delivery of public safety and local services. The highest property-to-land-area values in the region are for large industrial facilities, especially those with large fixed equipment.

A strong economic base, driven by industrial diversity, will enhance the economic and social wellbeing of the region. This improved quality of life leads to multiple social benefits, from extended buying power and improved health to reduced crime.

2.5 Need for Development Certainty: Readiness to accommodate industrial prospects is critical to successful recruitment in Wasco County. State and national recruiters relay that there is an actual cost to industry if it is unable to move quickly from development concept to having their product in the marketplace. This is why industry will bypass regions where they are unable to be in production within one year and why industry has such strong preference for areas that can accommodate expedited (three-month) permitting (Location Advisory Services).

2.6 Need for Wetlands Certainty: Most of the undeveloped, zoned large lot industrial land supply in The Dalles is constrained by wetlands, including sensitive vernal pools and Chenoweth Creek, which has a high habitat value for anadromous fish and other species. Experience with two previous development projects within the remaining The Dalles industrial land provides evidence that the unknown amount of time and uncertain outcomes related to wetlands permitting are major impediments for build-to-suit industrial development in this region.

2.7 Goals: The three primary goals of the AARP/Regional General Permit are to:

1. Increase economic development opportunities on industrial lands by providing increased certainty in permitting timelines.
2. Improve economic development efforts by identifying constraints on employment lands.
3. Better inform resource protection decisions so that development is balanced with the protection of high-value resource lands.

2.8 Outcomes Sought from DSL:

- Concurrence on wetland delineation reports for six sites within the study area sufficient for future removal-fill permitting.
- Concurrence on wetland functional assessments for the six sites within the study area sufficient for removal-fill permitting
- Acknowledge sufficiency of aquatic resources avoidance and impact minimization strategy for future removal-fill permitting.
- Acknowledge the sufficiency of the conceptual wetland mitigation strategy for more detailed and future refinement for use in removal-fill permitting.
- Expedite removal-fill permit process for projects located within the planning area and meeting defined eligibility criteria.

3.0 PUBLIC PARTICIPATION

The Technical Advisory Committee (TAC) brought together property owners, local and regional stakeholders, state and federal regulators, and others who could assist the process, including representatives of North Central Regional Solutions Team, which adopted this effort as a regional priority project. See attached TAC Contact List for additional details.

The TAC met intermittently between April 17, 2013 and July 9, 2015. The TAC's role through that period has been to:

- reach an understanding of the tasks required develop a programmatic solution to The Dalles' wetlands challenges;
- develop criteria by which to evaluate land for development, protection or mitigation;
- analyze information produced in the Wetlands Delineation and Oregon Rapid Wetlands Assessment Protocol produced by the Port's consultant in comparison to the criteria;

- reach consensus on a strategy that could produce a Regional General Permit or AARP/ Regional General Permit.

3.1 TAC Meetings and Publicity: The TAC met five times in total between 2013 and 2015 with a 15-month hiatus in the middle while funding was developed and wetlands delineation accomplished.

3.1.1 Meeting activity: April 17, 2013 - Outline the state planning requirements for industrial land, review available watershed and stormwater information, learn about various mechanisms for establishing state and federal framework (AARP/Regional General Permit), explore funding options.

June 13, 2013 - Familiarize TAC with Linn-Benton Counties parallel efforts, reach consensus on environmental criteria to characterize aquatic resources on industrial sites, reach consensus on "development" criteria, review project funding status. The environmental and development criteria are reflected in the Development and Compensatory Mitigation Feasibility Report attached.

Oct. 29, 2014 - Review progress so far and wetlands permitting challenges and the major developments stalled for years as a result, and how a programmatic solution could help resolve those challenges; reviewed key elements of process; reviewed site maps for the study area.

May 18, 2015 - TAC took a field trip to physically view the wetlands identified in the delineation and to hear options for protection, development and mitigation.

July 9, 2015 - Reach preliminary consensus on site-by-site discussion of Development and Protection/Mitigation designations. Explore wrap-up and next steps. The consensus strategy is reflected in the Development and Compensatory Mitigation Feasibility Report attached.

3.1.2 Media and other outreach: Stories about the wetlands process appeared in the local newspaper, *The Dalles Chronicle,* on May 19, 2013; Feb. 18, 2014; May 27, 2015 and October 13, 2015. Reports on the process have also been presented at two Regional Solutions meetings and have been regularly publicized in the Port's newsletter. The process was additionally discussed at a public meeting of the Port of The Dalles Commission on October 14.

3.2 Regional Solutions: Recognizing the need for more certainty in the wetlands permitting process for industrial development, the North Central Regional Solutions Advisory Committee adopted, as a regional priority project, the Port of The Dalles Wetland and Industrial Land Technical Assistance Project.

"The North Central Regional Solutions Advisory Committee has prioritized both regulatory integration/streamlining and industrial land availability – both of which are relevant to the Port of The Dalles Wetland and Industrial Land Technical Assistance project.

> "This project facilitates both natural resource protection and industrial development in the region. The project is complex, requiring coordination with the Department of State Lands, the Department of Environmental Quality, the Oregon Department of Fish and Wildlife, the Oregon Business Development Department, the U.S. Army Corps of Engineers, the Port of The Dalles, the City of The Dalles, and local partners. The project objectives, including the development of wetland mitigation in advance of industrial project proposals and expedited permitting in accordance with an AARP/Regional General Permit, would streamline future wetland permitting, producing the ultimate goals of the process: natural resource protection and certainty for industrial land development.
>
> "As an urban hub for the North Central Region, the City of The Dalles contains a substantial portion of the region's industrial land supply with approximately 60 acres of undeveloped and 265 acres of re-developable land zoned Industrial and Commercial/ Light Industrial within the urban growth boundary. Because the state and federal wetland permit processes from the wetland boundary delineation to permit decision can take six months to one or more years, any efforts to pre-work the wetland challenges will significantly advance readiness of those sites with wetland constraints for industrial development."
>
> *— Kate Sinner*
> *Regional Solutions Coordinator*
> *North Central Region*
> *Office of Oregon Gov. Kate Brown*

Table 3-1 Regional General Permit Technical Advisory Committee

Contact	Organization	Phone Number	Email	Role
TAC MEMBERS				
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Joe Zisa	FWS	503-231-6961	joe_zisa@fws.gov	FWS Rep
Rod French	ODFW	541-296-4628	rod.a.french@state.or.us	Mid-Columbia District Fish Biologist
Joy Vaughan	ODFW	503-947-6089	joy.r.vaughan@state.or.us	Waterway Alterations/ Land Use Coordinator
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Amanda Punton	DLCD	971-673-0961	amanda.Punton@state.or.us	DLCD Wetland Expert
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Nolan Young	City of The Dalles	541-296-5481 x1118	nolan_young@ci.the-dalles.or.us	City Manager
Richard Gassman	City of The Dalles	541-296-5481 x1151	rgassman@ci.the-dalles.or.us	Planning Director

Dawn Hert	City of The Dalles	541-296-5481	dhert@ci.the-dalles.or.us	Planning alternate
Krystyna Wolniakowski	Gorge Commission	509-493-3323	krystyna.wolniakowski@gorgecommission.org	Executive Director
Bryan Brandenburg	NORCOR	541-298-1576	jweed@norcor.com	Administrator
Howard Anderson	Northwest Aluminum	541-308-6018	andersengroupllc@yahoo.com	Property Watcher
Scott Tillman	Northwest Aluminum	646-256-1254	scottmtillman@gmail.com	NWA
Ryan Bessette	Wasco County SWCD	541-296-6178 x119	anna.buckley@or.nacdnet.net	Watershed Council Coordinator
Terry Cullen	Gorge Commission	509-493-3323 x 227	terry.cullen@gorgecommission.org	Principle Planner
Galen May	Northwest Aluminum		m1link@gorge.net	NWA Environmental Consultant
Loren Shultz	Infrastructure Finance Authority	503-986-0138	loren.j.shultz@state.or.us	IFA Regional Representative
Michele Spatz	MCEDD	541-296-2266	michele@mcedd.org	Project/Mobility Manager
Mark McCavic	WM3	541-993-0458	mark@qnect.net	Property Owner
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David Monnin	Terra Science	503-274-2100	david@terrascience.com	Field Manager
Sierra Gardiner	Business Oregon	503-986-0141	sierra.gardiner@state.or.us	Industrial Lands Specialist
Larry French	DLCD	503-934-0054	larry.french@state.or.us	Community Service Administrative Specialist
Judy Linton	U.S. Army Corps of Engineers	503-808-4382	judy.l.linton@usace.army.mil	

4.0 PLANNING AREA

The planning area for this proposal includes five zoned industrial properties with large-lot potential within the Urban Growth Boundary (UGB) of The Dalles, and one identified for potential inclusion in industrial zoning if the UGB can be expanded. All the sites are located in Wasco County, Oregon. All sites are located in the Eastern Cascades Eco-region and Middle Columbia-Hood Watershed (HUC 4 number:17070105).

4.1 Regional Context: Industrial development in The Dalles has largely grown up along the city's riverfront crescent as a result of a variety of factors.

4.1.1 Topography: The Dalles topography is bowl-shaped, featuring steep bluffs that hinder transportation for commercial and industrial purposes, so the city has spread out from the historical downtown along the waterfront with the largest industrial developments to the north and east of downtown as it bends along the river. Topography further constrains access to transportation — rail, river and highway — which are located primarily in a lowland corridor along the river.

4.1.2 Jurisdiction: Expansion of The Dalles boundaries to meet future industrial needs is constrained by several factors. It is bounded to the south by exclusive farm use land and to the east and west by the Columbia River Gorge National Scenic Area. A more than seven-year effort to seek expansion of the city's Urban Area boundaries in relation to the Scenic Area remains gridlocked by staffing and funding issues.

The Dalles functions as the largest service center within the Mid-Columbia Region, providing a job site that draws workers from most nearby counties including Hood River, Gilliam, Klickitat and Sherman counties, which are home to an estimated 71,513 residents (2013 American Community Survey). Like many non-metropolitan communities in Oregon, The Dalles lags behind the state in median income. Figures also from the 2013 ACS show Oregon's median annual income at $50,299, while Wasco County's median annual income is $43,765.

The gap is even more marked when annual average wage income (2014 Oregon State Annual Labor Statistics) alone is considered. Oregon's annual average is $46,515, while Wasco County's is $34,505.

The largest private employment categories also have some of the lowest annual average wages. Agriculture, which employs 1,889 workers, earns an average annual $19,590. Retail, the next-largest sector with 1,633 workers, earns an average $26,957. Manufacturing employed 720 workers and provided a $31,446 average annual wage — 15 percent higher than retail and 37 percent higher than agriculture. Manufacturing and other industrial jobs make up a key portion of the foundational jobs upon which the Wasco County economy is based.

These statistics emphasize the importance of bringing new industrial sector job opportunities to the region to help address the significant income inequalities of the region.

Figure 4-1 Six Sites Chosen to be part of AARP/Regional General Permit

Source: Adapted from U.S.D.A. Farm Service Agency aerial photography, available at Google Earth.

Terra Science, Inc. Soil, Water, & Wetland Consultants	FINAL OREGON RAPID WETLAND ASSESSMENT PROTOCOL (ORWAP) REPORT SUMMARY FOR THE PORT OF THE DALLES REGIONAL WETLAND PLANNING PROJECT The Dalles, Wasco County, Oregon	AUGUST 2013 AERIAL PHOTOGRAPH	FIGURE 2
GRAPHIC SCALE 0 750 1500 1 Inch = 1500 ft.	16 March 2015		

Figure 4-1A Wetlands Study Area in Proximity to The Dalles, Oregon

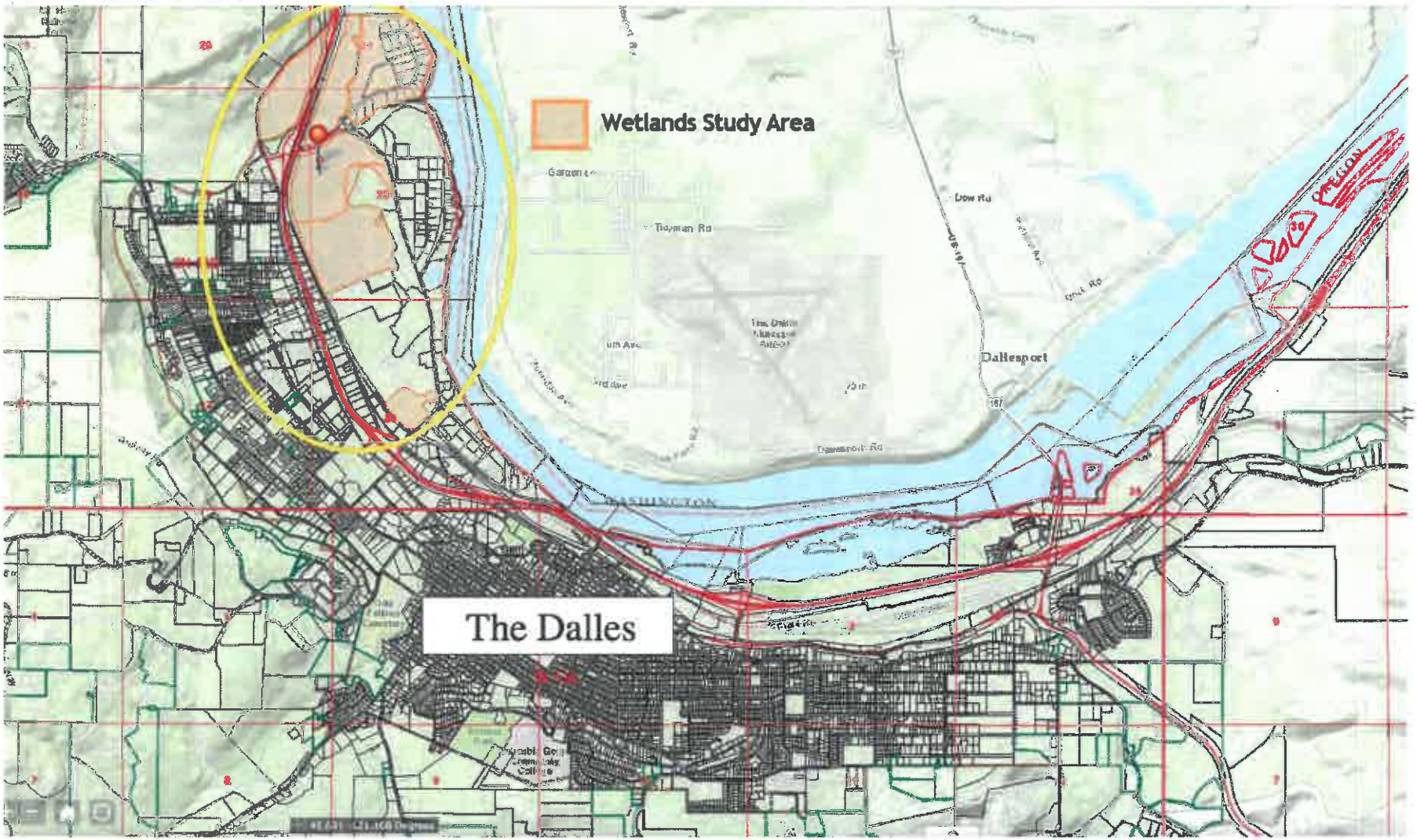


Table 4-1. Six Sites Chosen to be part of the AARP/Regional General Permit

Site Name	Acres	Tax Map	Tax Lot	Geographic Viscinity	Zoning	Owner
Site 1	30.85	2N13E29A	100	West of Interstate 84, North of Chenoweth Interchange	General Management Area, National Scenic Area	Northwest Aluminum
	20.28	2N13E20	900			
Site 2	20.5	2N13E28	701	West of Interstate 84, North of Chenoweth Interchange	Industrial	Northwest Aluminum
	22.23	2N13E21	600			
Site 3	40.93	2N13E21	700	North of River Road on the waterfront	Industrial	Port of The Dalles
	42.51	2N13E21	800			
Site 4	67.17*	2N13E28	702	South of River Road, East of Interstate 84	Commercial/ Light Industrial	WM3 (Maley LLC)
Site 5	91.52	2N13E28	700	East of Interstate 5, West of River Road	Industrial	Northwest Aluminum
Site 6	17.5	2N13E33	500	North of Webber St, East of West Second St.	Industrial	Northern Oregon Regional Corrections

* Site 4 acreage includes proposed WalMart, proposed mitigation and existing ODOT mitigation equals 67.17 acres; excluding those areas acreage is approximately 35 acres.

4.2 Site Rationale and Descriptions. The six properties selected for inclusion in the AARP boundary represent the largest sites still remaining in The Dalles' Urban Growth Boundary still available for industrial or light industrial development, as well as one site targeted for eventual inclusion in the UGB. These sites represent the city's best existing opportunity for industrial development requiring land of 10 acres or larger.

Figure 4-2 AARP/RGP Study Area Site 1

Source: Adapted from U.S.D.A. Farm Service Agency available at Google Earth.

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 1 The Dalles, Wasco County, Oregon	AUGUST 01, 2011 AERIAL PHOTOGRAPH
GRAPHIC SCALE 0 175 350 1 inch = 350 ft.	August 2014	FIGURE A.5h

Site

1. Northwest Aluminum Company:

Site 1 is owned by Northwest Aluminum Company (NAC). This study area is bound by Interstate I-84 to the east, Old Columbia River Highway to the west and River Road to the south. The 51.13± acre Site 1 consists of Tax lot 900 on Wasco County Assessor's map Township 02 North,

Range 13 East, Section 20 and Tax lot 100 (including portion of Oregon Department of Transportation Lot 7) on Township 02 North, Range 13 East, Section 29A. The centroid of the site is approximated at 45.634470° north and -121.213776° west.

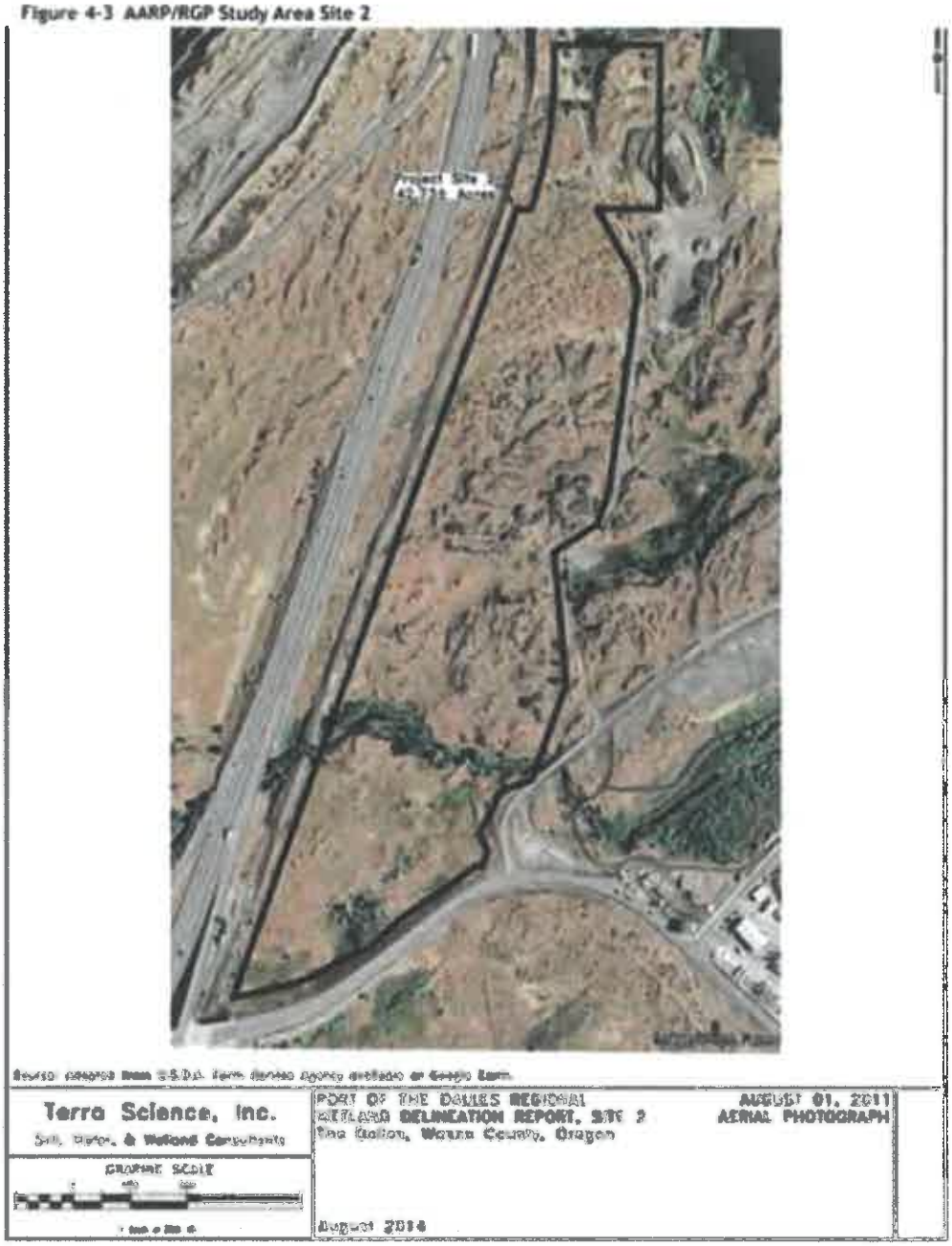
The site transitions from steep basalt cliffs and rock outcrops in the northernmost portion to a relatively flat alluvial terrace of Chenoweth Creek containing basalt rock outcrops. Chenoweth Creek dissects the Site 1 along the southern quarter as it flows easterly towards the Columbia River. The southernmost portion consists of a fill terrace and native terraces which gently slope to Chenoweth Creek. Central areas consist of a broad and relatively flat alluvial terrace with scattered basalt rock outcrops. The northernmost portion transitions to rock outcrops and basalt cliffs. Onsite elevations range from approximately 165 above mean seal level (msl) in the northern corner to approximately 120 msl along Chenoweth Creek.

Historic aerial photography analysis documents site disturbances for agricultural purposes since (at least) 1935. Despite said agricultural actions, a majority of the site continues to express native topography. Agricultural practices included flood irrigation throughout the central, relatively flat alluvial terrace. Delineation observations document two remnant sections of the former irrigation delivery system along the base of the western rock outcrops. Fill material associated with former rural residential and farming structures was placed along the northern flank of the Chenoweth Creek floodplain greater than fifty years ago.

Construction of Union Pacific Rail Line and subsequent Interstate I-84 road bases partially sever historical upgradient hydrology to the North Scabland Depression in the northeast portion of the site. Although this wetland continues to support perched wetland hydrology, Terra Science, Inc. (TSI) field team observations of Site 2 impoundments suggest these transportation structures have impeded historic water flows onto Site 1.

Fill terraces in the southernmost portion of the site were created and compacted by Oregon Department of Transportation (ODOT) contractors circa 1995 during construction of the adjacent River Road overpass. Road construction impounded and concentrated upgradient runoff from lands south of River Road; concentrated flows enter a culvert and then discharge immediately upgradient (south) of the Site 1 boundary. Aerial photography analysis indicates this point source culvert discharge results in wetter hydrologic regimes in areas documented by the South Depression Complex.

Figure 4-3 AARP/RGP Study Area Site 2



Site 2, Northwest Aluminum Company:

Site 2 is owned by Northwest Aluminum Company (NAC). This study area is bound by the Union Pacific railroad right-of-way and then Interstate I-84 to the west, Oregon Department of Fish and Wildlife (ODFW) Taylor Lake wildlife refuge to the north, vacant lands owned by Port of The Dalles (Site 3) to the east and River Road to the south. The 42.73± acre site consists of Tax lot 600 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 21 and Tax

lot 701 on Township 02 North, Range 13 East, Section 28. The centroid of the site is approximated at 45.63548° north and -121.20889° west.

The site is quite variable in landform and, from the south, includes a northeast sloping terrace interspersed with rocky outcrops that leads down (north) to the flatter terrace adjacent to Chenoweth Creek. North of the creek, the land rises into uneven rock outcrops and ridges interspersed with shallow depressional areas that are typical of the scablands in this area. These scablands continue on to the north before gently sloping northeasterly down toward Taylor Lake and the fringe of wetlands surrounding it. Onsite elevations range from 135 feet above mean seal level (msl) atop a rock outcrop in the central part of the site to 88 feet msl along Chenoweth Creek. The land is currently vacant of buildings or other structures and has been unmanaged for greater than ten years.

Historic aerial photography analysis documents site disturbances for agricultural purpose (grass management and grazing) in the area south of Chenoweth Creek since (at least) 1935. Areas north of the creek appear to have been grazed but was likely too rocky for any grass management activities to occur. Much of this activity appears to have ceased by 1973 although grazing may have continued infrequently. Despite said agricultural actions, most of the site continues to express native topography. Delineation observations identified several smallish areas that have been excavated and / or filled within the scablands in the north-central part of the site. These were probably for gravel extraction and dumping spoils. The area that comprises Taylor Lake and its wetland fringe has been clearly influenced by dam construction on the Columbia River as well as damming and pumping of water into the lake itself by ODFW.

Construction of the Union Pacific rail line (pre-1935) and I-80 North (now I-84) partially severed and / or impounded historical upgradient hydrology from the west to the scabland depressions in the north-central part of the site along with the emergent swale / depressions south of Chenoweth Creek. More recent construction of River Road and its interchange with I-84 in 1995 further severed and constricted upgradient hydrology that fed the emergent swales / depressions in the south part of the site. Hydrology to these features is now constricted to culvert discharge from under the base material of the River Road overpass. Furthermore, it appears that some material has been manipulated, likely associated with improvements to River Road. These last areas of disturbance do not appear to have significantly changed the extent of wetlands in the south part of the site.

Site 3, Port of The Dalles Columbia Gorge Industrial Center

Site 3 is owned by the Port of the Dalles (POTD). The study area is bound by Chenoweth Creek to the south, Taylor Lake dirt access road then vacant lands (Site 2) to the west, Taylor Lake and the Crates Point Wildlife Area to the north and the Columbia River to the east. The 83.44± acre study area consists of Tax lots 700 and 800 on Wasco County Assessor's map Township 02N, Range 13E, Section 21, Willamette Meridian. The centroid of the Site 3 is approximated at 45.637263° north and -121.204236° west. The Bonneville Power Administration (BPA) Chenoweth Creek Substation (Tax lot 900) located within the south-central portion of the site

and is not included in the study area. Approximately 58% of Site 3 has experienced significant disturbances associated with a former mill while remaining areas contain rock-outcrop complexes exhibiting moderate to low disturbances. . POTD contractors have completed constructing Phase I of the Chenoweth Business Park within the south and eastern portion of the site. Phase I is located within historically leveled fill terraces associated with former industrial (lumber mill) uses. As onsite wetlands lie beyond the construction envelope, onsite actions have not impacted jurisdictional aquatic resources, affected supporting upgradient hydrological sources or otherwise encroached upon previously defined features. No other on- or immediately offsite land alterations or management practices have occurred to encroach upon or otherwise affect the location, size or defining characteristics of previously defined wetlands and waters.

Figure 4-5 AARP/RGP Study Area Site 4

Total Site 4 acreage of 67.17 acres includes proposed WalMart, proposed mitigation and existing ODOT mitigation site; with those excluded, total equals approximately 35 acres.

Source: Adapted from USGS, Farm Service Agency aerial photographs, courtesy of Google Earth

Terra Science, Inc. Soil, Water, & Wetland Consultants	DELINEATION VERIFICATION INFORMATION FOR DSL WD#2009-0216 & USACE NWP 2005-445 The Dalles, Wasco County, Oregon	AUGUST 01, 2011 AERIAL PHOTOGRAPH
GRAPHIC SCALE 0 200 400 1 inch = 400 ft.	June 2014	

Site 4, WM3, Inc.

Site 4 is owned by WM3, Inc. Wal-mart Stores, Inc. has a lease agreement with WM3 to utilize the west-center of the property and to construct primary and secondary access roads. The site is currently undeveloped and supports a complex of low-growing grasses, scattered shrubs, rock-outcrops and scabland depressions exhibiting high to low disturbance. The 61.17-acre area is bounded by River Road to the north, Union Pacific railroad right-of-way to the west and the former Northwest Aluminum Company industrial lands to the south. It is situated on tax lot 702 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 28, Willamette Meridian. The centroid of the study area is approximated at 45.626867° north and -121.211806° west.

While DSL and USACE wetland fill permits were issued in 2013 for the Wal-Mart store, internal access roads and compensatory mitigation sites, development has not yet occurred within Tax lot 702. Similarly, no offsite land alterations or management practices have occurred that encroach upon or otherwise affect the location, size or defining characteristics of defined wetlands and waters.

Site 5, Northwest Aluminum Company Former Mill Site

Site 5 is owned by Northwest Aluminum Company (NAC). This study area is bound by Union Pacific railroad right-of-way then Interstate I-84 to the west, currently vacant lands (Site 4) to the north, River Road and light industrial lands to the east and vacant land containing a former golf course and landfill to the south (Figure E.1). The 91.52± acre Site 5 consists of Tax lot 700 on

Wasco County Assessor's map Township 02 North, Range 13 East, Section 28 (Figures E.2). The centroid of the site is approximated at 45.62677° north and -121.20775° west.

The southern 82.8± acres formerly housed an aluminum production facility beginning circa 1958. Mill decommissioning and demolition occurred between 2007 and 2009 resulting in a flat fill terrace containing concrete and crushed concreted fill pads. Union Pacific rail spurs enter the southern end of the former mill site. Lands north of the former plant have experienced varying levels of disturbance ranging from mass excavation (ditch and pond formation) to fill material placement (boulder fields and access road). The northern portion does contain native scabland depression and rock outcrop complexes. Onsite elevations range from 145 feet above mean seal level (msl) in atop a rock pile in the northern portion to 123 feet msl within a remnant scabland depression.

Historic aerial photography analysis documents site disturbances for agricultural purposes since (at least) 1935. A majority of agricultural activity occurred in the northwest portion of the site in areas lacking exposed rock outcrop features. Major industrial mill construction occurred throughout the southern 90% of the site circa 1958. Aluminum production continued through circa 1987. Mill decommissioning and demolition occurred between 2007 and 2009[1].

During mill operations, earthwork occurred in the northwest portion of the site during waste management activities. During said actions, boulders and large rocks displaced by construction were placed along the edge of Site 5. Ditches and other depressions were also excavated. Lastly, encroachment into the northern portion of Site 5 included construction of a gravel access road circa 1980. Several remnant scabland depressions along the northern site boundary are slightly impounded by the gravel access road, slightly expanding their historical boundaries.

Site 6, Northern Oregon Regional Corrections

Site 6 is owned by the Northern Oregon Correctional Facility (NORCOR). The site is bound by Union Pacific railroad right-of-way to the west, Webber Street and vacant lands to the south, River Road to the east and Fort Dalles Rodeo grounds to the north. The 17.5± acre Site 6 consists of Tax lot 500 on Wasco County Assessor's map Township 02N, Range 13E, Section 33, Willamette Meridian. Approximately 87% of the site is developed (housing NORCOR facilities, industrial warehouses and recently constructed fill terraces) while remaining areas

contain remnant scabland depressions and adjacent rock outcrops. The centroid of the Site 6 is approximated at 45.613768° north and -121.201526° west. . In accordance with DSL Permit 45855-RF, an authorized access road and fill terrace was constructed in summer 2011. The August 01, 2012 aerial photograph documents the authorized construction activity. As avoided / remaining wetlands lie beyond the authorized development envelope, construction actions have not directly impacted jurisdictional resources, affected the closed upgradient hydrological sources or otherwise encroached upon avoided features. No other on- or immediately offsite land alterations or management practices have occurred to encroach upon or otherwise affect the location, size or defining characteristics of previously defined wetlands and waters.

5.0 AUTHORIZED ACTIVITY TYPES

The Port of The Dalles is seeking permission to allow for the development commercial/light industrial and industrial uses and minor ancillary uses consistent with the allowed uses identified in the respective zoning codes.

5.1 Outright Uses in the Commercial/Light Industrial Zone (Section 5.070, City of The Dalles Land Use and Development Ordinance) include:

- Agricultural sales and service (feed and seed stores, nurseries, greenhouses, landscape supplies, and garden centers)
- Animal sales and services (pet stores, grooming, kennels, veterinary)
- Automobile and heavy/light equipment repair, sales and services (rental agencies, detailing, service stations, body shops, auto painting, machine shops)
- Child care center
- Contractor shops, offices and storage areas
- Engineering, research and development
- Food services (restaurants, cafeterias, bakeries, catering, take-out operations)
- Hotels and motels
- Laundromats and dry cleaners, including industrial operations
- Light manufacture, assembly and packaging of goods or products, which can be performed with minimal adverse impact on, and poses no special hazard to, the environment and the community
- Liquor stores, taverns, lounges and bars
- Manufactured home sales, including demonstration units (not actual dwellings)
- Markets and grocery stores
- Medical and dental offices, clinics and laboratories
- Personal care services such as barber shops and salons
- Printing and publishing
- Professional and administrative offices and services
- Public parks and open space (excluding spectator and participant sports facilities)
- Public and private parking lots
- Public and private transportation depots and terminals, passengers and freight
- Recreation facilities (commercial - indoor, including health and athletic clubs, bowling alleys, skating rinks, shooting ranges, movie theaters, multiplexes and game rooms)
- Residential dwelling for security and maintenance personnel
- Retail uses, including shopping centers
- Wireless communication facilities
- Warehousing, storage and distribution of equipment, commodities and products in an enclosed area, including mini storage facilities

- Wholesale uses
- Other, similar uses (determined by the Director)

5.1.1 Permitted Accessory Uses:

- Accessory dwellings
- Accessory uses, buildings and structures, not otherwise prohibited and customarily incidental to the primary uses
- Bed and breakfast and vacation rentals
- Bus shelters, bike racks, street furniture, drinking fountains, and other pedestrian and transit amenities
- Home business

5.1 Outright uses in the Industrial Zone (Section 5.090, City of The Dalles Land Use and Development Ordinance) include:

- Auto body shops, auto painting and machine shops
- Circus or like activity (four events per year)
- Feed, seed and fuel stores (excluding bulk storage of petroleum or gas)
- Food production and manufacturing
- Food services (including restaurants, cafeterias, bakeries, catering and take-out operations)
- Heavy equipment sales and service (on-site only)
- Laundry and cleaning service industries
- Manufacturing, fabricating, processing, repair, engineering, research and development, assembly, wholesale, transfer, distribution, and storage uses (except manufacture of explosives, the slaughter of animals, and the rendering of fats)
- Printing and publishing
- Public and private parking lots
- Public and private vehicle servicing and fueling stations
- Public parks and open space (excluding spectator and participant sports facilities)
- Railroad yards and spurs, shipyards, and commercial docking facilities
- Rock, sand and gravel cleaning, crushing, processing and assaying
- Rodeo grounds
- Storage and maintenance yards
- Transportation facilities
- truck stop facility (including incidental community uses, such as restaurant, fuel and shower facilities)
- Veterinary services, kennels and fish hatcheries
- Warehouses

- Wireless communication facilities
- Other similar uses (determined by the Director)

5.2.1 Permitted accessory uses:

- Accessory uses, buildings and structures not otherwise prohibited and customarily incidental to the primary use
- Bus shelters, bike racks, street furniture, drinking fountains, and other pedestrian and transit elements
- Residential dwelling for security and/or caretaker and maintenance personnel

6.0 IDENTIFICATION AND CHARACTERIZATION OF WATERS OF THIS STATE

Within the six sites comprising the planning area (Figure 4-1), TerraScience, Inc. (contractor to the Port) identified the locations of wetlands and waterways and assessed the functions and values of each aquatic feature. Features were additionally characterized using other environmental parameters as further described in this section.

Wetland features are organized into 12 characteristic types considering their predominant hydrology source, immediate topography, vegetation characteristics and relative degree of disturbance.

Slope Complex Wetlands: Slope landscape setting, primarily native vegetation communities (including scrub-shrub inclusions) which experience severed and concentrated hydrological manipulations due to River Road. Represented wetlands lie in similar proximity to high traffic roads with similar disturbance in the immediate vicinity.

Chenoweth Creek/Riverine Wetlands: Chenoweth Creek and associated wetlands which lie in the topographically low end of the watershed. Features support similar vegetation communities, wildlife populations, soil substrates and experience similar hydrological influences. Features lie in similar proximity to high traffic roads and encroachments.

Emergent Depression: A unique wetland feature within the regional project footprint. Isolated feature contains very deep, dark silt loam soils which support an invasive plant community (teasel).

Excavated Features: Typically depressional, support mixed vegetation communities, exhibit truncated soil profiles, and have experienced similar historical excavation disturbances. Disturbances result in created and heavily manipulated hydrological characteristics.

Ditch/Swale Complex: Wetlands which support varying plant communities ranging from native dominated to (near monocultures) of non-native species. Soils range from truncated and excavated areas to areas leveled and / or partially filled. Despite historic disturbances, this category of wetland appears to have an intact basalt bedrock layer which perches precipitation and immediate runoff.

Scabland Depression Complex: High quality scabland depressions which support primarily native vegetation communities and are supported primarily by precipitation and immediate runoff from surrounding basalt uplands. Wetlands lie in similar proximity to the Union Pacific rail line, Taylor Road access road and experience similar disturbances in the immediate vicinity.

Scabland Swale/Depression Type 1: Relatively intact scabland depression wetlands which primarily support native vegetation communities and are supported by precipitation and immediate runoff from surrounding basalt uplands. Wetlands lie in similar proximity to the high traffic roads and experience similar disturbances in the immediate vicinity. This type of feature is differentiated from Type 2 by the higher percentage of depressional areas within topographically flatter landform.

Scabland Swale/Depression Type 2: Disturbed but relatively in-tact scabland depression wetlands which primarily support native vegetation communities and are supported primarily by precipitation and immediate runoff. Represented wetlands lie in

similar proximity to the high traffic roads and experience similar hydrological disturbances in the immediate vicinity. This feature is differentiated from Type I Complex by the higher percentage of swale areas within slightly sloping landforms.

Impounded Scabland Depression Type 1: A unique wetland feature within Site 2. Hydrology is significantly impounded by the Union Pacific rail line, increasing the size and depth of inundation typically observed for similar scabland depressions in the vicinity. Type I Impoundment has a relatively undisturbed contributing area.

Impounded Scabland Depression Type 2: Wetland type unique to Site 6 which are impounded within a more native basalt topography and constructed road basin (as opposed to significant impoundment experienced by Type 1). Further, the Type 2 impoundment has an extensively developed and highly undisturbed contributing area while the Type I contributing area is relatively undisturbed.

Remnant Scabland Depression Type 1: Depressional features which primarily support native vegetation (including small scrub-shrub inclusions) and have experienced similar excavation, fill material placement and impoundment alterations significantly altering the natural hydrological characteristics of this wetland. Represented wetlands also lie within similarly disturbed contributing areas with similar proximity to access roads.

Remnant Scabland Depression Type 2: Disturbed scabland depression wetlands unique to Site 5. Features are depressional, primarily support native vegetation and have experienced excavation, fill material placement, partial hydrological severance and road impoundments disturbances. Wetlands also lie within similarly disturbed contributing area with similar proximity to access roads.

6.1 Wetland and Waterways Identification

Wetland and Waterway boundaries were determined using the Corps' 1987 Delineation Manual and the Arid West Supplement (2008) and then documented pursuant to the requirements of Oregon Administrative Rules 141-090 (wetland delineation report requirements). Table 6-1 summarizes the wetland delineation report status for each site. Table 6-2 summarizes wetland delineation results by wetland type. Wetland acreages by site are summarized on Tables 6-3 to 6-8. The DSL-approved wetland and waterway boundaries for each site (annotated to illustrate wetlands by type) are illustrated in Figure 6-1 to 6-6. The DSL concurrence letters for each site are provided in Appendix A.

Table 6-1: Wetland Delineation Report Status

Site	DSL #	Status
Site 1	WD14-0399	DSL concurred. Expires 3/4/2020. Potentially eligible for re-issuance
Site 2	WD14-0400	DSL concurred. Expires 3/5/2020. Potentially eligible for re-issuance
Site 3	WD12-0159	DSL concurred. Expires 7/23/2017. Potentially eligible for re-issuance
Site 4	WD09-0216R	DSL concurred. Expires 6/18/2019. Not eligible for re-issuance
Site 5	WD14-0401	DSL concurred. Expires 3/4/2020. Potentially eligible for re-issuance
Site 6	WD09-353R	DLS concurred. Expires 01/21/2020. Not eligible for re-issuance.

Table 6-2: Summary of Wetland and Waterways Delineation Results by Wetland Type*

Wetland Type	Cowardin/HGM Class	Area (ac.)
Slope Complex Wetlands: Sites 1, 2	PEM (dominant; w/PSS inclusions)/Slope	1.16
Chenoweth Creek & Riverine Wetlands Sites 1, 2, 3	PSS, PFO (dominant w/ PEM inclusions)/ Riverine Flow-Thru (Sites 1, 3)	3.77
	PEM/ Riverine Flow-Thru (Site 2)	0.66

Emergent Depressions Site 1	PEM/Depressional	1.65
Excavated Features Sites 2, 3, 4, 5	PEM/Depressional (Site 2, 5)	0.22
	PEM/Flats (Site 3, 4)	0.232
Ditch/Swale Complex Sites 2, 3, 4, 5	PEM/Depressional (Site 2, 5)	0.27
	PEM/Flats (Sites 3, 4)	0.71
Scabland Depression Complex Site 2	PEM (dominant; w/PSS inclusions)/ Depressional	0.67
Scabland Swale/Depression Type 1 Sites 2, 4, 5	PEM/Depresssional	1.44
Scabland Swale/Depression Type 2 Sites 1, 4	PEM/Depressional (Site 1)	0.1
	PEM/Flats (Site 4)	1.48
Impounded Scabland Depression Type 1 Site 2	PEM/Depressional	0.5
Impounded Scabland Depression Type 2 Site 6	PSS/Depressional	0.8
Remnant Scabland Depression Type 1 Sites 3, 4	PEM (dominant; w/PSS inclusions)/Flats	2.92
Remnant Scabland Depression Type 2 Site 5	PEM/Depressional	0.33

Taylor Lake & Fringe Wetlands Sites 2, 3	OW, PEM, PSS/ Lacustrine	2.99
Columbia River Site 3	OW/Riverine	0.41

* Non-state jurisdictional excavated features on all sites not included in this summary

6.2 Functional Assessments

Wetland functions and values were determined by applying the Oregon Rapid Wetland Assessment Protocol, version 2.0.2 (ORWAP). Wetlands were grouped into the categories described above. For each category of wetland type, one representative wetland was selected for assessment. Representative wetlands were selected considering landscape setting, site conditions and surrounding uses that best represented all the wetlands of that type. Per the wetland grouping guidance provided in "*Guidance for Using the Oregon Rapid Wetland Assessment Protocol in the State and Federal Permit Programs*, April 2010", this was a reasonable approach considering: 1) the same predominant hydrology source of wetlands for each wetland type; 2) relatively similar degree of disturbance and general proximity of all the wetlands to stressors; 3) the same general landform in which all wetlands are located (low terrace of the Columbia River); and 4) the similarity of land uses in the assessment areas. Appendix B contains the ORWAP Summary Report for each wetland type. Volume 2 of this report includes the complete ORWAP assessment for each site.

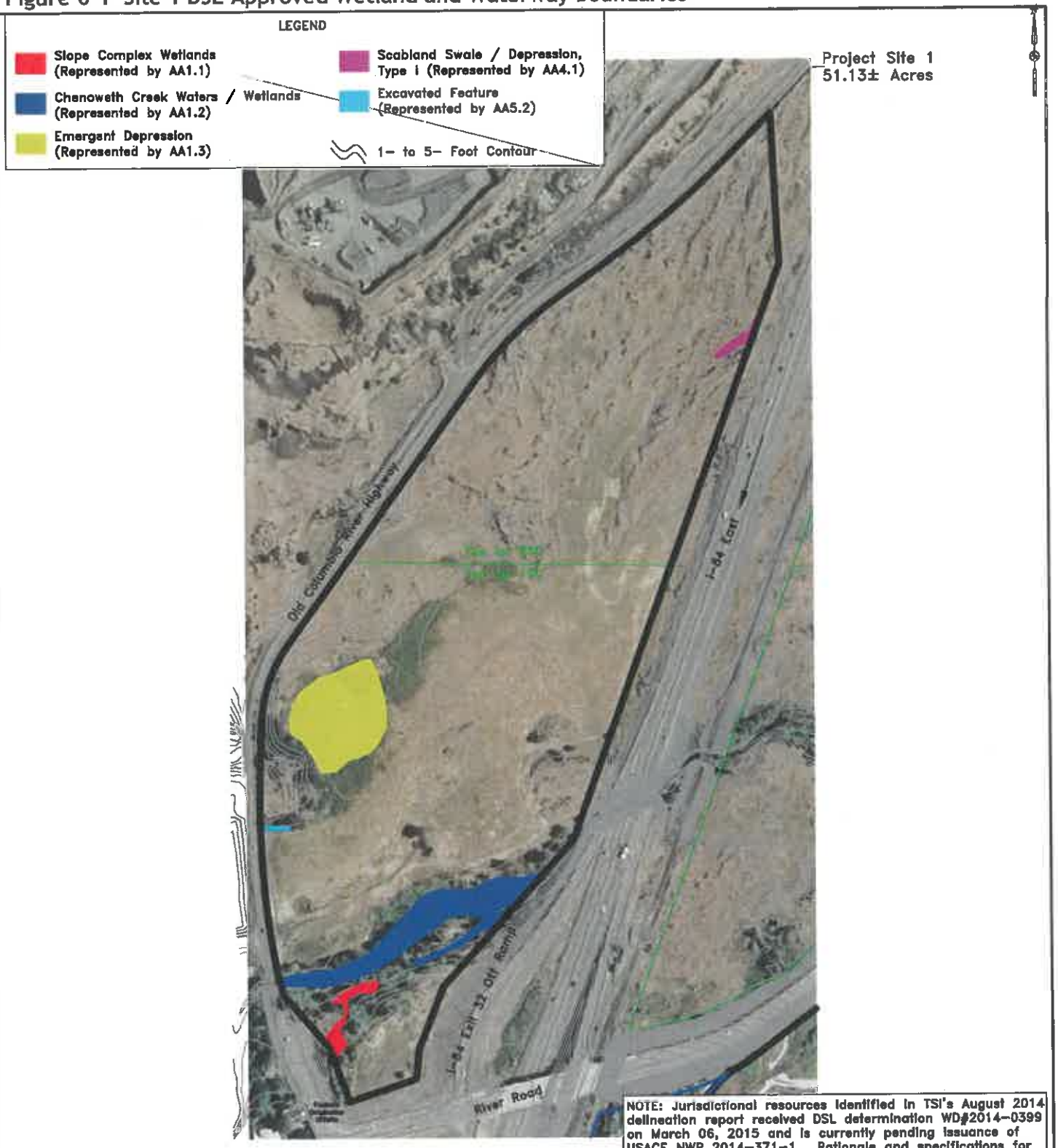
Wetland Type	Assessment Location
Slope complex wetlands	Site 1
Chenoweth Creek waters/wetlands	Site 1
Emergent depression wetlands	Site 1
Scabland depression complex wetlands	Site 2
Impounded scabland depression, type 1 wetlands	Site 2
Impounded scabland depression, type 2 wetlands	Site 6
Remnant scabland depression, type 1 wetlands	Site 3
Remnant scabland depression, type 2 wetlands	Site 5
Ditch/swale complex wetlands	Site 3
Scabland swale/depression complex type 1 wetlands	Site 4
Scabland swale/depression complex type 2 wetlands	Site 4
Excavated feature wetlands	Site 5

The following Tables 6-3 to 6-8 provide a high level summary of the functional assessment results by site. These tables use the aforementioned Guidance document to identify the key wetland functional attributes for regulatory permitting interest. A check mark indicates that the attribute has both a relatively high function score and relatively high value score (meaning that the assessed wetland is relatively effective in performing the function and is doing that function in a place that values it). Using the aforementioned *Guide*, "high" was defined as any score above the median score for 221 sites assessed statewide as part of original ORWAP methodology development. A check + means that the function and value score was at least three points above the median scores for the 221 statewide sites (i.e., "very high" function and value).

6.3 Other Environmental Parameters

To assist the Port, consultant and Technical Advisory Committee in discerning which aquatic resources may be of particular importance for impact avoidance and minimization, each wetland/waterway was evaluated against other TAC-identified environmental criteria. Those additional criteria and the results for each site are further discussed in Section 7.

Figure 6-1 Site 1 DSL-Approved Wetland and Waterway Boundaries



NOTE: Jurisdictional resources identified in TSI's August 2014 delineation report received DSL determination WD#2014-0399 on March 06, 2015 and is currently pending issuance of USACE NWP 2014-371-1. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

SITE 1 EXISTING CONDITIONS

GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

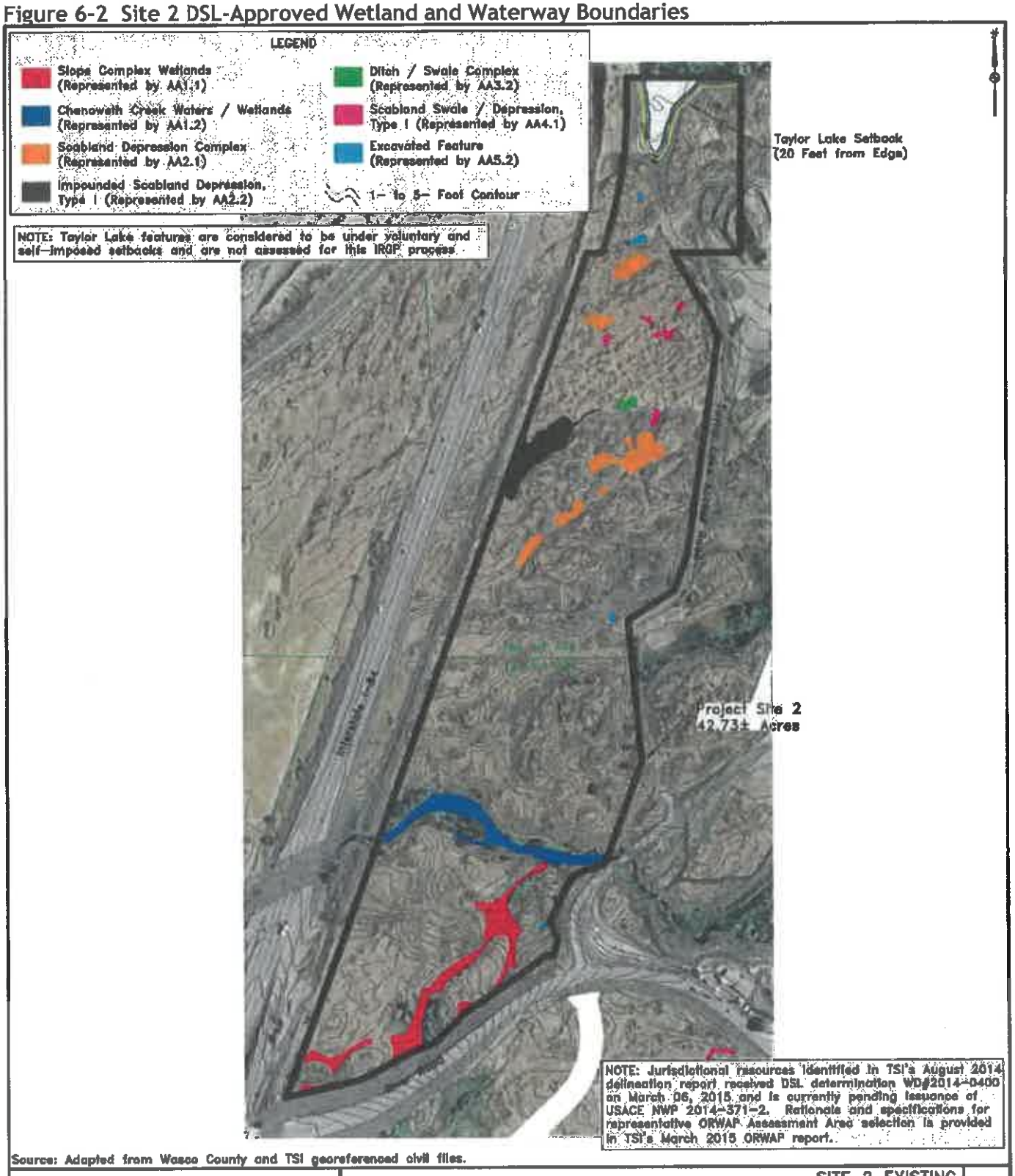
July 2015

Table 6-3 Site 1 Functional Assessment Summary

Attribute	Wetland Type				
	Slope 0.19 acres	Chenoweth Cr. Wetlands / Waters 1.53 acres	[illegible]	Excavated 0.02 acres*	Scabland Swale / Depression Type 2 0.1 acres
Water storage & delay			✓		
Water quality			✓+		
Fish habitat		✓+			
Aquatic habitat					
Terrestrial habitat		✓			✓
Condition				✓	✓
Stressors	✓	✓	✓		
Sensitivity to stressors			✓+		✓+

*Not State Jurisdictional.

Figure 6-2 Site 2 DSL-Approved Wetland and Waterway Boundaries



Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

SITE 2 EXISTING CONDITIONS

GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

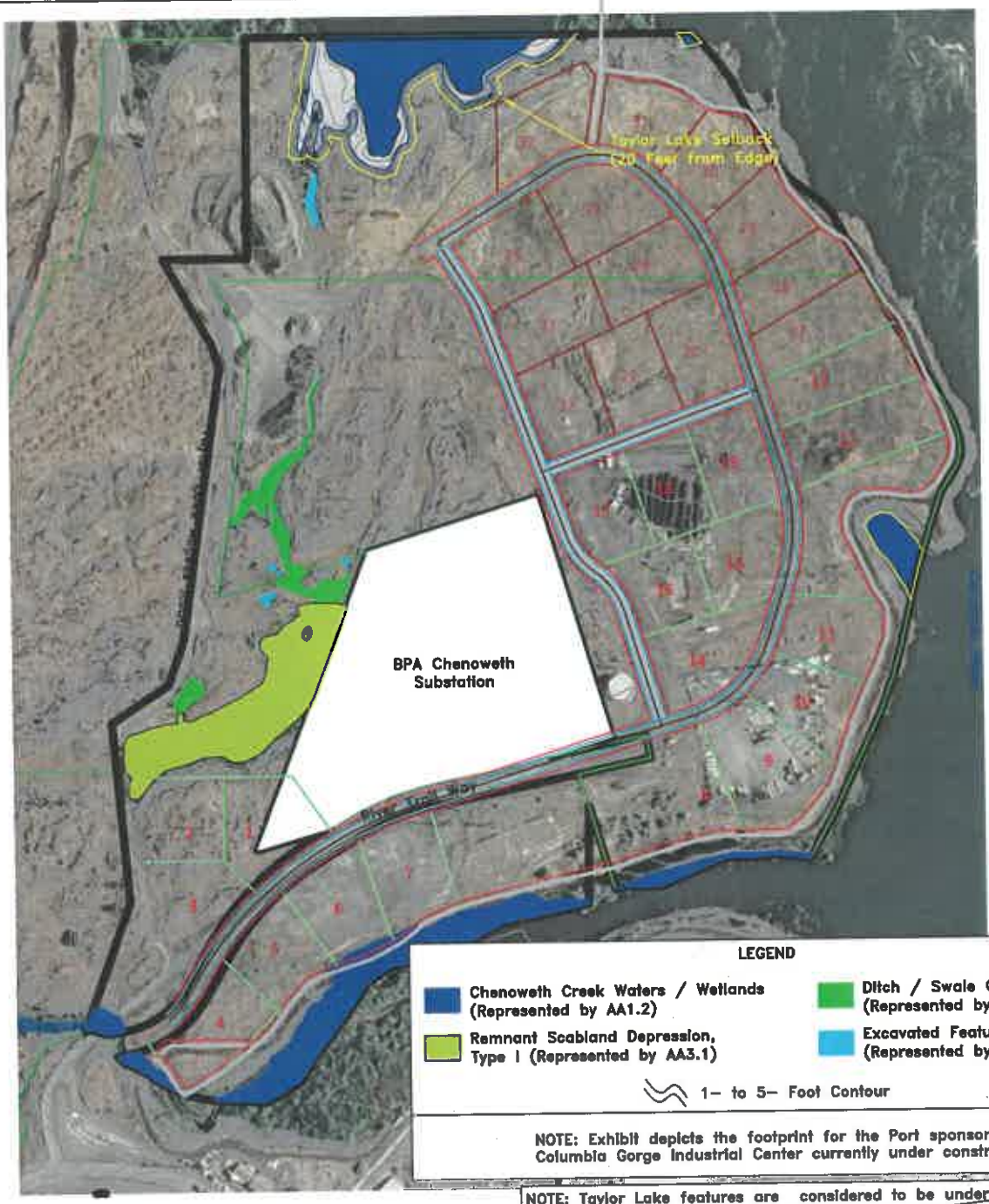
July 2015

Table 6-4 Site 2 Functional Assessment Summary

Attribute	Wetland Type						
	Slope 0.97 acres	Chenoweth Cr. Wetlands/ Waters 0.66 acres	Excavated 0.05 acres	Ditch/ Swale Complex 0.04 acres	Scabland Swale/ Depression Type 1 0.08 acres	Scabland Depression Complex 0.07 acres	Impounded Scabland Depression 1 0.5 acres
Water storage & delay				✓		✓	✓
Water quality				✓		✓	
Fish habitat		✓					
Aquatic habitat						✓	
Terrestrial habitat		✓			✓	✓	
Condition			✓	✓	✓	✓	✓
Stressors	✓	✓		✓			
Sensitivity to stressors				✓	✓	✓	✓

Figure 6-3 Site 3 DSL-approved Wetland and Waterway Boundaries

NOTE: Jurisdictional resources identified in TSI's April 2012 delineation report received DSL determination WD#2012-0159 on July 24, 2012 and USACE AJD NWP 2012-134 on August 09, 2012. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.



Source: Adapted from Wasco County, Harper Houf Peterson Righellis and TSI georeferenced civil files.

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GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

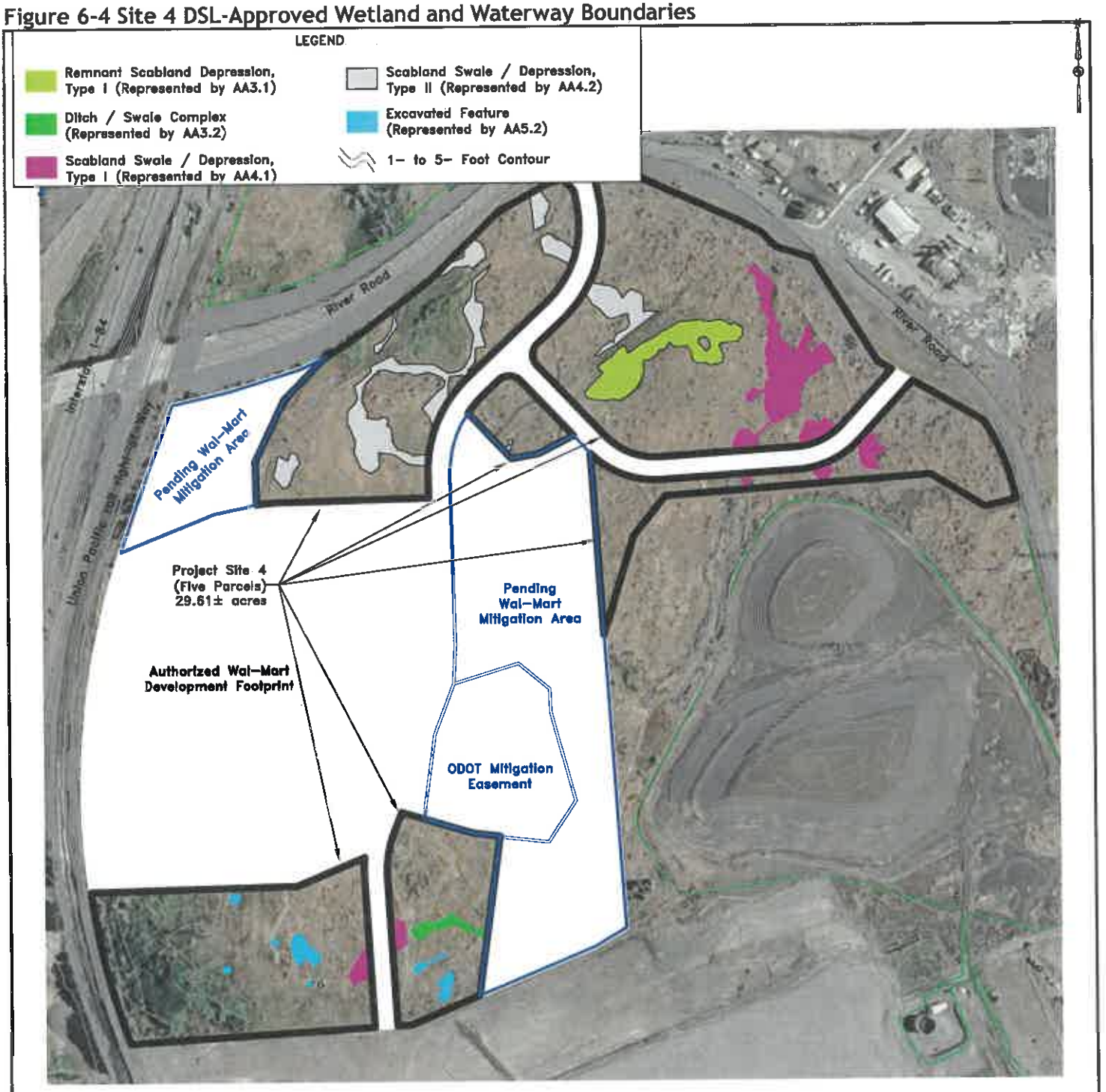
SITE 3 EXISTING CONDITIONS

July 2015

Table 6-5 Site 3 Functional Assessment Summary

Attribute	Wetland Type			
	Chenoweth Cr. Wetlands/ Waters 2.24 acres	Excavated 0.05 acres	Ditch/ Swale Complex 0.60 acres	Remnant Scabland Depression 1 2.21 acres
Water storage & delay			✓	✓
Water quality			✓	✓
Fish habitat	✓			
Aquatic habitat				
Terrestrial habitat	✓			
Condition		✓	✓	✓
Stressors	✓		✓	✓
Sensitivity to stressors			✓	✓

Figure 6-4 Site 4 DSL-Approved Wetland and Waterway Boundaries



NOTE: Jurisdictional resources identified in TSI's August 2014 delineation update received DSL determination WD#2009-0216R on September 04, 2014 and is currently pending re-issuance of USACE AJD NWP 2008-445. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

NOTE: Area within the confines of the authorized Wal-Mark retail development footprint and Oregon Department of Transportation mitigation easement are omitted from this IRGP process.

Source: Adapted from Wasco County, Pac-Land and TSI georeferenced civil files.

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GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

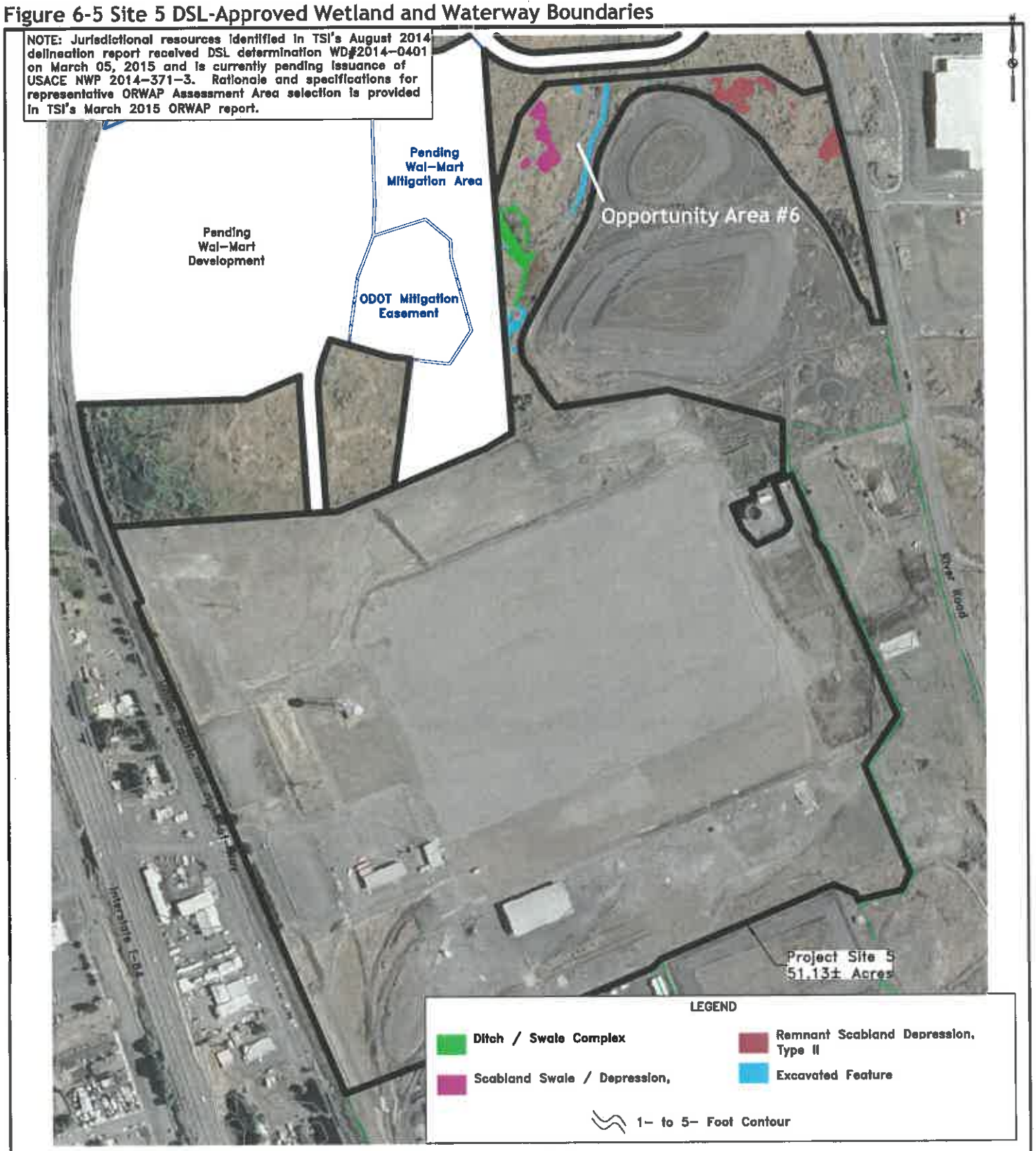
SITE 4 EXISTING CONDITIONS

July 2015

Table 6-6 Site 4 Functional Assessment Summary

Attribute	Wetland Type				
	Excavated 0.182 acres	Ditch/Swale Complex 0.11 acres	Scabland Swale/ Depression Type 1 1.13 acres	Scabland Swale/ Depression Type 2 1.48 acres	Dominant Scabland Depression 1 0.71 acres
Water storage & delay		✓			✓
Water quality		✓			✓
Fish habitat					
Aquatic habitat					
Terrestrial habitat			✓	✓	
Condition	✓	✓	✓	✓	✓
Stressors		✓			✓
Sensitivity to stressors		✓	✓	✓	✓

Figure 6-5 Site 5 DSL-Approved Wetland and Waterway Boundaries



Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

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SITE 5 EXISTING CONDITIONS

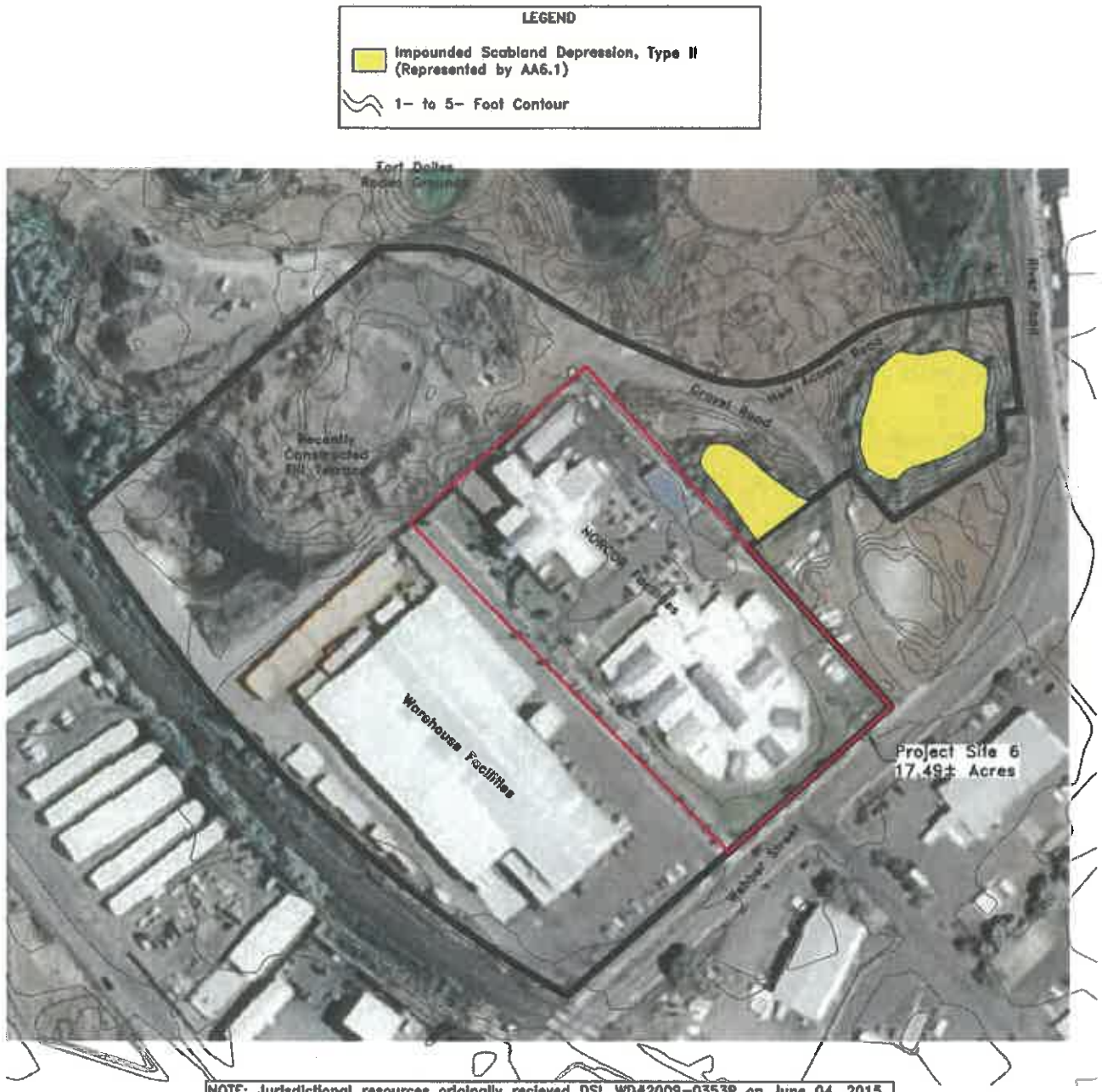
GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

July 2015

Table 6-7 Site 5 Functional Assessment Summary

Attribute	Wetland Type			
	Excavated 0.17 acres	Ditch/Swale Complex 0.23 acres	Scabland Swale/ Depression Type 1 0.23 acres	Remnant Scabland Depression 2 0.33 acres
Water storage & delay		✓		✓
Water quality		✓		
fish habitat				
Aquatic habitat				
Terrestrial habitat			✓	✓
Condition	✓	✓	✓	✓
Stressors		✓		
Sensitivity to stressors		✓	✓	

Figure 6-6 Site 6 DSL-Approved Wetland and Waterway Boundaries



Source: Adapted from Wasco County and TSI georeferenced civil files.

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GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

SITE 6 EXISTING CONDITIONS

July 2015

Table 6-8. Site 6 Functional Assessment Summary[1]

Attribute	Wetland Type
	Impounded Scattered Depression 2 0.8 acres
Water storage & delay	✓
Water quality	
Fish habitat	
Aquatic habitat	
Terrestrial habitat	
Condition	
Stressors	
Sensitivity to stressors	✓

7.0 AVOIDANCE AND MINIMIZATION STRATEGY

7.1 Approach

Key goals of this Advance Aquatic Resource Plan and request for Regional General Permit are to bring some development certainty to the six remaining large-lot industrial sites in The Dalles while simultaneously better ensuring protection of high-value aquatic resources located within those sites. To accomplish this, as discussed in Section 3, the Port secured wetland consulting services from Terra Science, Inc. and convened a Technical Advisory Committee (TAC) representing a broad range of interests to help define the best balance of lands for impact avoidance versus those lands best suited to future development in fulfillment of the city's Comprehensive Plan. To reach this balance, the TAC provided input on a suite of evaluation parameters both from ecological and development perspectives and, with consultant support, developed a consensus strategy for designating avoidance and development zones within the six-site study area using those criteria. The consultant's recommendations and report to the Port of The Dalles on this effort is contained in Volume 3.

This section begins with a discussion of legal easement and setback requirements on each site and then documents the process and outcome for balancing aquatic resources avoidance with development objectives.

7.2 Easements and Setbacks

The six-site study area was first assessed using general setback regulations identified in the *City of the Dalles, Oregon Land Use and Development Ordinance*[1]. Pertinent setback constraints affecting the six sites include:

- Section 5.070: Commercial / Light Industrial District (CLI)
- Section 5.080: Recreational Commercial District (CR) Section 5.090: Industrial District (I)
- Section 5.130: Stream Corridor District
- Section 8.030: Flood Control Provisions

The Port, City of The Dalles and respective landowners additionally identified known easements and legal constraints within each site. Known easements include Oregon Department of Transportation (ODOT), BPA power-line, Union Pacific rail-line easements and a Martin Marietta access road easement. Lastly, other land reservations including the National Scenic Act protection of basalt cliffs within Site 1, the Taylor Lakes exclusion area, the pending Wal-Mart development, internal roads and designated mitigation areas on Site 4 and the existing NORCOR facility on Site 6 were identified as other encumbrances.

Ordinance Setback:
CK: Chenoweth Creek 50-foot setback
CRFT: Columbia River Front Trail 30-foot setback
FP: Flood Provisioning (pending delineation of current 100-year floodplain)

[1] It should be noted that this ordinance assessment considered select regulations and should not be considered an exhaustive analysis of development feasibility. As many ordinances are development and / or site specific, regulations associated with Access Management, Driveway and Entrance Standards, Parking Standards, Land Divisions and Improvements Required with Development were not specifically investigated or considered for this process.

Known Easements:
UP: Union Pacific rail line easement
BPA: Bonneville Power Administration power-line easement
MM: Martin Marietta access road easement
ODOT: Oregon Department of Transportation
CTD: City of The Dalles utility easement

Other Reservations:
NSA: Approximate National Scenic Act constraints
TL: Project incorporates self-imposed 25-foot setback from Taylor Lake wetlands
Wal-Mart: Excludes authorized Wal-Mart development footprint
NORCOR: Excludes existing NORCOR development footprint

Table 7-1 Cursory development constraints and remaining development space.

Site	Total Parcel	Ordinance Setbacks	Easements / Partitions	Other Reservatio	Remaining Developable
Site 1	51.13 acres	CK, FP	ODOT	NSA	32.6± acres*
Site 2	42.73 acres	CK, FP	UP	TL	39.2± acres
Site 3	83.44 acres	CRFT, CK, FP	BPA	TL	56.0± acres
Site 4	29.6 acres	None	UP, BPA,	Wal-Mart	27.0± acres
Site 5	91.52 acres	None	UP, BPA, MM,	CTD	75.2± acres
Site 6	17.5 acres	None	None	NORCOR	7.6± acres
Total Developable Space					237.6± acres

* This site is currently not included in The Dalles Urban Growth Boundary and thus is not currently available for development. The City is examining this site for possible inclusion in the Urban Growth Boundary as buildable land.

7.3 Criteria for Avoidance Consideration

The avoidance designation process considered the entire ecological context of the identified aquatic resources, and balanced this information against the features of the site that make it suitable for industrial development. Each site was evaluated against a consistent set of ecological/environmental parameters summarized below. In most cases, an affirmative response to any one of these criteria did not trigger an automatic "avoidance" designation. Rather, the designation process considered the entire ecological context of the wetland to build the case for a potential avoidance designation.

Table 7-2 Criteria for Avoidance Consideration

Considerations for Avoidance Designation	Comments	Source
High function and value scores?	Wetlands with both a high function and corresponding high value score for multiple attributes are more prone to an avoidance designation.*	Consultant's ORWAP assessments (Section 6 and Volume 2)
High condition and sensitivity score?	Wetlands with high condition score and high sensitivity score are more prone to an avoidance designation.	Consultant's ORWAP assessments (Section 6 and Volume 2)

Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	Wetlands providing such connectivity or buffering are more prone to an avoidance designation.	Consultant field work.
Does the wetland support a predominance of a native wetland plant community?	Predominantly native wetland plant communities within a wetland are more prone to an avoidance designation.	Wetland delineation field work.
Wetland vegetation class	Scrub-shrub and forested wetland communities are generally considered more difficult to replace with a longer temporal loss and thus more prone to an avoidance designation.	Wetland delineation field work.
Is the wetland a designated Wetland of Conservation Concern?	Wetlands of Conservation Concern are more prone to an avoidance designation. For The Dalles area, the known Wetlands of Conservation Concern are Modoc Basalt/Columbia Plateau Vernal Pools.	Consultant field assessment using DSL publication *"Wetlands of Conservation Concern"*.
Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	Such wetlands are more prone to an avoidance designation where the wetland supports the conservation habitat type.	ODFW Conservation Opportunity Areas mapping tools.
Do any wetlands have a legal protection overlay?	Such wetlands will receive an avoidance designation.	Easements and setbacks analysis described in Section 7.2
Opportunity for on-site mitigation or other restoration action?	Such areas are more prone to an avoidance designation.	Consultant field work and assessments.

Any designated floodplains on the site?	Such areas are prone to an avoidance designation.	Existing FEMA floodplain mapping for this region is known to be obsolete. Consultant field work and assessment was used to identify likely extent of 100-year floodplains. Future developments will require site-specific delineation of the 100-year floodplain.

* To determine what score constitutes "high", ORWAP scores for each wetland were compared to the median scores of the 221 reference wetlands originally sampled for production ORWAP Version 2.0.2. Consistent with current regulatory guidance (*Guidance for Using ORWAP in the State and Federal Regulatory Programs*, April 2010), grouped functions and values were considered "high" if their score was one or more points above the median score of ORWAP's 221 reference sites. The TAC further identified grouped function and value scores of three or more points above the median as "very high." Only those grouped services having both a high function score and corresponding high value score were considered to be "high" or "very high".

The TAC additionally identified criteria for waterways avoidance consideration, as follows:

- Is the waterway generally natural in condition (degree of manipulation or simplification)?
- Is there a predominantly native riparian corridor associated with the waterway?
- Is the waterway and riparian area protected under the community's Comprehensive Plan - Goal 5?
- Is the waterway fish bearing? If yes, Is the waterway mapped Essential Salmonid Habitat (ESH)?
- Is the waterway or receiving waters water quality impaired (per 303d listings)?

These parameters were assessed by the consultant either by field assessment or using published documentation. It was found that all identified waterways within the study area met all or nearly all of these parameters. As a result, all waterways (i.e., the portion of Chenoweth Creek located on Sites 1, 2, and 3 and the portion of Columbia River on Site 3) were designated as avoidance areas including 50-foot buffer on each side of the waterway, per the city's Land Use Development Ordinance (Chapter 5.130).

7.4 Criteria for Development Consideration

Each site was also evaluated against a consistent set of industrial development suitability criteria. These criteria were developed with input from the Technical Advisory Committee that included state and local economic development professionals using their experience with industry recruitment and what site features are most commonly identified as important to them. To the extent possible, these features should be preserved within the six sites.

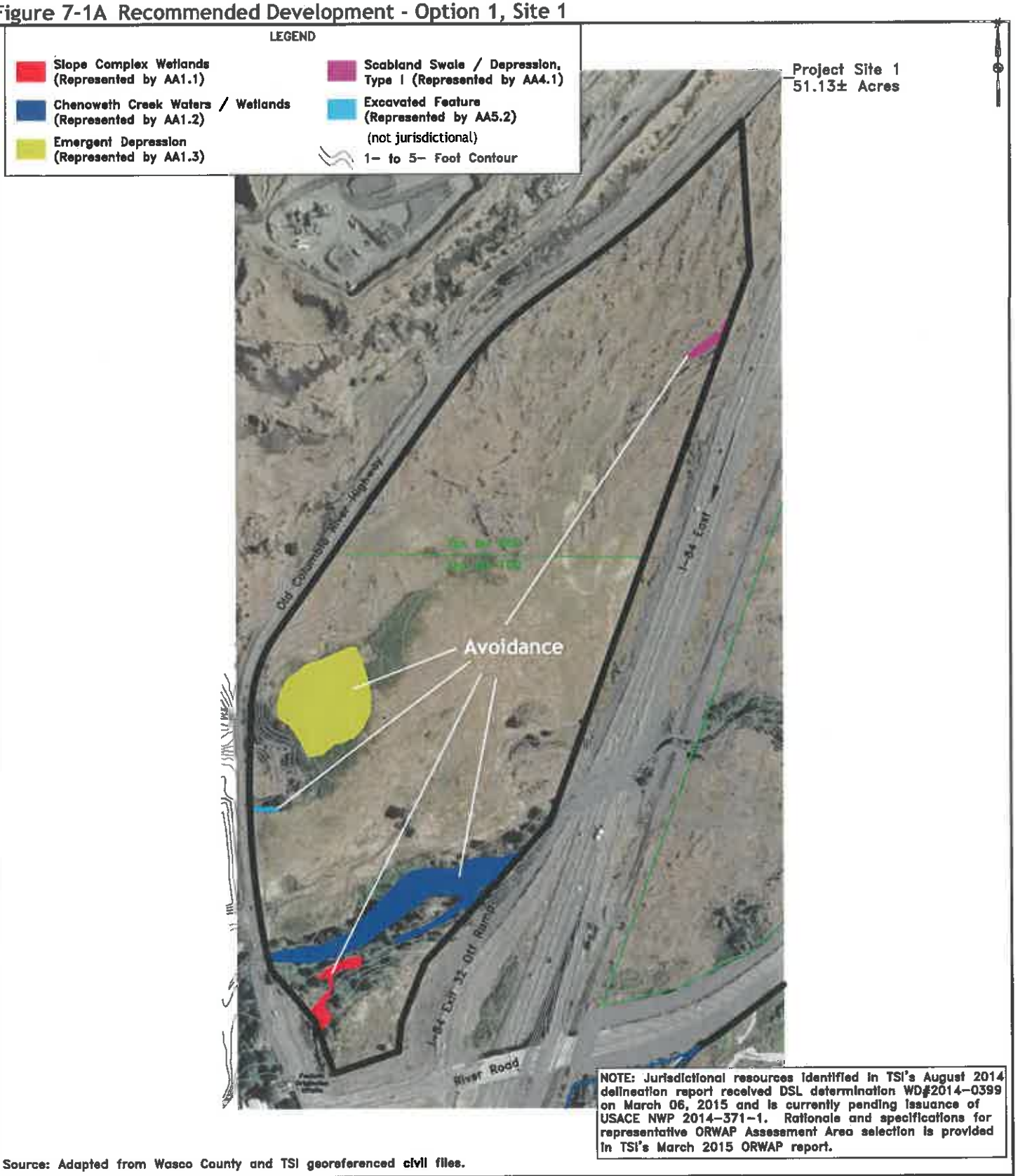
Table 7-3 Criteria for Development Consideration

Consideration for Development Designation	Comments
Maximize net contiguous developable acreage on the site.	Generally, the minimum threshold for net contiguous developable area of 10 acres is desirable with larger areas preferred.
Maximize rectangular development areas	Rectangular development parcels are generally preferred to allow for most efficient use of land.
Preserve efficient highway access with preference for direct highway access.	Maximize efficient movement of raw materials and products.
Preserve multiple access points, where available.	Important for separation of truck traffic from employee vehicles.
Preserve rail access on sites with such capabilities.	Generally, sites with rail access are a very limited resource.
Preserve natural buffer features where they occur.	Opportunities to separate industrial activity from adjacent sensitive receptors.
Impact to site development costs.	For The Dalles, this is typically manifested as areas of steep topography, shallow bedrock, and basalt outcrop areas.

7.5 Site-by-Site Avoidance and Minimization Assessment

The following subsections assess each aquatic resource feature and each site against the avoidance and development criteria to arrive at a final recommendation. Note that the analysis excludes state-determined non-jurisdictional wetlands (certain "excavated features") per the DSL delineation concurrences. "Excavated features" that are described herein are state-determined jurisdictional features.

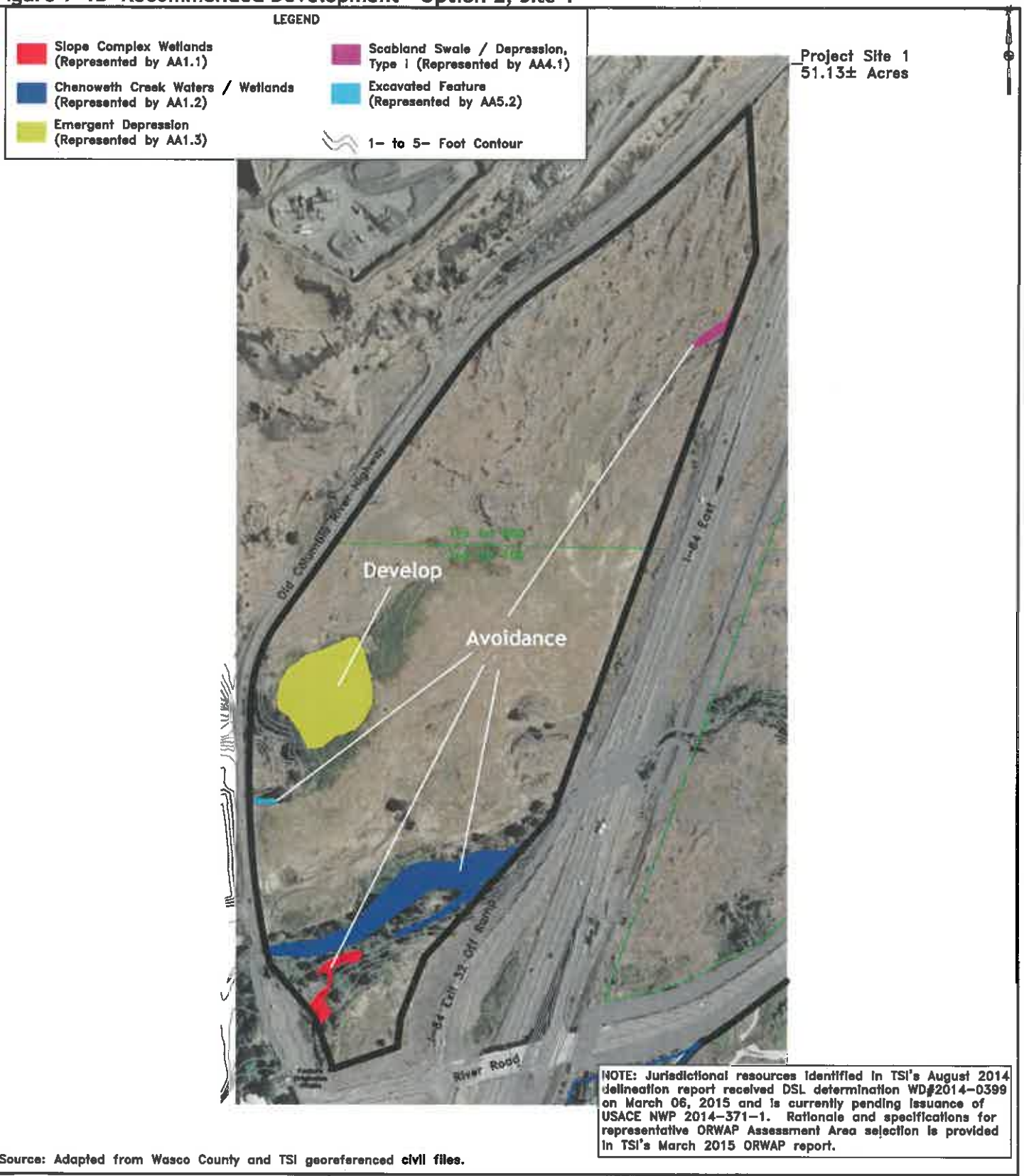
Figure 7-1A Recommended Development - Option 1, Site 1



Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	DEVELOPMENT AND COMPENSATORY MITIGATION FEASIBILITY REPORT FOR THE POTENTIAL PORT OF THE DALLES IRGP PROCESS The Dalles, Wasco County, Oregon	SITE 1 EXISTING CONDITIONS	FIGURE A.1
GRAPHIC SCALE 0 200 400 (IN FEET) 1 inch = 400 ft.	59 July 2015		

Figure 7-1B Recommended Development - Option 2, Site 1



Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	DEVELOPMENT AND COMPENSATORY MITIGATION FEASIBILITY REPORT FOR THE POTENTIAL PORT OF THE DALLES IRGP PROCESS The Dalles, Wasco County, Oregon	SITE 1 EXISTING CONDITIONS
GRAPHIC SCALE 0 200 400 (IN FEET) 1 inch = 400 ft.	60 July 2015	FIGURE A.1

7.5.1 Site 1

As previously described, Site 1 is not currently within The Dalles Urban Growth Boundary and is not available for development as part of the National Scenic Area. The following analysis was developed under the assumption that the site will eventually be successfully brought into the UGB and planned and zoned for industrial development.

The total size of Site 1 is 51.13 acres. Identified easement and setback requirements (City of The Dalles Stream Corridor District and Flood Control Provisions (Chenoweth Cr.) and Department of Transportation partition between Chenoweth Creek and the River Road interchange) reduce this area to about 32.6 acres. Five distinct types of aquatic resources are located on Site 1 and summarized in Table 7-4.

Table 7-4 Summary of Aquatic features within Site 1.

Feature	Cowardin Class HGM Class	Acreage
Slope Complex Wetland	PSS;EM/EMh D/S	0.19 acres
Chenoweth Creek Waters / Wetland	PEM; PSS; PFO/J; R2SB RFT	1.53 acres
Emergent Depression	PEMC D	1.65 acres
Scabland Swale / Depression, Type 2	PEMC D	0.10 acres

Cowardin Modifiers:
PSS / EM / EMh: Palustrine, Scrub-shrub / Emergent / Emergent, impounded
PEM / SS / FOJ: Palustrine / Scrub-Shrub / Forested, Intermittently Flooded
R2SB: Riverine, Lower Perennial, Streambed
PEMCx: Palustrine, Emergent, Seasonally Flooded, excavated
PEMC: Palustrine, Emergent, Seasonally Flooded

HGM Modifiers:
D / S: Depression / Slope
RFT: Riverine Flow Through

Table 7-5: Site 1 Avoidance Considerations

Considerations for Avoidance Designation	Slope Complex	Chenoweth Creek Waters / Wetlands	Emergent Depression	Scabland Swale / Depression, Type 2
High function and value scores?	No.	Fish Habitat (Very High) Terrestrial Habitat (High)	Hydrologic (High) Water Quality (Very High)	Terrestrial Habitat (High)
High condition and/or sensitivity score?	No.	No.	Sensitivity (Very High)	Condition (High) Sensitivity (Very High)
Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	Wetlands likely contribute baseflow connection to Chenoweth Creek.	Yes. Provides up- and downstream riparian corridor connectivity along Chenoweth Creek - a designated Essential Salmonid Habitat waterway.	Wetland is adjacent to basalt cliff and oak gallery - extension of Wasco oaks habitat further west.	No
Does the wetland support a predominance of a native wetland plant community?	Yes; scrub-shrub inclusions of *Fraxinus latifolia* and emergent areas supporting native wetland species.	Yes; native components include mature Fraxinus latifolia and Alnus rubra among dense thickets of Rubus armeniacus.	No; feature primarily supported invasive *Dipsacus fullonum*.	No; predominantly non-native herbaceous community; feature does support a population of *Camassia*.
Wetland vegetation class	Emergent: 60% Scrub-shrub: 20% Forested: 10%	Emergent: 10% Scrub-shrub: 45% Forested: 45%	Emergent: 95% Scrub-Shrub: 5%	Emergent: 100%
Is the wetland a designated Wetland of Conservation Concern?	No	No (does not meet definition for "mature forested wetland"; however, relative to the area, there are fully matured trees)	No	Yes; Modoc Basalt Vernal Pool

Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	Yes. The western/northwestern edge of Site 1 (west of Hwy 30) is flanked by The Dalles Area Conservation Opportunity Area. ODFW has identified this area as Wasco Oaks Conservation Opportunity Area - believed to contain over 80% of the eco-regions limited oak habitat. ODFW conservation recommendations include limited development in, maintenance of and restoration of oak woodlands.			
Do any wetlands have a legal protection overlay?	Wetlands lay partially within ODOT easement and partially within City riparian setback area.	Yes; City riparian setback ordinance.	Currently within National Scenic Area	Currently within National Scenic Area
Opportunity for on-site mitigation or other restoration action?	Very limited wetland mitigation opportunity. Adjacency to busy roads and freeway interchange makes it less desirable for mitigation.	Yes. Historic fill on floodplain offers opportunity for wetland restoration and creation.	Potentially. Opportunity for shallow excavation of surrounding uplands to expand wetland footprint.	No. Feature has been isolated from broader down-gradient vernal pool habitat area by construction of I-84.
Any designated floodplains on the site?	Partially; lower areas are (likely) within the 100-year floodplain.	Yes- wetlands and waterway are in 100-year floodplain.	No.	No.

Table 7-6 Site 1 Development Considerations

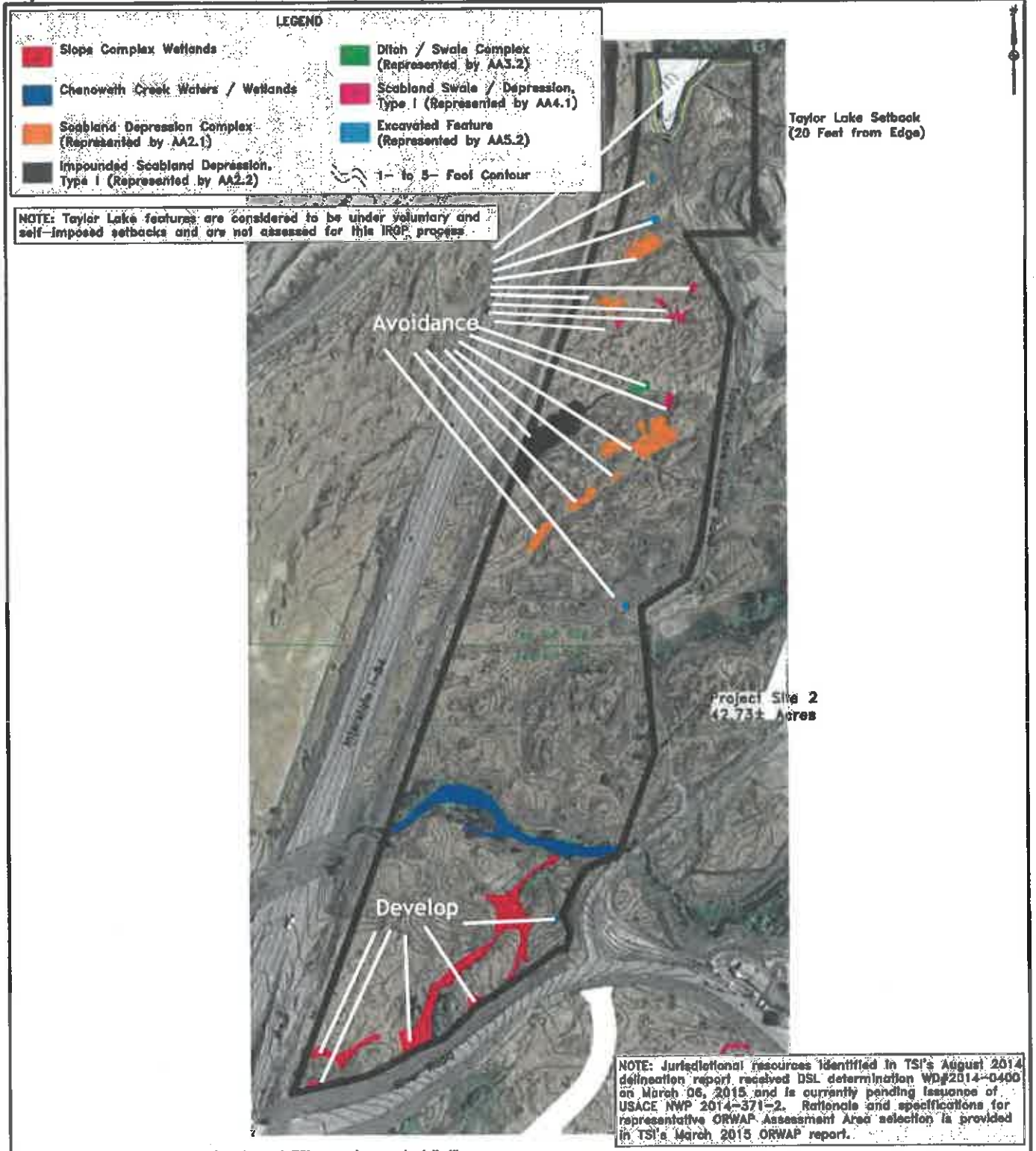
Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	When Chenoweth Creek setbacks are considered, areas north of the Chenoweth Creek allow for subdivision providing multiple 10 acre plots or use as one large, contiguous development area. Area south of creek offers small, irregularly configured lot.
Maximize rectangular development areas.	Yes. Areas north of Chenoweth Creek allow for large, rectangular development. Area south of creek does not.
Preserve efficient highway access with preference for direct highway access.	Access off of Old Columbia River Highway (Hwy 30) north of Chenoweth Creek is less than 1 mile from I-84 interchange.
Would the site preserve multiple access points?	Yes. The northeastern site boundary provides adequate frontage along Old Columbia River Highway to provide multiple access points.
Preserve rail access on sites with such capabilities.	N/A
Preserve natural buffer features where they occur.	Chenoweth Creek riparian corridor offers natural buffering from uses to the south. Oak gallery/basalt cliffs on west edge of site offers natural buffering to natural areas further west.
Impact to site development costs.	Scabland formation on northernmost portion of the site likely to have high development costs. Areas north of Chenoweth Creek are relatively flat and lack extensive shallow bedrock - likely lower development costs.

Table 7-7 Final Recommendation for Site 1 Aquatic Resources

Aquatic Feature	Summary and Recommendation
Slope Complex Wetlands (0.19 acres)	ORWAP results indicate no remarkable functions and values; the wetlands do feed baseflow to Chenoweth Creek. Wetland has predominantly native plant community. Development potential in this area south of Chenoweth Creek is severely constrained by: poor accessibility from River Road or Hwy 30; ODOT easement and city riparian setback requirements, floodplain at lower elevation, and a small and irregularly configured land area that fails size and shape preferences. **Designation: Avoidance.** This parcel south of Chenoweth Creek (where slope wetland is located) is ill-configured and relatively very small. Significant access challenges, ODOT easement and city riparian ordinance protections further reduce developability of this area.
Chenoweth Creek Waters / Wetlands (1.53 acres)	Wetland and waterway present multiple high function/value; designated Essential Salmonid Habitat and supports ESA-listed fish; area is in 100-year floodplain; there is a significant wetland mitigation opportunity on the floodplain; City 50-foot riparian setback ordinance applies. Developability of remaining site to the north would not be affected by an avoidance designation in this area. **Designation: Avoidance with opportunity as a wetland mitigation area.** Multiple compelling resource values and city ordinance protections warrant avoidance.

Emergent Depression (1.65 acres)	Feature provides high hydrologic and water quality functions/value and is immediately adjacent to other high value habitat (Wasco oaks). Potential mitigation (wetland creation) opportunities exist here. Located on a terrace in the middle of site 1, this feature lies within the most developable portion of the site that is otherwise constrained by steeper slopes and basalt outcrops to the north and Chenoweth Creek riparian area to the south. Avoidance would substantially disrupt the contiguous develop-ability of this site. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. Designation: Indeterminate. Avoidance and development considerations do not lead to a conclusive determination. If avoided, area offers potential wetland mitigation opportunities (for non-vernal pool wetland types). Remainder of this analysis examines this feature as both an avoidance (with mitigation potential) area and as a development area.
Scabland Swale / Depression, Type 2 (0.1 acres)	Although isolated by the construction of I-84, this feature continues to function as vernal pool habitat; relatively high condition and supporting high quality terrestrial habitat function/value. Considering location of the feature on NE edge of the site and within otherwise difficult-to-develop shallow bedrock and basalt outcrops, developability of remaining site would not be affected by an avoidance designation this area. **Designation: Avoidance**

Figure 7-2 Recommended Development, Site 2



Source: Adapted from Wasco County and TSI georeferenced civil files.

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GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

SITE 2 EXISTING CONDITIONS

July 2015

7.5.2 Site 2

The total size of Site 2 is 42.73 acres. Identified easement and setback requirements (City of The Dalles Stream Corridor District and Flood Control Provisions (Chenoweth Cr.) reduce this area to about 39.2 acres. Eight distinct types of aquatic resources are located on Site 2 and summarized in Table 7-8.

Table 7-8 Summary of Aquatic features within Site 2.

Feature	Cowardin Class HGM Class Classification	Acreage
Slope Complex Wetland	PSS; EM/EMh D/S	0.97 acres
Chenoweth Creek Waters / Wetland	R2SB;EMH/J; PEMC RFT	0.66 acres
Scabland Depression Complex	PEM; PSSE D	0.67 acres
Impounded Scabland Depression, Type 1	PEMCh D	0.5 acres
Ditch/Swale Complex	PEMCx D	0.04 acres
Scabland Swale / Depression, Type 1	PEME/C D	0.08 acres
Excavated Feature	PEMEx D	0.05 acres
Taylor Lake Wetlands*	L2EMCh D	0.48 acres

* Although a delineated wetland feature on Site 2, for the purposes of this plan/proposal, the owner has agreed to remove this aquatic resource from development consideration, because: 1) the high recreational and scenic value associated with Taylor Lake; and 2) the substantially lower elevation of this area compared to the rest of the site makes development impractical. This feature is not further discussed/described in this section.

Cowardin Modifiers:
PEMC / E: Palustrine, Emergent, Seasonally Flood / Saturated
R2SB/EMH/J: Riverine, Lower Perennial, Streambed / Emergent, Permanently / Intermittently Flooded
PEME: Palustrine, Emergent, Seasonally Flooded / Saturated
PEMEx: Palustrine, Emergent Seasonally Flooded / Saturated, excavated
L2EMCh: Lacustrine, Littoral, Emergent, Seasonally Flooded, impounded

HGM Modifiers:
S: Slope

RF I: Riverine Flow Through
D: Depression

Table 7-10 Site 2 Development Considerations

Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	Yes. When Chenoweth Creek setbacks are considered, areas south of the creek is 9.6 acres -consistent with 10 acre minimum target. Areas north of the creek allow for subdivision providing multiple 10-acre plots or use as one large, contiguous development parcel.
Maximize rectangular development areas.	Yes. Area south of creek presents some irregularity; area north of creek allows for large, rectangular configurations.
Preserve efficient highway access with preference for direct highway access.	South end of site has immediate access to River Road and I-84 Interchange. Access for interior of site would require substantial improvement of Taylor Lake access road.
Would the site preserve multiple access points?	Potentially. Areas south of creek would allow for only one access point. Areas north of the creek may allow for multiple access points. Future site access for the northern portion of the site, however, would be dependent on improvements to Taylor Lake access road.
Preserve rail access on sites with such capabilities.	Yes. The entire site abuts the existing Union Pacific rail line easement. While areas south of creek lack adequate space for a rail spur, northern areas could be configured to allow a new rail spur if necessary.
Preserve natural buffer features where they occur.	Taylor Lake wetlands provide natural buffer between any development on Site 2 and Taylor Lake itself.
Impact to site development costs.	Area between Chenoweth Creek and Taylor Lake wetlands exhibits extensive basalt rock outcrops. Only the the portion of the site south of creek has readily available access to existing utility infrastructure.

Table 7-11 Final Recommendation for Site 2 Aquatic Resources

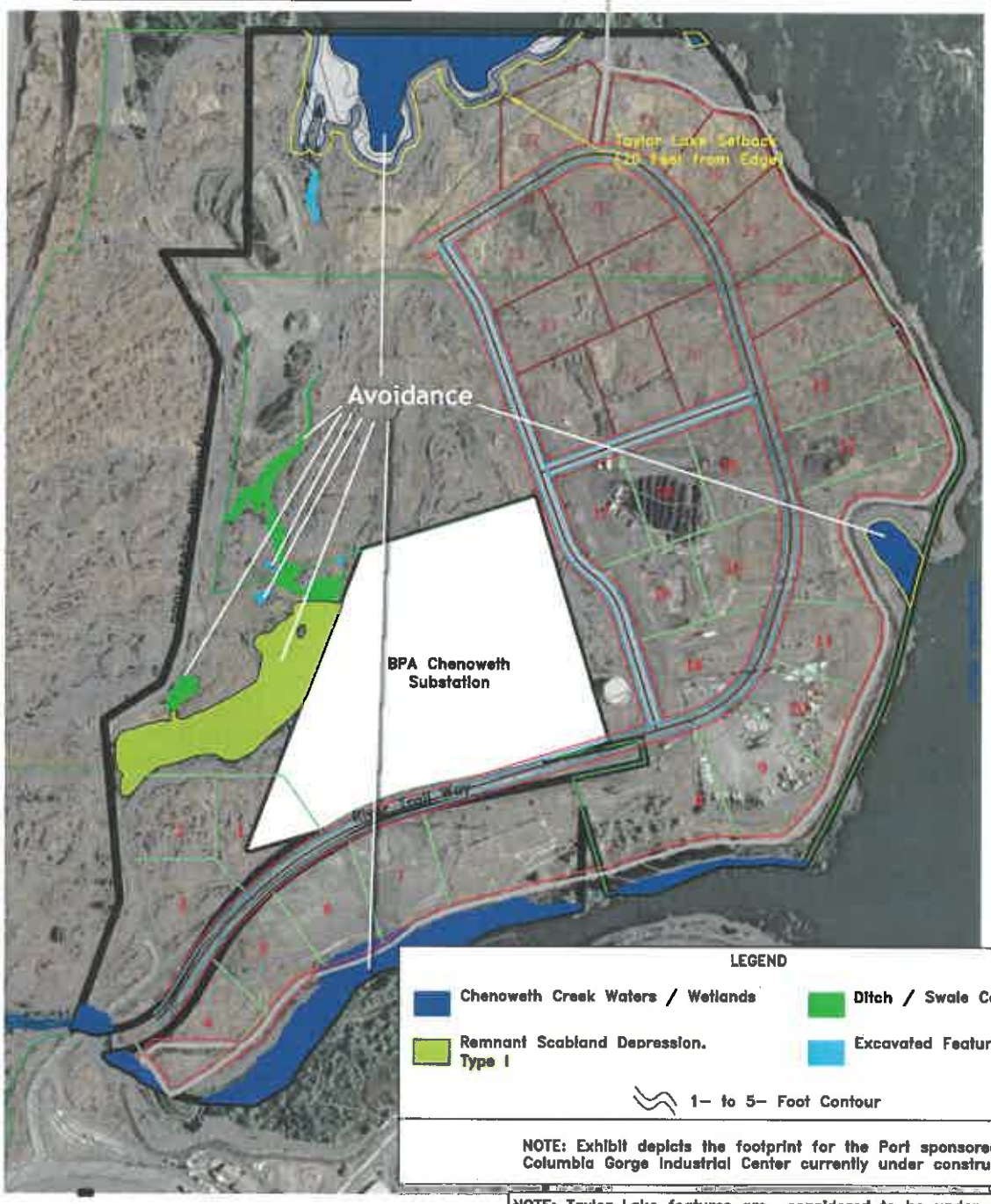
Aquatic Feature	Summary and Recommendation
Slope Complex Wetlands (0.97 acres)	ORWAP results indicate no remarkable functions and values; construction of River Road has interrupted normal hydrologic inputs. Wetland does have intermittent connection to Chenoweth Creek. No other remarkable features. These wetlands lie within a gently sloping terrace which lacks significant basalt outcrops and offers adequate buffer space to Chenoweth Creek. Relatively low development cost compared to areas north of creek with extensive basalt outcrops. Excellent access to River Road and I-84 interchange make it highly desirable for development as does availability of infrastructure. **Designation: Development.** Proximity to excellent access points, utilities and readily constructable land weigh in favor of development designation.
Chenoweth Creek Waters / Wetlands (0.66 acres)	Wetland and waterway present multiple high functions/values; designated Essential Salmonid Habitat and supports ESA-list fish; area is in 100-year floodplain; there is a significant wetland mitigation opportunity on the floodplain; City 50-foot riparian setback ordinance applies. An avoidance designation would marginally affect developability of the area to south of creek. **Designation: Avoidance.** Multiple compelling resource values and city ordinance protections warrant avoidance.
Scabland Depression Complex (0.67 acres)	This relatively intact wetland of conservation concern has multiple high functions/values (largest number of high function/value attributes of all wetland types within planning area). Features are in good condition and very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) mitigation opportunities exist within this landform. Feature located in center of the site within a landform constrained extensive basalt outcrops and currently lacking access and infrastructure. Development costs expected to be very high. Avoidance would substantially disrupt the contiguous develop-ability of this site. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** Although avoidance of this area substantially limits the total developability of Site 2; the high functions and values of the area, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.

Impounded Scabland Depression Type 1 (0.5 acres)	Artificial impoundment of this feature has substantially impaired its functionality except for the hydrologic function (increased as result of manipulations). Otherwise, this wetland of conservation concern is in good condition and has very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) opportunities exist within this landform. Feature located in center of the site and adjacent to rail line within a landform constrained by extensive basalt outcrops and currently lacking access and infrastructure. Development costs expected to be very high. Avoidance would substantially disrupt the contiguous developability of this site and could adversely affect rail spur options. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** Although avoidance of this area substantially limits the total developability of Site 2; the high functions and values of the area, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.
Ditch/Swale Complex (0.04 acres)	The feature (non-vernal pool) exhibits high hydrologic and water quality function/value, is in good condition and very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) mitigation opportunities exist within this landform. Feature located in center of the site within a landform constrained by extensive basalt outcrops and currently lacking access and infrastructure. Development costs expected to be very high. Avoidance would substantially disrupt the contiguous develop-ability of this site. Very high sensitivity indicates potential for disproportionately large impact to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** Although avoidance of this area substantially limits the total developability of Site 2; the high functions and values of the area, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.

Scabland Swale/Depression, Type 1 (0.08 acres)	Historic manipulations of this feature have substantially impaired its functionality except for terrestrial habitat functions/values. Otherwise, this wetland of conservation concern is in good condition and has very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) mitigation opportunities exist within this landform. Feature located in center of the site within a landform constrained extensive basalt outcrops and currently lacking access and infrastructure. Development costs expected to be very high. Avoidance would substantially disrupt the contiguous developability of this site. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** Although avoidance of this area substantially limits the total developability of Site 2; the high functions and values of the area, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.
Excavated Features (0.05 acres)	These small, heavily manipulated features are located in the area south of Chenoweth Creek (<0.01 acres) and immediately south of the Taylor Lake wetlands area (0.04 acres). No remarkable functions/values, although ORWAP reports a high condition score. Features unremarkable in all other regards. **Designation: Avoidance** for "excavated features" (0.04 acres) immediately south of Taylor Lake wetlands area. **Development** for "excavated feature" (<0.01 acres) south of Chenoweth Creek and located within the same development designation area as "slope complex wetlands".

Figure 7-3 Recommended Development, Site 3

NOTE: Jurisdictional resources identified in TSI's April 2012 delineation report received DSL determination WD#2012-0159 on July 24, 2012 and USACE AJD NWP 2012-134 on August 09, 2012. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report



LEGEND

- Chenoweth Creek Waters / Wetlands
- Ditch / Swale Complex
- Remnant Scabland Depression, Type I
- Excavated Feature
- 1- to 5- Foot Contour

NOTE: Exhibit depicts the footprint for the Port sponsored Columbia Gorge Industrial Center currently under construction.

NOTE: Taylor Lake features are considered to be under voluntary and self-imposed setbacks for this IRGP process. Similarly, waters features associated with the Columbia River lie within City defined setbacks and have been omitted from the IRGP process.

Source: Adapted from Wasco County, Harper Houf Peterson Righellis and TSI georeferenced civil files.

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GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

SITE 3 EXISTING CONDITIONS

July 2015

7.5.3 Site 3

The total size of Site 3 is 83.44 acres. City ordinances affecting developable space for Site 3 include constraints associated with Stream Corridor District (Chenoweth Creek) and Columbia Riverfront Trail ordinances. Lastly, multiple Bonneville Power Administration (BPA) powerline easements dissect the property and a large BPA substation lies in the center of the property (as a separate lot). Net acreage for Site 3 is approximately 56.0± acres.

Six distinct types of aquatic resources are located on Site 3 and summarized in Table 7-12.

Table 7-12 Summary of Aquatic Features Within Site 3

Feature	Cowardin Class HGM Class	Acreage
Remnant Scabland Depression, Type 1	PEMCh / PSSCh F	2.21 acres
Ditch / Swale Complex	PEMCx F	0.6 acres
Chenoweth Creek Waters / Wetland	PEM/SSJ / PEM/SSC RFT	2.24 acres
Excavated Features	PEMCx F	0.08 acres
Taylor Lake Waters / Wetlands*	PUBH / PEMC / PSSC RI, LF	2.51 acres
Columbia River Waters*	L1 / 2OW RI	0.41acres

* Although delineated wetland features on Site 3, for the purposes of this plan/proposal, the Port has agreed to remove these aquatic resources from development consideration because of the high recreational and scenic value associated with Taylor Lake and Columbia River at this location. These features are not further discussed in this section.

Cowardin Modifiers:

L1/2OW: Lacustrine, Limnetic / Littoral, Open Water
PEMJ: Palustrine, Emergent, Intermittently Flooded
PEMC: Palustrine, Emergent, Seasonally Flooded
PSSJ: Palustrine, Scrub-Shrub, Intermittently Flooded
PSSC: Palustrine, Scrub-Shrub, Seasonally Flooded
PUBH: Palustrine, Unconsolidated Bottom, Permanently Flooded
PEMCh: Palustrine, Emergent, Seasonally Flooded, diked / impounded
PEMCx: Palustrine, Emergent, Seasonally Flooded, excavated
PSSCh: Palustrine, Scrub-Shrub, Seasonally Flooded, diked / impounded

HGM Modifiers:
RI: Riverine Impounded
RFT: Riverine Flow Through
LF: Lacustrine Fringe
F: Flats

Table 7-13: Site 3 Avoidance Considerations

Considerations for Avoidance Designation	Remnant Scabland Depression, Type 1	Chenoweth Creek Waters / Wetlands	Ditch/Swale Complex	Excavated Feature
High function and value scores?	Hydrologic (Very High) Water Quality (Very High)	Fish Habitat(Very High) Terrestrial Habitat (High)	Hydrologic (High) Water Quality (Very High)	No.
High condition and/or sensitivity score?	Condition (High) Sensitivity (Very High)	No.	Condition (High) Sensitivity (Very High)	Condition (High)
Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	Provides partial connectivity between Taylor Lake and large interior depressional feature.	Yes. Provides up- and downstream riparian corridor connectivity along Chenoweth Creek - a designated Essential Salmonid Habitat waterway.	Provides partial connectivity between Taylor Lake and large interior depressional feature.	No.
Does the wetland support a predominance of a native wetland plant community?	Yes; areas of scrub-shrub supporting *Fraxinus latifolia* with native hydrophytic herbaceous community.	Partially; mature *Populus* and *Fraxinus* trees contain understory dominated by invasive *Rubus armeniacus* and *Phalaris arundinacea*.	No; feature supports predominantly non-native herbaceous species.	No.
Wetland vegetation class	Emergent: 90% Scrub-shrub: 10%	Emergent: 50% Scrub-shrub: 45% Forested: 5%	Emergent: 95% Scrub-shrub: 5%	Emergent: 100%

Is the wetland a designated Wetland of Conservation Concern?	Yes; Modoc Basalt Vernal Pool (disturbed)	No.	No.	No.
Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	No.	No.	No.	No.
Do any wetlands have a legal protection overlay?	No.	Yes; City riparian setback ordinance.	No.	No.
Opportunity for on-site mitigation or other restoration action?	Yes; located in landform suited to vernal pool creation or restoration.	Yes; historic fill on floodplain provides wetland restoration opportunity.	Yes; located in landform suited to vernal pool creation or restoration.	Yes; feature could be incorporated into a larger vernal pool creation or restoration area.
Any designated floodplains on the site?	No.	Yes- wetlands and waterway are in 100-year floodplain.	No.	No.

Table 7-14 Site 3 Development Considerations

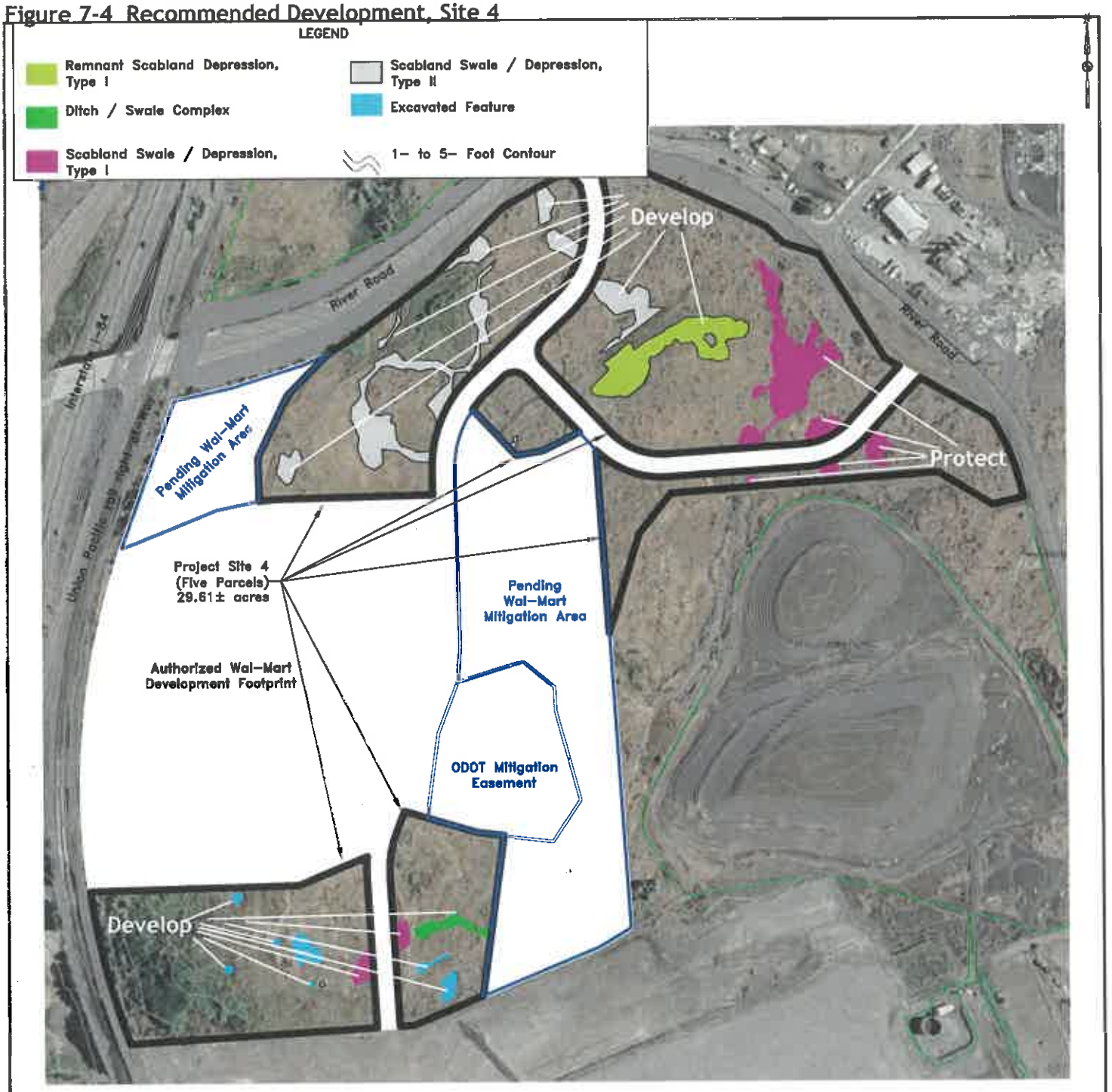
Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	Yes. The current redevelopment area provides approximately 46 acres of buildable land. Additional large acreage of un-platted land exists north of BPA substation.
Maximize rectangular development areas.	Yes. The current redevelopment area provides for platted rectangular parcels. Un-platted area north of BPA substation offers opportunity for single large rectangular footprint.
Preserve efficient highway access with preference for direct highway access.	Entire site lies less than 1 mile from River Road / I-84 interchange using recently developed River Way Trail access road.
Would the site preserve multiple access points?	Potentially. Secondary site access could be developed by improving current dirt Taylor Lake access road.
Preserve rail access on sites with such capabilities.	N/A
Preserve natural buffer features where they occur.	BPA substation easement provides a natural scabland buffer between the large remnant scabland depression and the current redevelopment area. Chenoweth Creek and associated wetlands provide natural buffer between the redevelopment area on Site 3 and other development immediately south of Chenoweth Creek.
Impact to site development costs.	Development on western portion of site will encounter significant shallow bedrock/basalt outcrop constraints. Redevelopment area is served with utility infrastructure.

Table 7-15 Final Recommendation for Site 3 Aquatic Resources

Aquatic Feature	Summary and Recommendation
Remnant Scabland Depression, Type 1 (2.21 acres)	This wetland of conservation concern has high function/value for hydrologic and water quality attributes. Although historically manipulated resulting in increased impoundment of water, the feature now expresses relatively good condition and very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) mitigation opportunities exist within this landform. The feature is within a landform constrained by extensive basalt outcrops and shallow bedrock; development costs expected to be very high. Avoidance would not substantially disrupt the contiguous developability of this site - substantial non-wetland constrained areas still exist within the site. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** The high functions and values of this wetland of conservation concern, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.
Chenoweth Creek Waters / Wetlands (2.24 acres)	Wetland and waterway present multiple high functions/values; designated Essential Salmonid Habitat and supports ESA-listed fish; area is in 100-year floodplain; there is a significant wetland mitigation opportunity on the floodplain; City 50-foot riparian setback ordinance applies. An avoidance designation would not substantially affect developability of the site. **Designation: Avoidance.** Multiple compelling resource values and city ordinance protections warrant avoidance.

Ditch/Swale Complex (0.6 acres)	The feature (non-vernal pool) exhibits high hydrologic and water quality function/value, is in good condition and very high sensitivity to adjacent stressors. Good wetland (vernal pool) opportunities exist within this landform. The feature is within a landform constrained by extensive basalt outcrops and shallow bedrock; development costs are expected to be very high. Avoidance would not substantially disrupt the contiguous developability of this site - substantial non-wetland constrained areas still exist within the site. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** The high functions and values of this wetland of conservation concern, the development challenges, and the opportunities to establish vernal pool mitigation weighed in favor of avoidance.
Excavated Features (0.08 acres)	These small, heavily manipulated features are located in the area south of Taylor Lake and interspersed around the ditch/swale complex. No remarkable functions/values. Features are located within a landform suited to vernal pool mitigation. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity.** Although unremarkable features themselves, the development challenges and the opportunities to establish vernal pool mitigation in this landform weighed in favor of avoidance.

Figure 7-4 Recommended Development, Site 4



NOTE: Jurisdictional resources identified in TSI's August 2014 delineation update received DSL determination WD#2009-0216R on September 04, 2014 and is currently pending re-issuance of USACE AJD NWP 2008-445. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

NOTE: Area within the confines of the ~~authorized Wal-Mark~~ retail development footprint and ~~Oregon Department~~ of Transportation ~~mitigation easement~~ are omitted from this IRGP process.

Source: Adapted from Wasco County, Pac-Land and TSI georeferenced civil files.

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GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

SITE 4 EXISTING CONDITIONS

July 2015

7.5.4 Site 4

The total size of Site 4 is 29.6 acres. Easements and other legal constraints affecting this site include a Union Pacific rail line easement skirting the western boundary of the site, BPA powerline easements dissecting the southern portion of the site and an ODOT compensatory wetland mitigation site. The latter is excluded from Site 4. In addition, the state and federal-permitted Wal-Mart development site and associated wetland mitigation areas are located here but are excluded from Site 4 considerations. Net acreage for Site 4 is approximately 27.0± acres.

Five distinct types of aquatic resources are located on Site 4 and summarized in Table 7-16.

Table 7-16 Summary of Aquatic Features Within Site 4

Feature	Cowardin Class HGM Class	Acreage
Remnant Scabland Depression, Type 1	PEMCh F	0.71 acres
Ditch / Swale Complex	PEMCx F	0.11 acres
Scabland Swale/ Depression Type 1	PEMC F/D	1.13 acres
Scabland Swale/ Depression Type 2	PEMC F	1.48 acres
Excavated Features	PEMCx F	0.18 acres

Cowardin Modifiers:
PEMC: Palustrine, Emergent, Seasonally Flooded
PEMCh: Palustrine, Emergent, Seasonally Flooded, diked / impounded
PEMCx: Palustrine, Emergent, Seasonally Flooded, excavated

HGM Modifiers:
D: Depression
F: Flats

Table 7-17: Site 4 Avoidance Considerations

Considerations for Avoidance Designation	Remnant Scabland Depression, Type 1	Ditch/Swale Complex	Scabland Swale/ Depression, Type 1	Scabland Swale/ Depression, Type 2	Excavated Feature
High function and value scores?	Hydrologic (Very High) Water Quality (Very High)	Hydrologic (High) Water Quality (Very High)	Terrestrial Habitat (High)	Terrestrial Habitat (High)	No.
High condition and/or sensitivity score?	Condition (High) Sensitivity (Very High)	Condition (High) Sensitivity (Very High)	Condition (High) Sensitivity (Very High)	Condition (High) Sensitivity (Very High)	Condition (High)
Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	Feature is in close proximately to 2 other relatively large scabland swale/ depression features; however approved development plans will bound the feature with access roads.	Yes; feature connects to approved vernal pool wetland mitigation site for Wal-Mart.	Feature is in close proximately to 2 other relatively large scabland swale/ depression features; however approved development plans will bound the feature with access roads.	Feature is within a complex of like features; however, existing River Road and approved interior roads bound the feature.	Partially; features in southeast portion of site will lay in close proximity to Wal-Mart vernal pool mitigation area.
Does the wetland support a predominance of a native wetland plant community?	Yes; emergent vegetation dominated by native hydrophytic species typical of Modoc Basalt vernal pools.	Yes; emergent vegetation dominated by native hydrophytic species	Yes; emergent vegetation dominated by native hydrophytic species typical of Modoc Basalt vernal pools.	Yes; emergent vegetation dominated by native hydrophytic species typical of Modoc Basalt vernal pools.	No.
Wetland vegetation class	Emergent: >95% Scrub-shrub: <5%	Emergent: 100%	Emergent: 100%	Emergent: >95% Scrub-shrub: <5%	Emergent: 100%

Is the wetland a designated Wetland of Conservation Concern?	Yes; Modoc Basalt Vernal Pool (disturbed)	No.	Yes; Modoc Basalt Vernal Pool	Yes; Modoc Basalt Vernal Pool	No.
Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	No.	No.	No.	No.	No.
Do any wetlands have a legal protection overlay?	No.	No.	No.	No.	No.
Opportunity for on-site mitigation or other restoration action?	Yes; located in landform suited to vernal pool creation or restoration.	Yes; located in landform suited to vernal pool creation or restoration. Also connects with approved mitigation site for Wal-Mart.	Yes; relatively intact feature suited to preservation credit; also located in landform suited to vernal pool creation.	Marginal; historic manipulations in this area limit preservation credit potential. Density of existing pools limits significant additional creation opportunities.	Marginal; features in southeast area may provide some limited vernal pool creation opportunity; features in southwest area lack shallow bedrock for vernal pool mitigation.
Any designated floodplains on the site?	No.	No.	No	No.	No.

Table 7-18 Site 4 Development Considerations

Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	Six remaining development areas within Site 4 range 0.8 acres to 9.9 acres. Opportunity to combine areas limited by approved plans for internal access roads.
Maximize rectangular development areas.	Remaining development areas generally irregularly configured.
Preserve efficient highway access with preference for direct highway access.	Two approved access points to the site provide excellent access to the River Rd./I-84 interchange.
Would the site preserve multiple access points?	Yes; two access points approved for the site.
Preserve rail access on sites with such capabilities.	Southwestern area is adjacent to UP railine however, parcel of insufficient size to develop access point.
Preserve natural buffer features where they occur.	None.
Impact to site development costs.	Southern development parcels lack basalt outcrops but have areas of shallow bedrock. Development parcels on north side of site have basalt outcrops and shallow bedrock. All areas will incur significant development cost. Upon completion of Wal-Mart development, all parcels will have ready access to utility infrastructure.

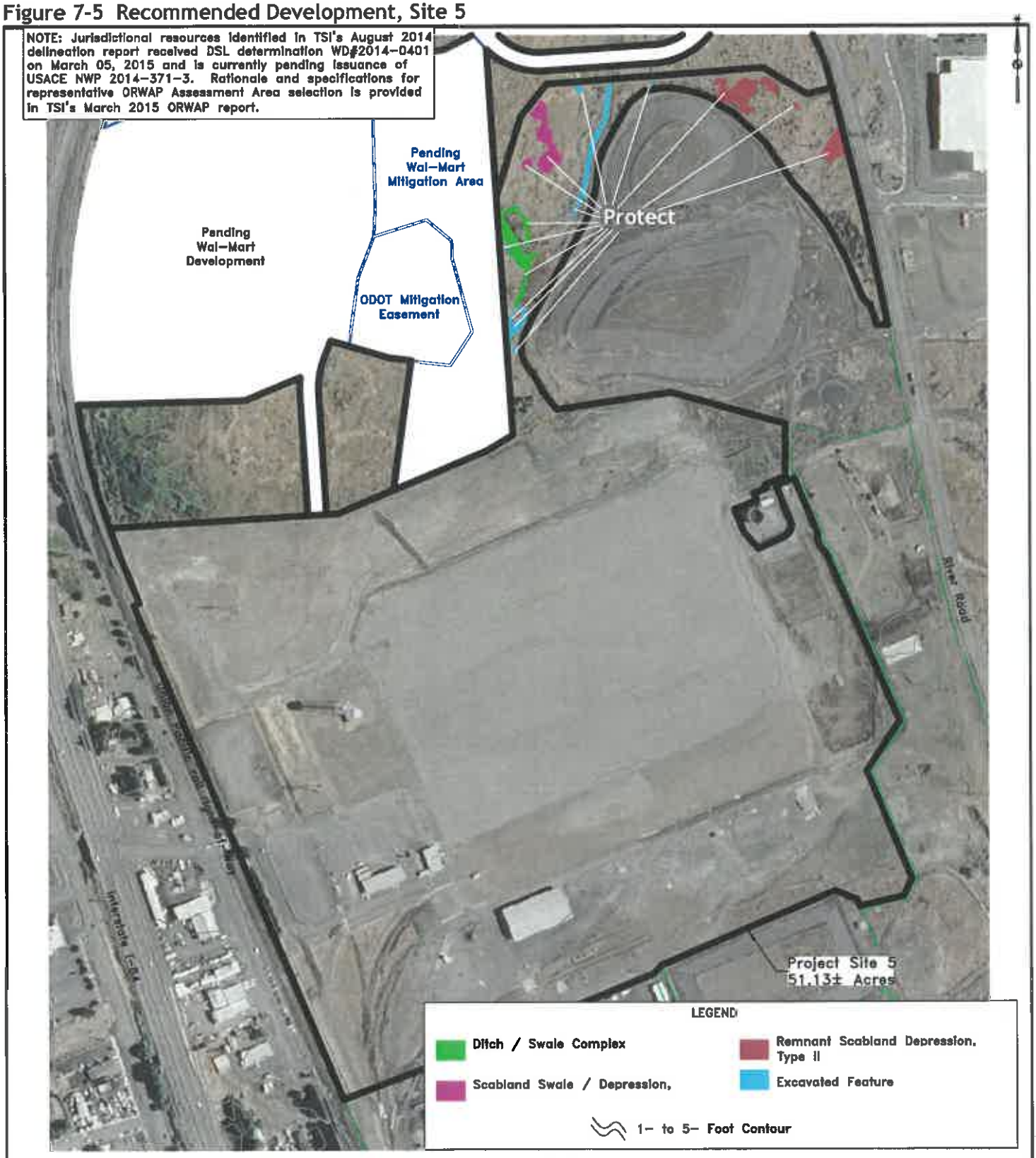
Table 7-19 Final Recommendation for Site 4 Aquatic Resources

Aquatic Feature	Summary and Recommendation
Remnant Scabland Depression, Type 1 (0.71 acres)	This wetland of conservation concern has very high function/value for hydrologic and water quality attributes. The feature expresses relatively good condition and very high sensitivity to adjacent stressors. Supports native plant community. Good wetland (vernal pool) mitigation opportunities exist within this landform; however, planned interior road system would introduce new stressors. The feature is within a landform constrained by basalt outcrops and shallow bedrock; development costs expected to be high. Located in the middle of the northernmost development parcel (Area 2), avoidance of this feature (and its contributing hydrologic input area) would render this parcel largely undevelopable. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Development.** While this vernal pool feature presents high hydrologic and water quality function/value and is in good condition, its position on the northeastern parcel renders the parcel otherwise undevelopable. This parcel's frontage to River Road and 2 access points make it highly desirable for development. Proposal is to bifurcate the northeastern parcel to make west side of parcel developable and protect east side of the parcel as a vernal pool mitigation area.
Ditch/Swale Complex (0.11 acres)	The feature (non-vernal pool) exhibits high hydrologic and water quality function/value, in good condition and very high sensitivity to adjacent stressors. Good wetland (vernal pool) mitigation opportunities exist within this landform. The feature is within a landform less constrained by basalt outcrops and shallow bedrock. Given position of the feature on the southeastern parcel (Area 6), avoidance would substantially disrupt developability. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Development.** Lower costs for development in this area plus location of feature in the center of this otherwise small southeastern parcel weigh in favor of development. This parcel will require some buffering between the future development and the existing and proposed wetland mitigation sites to the north and east.

Scabland Swale/ Depression, Type 1 (1.13 acres)	This wetland of conservation concern has high function/value for terrestrial habitat and is in good condition and has very high sensitivity to adjacent stressors. Supports native plant community. This feature includes the largest, relatively intact vernal pool within the six-site study area and possibly, larger The Dalles area. Good wetland (vernal pool) mitigation opportunities exist within this landform. These features are predominantly located in a landform constrained by extensive basalt outcrops and shallow bedrock; development costs are expected to be very high. The northeastern parcel's frontage to River Road makes it highly desirable for development. Avoidance would substantially reduce the developable area of the northeastern parcel by about 50%. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Avoidance with wetland (vernal pool) mitigation opportunity for features located in northeastern portion of site (0.99 acres) and development for features located in southwestern and southeastern parcels (0.14 acres).** Considering that the northeastern parcel contains the largest, relatively intact vernal pool in the study area, the development challenges, and the good opportunities to establish vernal pool mitigation weighed in favor of avoidance. Proposal is to bifurcate northeastern parcel to make west side of parcel developable and protect east side of the parcel as a vernal pool mitigation area. For the small scabland swale/depression features in the southeastern and southwestern parcels (Areas 5 and 6), the marginal mitigation opportunities in those areas, their adjacency to the approved internal road network (future stressors to this highly sensitive resource) and the potentially lower development costs of the area weighed in favor of development .

Scabland Swale/ Depression, Type 2 (1.48 acres)	This wetland of conservation concern has a higher level of historic disturbance but still supports high function/value for terrestrial habitat and is still in relatively good condition and very high sensitivity to adjacent stressors. Supports native plant community. Marginal wetland (vernal pool) opportunities exist within northwestern parcel. Some creation potential for the feature located in the northwestern parcel. The feature is within a landform constrained by extensive basalt outcrops and shallow bedrock; development costs are expected to be very high. The northwestern and northaestern parcels (Areas 1 and 2) where these features are located have frontage to River Road and extensive frontage to planned internal road network making both parcels highly desirable for development. Avoidance would eliminate the developability of the northwestern parcel. Very high sensitivity indicates potential for disproportionately large effect to function by future adjacent development. **Designation: Development.** Compared to other vernal pool types in the study area, functionality of this vernal pool complex has been significantly reduced by historic manipulation/grading. The northwestern and northeastern parcels (Areas 1 and 2) containing these features are highly desirable for development due to road frontage and excellent access. The features do not support strong vernal pool mitigation opportunities. Proposal is a development designation for Area 1 containing these features and bifurcate Area 2 to make the west side of parcel developable and to protect the east side of the parcel as a vernal pool mitigation area.
Excavated Features (0.18 acres)	These small, heavily manipulated features are located in the southeastern and southwestern parcels. They have no remarkable functions/values. Features are located within a landform generally not well-suited to vernal pool mitigation. Distance from River Road frontage and position at "the back" of Site 4 potentially reduce the desirability of the two parcels containing these features, however, the lesser amount of basalt outcrops makes parcels relatively easier to develop. **Designation: Development.** The unremarkable and highly manipulated nature of these features, marginal mitigation opportunities in the areas where located, and the potentially lower development costs all weighed in favor of development . Exception is the 0.002 acre feature on the northeast edge of the site that is associated with the avoided scabland swale/depression type 1 and would be avoided.

Figure 7-5 Recommended Development, Site 5



Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

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GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

SITE 5 EXISTING CONDITIONS

July 2015

7.5.5 Site 5

The total size of Site 5 is 91.52 acres. Easements and other legal constraints affecting this site include a Union Pacific rail line easement located on the western portion of the site and a 20-foot City of The Dalles utility easement on the western portion of the site. A BPA power line easement dissects the northern portion of the site and an existing access road easement skirts the northern site boundary. Net acreage for Site 5 is approximately 75.2± acres.

Four distinct types of aquatic resources are located on Site 5 and summarized in Table 7-20.

Table 7-20 Summary of Aquatic Features Within Site 5

Feature	Cowardin Class HGM Class	Acreage
Remnant Scabland Depression, Type 2	PEMCx D	0.33 acres
Ditch / Swale Complex	PEMCx D	0.23 acres
Scabland Swale/ Depression Type 1	PEME; PEMC D	0.23 acres
Excavated Features	PEMCx D	0.17 acres

Cowardin Modifiers:
PEMC: Palustrine, Emergent, Seasonally Flooded
PEME: Palustrine, Emergent, Seasonally Saturated
PEMCx: Palustrine, Emergent, Seasonally Flooded, excavated

HGM Modifiers:
D: Depression

Table 7-21: Site 5 Avoidance Considerations

Considerations for Avoidance Designation	Remnant Scabland Depression, Type 2	Ditch/Swale Complex	Scabland Swale/ Depression, Type 1	Excavated Feature
High function and value scores?	Hydrologic (High) Terrestrial Habitat (High)	Hydrologic (High) Water Quality (Very High)	Terrestrial Habitat (High)	No
High condition and/or sensitivity score?	Condition (High)	Condition (High) Sensitivity (Very High)	Condition (High) Sensitivity (Very High)	Condition (High)
Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	Partially; feature is part of larger vernal pool complex extending to the north into Site 4.	Yes; feature connects to pending vernal pool wetland mitigation site for Wal-Mart and extends northward to vernal pool complex on Site 4.	Partially; feature is part of larger vernal pool complex extending to the north into Site 4 and west to pending Wal-Mart mitigation area.	Partially; some features border the pending Wal-Mart vernal pool mitigation area.
Does the wetland support a predominance of a native wetland plant community?	Partially; predominantly non-native emergent vegetation with population of *Camassia*.	No; predominantly non-native emergent vegetation	Yes; emergent vegetation dominated by native hydrophytic species including population of *Camassia*.	No; predominantly non-native emergent vegetation
Wetland vegetation class	Emergent: 100%	Emergent: 100%	Emergent: 100%	Emergent: 100%
Is the wetland a designated Wetland of Conservation Concern?	Yes; Modoc Basalt Vernal Pool (disturbed)	No.	Yes; Modoc Basalt Vernal Pool	No.
Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	No.	No.	No.	No.

Do any wetlands have a legal protection overlay?	No.	No.	No.	No.
Opportunity for on-site mitigation or other restoration action?	Yes; good potential to remove historic fill for vernal pool restoration and creation.	Yes; good potential to remove historic fill for restoration and creation.	Yes; good potential to remove historic fill for vernal pool restoration and creation.	Marginal; features could be incorporated into a broader vernal pool mitigation opportunity.
Any designated floodplains on the site?	No.	No.	No	No.

Table 7-22 Site 5 Development Considerations

Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	The southern (majority) area comprising the former aluminum mill site provides about 70 acres of contiguous developable acreage. The northern portion (location of all delineated aquatic resource features) is oddly configured and does not provide significant area of contiguous developable land.
Maximize rectangular development areas.	The southern area offers opportunity for configuration of multiple rectangular development areas. Northern area is oddly configured with no opportunity for rectangular footprints.
Preserve efficient highway access with preference for direct highway access.	The southern area lies less than one mile from I-84 interchange using West Second Street. Access to the north area could only be provided by further development of the River Road frontage.
Would the site preserve multiple access points?	Multiple access points possible off of West Second Street. Multiple access points for the northern area not possible.
Preserve rail access on sites with such capabilities.	Southern area has existing UP rail line with several spurs serving the property. Northern area has no rail access.
Preserve natural buffer features where they occur.	None.

Impact to site development costs.	Southern area is a readily constructable, vacant fill terrace with utilities service. Northern area exhibits shallow bedrock and rock outcrops and is not currently served by utilities.

Table 7-23 Final Recommendation for Site 5 Aquatic Resources

Aquatic Feature	Summary and Recommendation
Remnant Scabland Depression, Type 2 (0.33 acres)	This wetland of conservation concern has high function/value for hydrologic and terrestrial habitat attributes. The feature still expresses relatively good condition and very high sensitivity to adjacent stressors. Supports native plant community. Located within a broader vernal pool complex, it offers good mitigation opportunities with proximity to potential vernal pool mitigation area identified for Site 4. The feature is located within an oddly configured portion of Site 5 that does not offer significant area of contiguously developable land. Poor access and high cost of construction due to basalt outcrops/shallow bedrock further limit the developability of the northern area where this feature is located. Avoidance of this feature would not substantially affect the broader developability of Site 5 (southern area). **Designation: Avoidance.** The potential to include this feature as part of a broader vernal pool mitigation complex with the northeastern part of Site 4, combined with the lack of features suited to industrial development, weigh in favor of avoidance.
Ditch/Swale Complex (0.23 acres)	This wetland has high function/value for hydrologic and water quality attributes. The feature still expresses relatively good condition and very high sensitivity to adjacent stressors. However it does not support a native plant community. Located within a broader vernal pool complex, it offers good mitigation opportunities with connectivity to potential vernal pool mitigation area identified for Site 4 and connectivity to pending Wal-Mart vernal pool mitigation site. The feature is located within an oddly configured portion of Site 5 that does not offer significant area of contiguously developable land. Poor access and high cost of construction due to basalt outcrops/shallow bedrock further limit the developability of the northern area where this feature is located. Avoidance of this feature would not substantially affect the broader developability of Site 5 (southern area). **Designation: Avoidance.** The potential to include this feature as part of a broader vernal pool mitigation complex with the northeastern part of Site 4, combined with the lack of features suited to industrial development, weigh in favor of avoidance.

Scabland Swale/Depression Type 1 (0.23 acres)	This wetland of conservation concern has high function/value for terrestrial habitat only. The feature still expresses relatively good condition and very high sensitivity to adjacent stressors. Supports native plant community. Located within a broader vernal pool complex, it offers good mitigation opportunities with connectivity to potential vernal pool mitigation area identified for Site 4 and pending Wal-Mart vernal pool mitigation site. The feature is located within an oddly configured portion of Site 5 that does not offer significant area of contiguously developable land. Poor access and high cost of construction due to basalt outcrops/shallow bedrock further limit the developability of the northern area where this feature is located. Avoidance of this feature would not substantially affect the broader developability of Site 5 (southern area). **Designation: Avoidance.** The potential to include this feature as part of a broader vernal pool mitigation complex with the northeastern part of Site 4, combined with the lack of features suited to industrial development, weigh in favor of avoidance.
Excavated Features (0.17 acres)	These small, heavily manipulated features express no remarkable functions/values. Vegetation is predominantly non-native. Features are, however, located within a broader vernal pool complex extending north to Site 4 and west into the pending Wal-Mart vernal pool mitigation site. The feature is located within an oddly configured portion of Site 5 that does not offer significant area of contiguously developable land. Poor access and high cost of construction due to basalt outcrops/shallow bedrock further limit the developability of the northern area where this feature is located. Avoidance of this feature would not substantially affect the broader developability of Site 5 (southern area). **Designation: Avoidance.** The potential to include this feature as part of a broader vernal pool mitigation complex with the northeastern part of Site 4 and pending Wal-Mart mitigation site, combined with the lack of features suited to industrial development, weigh heavily in favor of avoidance.

Figure 7-6 Recommended Development, Site 6

NOTE: Jurisdictional resources originally recieved DSL WD#2009-0353R on June 04, 2015 and is pending and re-issuance of USACE NWP 2010-105. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

Source: Adapted from Wasco County and TSI georeferenced civil files.

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GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

SITE 6 EXISTING CONDITIONS

July 2015

7.5.6 Site 6

Total area of Site 6 is 17.5 acres including the already developed areas. About 7.6 acres is undeveloped. No specific easements or setback requirements have been identified on the site. Aquatic resources on Site 6 are limited to one type summarized in Table 7-24.

Table 7-24 Summary of identified Aquatic Resources Within Site 6

Feature	Cowardin/HGM Class	Total Size
Impounded Scabland Depression Type 2	PEM/PSSCh; D	0.8 acres

Cowardin Modifiers:
PEM / SSCh: Palustrine, Emergent / Scrub-Shrub, Seasonally Flooded, impounded

HGM Modifiers:

D: Depression

Table 7-25 Site 6 Avoidance Considerations

Considerations for Avoidance Designation	Impounded Scabland Depressions Type 2
High function and value scores?	Hydrologic (High); but only as a result of historic excavation of the feature.
High condition and/or sensitivity score?	Sensitivity (High)
Extent to which wetlands provide connectivity between, or buffering to, other important habitats (either on- or off-site)?	No. Features are isolated on the landscape and surrounded by development and dirt roads.
Does the wetland support a predominance of a native wetland plant community?	No; feature dominated by non-native herbaceous species.
Wetland vegetation class	Emergent: 90% Scrub-Shrub: 10%
Is the wetland a designated Wetland of Conservation Concern?	Yes; Modoc Basalt Vernal Pool
Is the wetland within, adjacent or otherwise connected to a designated "Conservation Opportunity Area"?	No.
Do any wetlands have a legal protection overlay?	No.
Opportunity for on-site mitigation or other restoration action?	No. Creation opportunities are severely constrained by surrounding development and historic manipulation of the land. No restoration opportunities observed. Little opportunity to reverse historic hydrologic manipulations for enhancement credit. Degraded and isolated nature of vernal pool not suited to preservation credit.
Any designated floodplains on the site?	No.

Table 7-26 Site 6 Development Considerations

Considerations for Development Designation	Results
Maximize net contiguous developable acreage on the site.	Total site size is less than 10 acres, however, development space could be expanded onto the adjacent Tax lot 201 and into vacant warehouse space in the southwest corner of the development parcel.
Maximize rectangular development areas.	No; although slightly irregular in shape, the parcel could be developed into a rectangular configuration with expansion onto adjacent lots.
Preserve efficient highway access with preference for direct highway access.	Yes. The parcel lies less than 0.5-mile from the Webber Street Interstate I-84 interchange using West Second Street.
Would the site preserve multiple access points?	Potentially. If the adjacent tax lot 201 and/or vacant warehouse space in the southwest corner of the parcel is utilized, the site could be developed with multiple access points to Webber Street.
Preserve rail access on sites with such capabilities.	No. While adjacent to a UP rail line easement, the site lacks adequate space to provide rail service.
Preserve natural buffer features where they occur.	None.
Impact to site development costs.	Likely low. The balance of the area has proven to be developable.

Table 7-27 Final Recommendation for Site 6 Aquatic Resources

Aquatic Feature	Summary and Recommendation
Impounded Scabland Depression-Type 2 (0.8 acres)	On-site aquatic resources do not present a strong case for either avoidance or development. Historical regional disturbances have altered the native hydrology of these features, resulting in degraded conditions. Due to the irregularly configured and relatively small parcel size, these features do not necessarily meet the TAC development criteria. If a development designation were made, the mitigation would have to be in-kind vernal pool. This became the deciding factor for final designation. **Designation: Avoidance.**

7.6 Summary

Table 7-28. Summary of Proposed Aquatic Resource Avoidance and Impact Acreages. All figures are in acres.

Site		Vernal pools - all types	Chenoweth Cr./ riverine wetlands	Taylor Lake/ fringe wetlands	Slope wetlands	Emergent depression wetlands	Excavated features wetlands	Ditch/ swale complex	Columbia River	Totals
Site 1	Avoidance	0.10	1.53	0	0.19	1.65*	0	0	0	3.47
	Impact	0	0	0	0	0	0	0	0	0
Site 2	Avoidance	1.25	0.66	0.48	0	0	0.04	0.04	0	2.47
	Impact	0	0	0	0.97	0	0.01	0	0	0.98
Site 3	Avoidance	2.21	2.24	2.51	0	0	0.05	0.60	0.41	8.02
	Impact	0	0	0	0	0	0	0	0	0
Site 4	Avoidance	0.99	0	0	0	0	0.002	0	0	0.992
	Impact	2.34	0	0	0	0	0.18	0.11	0	2.63
Site 5	Avoidance	0.56	0	0	0	0	0.17	0.23	0	0.96
	Impact	0	0	0	0	0	0	0	0	0
Site 6	Avoidance	0.8	0	0	0	0	0	0	0	0.8
	Impact	0	0	0	0	0	0	0	0	0
Totals	**Avoidance**	**5.91 (72%)**	**4.43 (100%)**	**2.99 (100%)**	**0.19 (16%)**	**1.65 (100%)**	**0.262 (58%)**	**0.87 (89%)**	**0.41 (100%)**	**16.712 (82%)**
	Impact	**2.34 (28%)**	**0**	**0**	**0.97 (84%)**	**0**	**0.19 (42%)**	**0.11 (11%)**	**0**	**3.61 (18%)**

* As noted previously, the avoidance/development outcome for the Site 1 emergent depression wetland was indeterminate having characteristics equally suited to avoidance and development designations. The above figures assume this feature as avoidance. If designated development, then the proposed wetland avoidance and minimization strategy achieves a 74% avoidance rate (15.06 acres).

Looking at the sites, the avoidance and minimization strategy concentrates impacts on two sites (Sites 2 and 4; with 73% of all impact on Site 4) in favor of protecting all aquatic resources on the remaining four sites and capitalizing on mitigation opportunities on those four sites (discussed further in Section 8).

Across all wetland types, the proposed wetland avoidance and minimization strategy achieves an 82% avoidance rate (16.71 acres). For the generally highest function/value, and most abundant aquatic resource types in the study area (vernal pools and Chenoweth Creek riverine wetlands), the avoidance rate is 74% and 100% respectively. It is also worth noting that this avoidance and minimization strategy is consistent with the Dalles Watershed Council Restoration Action Plan, 2015 Update, that identifies the protection and enhancement of the Chenoweth Creek and its associated wetlands as a priority strategy.

8.0 COMPENSATORY WETLAND MITIGATION STRATEGY

Both the state and the federal wetland regulatory programs require compensatory mitigation for unavoidable impacts to wetlands and waterways. Because impacts are anticipated only to wetland resources, compensatory wetland mitigation is the sole subject of this section.

Under the state regulatory program, the appropriate form of wetland mitigation is informed by applying the "Principal Objectives for Compensatory Wetland Mitigation" (OAR 141-085-0680). Under the federal program, the appropriate form of wetland mitigation is largely guided by the mitigation hierarchy defined in 40 CFR Part 332.3. These are further discussed in Section 8.2 relative to the proposed mitigation strategy.

8.1 Wetland Mitigation Options Explored

8.1.1 Wetland Mitigation Banks or In-Lieu Fee Programs

Purchasing appropriate wetland mitigation bank credits or approved in-lieu fee program credits are the preferred mechanisms for providing compensatory wetland mitigation for the six-site study area (and specifically, Sites 2 and 4 where all wetland impacts are proposed). This conclusion comes from consideration of the Department of State Lands' principal objectives for wetland mitigation and the federal wetland mitigation hierarchy. However, at this time (2015) there are no wetland mitigation banks serving the study area or broader region. To the Port's knowledge, there are no wetland mitigation banks being proposed. The Port of The Dalles is, however, actively evaluating the sponsorship of an in-lieu fee program for The Dalles. Conceptually, this program would incorporate some or all of the on-site wetland mitigation strategies discussed in Section 8.2 and may include other, yet to be defined, wetland creation, restoration and enhancement opportunities in the area. If the Port is successful in obtaining approval for a local in-lieu fee program, then this will be the preferred mechanism by which compensatory wetland mitigation is administered for the six-site study area.

8.1.2 On-Site Permittee Responsible Mitigation

The Port's contractor, TerraScience, evaluated all lands within the six-site study area for compensatory wetland mitigation development potential. (See Volume 3: "Development and Compensatory Mitigation Feasibility Report for Potential Issuance of an Industrial Regional General Permit, City of The Dalles, Wasco County, OR July 2015".) As a result of this review, six specific areas were identified as having good opportunity to create, restore or enhance wetlands to replace the wetlands anticipated for impact. The use of these six mitigation opportunity areas is the preferred strategy and each area is further described in Section 8.2. Again, the Port will be exploring the sponsorship of an in-lieu fee program that could administer these six identified mitigation opportunities. Until such time that the mitigation opportunity areas are brought under an "umbrella" in-lieu fee program, it would be the responsibility of future individual applicants to secure the appropriate mitigation area (i.e., permittee-responsible).

8.1.3 Off-Site Permittee Responsible Mitigation

Potentially suitable off-site mitigation areas were also explored. Four areas in proximity to The Dalles with willing landowners were identified and are illustrated on Figure 8-1]. Because of the dry climate and scarcity of relatively flat lands in and around The Dalles, the opportunities for wetland mitigation sites are equally scarce.

Figure B-1. Off-site Permittee-Responsible Mitigation

- **Hidden Valley:** Consisting of one parcel (tax lot 300 on T.02 North, R.13 East, Section 20) this site lies in a narrow alluvial valley about 0.5 miles north of the six-site study area. It is currently used for vegetable production. Historic, pre-agricultural use of the site suggests that the area likely supported some amount of wetland. DSL staff assessment in 2015 identified some concerns with the site, however: 1) the amount of water that may be available to re-create wetland hydrology may be insufficient or of uncertain sustainability; and, 2) the wetland form and functions at this site would likely be appreciably different from those within the six-site study area. This site was rejected for the purposes of this study.

- **Chenoweth Bluff:** Consisting of two parcels (Tax lots 100 on both T. 02 North, R. 13 East, Section 31 and 32), this mitigation opportunity lies atop The Dalles Bluffs landform approximately one mile west of the six-site study area. The site contains scatted areas of vernal pools. DSL staff evaluation in 2015 found the pools in the privately owned area to be in good condition. Pools in the public lands were assumed to be likewise. Mitigation credit by preservation was determined not to be an option since the pools are already protected by nature of their being within the Gorge National Scenic Area. The land use designation does not allow for activities that would likely diminish or destroy these vernal pool features. Opportunities to create new pools appear limited. This site was rejected for the purposes of this study.

- **Threemile Creek:** Consisting of one parcel (tax lot 200 on T.01 North, R.13 East, Section 1) this mitigation opportunity lies in a narrow floodplain associated with Threemile Creek. It is about 3.5 miles southeast of the six-site study area. This opportunity was investigated by DSL staff in 2015 with no realistic opportunity for wetland mitigation identified considering the narrowness and slope of the floodplain and the often incised nature of the creek. This site was rejected for the purposes of this study.

- **Dallesport:** Consisting of two parcels, this 253± acre property is located immediately opposite the City of The Dalles, across the Columbia River in Washington. The location includes the Columbia Gorge Regional Airport. Zoned as Airport Development, the western parcel is slated for future development while the eastern parcel is zoned as Open Space. Situated in an area containing basalt outcrops / vernal pools, this area provides potential vernal pool preservation, restoration and enhancement opportunities. The major constraint of this property, however, is the location in Washington. While US Army Corps of Engineers' rules may allow for flexibility to authorize intrastate mitigation, DSL legal review determined that mitigating for wetland impacts in another state (regardless of proximity to the impact site) is not supported by the Removal-Fill Law. Further, should earthwork be proposed at this location, Washington Department of Ecology regulations and interactions would also be triggered. This opportunity was rejected considering DSL's regulatory issues and the added complexity of a third regulatory agency.

8.1.4 Payment-in Lieu

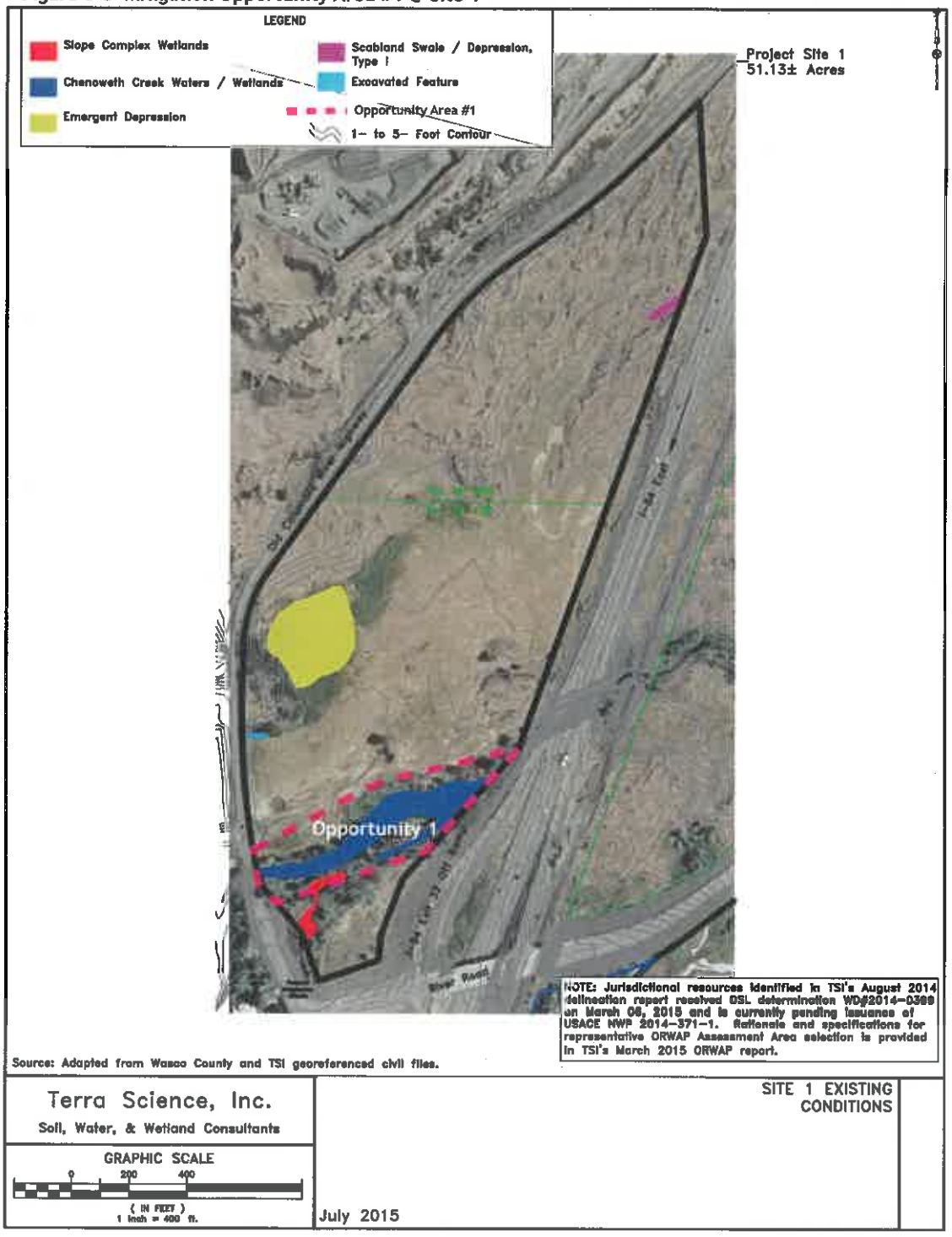
Paying into DSL's removal-fill revolving account, in lieu of "on the ground" mitigation was considered but rejected because at this time, the US Army Corps of Engineers does not recognize this option as allowable mitigation for impacts to waters of the United States.

8.2 Proposed Wetland Mitigation Strategy

Six on-site wetland mitigation opportunities were identified by the Port's consultant (TerraScience). Two of the mitigation opportunities are adjacent to Chenoweth Creek, three mitigation opportunities are within scabland formations, and one mitigation opportunity is located adjacent to an existing large emergent depression unique to the area. Each opportunity is identified below including a general description of the land treatments that would be involved, the wetland form and functions that would be created, what impact sites it would be most suited for, and an estimated number of credits that could be generated using DSL's standard wetland mitigation ratios.

It must be noted that these are conceptual proposals for compensatory wetland mitigation. Future individual permit applications (or any future Port-sponsored in-lieu fee program) would still need to fully develop the proposals to the detail required by DSL and the US Army Corps of Engineers for regulatory approval.

Figure 8-3 Mitigation Opportunity Area #1 @ Site 1



8.2.1 Mitigation Opportunity Area #1, Site 1

As illustrated in Figure 8-3, Mitigation Opportunity 1 would involve enhancement and expansion of the Chenoweth Creek corridor on Site 1. Analysis indicates this area could

provide an excellent opportunity to provide enhancement and restoration credits. Aerial photography and site reconnaissance suggests fill material was historically placed within floodplain areas north of the creek. Removal of said material, in combination with enhancement of existing wetland areas could yield mitigation credits.

Mitigation would require significant excavation to remove fill material, obtain target grades and provide micro-topography characteristic of the historic floodplain. Upon completion of earthwork, native seed mixtures, plugs, shrubs and trees would need to be installed to control erosion and begin establishment of target riparian communities and habitats. In addition to installation, mitigation would include eradication of invasive species (especially Rubus armeniacus) and replacement with native species. It would be anticipated that this area would ultimately evolve into forested and scrub-shrub communities.

The predominant HGM class for this opportunity would be riverine flow-through and riverine impounding. Predominant Cowardin classes would be palustrine scrub-shrub and palustrine forested with the potential for emergent inclusions. Functionally, the wetland would likely perform similarly to the existing riverine wetlands already located on Site 1.

This mitigation opportunity would be targeted toward the anticipated slope wetland impacts at Site 2 and the "excavated features" wetlands at Sites 2 and 4. While not precisely in-kind by HGM class, the mitigation area is expected to return wetland functions and values equal to or greater than those projected to be lost at the slope and "excavated features" wetland impact sites in addition to delivering other ecological benefits including significant increase in the spatial footprint of the existing floodplain; broadening the wildlife corridor along the creek; increase rearing, food-producing and refugia habitat for listed fish in this Essential Salmonid Habitat (ESH) stream; and aid in addressing water quality impairments (temperature -TMDL approved) to this DEQ listed 303(d) stream.

Table 8-1A Functional Gains/Losses Analysis for Slope Wetland Impact

Functional Attribute	Mitigation Opportunity #1*	Slope Wetland Impact @ Site 2**	Gain, Loss or Replace?
Hydrologic: Function Value	 2 3	 3 4	Replacement
Water Quality: Function Value	 5 10	 5 7	Replacement
Fish Support: Function Value	 7 10	 1 7	Gain
Aquatic Support: Function Value	 6 8	 7 8	Replacement

Terrestrial Support: Function Value	7 8	5 8	Gain

* Assessment is for creation and restoration only. Results are the ORWAP assessment for existing Chenoweth Creek wetlands/waters (TSI, March 2015).
** Results are the ORWAP assessment for slope complex wetlands (TSI, 2015)

Applying the *Guidance for Using ORWAP in the State and Federal Permit Programs, April 2010* (Guidance), all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the slope wetland functions and corresponding values are considered to be high (using the *Guidance* protocol for determining "high" scores) whereas Mitigation Opportunity #1 delivers high function/value for both fish habitat and terrestrial habitat - two of the most constrained but highly valued functions in The Dalles area.

Table 8-1B Functional Gains/Losses Analysis for "Excavated Features" Wetland Impacts

Functional Attribute	Mitigation Opportunity #1*	"Excavated Features" Wetland Impact @ Sites 2 and 4**	Gain, Loss or Replace?
Hydrologic: Function Value	2 3	3 4	Replacement
Water Quality: Function Value	5 10	6 7	Replacement
Fish Support: Function Value	7 10	1 10	Gain
Aquatic Support: Function Value	6 8	7 9	Replacement
Terrestrial Support: Function Value	7 8	6 8	Replacement

* Assessment is for creation and restoration only. Results are the ORWAP assessment for existing Chenoweth Creek wetlands/waters (TSI, March 2015).
** Results are the ORWAP assessment for "excavated features" wetlands (TSI, 2015)

Comparing this mitigation opportunity area to the "excavated features" wetland impact, all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the "excavated features" wetland functions and corresponding values are considered to be high (using the *Guidance* protocol for determining

"high" scores) whereas Mitigation Opportunity #1 delivers high function/value for both fish habitat and terrestrial habitat - two of the most constrained but highly valued functions in The Dalles area.

The Port's consultant conducted a cursory analysis of the land area available for mitigation to develop an estimate of the mitigation credit potential for Mitigation Opportunity Area #1. While the Port's consultant has identified opportunities for wetland preservation, creation, restoration and enhancement at this location, Table 8-2 includes only the creation and restoration opportunities as a conservative assessment of credit potential.

Table 8-2: Credit Potential for Mitigation Opportunity Area #1

Mitigation Type	Ratio	Land Area	Credit
Wetland Restoration	1:1	1.0± acre	1.0± ac.-credit
Wetland Creation	1.5:1	0.75± acre	0.5± ac.-credit
Approximate Total		1.75± acres	**1.5± ac.-credits***

* Factoring in a potential wetland enhancement area of 0.5 acres could deliver an additional 0.17 credits (assuming 3:1 mitigation ratio for enhancement). This opportunity is further illustrated in Volume 3.

With a conservative credit estimate of 1.5 credits, this would be sufficient credit to cover all projected non-vernal pool wetland impacts within the six-site study area (i.e., 0.97 acres slope wetland impact @ Site 2; 0.19 acres excavated features wetland impact and sites 2 and 4; and ditch/swale complex wetlands @ Site 4 (0.11 acres).

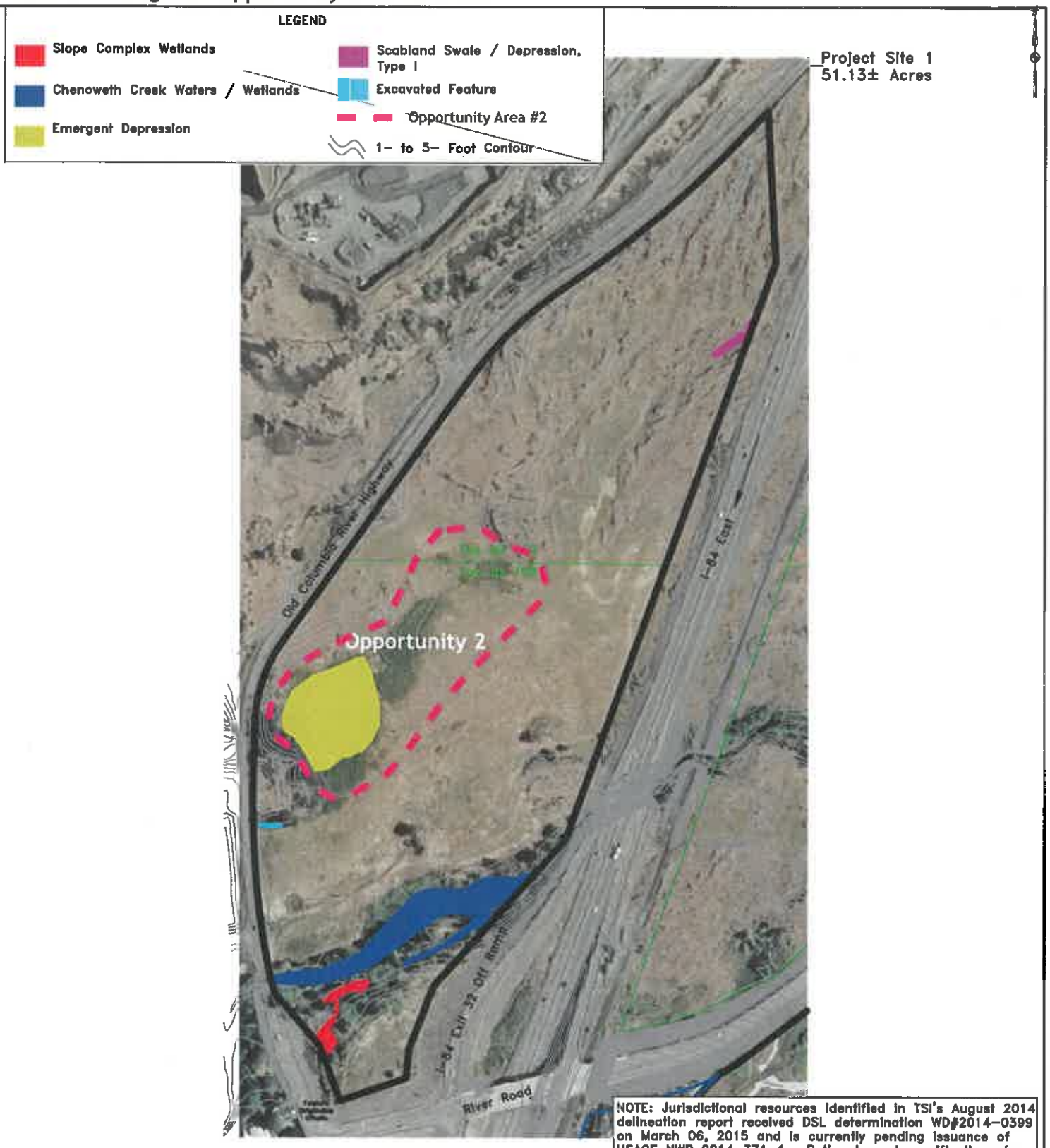
Table 8-3: Comparing Mitigation Opportunity Area #1 to the State Regulatory Objectives for Wetland Mitigation

DSL Principal Objectives for Compensatory Wetland Mitigation (OAR 141-085-0680)	Outcome
Replace functions and values lost at the removal fill site.	Comparing Mitigation Opportunity Area #1 to slope and "excavated feature" wetlands, functional replacement is anticipated to be achieved as documented in Table 8-1A and 8-1B.
Provide local replacement for locally important functions and values.	No locally important functions were identified with the slope wetlands or "excavated feature" wetlands (i.e., no high value scores using ORWAP regulatory guidance document, April 2010).
Enhance, create, restore or preserve wetlands that are self-sustaining and minimize long-term maintenance needs.	Mitigation Opportunity Area #1 would be graded to receive natural, recurrent overbank flow from Chenoweth Creek, a perennial stream. No reliance on any structures to maintain hydrology. A native cover of trees and shrubs would be established and maintained through the monitoring period to ensure minimal long term vegetation maintenance needs.
Ensure siting in ecologically suitable locations.	Mitigation Opportunity Area #1 is located in a landform (former floodplain of Chenoweth Creek) highly suited to floodplain restoration and re-establishment of wetland condition. It would build upon the existing habitat corridor already provided by the creek's riparian area. Site could be challenged by adjacent future development for which buffering would need to be established.
Minimize temporal loss of wetlands and their functions and values.	As permittee-responsible mitigation, temporal loss would be minimized by constructing mitigation in advance of, or concurrent with, the authorized impact. If the Port is successful with in-lieu fee program approval, advancing the construction of wetland mitigation opportunities may be possible.

Relative to the federal mitigation hierarchy, this area would be considered permittee-responsible mitigation under a watershed approach. In this case, The Dalles Watershed Council Restoration Action Plan, 2015 Update, specifically identifies as Strategy 2-D, the

restoration of riparian and wetland habitats on Chenoweth Creek. More broadly, the Plan identifies as Strategy 2-B the restoration of floodplain connectivity and function for all streams in the region. The goal of Mitigation Opportunity Area #1 to expand the floodplain and create/restore wetlands adjacent to Chenoweth Creek dovetails well with this watershed action plan.

Table 8-4 Mitigation Opportunity Area #2 @ Site 1



NOTE: Jurisdictional resources identified in TSI's August 2014 delineation report received DSL determination WD#2014-0399 on March 06, 2015 and is currently pending issuance of USACE NWP 2014-371-1. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

Source: Adapted from Wasco County and TSI georeferenced civil files.

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GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

SITE 1 EXISTING CONDITIONS

July 2015

protection versus development. This area had good justifications for either designation. For the purposes of this Section, the emergent depression area is described for its opportunities as a compensatory mitigation site to offset non-vernal pool wetland impacts elsewhere in the study area.

As illustrated in Figure 8-4, this Mitigation Opportunity Area #2 would include the improvement and expansion of the highly degraded emergent depression feature. As documented by the delineation, the wetland and surrounding uplands are dominated by invasive Dipsacus fullonum and contain little to no native vegetation coverage.

Mitigation would require extensive site preparation to begin eradication of the existing invasive plant community. Select excavation and grading would be required to expand current wetland hydrology. That is, the saturation-driven wetland (and surrounding uplands) could be selectively excavated to provide varying levels of inundation followed by native plant establishment. Target communities could include herbaceous communities containing patches of scrub-shrub species surrounded by upland trees and shrubs.

The predominant HGM class for this opportunity would continue to be depressional (closed). Predominant Cowardin class would be palustrine emergent with the potential for scrub-shrub inclusions. Functionally, the wetland would likely perform similarly to the existing emergent depression wetland already located on Site 1 except that with a native vegetation cover and inclusions of scrub-shrub vegetation, aquatic and terrestrial habitat functions would likely be appreciably higher.

This mitigation opportunity could be targeted toward the anticipated slope wetland impacts at Site 2 and/or "excavated features" wetlands on Sites 2 & 4. While not precisely in-kind by HGM class, the mitigation area is expected to return wetland functions and values equal to or greater than those projected to be lost at the slope wetland impact site. Given the proximity of this feature to the Chenoweth Creek riparian corridor, expansion of the emergent depressional area has the additional benefit of supporting terrestrial habitat functions at Chenoweth Creek.

Table 8-4A Functional Gains/Losses Analysis for Slope Wetland Impact

Functional Attribute	Mitigation Opportunity #2*	Slope Wetland Impact @ Site 2**	Gain, Loss or Replace?
Hydrologic: Function Value	 5 4	 3 4	Gain
Water Quality: Function Value	 10 7	 5 7	Gain
Fish Support: Function Value	 1 10	 1 7	Replacement
Aquatic Support: Function Value	 7 8	 7 8	Replacement
Terrestrial Support: Function Value	 6 8	 5 8	Replacement

* Assessment is for creation only. Results are the ORWAP assessment for existing emergent depressional wetland at Site 1 (TSI, March 2015).
** Results are the ORWAP assessment for slope complex wetlands (TSI, 2015)

Applying the *Guidance for Using ORWAP in the State and Federal Permit Programs, April 2010* (Guidance), all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the slope wetland functions and corresponding values are considered to be high (using the *Guidance* protocol for determining "high" scores) whereas Mitigation Opportunity #2 delivers relatively high function/value for both hydrologic (water storage & delay) and water quality attributes.

Table 8-4B Functional Gains/Losses Analysis for "Excavated Features" Wetland Impact

Functional Attribute	Mitigation Opportunity #2*	"Excavated Features" Wetland Impact @ Sites 2 and 4**	Gain, Loss or Replace?
Hydrologic: Function Value	 5 4	 3 4	Gain (function)
Water Quality: Function Value	 10 7	 6 7	Gain (function)

Fish Support: Function Value	 1 10	 1 10	Replacement
Aquatic Support: Function Value	 7 8	 7 9	Replacement
Terrestrial Support: Function Value	 6 8	 6 8	Replacement

* Assessment is for creation only. Results are the ORWAP assessment for existing emergent depressional wetland at Site 1 (TSI, March 2015).
** Results are the ORWAP assessment for "excavated features" wetlands (TSI, 2015)

Comparing this mitigation opportunity area to the "excavated features" wetland impact, all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the "excavated features" wetland functions and corresponding values are high (using the *Guidance* protocol for determining "high" scores) whereas Mitigation Opportunity #2 delivers high function/value for both hydrologic (water storage & delay) and water quality.

The Port's consultant conducted a cursory analysis of the land area available for mitigation to develop an estimate of the mitigation credit potential for Mitigation Opportunity Area #2. While the Port's consultant has identified opportunities for wetland creation and enhancement at this emergent depression area, Table 8-5 includes only the creation opportunity as a conservative assessment of credit potential.

Table 8-5: Credit Potential for Mitigation Opportunity Area #2

Mitigation Type	Ratio	Land Area	Credit
Wetland Creation	1.5:1	6.0± acre	4.0± ac.-credit*

* Factoring in a potential wetland enhancement area of 1.65 acres could deliver an additional 0.55 credits (assuming 3:1 mitigation ratio for enhancement). This opportunity is further illustrated in Volume 3.

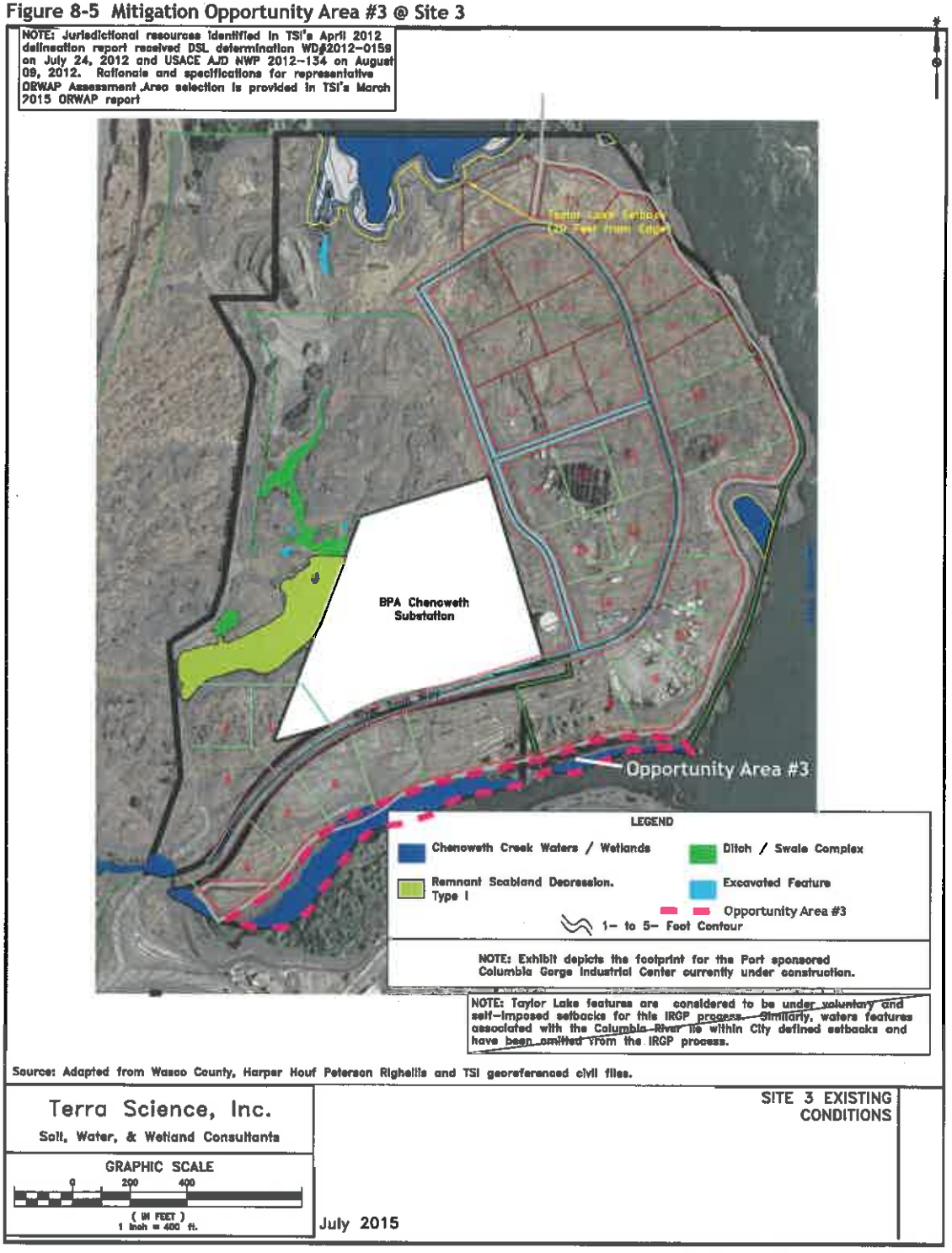
With an estimate of 4.0 credits, this would be sufficient credit to cover all projected non-vernal pool wetland impacts within the six-site study area (i.e., 0.97 acres slope wetland impact @ Site 2; 0.19 acres excavated features wetland impact and sites 2 and 4; and ditch/ swale complex wetlands @ Site 4 (0.11 acres).

Table 8-6: Comparing Mitigation Opportunity Area #2 to the State Regulatory Objectives for Wetland Mitigation

DSL Principal Objectives for Compensatory Wetland Mitigation (OAR 141-085-0680)	Outcome
Replace functions and values lost at the removal fill site.	Comparing Mitigation Opportunity Area #2 to slope and "excavated feature" wetlands, functional replacement is anticipated to be achieved as documented in Table 8-4A and 8-4B.
Provide local replacement for locally important functions and values.	No locally important functions were identified with the slope wetlands or "excavated feature" wetlands (i.e., no high value scores using ORWAP regulatory guidance document, April 2010).
Enhance, create, restore or preserve wetlands that are self-sustaining and minimize long-term maintenance needs.	Mitigation Opportunity Area #2 would be graded to expand natural hydrologic inputs within the area and not rely on any structures to maintain hydrology. A native emergent cover would be established and maintained through the monitoring period to ensure minimal long term vegetation maintenance needs.
Ensure siting in ecologically suitable locations.	Mitigation Opportunity Area #2 is located in a landform (closed shallow depression) highly suited to selective grading to expand the depression and create a broader wetland condition. It would build upon the existing terrestrial habitat already provided by the adjacent Chenoweth Creek riparian corridor located to the south and the basalt outcrop and oak gallery located immediately west. The site could be challenged by adjacent future development for which buffering would need to be established.
Minimize temporal loss of wetlands and their functions and values.	As permittee-responsible mitigation, temporal loss would be minimized by constructing mitigation in advance of, or concurrent with, the authorized impact. If the Port is successful with in-lieu fee program approval, advancing the construction of wetland mitigation opportunities may be possible.

Relative to the federal mitigation hierarchy, Mitigation Opportunity Area #2 would be considered permittee-responsible mitigation on-site and in-kind. In this case, the mitigation area meets or exceeds functions and values replacement (in-kind) and is located within the study area.

Figure 8-5 Mitigation Opportunity Area #3 @ Site 3



8.2.3 Mitigation Opportunity Area #3, Site 3

Similar to the Mitigation Opportunity Area # 1, this approach could enhance and restore the Chenoweth Creek floodplain along the southern border of Site 3 (see Figure 8-5) Aerial

photography review, delineation results and site reconnaissance indicates significant amounts of fill material were historically placed within the Chenoweth Creek riparian and floodplain area. Removal of this material, in combination with enhancement of existing upland / wetland areas could yield mitigation credits.

Mitigation would require significant excavation to remove fill material and obtain target grades and to provide micro-topography characteristic of the historic floodplain. Upon completion of earthwork, native seed mixtures, plugs, shrubs and trees would be installed to control erosion and begin establishment of target riparian communities and habitats. In addition to materials installation, mitigation would include eradication of invasive species (especially Rubus armeniacus) and replacement with native species. It is anticipated that riparian mitigation would ultimately evolve into forested and scrub-shrub communities.

The predominant HGM class for this opportunity would be riverine flow-through and riverine impounding. Predominant Cowardin classes would be palustrine scrub-shrub and palustrine forested with the potential for emergent inclusions. Functionally, the wetland would likely perform similarly to the existing riverine wetlands already located on Site 3.

This mitigation opportunity would be targeted toward the anticipated slope wetland impacts at Site 2 and the "excavated features" wetlands at Sites 2 and 4. While not precisely in-kind by HGM class, the mitigation area is expected to return wetland functions and values equal to or greater than those projected to be lost at the slope wetland impact site in addition to delivering other ecological benefits including significant increase in the spatial footprint of the existing floodplain; broadening the wildlife corridor along the creek; increase rearing, food-producing and refugia habitat for listed fish in this Essential Salmonid Habitat (ESH) stream; and aid in addressing water quality impairments (temperature TMDL approved) to this DEQ listed 303(d) stream.

Table 8-7A Functional Gains/Losses Analysis for Slope Wetland Impact

Functional Attribute	Mitigation Opportunity #3*	Slope Wetland Impact @ Site 2**	Gain, Loss or Replace?
Hydrologic: Function Value	 2 3	 3 4	Replacement
Water Quality: Function Value	 5 10	 5 7	Replacement
Fish Support: Function Value	 7 10	 1 7	Gain
Aquatic Support: Function Value	 6 8	 7 8	Replacement

Terrestrial Support: Function Value	 7 8	 5 8	Gain

* Assessment is for restoration only. Results are the ORWAP assessment for existing Chenoweth Creek wetlands/waters (TSI, March 2015).
** Results are the ORWAP assessment for slope complex wetlands (TSI, 2015)

Applying the *Guidance for Using ORWAP in the State and Federal Permit Programs, April 2010* (Guidance), all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the slope wetland functions and corresponding values are considered to be high (using the *Guidance* protocol for determining "high" scores) whereas Mitigation Opportunity #3 delivers high function/value for both fish habitat and terrestrial habitat - two of the most constrained but highly valued functions in The Dalles area.

Table 8-7B Functional Gains/Losses Analysis for "Excavated Features" Wetland Impacts

Functional Attribute	Mitigation Opportunity #3*	"Excavated Features" Wetland Impact @ Sites 2 and 4**	Gain, Loss or Replace?
Hydrologic: Function Value	 2 3	 3 4	Replacement
Water Quality: Function Value	 5 10	 6 7	Replacement
Fish Support: Function Value	 7 10	 1 10	Gain
Aquatic Support: Function Value	 6 8	 7 9	Replacement
Terrestrial Support: Function Value	 7 8	 6 8	Replacement

* Assessment is for restoration only. Results are the ORWAP assessment for existing Chenoweth Creek wetlands/waters (TSI, March 2015).
** Results are the ORWAP assessment for "excavated features" wetlands (TSI, 2015)

Comparing this mitigation opportunity area to "excavated features" wetlands impact, all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, none of the "excavated features" wetland functions and corresponding values are considered to be high (using the *Guidance* protocol for determining "high" scores) whereas Mitigation Opportunity #3 delivers high function/value for both fish habitat and terrestrial habitat - two of the most constrained but highly valued functions in The Dalles area.

The Port's consultant conducted a cursory analysis of the land area available for mitigation to develop an estimate of the mitigation credit potential for Mitigation Opportunity Area #3. While the Port's consultant has identified opportunities for wetland enhancement at this location, Table 8-8 includes only the restoration opportunities as a conservative assessment of credit potential.

Table 8-8: Credit Potential for Mitigation Opportunity Area #3

Mitigation Type	Ratio	Land Area	Credit
Wetland Restoration	1:1	1.0± acre	1.0± ac.-credit*

* Factoring in a potential wetland enhancement area of 2.0 acres could deliver an additional 0.67 credits (assuming 3:1 mitigation ratio for enhancement). This opportunity is further illustrated in Volume 3.

With a conservative credit estimate of 1.0 credits, this would be sufficient credit to cover slope wetland impacts at Site 2 (0.97 acres), or "excavated feature" wetland impacts at Site 2 and 4 (0.19 acres) and ditch/swale complex wetlands at Site 4 (0.11 acres).

Table 8-9: Comparing Mitigation Opportunity Area #3 to the State Regulatory Objectives for Wetland Mitigation

DSL Principal Objectives for Compensatory Wetland Mitigation (OAR 141-085-0680)	Outcome
Replace functions and values lost at the removal fill site.	Comparing Mitigation Opportunity Area #3 to slope and "excavated feature" wetlands, functional replacement is anticipated to be achieved as documented in Table 8-7A and 8-7B.
Provide local replacement for locally important functions and values.	No locally important functions were identified with the slope wetlands or "excavated feature" wetlands (i.e., no high value scores using ORWAP regulatory guidance document, April 2010).
Enhance, create, restore or preserve wetlands that are self-sustaining and minimize long-term maintenance needs.	Mitigation Opportunity Area #3 is a wetland restoration action to remove fill and restore native/natural, recurrent overbank flow from Chenoweth Creek, a perennial stream. No reliance on any structures to maintain hydrology. A native cover of trees and shrubs would be established and maintained through the monitoring period to ensure minimal long term vegetation maintenance needs.
Ensure siting in ecologically suitable locations.	Mitigation Opportunity Area #3 is located in a landform (former floodplain of Chenoweth Creek) highly suited to floodplain restoration and re-establishment of wetland condition. It would build upon the existing habitat corridor already provided by the creek's riparian area. The site could be challenged by adjacent future development for which buffering would need to be established.
Minimize temporal loss of wetlands and their functions and values.	As permittee-responsible mitigation, temporal loss would be minimized by constructing mitigation in advance of, or concurrent with, the authorized impact. If the Port is successful with in-lieu fee program approval, advancing the construction of wetland mitigation opportunities may be possible.

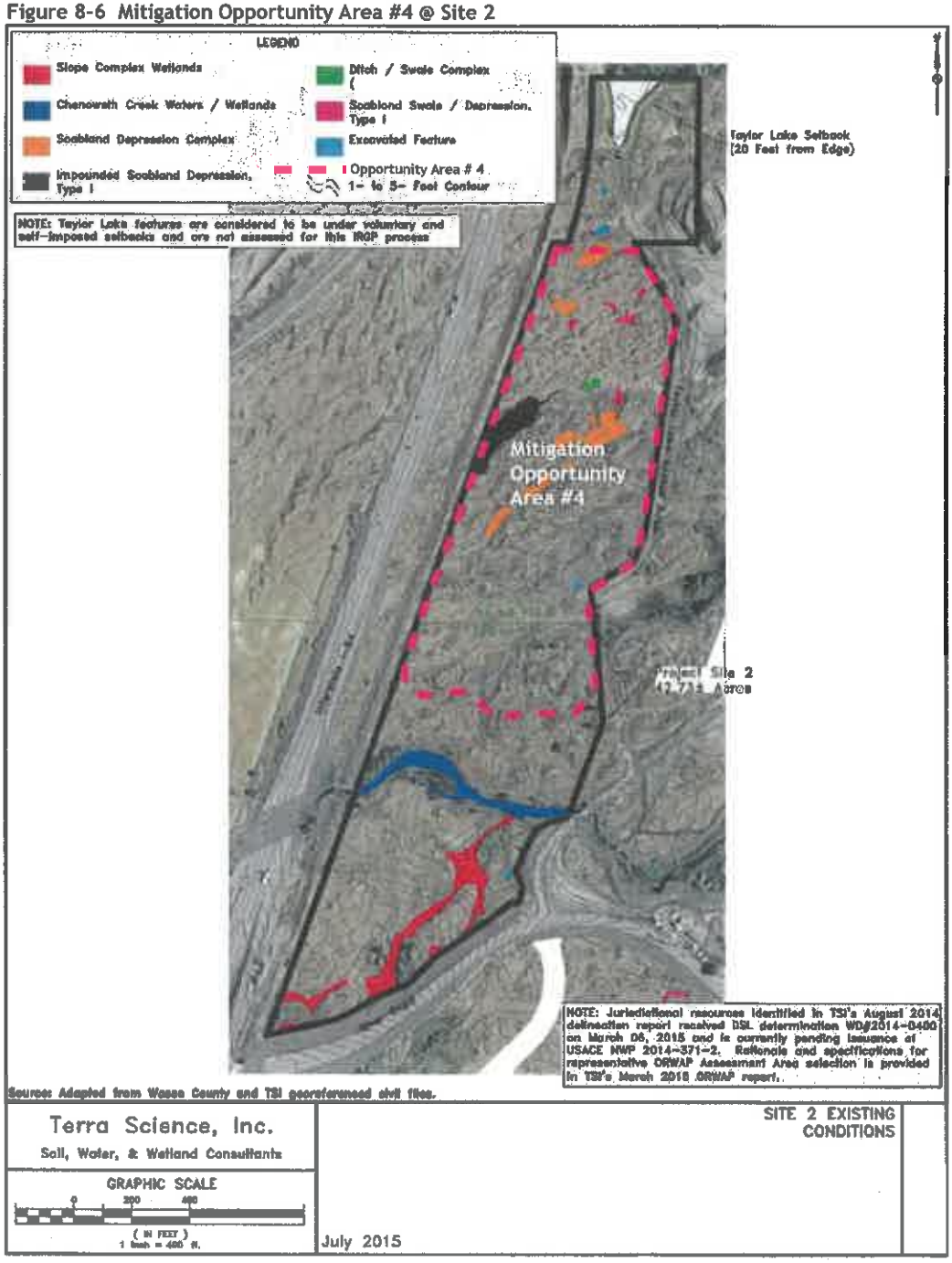
Relative to the federal mitigation hierarchy, this area would be considered permittee-responsible mitigation under a watershed approach. In this case, The Dalles Watershed Council Restoration Action Plan, 2015 Update, specifically identifies as Strategy 2-D, the

restoration of riparian and wetland habitats on Chenoweth Creek. More broadly, the Plan identifies as Strategy 2-B the restoration of floodplain connectivity and function for all streams in the region. The goal of this Mitigation Opportunity Area #3 to expand the floodplain and create/restore wetlands adjacent to Chenoweth Creek dovetails well with this watershed action plan.

8.2.4 Mitigation Opportunity Areas #4 - #6, Sites 2, 3 and 4/5 (Vernal Pool Mitigation Opportunities)

Mitigation Opportunity Areas #4, #5 and #6 are presented together because they involve similar actions to create, restore and preserve vernal pools as mitigation for anticipated impacts to impaired and intact vernal pools on Site 4. Differences in the mitigation areas are noted where appropriate.

Figure 8-6 Mitigation Opportunity Area #4 @ Site 2



Mitigation Opportunity Area #4, Site 2: The northern portion of Site 2 houses the highest functioning and highest quality vernal pool complex within the six-site study area. As illustrated on Figure 8-6, pools range from intact areas within very rugged

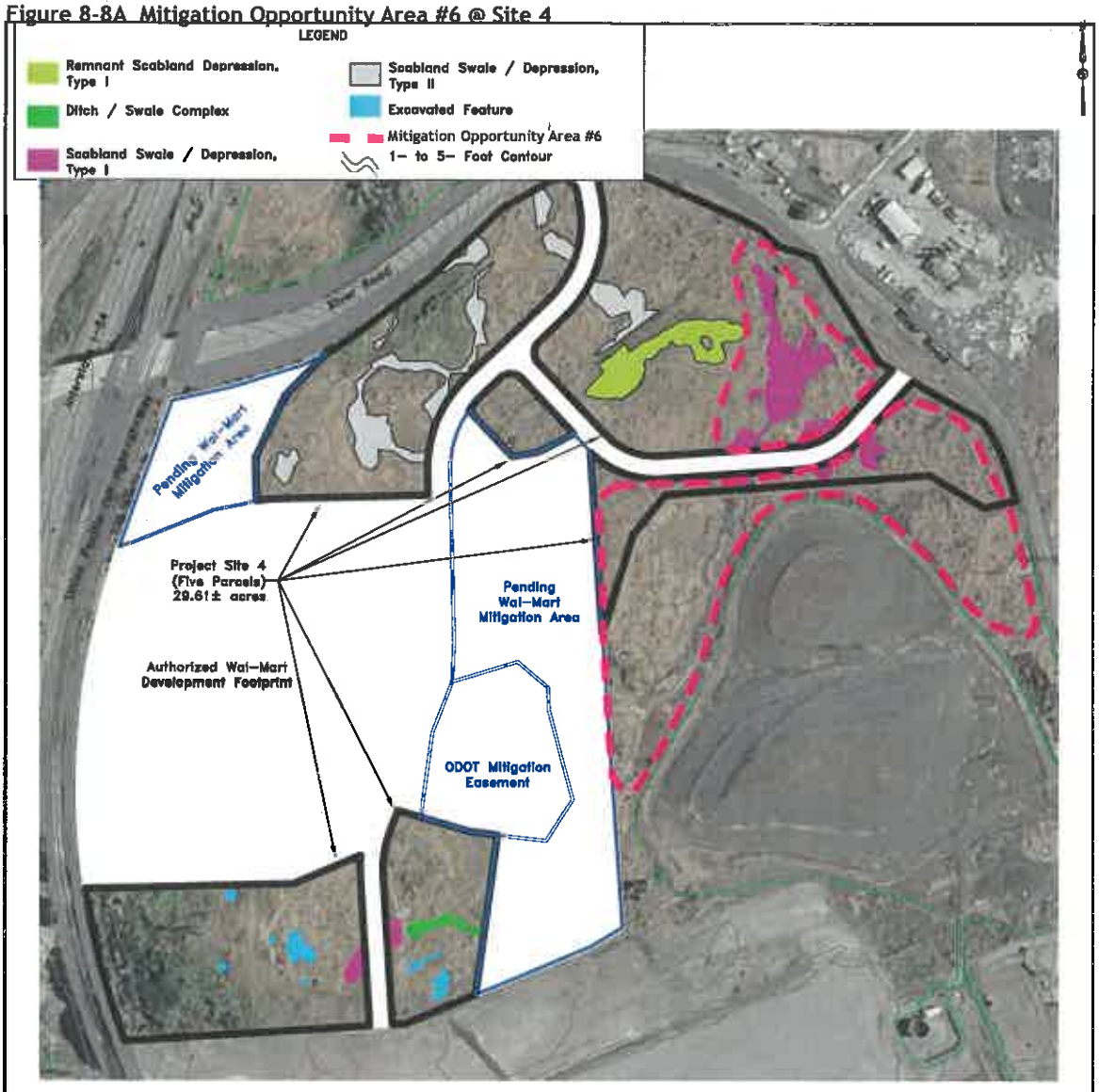
basalt outcrops to areas experiencing historic and ongoing disturbances in the northern extents. This Mitigation Opportunity Area #4 could provide wetland/upland preservation, enhancement and creation potential for vernal pools.

Figure 8-7 Mitigation Opportunity Area #5 @ Site 3

Mitigation Opportunity Area #5, Site 3: Located along the western boundary of Site 3 (as illustrated on Figure 8-7), Mitigation Opportunity #5 would utilize existing wetlands and adjacent areas to provide a combination of vernal pool preservation,

enhancement and restoration. Aerial photography and delineation results document historic fill, excavation and land manipulation encroachments within a relatively intact basalt valley. It is anticipated that mitigation would restore, expand and preserve the historically present wetland complex to provide vernal pool type credits.

Figure 8-8A Mitigation Opportunity Area #6 @ Site 4



NOTE: Jurisdictional resources identified in TSI's August 2014 delineation update received DSL determination WD#2008-0216R on September 04, 2014 and is currently pending re-issuance of USACE AJD NWP 2008-445. Rationale and specifications for representative ORWAP Assessment Area selection is provided in TSI's March 2015 ORWAP report.

NOTE: Area within the confines of the ~~authorized Wal-Mark~~ retail development footprint and ~~Oregon Department~~ of Transportation ~~mitigation easement~~ are omitted from this IRGP process.

Source: Adapted from Wasco County, Pac-Land and TSI georeferenced civil files.

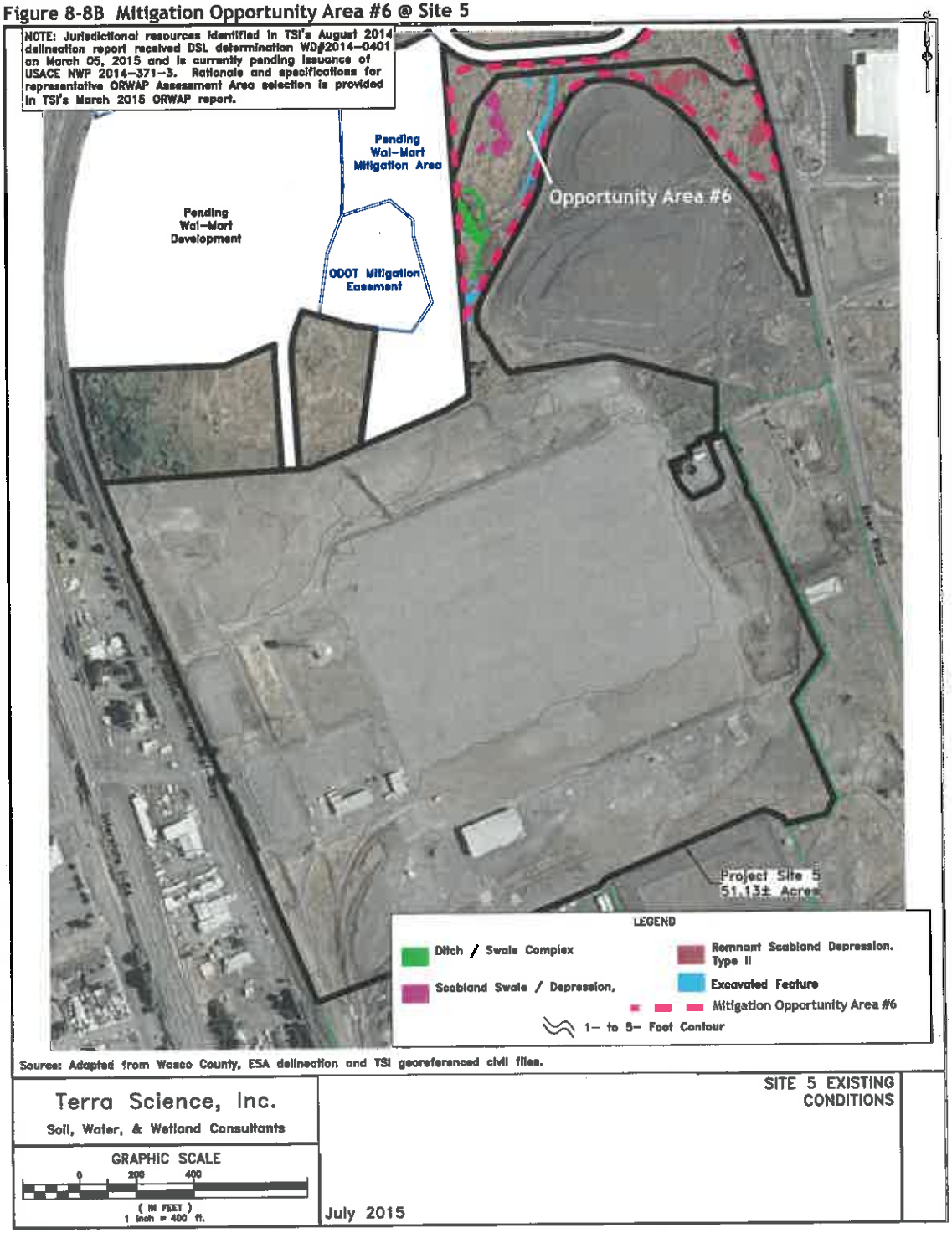
Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

SITE 4 EXISTING CONDITIONS

July 2015

Figure 8-8B Mitigation Opportunity Area #6 @ Site 5



Mitigation Opportunity Area #6, Site 4-5: Located at the interface of Sites 4 and 5 (as illustrated on Figures 8-8A and 8-8B), Mitigation Opportunity Area #6 would include a combination of vernal pool preservation, restoration and enhancement . While proposed preservation areas remain relatively undisturbed, the remainder of this area

has experienced significant grading disturbances. Specifically, delineation and ORWAP results document historical disturbances resulting in highly degraded and disturbed wetland areas ranging from impounded scabland depressions to excavated ditches.

Mitigation would require select excavation, material placement and contouring to achieve target grades and hydrological conditions. As the mitigation features are hydrologically dependent upon adjacent basalt uplands, upland preservation will be a key component to the mitigation areas' success. Intact vernal pools (scabland depression complex) at Site 2 would serve as reference areas for these three vernal pool mitigation actions. That is, mitigation actions would be executed in a manner to obtain the hydrological and vegetation characteristics present within preserved pools at Site 2. For preservation, minimal vegetation management would be required to maintain existing communities. Enhancement and/or creation areas would require select grading and vegetation re-establishment to obtain target habitats. Vegetation goals would be establishment of native herbaceous communities with scrub-shrub inclusions along the bases of basalt outcrops.

The predominant HGM class for these opportunities would be depressional, closed and non-permanent. Predominant Cowardin class would be palustrine emergent with potential for scrub-shrub inclusions at the base of basalt outcrops. Functionally, the created and restored wetland (vernal pools) would have the goal of performing similarly to the existing "scabland depression complex" vernal pools located at Site 2. These mitigation opportunities would be targeted toward the anticipated intact and impaired vernal pool impacts at Site 4 and as such would be in-kind.

Table 8-10A Functional Gains/Losses Analysis for Impaired Vernal Pool Impact

Functional Attribute	Mitigation Opportunities #4, #5 & #6*	Impaired Vernal Pool Impact @ Site 4**	Gain, Loss or Replace?
Hydrologic: Function Value	 5 4	 7 4	Loss
Water Quality: Function Value	 10 7	 10 7	Replacement
Fish Support: Function Value	 1 10	 1 10	Replacement
Aquatic Support: Function Value	 8 9	 7 9	Replacement
Terrestrial Support: Function Value	 7 8	 6 8	Replacement

* Assessment is for creation and restoration only. Results are the ORWAP assessment for existing "Scabland Depression Complex" vernal pools (TSI, March 2015 as the performance goal for this mitigation.
** "Impaired" vernal pools include impounded scabland depressions type 1 and 2 and remnant scabland depressions type 1 and 2. Results are the ORWAP assessment specifically for "remnant scabland depression - type 1" (TSI, 2015) as the "impaired" vernal pool type on Site 4.

Applying the *Guidance for Using ORWAP in the State and Federal Permit Programs, April 2010* (Guidance), all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point) except for the hydrologic function. This is because the impaired vernal pools at Site 4 are, in part, impaired as a result of historic excavations that have left the pools deeper than the native/normal condition. These excavations have had the effect of increasing the water storage capability thus driving up the hydrologic function score higher than what would be the normal condition. Importantly, four of the five grouped wetland functions and their associated values at Mitigation Opportunity Areas #4 - #6 are considered to be high (using the Guidance protocol for determining "high" scores); the exception being fish habitat - as would be expected with vernal pools. The impaired vernal pools identified for impact at Site 4 have high function/value for two attributes: hydrologic and water quality grouped functions (again, due in part to historic excavations within these pools).

Table 8-10B Functional Gains/Losses Analysis for Intact Vernal Pool Impact

Functional Attribute	Mitigation Opportunities #4, #5 & #6*	Intact Vernal Pool Impact @ Site 4**	Gain, Loss or Replace?
Hydrologic: Function Value	 5 4	 5 3	Replacement
Water Quality: Function Value	 10 7	 10 6	Replacement
Fish Support: Function Value	 1 10	 1 10	Replacement
Aquatic Support: Function Value	 8 9	 7 9	Replacement
Terrestrial Support: Function Value	 7 8	 7 8	Replacement

* Assessment is for creation and restoration only. Results are the ORWAP assessment for existing "Scabland Depression Complex" vernal pools (TSI, March 2015 as the performance goal for this mitigation.

** "Intact" vernal pools are scabland depression complex and scabland swale/depressions type 1 and 2. Results are the ORWAP assessment specifically for "scabland swale/depression - type 2" (TSI, 2015) as the predominant intact vernal pool type on Site 4.

Comparing these mitigation opportunity areas to the intact and impaired vernal pool impacts at Site 4, all grouped functions and their values are at least replaced by the mitigation (i.e., at least within one point). Importantly, four of the five grouped wetland functions and their associated values at Mitigation Opportunity Areas #4 - #6 are considered to be high (using the Guidance protocol for determining "high" scores); the exception being fish habitat - as would be expected with vernal pools. The intact vernal pools identified for impact at Site 4 have high function/value for only one attribute: terrestrial habitat.

The Port's consultant conducted a cursory analysis of the land area available for mitigation to develop an estimate of the mitigation credit potential for Mitigation Opportunity Areas #4 - #6. While the Port's consultant has identified opportunities for wetland enhancement at these locations, Table 8-11 includes only the creation, restoration and preservation opportunities as a conservative assessment of credit potential.

Table 8-11: Credit Potential for Mitigation Opportunity Areas #4 - #6

Mitigation Type*	Ratio	Land Area	Credit
Mitigation Opportunity #4			
Wetland Creation	1.5:1	0.75± acres	0.5± ac.-credits
Wetland Preservation**	4:1	0.7± acre wetland 17.75± acre upland	0.18± ac.-credits
Subtotal		19.2± acres	**0.68± ac.-credits**
Mitigation Opportunity #5			
Wetland Restoration	1:1	0.75± acres	0.75± ac.-credits
Wetland Creation	1.5:1	0.25± acres	0.17± ac.-credits
Subtotal		1.0± acres	**0.92± ac.-credits**
Mitigation Opportunity #6			
Wetland Restoration	1:1	0.6± acres	0.6± ac.-credits
Wetland Preservation**	4:1	1.0± acres wetland 9.2± acres upland	0.25± ac.-credits
Subtotal		10.8± acres	0.85± ac.-credits
Grand Total: vernal pool mitigation			2.45± ac.-credits***

* Further site analysis could determine that areas of creation may qualify for restoration. Specifically, inter-basalt areas currently supporting upland vegetation may have historic hydric soils, resulting in potential restoration credits. Similarly, cursory preservation areas may be considered to be degraded sufficiently to qualify for enhancement credits

** The proposed preservation credit ratio for vernal pool wetlands is 4:1 assuming that that contributing uplands would additionally be preserved to allow the 4:1 ratio. This approach is consistent with the vernal pool preservation credit granted by DSL and Army Corps of Engineers for the nearby Wal-Mart project (DSL# 43798-RF; Corps #2008-00445).

*** Factoring in a potential wetland enhancement area of 4.0 acres could deliver an additional 1.33 credits (assuming 3:1 mitigation ratio for enhancement). This opportunity is further illustrated in Volume 3.

With a conservative credit estimate of 2.45 credits, this would be sufficient credit to cover total anticipated impacts to impaired (0.71 acres) and intact (1.63 acres) vernal pools at Site 4.

Table 8-12: Comparing Mitigation Opportunity Areas #4 - #6 to the State Regulatory Objectives for Wetland Mitigation

DSL Principal Objectives for Compensatory Wetland Mitigation (OAR 141-085-0680)	Outcome
Replace functions and values lost at the removal fill site.	Comparing the three mitigation opportunity areas to "intact" and "impaired" vernal pool wetlands, functional replacement is anticipated to be achieved as documented in Table 8-10A and 8-10B, with possible exception noted for hydrologic function where noted.
Provide local replacement for locally important functions and values.	Impact site locally important functions (as defined using ORWAP regulatory Guidance) are terrestrial habitat (for intact vernal pools) and hydrologic and water quality for impaired vernal pools. The three mitigation opportunity areas provide local replacement for those functions, potentially excepting the hydrologic function at the impaired vernal pools. This should be considered acceptable considering the excavated nature of the impaired vernal pools and the miniscule absolute volume of water stored by a vernal pool relative to total watershed.

Enhance, create, restore or preserve wetlands that are self-sustaining and minimize long-term maintenance needs.	Mitigation Opportunity Areas #4 - #6 are a combination of wetland restoration, creation and preservation actions with hydrologic input derived from direct precipitation and surface water run-off from immediate contributing uplands. No reliance on any structures or other human intervention to maintain hydrology. A native cover of emergent vegetation would be established and maintained through the monitoring period to ensure minimal long term vegetation maintenance needs.
Ensure siting in ecologically suitable locations.	Mitigation Opportunity Areas #4 - #6 are located in the only landform (scabland) in the area known to support vernal pools. It would build upon the existing, intact vernal pool habitat already existing in the mitigation area. Preservation of upland buffers is proposed to ameliorate effects of adjacent future development.
Minimize temporal loss of wetlands and their functions and values.	As permittee-responsible mitigation, temporal loss would be minimized by constructing mitigation in advance of, or concurrent with, the authorized impact. If the Port is successful with in-lieu fee program approval, advancing the construction of wetland mitigation opportunities may be possible.

Relative to the federal mitigation hierarchy, these three mitigation opportunity areas would be considered permittee-responsible mitigation, on-site and in-kind.

8.3 Mitigation Summary

- **Study Area Site 1:** No wetland impact proposed. Host to Mitigation Opportunity Areas #1 and #2 (for non-vernal pool impacts)

- **Study Area Site 2:** Impact to slope wetlands (0.97 acres) and excavated feature wetlands (0.01 acres). Host to Mitigation Opportunity Area #4 (for vernal pool impacts).

- **Study Area Site 3:** No wetland impact proposed. Host to Mitigation Opportunity Areas #3 (for non-vernal pool impacts) and #5 (for vernal pool impacts).

- **Study Area Site 4:** Impact to relatively intact (1.63 acres) and relatively impaired (0.71 acres) vernal pools, excavated features (0.18 acres) and ditch/swale complex (0.11 acres). Host to Mitigation Opportunity Area #6 (for vernal pool impacts).

- **Study Area Site 5:** No wetland impact proposed. Host to Mitigation Opportunity Area #6 (for vernal pool impacts).

- **Study Area Site 6:** No wetland impact proposed. No mitigation area identified.

Table 8-13 Proposed Impact and Mitigation Summary

Credits Needed		Mitigation Credits Generated (ac. credits)***					
Wetland Type	Impact (ac.)	Mit. Area #1 @ Site 1	Mit. Area #2 @ Site 1	Mit. Area #3 @ Site 3	Mit. Area #4 @Site 2	Mit. Area #5 @ Site 3	Mit. Area #6 @ Sites 4/5
Vernal pool - Intact* (@Site 4)	1.63	0	0	0	0.68	0.92	0.85
Vernal pool - impaired** (@Site 4)	0.71	0	0	0			
Chenoweth Cr./ riverine wetlands	0	1.5	0	1.0	0	0	0
Slope wetlands (@Site 2)	0.97	0	0	0	0	0	0
Emergent depressions	0	0	4.0	0	0	0	0
Excavated features (@Sites 2 & 4)	0.19	0	0	0	0	0	0
Ditch/swale complex (@Site 4)	0.11	0	0	0	0	0	0
Totals: Vernal Pool	**2.34 ac.**	**0**	**0**	**0**	**0.68 credit**	**0.92 credit**	**0.85 credit**
Totals: Non-Vernal Pool	**1.27 ac.**	**1.5 credit**	**4.0 credit**	**1.0 credit**	**0**	**0**	**0**

* For the purposes of this study, "intact" vernal pool types are scabland swale/depressions type 1 and 2 and scabland depression complex.
** For the purposes of this study, "impaired" vernal pools include impounded scabland depressions type 1 and 2 and remnant scabland depressions type 1 and 2.
*** Factoring in potential wetland enhancement opportunities at each Mitigation Area could deliver an additional 1.4 credits (non-vernal pool) and 1.33 credits (vernal pool). Discussed further in Volume 3.

As illustrated by Table 8-13, ample and suitable wetland mitigation credit has been identified for both vernal pool and non-vernal pool wetland impacts. In fact, Mitigation Opportunity Area #2 (expansion of existing emergent depression at Site 1) is not required at all to meet

the projected non-vernal pool impact needs; however, it remains an option should Mitigation Opportunity Areas #1 or #3 not be available in the future.

As noted in Section 7, the Technical Advisory Committee identified a scenario whereby the emergent depression wetland on Site 1 would be identified for impact rather than as avoidance (and a mitigation opportunity area). If this is the case, the non-vernal pool impact acreage would rise by 1.65 acres to a total of 2.92 acres. With non-vernal pool mitigation of 2.5 credits identified, there would be a shortfall of approximately 0.42 credits under this scenario. Options to address this potential shortfall could include:

- Development of wetland enhancement credit at one or more of the Mitigation Opportunity Areas. The Port's consultant identified (see Volume 3) wetland enhancement credit opportunities at each mitigation area and totaling 1.4 credits (non-vernal pool) and 1.33 credits (vernal pool).To be conservative, enhancement credit was not factored into the analysis above.
- Impact only the amount of the Site 1 emergent depression for which sufficient mitigation credit has been identified (i.e., 1.23 acres).
- Identify other non-vernal pool wetland mitigation opportunities outside of the six-site study area.

SECTION 9.0 OTHER RESOURCE ISSUES

The federal regulatory program, administered by the US Army Corps of Engineers, includes several areas of coordination and consultation with certain external agencies. For future developments within the six-site study area that involve impact to wetlands (i.e., triggering Clean Water Act (CWA) Section 404 permit), it is anticipated that those external consultations will include:

- Review by the Oregon Department of Environmental Quality for the issuance of a Clean Water Act Section 401 Water Quality Certification.
- Consultation with the National Marine Fisheries Service for potential effects to listed anadromous fish species within and adjacent to the six-site study area.
- Consultation with the State Historic Preservation Office and affected Tribes for potential effects to any archeological or cultural resources within the study area.

9.1 Stormwater Management

A key component of the Clean Water Act Section 401 Water Quality Certification process is the review of post-construction storm water management plans for proposed developments to ensure that state water quality standards are met. While it will be the responsibility of future developments to design and manage their storm water management systems; the Port proposes that, for the purposes of the Regional General Permit, all systems be required to meet stormwater system design standards described in SLOPES V (Standard Local Operating Procedures for Endangered Species to Administer Maintenance or Improvement of Stormwater, Transportation or Utility Actions), or applicable future iterations of SLOPES, and that all plans meet the content requirements established by DEQ (Stormwater Management Plan Submission Guidelines for Removal/Fill Permit Application Which Involve Impervious Surfaces). Plans would be further conditioned to demonstrate compliance with all state water quality standards, Total Maximum Daily Loads, Waste Load Allocations, and National Pollutant Discharge Elimination System (NPDES) permits.

Regarding construction-related storm water management and erosion control, it is expected that each future development will be required to obtain an NPDES 1200-C permit establishing water quality protection requirements during the construction period.

9.2 Endangered Species Act Compliance

Known ESA threatened and endangered species within or adjacent to the six-site study area are, for Chenoweth Creek: Steelhead (Middle Columbia ESU winter run) and for Columbia River at The Dalles: Steelhead (Middle Columbia ESU summer and winter run), Chinook salmon (Snake River ESU spring and fall run) and Coho salmon (Lower Columbia ESU). For the purposes of this document, it is assumed that any development within the study area requiring a CWA Section 404 permit will, in turn, trigger some level of Endangered Species Act consultation with the National Marine Fisheries Service. Since no direct impact to waterways or their associated wetlands is proposed, it is expected that the primary action potentially affecting listed fish species will be the management of storm water and that this will be the focus of consultations.

To address this, the Port proposes that all developments within the study area requiring a CWA Section 404 permit and seeking qualification under the RGP demonstrate compliance with the

general construction measures included in SLOPES V and specifically including the design criteria for actions requiring storm water management. The Port believes that the appropriate level of ESA consultation for individual actions using SLOPES V will be informal consultation with National Marine Fisheries Service.

9.3 Archaeological and Cultural Resources

The Port recommends that the Corps consult with SHPO, affected Tribes and other applicable parties as part of their RGP deliberations to determine which sites may require archeological surveys and/or resource recovery plans prior to development. Any requirements or recommendations may then be made a condition of the final individual permit for site-specific projects under the RGP.

10.0 PLAN IMPLEMENTATION AND ADMINISTRATION

The Port anticipates that the regulatory agencies will require a final review and approval process for projects seeking to qualify under the Advance Aquatic Resource Plan/Regional General Permit. The Port offers, for regulatory agencies' further consideration, the following proposal for that final approval process as well as for administration of the AARP/RGP over its life span.

10.1 Qualifying Criteria

The individual project approval process will first require a determination that the project meets the qualifying criteria for expedited handling under the Advance Aquatic Resource Plan/Regional General Permit. The following criteria are offered for that determination:

- Project must be for industrial, or commercial/light industrial uses as further defined in the applicable zoning designation, as summarized in Section 5.
- Project must be for activities wholly within one of the identified 6 sites. Agencies may, at their sole discretion, allow the inclusion of ancillary off-site activities required for the on-site development to occur (e.g., access road widening/improvement, utility line extension) provided sufficient wetland delineation and characterization information is provided, wetland avoidance and minimization considerations are made, and a suitable mitigation plan provided for the off-site activity.
- No ground disturbance within designated protection areas. Agencies may, at their sole discretion, allow temporary impacts to designated avoidance areas if the impact does not substantially undermine the values of the avoidance area. Rehabilitation must be provided within 24 months of initiating the temporary impact.
- Commitment to administrative protection of any designated avoidance areas within the project site. [Protective covenant, deed restriction]

10.2 Application Form

The Port proposes that an application for final individual approval will be made using the "Joint Permit Application Form" and include at least the following information:

1. Name, address, and telephone number(s) and point of contact/agent.
2. Location of the proposed project.
3. Removal (excavation) and fill (discharge) volumes for the project and in jurisdictional waters.
4. Purpose and need for the proposed activity.

5. A complete description of the proposed project/activity. All activities the applicant plans to undertake, which are reasonably related to the same project and for which state and federal permits would be required, will be included.

6. Project drawings to include a vicinity map, and project section and plan views. Drawings will clearly depict jurisdictional limits, and limits of ground disturbance relative to any designed protection areas on the site.

7. A delineation of special aquatic sites and other waters of the state and of the U.S. on the project site or a concurrence letter from the Corps or DSL (less than five years old) of a previously submitted delineation. Wetland delineations must be prepared in accordance with the current method required by the Corps and DSL. See Section 6.0 for a complete description of wetland delineation concurrence status for each site.

8. Description of the affected aquatic resources including, but not limited to, a functional assessment of the wetlands on the project site using assessment method accepted by Corps and DSL. Applicant may use wetland functional assessment documented in this Plan for the applicable site and wetland type as a "safe harbor" assessment.

9. Compensatory mitigation: Projects proposing on-site mitigation using one of the pre-identified locations (Section 9), or any off-site mitigation proposal will include a complete compensatory wetland mitigation plan (for DSL, complete plan per OAR 141-085-0680-141-85-0715 and 0765; for Corps, justification for permittee- provided mitigation considering the federal mitigation hierarchy). Compensating mitigation credits from an approved Fee in Lieu sponsor would also qualify.

10. Names and addresses of property owners adjacent to the project site and mitigation site.

11. Completed Land Use Compatibility Statement.

12. Applicant and landowner signatures.

13. For DSL, application will additionally include items identified in OAR 141-085-0550 for complete application, except that the applicant may rely upon the impact avoidance and minimization strategy presented in Section 7.0 as fulfilling the completeness requirements for an alternatives analysis.

14. Application fee (DSL).

15. Other information requirements, as applicable:

    - Biological Assessment if determined necessary by the Corps for ESA consultation purposes.

    - For projects on tax lots that have designated avoidance areas: Draft administrative protection instrument for the avoidance area.

- Rehabilitation plan (with content described in OAR 141-085-0715 for DSL) for any proposed temporary impacts to wetlands or waterways.

10.3 Application Review and Approval Process

The Port believes that an expedited time frame for processing the Corps and DSL applications is warranted considering the level of site documentation already completed (e.g., wetland delineation, wetland characterization),considering the avoidance and minimization strategy that has already been pre-identified for each site (Section 7), and considering the compensatory wetland mitigation strategy described in Section 8. The Port respectfully recommends that the agencies establish a goal of 60 days from complete application determination to final agency decision.

10.4 Plan Term and Renewal

The proposed term of the Advance Aquatic Resource Plan/Regional General Permit is five years and would be renewable for additional five-year periods, not-to-exceed a total term of 20 years. For renewal, it is proposed that the request would be submitted to the regulatory agencies at least four months in advance of the current expiration date and would include at least the following elements, as applicable:

1. Cover letter requesting renewal.
2. Summary of regulatory actions (including those both covered and not covered by the programmatic approval) for each site for the previous 5 years including:
    a. Authorization number(s) and permittee identification
    b. Authorized wetland/waterway impact acreage
    c. Status of project(s) development
    d. Status of compensatory mitigation
    e. A current wetlands delineation
3. Identification of any sites that have been effectively developed and no longer require coverage under the Advance Aquatic Resource Plan/Regional General Permit.
4. Evaluation of each site to identify any substantive changes in land use, other site conditions or the environmental parameters that would cause the designated protection areas to be re-considered. Any proposed mapping changes would be accompanied by rationale for the change. Updated environmental parameters for each site would be included, as necessary.

The Port understands that the agencies will additionally use this renewal period to review and update, as necessary, any established standard conditions or best management practices, and those renewals may be subject to a public review period.

10.5 Amendment Process

The Port proposes that the Regional General Permit and Plan would be amendable upon request of the Port. Potential causes for amendment would include, but not be limited to:

- Removal of a site or portion of a site for any reason
- Addition of a new site, or expansion of an existing site to replace a removed site.
- Need to add, delete or modify standard term(s) or condition(s) due to unanticipated effects.

A request for amendment would include at least the following elements, as applicable:.

1. Cover letter requesting amendment and reason for amendment
2. For site reduction or removal:
    a. Identification of the site or portion of site to be removed from coverage including site name, legal description of area to be removed and map clearly illustrating the removal area.
    b. Rationale for removal or reduction.
3. For addition of a new site or expansion of existing site to replace a removed site:
    a. Identification of the new or expanded site including: site name, legal description, current land use, zoning, tax map and recent aerial photo clearly illustrating boundary of proposed area.
    b. Site description identifying and characterizing aquatic resource boundaries; site evaluation using, at a minimum, the environmental parameters documented in Section 6.
    c. Proposed protection and development areas including rationale for proposed designations.
    d. Wetlands delineation and assessment for the addition or expansion.

The information requirements for amending the Advance Aquatic Resource Plan/Regional General Permit for reasons other than those identified above would be determined by the regulatory agencies on a case-by-case basis.

Request for AARP/Regional General Permit for Selected Industrial Sites

in The Dalles and Wasco County, Oregon

Appendix A

Wetland Delineation Concurrence Letters

Oregon
John A. Kitzhaber, MD, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

September 4, 2014

Mark McCavic
5277 Cherry Heights Road
The Dalles, OR 97058

Re: Reissuance of Wetland Delineation Report for The Dalles, Wasco County; T 2N R 13E S 28 TL 702; WD #2009-0216R; App. #43798

Dear Mr. McCavic:

The Department of State Lands has reviewed your request for reissuance prepared by Terra Science, Inc. for the site referenced above. Please note that the reissuance study area includes only a portion of the tax lot described above (see the attached map), and includes less area than the original approval (area surrounding Chenowith Creek was not included in the request). Based upon the information presented in the report and additional information submitted upon request, we concur that the previous wetland boundaries have not changed since the original concurrence in 2009, as shown in Figures 3 and 3A-3C of the request for reissuance report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps. Within the study area, 49 wetlands (totaling approximately 9.0 acres) were confirmed as present and with the same boundaries as in 2009. The wetlands are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetlands.

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 until 6/18/19 (five years from the date of the original expiration) 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 503-986-5300 if you have any questions.

Sincerely,

Lynne McAllister
Wetland Specialist

Approved by

Kathy Verble, CPSS
Acting Wetlands Program Manager

Enclosures

ec: Phil Scoles, Terra Science, Inc.
The Dalles Planning Department
Steve Gagnon, Corps of Engineers
Heidi Hartman, 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 the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279 Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.
For new credit card payment option, see DSL web site.

☐ Applicant ☒ Owner Name, Firm and Address: **WM3, Inc.** **Attn: Mark McCavic** **5277 Cherry Heights Road** **The Dalles, Oregon 97058**	Business phone # (541) 993-0458 Mobile phone # (optional) Same as above FAX # (541) 298-2962 E-mail: mark@qnect.net
☐ Authorized Legal Agent, Name and Address:	Business phone # FAX # Mobile phone # E-mail: [redacted]

I either own the property described below or I have legal authority to allow access [redacted] access the property for the purpose of confirming the information in the report, aft
Typed/Printed Name: Mark McCavic Signature: [redacted]
Date: Special instructions regarding site access: All site access must be coordinated with Owner / Consultant.

Project and Site Information

Project Name: Site 4 (Tax Lot 702)	**Latitude: 45.626867° °N** **Longitude: -121.211806° W**
Proposed Use: **Commercial development & assessment inventory.**	Tax Map # **02N-13E- 28**
Project Street Address (or other descriptive location): **Immediately south of the River Road - River Trail Way intersection, east of Union Pacific Railroad and I-84.** City: **The Dalles** County: **Wasco**	Township **02N** Range **13E** Section **28** QQ **BA-BD** **Tax Lot (s) 702 (excluding ODOT mitigation easement) and portion of the River Road right-of way** Waterway: **N/A** River Mile: **N/A** NWI Quad(s): **The Dalles North, Oregon**

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Terra Science, Inc.** **Attn: Phil Scoles, CPSS** **4710 S.W. Kelly Avenue, Suite 100** **Portland, Oregon 97239**	Phone # (503) 274-2100 Mobile phone # N/A FAX # (503) 274-2101 E-mail: pscoles@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: [redacted] Date: 6-12-2014

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No	Study Area size: **67.0± acres**	Wetland Acreage: **8.97 acres**

Check Box Below if Applicable: **Fees:**

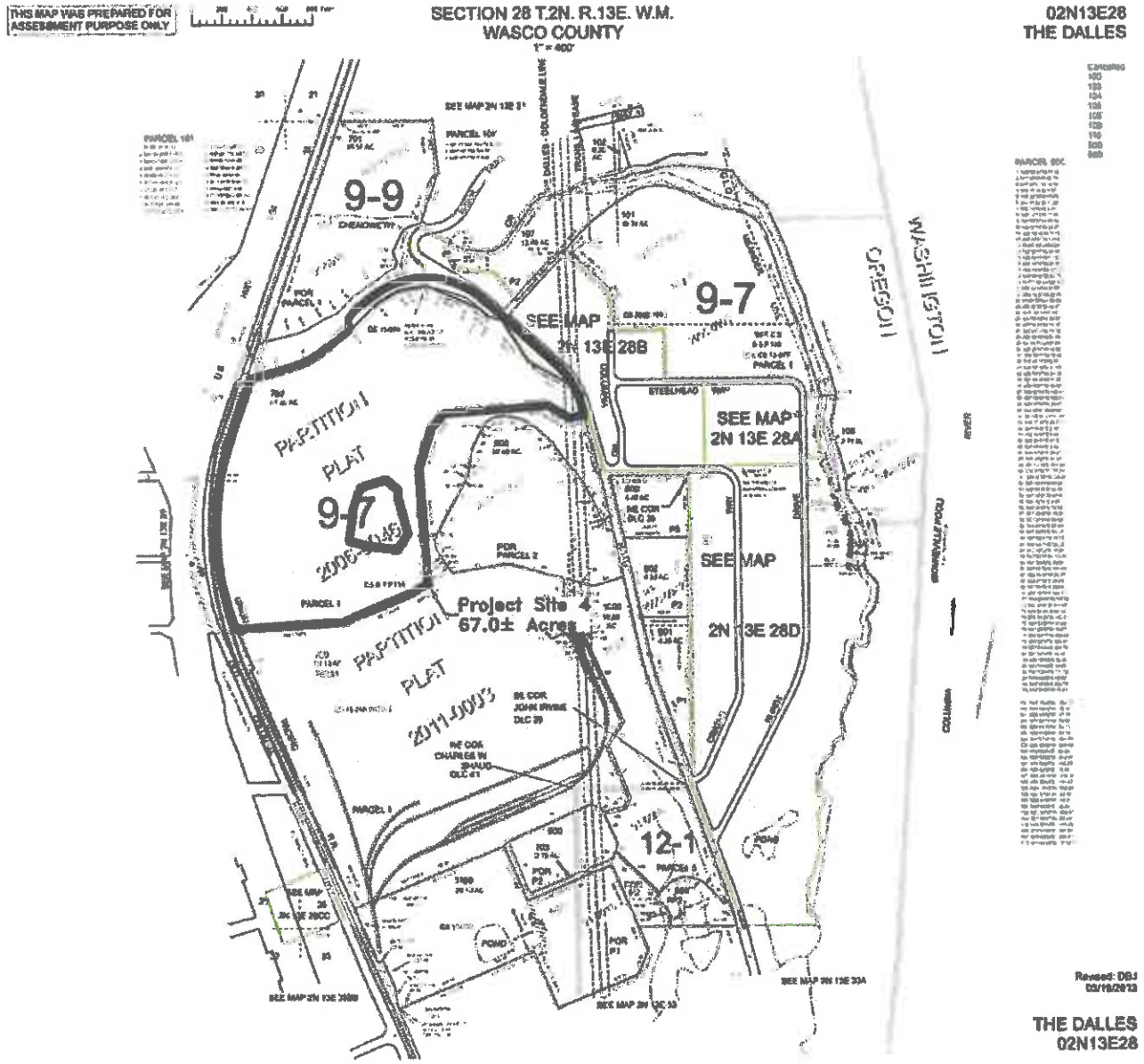
☐ R-F permit application submitted	☐ Fee payment submitted N/A
☐ Mitigation bank site	☐ Fee ($100) for re-submittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	No fee for request for re-issuance of an expired report
☐ Industrial Land Certification Program Site	
☒ Re-issuance of a recently expired delineation	
Previous DSL# **WD2009-0216**	Expiration Date **June 18, 2014**

Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	Previous DSL # WD#2009-0216
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

For Office Use Only

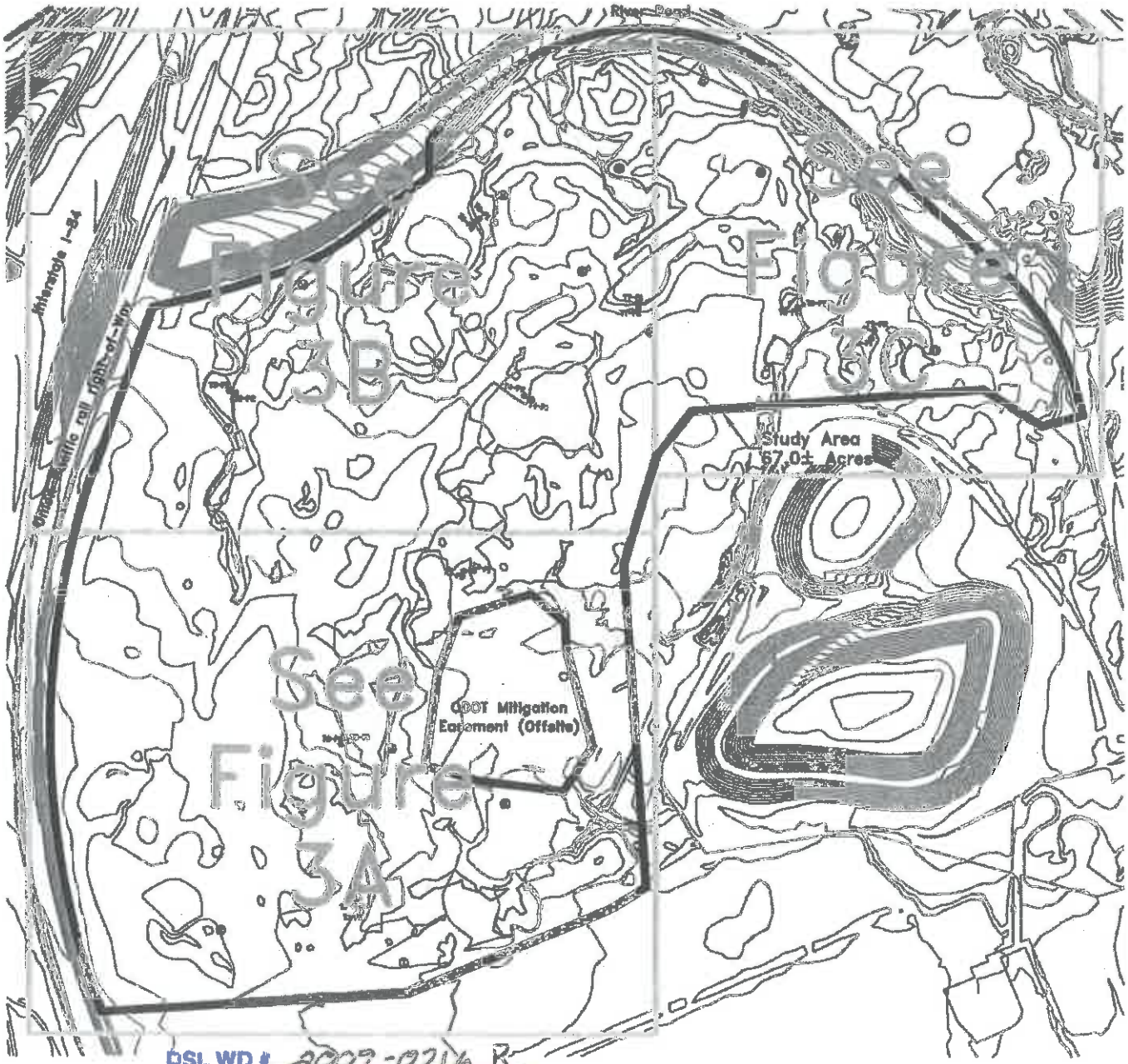
DSL Reviewer: LM Fee Paid Date: __/__/__ DSL WD # 2009-0216
Date Delineation Received: 6/13/14 DSL Project # _____ DSL Site # _____
Scanned: ☒ Final Scan: ☐ DSL WN # _____ DSL App. # _____

NOTE: The 67.17± acre study area consists of Tax lot 702 and portion of the River Road right-of-way on Wasco County Assessor's map Township 02 North, Range 13 East, Section 28, Willamette Meridian. The Oregon Department of Transportation mitigation easement in the southern portion of the study area is was not investigated for this delineation verification.



Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 28, W.M.

Terra Science, Inc. Soil, Water, & Wetland Consultants	DELINEATION VERIFICATION INFORMATION FOR DSL WD#2009-0216 & USACE NWP 2008-445 The Dalles, Wasco County, Oregon	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	June 2014	FIGURE 1



DSL WD # 2009-0216 R

Approval Issued 9/11/14

Approval Expires 6/18/19

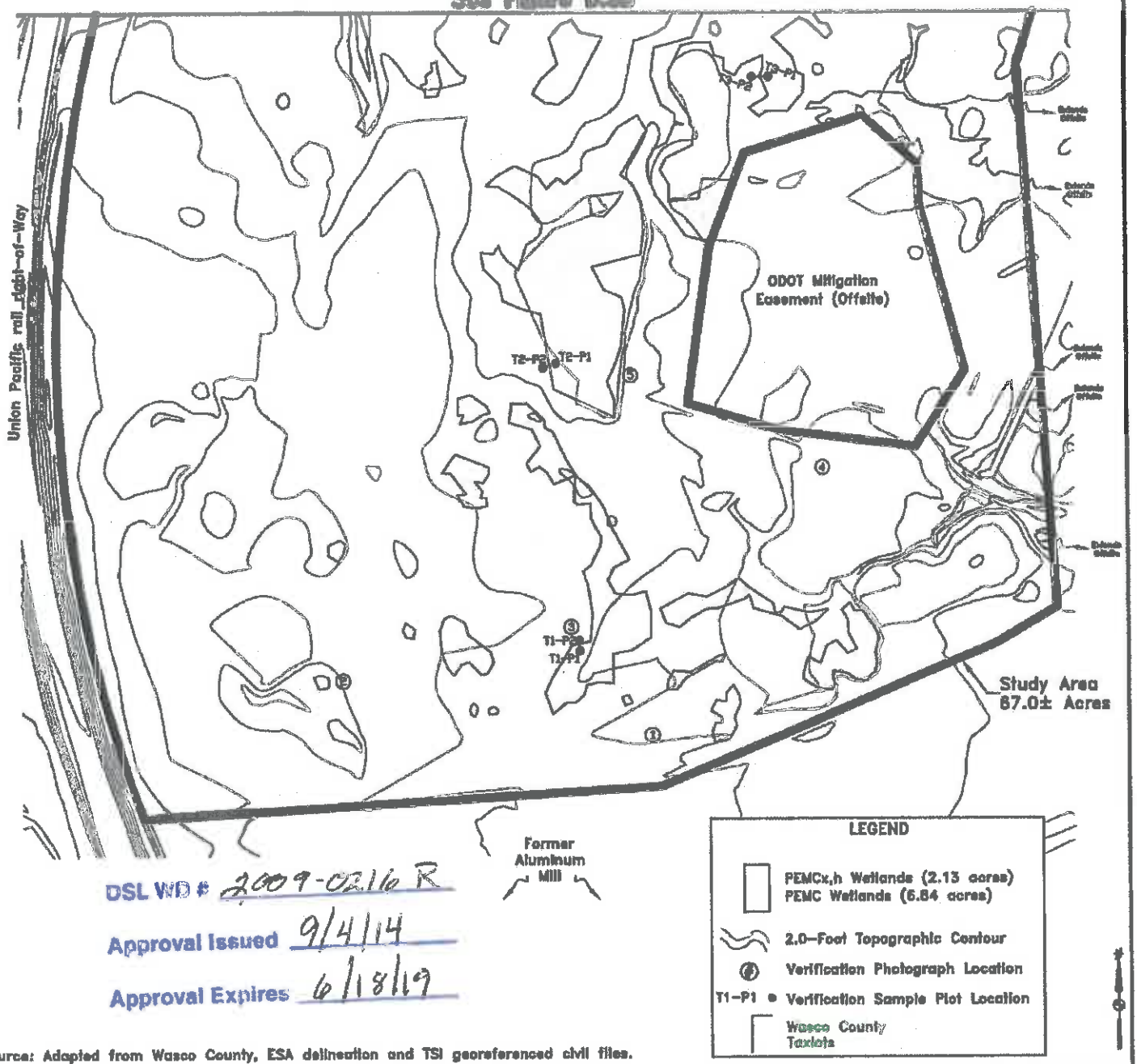
Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	DELINEATION VERIFICATION INFORMATION FOR DSL WD#2009-0216 & USACE NWP 2008-445 The Dalles, Wasco County, Oregon	EXISTING CONDITIONS INDEX
GRAPHIC SCALE 0 175 350 (IN FEET) 1 inch = 350 ft.	June 2014	FIGURE 3

NOTE: Wetland conditions of Site 4 was most recently documented in Environmental Science & Assessment's December 2008 *Wetland Delineation Report, The Dalles Retail Site* which received DSL WD#22009-0216 on June 18, 2009 and Corps Approved Jurisdictional Determination (AJD) NWP 2008-445 on July 15, 2009.

TSI field teams verified Site 4 boundaries on March 23, March 30 and April 16, 2014 using previously approved delineation linework and topographic contours loaded onto a Trimble GeoXH hand-held GPS unit; verified wetland boundaries and sample plot locations are accurate to ±1.0 meter. Updated data collection utilized methodology outlined in the Corps Arid West Regional Supplement Version 2.0 using the *State of Oregon 2014 Wetland Plant List*. Verified wetland boundaries continue to be based on dramatic breaks in topography which in turn exhibit distinct breaks between hydrophytic and adjacent upland plant communities, hydric and upland soils and wetland hydrology indicators.

See Figure 3B



DSL WD # 2009-0216 R

Approval Issued 9/4/14

Approval Expires 6/18/19

Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

DELINEATION VERIFICATION INFORMATION FOR
DSL WD#2009-0216 & USACE NWP 2008-445
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, SOUTH

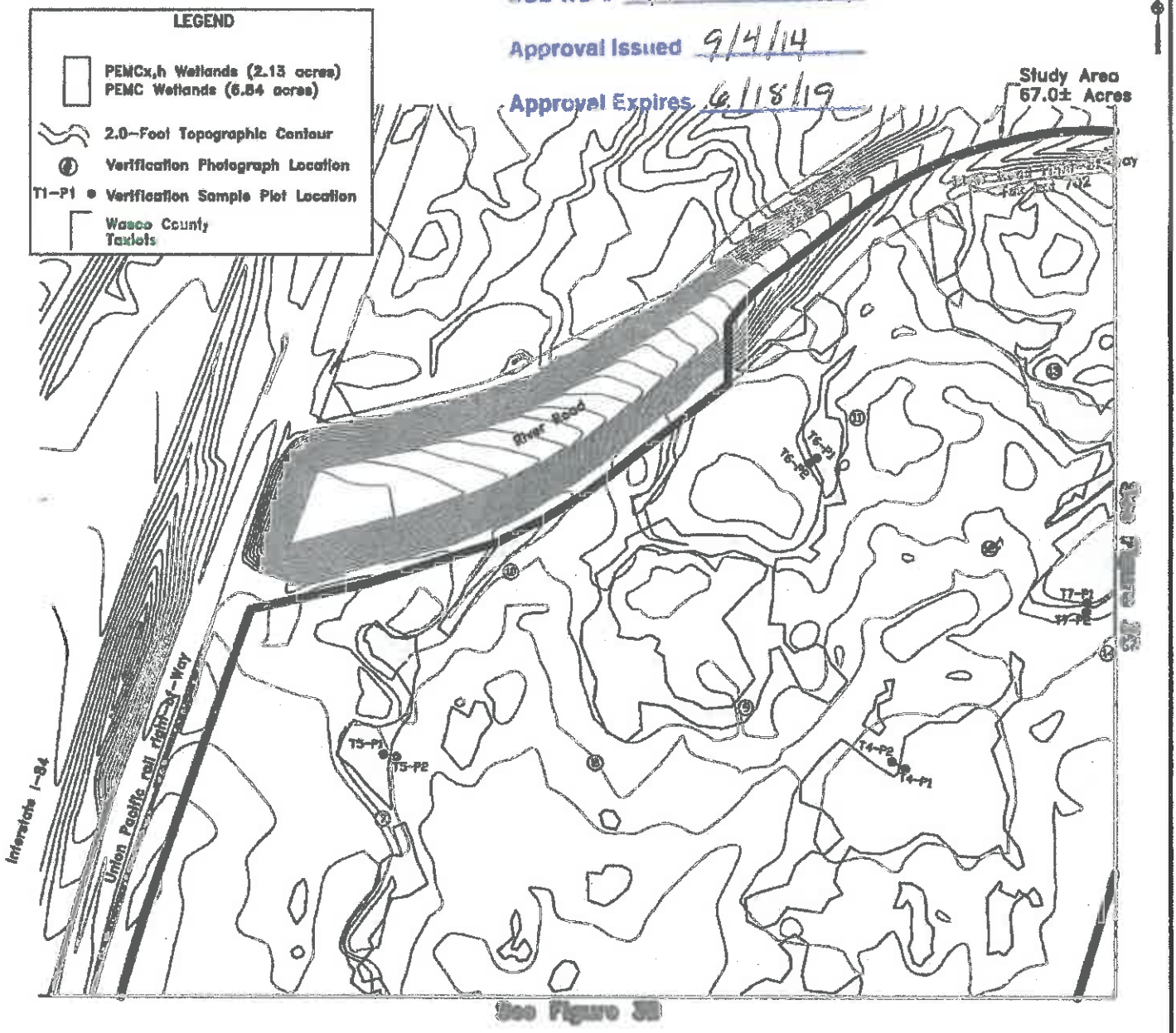
June 2014

FIGURE 3A

DSL WD # 2009-0216R

Approval Issued 9/4/14

Approval Expires 6/18/19



NOTE: Wetland conditions of Site 4 was most recently documented in Environmental Science & Assessment's December 2008 *Wetland Delineation Report, The Dalles Retail Site* which received DSL WD#22009-0216 on June 18, 2009 and Corps Approved Jurisdictional Determination (AJD) NWP 2008-445 on July 15, 2009.

TSI field teams verified Site 4 boundaries on March 23, March 30 and April 16, 2014 using previously approved delineation linework and topographic contours loaded onto a Trimble GeoXH hand-held GPS unit; verified wetland boundaries and sample plot locations are accurate to ±1.0 meter. Updated data collection utilized methodology outlined in the Corps Arid West Regional Supplement Version 2.0 using the *State of Oregon 2014 Wetland Plant List*. Verified wetland boundaries continue to be based on dramatic breaks in topography which in turn exhibit distinct breaks between hydrophytic and adjacent upland plant communities, hydric and upland soils and wetland hydrology indicators.

Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

DELINEATION VERIFICATION INFORMATION FOR
DSL WD#2009-0216 & USACE NWP 2008-445
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, NORTHWEST

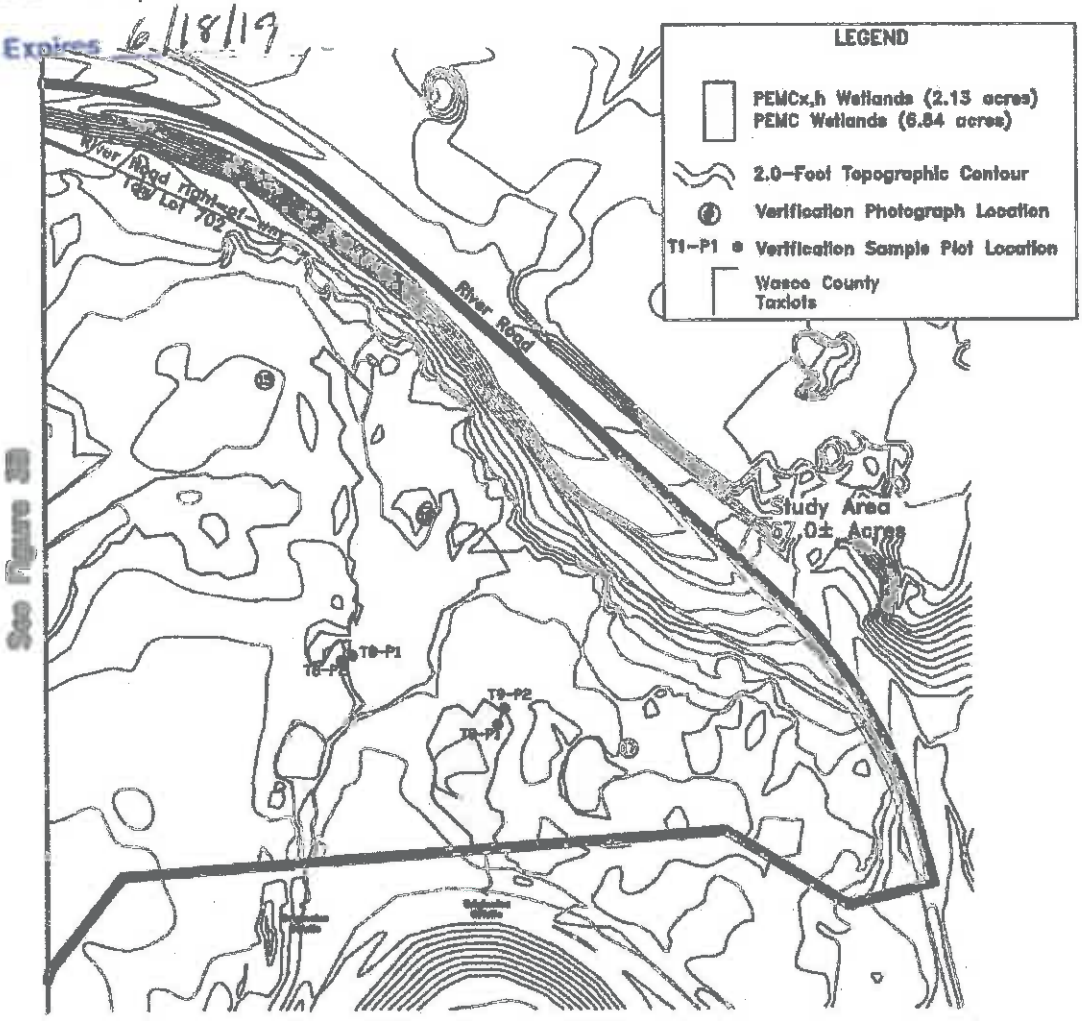
June 2014

FIGURE 3B

DSL Permit # 2009-0216 K

Approval Issued 9/4/14

Approval Expires 6/18/19



NOTE: Wetland conditions of Site 4 was most recently documented in Environmental Science & Assessment's December 2008 *Wetland Delineation Report, The Dalles Retail Site* which received DSL WD#22009-0216 on June 18, 2009 and Corps Approved Jurisdictional Determination (AJD) NWP 2008-445 on July 15, 2009.

TSI field teams verified Site 4 boundaries on March 23, March 30 and April 16, 2014 using previously approved delineation linework and topographic contours loaded onto a Trimble GeoXH hand-held GPS unit; verified wetland boundaries and sample plot locations are accurate to ±1.0 meter. Updated data collection utilized methodology outlined in the Corps Arid West Regional Supplement Version 2.0 using the *State of Oregon 2014 Wetland Plant List*. Verified wetland boundaries continue to be based on dramatic breaks in topography which in turn exhibit distinct breaks between hydrophytic and adjacent upland plant communities, hydric and upland soils and wetland hydrology indicators.

Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 175 350
(IN FEET)
1 inch = 350 ft.

DELINEATION VERIFICATION INFORMATION FOR
DSL WD#2009-0216 & USACE NWP 2008-445
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, NORTHEAST

June 2014

FIGURE 3C

Oregon
Kate Brown, Governor

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

June 4, 2015

Northern Oregon Correctional Facility
Attn: Jim Weed
201 Webber Street
The Dalles, OR 97036

Re: Reissuance of Wetland Delineation Report WD #2009-0353R;
Wasco County, T 2N R 13E S 33 Portion of Tax Lot 500

Dear Mr. Weed:

The Department of State Lands (DSL) reconsidered a request for reissuance for a jurisdictional determination (JD) that was originally determined to be ineligible for reissuance in a letter to you dated February 2, 2015. Based on information contained in the original request prepared by Terra Science, Inc. and changes submitted upon our request DSL is reissuing JD for the portion of Tax Lot 500 shown on Figure F.3. Within the study area shown, two wetlands were identified, totaling approximately 0.8 acres.

Please note that this is a slight increase from the original area determination made for these two wetlands in 2010 (they previously totaled approximately 0.65 acres). The wetlands are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands.

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 reissuance of this JD is valid for five years from the expiration date of the original concurrence letter (January 21, 2015) unless new information necessitates a revision. Circumstances under which DSL 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 DSL 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
Wetlands Specialist

Approved by
Kathy Verble, CPSS
Aquatic Resource Specialist

ec: David Monnin, PWS, Terra Science, Inc.
City of The Dalles Planning Department
Heidi Hartman, DSL
Kirk Jarvie, 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 the form to the front of an unbound report and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279** Mail a copy of the completed form with payment of the required report review fee to: **Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.**
For new credit card payment option, see DSL web site.

☐ Applicant ☒ Owner Name, Firm and Address: **Northern Oregon Correctional Facility** **Attn: Jim Weed, Administrator** **201 Webber Street** **The Dalles, Oregon 97036**	Business phone # 541.298.1576 Mobile phone # (optional) N/A FAX # 541.298.1082 E-mail: jweed@norcor.co.wasco.or.us
☐ Authorized Legal Agent, Name and Address:	Business phone # FAX # Mobile phone # E-mail:

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 confirming the information in the report, after prior notification to the primary contact.
Typed/Printed Name: James Weed Signature: [redacted]
Date: 8/15/14 Special instructions regarding site access: **All site access must be coordinated with Owner / Consultant.**

Project and Site Information

45.613752 -121.200116

Project Name: Site 6	**Latitude: ~~45.613768°~~ °N**	**Longitude: ~~-121.201526°~~ W**	
Proposed Use: Preliminary site assessment and resource inventory.	Tax Map # 02N-13E-33		
Project Street Address (or other descriptive location):	Township 02N	Range 13E	Section 33	QQ ~~AC, BD, CA, DB~~
201 Webber Street	Tax Lot (s) 500 (Portion)			
	Waterway: N/A		River Mile: N/A	
City: The Dalles County: Wasco	NWI Quad(s): The Dalles, North, Oregon			

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Terra Science, Inc.** **Attn: David Monnin, PWS** **4710 Southwest Kelly Avenue, Suite 100** **Portland, Oregon 97239**	Phone # (503) 274-2100 Mobile phone # N/A FAX # (503) 274-2101 E-mail: david@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: [redacted] Date: 8/18/2014

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No	Study Area size: ~~17.5±~~ acres 2.7A	Wetland Acreage: 0.8-acre ✓

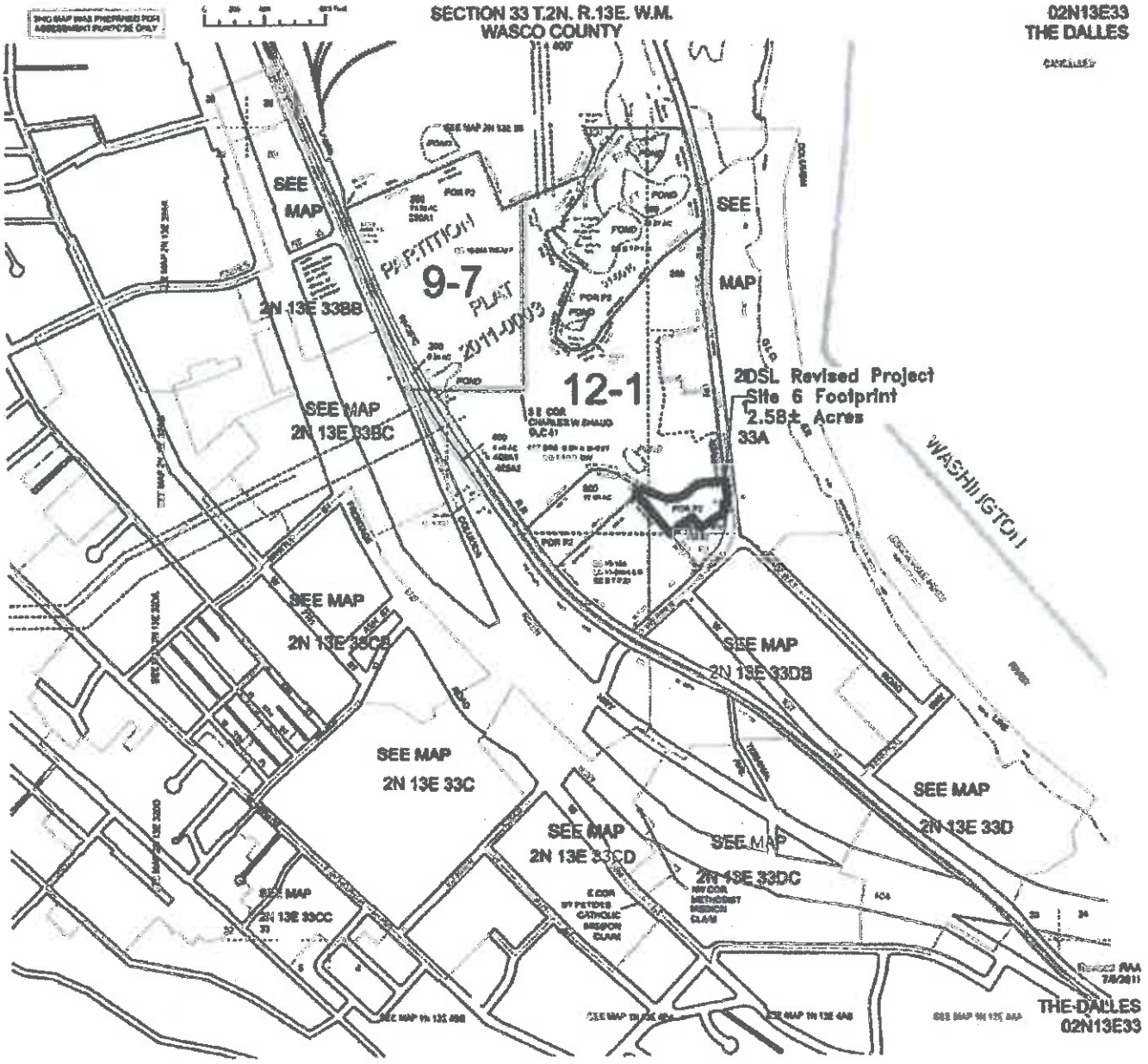
Check Box Below if Applicable:	**Fees:**
☐ R-F permit application submitted	☐ Fee payment submitted N/A
☐ Mitigation bank site	☐ Fee ($100) for re-submittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	No fee for request for re-issuance of an expired report
☐ Industrial Land Certification Program Site ☐ Re-issuance of a recently expired delineation	
Previous DSL# WD#2009-0353	Expiration Date January 15, 2015

Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	Previous DSL # WD#2009-0353
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

For Office Use Only

DSL Reviewer: LM Fee Paid Date: N/A / / DSL WD # 2009-0353RP
Date Delineation Received: 9 / 22 / 14 DSL Project # _____ DSL Site # _____
Scanned: ☒ Final Scan: ☐ DSL WN # 158 DSL App. # _____

NOTE: Site 6 consists of portion Tax lot 500 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 33, Willamette Meridian.



WD# 2009-0353R

Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 33, W.M.

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 6 RE-ISSUANCE INFORMATION The Dalles, Wasco County, Oregon (DSL WD#2009-0353 & USACE NWP 2010-105)	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	May 2015 (DSL UPDATE)	FIGURE F.1

NOTE: Documented construction activities authorized by DSL Permit 45855-RF. Corps permits were not required per Corps NWP 2010-105.

Union Pacific Railroad Line

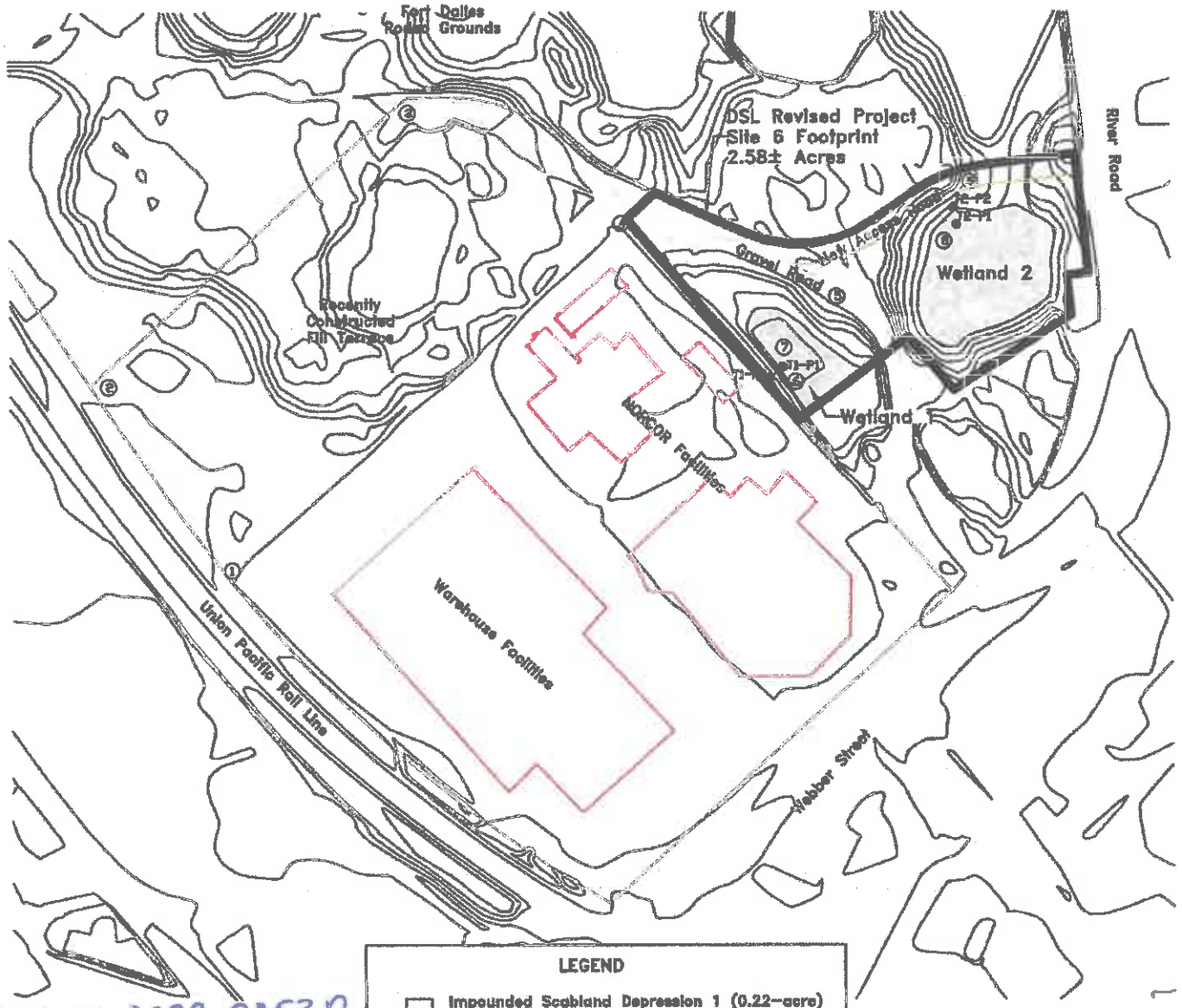
Source: Adapted from U.S.D.A. Farm Service Agency aerial photography, available at Google Earth.

WD#2009-0353R

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 6 RE-ISSUANCE INFORMATION The Dalles, Wasco County, Oregon (DSL WD#2009-0353 & USACE NWP 2010-105)	AUGUST 01, 2011 AERIAL PHOTOGRAPH And Site Location Map	FIGURE F.2
GRAPHIC SCALE 0 100 200 1 inch = 200 ft.	May 2015 (DSL UPDATE)		

NOTE: Wetland conditions of Site 6 originally documented in Mark Yinger Associates' July 2009 *Wetland Delineation Report* which received DSL determination WD#2009-0353 on January 15, 2010 and Corps NWP 2010-105 on September 30, 2010. In accordance with DSL Permit 45855-RF, authorized access road and fill terrace was constructed in summer 2011.

TSI's March 23, 2014 delineation verification process utilized methodology outlined in the Corps Arid West Regional Supplement Version 2.0 using the *State of Oregon 2014 Wetland Plant List*. Updated wetland boundaries more closely reflect dramatic breaks in topography which in turn exhibit distinct breaks between hydrophytic and adjacent upland plant communities, hydric and upland soils and wetland hydrology indicators. Verification sample plot locations, wetland boundaries and photograph points mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, georeferenced topographic contour and Wasco County parcel civil files then inserted into AutoCAD software for acreage calculations. Site 6 site boundary, wetlands and sample plots are accurate to within ±1.0 foot.



DSL WD # 2009-0353 R

Approval Issued 6/4/2015

Approval Expires 1/21/2020

Source: Adapted from Lockheed Martin, Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 6 RE-ISSUANCE INFORMATION
The Dalles, Wasco County, Oregon
(DSL WD#2009-0353 & USACE NWP 2010-105)

May 2015 (DSL UPDATE)

EXISTING CONDITIONS

FIGURE F.3

Oregon
John A. Kitzhaber, MD, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

July 24, 2012

Port of The Dalles
Attn: Michael Held
3436 Klindt Drive
The Dalles, OR 97058

Re: Correction to Concurrence Letter for Wetland Delineation Report for North Chenoweth Property, The Dalles, Wasco County; T 2N R 13E S 21 TL 700 & 800; WD #2012-0159

Dear Mr. Held:

The Department of State Lands has reviewed the wetland delineation report prepared by Terra Science, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figures 6 and 6a-6d of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map. Within the study area, four wetlands (totaling approximately 6.05 acres), two waterways (Chenoweth Creek and the Columbia River), and Taylor Lake were identified. The wetlands, with the exception of the tire rut wetlands, are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland 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, Chenoweth Creek is essential salmonid habitat; therefore, fill or removal of any amount of material within the OHWL and hydrologically-connected wetlands (Chenoweth Creek wetlands) may require a state permit.

In addition, the Columbia River is a state-owned waterway; any activity encroaching within the submerged and submersible land below the line of ordinary high water may require a lease, registration, or easement to occupy state-owned land. Please contact Shawn Zumwalt at 541-388-6033 for more information.

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 503-986-5300 if you have any questions.

Sincerely,

Lynne McAllister
Wetland Specialist

Approved by

Anna Buckley
Acting Wetlands Program Manager

Enclosures

ec: David Monnin, Terra Science, Inc.
The Dalles Planning Department
Debra Henry, Corps of Engineers Portland office
Charles Redon, DSL
Kirk Jarvie, DSL

Oregon
John A. Kitzhaber, MD, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

July 23, 2012

Port of The Dalles
Attn: Michael Held
3436 Klindt Drive
The Dalles, OR 97058

Re: Wetland Delineation Report for North Chenoweth Property, The Dalles, Wasco County; T 2N R 13E S 21 TL 700 & 800; WD #2012-0159

Dear Mr. Held:

The Department of State Lands has reviewed the wetland delineation report prepared by Terra Science, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figures 6 and 6a-6d of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map. Within the study area, four wetlands (totaling approximately 6.05 acres), two waterways (Chenoweth Creek and the Columbia River), and Taylor Lake were identified. The wetlands, with the exception of the tire rut wetlands, are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland 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, Chenoweth Creek and the Columbia River are essential salmonid habitat; therefore, fill or removal of any amount of material within the OHWL and hydrologically-connected wetlands (Chenoweth Creek wetlands) may require a state permit.

In addition, the Columbia River is a state-owned waterway; any activity encroaching within the submerged and submersible land below the line of ordinary high water may require a lease, registration, or easement to occupy state-owned land. Please contact Shawn Zumwalt at 541-388-6033 for more information.

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 503-986-5300 if you have any questions.

Sincerely,

Approved by

Lynne McAllister
Wetland Specialist

Anna Buckley
Acting Wetlands Program Manager

Enclosures

ec: David Monnin, Terra Science, Inc.
The Dalles Planning Department
Debra Henry, Corps of Engineers Portland office
Charles Redon, DSL
Kirk Jarvie, 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 the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279 Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.
For new credit card payment option, see DSL web site.

RECEIVED
APR 24 2012
DEPARTMENT OF STATE LANDS

☐ Applicant ☒ Owner Name, Firm and Address: Port of The Dalles Attn: Michael Held, Assistant Project Manager 3636 Klindt Drive The Dalles, Oregon 97058	Business phone # 541.298.4148 Mobile phone # (optional) N/A FAX # 541.298.2136 E-mail: michael@portofthedalles.com
☐ Authorized Legal Agent, Name and Address:	Business phone # FAX # Mobile phone # E-mail:

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 confirming the information in the report, after prior notification to the primary contact.
Typed/Printed Name: Michael Held Signature: [signature]
Date: Special instructions regarding site access: Contact Applicant prior to site access.

Project and Site Information (for latitude & longitude, use centroid of site or start & end points of linear project)

Project Name: North Chenoweth Property		Latitude: 45.637263° °N		Longitude: -121.204236° W
Proposed Use: Preliminary site assessment and resource inventory.		Tax Map # 02N-13E-21 and 28		
Project Street Address (or other descriptive location):		Township 02N	Range 13E	Section 21	QQ CA, CB, CC, CD DB, DC
Site is bound by Taylor Lake dirt access road then vacant lands to the west, Taylor Lake and the Crates Point Wildlife Area to the north and the Columbia River to the east.		Tax Lot (s) 700 and 800		
		Waterway: Chenoweth Creek / Columbia River		River Mile: 187
City: The Dalles	County: Wasco	NWI Quad(s): The Dalles, North, Oregon		

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Terra Science, Inc. Attn: David Monnin, PWS 4710 Southwest Kelly Avenue, Suite 100 Portland, Oregon 97239	Phone # (503) 274-2100 Mobile phone # N/A FAX # (503) 274-2101 E-mail: david@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: [signature] Date: 4/23/12

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No	Study Area size: 83.44± acres	Wetland Acreage: 6.05 acres* Waters Acreage: 2.0 acres

Check Box Below if Applicable:	Fees:
☐ R-F permit application submitted	☒ Fee payment submitted $379.00
☐ Mitigation bank site	☐ Fee ($100) for re-submittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	Name of Payor: Port of The Dalles
☐ Industrial Land Certification Program Site	

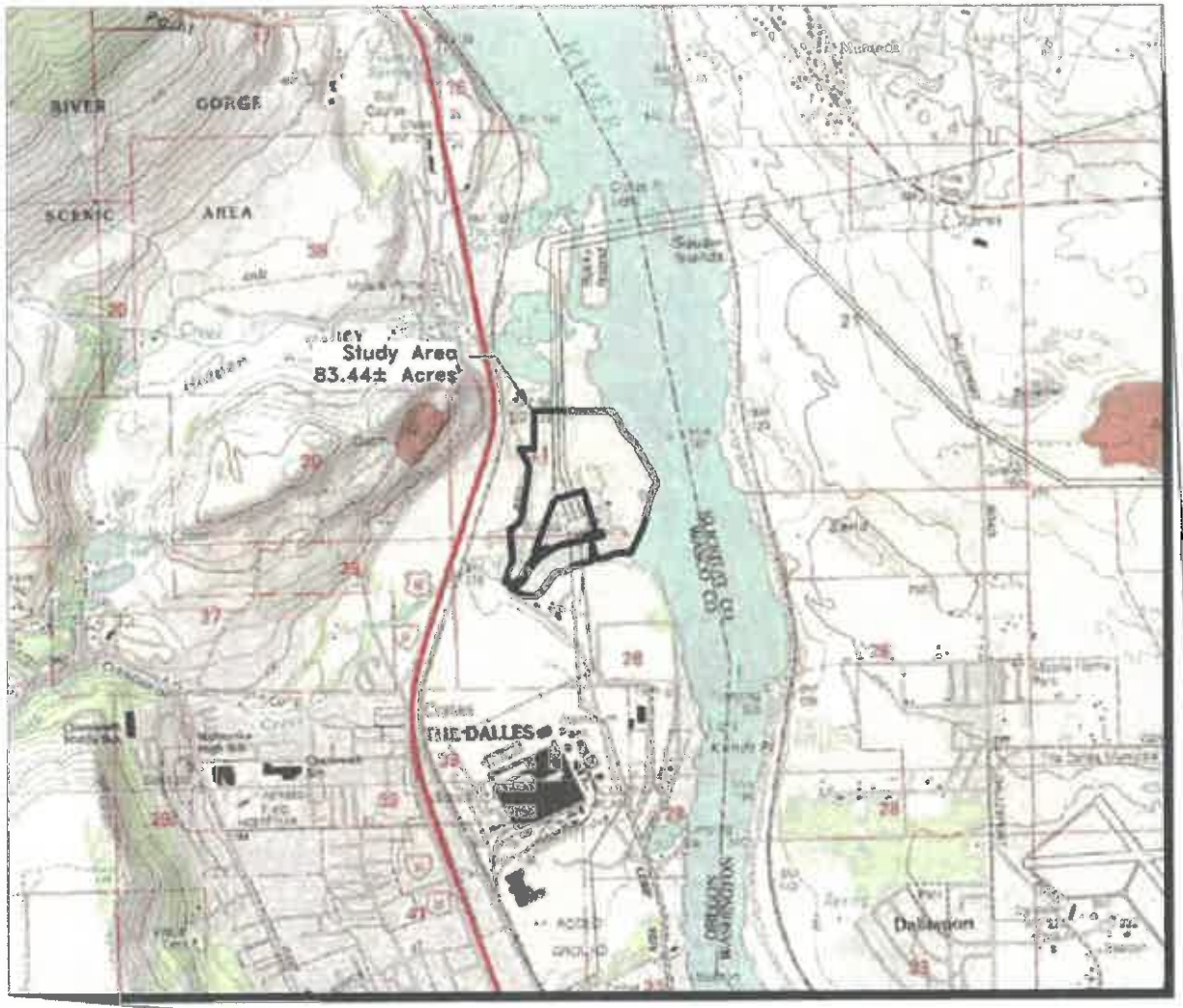
Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	If known, previous DSL # WD 2005-0346
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

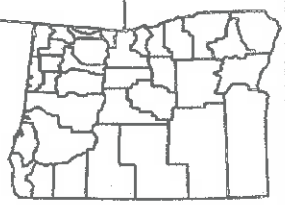
For Office Use Only

DSL Reviewer: LM Fee Paid Date: ____/____/____ DSL WD # 2012-0159
Date Delineation Received: 4/24/12 DSL Project # ____ DSL Site # ____
Scanned: ☒ Final Scan: ☐ DSL WN # ____ DSL App. # ____

*See report text for jurisdictional attributes of identified features.

DIRECTIONS: From Portland, take Interstate I-84 west to The Dalles River Road exit (Exit 82). Go west for approximately 0.25-mile then turn north onto River Road. After you cross Chenoweth Creek, River Road dissects the southern portion of the study area. Approximate centroid of the study area is 45.637263° north and -121.204236° west.





Source: Adapted from U.S.G.S. Topographic Quads.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

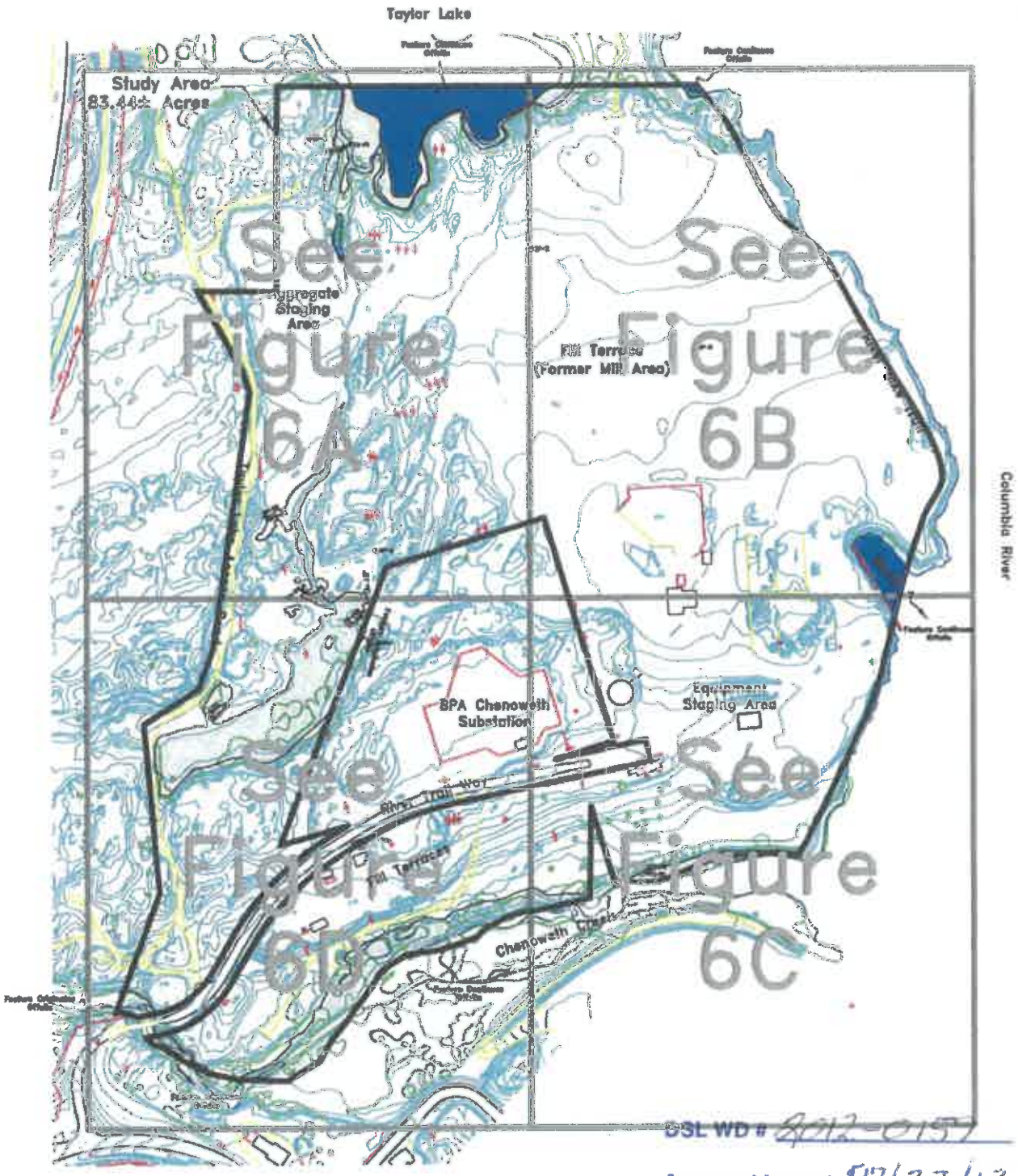
GRAPHIC SCALE
0 1250 2500
(IN FEET)
1 inch = 2500 ft.

WETLAND DELINEATION FOR THE
NORTH CHENOWETH PROPERTY
The Dalles, Wasco County, Oregon

VICINITY MAP

April 2012

FIGURE 1



DSL WD # 2012-0157

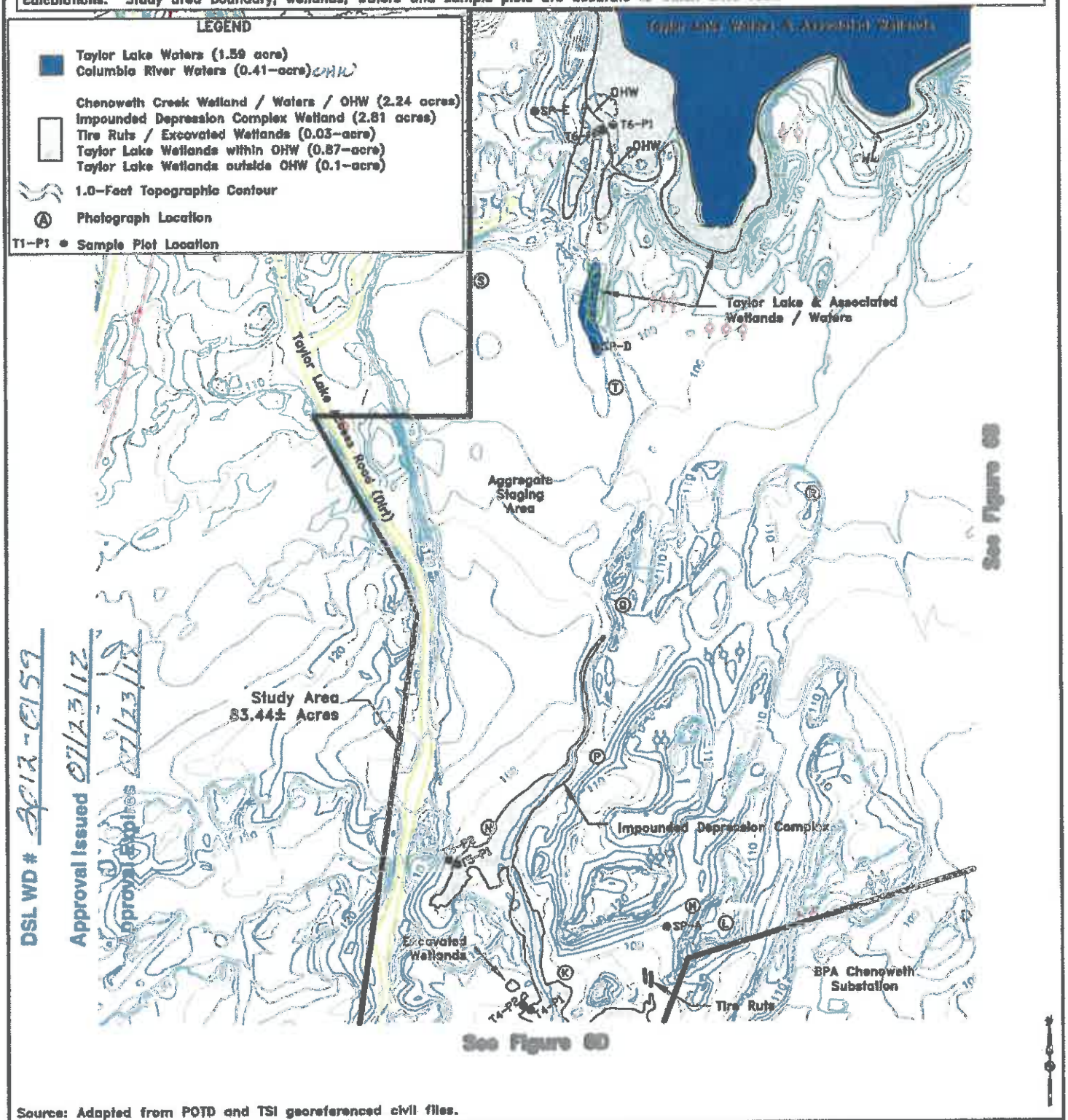
Approval Issued 07/23/12

Approval Expires 07/23/17

Source: Adapted from POTD and TSI georeferenced civil files.

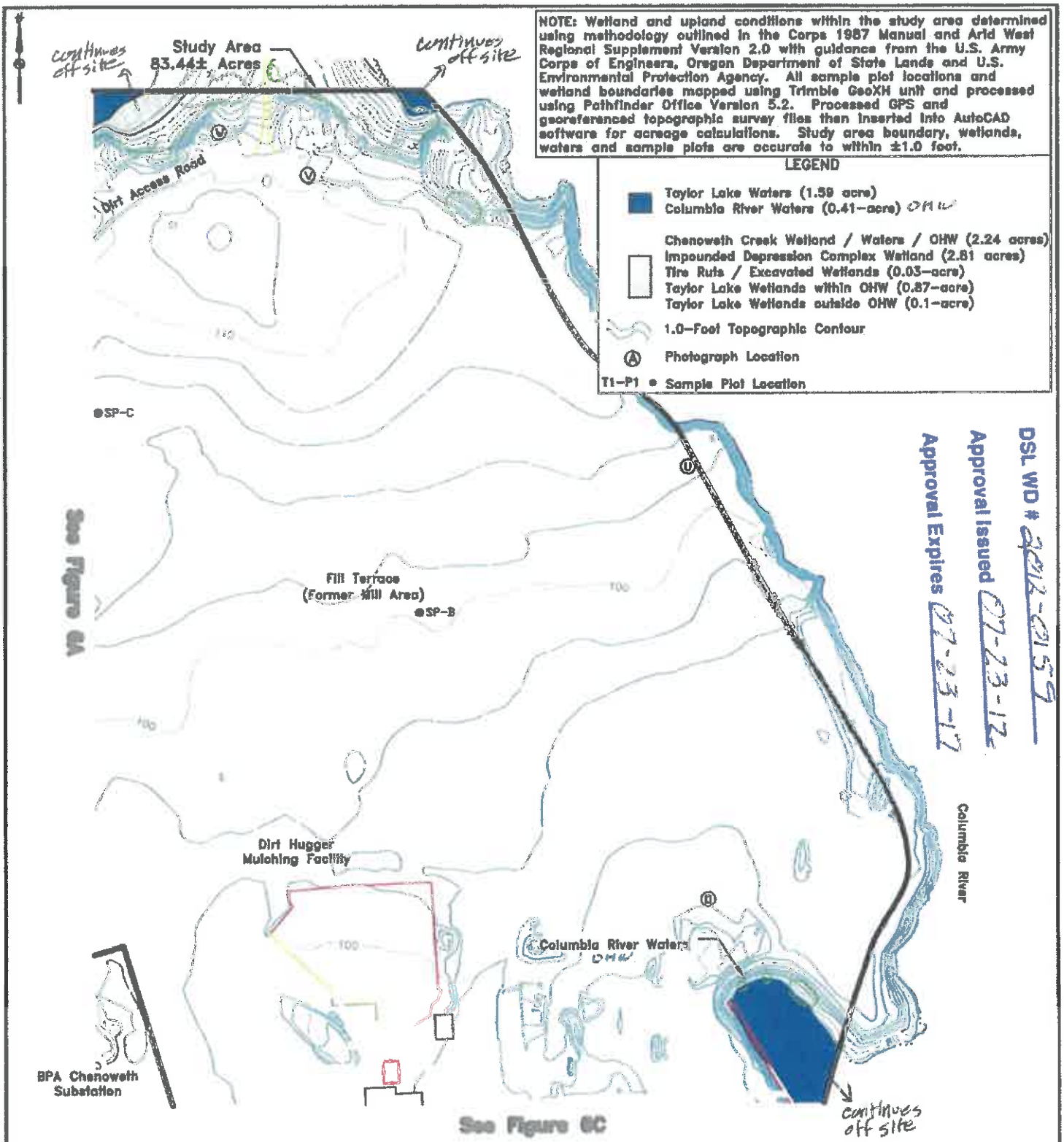
Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION FOR THE NORTH CHENOWETH PROPERTY The Dalles, Wasco County, Oregon	INDEX MAP
GRAPHIC SCALE 0 200 400 (IN FEET) 1 inch = 400 ft.	April 2012	FIGURE 6

NOTE: Wetland and upland conditions within the study area determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot.



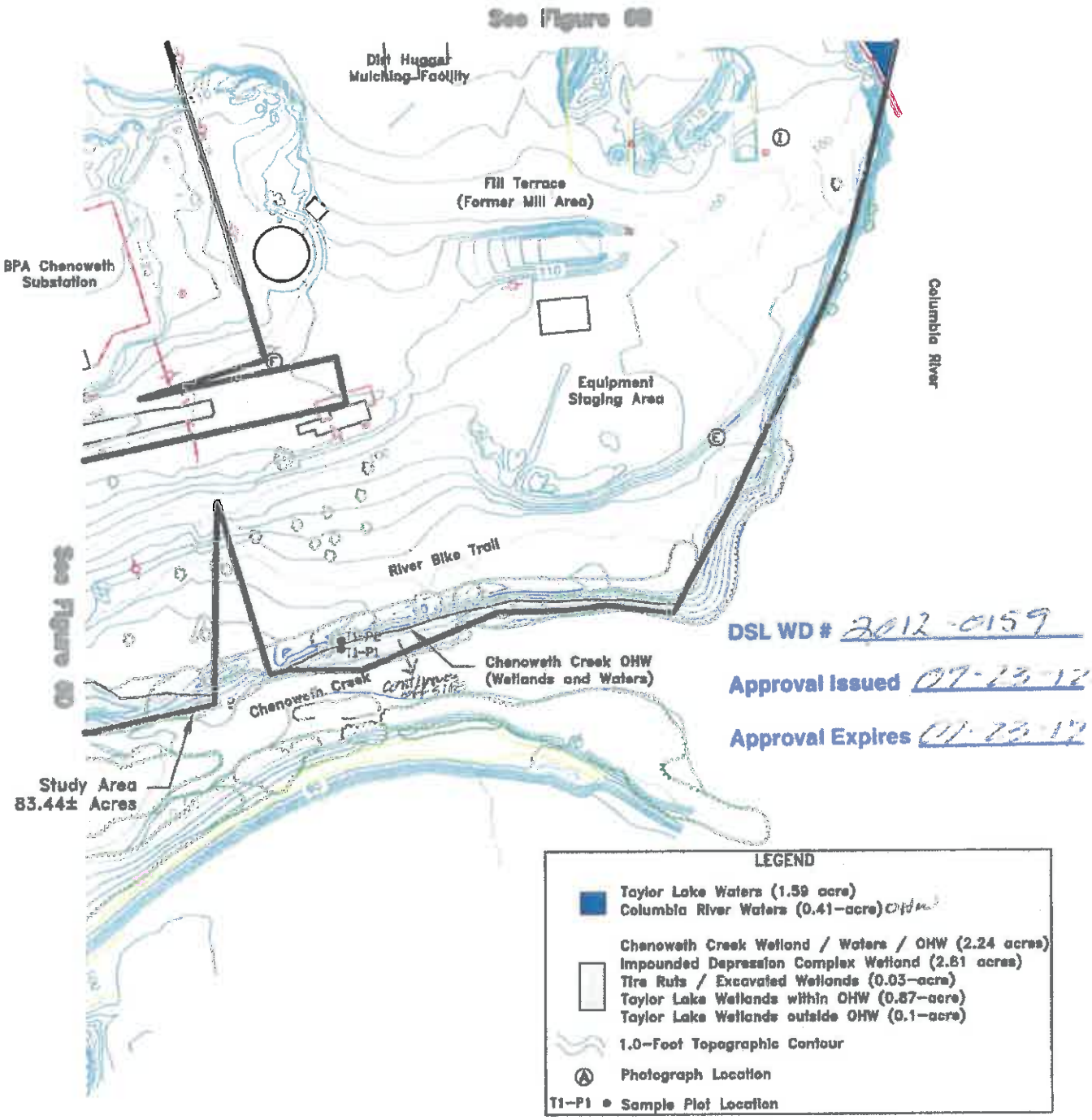
Source: Adapted from POTD and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION FOR THE NORTH CHENOWETH PROPERTY The Dalles, Wasco County, Oregon	EXISTING CONDITIONS, NORTHWEST QUARTER	FIGURE 6A
GRAPHIC SCALE 0 90 180 (IN FEET) 1 inch = 180 ft.	April 2012		



Source: Adapted from POTD and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION FOR THE NORTH CHENOWETH PROPERTY The Dalles, Wasco County, Oregon	EXISTING CONDITIONS, NORTHEAST QUARTER
GRAPHIC SCALE 0 90 180 (IN FEET) 1 inch = 180 ft.	April 2012	FIGURE 6B



NOTE: Wetland and upland conditions within the study area determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot.

Source: Adapted from POTD and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

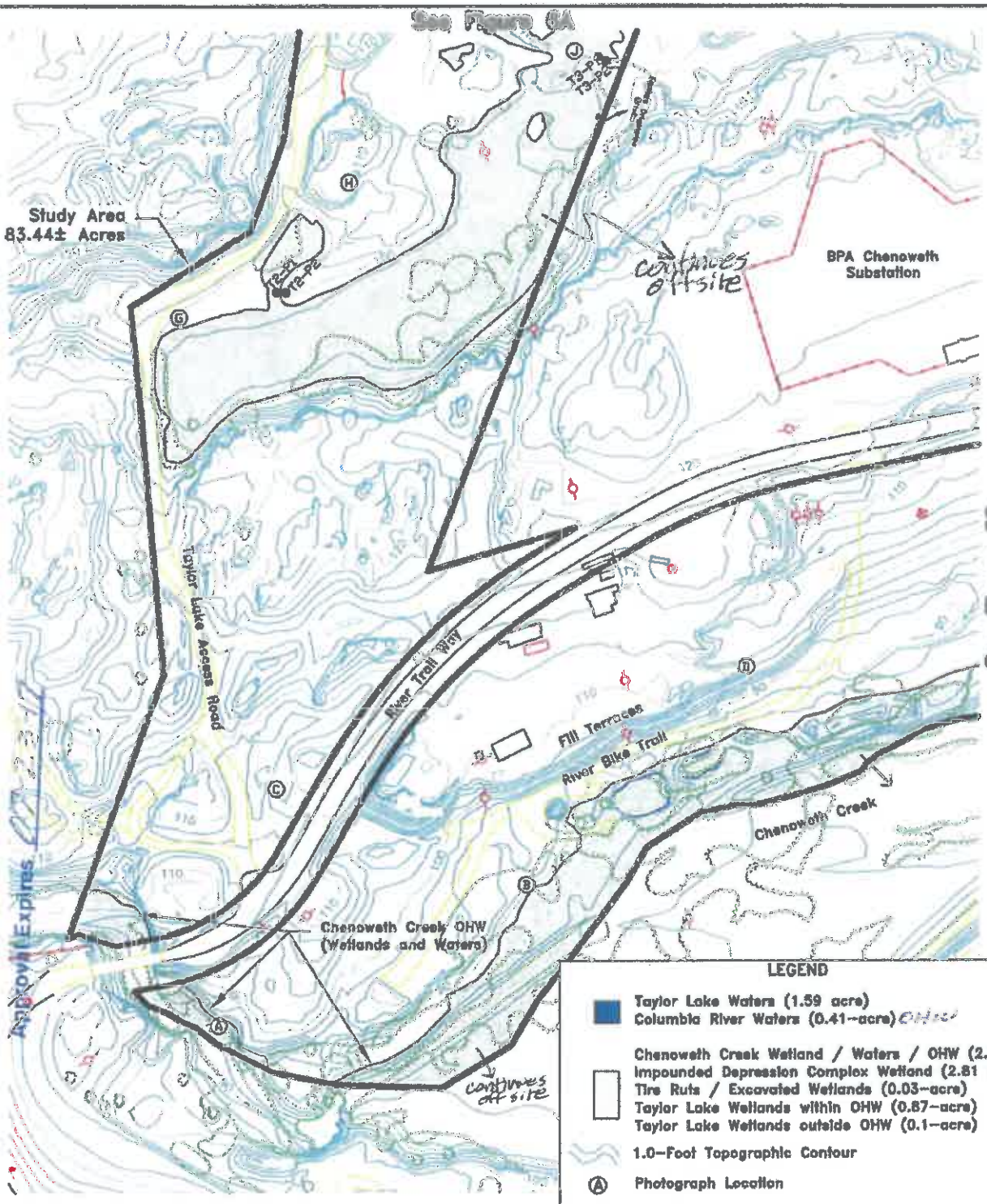
GRAPHIC SCALE
0 90 180
(IN FEET)
1 inch = 180 ft.

WETLAND DELINEATION FOR THE NORTH CHENOWETH PROPERTY
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, SOUTHEAST QUARTER

April 2012

FIGURE 6C



NOTE: Wetland and upland conditions within the study area determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot.

Source: Adapted from POTD and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 90 180
(IN FEET)
1 inch = 180 ft.

WETLAND DELINEATION FOR THE NORTH CHENOWETH PROPERTY
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, SOUTHWEST QUARTER

April 2012

FIGURE 6D

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

March 6, 2015

Golden NW Aluminum
Attn: Howard Anderson
3313 West Second Street
The Dalles, OR 97058

Re: WD #2014-0399; Wetland Delineation Report for Site 1 of
The Dalles Industrial Area, Wasco County;
T 2N R 13E S 20 TL 900; S 29 TL 100

Dear Mr. Anderson:

The Department of State Lands has reviewed the wetland delineation report prepared by Terra Science, Inc. for the site referenced above. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figures A.6, A.6a and A.6b of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps. Within the study area, five wetlands (totaling approximately 2.12 acres) and Chenoweth Creek were identified.

The creek and all wetlands except the remnant irrigation ditch are subject to the permit requirements of the state Removal-Fill Law. The remnant irrigation ditch is artificially created in upland and does not contain fish; therefore, per OAR 141-085-0515(8) it is not state-jurisdictional. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the 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, Chenoweth Creek is an essential salmonid stream; therefore, fill or removal of any amount of material within the OHWL and hydrologically-connected wetlands (South Depression Complex and Chenoweth Creek Scour Channel) may require a state permit.

The estimated OHWL of Chenoweth Creek is mapped on Figure A.6a. The mapping accuracy of the OHWL is 5 feet, which does not meet our Department's accuracy standard of 3.28 feet. Therefore, any impacts within approximately 1.7 feet of the OHWL may require additional mitigation.

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

March 6, 2015

Golden NW Aluminum
Attn: Howard Anderson
3313 West Second Street
The Dalles, OR 97058

Re: WD #2014-0400; Wetland Delineation Report for Site 2 of
The Dalles Industrial Area,
Wasco County; T 2N R 13E S 21 TL 600; S 28 TL 701

Dear Mr. Anderson:

The Department of State Lands has reviewed the wetland delineation report prepared by Terra Science, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figures B.6, B.6a and B.6b of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps. Within the study area, 22 wetlands (totaling approximately 2.81 acres) and Chenoweth Creek were identified.

The wetlands and Chenoweth Creek are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the 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). The estimated OHWL is mapped on Figure B.6a.

However, Chenoweth Creek is an essential salmonid stream; therefore, fill or removal of any amount of material within the OHWL and the hydrologically-connected scour channel wetland 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 503-986-5300 if you have any questions.

Sincerely,

for Lynne McAllister
Aquatic Resource Planner

Approved by _____
Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: David Monnin, Terra Science, Inc.
Wasco County Planning Department
The Dalles Planning Department
Mike Turaski, Corps of Engineers
Heidi Hartman, DSL
Kirk Jarvie, DSL

RECEIVED

SEP 3 2014

DEPARTMENT OF STATE LANDS

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 the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279 Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.

For new credit card payment option, see DSL web site.

REMITTANCE $ 396.-

☐ Applicant ☒ Owner Name, Firm and Address: Golden NW Aluminum Attn: Howard Anderson 3313 West Second Street The Dalles, Oregon 97058	Business phone # 541.298.0821 Mobile phone # (optional) 541.308.6018 FAX # N/A E-mail: andersengroupllc@yahoo.com
☐ Authorized Legal Agent, Name and Address:	Business phone # E-mail:

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 confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Howard Anderson Signature: [redacted]

Date: 8-28-14 Special instructions regarding site access: Contact Port of The Dalles and Consultant prior to site access.

Project and Site Information

Project Name: Site 2.	Latitude: 45.63548° °N Longitude: -121.20689° W
Proposed Use: Preliminary site assessment and resource inventory.	Tax Map # 02N-13E-21 and 28
Project Street Address (or other descriptive location): Site is bound by Taylor Lake dirt access road then vacant lands to the east, Taylor Lake and the Crates Point Wildlife Area to the north and Union Pacific rail lines to the west. City: The Dalles County: Wasco	Township 02N Range 13E Section 21 & 28 QQ CA, CC, CD (Sec. 21) BB, BC (Sec. 28) Tax Lot (s) 600 (Sec. 21) and 701 (Sec. 28) Waterway: Chenoweth Creek River Mile: 1 NWI Quad(s): The Dalles, North, Oregon

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Terra Science, Inc. Attn: David Monnin, PWS 4710 Southwest Kelly Avenue, Suite 100 Portland, Oregon 97239	Phone # (503) 274-2100 Mobile phone # N/A FAX # (503) 274-2101 E-mail: david@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: [redacted] Date: 8/28/14

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No	Study Area size: 42.73± acres	Wetland Acreage: 2.77 acres Waters Acreage: 0.64-acre

Check Box Below if Applicable: **Fees:**

☐ R-F permit application submitted		☒	Fee payment submitted $396.00
☐ Mitigation bank site		☐	Fee ($100) for re-submittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)			Name of Payor: Northwest Aluminum Company
☐ Industrial Land Certification Program Site			
Other Information:	**Y**	**N**	
Has previous delineation/application been made on parcel?	☐	☒	If known, previous DSL # N/A
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

For Office Use Only

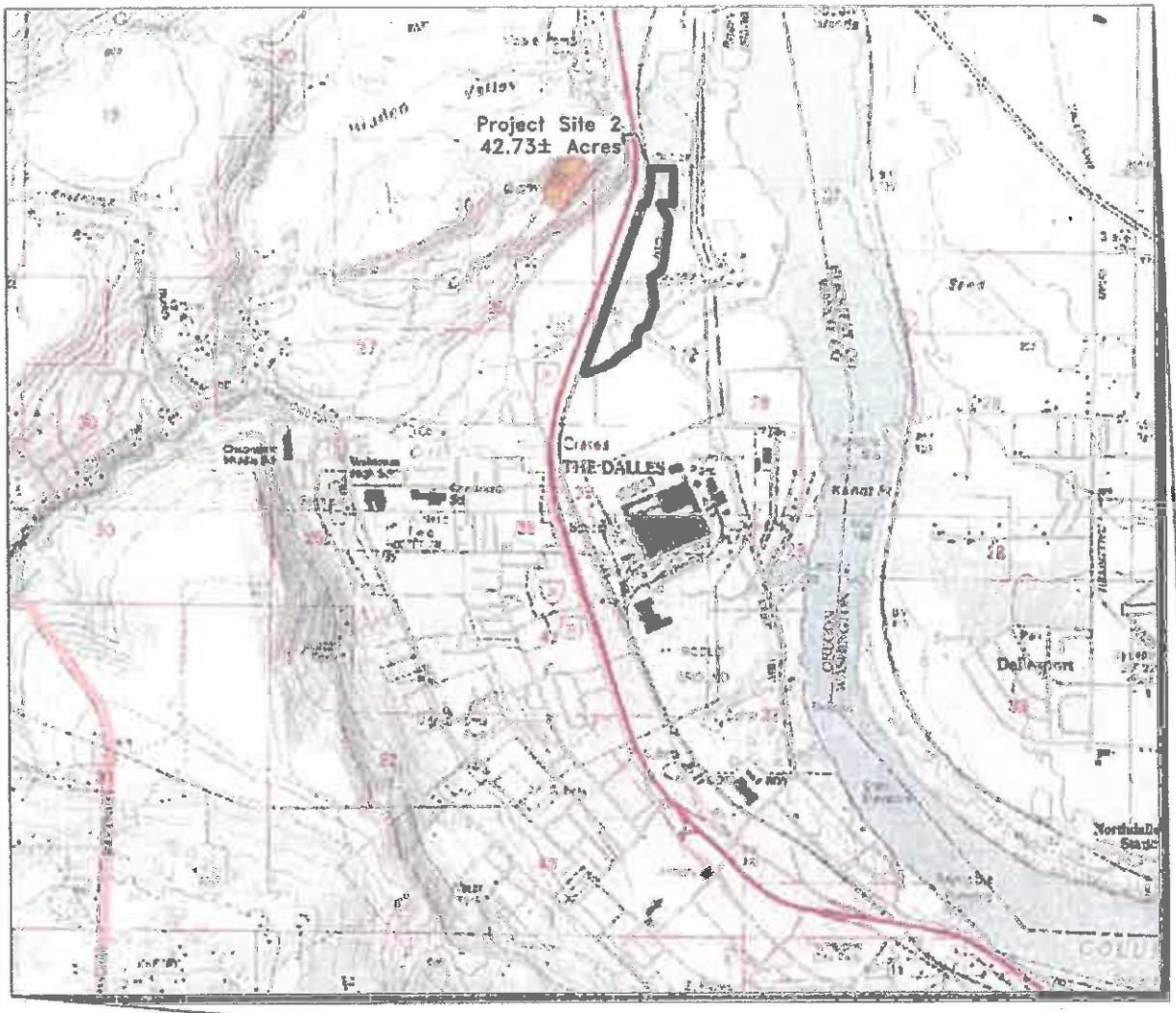
DSL Reviewer: LM Fee Paid Date: 9 / 3 / 14 DSL WD # 2014-0400

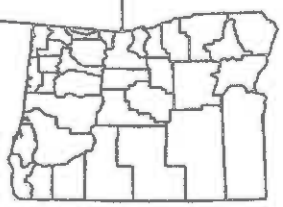
Date Delineation Received: 9 / 3 / 14 DSL Project # _____ DSL Site # _____

Scanned: ☒ Final Scan: ☐ DSL WN # _____ DSL App. # _____

Port of The Dalles, Site 2

DIRECTIONS: From Portland, take Interstate I-84 west to The Dalles River Road Exit 82 and proceed east (left) onto River Road for approximate 0.25-mile then turn north onto River Trail Way. Site 2 is located between the gravel Taylor Access Road and Union Pacific railroad right-of-way. As privately owned property, access is restricted and requires authorization and escort from individual landowners and / or consultants. The centroid of Site 2 is approximated at 45.63548° North and -121.20889° West.





Source: Adopted from U.S.G.S. Topographic Quads.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 1250 2500
1 inch = 2500 ft.

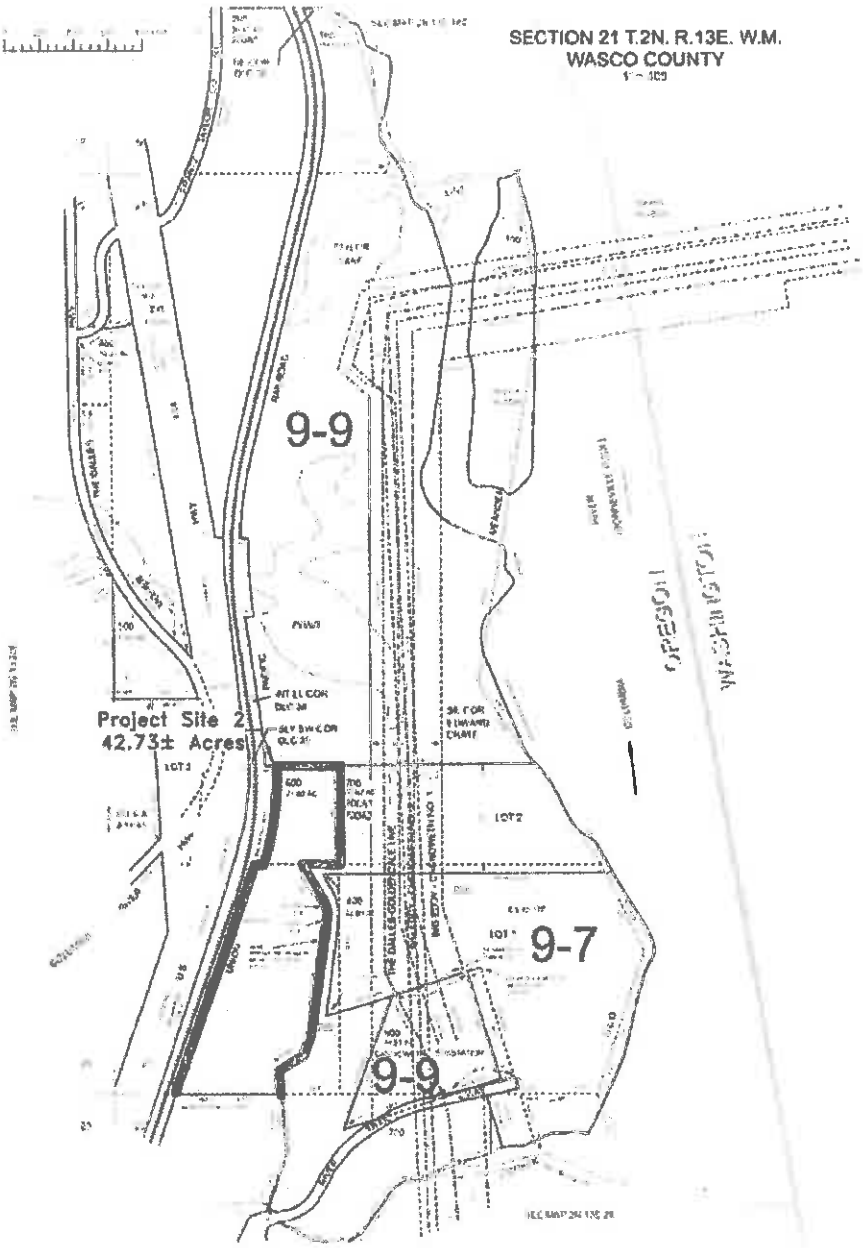
PORT OF THE DALLES REGIONAL
WETLAND DELINEATION REPORT, SITE 2
The Dalles, Wasco County, Oregon

VICINITY MAP

August 2014

FIGURE B.1

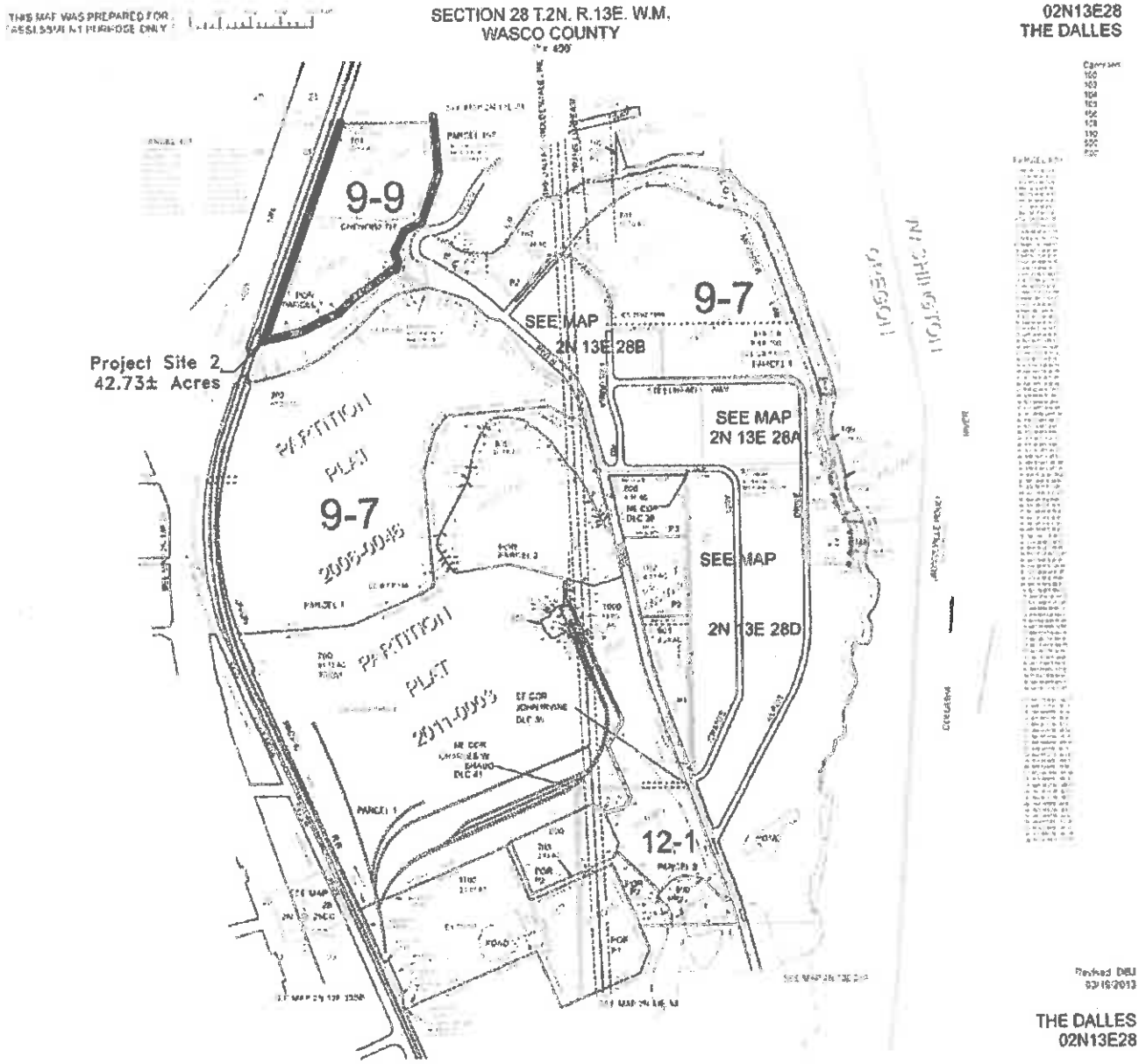
NOTE: The 42.73± acre Site 2 consists of Tax lot 600 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 21 and Tax lot 701 on Township 02 North, Range 13 East Section 28, Willamette Meridian.



Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 21, W.M.

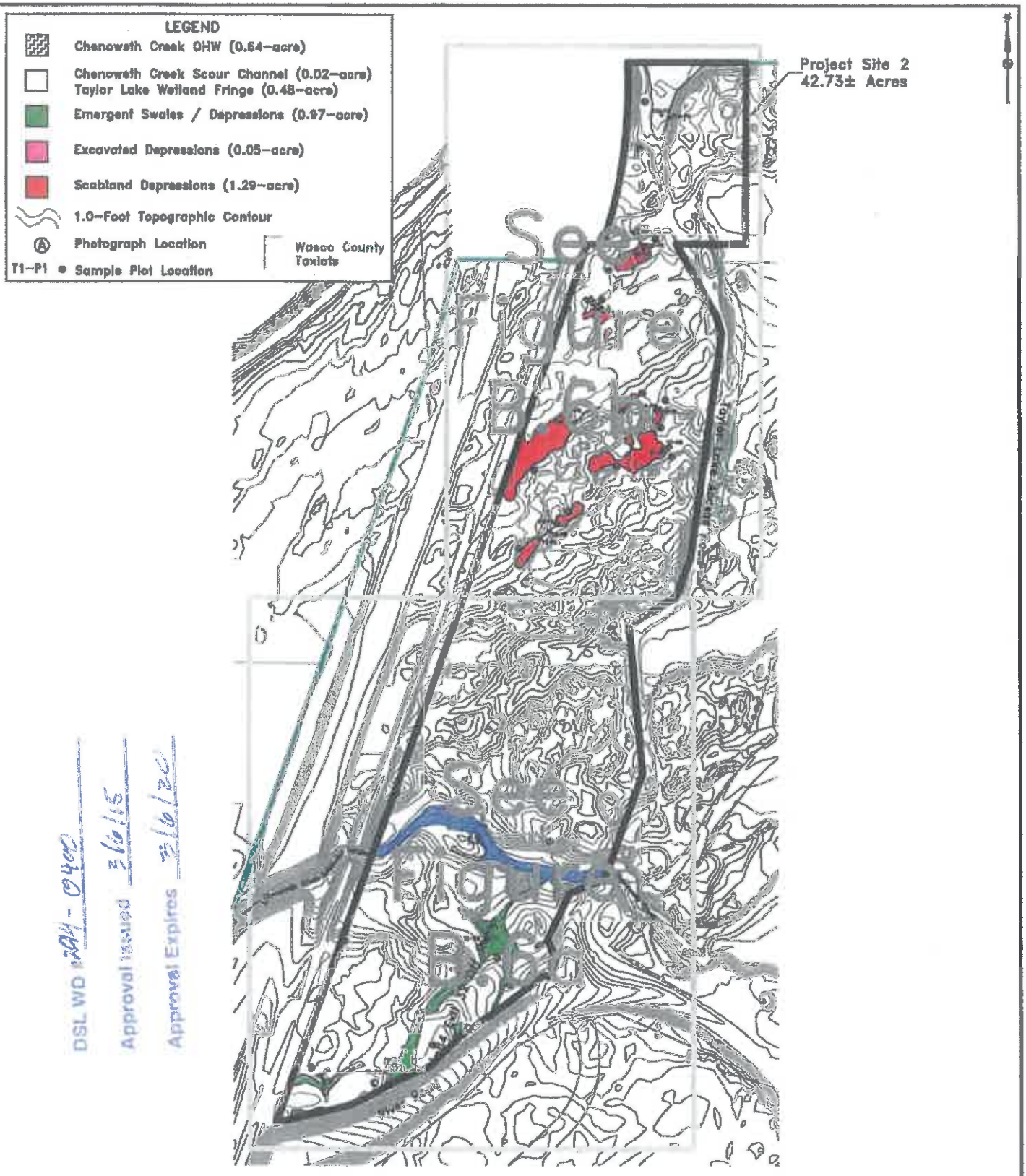
Terra Science, Inc. Soil, Water, & Wetland Consultants	PORT OF THE DALLES REGIONAL WETLAND DELINEATION REPORT, SITE 2 The Dalles, Wasco County, Oregon	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	August 2014	FIGURE B.2a

NOTE: The 42.73± acre Site 2 consists of Tax lot 600 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 21 and Tax lot 701 on Township 02 North, Range 13 East Section 28, Willamette Meridian.



Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 28, W.M.

Terra Science, Inc. Soil, Water, & Wetland Consultants	PORT OF THE DALLES REGIONAL WETLAND DELINEATION REPORT, SITE 2 The Dalles, Wasco County, Oregon	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	August 2014	FIGURE B.2b



Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

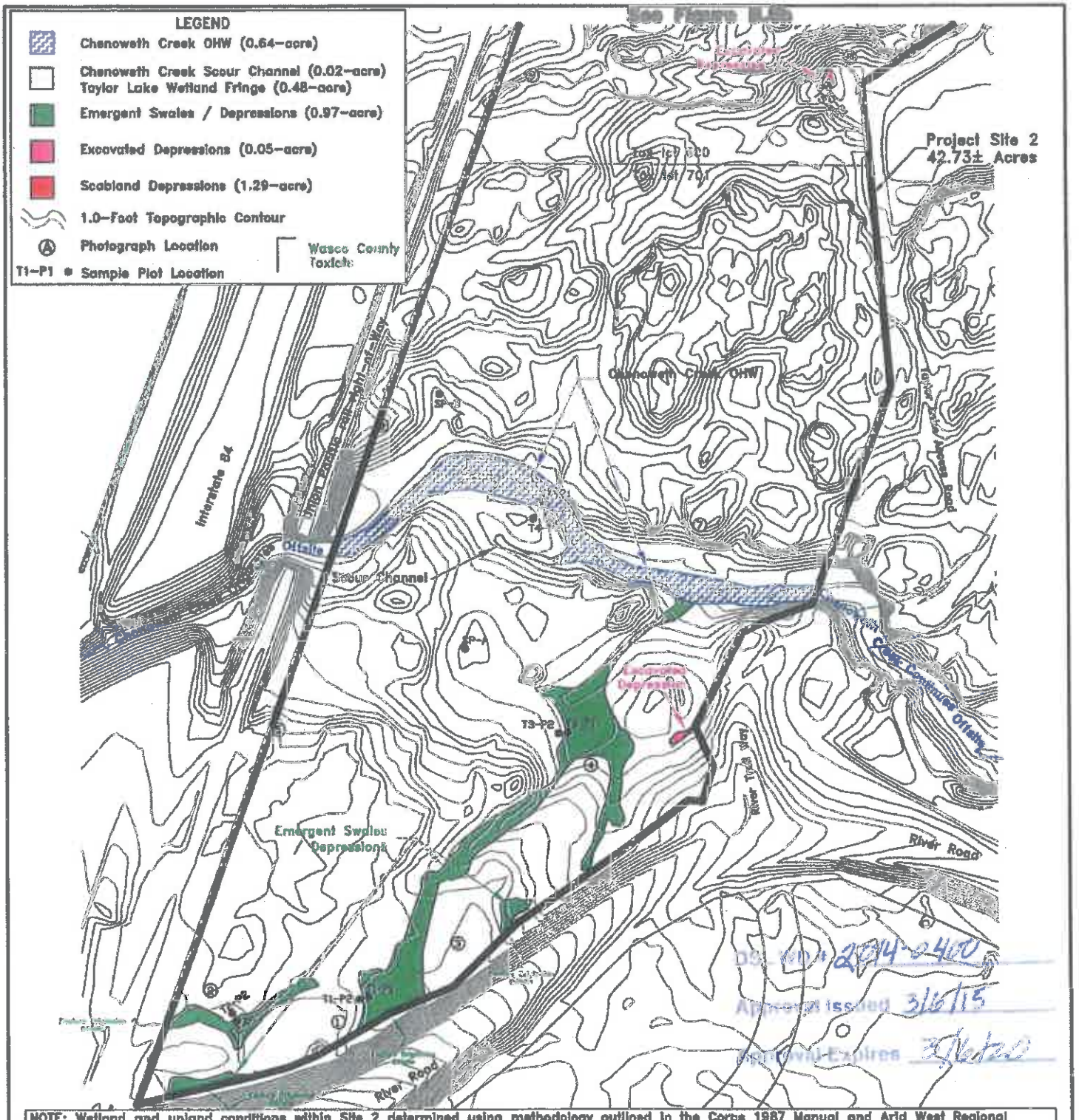
GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 2 (DSL WD#2014-0400 & Corps NWP 2014-371-2)
The Dalles, Wasco County, Oregon

July 2014 (UPDATE)

EXISTING CONDITIONS INDEX

FIGURE B.6



NOTE: Wetland and upland conditions within Site 2 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, OHW and sample plots are accurate to within ±1.0 foot. See delineation report Appendix B for greater discussion regarding specific feature characteristics and boundary determinations.

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

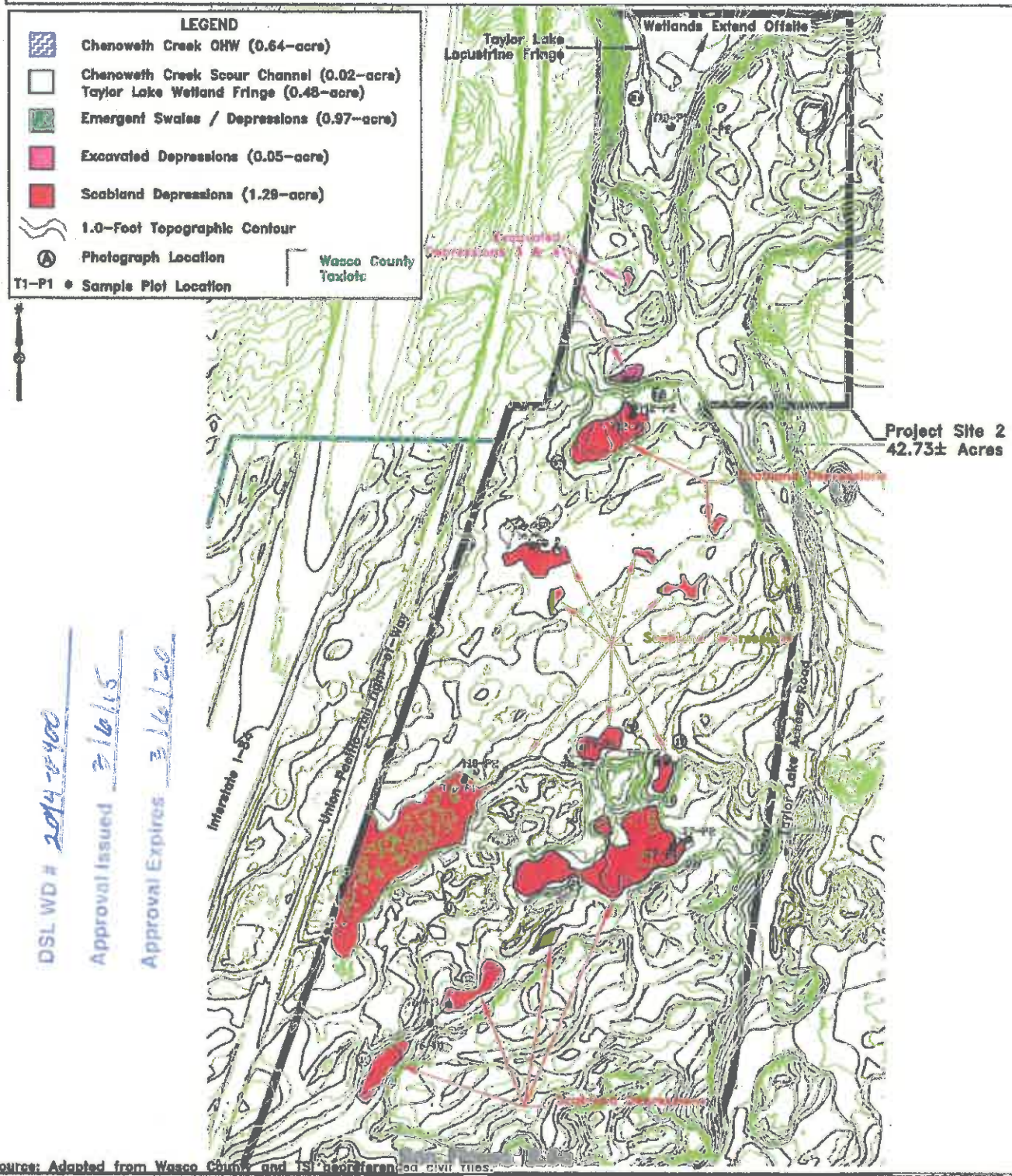
WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 2
(DSL WD#2014-0400 & Corps NWP 2014-371-2)
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS SOUTH

July 2014 (UPDATED)

FIGURE B.6a

NOTE: Wetland and upland conditions within Site 2 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, OHW and sample plots are accurate to within ±1.0 foot. See delineation report Appendix B for greater discussion regarding specific feature characteristics and boundary determinations.



DSL WD # 2014-0400
Approval Issued 3/6/15
Approval Expires 3/4/20

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 100 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 2
(DSL WD#2014-0400 & Corps NWP 2014-371-2)
The Dalles, Wasco County, Oregon

July 2014 (UPDATED)

EXISTING CONDITIONS NORTH

FIGURE B.6b

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 503-986-5300 if you have any questions.

Sincerely,

Lynne McAllister
Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: David Monnin, Terra Science, Inc.
Wasco County Planning Department
The Dalles Planning Department
Mike Turaski, Corps of Engineers
Heidi Hartman, DSL
Kirk Jarvie, DSL

#6558 WD

RECEIVED

SEP 3 2014

DEPARTMENT OF STATE LANDS

396

REMITTANCE

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 the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279 Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.
For new credit card payment option, see DSL web site.

☐ Applicant ☒ Owner Name, Firm and Address: Golden NW Aluminum Attn: Howard Anderson 3313 West Second Street The Dalles, Oregon 97058	Business phone # 541.298.0821 Mobile phone # (optional) 541.308.6018 FAX # N/A E-mail: andersengroupllc@yahoo.com
☐ Authorized Legal Agent, Name and Address:	Business phone # Mobile phone # E-mail:

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 confirming the information in the report, after prior notification to the primary contact.
Typed/Printed Name: Howard Anderson Signature: Howard C Anderson
Date: 8-29-14 Special instructions regarding site access: Contact Port of The Dalles and Consultant prior to site access.

Project and Site Information

Project Name: Site 1.			Latitude: 45.634470° °N	Longitude: -121.213776° W
Proposed Use: Preliminary site assessment and resource inventory.			Tax Map # 02N-13E-20 and 29	
Project Street Address (or other descriptive location):	Township 02N	Range 13E	Section 20 & 29	QQ DD (Sec. 20) AA, AD (Sec. 29)
Site is bound by Interstate I-84 to the east, River Road to the south and Highway 30 / Old Columbia Highway to the west.	Tax Lot (s) 900 (Sec. 20) and 100 (Sec. 29)			
City: The Dalles County: Wasco	Waterway: Chenoweth Creek			River Mile: 1.5±
	NWI Quad(s): The Dalles, North, Oregon			

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Terra Science, Inc. Attn: David Monnin, PWS 4710 Southwest Kelly Avenue, Suite 100 Portland, Oregon 97239	Phone # (503) 274-2100 Mobile phone # N/A FAX # (503) 274-2101 E-mail: david@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Date: 8/28/14

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No	Study Area size: 51.13± acres	Wetland Acreage: ~~1.94~~ acre 2.12 Waters Acreage: 1.37 acre

Check Box Below if Applicable:

☐ R-F permit application submitted	**Fees:**	
☐ Mitigation bank site	☒ Fee payment submitted	$396.00
☐ Wetland restoration/enhancement project (not mitigation)	☐ Fee ($100) for re-submittal of rejected report	
☐ Industrial Land Certification Program Site	Name of Payor: Northwest Aluminum Company	

Other Information:

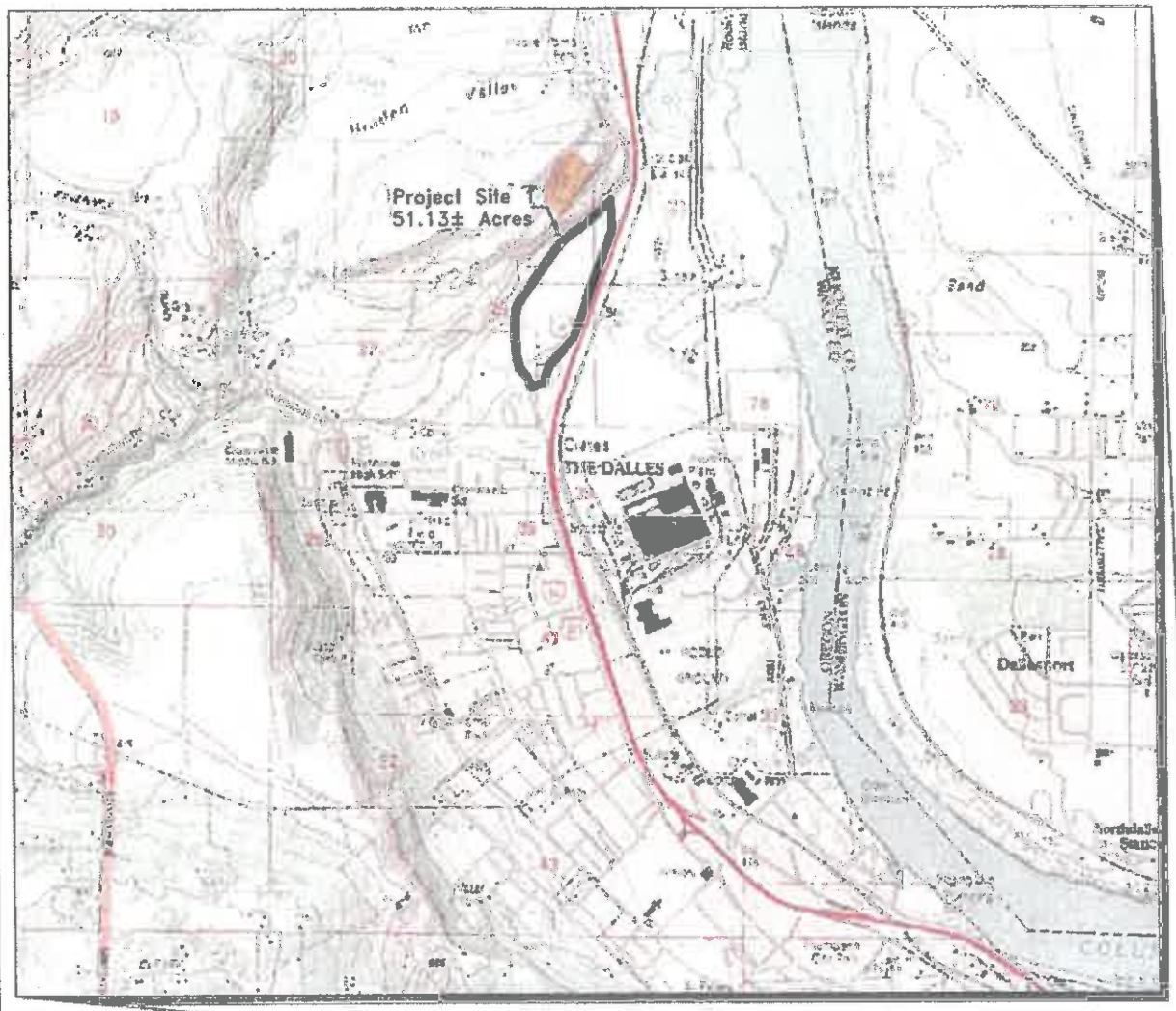
	Y	N	
Has previous delineation/application been made on parcel?	☐	☒	If known, previous DSL # N/A
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

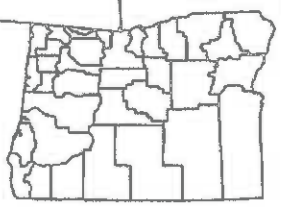
For Office Use Only

DSL Reviewer: LM	Fee Paid Date: 9/3/14	DSL WD # 2014-0399
Date Delineation Received: 9/3/14	DSL Project #	DSL Site #
Scanned: ☒ Final Scan: ☐	DSL WN #	DSL App. #

Port of The Dalles, Site 1

DIRECTIONS: From Portland, take Interstate I-84 west to The Dalles River Road Exit 82 and proceed west (right) onto River Road. Site 1 is located between Old Columbia River Highway and Interstate I-84. As privately owned property, access is restricted and requires authorization and escort from individual landowners and / or consultants. The centroid of Site 1 is approximated at 45.63447° North and -121.21377° West.





Source: Adopted from U.S.G.S. Topographic Quads.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 1250 2500
1 inch = 2500 ft.

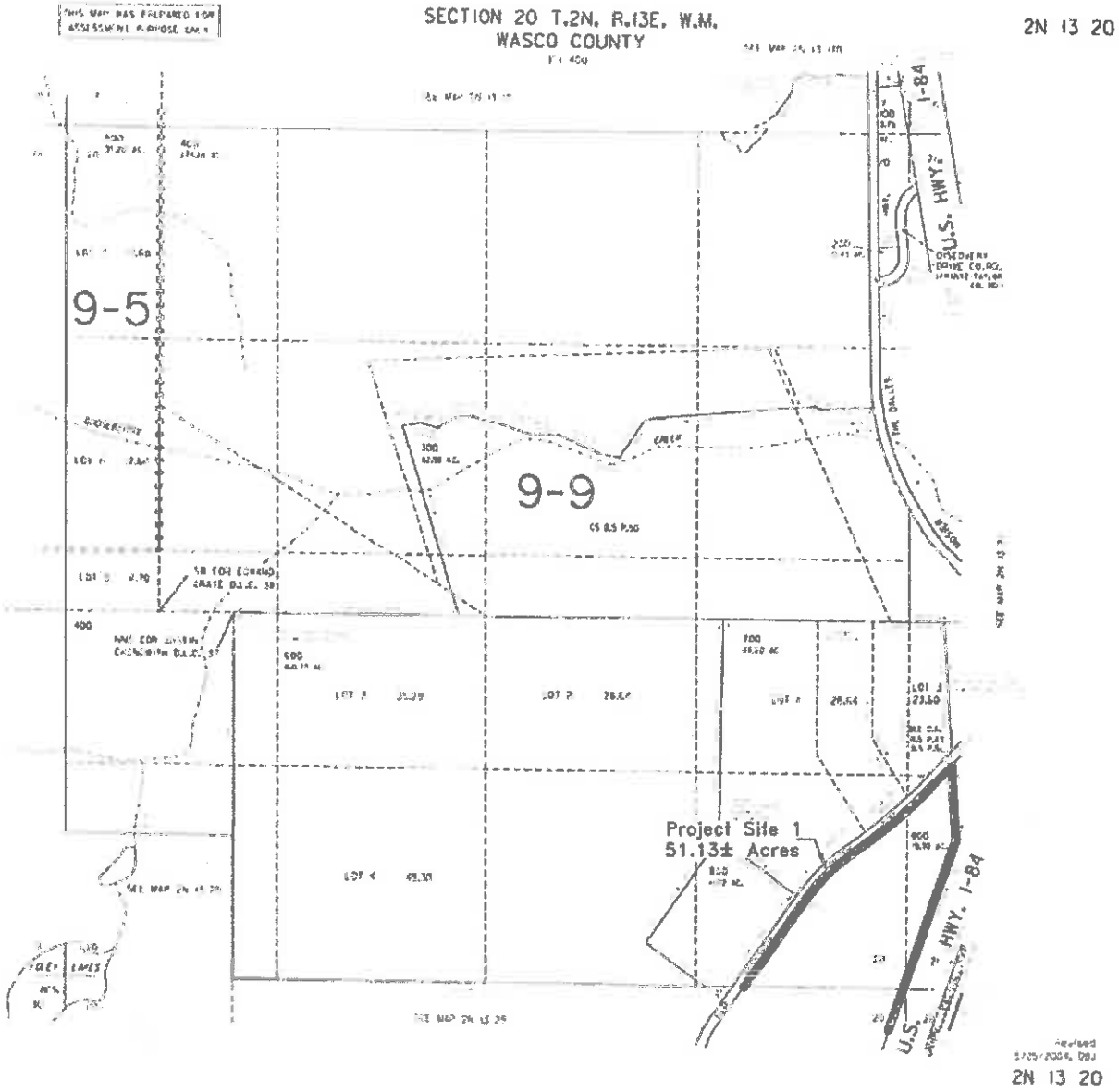
PORT OF THE DALLES REGIONAL
WETLAND DELINEATION REPORT, SITE 1
The Dalles, Wasco County, Oregon

VICINITY MAP

August 2014

FIGURE A.1

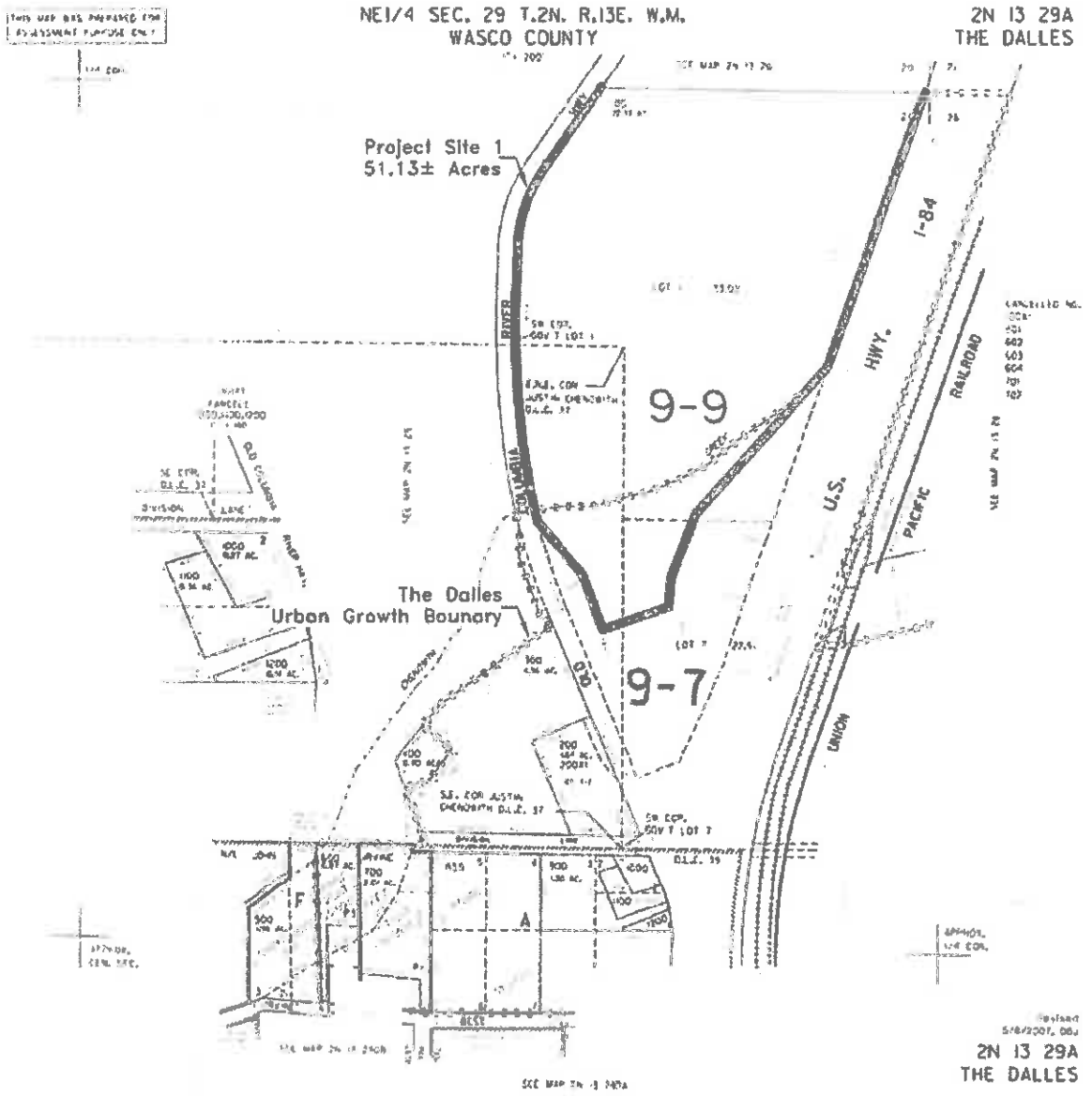
NOTE: The 51.13± acre Site 1 consists of Tax lot 900 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 20 and Tax lot 100 (including portion of ODOT Lot 7) on Township 02 North, Range 13 East Section 29A, Willamette Meridian.



Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 20, W.M.

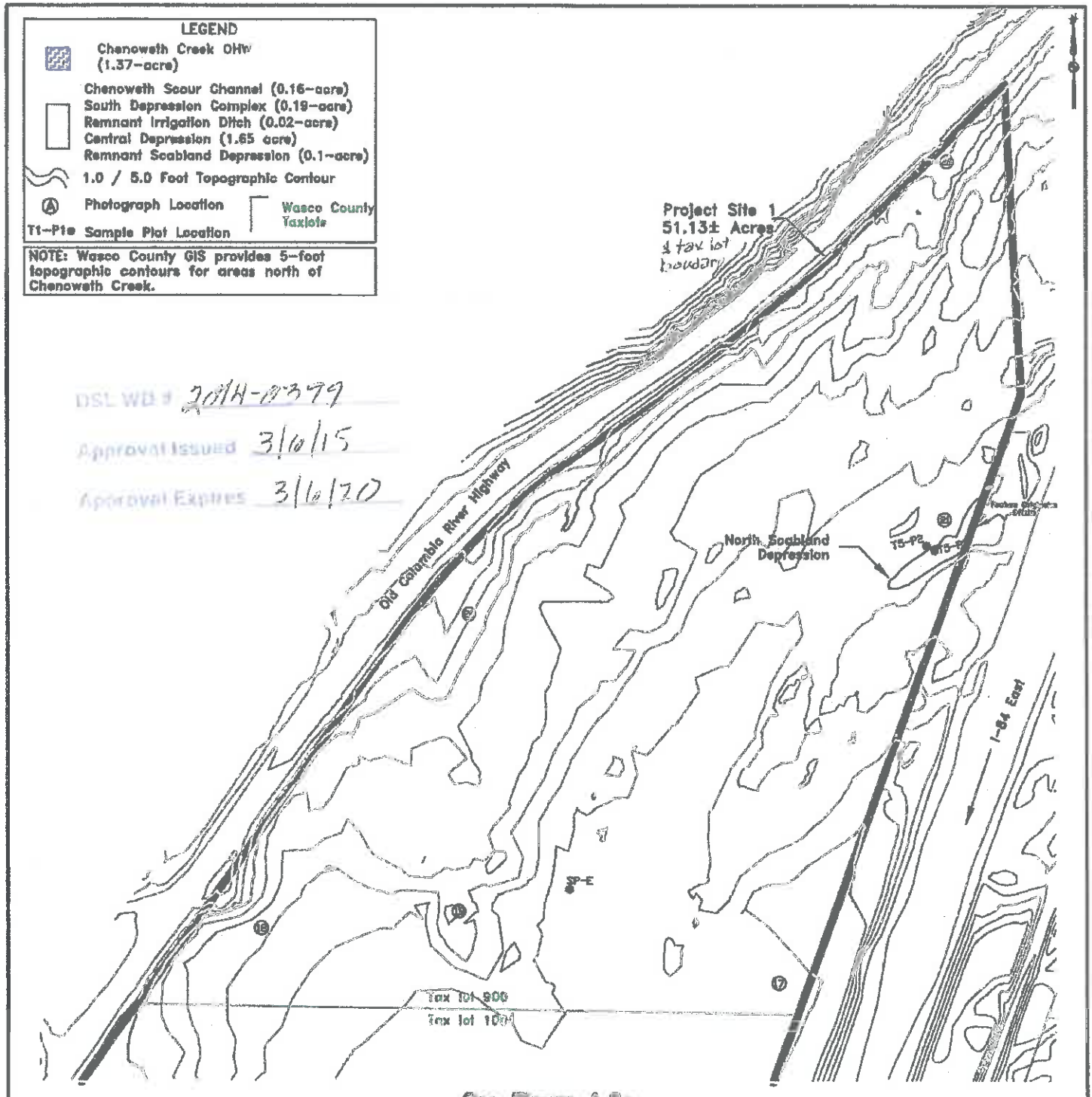
Terra Science, Inc. Soil, Water, & Wetland Consultants	PORT OF THE DALLES REGIONAL WETLAND DELINEATION REPORT, SITE 1 The Dalles, Wasco County, Oregon	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	August 2014	FIGURE A.2a

NOTE: The 51.13± acre Site 1 consists of Tax lot 900 on Wasco County Assessor's map Township 02 North, Range 13 East, Section 20 and Tax lot 100 (including portion of ODOT Lot 7) on Township 02 North, Range 13 East Section 29A, Willamette Meridian.



Source: Adapted from Wasco County Assessor's map T. 02N. R. 13E. Sec. 29A, W.M.

Terra Science, Inc. Soil, Water, & Wetland Consultants	PORT OF THE DALLES REGIONAL WETLAND DELINEATION REPORT, SITE 1 The Dalles, Wasco County, Oregon	TAX MAP
GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	August 2014	FIGURE A.2b



NOTE: Wetland and upland conditions within Site 1 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot. Access and mapping protocol for Chenoweth Creek results in wetland boundaries accurated to ±5.0 feet. See delineation report Appendix A for greater discussion regarding specific feature characteristics and boundary determinations.

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

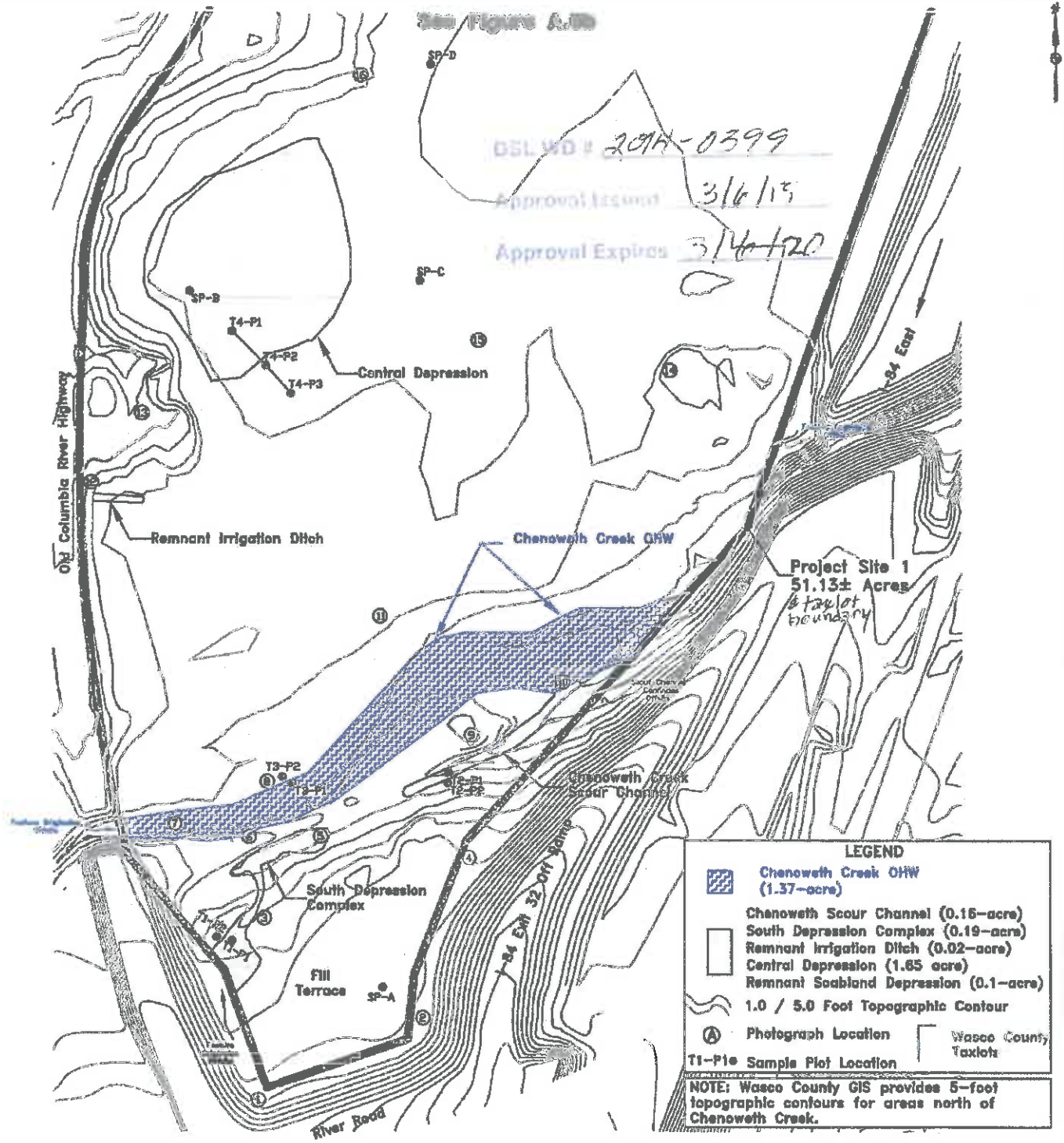
GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 1
(DSL WD#2014-0399 & Corps NWP 2014-371-1)
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS NORTH

July 2014 (UPDATE)

FIGURE A.6b



NOTE: Wetland and upland conditions within Site 1 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot. Access and mapping protocol for Chenoweth Creek results in wetland boundaries accurated to ±5.0 feet. See delineation report Appendix A for greater discussion regarding specific feature characteristics and boundary determinations.

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

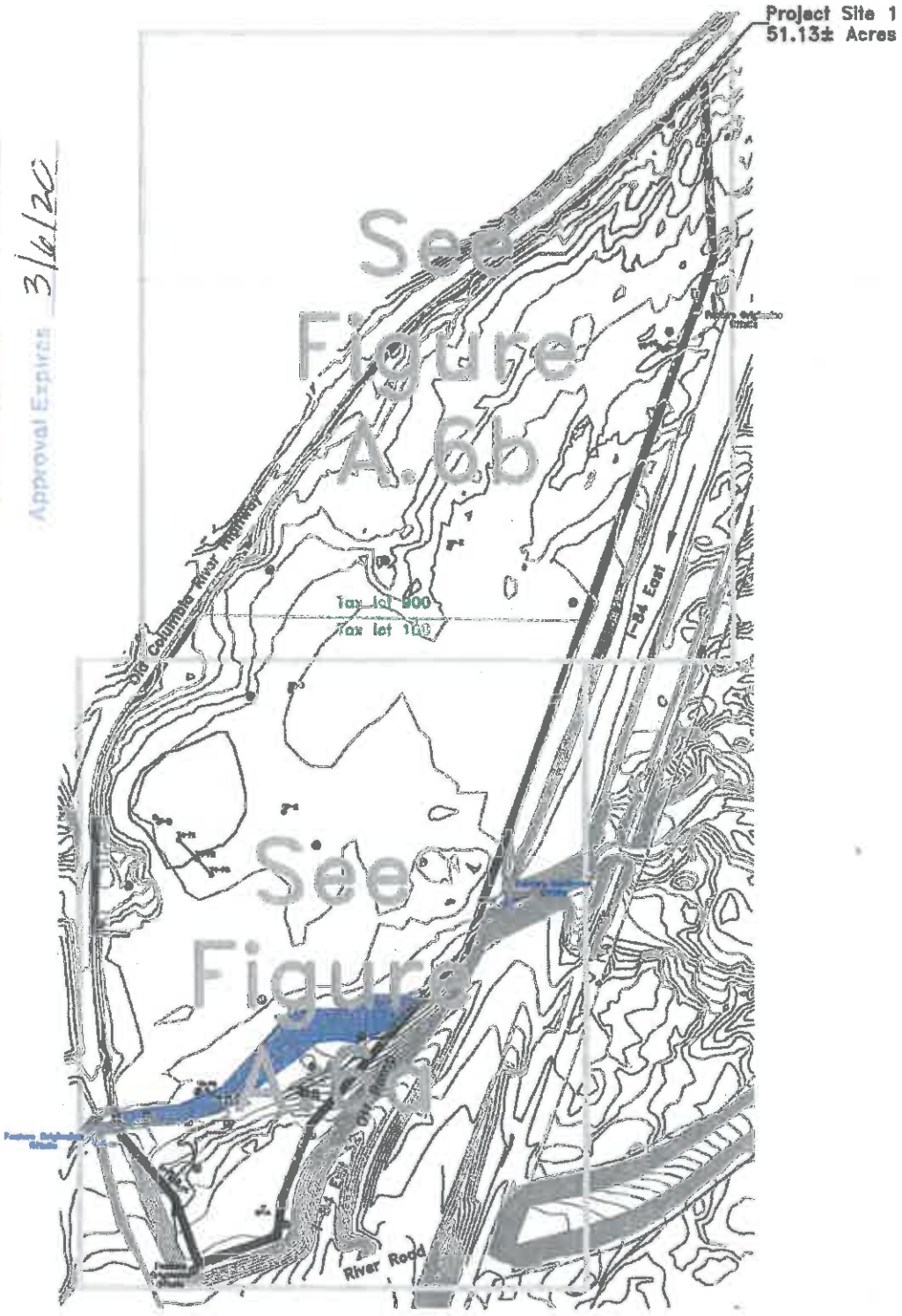
WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 1 (DSL WD#2014-0399 & Corps NWP 2014-371-1)
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS SOUTH

July 2014 (UPDATE)

FIGURE A.6a

DSL WD# 2014-0399
Approval Issued 3/6/15
Approval Expires 3/6/20



Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 1
(DSL WD#2014-0399 & Corps NWP 2014-371-1)
The Dalles, Wasco County, Oregon

July 2014 (UPDATE)

EXISTING CONDITIONS INDEX

FIGURE A.6

Oregon
Kate Brown, Governor

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

June 2, 2015

Golden NW Aluminum
Attn: Howard Anderson
3313 West Second Street
The Dalles, OR 97058

Re: Correction: WD #2014-0401; Wetland Delineation Report for Site 5 of The Dalles Industrial Area, Wasco County; T2N R13E Sec. 28, Tax Lot 700

Dear Mr. Anderson:

The concurrence letter dated March 5, 2015 for the wetland delineation WD # 2014-0401 contained an error. That letter misidentified the total number and area of wetlands delineated on Tax Lot 700. Please see the attached revised Figure E.6a and Table E.1 for the location and area of the 15 wetlands identified within the Site 5 study area (totaling approximately 0.93 acres). This corrected jurisdictional determination remains valid for five years from the date of the date of the original letter (March 5, 2015), unless new information necessitates a revision.

I apologize for any confusion this mistake may have caused, and thank you again for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

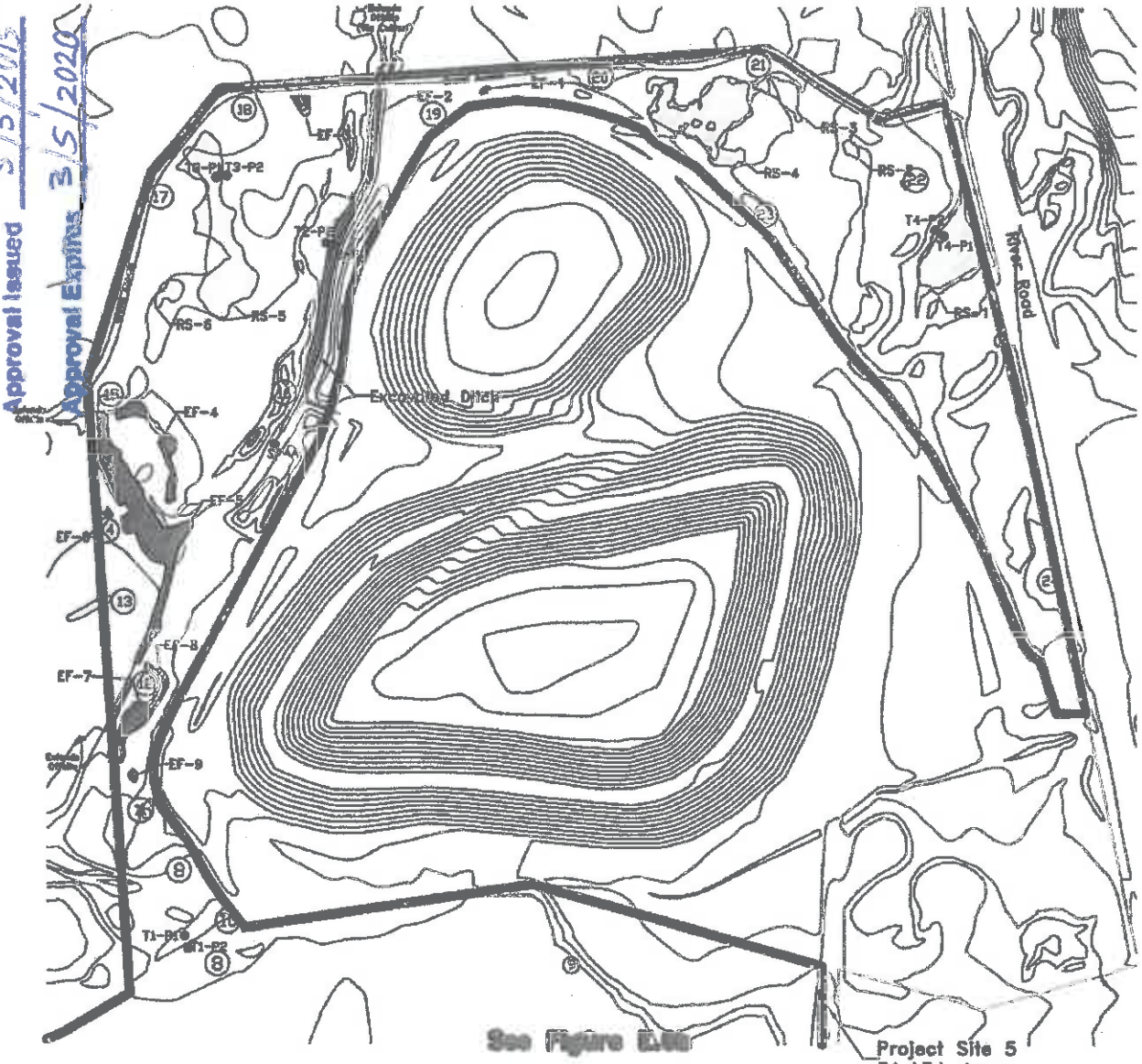
Peter Ryan, PWS
Jurisdiction Coordinator

Enclosures

ec: David Monnin, Terra Science, Inc.
City of The Dalles Planning Department
Mike Turaski, Corps of Engineers
Heidi Hartman, DSL
Kirk Jarvie, DSL

NOTE: Wetland and upland conditions within Site 5 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot. See delineation report Appendix E for greater discussion regarding specific feature characteristics and boundary determinations.

DSL WD # 2014-0401 Approval Issued 3/5/2015 Approval Expires 3/5/2020



LEGEND

- Excavated PEMEx Wetlands (0.38-acre)
- Remnant Scabland PEMEh Wetlands (0.55-acre)
- Culvert
- 2.0-Foot Topographic Contour
- Photograph Location
- T1-P1 Sample Plot Location
- Wasco County Taxlots

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 5 (DSL WD#2014-0401 & USACE NWP 2014-371-2)
The Dalles, Wasco County, Oregon

June 2015 (UPDATE)

EXISTING CONDITIONS, NORTH

Revised 6/2/2015

FIGURE E.6a

Table E.1. Delineation summary of identified features within Site 5.

Feature	Verified Cowardin Classification	Verified HGM Classification	DSL Jurisdiction	USACE Jurisdiction	Acreage
Remnant Scabland Depressions	**PEME / h**	**F / D**	**Yes**	**Yes**	**0.55-acre**
Remnant Scabland Depression 1 (RS-1)					0.12-acre
Remnant Scabland Depression 2 (RS-2)					<0.01-acre
Remnant Scabland Depression 3 (RS-3)					0.03-acre
Remnant Scabland Depression 4 (RS-4)					0.18-acre
Remnant Scabland Depression 5 (RS-5)					0.2-acre
Remnant Scabland Depression 6 (RS-6)					0.02-acre
Excavated Ditch and Depressions	**PEMEx**	**S / F**	**Yes**	**Yes**	**0.38-acre**
Excavated Feature 1 (EF-1)					<0.01-acre
Excavated Feature 2 (EF-2)					0.1-acre
Excavated Feature 3 (EF-3)					<0.01-acre
Excavated Feature 4 (EF-4)					0.04-acre
Excavated Feature 5 (EF-5)					0.19-acre
Excavated Feature 6 (EF-6)					<0.01-acre
Excavated Feature 7 (EF-7)					<0.01-acre
Excavated Feature 8 (EF-8)					0.05-acre
Excavated Feature 9 (EF-9)					<0.01-acre
DSL and USACE Regulated Wetland					**0.93-acre**

Cowardin Modifiers:
PEMC / h: Palustrine, Emergent, Seasonally flooded / impounded
PEMCx: Palustrine, Emergent, Seasonally Flooded, excavated

HGM Modifiers:
F: Flats
S: Slope
D: Depression

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

March 5, 2015

Golden NW Aluminum
Attn: Howard Anderson
3313 West Second Street
The Dalles, OR 97058

Re: WD #2014-0401; Wetland Delineation Report for Site 5 of The Dalles Industrial Area, Wasco County; T2N R13E Sec. 28, Tax Lot 700

Dear Mr. Anderson:

The Department of State Lands has reviewed the wetland delineation report prepared by Terra Science, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland boundaries as mapped in revised Figures E.6, E.6a and E.6b of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps. Within the study area, 14 wetlands (totaling approximately 1.09 acres) were identified.

The wetlands are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetlands.

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 503-986-5300 if you have any questions.

Sincerely,

Lynne McAllister
Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: David Monnin, Terra Science, Inc.
City of The Dalles Planning Department
Mike Turaski, Corps of Engineers
Heidi Hartman, DSL
Kirk Jarvie, DSL

A0560 WD

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 the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279 Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.
For new credit card payment option, see DSL web site.

RECEIVED
SEP 3 2014
DEPARTMENT OF STATE LANDS
REMITTANCE $ 396.-

☐ Applicant ☒ Owner Name, Firm and Address:
Golden NW Aluminum
Attn: Howard Anderson
3313 West Second Street
The Dalles, Oregon 97058

Business phone # 541.298.0821
Mobile phone # (optional) 541.308.6[illegible]
FAX # N/A
E-mail: andersengroupllc@yahoo.com

☐ Authorized Legal Agent, Name and Address:

Business phone #
Mobile phone #
E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.
Typed/Printed Name: Howard Anderson Signature: [redacted]
Date: 9-2-14 Special instructions regarding site access: Contact Port of The Dalles and Consultant prior to site access.

Project and Site Information

Project Name: Site 5.			Latitude: 45.62677° °N	Longitude: -121.20778° W
Proposed Use: Preliminary site assessment and resource inventory.			Tax Map # 02N-13E-28	
Project Street Address (or other descriptive location):	Township	Range	Section	QQ
	02N	13E	28	BD, CA,CB,CC,CD
3313 West Second Street	Tax Lot 700			
	Waterway: N/A			River Mile: N/A
City: The Dalles County: Wasco	NWI Quad(s): The Dalles, North, Oregon			

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Terra Science, Inc.
Attn: David Mannin, PWS
4710 Southwest Kelly Avenue, Suite 100
Portland, Oregon 97239

Phone # (503) 274-2100
Mobile phone # N/A
FAX # (503) 274-2101
E-mail: david@terrascience.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: [redacted] Date: 9/26/14

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland / Waters Present? ☒ Yes ☐ No | Study Area size: 51.13± acres | Wetland Acreage: 1.0 acre* (1.19)

Check Box Below if Applicable: **Fees:**

☐ R-F permit application submitted	☒ Fee payment submitted $396.00
☐ Mitigation bank site	☐ Fee ($100) for re-submittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	Name of Payor: Northwest Aluminum Company
☐ Industrial Land Certification Program Site	

Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☐	☒	If known, previous DSL # N/A
Does LWI, if any, show wetland or waters on parcel?	☐	☒	No LWI for The Dalles

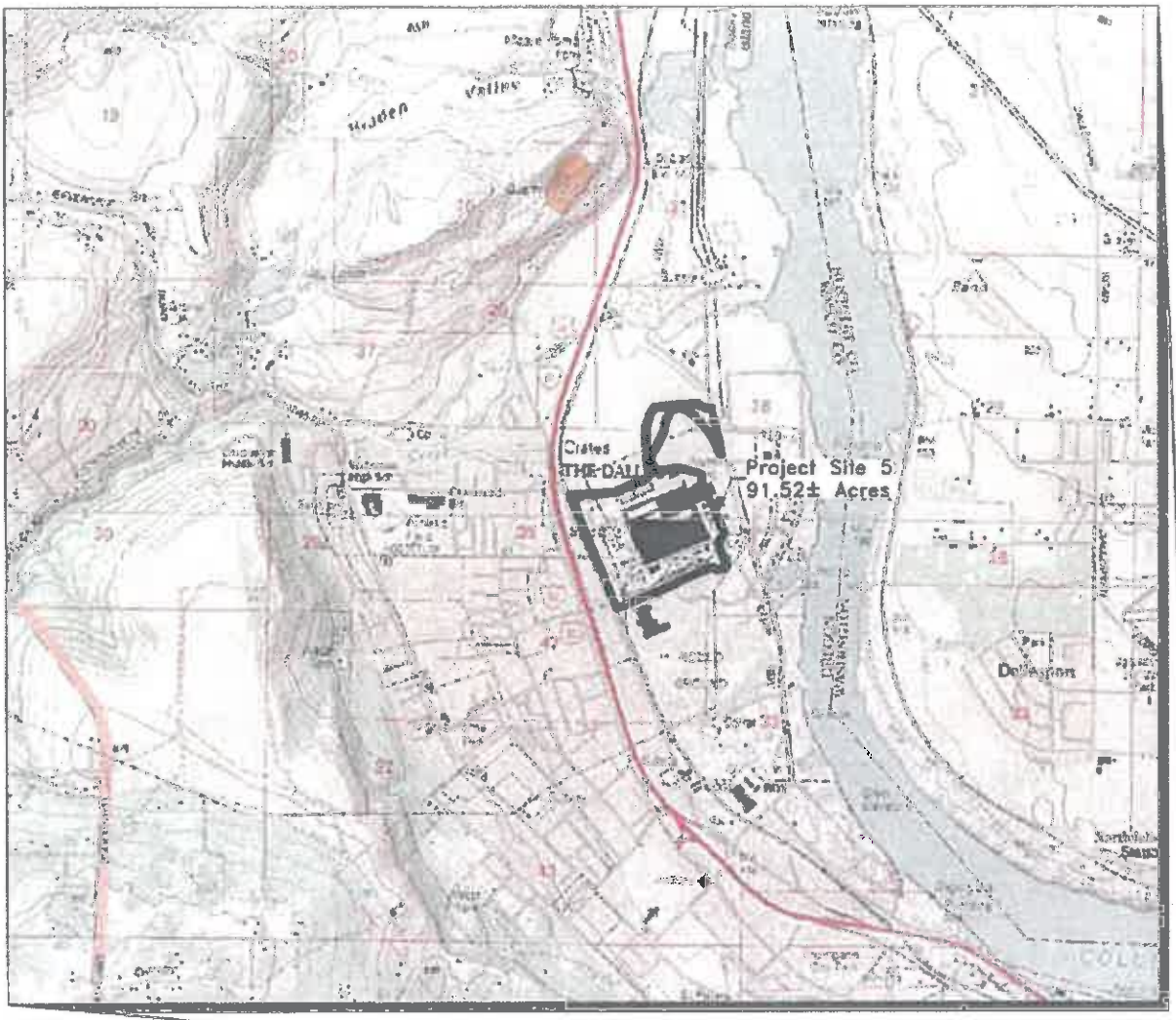
For Office Use Only

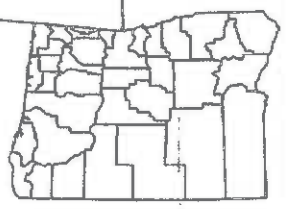
DSL Reviewer: LM Fee Paid Date: 9 / 3 / 14 DSL WD # 2014-0401
Date Delineation Received: 9 / 3 / 14 DSL Project # _____ DSL Site # _____
Scanned: ☑ Final Scan: ☐ DSL WN # _____ DSL App. # _____

*See report text for jurisdictional attributes of delineated features.

Port of The Dalles, Site 5

DIRECTIONS: From Portland, take Interstate I-84 west to The Dalles River Road Exit 82 and proceed east (left) onto River Road for approximate 0.25-mile. Site 5 is located between River Road and the Union Pacific railroad right-of-way. As privately owned property, access is restricted and requires authorization and escort from individual landowners and / or consultants. The centroid of Site 5 is approximated at 45.62677° North and -121.20775° West.





Source: Adapted from U.S.G.S. Topographic Quads.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 1250 2500
1 inch = 2500 ft.

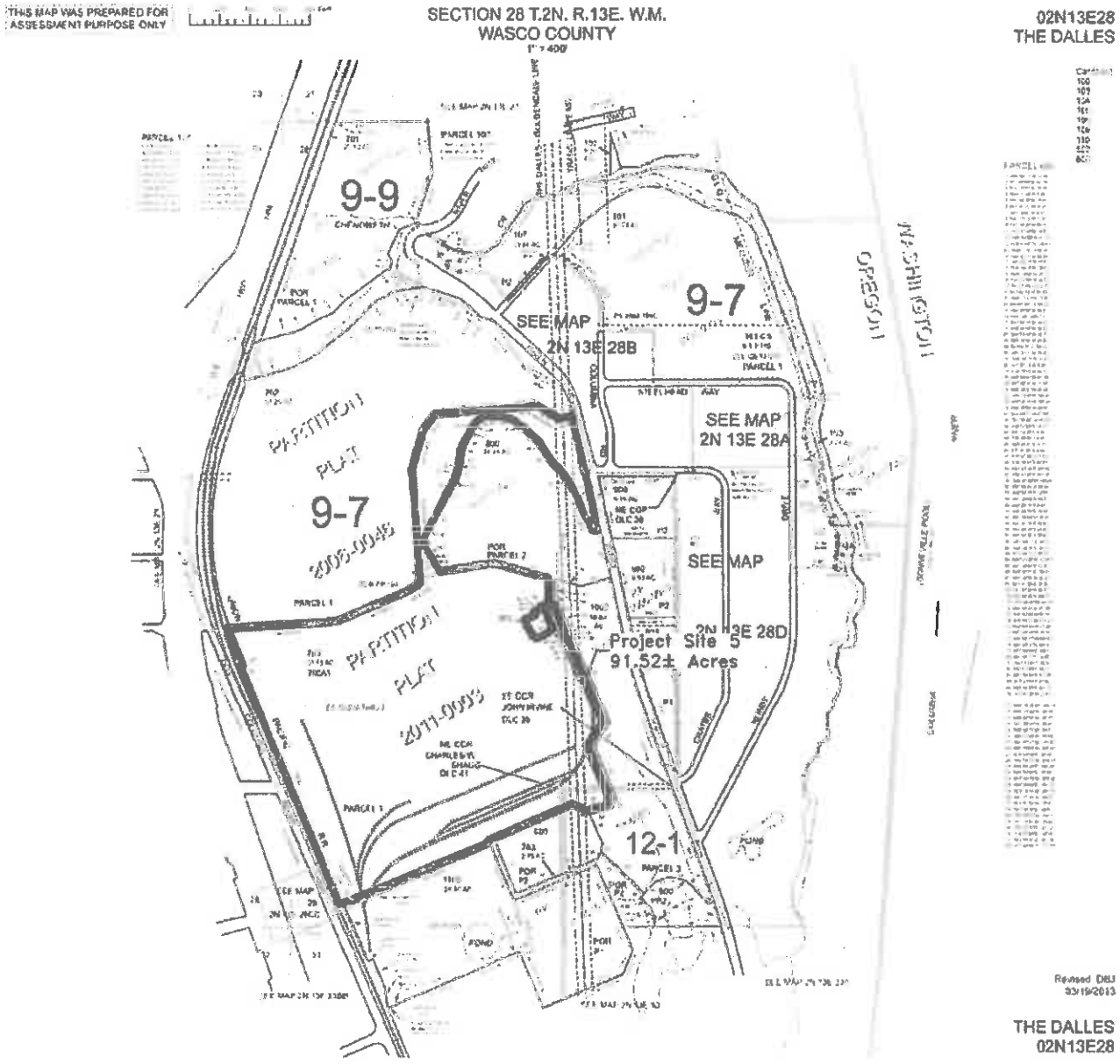
PORT OF THE DALLES REGIONAL
WETLAND DELINEATION REPORT, SITE 5
The Dalles, Wasco County, Oregon

VICINITY MAP

August 2014

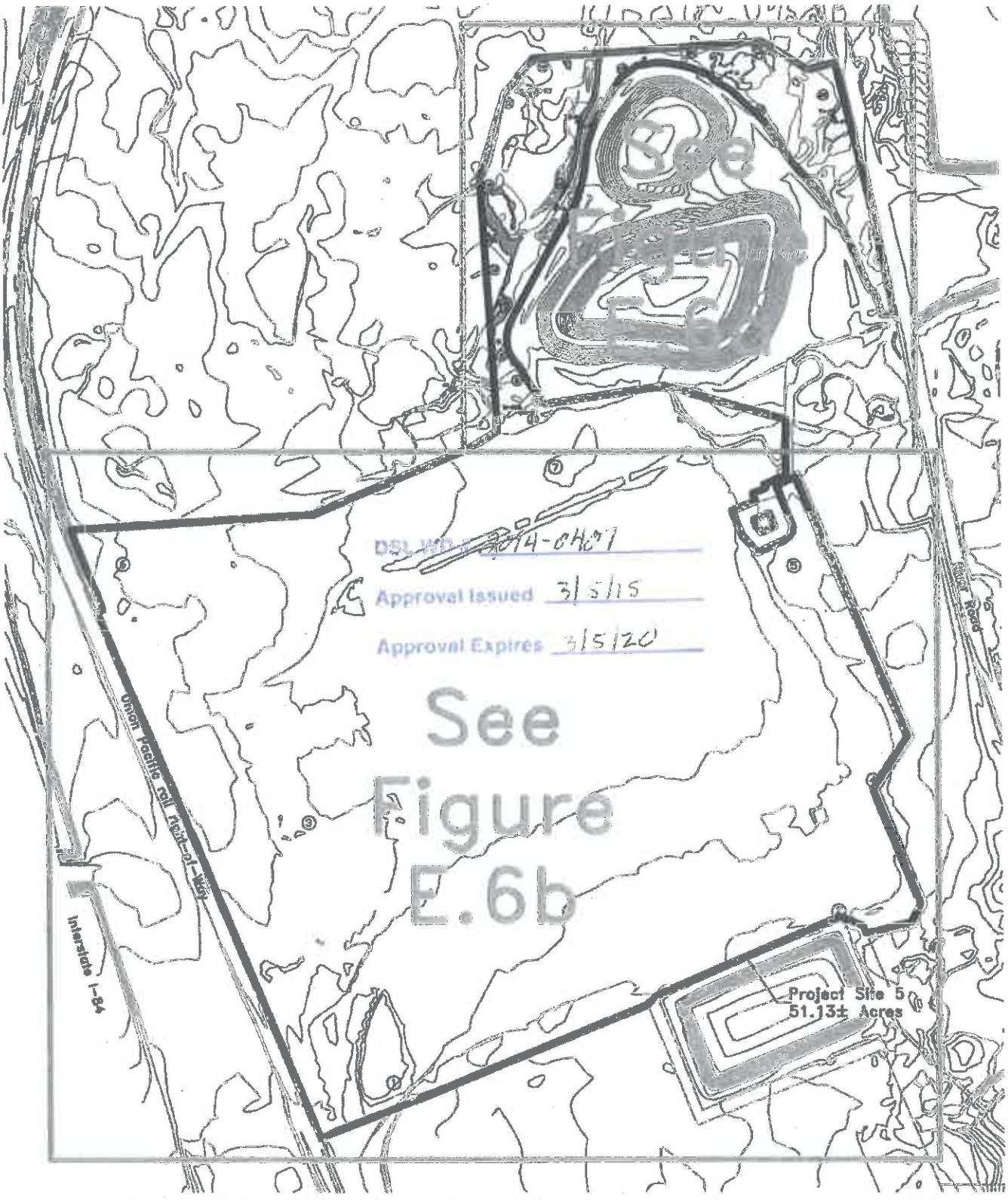
FIGURE E.1

NOTE: The 91.52± acre Site 5 consists of Tax lot 702 on Wasco County Assessor's map Township 02 North, Range 13 East Section 28, Willamette Meridian.



Source: Adapted from Wasco County Assessor's map T. 02N, R. 13E, Sec. 28, W.M.

Terra Science, Inc. Soil, Water, & Wetland Consultants GRAPHIC SCALE 0 500 1000 1 inch = 1000 ft.	PORT OF THE DALLES REGIONAL WETLAND DELINEATION REPORT, SITE 5 The Dalles, Wasco County, Oregon August 2014	TAX MAP FIGURE E.2

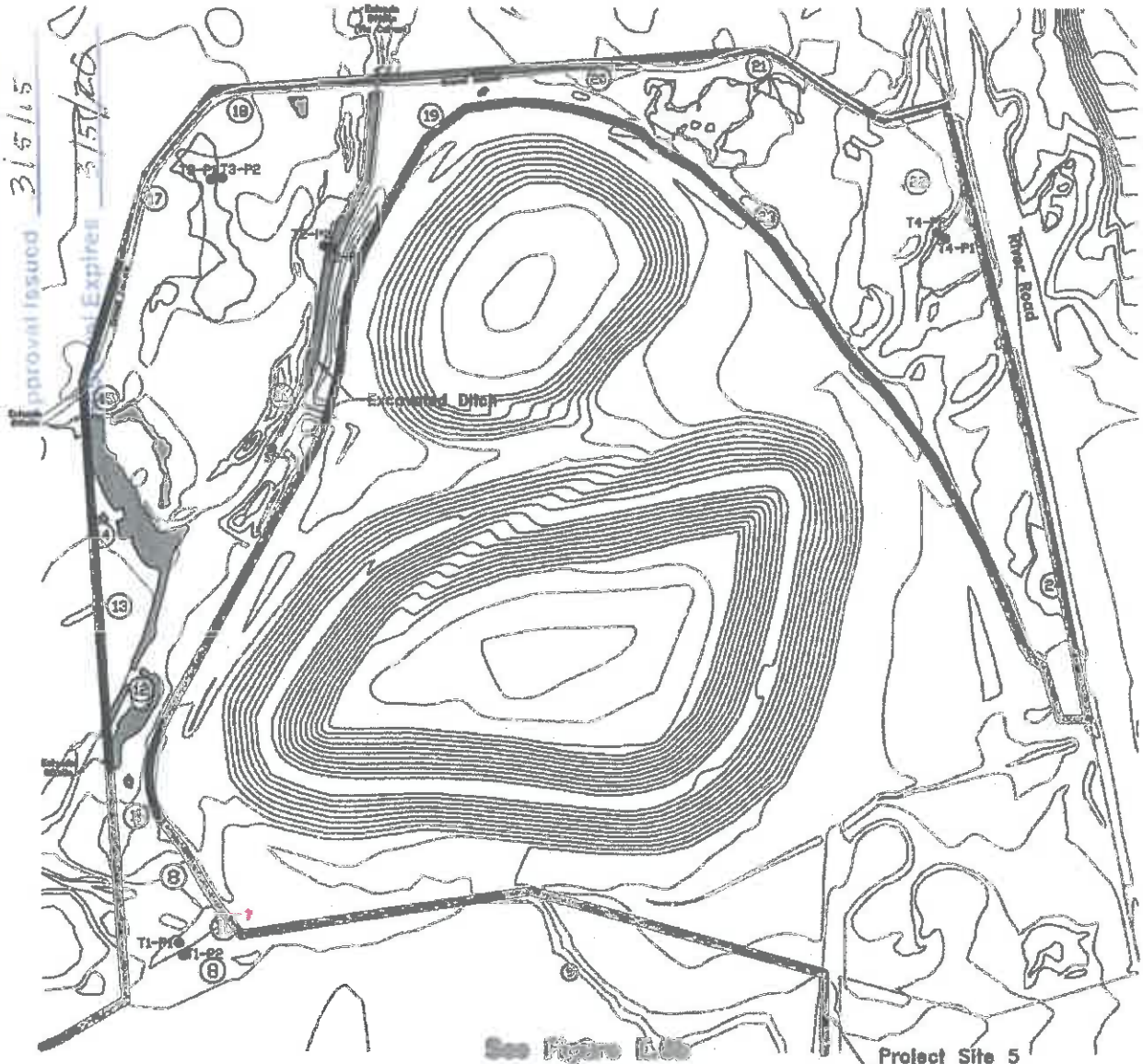


Source: Adapted from Wasco County, ESA delineation and TSI georeferenced civil files.

Terra Science, Inc. Soil, Water, & Wetland Consultants	WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 5 (DSL WD#2014-0401 & USACE NWP 2014-371-2) The Dalles, Wasco County, Oregon	EXISTING CONDITIONS INDEX
GRAPHIC SCALE 0 200 400 (IN FEET) 1 inch = 400 ft.	August 2014 (UPDATE)	FIGURE E.6

NOTE: Wetland and upland conditions within Site 5 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot. See delineation report Appendix E for greater discussion regarding specific feature characteristics and boundary determinations.

DSL WD # 2014-0401 Approval Issued 3/5/15 Approval Expires 3/5/20



LEGEND

- Excavated PEMEx Wetlands (0.55-acre)
- Remnant Seabland PEMEh Wetlands (0.38-acre)
- Culvert
- 2.0-Foot Topographic Contour
- Photograph Location
- T1-P1 Sample Plot Location
- Wasco County Taxlots

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 100 200
(IN FEET)
1 inch = 200 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 5
(DSL WD#2014-0401 & USACE NWP 2014-371-2)
The Dalles, Wasco County, Oregon

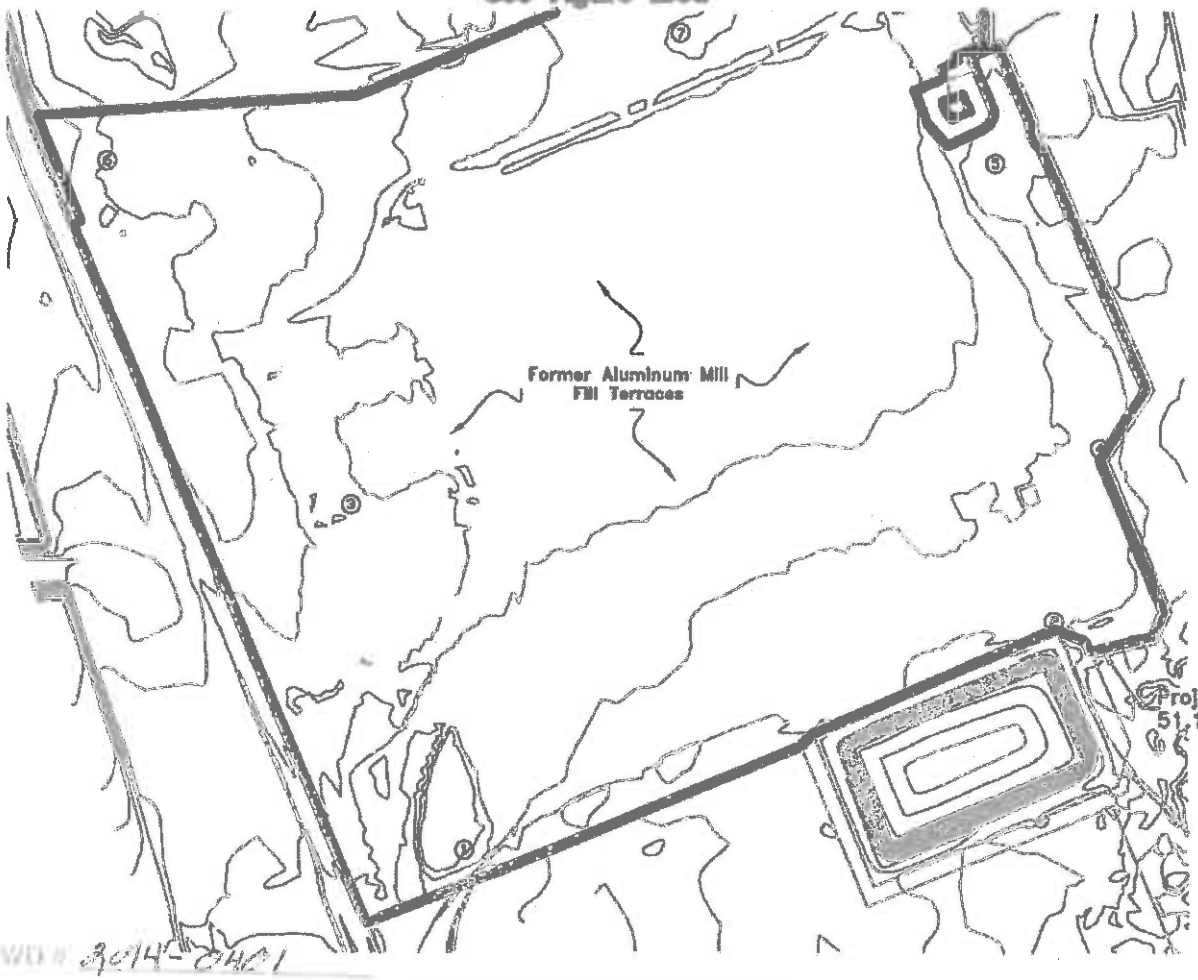
August 2014 (UPDATE)

EXISTING CONDITIONS, NORTH

FIGURE E.6a

NOTE: Wetland and upland conditions within Site 5 determined using methodology outlined in the Corps 1987 Manual and Arid West Regional Supplement Version 2.0 with guidance from the U.S. Army Corps of Engineers, Oregon Department of State Lands and U.S. Environmental Protection Agency. All sample plot locations and wetland boundaries mapped using Trimble GeoXH unit and processed using Pathfinder Office Version 5.2. Processed GPS, Wasco County tax lot boundaries and georeferenced topographic survey files then inserted into AutoCAD software for acreage calculations. Study area boundary, wetlands, waters and sample plots are accurate to within ±1.0 foot. See delineation report Appendix E for greater discussion regarding specific feature characteristics and boundary determinations.

See Figure E.6a



DSL WD # 2014-0401

Approval Issued 3/5/15

Approval Expires 3/5/20

LEGEND

- 2.0-Foot Topographic Contour
- Photograph Location
- T1-P1 Sample Plot Location
- Wasco County Taxlots

Source: Adapted from Wasco County and TSI georeferenced civil files.

Terra Science, Inc.
Soil, Water, & Wetland Consultants

GRAPHIC SCALE
0 200 400
(IN FEET)
1 inch = 400 ft.

WETLAND DELINEATION REPORT FOR THE PORT OF THE DALLES RGP PROCESS, SITE 5 (DSL WD#2014-0401 & USACE NWP 2014-371-2)
The Dalles, Wasco County, Oregon

EXISTING CONDITIONS, SOUTH

August 2014 (UPDATE)

FIGURE E.6b

Request for AARP/Regional General Permit for Selected Industrial Sites

in The Dalles and Wasco County, Oregon

Appendix B

ORWAP Summary Reports

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table A1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA1.1. Table A1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table A1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA1.1.

Table A1. Comparison of Slope Complex Wetland (AA1.1) and Oregon State-Wide ORWAP Results.

	Slope Complex Wetland (AA1.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	**Function Score**	**Value Score**	**Function Score**	**Value Score**	**Function Score**	**Value Score**
Hydrologic Function (WS)	2.65	4.33	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	**4.77**	**7.36**	**7.13**	**6.08**	**7.19**	**6.15**
Carbon Sequestration (CS)	2.53		2.38		2.53	
Fish Support Group (FISH)	1.21	6.67	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.00	8.00	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	5.44	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		5.92		5.7		5.64
Wetland Stressors		5.30		3.6		3.63
Wetland Sensitivity		4.58		4.63		4.74
HGM CLASSIFICATION	Slope					

For more regionally based comparisons, Table A2 outlines AA1.1 results alongside the four (most representative) Wasco County ORWAP reference sites. While Wasco County Flat reference sites are not consistent with AA1.1 Slope HGM designations, the comparison allows for a more regional comparison of wetland functions and values.

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IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table B1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA1.2. Table B1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table B1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA1.2.

Table B1. Comparison of Chenoweth Creek Wetlands / Waters (AA1.2) and Oregon State-Wide ORWAP Results.

	Chenoweth Creek Waters / Wetlands (AA1.2)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	2.44	2.50	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	**5.28**	**10.00**	**7.13**	**6.08**	**7.19**	**6.15**
Carbon Sequestration (CS)	3.06		2.38		2.53	
Fish Support Group (FISH)	6.86	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	6.00	8.00	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.51	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		4.72		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		4.92		5.7		5.64
Wetland Stressors		5.40		3.6		3.63
Wetland Sensitivity		4.17		4.63		4.74
HGM CLASSIFICATION	Riverine					

For more regionally based comparisons, Table B2 outlines AA1.2 results alongside the four (most representative) Wasco County ORWAP reference sites. While Wasco County Flat reference sites are not consistent with AA1.2 Riverine HGM designations, the comparison allows for a more regional comparison of wetland functions and values.

Unique to other wetlands documented by this process, AA1.3 consists of very deep and dark silt loam soils with depletions occurring in the matrix around 31 inches. Delineation teams observed hydrogen sulfide odor within topographically low portions of the depression. Agricultural disturbances are evident on historical aerial photography, including plowing, crop production and flood irrigation introduction.

AA1.3 hydrology is primarily driven by precipitation and upgradient runoff. While recent aerial photography shows distinct color patterns, said pattern is derived from the dense *Dipsacus fullonum* community and is not reflective of saturation (especially during summer aerial photographs).

III. Delineation and Description of Contributing Area (CA)

ORWAP defines the Contributing Area (CA) as the drainage area, catchment area or contributing uplands that hydrologically supports the Assessment Area wetland. Based on TSI's field investigations, analysis of on- and offsite conditions, and analysis of Wasco County GIS based topographic civil files, AA1.3 is supported by a 136.1± acre CA.

The delineated CA mostly occupies hillsides west and northwest of the AA1.3 Subtle topographic breaks within the Site 1 alluvial terrace also provide hydrological support to this AA. There is an existing rock quarry within the hillsides of the CA.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table C1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA1.3. Table C1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table C1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA1.3.

Table C1. Comparison of Emergent Depression (AA1.3) and Oregon State-Wide ORWAP Results.

	Emergent Wetland (AA1.3)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	**Function Score**	**Value Score**	**Function Score**	**Value Score**	**Function Score**	**Value Score**
Hydrologic Function (WS)	5.0	3.58	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.0	6.56	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	1.84		2.38		2.53	
Fish Support Group (FISH)	0.98	10.0	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	6.88	8.0	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.3	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		4.72		4.17		5.24
Provisioning Services (PS)		0.0		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		4.82		5.7		5.64
Wetland Stressors		4.63		3.6		3.63
Wetland Sensitivity		10.0		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table C2 outlines AA5.1 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA1.3 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

Table C2. Comparison of Emergent Wetland (AA1.3) and Wasco County ORWAP Results[1].

	Emergent Wetland (AA1.3)		Wasco County Median		Wasco County Mean	
GROUPED SERVICE FUNCTIONS	**Function Score**	**Value Score**	**Function Score**	**Value Score**	**Function Score**	**Value Score**
Hydrologic Function (WS)	5.0	3.58	5.0	3.17	5.1	3.15
Water Quality Group (WQ)	10.0	6.56	10.0	6.04	8.8	5.97
Carbon Sequestration (CS)	1.84		2.18		2.18	
Fish Support Group (FISH)	0.98	10.0	5.36	10.0	5.23	9.3
Aquatic Support Group (AQ)	6.88	8.0	5.56	7.84	5.59	8.08
Terrestrial Support Group (TERR)	6.3	8.00	4.79	8.0	4.76	8.17
Public Use & Recognition (PU)		4.72		1.25		1.46
Provisioning Services (PS)		0.0		1.0		1.0
OTHER ATTRIBUTES						
Wetland Ecological Condition		4.82		5.9		5.79
Wetland Stressors		4.63		3.37		3.53
Wetland Sensitivity		10.0		6.0		6.03

[1] As two Lacustrine Fringe reference sites are significantly different than wetlands assessed for this project, consultant teams assessed only four Wasco County Flats sites for this comparison (ORWAP Version 2.0.2 Supplemental Information).

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IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table D1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA2.1. Table D1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table D1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA2.1.

Table D1.Comparison of Scabland Depression Complex (AA2.1) and Oregon State-Wide ORWAP Results.

	Scabland Depression Complex (AA2.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	5.00	3.83	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	6.87	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.25		2.38		2.53	
Fish Support Group (FISH)	1.06	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.66	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	7.16	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.62		5.7		5.64
Wetland Stressors		2.21		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table D2 outlines AA2.1 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA2.1 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

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IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table D1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA2.1. Table D1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table D1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA2.1.

Table D1.Comparison of Scabland Depression Complex (AA2.1) and Oregon State-Wide ORWAP Results.

	Scabland Depression Complex (AA2.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	**Function Score**	**Value Score**	**Function Score**	**Value Score**	**Function Score**	**Value Score**
Hydrologic Function (WS)	5.00	3.83	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	6.87	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.25		2.38		2.53	
Fish Support Group (FISH)	1.06	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.66	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	7.16	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.62		5.7		5.64
Wetland Stressors		2.21		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table D2 outlines AA2.1 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA2.1 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

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Similar to AA2.1 (described in ORWAP report Appendix D), a relatively thin layer of gravelly clay loam lies atop the basalt bedrock. This particular feature is documented as having a dark brown to very dark brown soils with redoximorphic features of varying colors and concentrations in the matrix. Uplands were a mixture of exposed basalt and very thin layers of silt loam atop basalt.

As indicated within the main report text, two types of Impounded Scabland Depressions are located within the regional project footprint. The AA2.2 Impounded Scabland Depression, Type I is significantly impounded Union Pacific railroad base (versus more native basalt topography and road impoundments associated with AA6.1). The impounded condition has increased the size and depth of inundation typically observed for similar scabland depressions in the vicinity. Further, the Type I Impoundment has a relatively undisturbed CA while the Type II (AA6.1) CA is significantly developed.

III. Delineation and Description of Contributing Area (CA)

ORWAP defines the Contributing Area (CA) as the drainage area, catchment area or contributing uplands that hydrologically supports the Assessment Area wetland. Based on TSI's field investigations, analysis of on- and offsite conditions, and analysis of Wasco County GIS based topographic civil files, AA2.2 is supported by a 3.1± acre CA.

The relatively small CA is defined by high points in the irregular rock formations and topography that make up the surrounding scablands to the north, east, and south and the rail line to the west that either severs upgradient hydrology. Much of these areas are composed of very irregularly exposed basalt bedrock or grassland over shallow bedrock. Much of this area has been historically grazed but other disturbance to these areas has been fairly minimal. The immediate vicinity has remained relatively undisturbed other than the construction of the rail line and interstate to the west.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table E1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA2.2. Table E1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table E1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA2.2.

Table E1. Comparison of Impounded Scabland Depression, Type I (AA2.2) and Oregon State-Wide ORWAP Results.

	Impounded Scabland Depression, Type I (AA2.2)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	5.00	3.67	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	5.67	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.21		2.38		2.53	
Fish Support Group (FISH)	0.85	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.20	7.20	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.69	7.09	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.23		5.7		5.64
Wetland Stressors		2.69		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table E2 outlines AA2.2 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA2.2 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

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railroad line; potential contributing waters west of this feature are effectively intercepted by the rail bed, ditched and drained to areas north of the AA's basin.

While Site 4 Remnant Scabland Depression, Type I wetlands lie within a differently configured and sized CA, final ORWAP scores would not be anticipated to largely vary from AA3.1 results. As indicated, these wetlands exhibit similar historical disturbances and lie in similar proximity to high traffic roads, have similar proximity to Chenoweth Creek and experience similar encroachments.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table F1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA3.1. Table F1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table F1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA3.1.

Table F1. Comparison of Impounded Scabland Depression, Type I (AA3.1) and Oregon State-Wide ORWAP Results.

	Remnant Scabland Depression, Type I (AA3.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	7.00	3.83	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	7.19	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.33		2.38		2.53	
Fish Support Group (FISH)	1.50	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	6.58	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.36	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		2.22		4.17		5.24
Provisioning Services (PS)		2.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		6.84		5.7		5.64
Wetland Stressors		6.75		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

towards the AA's; this boundary is mapped using aerial photography and existing topographical conditions. Lastly, the western CA boundary is determined to be the existing railroad line; potential contributing waters west of this feature are effectively intercepted by the rail bed, ditched and drained to areas north of the AA's basin.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table G1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA3.2. Table G1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table G1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA3.2.

Table G1. Comparison of Ditch / Swale Complex (AA3.2) and Oregon State-Wide ORWAP Results.

	Ditch / Swale Complex (AA3.2)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	5.00	3.83	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	7.19	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.26		2.38		2.53	
Fish Support Group (FISH)	1.50	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	6.71	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.33	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		0.56		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.46		5.7		5.64
Wetland Stressors		7.23		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table G2 outlines AA3.2 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA3.2 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

is essentially non-functional since decommission of the site. The Northwest Aluminum site and construction of River Road are the only development within the immediate vicinity of the CA's.

While other Scabland Depression Complex wetlands within Sites 2, 4 and 5 lie within differently configured and sized CAs, final ORWAP scores would not be anticipated to largely vary from AA4.1 results. As indicated, these wetlands support similar wetland conditions, lie in similar proximity to high traffic roads, and experience similar hydrological disturbances in the immediate vicinity.

V. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table H1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA4.1. Table H1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table H1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA4.1.

Table H1. Comparison of Scabland Swale / Depression Complex, Type I (AA4.1) and Oregon State- Wide ORWAP Results.

	Scabland Swale / Depression Complex, Type I (AA4.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	5.00	3.42	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	6.14	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.25		2.38		2.53	
Fish Support Group (FISH)	1.06	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.42	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	7.94	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.62		5.7		5.64
Wetland Stressors		2.33		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

While similar represented Scabland Depression Complex wetlands within Sites 1 and 4 lie within differently configured and sized CAs, final ORWAP scores would not be anticipated to largely vary from AA4.2 results. As indicated, represented wetlands support similar wetland conditions, lie in similar proximity to high traffic roads, and experience similar hydrological disturbances in the immediate vicinity.

V. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table I1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA4.2. Table I1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table I1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA4.2.

Table I1. Comparison of Scabland Swale / Depression Complex, Type II (AA4.2) and Oregon State-Wide ORWAP Results.

	Scabland Swale / Depression Complex, Type II (AA4.2)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	5.00	2.83	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	10.00	6.24	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.25		2.38		2.53	
Fish Support Group (FISH)	1.06	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.42	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	6.83	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.17		5.7		5.64
Wetland Stressors		2.33		3.6		3.63
Wetland Sensitivity		10.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table I2 outlines AA4.2 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA4.2 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table J1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA5.1. Table J1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table J1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA5.1.

Table J1. Comparison of Remnant Scabland Depression, Type II (AA5.1) and Oregon State-Wide ORWAP Results.

	Remnant Scabland Depression, Type II (AA5.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	**Function Score**	**Value Score**	**Function Score**	**Value Score**	**Function Score**	**Value Score**
Hydrologic Function (WS)	4.71	3.92	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	6.22	6.61	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.94		2.38		2.53	
Fish Support Group (FISH)	1.41	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.33	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	7.57	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		7.62		5.7		5.64
Wetland Stressors		2.69		3.6		3.63
Wetland Sensitivity		5.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table J2 outlines AA5.1 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA5.1 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

IV. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table K1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA5.2. Table K1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table K1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA5.2.

Table K1. Comparison of Excavated Feature (AA5.2) and Oregon State-Wide ORWAP Results.

	Excavated Feature (AA5.2)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	3.01	3.92	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	6.12	6.77	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.88		2.38		2.53	
Fish Support Group (FISH)	1.45	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	7.05	8.67	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	5.86	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		1.39		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		6.99		5.7		5.64
Wetland Stressors		4.14		3.6		3.63
Wetland Sensitivity		5.00		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table K2 outlines AA5.2 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA5.2 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

Despite partial severance from upgradient hydrologic support (due to roads and development), basalt bedrock underlying this depression appears to be intact and effectively perches precipitation and received runoff. Further, River Road and the gravel access roads nearby effectively impound the depression, resulting in a slightly exaggerated hydrological regime at least to the level of the culvert outfall.

As indicated within the main report text, two type of Impounded Scabland Depressions are located within the regional project footprint. The Type II depression represented by AA6.1 is impounded within a more native basalt topography and constructed road basin while the AA2.2 Type I feature is significantly impounded Union Pacific rail base. As a more native situation, the impounded condition of AA6.1 slightly increases depth of inundation typically observed for similar scabland depressions in the vicinity. Further, the Type II Impoundment has an extensively developed and highly undisturbed CA while the Type I (AA62.2) CA is relatively undisturbed.

III. Delineation and Description of Contributing Area (CA)

ORWAP defines the Contributing Area (CA) as the drainage area, catchment area or contributing uplands that hydrologically supports the Assessment Area wetland. Based on TSI's field investigations, analysis of on- and offsite conditions, and analysis of Wasco County GIS based topographic civil files, AA6.1 is supported by, a 1.9± acre CA.

For AA6.1, the relatively small CA is defined by high points in the irregular rock formations and topography that make up the surrounding vicinity as well as the periphery of roads. Much of the remaining areas are composed of very irregularly exposed basalt bedrock or grassland over shallow bedrock. Much of this area has been historically grazed but more recently much of the area has been disturbed for construction of the access roads. The NORCOR site and River Road are the only development within the immediate vicinity of the CA.

V. Assessment Results Summary

Field observations and office-derived information were inserted into the ORWAP calculator (an Excel spreadsheet) for each AA. Table L1 outlines the function and value scores for the Grouped Service Functions and also the value scores for the Ecological Condition, Stressors, and Sensitivity for AA6.1. Table L1 also includes columns for the median and mean function and value scores that were derived for the 221 reference wetlands sampled during the development of the ORWAP protocol in 2008 for comparison. Lastly, Table L1 identifies the ORWAP calculator approximation of Hydrogeomorphic (HGM) Classification of AA6.1.

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Table L1. Comparison of Impounded Scabland Depression, Type II (AA6.1) and Oregon State-Wide ORWAP Results.

	Impounded Scabland Depression, Type II (AA6.1)		State-wide Median		State-wide Mean	
GROUPED SERVICE FUNCTIONS	Function Score	Value Score	Function Score	Value Score	Function Score	Value Score
Hydrologic Function (WS)	4.99	3.58	3.3	3.0	3.14	3.76
Water Quality Group (WQ)	6.50	6.85	7.13	6.08	7.19	6.15
Carbon Sequestration (CS)	2.76		2.38		2.53	
Fish Support Group (FISH)	1.50	10.00	3.09	6.67	3.25	7.31
Aquatic Support Group (AQ)	6.71	8.00	6.67	8.0	6.71	8.08
Terrestrial Support Group (TERR)	5.73	8.00	5.86	7.0	5.92	7.67
Public Use & Recognition (PU)		3.06		4.17		5.24
Provisioning Services (PS)		0.00		0.0		0.82
OTHER ATTRIBUTES						
Wetland Ecological Condition		5.68		5.7		5.64
Wetland Stressors		3.81		3.6		3.63
Wetland Sensitivity		6.10		4.63		4.74
HGM CLASSIFICATION	Flats					

For more regionally based comparisons, Table 2 outlines AA6.1 results alongside the four (most representative) Wasco County ORWAP reference sites. As Wasco County Flat reference sites are consistent with AA6.1 Flats HGM designation, this comparison allows for assessment and comparison of regionally present wetland functions and values provided by Flats type wetlands.

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