

Natural Resource Overlay District Report Phase 2 of The Cove Development Plan in Oregon City, Oregon

(Township 2 South, Range 2 East, Section 29, Tax Lots 1506, 1507, 1509, 2800, 3000,
3100, 3200, 3300, 3400, 3500, 3600, 3700 & 3800;
Township 2 South, Range 2 East, Section 20, Tax Lot 1100)

Prepared for

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1.0 INTRODUCTION

Pacific Habitat Services, Inc. (PHS) has prepared this report for Phase 2 of the Cove Development Plan (Project) in Oregon City, Oregon. Figure 1 and Figures 2A-2B (Appendix A) show the project vicinity and limits of the study area. All figures are in Appendix A.

The Cove Concept Development Plan (CDP) and Detailed Development Plan (DDP) (CP 08-05, DP 08-13, WR 08-21, TP 08-11, US 08-03) and amendments to the Cove CDP and DDP (CP 09-02, DP 09-01) were approved with conditions in 2009. A Concept (Master) Plan Amendment, DDP, Natural Resource Overlay District Review, and a Geologic Hazards Overlay District Review for Phase 1 of the Cove (CP 15-01, DP 15-01, NR 15-05, US 15-06) were approved with conditions in 2015. Phase 1 of the Cove is under construction as of this report date, and is shown as the existing condition within the project area and vicinity.

This report presents the definitions and the methodology used to assess the natural resource overlay district (NROD) within the project site as required by the City of Oregon City (Chapter 17.49). The field component of the natural resource evaluation for this site was completed on March 14, 2006. The existing conditions were reassessed on May 18, 2009, January 15, 2009, July 16, 2015, and December 12, 2017.

2.0 EXISTING CONDITIONS

The Clackamas River and Clackamette Cove are located adjacent to the Phase 2 project area. In 2006 and 2009, PHS delineated OHW of Clackamette Cove and the boundary of Wetland A, which were determined to be jurisdictional features, regulated by the Oregon Department of State Lands (DSL) and the US Army Corps of Engineers (Corps) (DSL File #WD10-0027, Corps File # NWP-2009-373, Appendix B). The OHW was determined to be approximately 18 feet NAVD 88.

The City's NROD map (Figure 3) includes the Clackamas River and Clackamette Cove, and their associated vegetated corridor (VC), which extends into the project area. During a 2008/2009 Land Use Decision, a reduction in the VC of the Clackamette Cove and Clackamas River in the project area from 200 feet from the OHW to 50 feet from the OHW was approved with conditions (Oregon City Water Resource File Number WR 08-21). PHS added Wetland A and its associated VC to the NROD boundary during the Phase 1 evaluation for the Cove. The updated NROD boundary, as well as the jurisdictional limits of the Clackamas River, Clackamette Cove, and Wetland A is shown on Figure 4, Existing Conditions.

The Clackamette Cove is a bay-like extension of the Clackamas River that was created by former gravel mining operations. The area was first excavated in 1964, and is connected to the Clackamas River through a dredged channel located just upstream of the Willamette / Clackamas Rivers' confluence. Much of the existing project site south and east of Clackamette Cove consists of vacant industrial lands. South of Clackamette Cove is an existing vacant property formerly occupied by The Glacier Ready Mix Concrete Plant, which ceased operation in 2007 and vacated the site in 2008. All associated buildings were then demolished, though associated pavement and building pads are still present adjacent to Wetland A. East of Clackamette Cove, the Rossman Landfill operated between 1960 and 1969. Afterward, the area was used for the manufacture of asphalt and concrete and as a log loading area. This portion of the site has remained generally undeveloped since 1986.

The site has generally been disturbed by past land uses, with areas of debris (including piles of rock, concrete, metal cables, and other materials), gravel, remnants of loading docks, buildings and other industrial structures occurring throughout much of the site. With the exception of the steep bank of the Clackamette Cove, the site's topography is nearly level to gently sloping, with areas of minor topographic relief resulting from the past land uses. Several old structures, including piers and cantilevered decks are located within the Cove or on the Cove's banks. The Clackamas County sheriff's office has a boat facility on the Cove. The Clackamas River Trail extends from Main Street northeast through the project area. This paved pedestrian/bicycle trail generally parallels the east side of Clackamette Cove and connects Main Street to Washington Street, approximately one mile to the northeast. A temporary section of trail was installed during Phase 1 to allow for continued use of this recreational resource during construction.

Most of the shoreline of the Clackamette Cove is armored with rocks, however, existing riparian vegetation along the banks consists primarily of cottonwood trees (*Populus balsamifera*), scattered red alder (*Alnus rubra*) and willow (*Salix* spp.). The banks support a relatively sparse understory of deciduous shrubs including Scotch broom (*Cytisus scoparius*) and Himalayan blackberry (*Rubus armeniacus*). Groundcover includes grasses and weedy forbs typical of disturbed areas.

3.0 DISCUSSION OF NATURAL RESOURCE AREAS

PHS delineated the limits of the wetlands on the site based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. The delineation was conducted on March 14, 2006, and January 15, 2009. The existing conditions were reassessed on May 18, 2009, January 15, 2009, July 16, 2015, and December 12, 2017. PHS identified and delineated the limits of ordinary high water (OHW) along Clackamette Cove and Wetland A. Because Wetland A is not within the Phase 2 project area, only a brief description of the Clackamette Cove is provided below.

Clackamette Cove

Clackamette Cove is a waterbody formed in a former quarry pit, and is steeply sloped within the project area. At some point in the quarry's history, an opening was cut and a dredged connection was created between the quarry and the Clackamas River. Because the limit of tidal influence along the Clackamas River is just upstream of the connection between Clackamette Cove and the Clackamas River, water levels in Clackamette Cove are affected by the tides as well as flows within the Clackamas River. . Based on the survey of the OHW flagging, the average elevation of the OHW is approximately 18 feet (NAVD 88). The slopes bordering Clackamette Cove rise 15 to 25 feet above the flagged OHW mark.

Below the OHW line, the shoreline of Clackamette Cove is largely unvegetated and has a substrate dominated by cobbles, gravel, and, in some places, boulders. Above the OHW line, the shoreline is vegetated with cottonwoods, willows, Himalayan blackberry, and various upland herbaceous species. Based on PHS's examination of soils, vegetation, and hydrology, there are no jurisdictional wetlands above the OHW line.

4.0 VEGETATED CORRIDOR ASSESSMENT

4.1 Vegetated Corridor Extent

The vegetated corridor within and adjacent to the Phase 2 project area is shown on Figure 4. The VC associated with the Clackamas River and Clackamette Cove was established to be 50 feet from the edge of bankfull flow (approximately 18 feet NAVD 88) during a 2008/2009 Land Use Decision (Oregon City Water Resource File Number WR 08-21).

4.2 Vegetated Corridor Condition

The condition of the vegetated corridor is defined by the combined coverage of trees, shrubs, and groundcover; overall tree canopy coverage; and the coverage of non-native species. PHS evaluated vegetation coverage on March 14, 2006, May 18, 2009, January 15, 2009, July 16, 2015, and December 12, 2017. Table 1 details the species present within the vegetated corridor in the Phase 2 project area as well as their overall coverage, as determined during the 2017 field investigation.

Table 1 Clackamette Cove Vegetated Corridor Plant Species and Percent Coverage in the Phase 2 Project Area.

Common Name	Botanical Name	Cover (%)	
		Cove Shoreline*	Peninsula**
Trees	Overall cover	40%	50%
Cottonwood	<i>Populus trichocarpa</i>	40	50
Douglas-fir	<i>Pseudotsuga menziesii</i>	1	2
Red alder	<i>Alnus rubra</i>	2	-
Willow sp.	<i>Salix</i> sp.	2	-
Shrubs	Overall cover	40%	70%
Cottonwood	<i>Populus trichocarpa</i>	5	30
Cut-leaf birch	<i>Betula pendula</i> ***	-	2
Himalayan blackberry	<i>Rubus discolor</i> ***	40	50
Madrone	<i>Arbutus menziesii</i>	1	1
Red-osier dogwood	<i>Cornus alba</i>	-	2
Scot's broom	<i>Cytisus scoparius</i> ***	10	10
Snowberry	<i>Symphoricarpos albus</i>	-	5
Woody Vines	Overall cover	20%	15%
English ivy	<i>Hedera helix</i> ***	20	15

Common Name	Botanical Name	Cover (%)	
		Cove Shoreline*	Peninsula**
Ground Cover	Overall cover	25%	35
Common tansy	<i>Tanacetum vulgare</i> ***	5	5
Common vetch	<i>Vicia sativa</i> ***	5	-
Few-seed bittercress	<i>Cardamine oligosperma</i>	15	5
Oxeye daisy	<i>Leucanthemum vulgare</i> ***	5	-
Red clover	<i>Trifolium pretense</i>	5	2
Reed canary grass	<i>Phalaris arundinacea</i> ***	5	-
Robert's geranium	<i>Geranium robertianum</i> ***	5	-
Spotted cat's ear	<i>Hypochaeris radicata</i> ***	5	-
St. John's wort	<i>Hypericum perforatum</i> ***	2	5
Sticky-willy	<i>Galium aparine</i>	-	2
Sweetclover	<i>Melilotus alba</i> ***	-	5
Teasel	<i>Dipsacus fullonum</i> ***	10	5
Thistle	<i>Cirsium sp.</i> ***	5	10
Unknown grass	<i>Grass sp.</i>	20	20
Watson's Willow Herb	<i>Epilobium watsonii</i>	5	-

* "Cove Shoreline" includes the Clackamette Cove bank adjacent to the proposed Esplanade (described below).

** "Peninsula" includes the peninsula between the Clackamas River & Clackamette Cove, north of the Clackamette Cove mouth.

*** Oregon City Nuisance Plant List: <http://www.orcity.org/sites/default/files/NuisancePlantList.pdf>

The vegetated corridor of Clackamette Cove has a marginal tree canopy coverage at an average of 45 percent, but has greater than 10 percent coverage of non-native species, bringing the overall condition to **degraded**.

4.3 Functions and Values Assessment of the Vegetated Corridor

Human activity associated with the former quarry has degraded the functions and values of the VC within the project area, as documented in the *Clackamette Cove Water Quality and Habitat Improvement Feasibility Study (Feasibility Study)*¹. The bank slopes exceed 25 percent, with some areas having a nearly vertical bank (see photos, Appendix C). The banks are eroding and contain concrete and metal debris in many locations. Though cottonwoods can live 100 to 200 years², the cottonwoods within the VC are experiencing more rapid turnover due to erosion within the root zone. The existing functions and values of the VC within the project area are summarized in Table 2. A brief discussion follows.

¹ Cascade Environmental Group LLC. 2017. *Clackamette Cove Water Quality and Habitat Improvement Feasibility Study*, dated August 14, 2017.

² Braatne, Jeffrey H.; Rood, Stewart B.; Heilman, Paul E. 1996. Life History, Ecology, and Conservation of Riparian Cottonwoods in North America. In: Steller, R. F., ed. *Biology of Populus and its implications for management and conservation*. Ottawa, ON: National Research Council of Canada, NRC Research Press: 57-85. [29693].

Table 2 Clackamette Cove Existing Vegetated Corridor Functions and Values in the Phase 2 Project Area.

Function	Assessment	Rationale
Water Storage and Delay	Low Function	- No ponding occurs within the VC - Steep banks and sparse groundcover do little to delay overland flow
	Moderate to High Value	- The opportunity for the VC to provide water storage and delay is high given the general urban setting and proximity to the Clackamas River. - The significance of water storage and delay to reduce flood damage potential is high given the general urban setting, however, existing development in the project area is limited, which reduces this value.
Sediment Stabilization, Phosphorus Retention, & Nitrogen Removal	Low Function	- Soil texture is predominantly gravelly, sandy loam with little adsorptive potential - Bank erosion prevalent due to steep slopes - No ponding and low water storage and delay function - Sparse groundcover and low structural diversity of vegetation limits interception of nitrogen compounds
	High Value	- The opportunity for the VC to provide sediment stabilization and nutrient retention/removal is high given its location adjacent to the Clackamas River / Clackamette Cove - The significance of sediment stabilization and nutrient retention/removal is high given the water quality issues in the Clackamette Cove³
Terrestrial Habitat Support	Moderate Function	- Overall plant coverage provides some cover, foraging, and nesting opportunities - Vegetative diversity and structure is low
	High Value	- The opportunity for the VC to provide terrestrial habitat support is high given its location within the riparian corridor of the Clackamas River - The significance of terrestrial habitat support is high given the general urban setting where terrestrial habitat is limited
Aquatic Habitat Support	Moderate Function	- Cottonwoods provide shade and in-stream wood source - Low diversity and few coniferous species to provide year-round shade - Unstable banks disrupt canopy regeneration and habitat-forming processes
	High Value	- The opportunity for the VC to support aquatic habitat is high given the proximity to permanent water in the Clackamette Cove - The significance of aquatic habitat support is high given that the Clackamas River and Clackamette Cove are known to support ESA-listed salmonids and other sensitive species
Native Plant Diversity	Low Function	- Vegetative diversity and structure is low - High percentage of non-native species
	High Value	- The opportunity for the VC to provide native plant diversity is high given it is within the NROD vegetation disturbance is regulated - The significance of native plant diversity is high given the general urban setting where native plant communities are limited

³ Water quality issues are documented in the *Clackamette Cove Water Quality and Habitat Improvement Feasibility Study*, dated August 14, 2017, prepared by Cascade Environmental Group LLC.

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The functions of the existing VC are generally low to moderate. This is primarily due to the steep and eroding banks, the lack of vegetative diversity and structure, and the overwhelming presence of invasive plant species. As such, there is a significant opportunity to enhance the existing functions of the VC.

In contrast, the value of the functions provided by the VC are relatively high given the urban and urbanizing setting and the proximity to major water quality resources (Clackamas River and Clackamette Cove). The significance of these functions will increase as the project area and vicinity urbanize and undeveloped land decreases.

5.0 PROPOSED PROJECT

The proposed project has been refined since the 2008/2009 and the 2015 Land Use Decisions (Oregon City Water Resource File Number WR 08-21 and Natural Resources Overlay District File Number 15-05). The proposed project will include enhancement (as defined in OCMC 17.04.375, Phase 2); construction of mixed use buildings and associated features, pedestrian paths (esplanade and other paths), and stormwater facilities; floodplain balancing (Phase 2); preparations for future aquatic resource and recreation projects (Phase 3); and required NROD mitigation (Phase 2) (Figures 5, 5A, 5B, 5C, 6, and 6A). Project elements within the NROD include the following:

- Enhancement of the NROD will occur where project actions will improve upon the natural functions and values of the riparian area, which has been degraded by human activity. The areas considered as enhancement will significantly improve wildlife habitat conditions in the long term by establishing processes and features that occur naturally. The enhancement areas will also provide flood storage within the City Flood Management Overlay District. Enhancement is considered an *use allowed outright (exempted)* per Section 17.49.[0]80.
- Construction of the esplanade and recreational paths, subject to Section 17.49.150 – *Standards for vehicular or pedestrian paths and roads.*
- The expansion of a stormwater facility at the North Park area, subject to Section 17.49.155 – *Standards for stormwater facilities.*
- Grading along the Cove shoreline for bank functional improvement, recreational areas, and flood storage. Subject to Section 17.49.200 – *Adjustment from standards.*
- Mitigation for permanent encroachments, subject to Section 17.49.180 – *Mitigation Standards.*

Enhancement

The enhancement area shown on Figures 5A, 5B, and 6 includes grading along approximately 1,600 linear feet of the Cove's bank to improve the functions of the VC and provide flood storage for the project. Existing vegetation dominated by native cottonwood trees and invasive Himalayan blackberry will be removed during grading (a complete list of trees removed from the NROD is included in Appendix D), and a diverse array of native vegetation will be planted on the re-graded bank. The proposed enhancement will address unnatural landforms and debris within the VC, and is the recommended approach documented in the *Feasibility Study*. The enhancement within the VC includes areas where native trees and shrubs will be planted and maintained to meet *Good Condition* (per Table 17.49.A).

The proposed plantings detailed on Figure 6A include native riparian species that will provide structural diversity and terrestrial and aquatic habitat viewing opportunities from the adjacent esplanade. Native coniferous trees removed during grading will be retained and used as habitat features within the enhancement area. Seed mixes will include native grasses and forbs, with an emphasis on species that provide pollinator habitat, a habitat feature that is lacking in the existing VC.

The expected functions and values improvements associated with the enhancement are detailed in Table 3, a brief discussion follows.

Table 3 Clackamette Cove Existing and Proposed Vegetated Corridor Functions and Values in the Phase 2 Project Area

Function	Existing Condition	Proposed Enhancement	Rationale
Water Storage and Delay	Low Function	Moderate Function	- Increased storage capacity of the floodplain - Gentler bank slopes and improved vegetation coverage increase the delay of overland flow - No ponding or wetland creation proposed to improve the function to high
	Moderate to High Value	High Value	Proposed development will increase the opportunity to perform the function and the significance of the function.
Sediment Stabilization, Phosphorus Retention, & Nitrogen Removal	Low Function	High Function	- Gentler bank slopes and improved vegetation coverage will improve sediment stabilization - Improved vegetation coverage will increase the interception of phosphorous and nitrogen compounds - Improved water storage and delay function will increase the potential to perform this function
	High Value	High Value	Proposed development will increase the opportunity to perform the function and the significance of the function.
Terrestrial Habitat Support	Moderate Function	High Function	- Improved vegetation coverage, diversity, and structure will increase the terrestrial habitat support function and establish more stable habitat forming processes - Gentler bank slopes will improve terrestrial wildlife usage, which is currently limited by extremely steep slopes
	High Value	High Value	Proposed development will increase the significance of the function.
Aquatic Habitat Support	Moderate Function	Moderate to High Function	Improved canopy coverage, diversity, and structure will increase shade and establish more stable habitat forming processes
	High Value	High Value	Proposed development will increase the significance of the function.
Native Plant Diversity	Low Function	High Function	Proposed plantings will greatly increase the native plant diversity
	High Value	High Value	Proposed development will increase the significance of the function.

The functions and values improvements associated with the enhancement result from re-grading the bank and establishing diverse native plant communities. The proposed grading will also provide required floodplain storage volume for the project. The gentler bank slope will allow for the establishment of a diverse and stable vegetative community and will physically increase the residence time for overland flow. Although there will be a temporal loss of habitat during the plant establishment period, excess NROD mitigation (2,095 square feet) is being provided to help offset this temporary functional impact.

Given that the existing VC is in degraded condition as a result of past land uses and human-induced disturbance, the long-term functions and values are expected to significantly increase as a result of the proposed enhancement. In addition, there will be an excess of NROD mitigation to compensate for the temporal functional loss. As such, PHS believes that the proposed enhancement meets the definition and intent of *Enhancement*, as defined in Section 17.04.375 (OCMC).

Esplanade and Recreational Paths

The proposed esplanade is a paved pedestrian path connecting Main Street in the south to the North Park site. It will be approximately 20 feet wide and will feature numerous natural resource observation areas, connections with the proposed mixed use buildings to the east, and future connections with proposed paths. The esplanade has been designed to remain outside of the VC boundary as much as possible; however, in several locations the esplanade and/or retaining walls associated with the esplanade encroach into the VC boundary.

Proposed recreational paths will be provided during Phase 3 of the project and will include two ground-level impervious paths as well as two elevated walkways. The paths and walkways will be approximately 6 feet wide and will connect the esplanade with the north beach area and the future recreational dock. The conceptual design for the elevated walkways will allow for the establishment of native herbaceous species beneath a pervious (grated) walkway.

The improvements associated with the esplanade recreational paths will permanently impact 7,204 square feet of the NROD, and are subject to Section 17.49.150.

Stormwater Facility

The project includes a stormwater plan that will provide water quality and quantity treatment for impervious surfaces within the project area. One of the proposed stormwater facilities will be partially within the NROD boundary, resulting in 2,465 square feet of permanent encroachment. The stormwater facility is subject to Section 17.49.155.

Grading

Grading along the east bank of the Cove outside of the enhancement area will disturb 34,361 square feet of the NROD and remove 31 trees; only 18 of the trees are greater than six inches in diameter and more than 10 feet from proposed structures (Table 4). These impacts are subject to the standards of Section 17.49.200. All of the impacted VC will be stabilized following final grading. Areas to remain undeveloped will be replanted, as detailed in the Mitigation Plan (Figure 6).

Areas to remain unplanted for future in-water habitat and/or recreational uses (Phase 3 project elements) will be seeded with an appropriate native seed mix.

Table 4: Species and diameter of trees to be removed from the NROD Encroachment Areas

Tree ID	Species	Diameter (in)	Within 10 feet of Development?
5325	Black cottonwood (<i>Populus balsamifera</i>)	8x2	No
5327	Black cottonwood (<i>Populus balsamifera</i>)	16	Yes
5328	Black cottonwood (<i>Populus balsamifera</i>)	14	Yes
5329	Black cottonwood (<i>Populus balsamifera</i>)	10	Yes
5339	Black cottonwood (<i>Populus balsamifera</i>)	12x2	Yes
5340	Black cottonwood (<i>Populus balsamifera</i>)	18	Yes
5341	Black cottonwood (<i>Populus balsamifera</i>)	14	Yes
6221	Black cottonwood (<i>Populus balsamifera</i>)	8	Yes
6218	Black cottonwood (<i>Populus balsamifera</i>)	8	Yes
6216	Black cottonwood (<i>Populus balsamifera</i>)	8	Yes
6217	Black cottonwood (<i>Populus balsamifera</i>)	12x2	Yes
5368	Black cottonwood (<i>Populus balsamifera</i>)	14x2	No
6183	Black cottonwood (<i>Populus balsamifera</i>)	24	Yes
6184	Black cottonwood (<i>Populus balsamifera</i>)	10x2	Yes
5733	Douglas-fir (<i>Pseudotsuga menziesii</i>)	8	Yes
5878	Black cottonwood (<i>Populus balsamifera</i>)	14x2	No
5877	Black cottonwood (<i>Populus balsamifera</i>)	14x2	No
5844	Black cottonwood (<i>Populus balsamifera</i>)	22	No
5849	Black cottonwood (<i>Populus balsamifera</i>)	14	No
5850	Black cottonwood (<i>Populus balsamifera</i>)	14	No
5852	Black cottonwood (<i>Populus balsamifera</i>)	22	No
5851	Black cottonwood (<i>Populus balsamifera</i>)	12	No
5843	Black cottonwood (<i>Populus balsamifera</i>)	22	No
5842	Black cottonwood (<i>Populus balsamifera</i>)	8	No
6001	Black cottonwood (<i>Populus balsamifera</i>)	22	No
6002	Black cottonwood (<i>Populus balsamifera</i>)	22	No
6003	Black cottonwood (<i>Populus balsamifera</i>)	24	No
5999	Black cottonwood (<i>Populus balsamifera</i>)	24	No
5991	Black cottonwood (<i>Populus balsamifera</i>)	22x2	No
5990	Black cottonwood (<i>Populus balsamifera</i>)	10	No
5988	Black cottonwood (<i>Populus balsamifera</i>)	24x3	No

Mitigation for NROD impacts resulting from Phase 2 and Phase 3 project elements is detailed in Section 5.2 below. Mitigation in this report is for impacts to the NROD and does not include mitigation for tree protection standards (Chapter 17.41), which is included in the application package.

5.1 NROD Development Standards

As the proposed project will result in impacts to the vegetated corridor within the study area, the project must comply with Oregon City Municipal Code, Chapter 17.49, Natural Resource Overlay District. The applicable sections of the code are addressed below.

17.49.[0]60 – Consistency and relationship to other regulations.

Response: No conflicts with the provisions of the Oregon City Municipal Code; other City requirements; or with regional, state or federal law have been identified for the proposed project. PHS conducted a wetland delineation within the Cove development property and received concurrence letters from the US Army Corps of Engineers (Corps) on March 23, 2010 and from the Oregon Department of State Lands (DSL) on May 13, 2010. In order to provide those concurrences, representatives from both the Corps and DSL conducted in depth field reviews of the wetland delineation to verify its accuracy. PHS wetland scientists conducted a thorough review of the wetland and OHW boundaries within the entire Cove development site in 2015. This review was conducted to ensure that wetland and OHW boundaries had not changed, especially as both the Corps and DSL concurrences are only valid for five years.

Although the concurrences last only five years, there is no State or Federal regulation requiring the concurrences to be renewed. In addition, there is no State or Federal regulation requiring wetland delineations be reviewed prior to developing a property. Legally, the only time that a wetland delineation report needs to be reviewed is when there are proposed impacts to wetlands or waters regulated by the Corps and DSL. The Phase 2 project site does not contain wetland, and was designed to stay above the OHW of the Clackamette Cove. Therefore, there are no state or federal permits required for the project that would require the applicant to file a permit application and obtain a renewed letter of concurrence.

A Conditional Letter of Map Revision (CLOMR) will be submitted to the Federal Emergency Management Agency (FEMA) for project actions within the 100-year floodplain. A DEQ 1200-C NPDES Stormwater Discharge Permit will be submitted once the City provides Conditions of Approval for the Land Use application.

17.49.[0]70 – Prohibited uses

- D. *Grading, the placement of fill in amounts greater than ten cubic yards, or any other activity that results in the removal of more than ten percent of the existing native vegetation on any lot within the NROD is prohibited, unless part of an approved development activity.***

Response: Grading, the placement of greater than ten cubic yards of fill, and native vegetation removal within the NROD will occur for the proposed project. An approval for these development activities is being requested (See 17.49.200 below).

Grading and fill within the NROD will also occur in association with the esplanade and other paths and a stormwater facility, however, these are allowed uses under prescribed conditions (see 17.49.150 for the esplanade and paths and 17.49.155 for the stormwater facility).

17.49.[0]80 – Uses allowed outright (exempted)

- A. Stream, wetland, riparian, and upland restoration or enhancement projects as authorized by the city.**

Response: As described above, the applicant will enhance areas within the VC as part of the proposed project, as authorized by the city pursuant to this section.

- L. Planting of native vegetation and the removal of non-native, invasive vegetation (as identified on the Oregon City Native Plant List), and removal of refuse and fill, provided that:**

- 1. All work is done using hand-held equipment;**
- 2. No existing native vegetation is disturbed or removed; and**
- 3. All work occurs outside of wetlands and the top-of-bank of streams.**

Response: The applicant will plant native vegetation and remove non-native species in the enhancement and mitigation areas as detailed in the response to Section 17.49.[0]80 and authorized by the city (see section 5.2 *Mitigation Plan* below).

17.49.[0]90 – Uses allowed under prescribed conditions.

- E. Trails/pedestrian paths when not exempted by Section 17.49.080, subject to Section 17.49.170 (for trails) or Section 17.49.150 (for paved pedestrian paths).**

Response: The proposed esplanade and paths are subject to Section 17.49.150 described below.

- I. Stormwater detention or pre-treatment facilities subject to Section 17.49.155.**

Response: The proposed project includes a stormwater facility that will be partially within the VC. As such, the stormwater facility will be subject to Section 17.49.155, described below.

17.49.100 – General development standards.

The following standards apply to all Uses Allowed under Prescribed Conditions within the NROD with the exception of rights of ways (subject to Section 17.49.150), trails (subject to Section 17.49.170), utility lines (subject to Section 17.49.140), land divisions (subject to Section 17.49.160), and mitigation projects (subject to Section 17.49.180 or 17.49.190):

- A. Native trees may be removed only if they occur within ten feet of any proposed structures or within five feet of new driveways or if deemed not wind-safe by a certified arborist. Trees listed on the Oregon City Nuisance Plant List or Prohibited Plant List are exempt from this standard and may be removed. A protective covenant shall be required for any native trees that remain;**

Response: An adjustment from the standards of this Section is being requested as 18 trees greater than 6 inches in diameter will be removed that are more than 10 feet from proposed structures. Refer to Section 17.49.200 below.

- B. The community development director may allow the landscaping requirements of the base zone, other than landscaping required for parking lots, to be met by preserving, restoring and permanently protecting habitat on development sites in the Natural Resource Overlay District.**

Response: No landscaping requirements of the base zone will be met within the NROD.

C. All vegetation planted in the NROD shall be native and listed on the Oregon City Native Plant List;

Response: All vegetation proposed to be planted within the NROD is native and listed on the Oregon City Native Plant List. Refer to 5.2 *Mitigation Plan* for the proposed planting details.

D. Grading is subject to installation of erosion control measures required by the City of Oregon City;

Response: Erosion control measures required by the City of Oregon City will be installed prior to site mobilization and grading activities (see Construction Management Plan Sheets C4.1 through C4.4, Appendix A).

E. The minimum front, street, or garage setbacks of the base zone may be reduced to any distance between the base zone minimum and zero in order to minimize the disturbance area within the NROD portion of the lot;

Response: Minimum setback reductions are not being requested.

F. Any maximum required setback in any zone, such as for multi-family, commercial or institutional development, may be increased to any distance between the maximum and the distance necessary to minimize the disturbance area within the NROD portion of the lot;

Response: Maximum setback increases are not being requested.

G. Fences are allowed only within the disturbance area;

Response: Fences are not proposed within the undisturbed NROD.

H. Incandescent lights exceeding two hundred watts (or other light types exceeding the brightness of a two hundred watt incandescent light) shall be placed or shielded so that they do not shine directly into resource areas;

Response: Lights are not proposed for within the undisturbed NROD area; lights adjacent to the NROD will be shielded so that they do not shine directly into resource areas.

I. If development will occur within the one hundred-year floodplain, the FEMA floodplain standards of Chapter 17.42 shall be met; and

Response: Development will occur within the one hundred year floodplain. As such, the FEMA floodplain standards of Chapter 17.42 will be met (see the Floodplain Technical Memorandum included as part of the land use application for the proposed project).

J. Mitigation of impacts to the regulated buffer is required, subject to Section 17.49.180 or 17.49.190.

Response: Mitigation of impacts will be provided subject to Section 17.49.180, Planting Option 2. Refer to section 5.2 *Mitigation Plan* for details.

17.49.110 – Width of vegetated corridor.

Response: The VC associated with the Clackamas River and Clackamette Cove was established to be 50 feet from the edge of bankfull flow (approximately 18 feet NAVD 88) during a 2008/2009 Land Use Decision (Oregon City Water Resource File Number WR 08-21). The vegetated corridor within and adjacent to the Phase 2 project area is shown on Figure M4.0.

17.49.150 – Standards for vehicular or pedestrian paths and roads.

The following standards apply to public rights-of-way and private roads within the NROD, including roads, bridges/stream crossings, driveways and pedestrian paths with impervious surfaces:

- A. Stream crossings shall be limited to the minimum number and width necessary to ensure safe and convenient pedestrian, bicycle and vehicle connectivity, and shall cross the stream at an angle as close to perpendicular to the stream channel as practicable. Bridges shall be used instead of culverts wherever practicable.**
- B. Where the right-of-way or private road crosses a stream the crossing shall be by bridge or a bottomless culvert;**
- C. No fill or excavation shall occur within the ordinary high water mark of a stream without the approval of the Division of State Lands and/or the U.S. Army Corps of Engineers;**
- D. If the Oregon Department of State Lands (DSL) has jurisdiction over any work that requires excavation or fill in a wetland, required permits or authorization shall be obtained from DSL prior to release of a grading permit;**
- E. Any work that will take place within the banks of a stream shall be conducted between June 1 and August 31, or shall be approved by the Oregon Department of Fish and Wildlife; and**
- F. Mitigation is required, subject to Section 17.49.180 or 17.49.190.**

Response: The proposed project does not include stream crossings or work below the OHW of Clackamette Cove; therefore, no approval from DSL or Corps is required. The proposed esplanade is a paved pedestrian path connecting Main Street in the south to the North Park site. It will be approximately 20 feet wide and will feature numerous natural resource observation areas, connections with the proposed mixed use buildings to the east, and future connections with proposed paths. The esplanade has been designed to remain outside of the VC boundary as much as possible; however, in several locations the esplanade and/or retaining walls associated with the esplanade encroach into the VC boundary.

Proposed recreational paths will be provided during Phase 3 of the project and will include two ground-level impervious paths as well as two elevated walkways. The paths and walkways will be approximately 6 feet wide and will connect the esplanade with the north beach area and the future recreational dock. The conceptual design for the elevated walkways will allow for the establishment of native herbaceous species beneath a pervious (grated) walkway.

The improvements associated with the esplanade recreational paths will permanently impact 7,204 square feet of the NROD, and mitigation is required. Mitigation of these impacts will be provided subject to Section 17.49.180, Planting Option 2. Refer to section 5.2 *Mitigation Plan* for details.

17.49.155 – Standards for stormwater facilities.

Approved facilities that infiltrate stormwater on-site in accordance with Public Works Low-Impact Development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards:

- A. The forest canopy within the driplines of existing trees shall not be disturbed.**
- B. Only vegetation from the Oregon City Native Plant List shall be planted within these facilities.**
- C. Mitigation is required, subject to Sections 17.49.180 or 17.49.190.**
- D. The storm water facility may encroach up to one-half the distance of the NROD corridor.**
- E. The stormwater facility shall not impact more than one thousand square feet of the NROD. Impacts greater than one thousand square feet shall be process as a Type III application.**

F. The community development director may allow landscaping requirements of the base zone, other than landscaping required for parking lots, to be met by preserving, restoring and permanently protecting habitat on development sites within the Natural Resource Overlay District.

Response: The proposed stormwater facility will impact approximately 2,465 square feet of the NROD, which requires a Type III review; however, given the variance request for grading described in 17.49.200, the application will already be processed with a Type III review. There is no existing tree canopy in the vicinity of the proposed facility, the facility will encroach only 10 feet into the NROD boundary (less than one-half the distance of the NROD corridor), and only native plants will be used within the facility. Additional detail for the storm facility will be provided in the application package.

17.49.180 – Mitigation standards.

Response: Project-related impacts (non-exempt) total 44,030 square feet. The applicant will provide mitigation for project-related impacts pursuant to the mitigation standards of this section, Planting Option 2. The mitigation plan and requirements of this section are detailed in 5.2 *Mitigation Plan* below.

17.49.200 – Adjustment from standards.

If a regulated NROD use cannot meet one or more of the applicable NROD standards then an adjustment may be issued if all of the following criteria are met. Compliance with these criteria shall be demonstrated by the applicant in a written report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant. Such requests shall be processed under the Type III development permit procedure. The applicant shall demonstrate:

- A. There are no feasible alternatives for the proposed use or activity to be located outside the NROD area or to be located inside the NROD area and to be designed in a way that will meet all of the applicable NROD development standards.***

Response: The proposed grading and tree removal within the NROD that is not considered *Enhancement* (per Section 17.04.375) and is not associated with the proposed esplanade or paths is for future in-water habitat, future water-related recreational uses (beaches, beach viewing area, water feature), and flood storage. This non-exempt grading encroaches into 34,361 square feet of the NROD. Future in-water habitat and water-related recreational areas that are planned for Phase 3 must be in or adjacent to the water, and as such must be within the NROD. The location of flood storage areas were constrained by lot size and configuration; the location of Main Street, Agnes Avenue, and other existing developments; and the location of the Rossman Landfill. Given these constraints, flood storage areas could not be conducted completely outside of the NROD area

Providing flood storage and water-related recreational areas are not uses allowed outright or under prescribed conditions within the NROD, with the exception of future trails (detailed in Section 17.49.150). Although the north and south beach areas planned for Phase 3 would be considered in-water habitat enhancement areas per Section 17.04.375, the in-water work would not occur until Phase 3. During Phase 2 construction, the future in-water habitat areas will be graded to provide flood storage, and will not be planted to meet the standards of Chapter 17.49. Because grading and

native vegetation removal are prohibited per Section 17.49.[0]70.D unless part of an approved development activity, and tree removal is only allowed within 10 feet of proposed development per Section 17.49.100.A, it is not possible that these uses could meet the applicable NROD development standards without an adjustment from standards.

B. The proposal has fewer adverse impacts on significant resources and resource functions found in the local NROD area than actions that would meet the applicable environmental development standards.

Response: The proposed project has been designed to address project specific criteria while minimizing impacts to natural resources. Site constraints limit the potential location of areas suitable for cut/fill balance within the floodplain. The proposed grading along the bank has been minimized to the extent practicable, and will provide improvements to significant resource functions within the local NROD as compared to the existing function. Project alternatives that eliminate this grading would not provide flood storage, future in-water habitat and recreational uses, and improved bank function or the associated public benefits of these actions.

The NROD within the project area is in degraded condition. The enhancement and mitigation proposed for the project, which includes removing invasive plant species and increasing tree canopy, vegetation structure, and native plant diversity, is expected to create a higher functioning NROD area than currently exists within the project area.

C. The proposed use or activity proposes the minimum intrusion into the NROD area that is necessary to meet development objectives.

Response: The project proposes the minimum amount of disturbance inside the NROD while still meeting project specific criteria detailed in the application package. Grading has been limited to the amount necessary to improve bank functions, provide in-water habitat and recreational uses, and balance cut and fill⁴ within the development area.

D. Fish and wildlife passage will not be impeded.

Response: The impacts to the NROD are not expected to impede fish and wildlife passage. As no work is proposed below the OHW of the Clackamas River or Clackamette Cove during Phase 2, fish passage should not be impeded. In-water project elements constructed during Phase 3 will be permitted by the applicable federal, state, and local regulatory authorities, and will not impede fish passage.

A majority of the NROD area will remain intact and/or will be improved in function. The riparian area of the Clackamas River and Clackamette Cove adjacent to the development area is expected to improve through the proposed enhancement and required mitigation measures. The proposed project is not anticipated to cause additional wildlife passage impacts within the NROD other than those already present associated with the existing developments within the project vicinity.

⁴ The project will adhere to the FEMA floodplain standards and to the standards of Chapter 17.42 for development within the 100-year floodplain.

E. With the exception of the standard(s) subject to the adjustment request, all other applicable NROD standards can be met.

Response: All standards will be met with the exception of the standard where an adjustment has been requested in this section, as described in the responses provided to *Section 17.49.100.B-J – General development standards*, *Section 17.49.150 – Standards for vehicular and pedestrian paths or roads*, and *Section 17.49.155 – Standards for stormwater facilities*.

F. The applicant has proposed adequate mitigation to offset the impact of the adjustment.

Response: As described in the mitigation plan below, the proposed project will provide adequate mitigation to offset the impact of the adjustment to the development standards.

5.2 Mitigation Plan

The following standards (or the alternative standards of Section 17.49.190) apply to required mitigation:

A. Mitigation shall occur at a two-to-one ratio of mitigation area to proposed NROD disturbance area. Mitigation of the removal or encroachment of a wetland or stream shall not be part of this chapter and will be reviewed by the Division of State Lands or the Army Corp of Engineers during a separate review process;

Response: Proposed mitigation totals 90,155 square feet, as shown on Figure 6. The proposed mitigation plan includes mitigation area within the existing NROD and contiguous to the existing NROD. The total mitigation area exceeds the two-to-one required mitigation by approximately 2,095 square feet. This excess mitigation will help with the temporal loss of habitat during the plant establishment period. The proposal does not include mitigation of the removal or encroachment of a wetland or stream.

B. Mitigation shall occur on the site where the disturbance occurs, except as follows:[standards omitted];

Response: Proposed mitigation is within the project parcels. An easement that allows access to the mitigation site for monitoring and maintenance shall be provided.

C. Mitigation shall occur within the NROD area of a site unless it is demonstrated that this is not feasible because of a lack of available and appropriate area. In such cases, the proposed mitigation area shall be contiguous to the existing NROD area so the NROD boundary can be easily extended in the future to include the new resource site.

Response: Proposed mitigation occurs within and contiguous with the existing NROD area. The entire mitigation area is not located within the NROD because steep slopes make large portions of the NROD unsuitable for plantings and invasive removal. In addition, future habitat enhancement projects described in the *Feasibility Study* are planned for the western portion of the project area, which would otherwise have NROD areas that would be suitable for mitigation. As such, there is insufficient mitigation area within the NROD that is available (not planned for future enhancement) and suitable (not on steep slopes) for mitigation. As such, in addition to mitigation within the existing NROD, mitigation is proposed in areas contiguous with the existing NROD as shown on Figure 6.

D Invasive and nuisance vegetation shall be removed within the mitigation area;

Response: Invasive vegetation listed on the Oregon City Nuisance Plant List including, but not limited to cut-leaf birch, Himalayan blackberry, multi-flora rose, Scotch broom, English ivy, common

tansy, common vetch, oxeye daisy, reed canarygrass, Robert's geranium, spotted cat's ear, sweet clover, and common teasel will be removed within the mitigation area.

E. Required Mitigation Planting. *An applicant shall meet Mitigation Planting Option 1 or 2 below, whichever option results in more tree plantings, except that where the disturbance area is one acre or more, Mitigation Option 2 shall be required. All trees, shrubs, and groundcover shall be selected from the Oregon City Native Plant List.*

Response: Mitigation Planting Option 2 will be used as the disturbance area is greater than one acre. All trees, shrubs, and herbaceous (groundcover) selected for the mitigation plan are from the Oregon City Native Plant List. The plant species listed in Table 5 and shown on Figure 6A are subject to adjustment based on site conditions and plant availability at the time of planting; however, no more than one-third of the trees will be of the same genus, and shrubs will consist of at least three different species.

Table 5. Proposed plant list for mitigation plantings.

Botanical Name	Common Name
TREES (Minimum 440)	
<i>Acer circinatum</i>	Vine maple
<i>Acer macrophyllum</i>	Big leaf maple
<i>Alnus rubra</i>	Red alder
<i>Cornus nuttalli</i>	Western flowering dogwood
<i>Fraxinus latifolia</i>	Oregon ash
<i>Prunus emarginata</i>	Bitter cherry
<i>Quercus garryana</i>	Oregon white oak
<i>Rhamnus purshiana</i>	Cascara
<i>Salix species</i>	Willow
<i>Sambucus species</i>	Elderberry
SHRUBS (Minimum 2,202)	
<i>Amelanchier alnifolia</i>	Western serviceberry
<i>Berberis aquifolium</i>	Tall Oregon grape
<i>Cornus sericea</i>	Red-osier dogwood
<i>Gaultheria shallon</i>	Salal
<i>Ribes sanguineum</i>	Red flowering currant
<i>Rhododendron macrophyllum</i>	Western rhododendron
<i>Rubus parviflorus</i>	Thimbleberry
<i>Spiraea douglasii</i>	Douglas' spirea
<i>Symphoricarpos albus</i>	Snowberry
<i>Vaccinium ovatum</i>	Evergreen huckleberry
SEED MIX	
<i>Agrostis exarata</i> - Spike bentgrass	<i>Bromus carinatus</i> - California brome
<i>Danthonia californica</i> - California oatgrass	<i>Elymus glaucus</i> - Blue wild rye
<i>Hordeum brachyantherum</i> - Meadow barley	<i>Lupinus rivularis</i> - Riverbank lupine
<i>Prunella vulgaris</i> - Self heal	

2. Mitigation Planting Option 2.

Response: The mitigation planting quantity is based on the disturbance area within the NROD. The disturbance area within the NROD is 44,030 square feet, which requires that four hundred and forty (440) replacement trees (5 trees for every 500 square feet) and two-thousand, two-hundred and two (2,202) replacement shrubs (25 shrubs for every 500 square feet) be planted according to the size, spacing, and diversity standards of this section. Bare ground will be planted or seeded with native grasses and ground cover species. New plantings will be mulched and planting areas will be watered for a minimum of three years following planting.

F. Monitoring and Maintenance.

Response: The proposed mitigation will be monitored and maintained for a minimum of five years, with approved annual progress reports submitted to the City's planning division. Mulching and irrigation will be applied in the amounts necessary to ensure eighty percent (80%) survival at the end of the required five-year monitoring period. Irrigation is to be determined, but may require the use of a watering truck for the duration of the maintenance and monitoring period. The mitigation area will be inspected annually during the active growing season. During site monitoring, survival rates of planted trees and shrubs and invasive plant species cover will be documented. This information, along with photo documentation of the mitigation area, will be used to inform the annual progress report. Should the survival rate drop below 80 percent or invasive plant coverage exceed 10 percent at any time during the maintenance period, immediate remedial action will be taken. Monitoring and maintenance is the on-going responsibility of the property owner, assign, or designee.

G. Covenant or Conservation Easement. *Applicant shall record a restrictive covenant or conservation easement, in a form provided by the city, requiring the owners and assigns of properties subject to this section to comply with the applicable mitigation requirements of this section. Said covenant shall run with the land, and permit the city to complete mitigation work in the event of default by the responsible party. Costs borne by the city for such mitigation shall be borne by the owner.*

Response: The applicant will record a restrictive covenant or conservation easement in the form provided by the City that will require owners and assigns of the property to comply with the applicable mitigation requirements. The covenant or easement will run with the land and permit the City to complete mitigation work in the event of default by the responsible party. Should the city need to complete the mitigation work, such cost will be borne by the owner. The covenant or conservation easement is the responsibility of the property owner, assign, or designee.

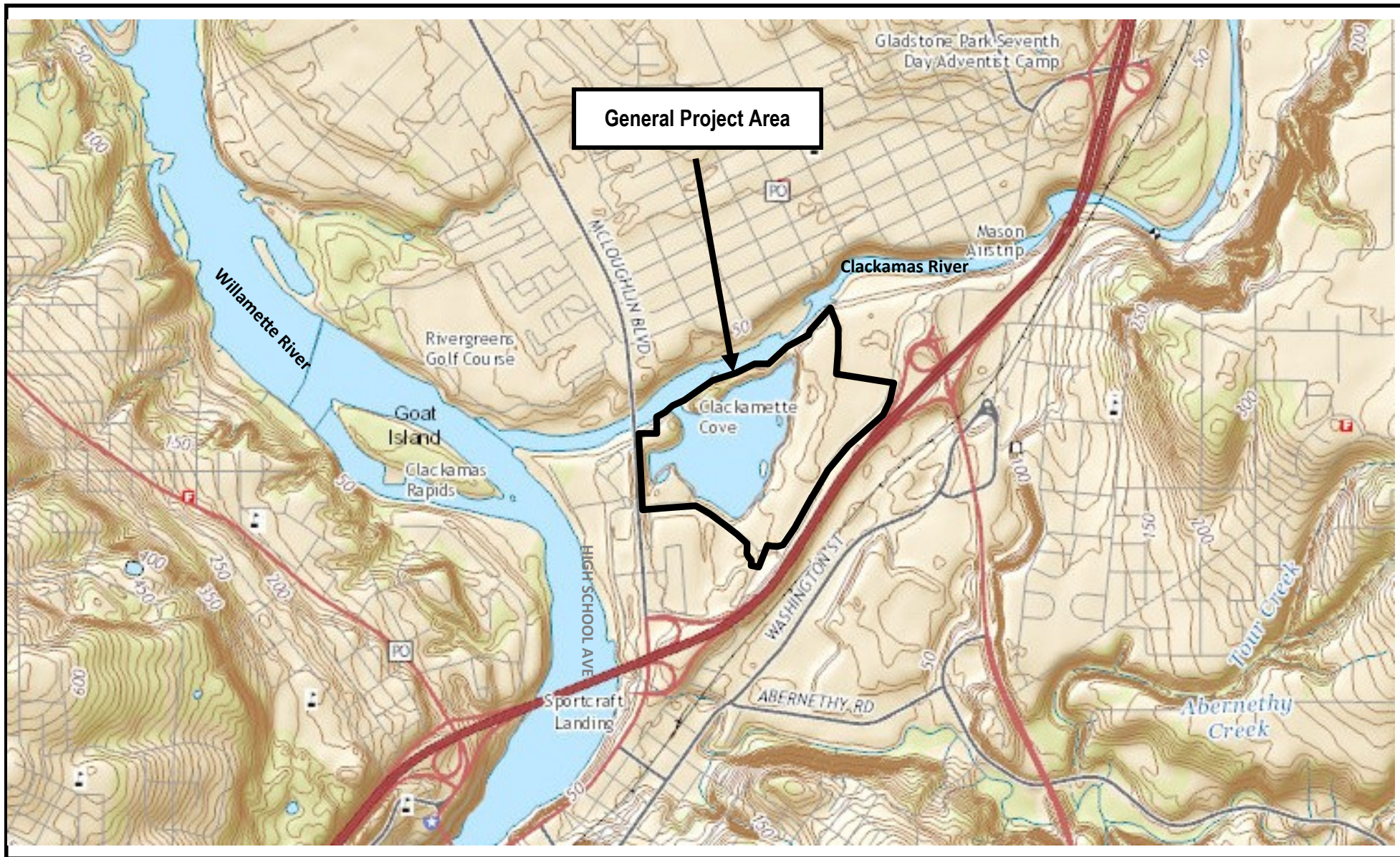
H. Financial Guarantee. *A financial guarantee for establishment of the mitigation area, in a form approved by the city, shall be submitted before development within the NROD disturbance area commences. The city will release the guarantee at the end of the five-year monitoring period, or before, upon its determination that the mitigation plan has been satisfactorily implemented pursuant to this section.*

Response: A financial guarantee will be provided to the city prior to development within the NROD disturbance area. The financial guarantee is the responsibility of the property owner, assign, or designee.

Appendix A

Figures





5511
6/29/15

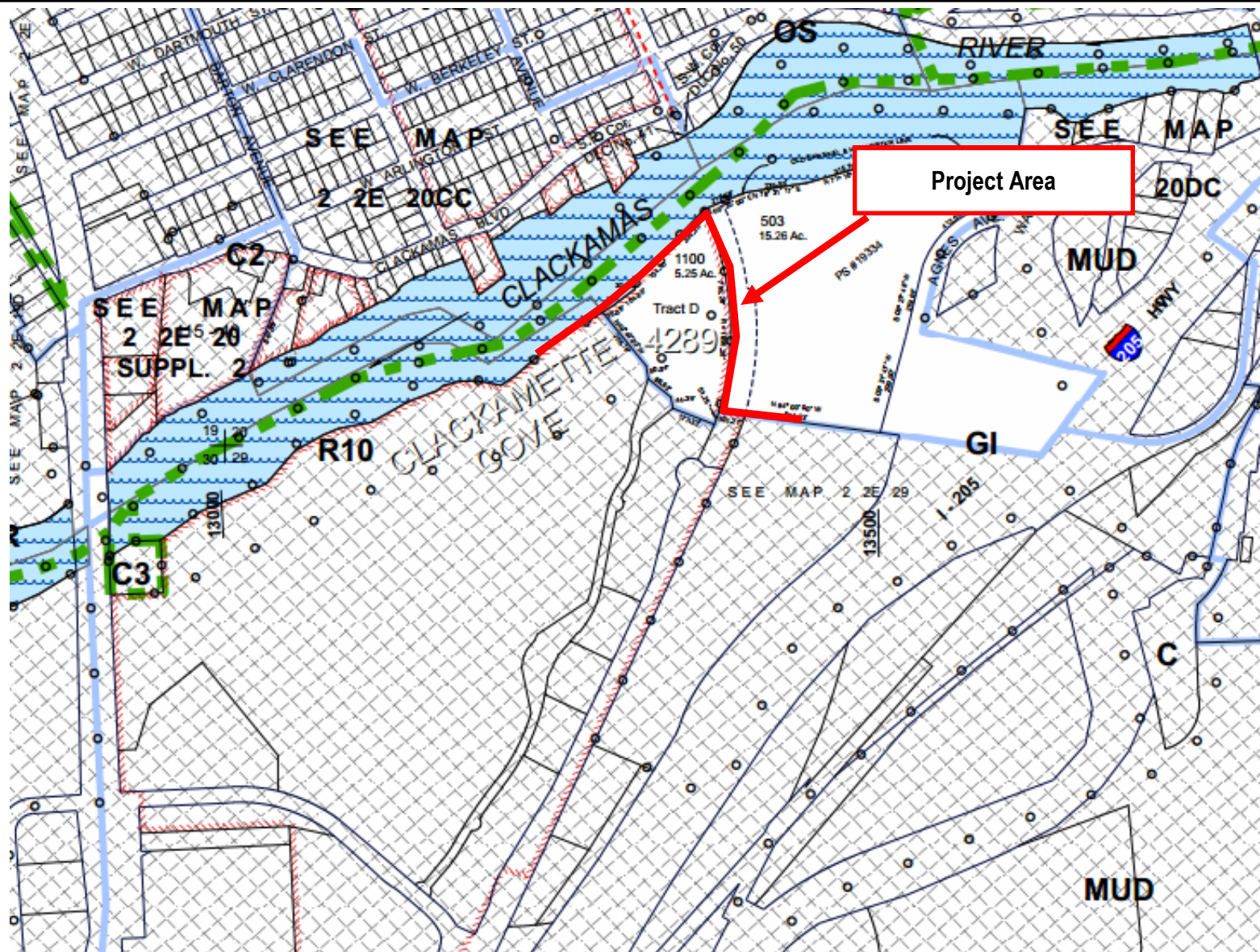


Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Location and General topography
The Cove— Phase 2, Oregon City, Oregon
(USGS The National Map Viewer, Oregon City, Oregon quadrangle, 2015)

FIGURE

1



5511
6/29/15

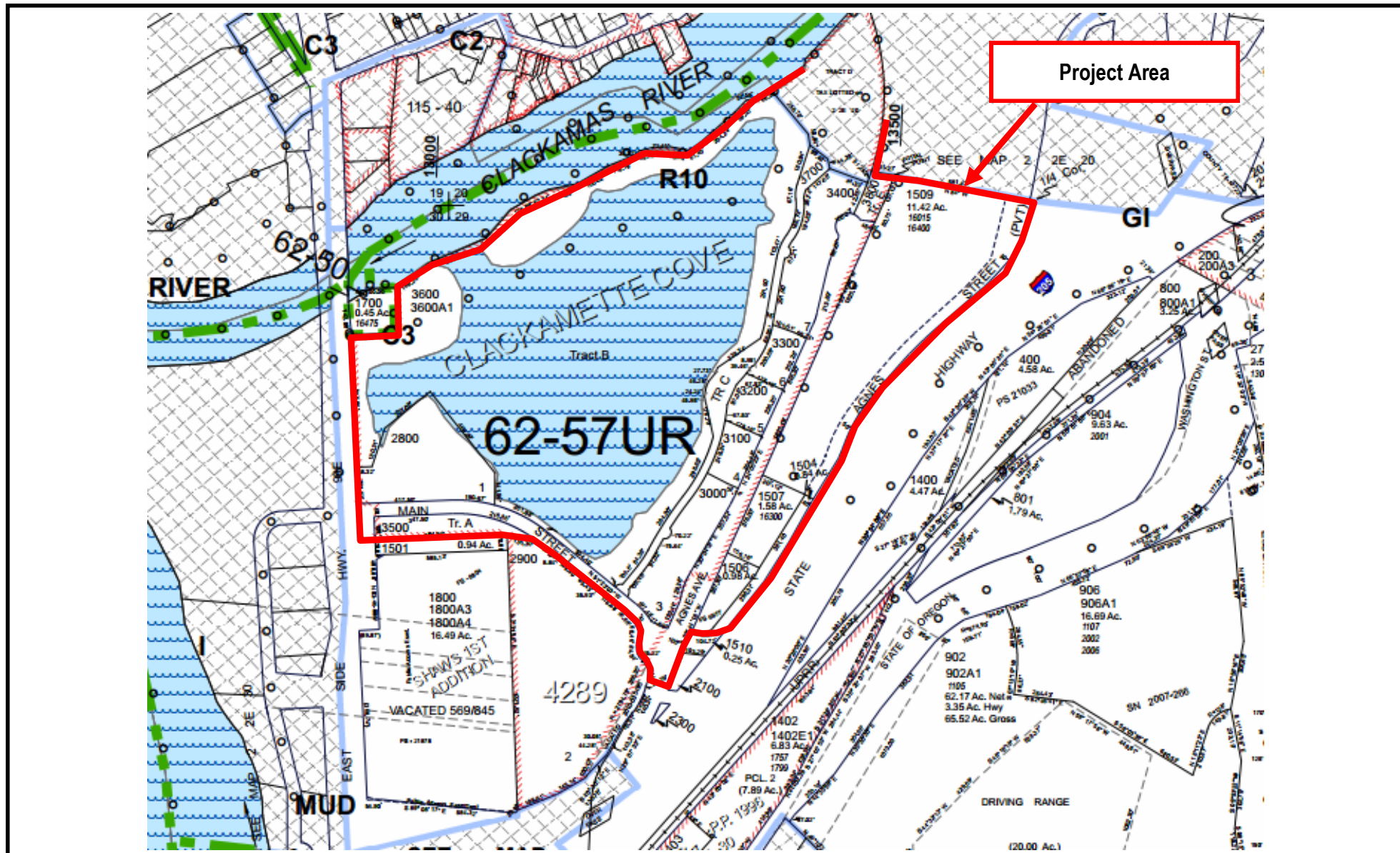


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Tax Lot map 2 2E 20, Clackamas County Oregon
The Cove—Phase 2, Oregon City, Oregon
(ormap.net, 2015)

FIGURE

2A



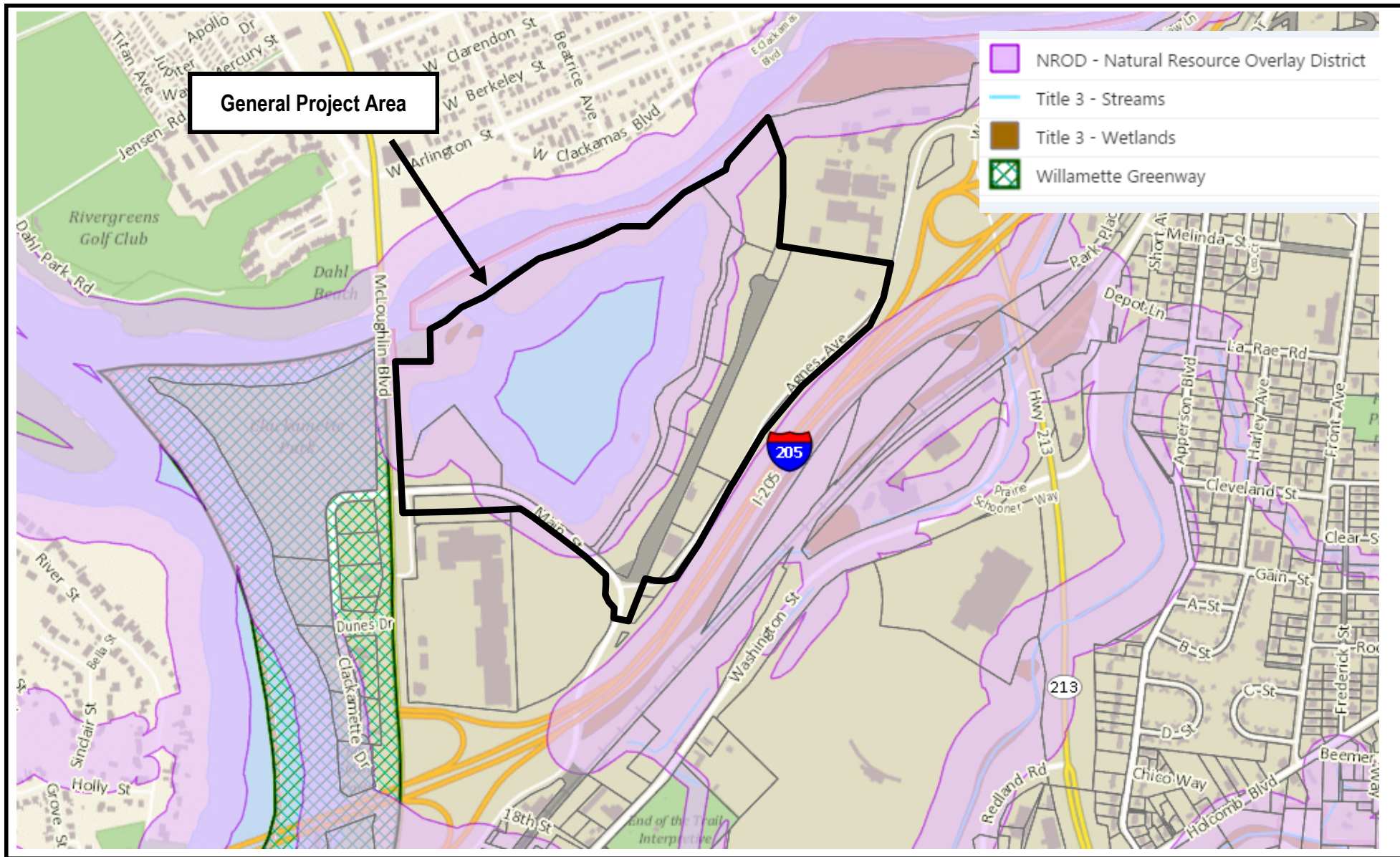
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6/29/15



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Tax Lot map 2 2E 29, Clackamas County Oregon
The Cove—Phase 2, Oregon City, Oregon
(ormap.net, 2015)

FIGURE
2B



5511
6/29/15

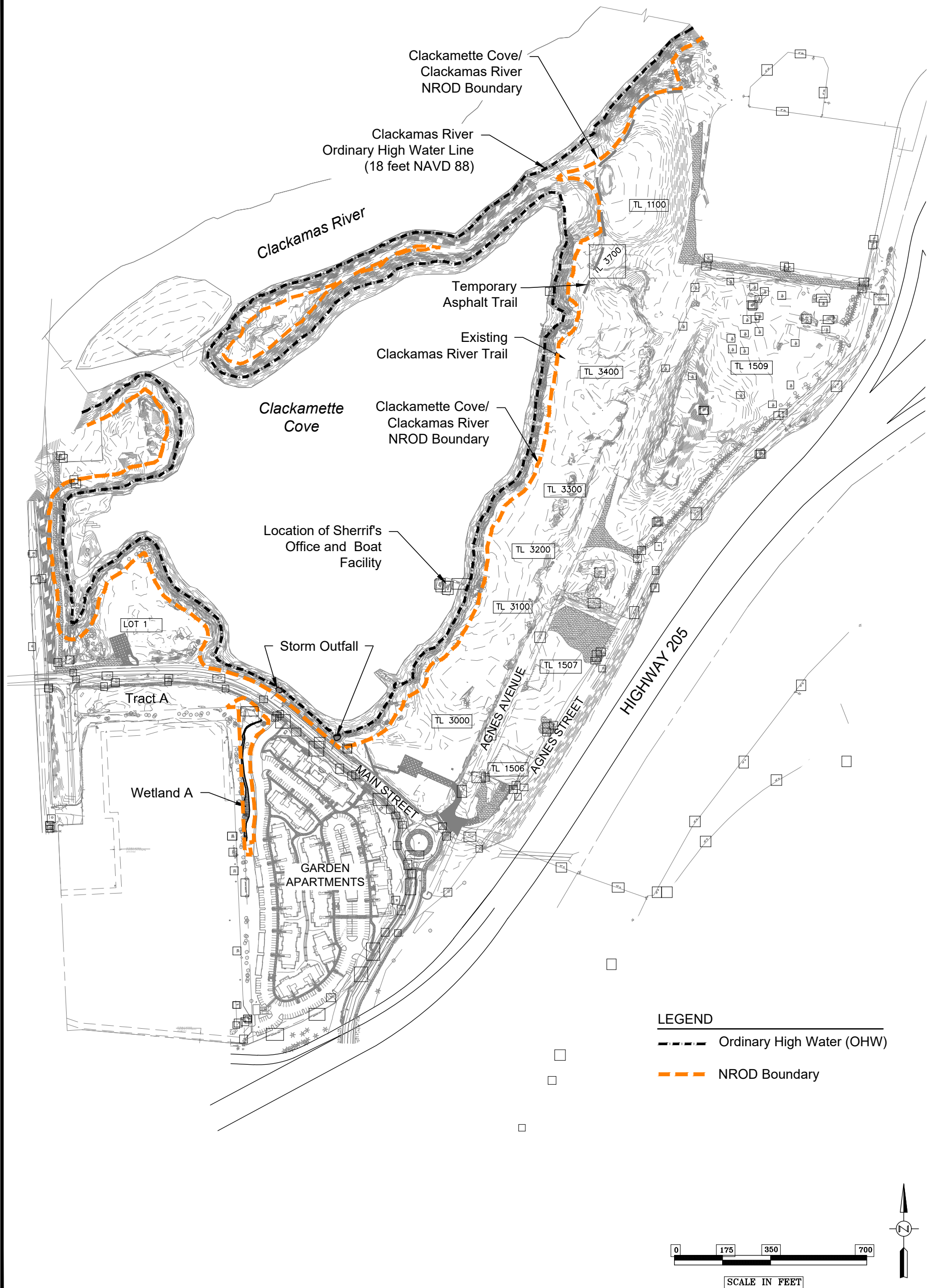


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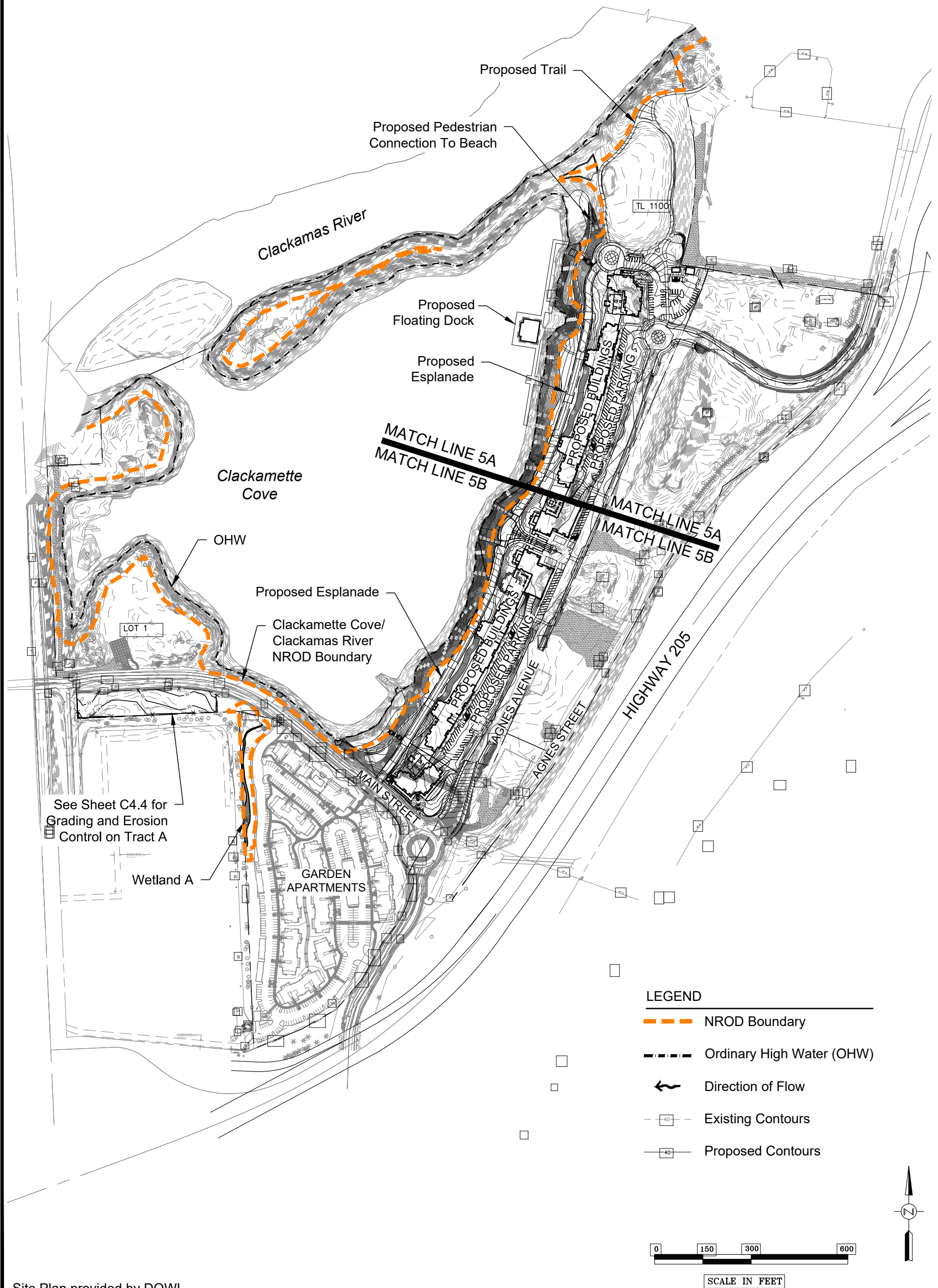
Natural Resources Overlay District map
The Cove—Phase 2, Oregon City, Oregon
(Oregon City Web Maps, 2015)

FIGURE

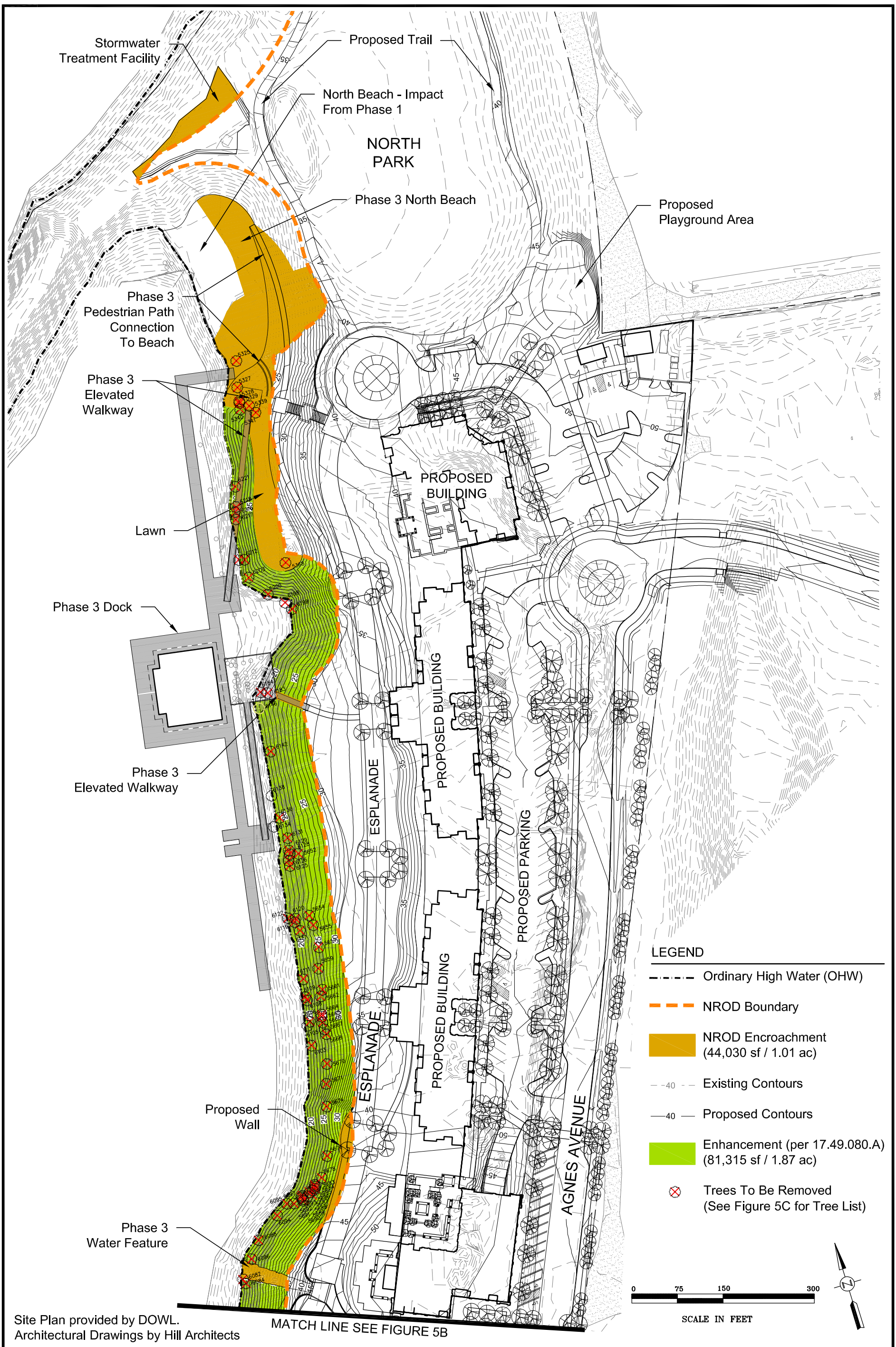
3

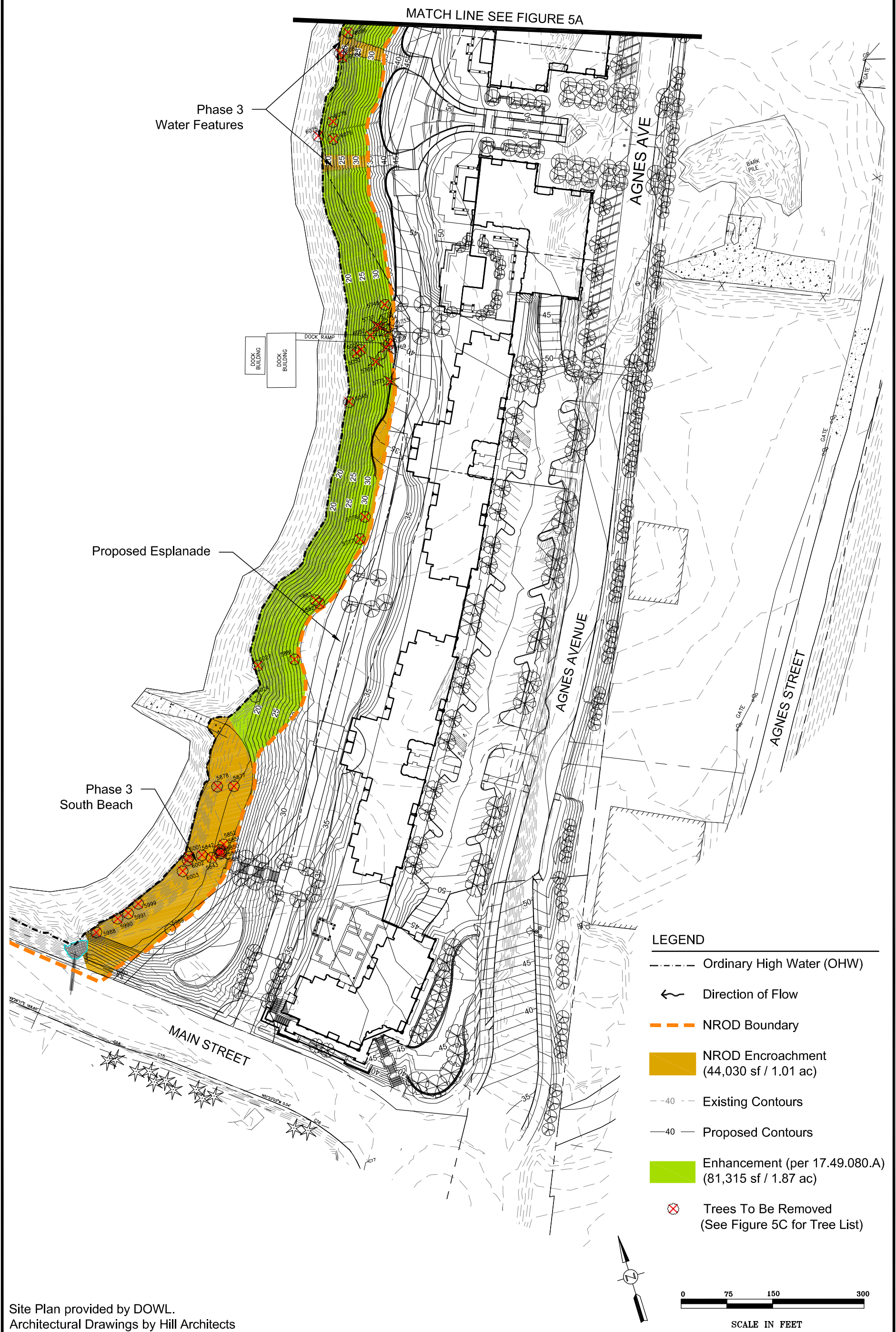


Survey provided by DOWL.



Site Plan provided by DOWL.





Pacific Habitat Services, Inc.
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Phone: (503) 570-0800 Fax: (503) 570-0855

Site Plan
The Cove, Phase 2 - Oregon City, OR

FIGURE
5B

6-15-2018

Tree ID	Species	Diameter (in)
5325	Black cottonwood (<i>Populus balsamifera</i>)	8x2
5327	Black cottonwood (<i>Populus balsamifera</i>)	16
5328	Black cottonwood (<i>Populus balsamifera</i>)	14
5329	Black cottonwood (<i>Populus balsamifera</i>)	10
5339	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5340	Black cottonwood (<i>Populus balsamifera</i>)	18
5341	Black cottonwood (<i>Populus balsamifera</i>)	14
6221	Black cottonwood (<i>Populus balsamifera</i>)	8
6218	Black cottonwood (<i>Populus balsamifera</i>)	8
6216	Black cottonwood (<i>Populus balsamifera</i>)	8
6217	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6211	Black cottonwood (<i>Populus balsamifera</i>)	12
6212	Black cottonwood (<i>Populus balsamifera</i>)	14
6203	Black cottonwood (<i>Populus balsamifera</i>)	18
5368	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6200	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6198	Black cottonwood (<i>Populus balsamifera</i>)	16x2
6199	Black cottonwood (<i>Populus balsamifera</i>)	14
6184	Black cottonwood (<i>Populus balsamifera</i>)	10x2
6183	Black cottonwood (<i>Populus balsamifera</i>)	24
6146	Black cottonwood (<i>Populus balsamifera</i>)	12
6142	Black cottonwood (<i>Populus balsamifera</i>)	18
6136	Black cottonwood (<i>Populus balsamifera</i>)	10
6131	Black cottonwood (<i>Populus balsamifera</i>)	14x2

Tree ID	Species	Diameter (in)
6084	Black cottonwood (<i>Populus balsamifera</i>)	8
6078	Black cottonwood (<i>Populus balsamifera</i>)	20x2
6075	Black cottonwood (<i>Populus balsamifera</i>)	20
6076	Black cottonwood (<i>Populus balsamifera</i>)	22x2
5748	Black cottonwood (<i>Populus balsamifera</i>)	24
5738	Douglas-fir (<i>Pseudotsuga menziesii</i>)	6
5737	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12x2
6052	Black cottonwood (<i>Populus balsamifera</i>)	16x2
5734	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
5733	Douglas-fir (<i>Pseudotsuga menziesii</i>)	8
5758	Black cottonwood (<i>Populus balsamifera</i>)	12
5759	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
6051	Black cottonwood (<i>Populus balsamifera</i>)	10
6050	Black cottonwood (<i>Populus balsamifera</i>)	12
5769	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
5775	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
6045	Black cottonwood (<i>Populus balsamifera</i>)	20
5776	Black cottonwood (<i>Populus balsamifera</i>)	6
5777	Black cottonwood (<i>Populus balsamifera</i>)	10
5883	Black cottonwood (<i>Populus balsamifera</i>)	10
5882	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5881	Black cottonwood (<i>Populus balsamifera</i>)	12
6027	Black cottonwood (<i>Populus balsamifera</i>)	18
6024	Black cottonwood (<i>Populus balsamifera</i>)	12x2

Tree ID	Species	Diameter (in)
6129	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6128	Black cottonwood (<i>Populus balsamifera</i>)	14
5652	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6126	Black cottonwood (<i>Populus balsamifera</i>)	10
6125	Black cottonwood (<i>Populus balsamifera</i>)	12
6120	Black cottonwood (<i>Populus balsamifera</i>)	12
6122	Black cottonwood (<i>Populus balsamifera</i>)	12
6119	Black cottonwood (<i>Populus balsamifera</i>)	24
6117	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5654	Black cottonwood (<i>Populus balsamifera</i>)	12
5655	Black cottonwood (<i>Populus balsamifera</i>)	12
5657	Black cottonwood (<i>Populus balsamifera</i>)	14
5659	Black cottonwood (<i>Populus balsamifera</i>)	16
6111	Black cottonwood (<i>Populus balsamifera</i>)	12
6109	Black cottonwood (<i>Populus balsamifera</i>)	14
5661	Black cottonwood (<i>Populus balsamifera</i>)	14
5662	Black cottonwood (<i>Populus balsamifera</i>)	16
5665	Black cottonwood (<i>Populus balsamifera</i>)	10
5664	Black cottonwood (<i>Populus balsamifera</i>)	12
6108	Black cottonwood (<i>Populus balsamifera</i>)	12
6106	Black cottonwood (<i>Populus balsamifera</i>)	14
6105	Black cottonwood (<i>Populus balsamifera</i>)	10
5666	Black cottonwood (<i>Populus balsamifera</i>)	12
5667	Black cottonwood (<i>Populus balsamifera</i>)	14

Tree ID	Species	Diameter (in)
5878	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5877	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5844	Black cottonwood (<i>Populus balsamifera</i>)	22
5849	Black cottonwood (<i>Populus balsamifera</i>)	14
5850	Black cottonwood (<i>Populus balsamifera</i>)	14
5852	Black cottonwood (<i>Populus balsamifera</i>)	22
5851	Black cottonwood (<i>Populus balsamifera</i>)	12
5843	Black cottonwood (<i>Populus balsamifera</i>)	22
5842	Black cottonwood (<i>Populus balsamifera</i>)	8
6001	Black cottonwood (<i>Populus balsamifera</i>)	22
6002	Black cottonwood (<i>Populus balsamifera</i>)	22
6003	Black cottonwood (<i>Populus balsamifera</i>)	24
5999	Black cottonwood (<i>Populus balsamifera</i>)	24
5991	Black cottonwood (<i>Populus balsamifera</i>)	22x2
5990	Black cottonwood (<i>Populus balsamifera</i>)	10
5988	Black cottonwood (<i>Populus balsamifera</i>)	24x3

Tree ID	Species	Diameter (in)
5668	Black cottonwood (<i>Populus balsamifera</i>)	12
6103	Black cottonwood (<i>Populus balsamifera</i>)	10
5670	Black cottonwood (<i>Populus balsamifera</i>)	14
5671	Black cottonwood (<i>Populus balsamifera</i>)	14x3
5674	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5676	Black cottonwood (<i>Populus balsamifera</i>)	18
5678	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5683	Black cottonwood (<i>Populus balsamifera</i>)	6
5687	Black cottonwood (<i>Populus balsamifera</i>)	10
5690	Black cottonwood (<i>Populus balsamifera</i>)	14
5691	Black cottonwood (<i>Populus balsamifera</i>)	10
5692	Black cottonwood (<i>Populus balsamifera</i>)	12
5693	Black cottonwood (<i>Populus balsamifera</i>)	12
6095	Black cottonwood (<i>Populus balsamifera</i>)	14
6094	Black cottonwood (<i>Populus balsamifera</i>)	10x3
6097	Black cottonwood (<i>Populus balsamifera</i>)	DEAD
5689	Black cottonwood (<i>Populus balsamifera</i>)	10
5688	Black cottonwood (<i>Populus balsamifera</i>)	10
5686	Black cottonwood (<i>Populus balsamifera</i>)	12
5685	Black cottonwood (<i>Populus balsamifera</i>)	12
5684	Black cottonwood (<i>Populus balsamifera</i>)	10
6088	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6086	Black cottonwood (<i>Populus balsamifera</i>)	8
6082	Black cottonwood (<i>Populus balsamifera</i>)	6



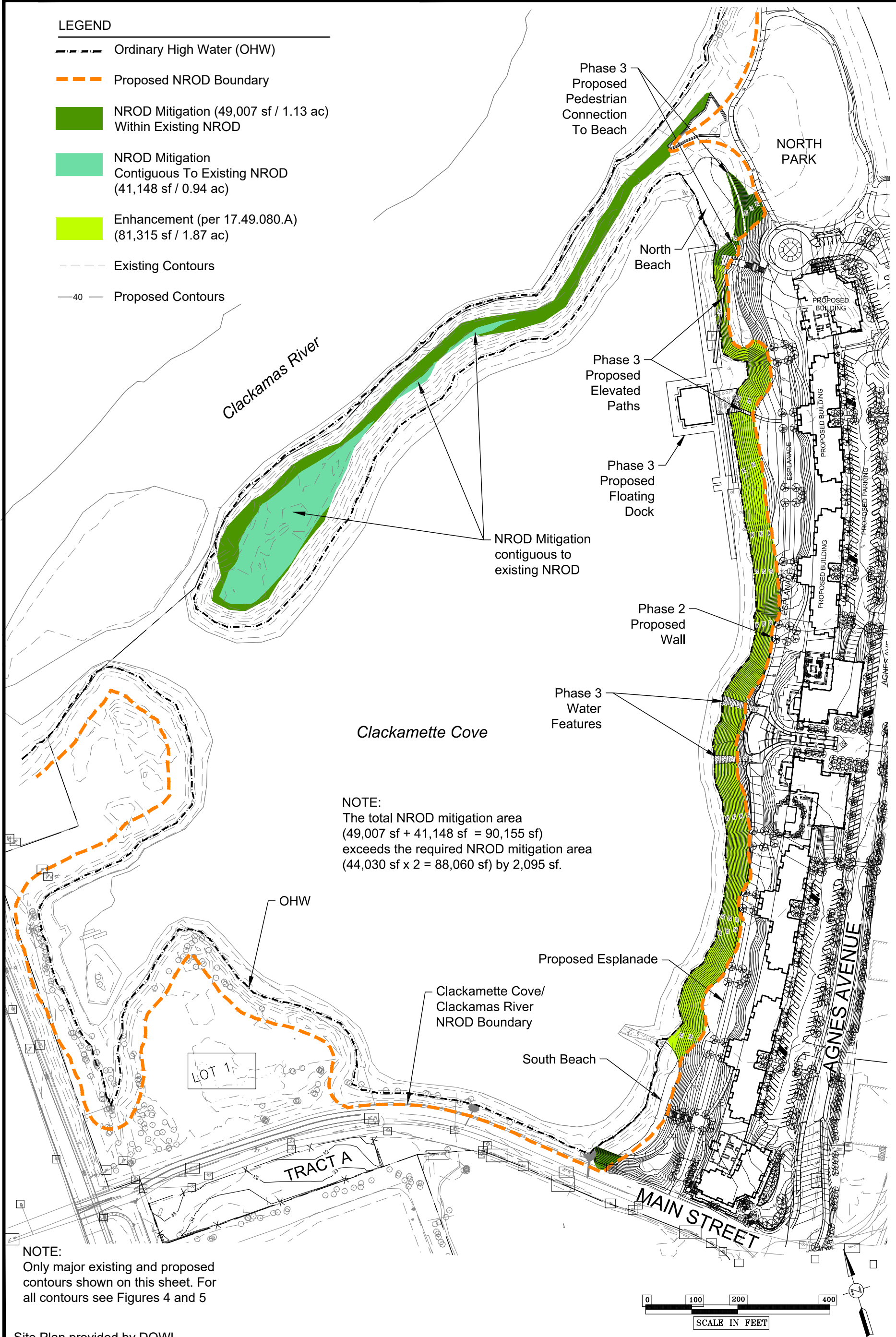
Tree Lists (Trees To Be Removed)
The Cove, Phase 2 - Oregon City, OR

FIGURE
5C

6-15-2018

LEGEND

- Ordinary High Water (OHW)
- Proposed NROD Boundary
- NROD Mitigation (49,007 sf / 1.13 ac)
Within Existing NROD
- NROD Mitigation
Contiguous To Existing NROD
(41,148 sf / 0.94 ac)
- Enhancement (per 17.49.080.A)
(81,315 sf / 1.87 ac)
- Existing Contours
- Proposed Contours



NROD Mitigation Area Plant List

Botanical Name	Common Name
TREES (Minimum 440)	
<i>Acer circinatum</i>	Vine maple
<i>Acer macrophyllum</i>	Big leaf maple
<i>Alnus rubra</i>	Red alder
<i>Cornus nuttali</i>	Western flowering dogwood
<i>Fraxinus latifolia</i>	Oregon ash
<i>Prunus emarginata</i>	Bitter cherry
<i>Quercus garryana</i>	Oregon white oak
<i>Rhamnus purshiana</i>	Cascara
<i>Salix species</i>	Willow
<i>Sambucus species</i>	Elderberry
SHRUBS (Minimum 2,202)	
<i>Amelanchier alnifolia</i>	Western serviceberry
<i>Berberis aquifolium</i>	Tall Oregon grape
<i>Cornus sericea</i>	Red-osier dogwood
<i>Gaultheria shallon</i>	Salal
<i>Ribes sanguineum</i>	Red flowering currant
<i>Rhododendron macrophyllum</i>	Western rhododendron
<i>Rubus parviflorus</i>	Thimbleberry
<i>Spiraea douglasii</i>	Douglas’ spirea
<i>Symphoricarpos albus</i>	Snowberry
<i>Vaccinium ovatum</i>	Evergreen huckleberry
SEED MIX	
<i>Agrostis exarata</i>	Spike bentgrass
<i>Bromus carinatus</i>	California brome
<i>Danthonia californica</i>	California oatgrass
<i>Elymus glaucus</i>	Blue wild rye
<i>Lupinus rivularis</i>	Riverbank lupine
<i>Horedum brachyantherum</i>	Meadow barley
<i>Prunella vulgaris</i>	Self heal

NROD Enhancement Area Plant List

Botanical Name	Common Name
TREES (Minimum 778)	
<i>Acer circinatum</i>	Vine maple
<i>Acer macrophyllum</i>	Big leaf maple
<i>Alnus rubra</i>	Red alder
<i>Cornus nuttali</i>	Western flowering dogwood
<i>Fraxinus latifolia</i>	Oregon ash
<i>Prunus emarginata</i>	Bitter cherry
<i>Quercus garryana</i>	Oregon white oak
<i>Rhamnus purshiana</i>	Cascara
<i>Salix species</i>	Willow
<i>Sambucus species</i>	Elderberry
SHRUBS (Minimum 3,892)	
<i>Amelanchier alnifolia</i>	Western serviceberry
<i>Berberis aquifolium</i>	Tall Oregon grape
<i>Cornus sericea</i>	Red-osier dogwood
<i>Gaultheria shallon</i>	Salal
<i>Ribes sanguineum</i>	Red flowering currant
<i>Rhododendron macrophyllum</i>	Western rhododendron
<i>Rubus parviflorus</i>	Thimbleberry
<i>Spiraea douglasii</i>	Douglas’ spirea
<i>Symphoricarpos albus</i>	Snowberry
<i>Vaccinium ovatum</i>	Evergreen huckleberry
SEED MIX (suggested pollinator mix)	
Grasses	Forbs
<i>Agrostis exarata</i> - spike bentgrass	<i>Achillea millefolium</i> – Western yarrow
<i>Bromus carinatus</i> - California brome	<i>Clarkia purpurea</i> – farewell to spring
<i>Danthonia californica</i> – California oatgrass	<i>Gilia capitata</i> – globe gilia
<i>Deschampsia cespitosa</i> - tufted hairgrass	<i>Lupinus rivularis</i> – riverbank lupine
<i>Elymus glaucus</i> – blue wild rye	<i>Prunella vulgaris</i> – self heal
<i>Festuca romerii</i> – Roemer’s fescue	<i>Sidalcea virgata</i> – rose checkermallow
<i>Horedum brachyantherum</i> – meadow barley	<i>Solidago canadensis</i> – Canada goldenrod
	<i>Symphyotrichum subspicatum</i> – Douglas aster

Appendix B

Delineation Concurrence Letters





Oregon

Theodore R. Kulongoski, 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

May 13, 2010

State Land Board

Edward Darrow
Pacific Property Search, LLC
23535 SW Gage Street
Wilsonville, OR 97070

Theodore R. Kulongoski
Governor

Kate Brown
Secretary of State

Ted Wheeler
State Treasurer

Re: Wetland Delineation Report for The Cove in Oregon City, Clackamas County; T2S R2E Sec. 20, Portion of Tax Lot 502; Sec. 29, Tax Lots 1500, 1505, 1508, 1509, 1600, 1601, 1900, and Portion of 1503; Sec. 29CB, Tax Lot 100; WD #10-0027; App. #41641 and App. #43457; City of Oregon City Local Wetlands Inventory, Clackamette Cove

Dear Mr. Darrow:

The Department of State Lands has reviewed the wetland delineation report prepared by Pacific Habitat Services, Inc. for the site referenced above. Based upon our review, we concur with their delineation (Figures 8 and 8A-8H) and conclusions. Within the study area, 2 wetlands, 1 pond, and Clackamette Cove were identified. Of these features, Wetland A (totaling approximately 0.1 acres) and Clackamette Cove are subject to the permit requirements of the state Removal-Fill Law. The remaining two features, an artificially created wetland (0.08 acres) and pond (0.07 acres), are exempt per OAR 141-085-0515(6) and not subject to the state law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). In addition, Clackamette Cove is designated an essential salmonid water; therefore, fill or removal of any amount of material below the OHWL, will require a state permit.

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

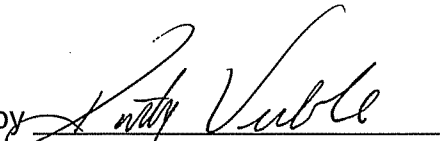
Thank you for having the site evaluated. Please phone me at (503) 986-5232 if you have any questions.

Sincerely,



Peter Ryan, PWS
Wetland Specialist

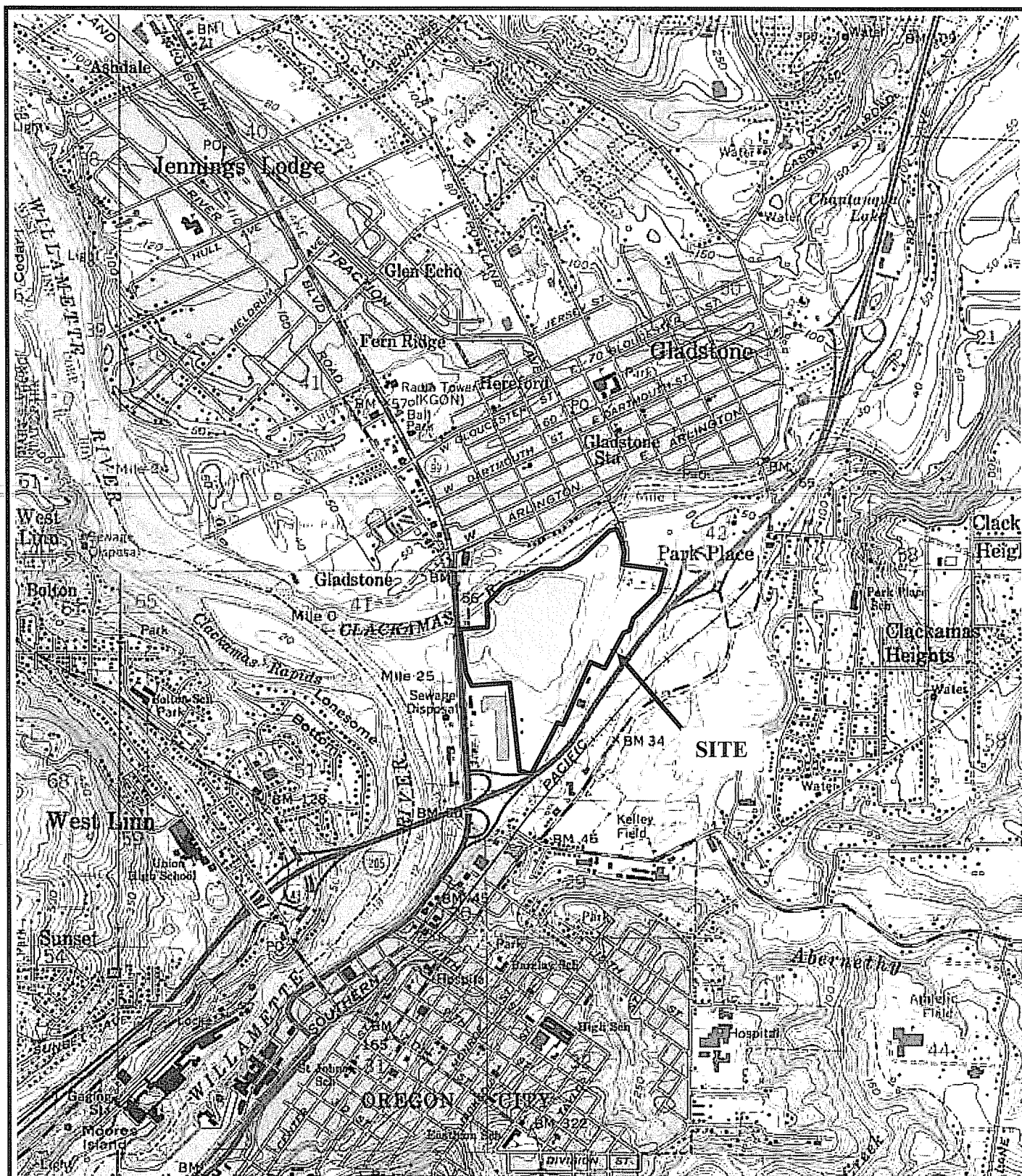
Approved by



Kathy Verble, CPSS
Acting Wetlands Program Manager

Enclosures

ec: Craig Tumer, Pacific Habitat Services, Inc.
City of Oregon City Planning Department (Map enclosed for updating LWI)
Charlie Hanner, Corps of Engineers
Anita Huffman, DSL



7/21/09

4496

Location and general topography for The Cove project in Oregon City, Oregon (USGS OR City, OR and Gladstone, OR quadrangles; 1961 photos revised 1985 and 1984 respectively).

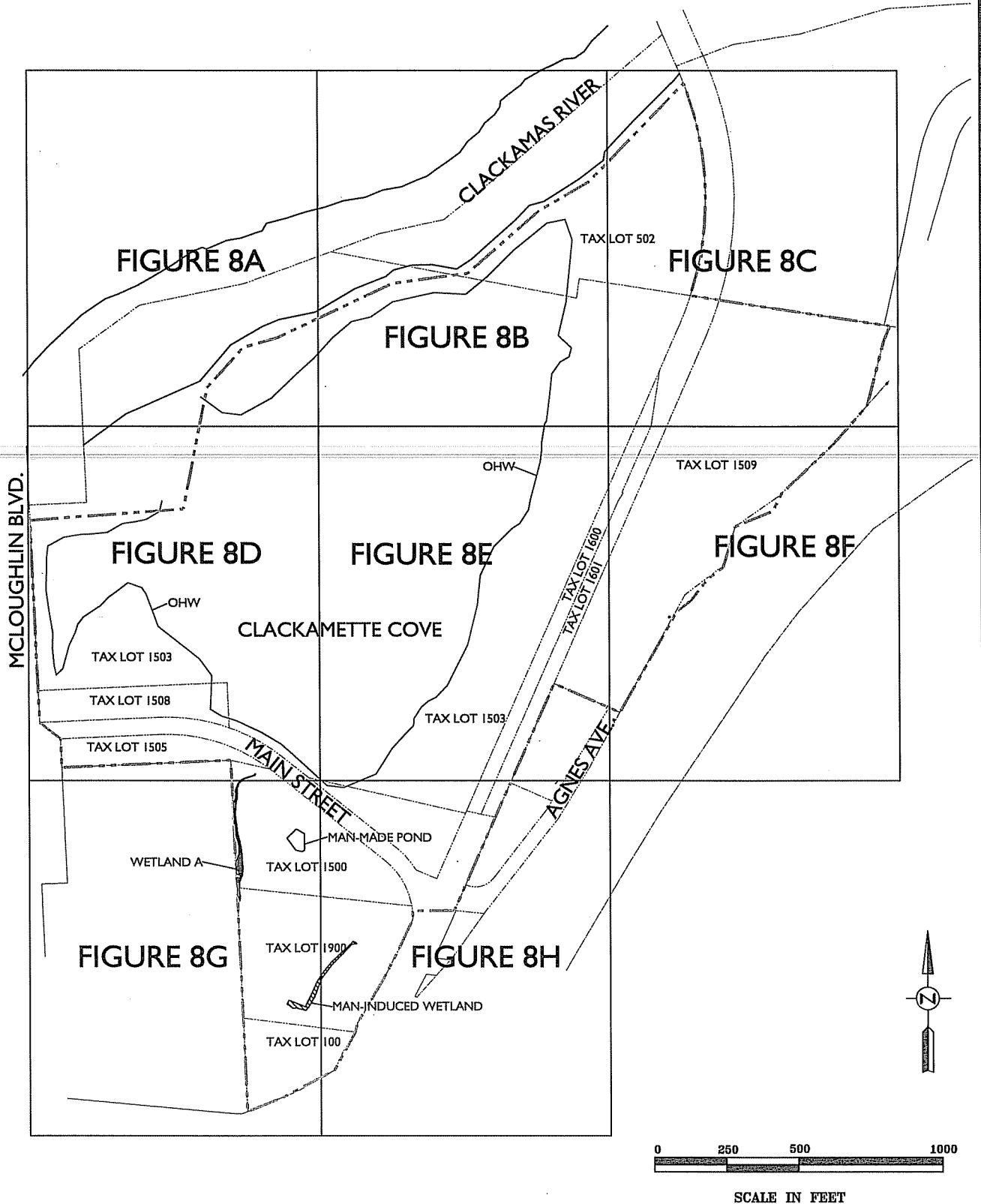
FIGURE

1



— Pacific Habitat Services, Inc. —

WD#10-0027



8-24-2009
PHS #3602

Wetland Delineation Map Figure Index



Pacific Habitat Services, Inc.

FIGURE

8

LEGEND



WETLAND



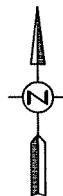
NON-WETLAND WATERS OF THE U.S./STATE

● 2

WETLAND DELINEATION DATA POINT
AND NUMBER



PHOTO-DOCUMENTATION POINT
AND NUMBER



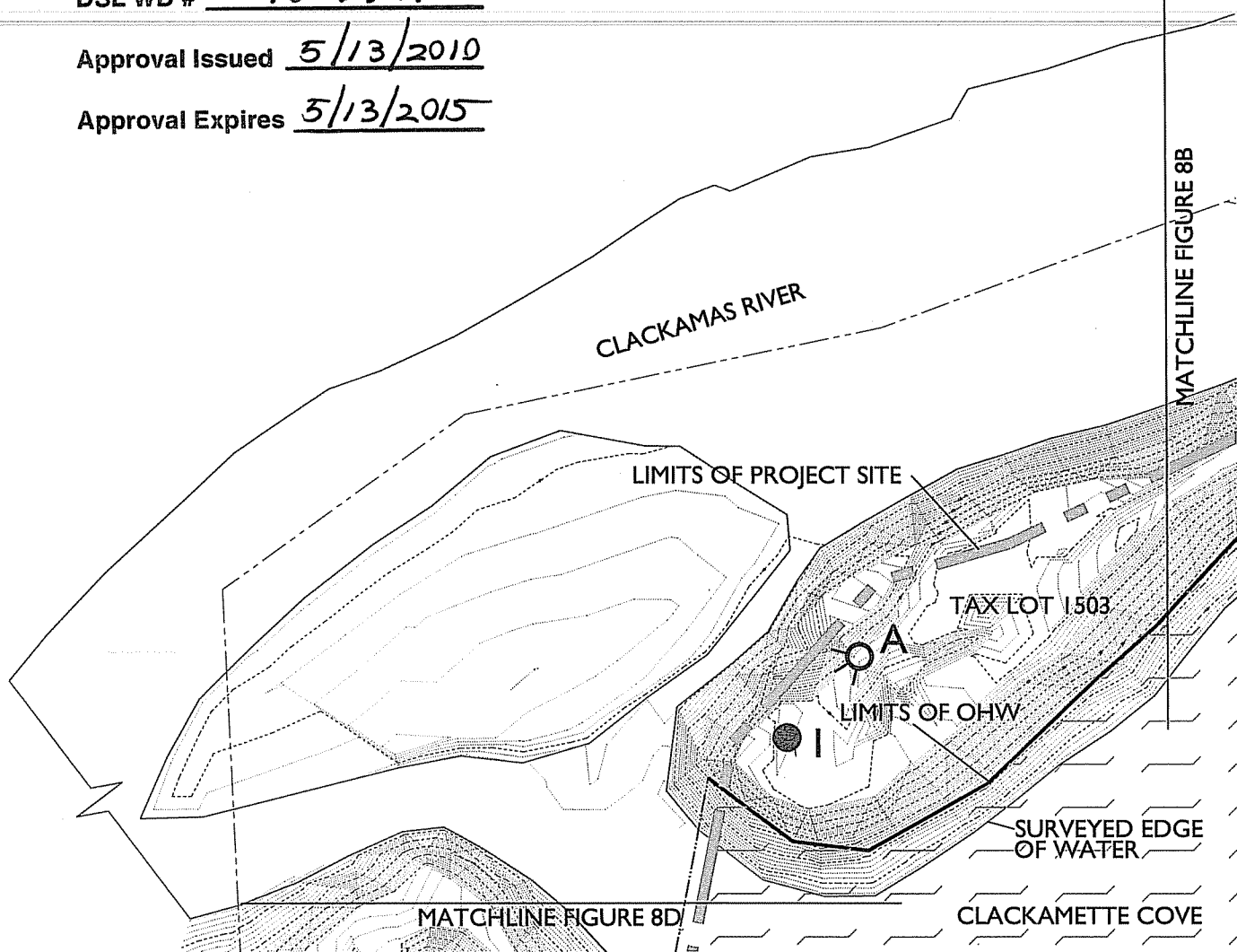
0 75 150 300

SCALE IN FEET

DSL WD # 10-0027

Approval Issued 5/13/2010

Approval Expires 5/13/2015



8-24-2009
PHS #3602



Pacific Habitat Services, Inc.

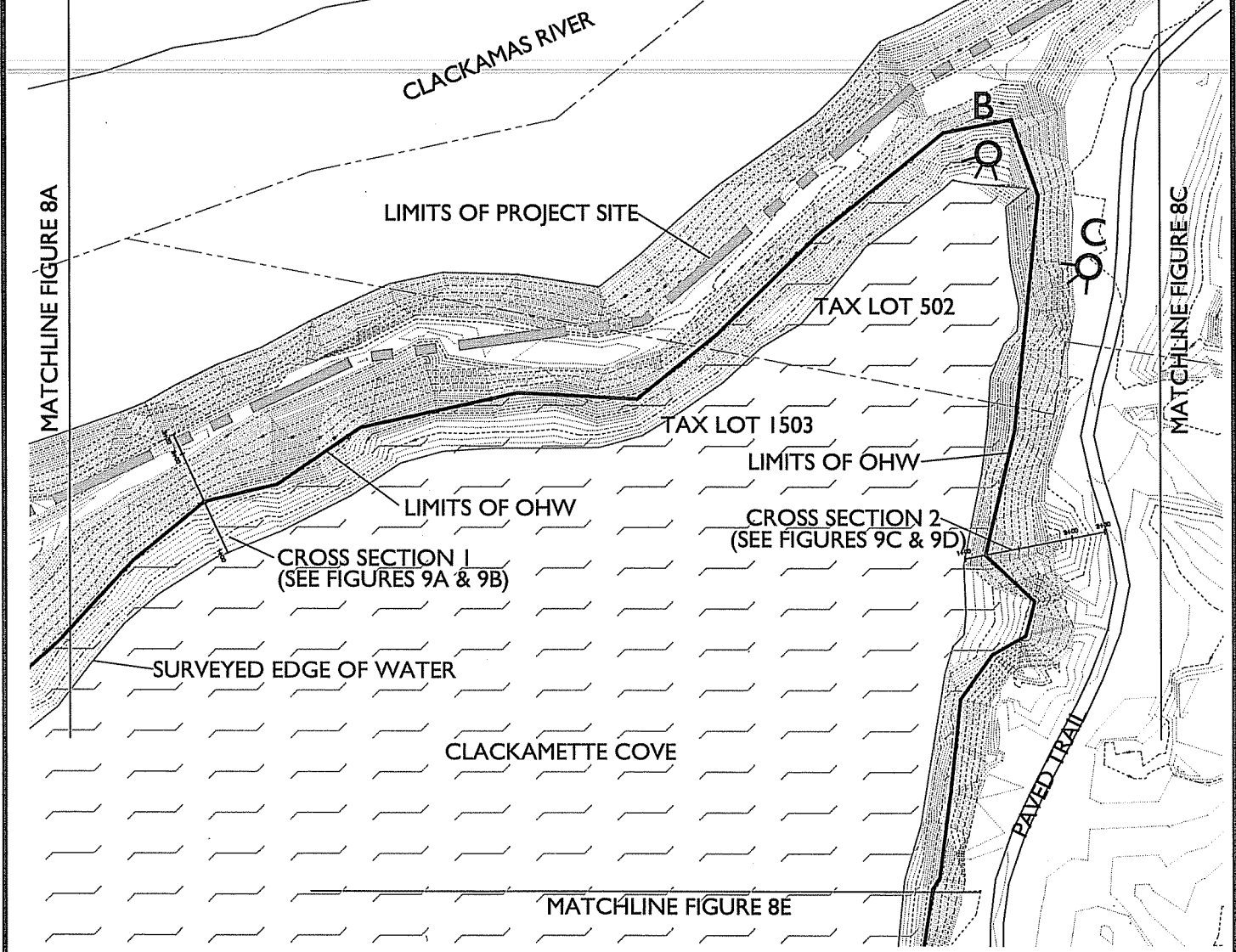
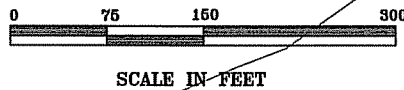
Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

FIGURE
8A

DSL WD # 10-0027
 Approval Issued 5/13/2010
 Approval Expires 5/13/2015

LEGEND

	WETLAND
	NON-WETLAND WATERS OF THE U.S./STATE
	WETLAND DELINEATION DATA POINT AND NUMBER
	PHOTO-DOCUMENTATION POINT AND NUMBER



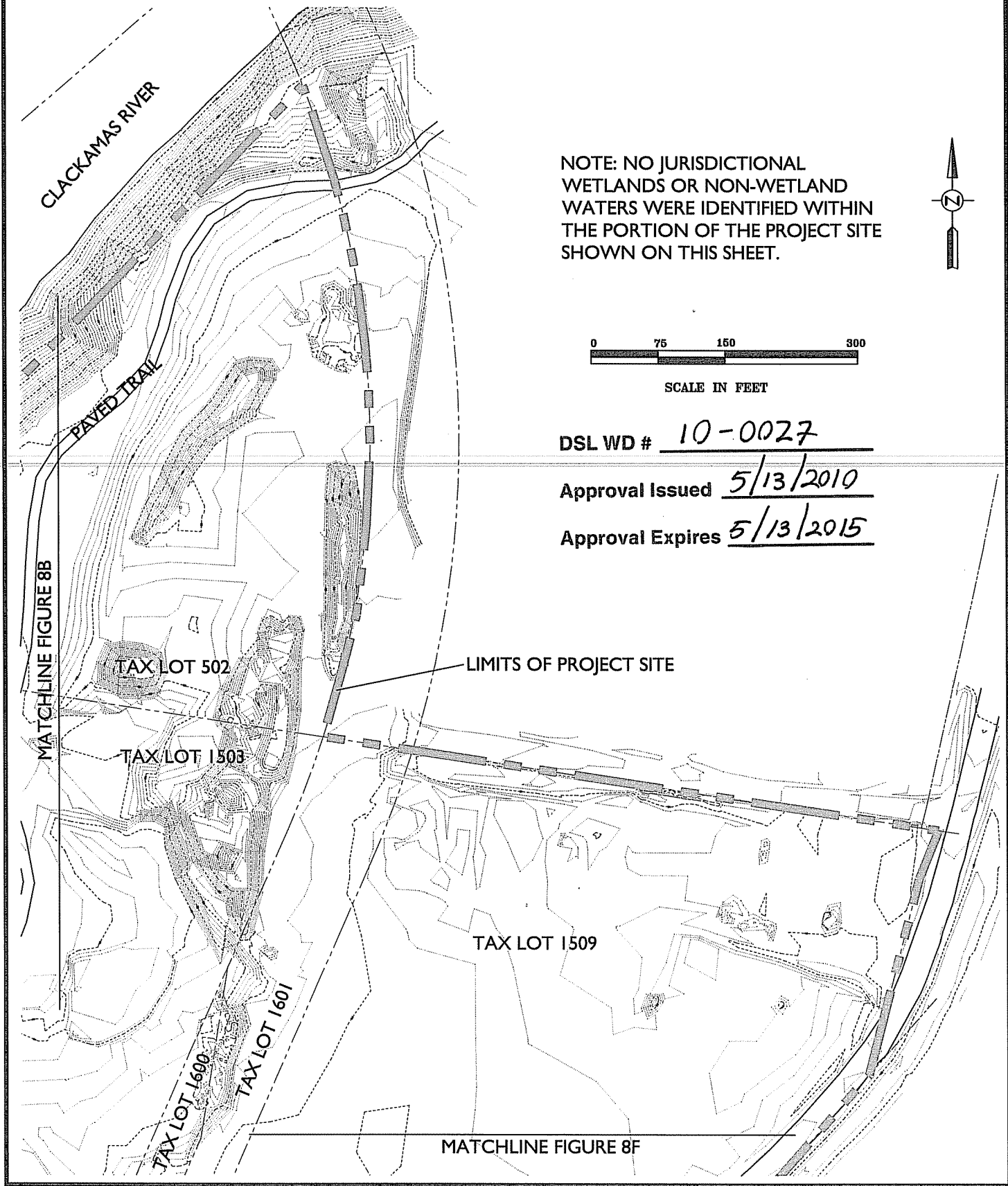
8-24-2009
 PHS #3602



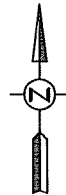
Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
 8B



NOTE: NO JURISDICTIONAL
WETLANDS OR NON-WETLAND
WATERS WERE IDENTIFIED WITHIN
THE PORTION OF THE PROJECT SITE
SHOWN ON THIS SHEET.



0 75 150 300

SCALE IN FEET

DSL WD # 10-0027

Approval Issued 5/13/2010

Approval Expires 5/13/2015

MATCHLINE FIGURE 8B

TAX LOT 502

LIMITS OF PROJECT SITE

TAX LOT 1503

TAX LOT 1509

TAX LOT 1600
TAX LOT 1601

MATCHLINE FIGURE 8F

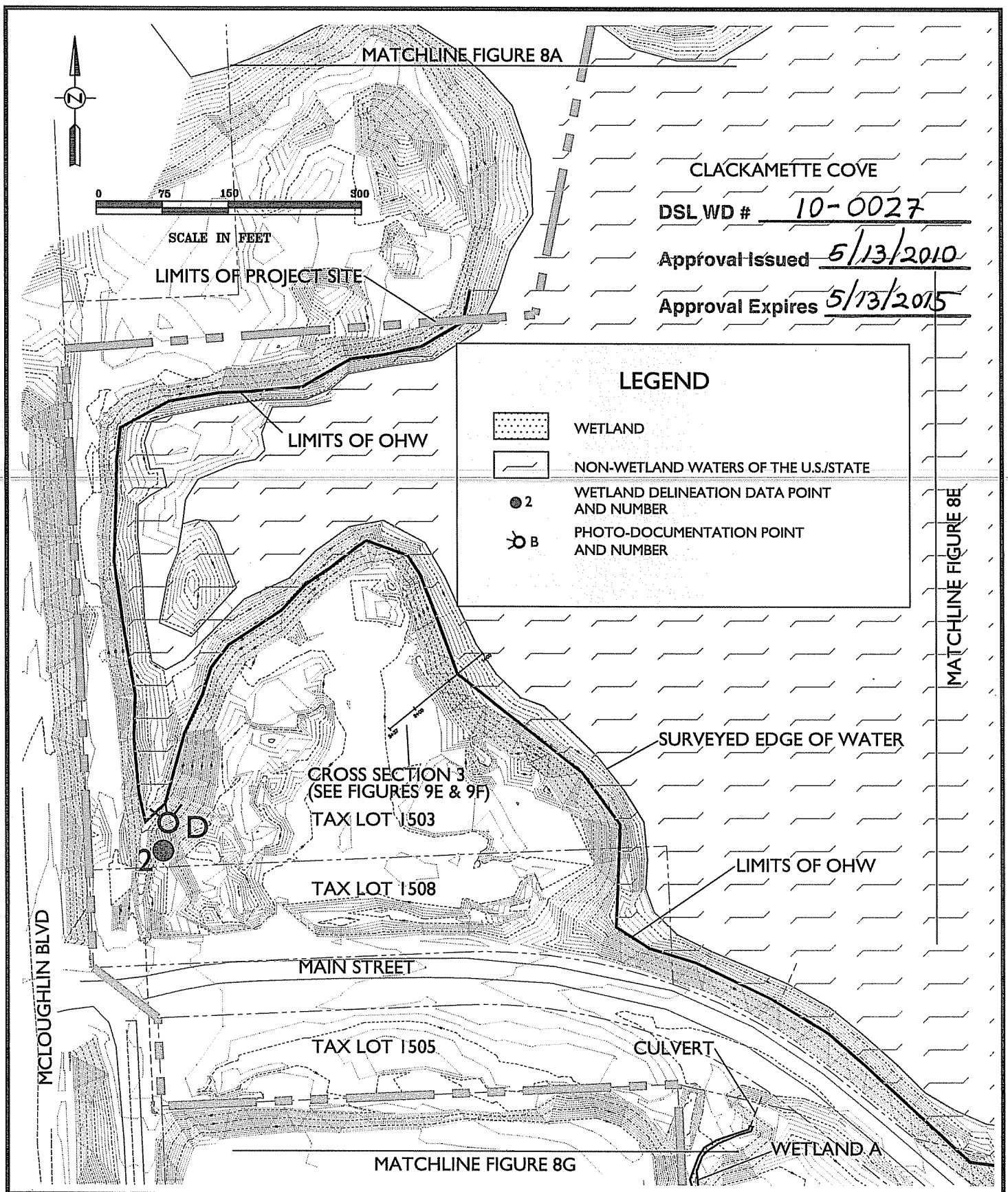
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8C



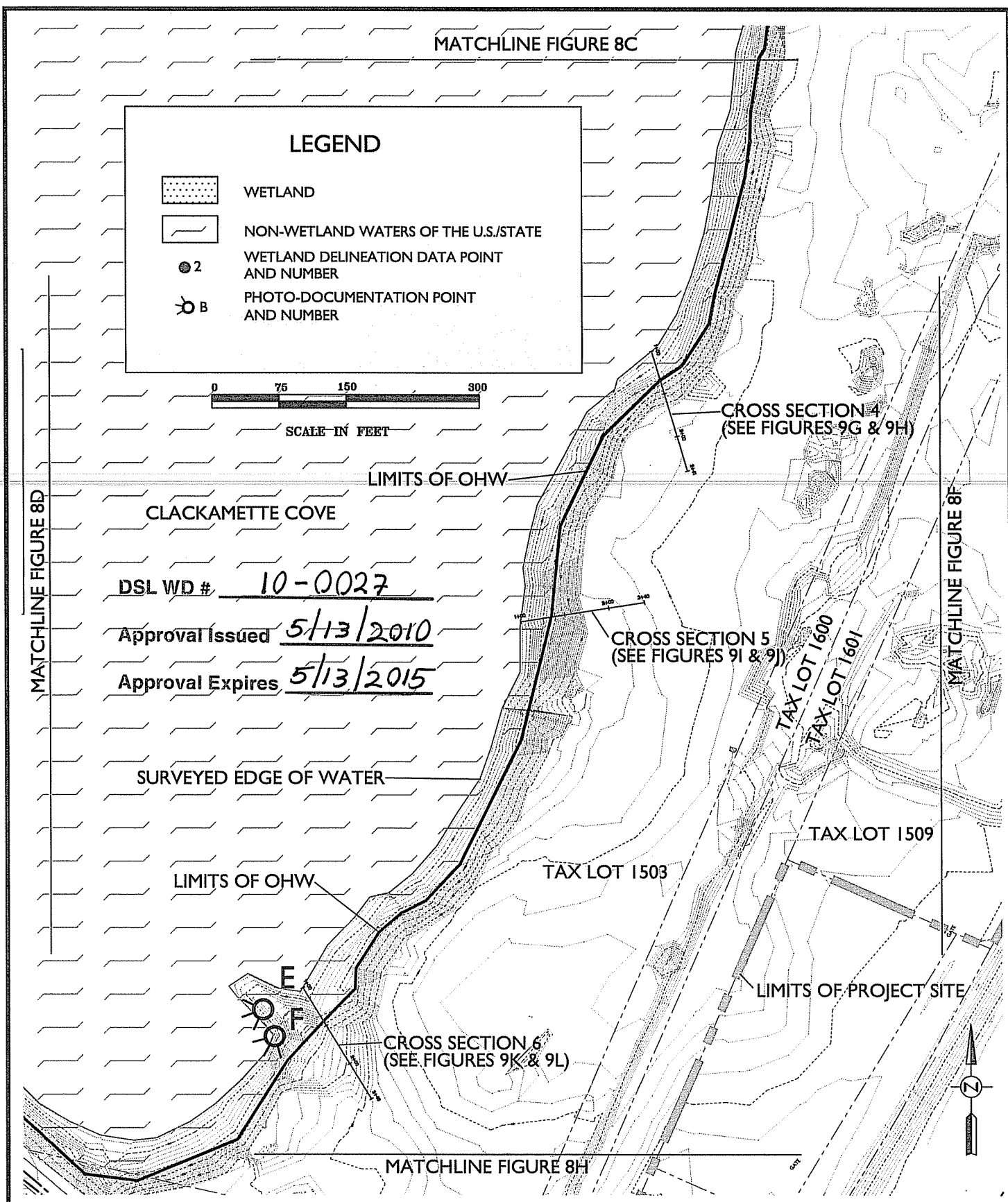
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8D



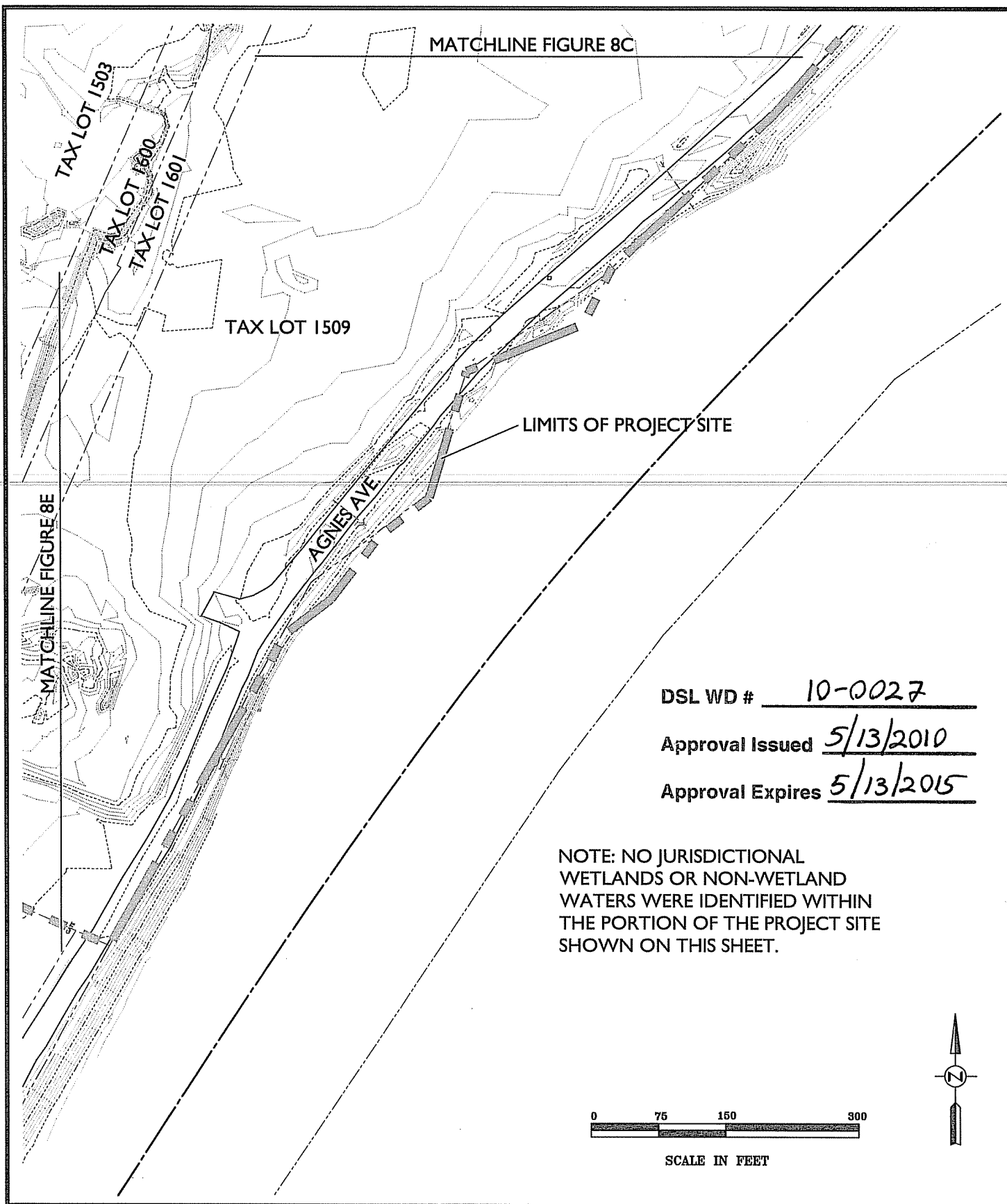
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8E



DSL WD # 10-0027
Approval Issued 5/13/2010
Approval Expires 5/13/2015

NOTE: NO JURISDICTIONAL
WETLANDS OR NON-WETLAND
WATERS WERE IDENTIFIED WITHIN
THE PORTION OF THE PROJECT SITE
SHOWN ON THIS SHEET.

0 75 150 300

SCALE IN FEET

8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8F

MATCHLINE FIGURE 8D

DSL WD # 10-0027

Approval Issued 5/13/2019

Approval Expires 5/13/2015

LEGEND



WETLAND



NON-WETLAND WATERS OF THE U.S./STATE



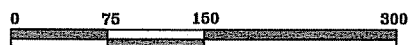
MAN-INDUCED WETLAND



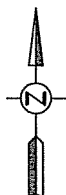
WETLAND DELINEATION DATA POINT
AND NUMBER



PHOTO-DOCUMENTATION POINT
AND NUMBER



SCALE IN FEET



LIMITS OF PROJECT SITE

TAX LOT 1500

MAN-MADE POND

WETLAND A

TAX LOT 1900

APPROX. LOCATION
MAN-INDUCED
WETLAND

TAX LOT 100

MATCHLINE FIGURE 8H

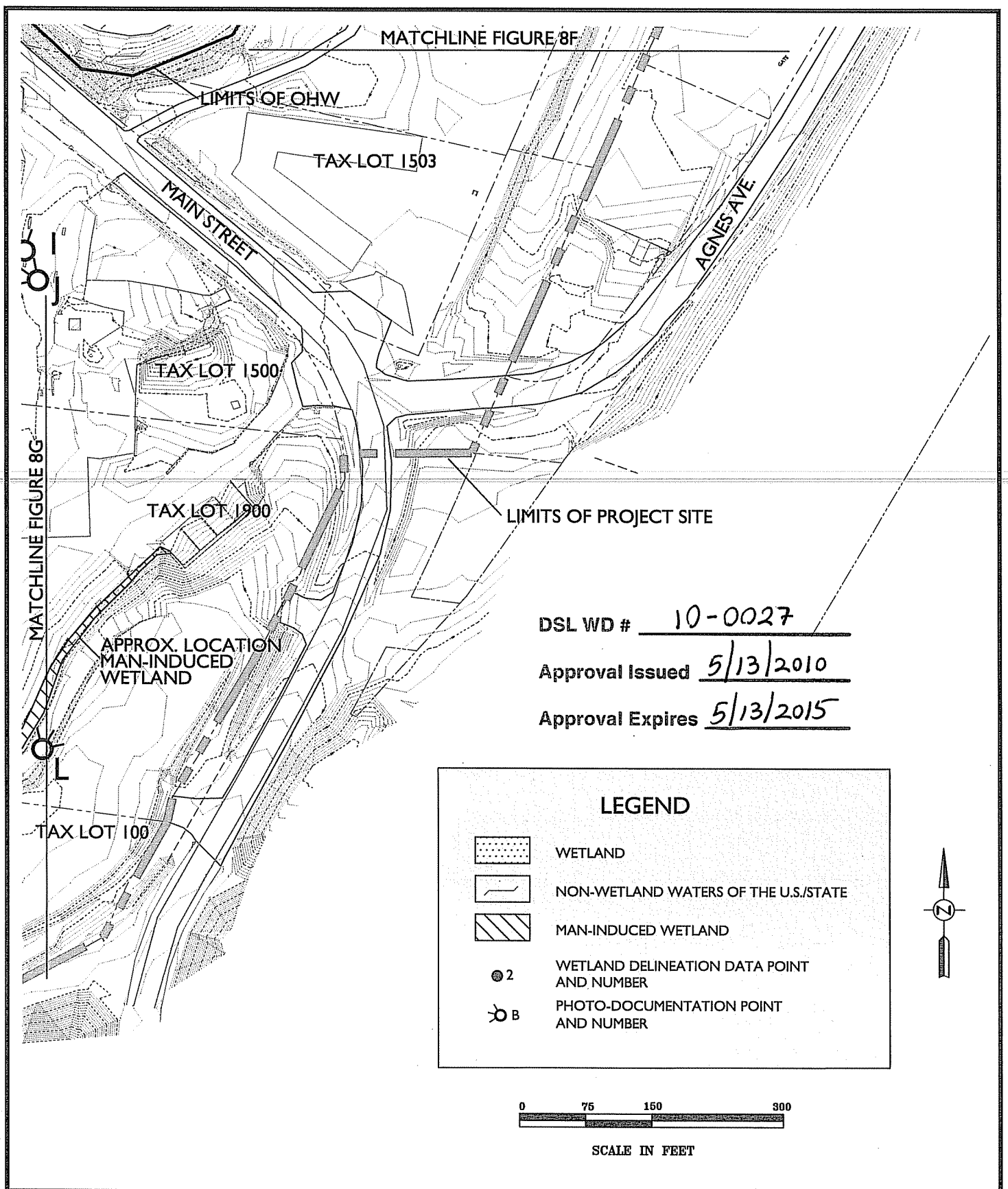
8-24-2009
PHS #3602



Pacific Habitat Services, Inc.

Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

FIGURE
8G



8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8H



DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2946
PORTLAND, OREGON 97208-2946



March 23, 2010

REPLY TO
ATTENTION OF:

Operations Division
Regulatory Branch
Corps No.: NWP-2009-373

Mr. Randy Tyler
Pacific Property Search, LLC
23535 SW Gage Street
Wilsonville, OR 97070

Dear Mr. Tyler:

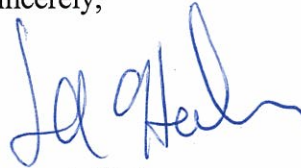
The U.S. Army Corps of Engineers (Corps) received your request for an approved jurisdictional determination on the waterways shown in Enclosure 1. The site is located at Clackamette Cove 110, in the City of Oregon City, Clackamas County, Oregon (Section 29, Township 2 South, and Range 2 East). The project area reviewed by the Corps, and addressed in this letter and accompanying documentation, is shown on Figure 8 (Page 2 of Enclosure 1).

The Corps determined that the wetlands and other waters shown in Figures 8A to 8 H and 9A to 9 L are waters of the U.S. A total of 0.095 acres of wetlands (Wetland A) and approximately 40.1 acres (Clackamette Cove) of other waters will be regulated as "waters of the United States". The placement of dredged or fill material into these waters identified in the Figures may require a Department of the Army permit under Section 404 of the Clean Water Act

Enclosure 2 is the approved jurisdictional determination (JD) form that identifies the basis for asserting jurisdiction. If you are not in agreement with that approved JD, you can make an administrative appeal under 33 CFR 331. Please see the enclosed Notification of Administrative Appeal Options and Process and Request for Appeal for further information about that process (Enclosure 3). This approved JD is valid for 5 years from the date of this letter unless new information warrants revision of the determination.

If you have any questions regarding our regulatory authority, please contact me at the letterhead address, by telephone at (503) 808-4385 or by email at james.a.holm@usace.army.mil.

Sincerely,



James A. Holm
Project Manager, Regulatory Branch

Enclosures

Copy Furnished:

Oregon Department of State Lands (Landrum)
~~Pacific Habitat Services, Inc.~~

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): March 12, 2010

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Portland District, Clackamette Cove, NWP-2009-373

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Oregon County/parish/borough: Clackamas City: Oregon City
Center coordinates of site (lat/long in degree decimal format): Lat. 45.377319° **N**, Long. 122.595864° **W**.
Universal Transverse Mercator:

Name of nearest waterbody: Clackamas River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Clackamas River

Name of watershed or Hydrologic Unit Code (HUC):

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☒ Office (Desk) Determination. Date: 9 February 2010
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- ☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are and are not** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- ☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☒ Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
☐ Non-RPWs that flow directly or indirectly into TNWs
☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: Approximately linear feet: width (ft) and/or Approximately 40.1 acres.
Wetlands: 0.095 acres.

- c. Limits (boundaries) of jurisdiction** based on: Established by OHWM, 1987 manual, and Western Mountains, Valleys, and Coast regional supplement.
Elevation of established OHWM (if known): 16 to 18 feet (average approximately 16.8 feet), NAVD 88.

2. Non-regulated waters/wetlands (check if applicable):³

- ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **An excavated wetland (0.08 acre) in the southern portion of the review area is isolated from both the Willamette River and the Clackamas River and is not jurisdictional. The wetland is located at an elevation of approximately 35 feet NAVD 88; the OHW of the Clackamas is at approximately 16 to 18 feet NAVD 88. Soils in the**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

vicinity of the wetland are mapped as "urban land." Review of the Web Soil Survey indicates that soils underlying the urban lands would have consisted of either the Newberg fine sandy loam or the Chehalis silt loam. Both these soil units are well drained and have depths to the water table of greater than 80 inches. These soils were likely heavily disturbed by former industrial activities, as indicated by the presence of fill material throughout the site. It appears as if the wetland is perched on a compacted horizon, and that the wetland is not connected to the water table associated with the Clackamas or Willamette Rivers. As such, the wetland lacks a surface or shallow subsurface hydrologic connection to other waters of the U.S. The wetland is not separated from the other waters by berms or barriers; rather it is an excavated feature that would not exist were it not for wholesale alteration of the review area. The wetland also appears to lack an ecological interconnection with other waters. It does have some vegetation, but it is surrounded by an expanse of urban land uses which make it unlikely that species move between the wetland and other waters.

The review area includes one additional non-jurisdictional feature: a created pond approximately 200 feet south of Clackamette Cove. The pond was excavated and is not an impoundment of a water of the U.S. Therefore it does not fit any of the categories of waters of the U.S. defined in 33 CFR 328.3. There are no wetlands adjacent to the pond.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW _____.

Summarize rationale supporting determination: _____.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": _____.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size _____

Pick List

Drainage area: _____

Pick List

Average annual rainfall: _____ inches

Average annual snowfall: _____ inches

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

- ☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

Tributary stream order, if known:

(b) **General Tributary Characteristics (check all that apply):**

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- | | | |
|--|--|-----------------------------------|
| ☐ Silts | ☐ Sands | ☐ Concrete |
| ☐ Cobbles | ☐ Gravel | ☐ Muck |
| ☐ Bedrock | ☐ Vegetation. Type/% cover: | |
| ☐ Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) **Flow:**

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

☐ Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|---|---|
| ☐ Bed and banks | |
| ☐ OHWM ⁶ (check all indicators that apply): | |
| ☐ clear, natural line impressed on the bank | ☐ the presence of litter and debris |
| ☐ changes in the character of soil | ☐ destruction of terrestrial vegetation |
| ☐ shelving | ☐ the presence of wrack line |
| ☐ vegetation matted down, bent, or absent | ☐ sediment sorting |
| ☐ leaf litter disturbed or washed away | ☐ scour |
| ☐ sediment deposition | ☐ multiple observed or predicted flow events |
| ☐ water staining | ☐ abrupt change in plant community |
| ☐ other (list): | |
| ☐ Discontinuous OHWM. ⁷ Explain: | |

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

⁶ A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷ Ibid.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| ☐ High Tide Line indicated by: | ☐ Mean High Water Mark indicated by: |
| ☐ oil or scum line along shore objects | ☐ survey to available datum; |
| ☐ fine shell or debris deposits (foreshore) | ☐ physical markings; |
| ☐ physical markings/characteristics | ☐ vegetation lines/changes in vegetation types. |
| ☐ tidal gauges | |
| ☐ other (list): | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings:
 - ☐ Fish/spawn areas. Explain findings:
 - ☐ Other environmentally-sensitive species. Explain findings:
 - ☐ Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
 - ☐ Discrete wetland hydrologic connection. Explain:
 - ☐ Ecological connection. Explain:
 - ☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width):
- ☐ Vegetation type/percent cover. Explain:
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings:
 - ☐ Fish/spawn areas. Explain findings:
 - ☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings: _____

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: ~~Pick List~~

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed: _____

C. **SIGNIFICANT NEXUS DETERMINATION**

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. **DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):**

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

☐ TNWs. linear feet width (ft). Or, acres.

☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: The Clackamas River (including Clackamette Cove) is a large perennial river.

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: _____

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
☒ Other non-wetland waters: **Approximately 40.1** acres.

Identify type(s) of waters: **Embayment of the Clackamas River (within the OHW of the river).**

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.

Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **Wetland A has a continuous surface connection with the Clackamas River, via a culvert that conveys surface water from the wetland into Clackamette Cove.**
☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: **0.095** acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸ See Footnote # 3.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
- Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - ☒ Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☒ Wetlands: 0.08 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

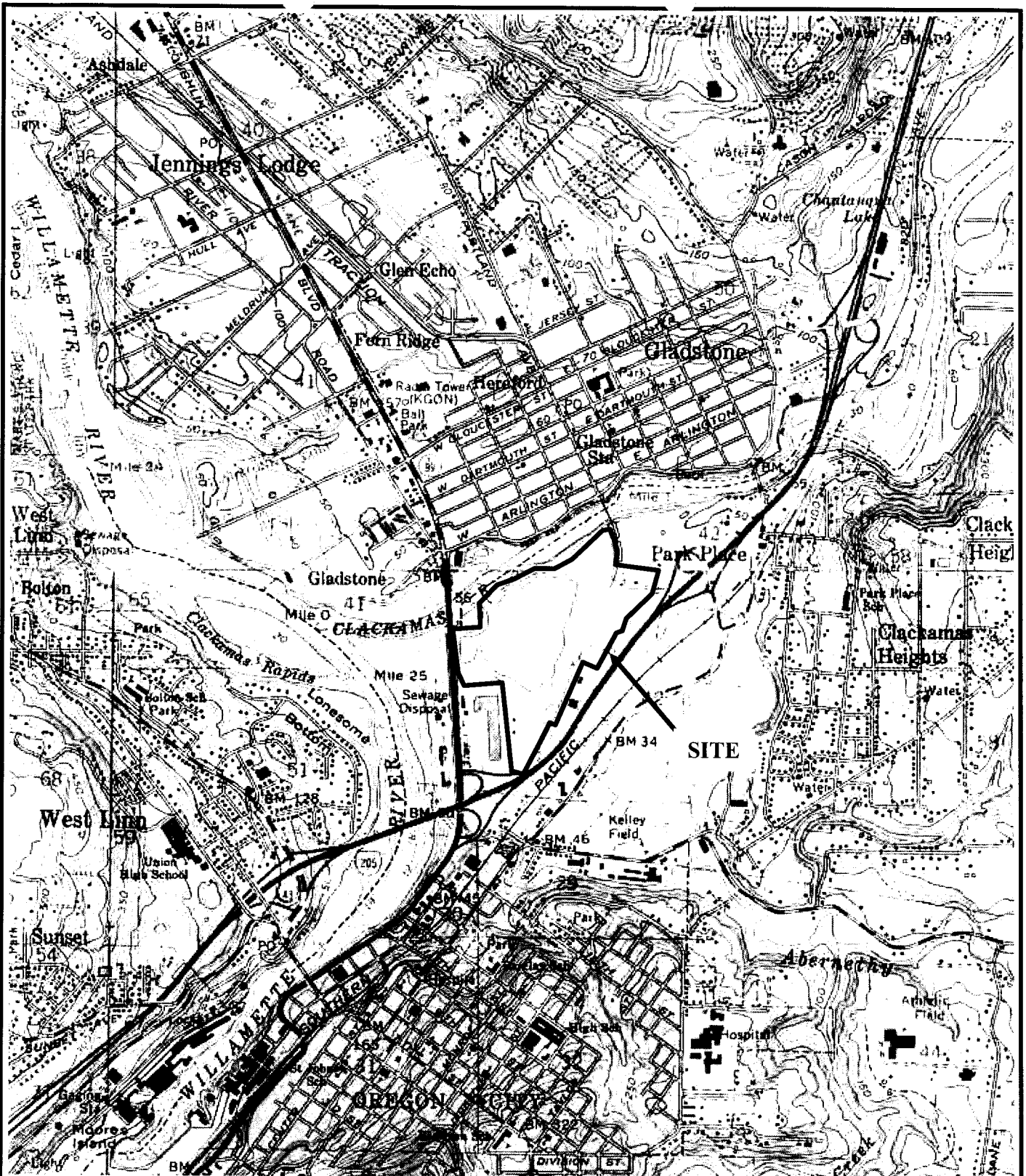
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland delineation dated August 26, 2009.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - ☒ Office concurs with data sheets/delineation report.
 - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
 - ☐ USGS NHD data.
 - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Oregon City and Gladstone, 1:24000.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey.
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: The Clackamas River is a Section 10 navigable river for its lower 0.5 mile (from its confluence with the Willamette River to a point 0.1 mile upstream from the Highway 99 bridge). The project area is upstream from the upper limit of Section 10 navigability.



7/21/09

4496

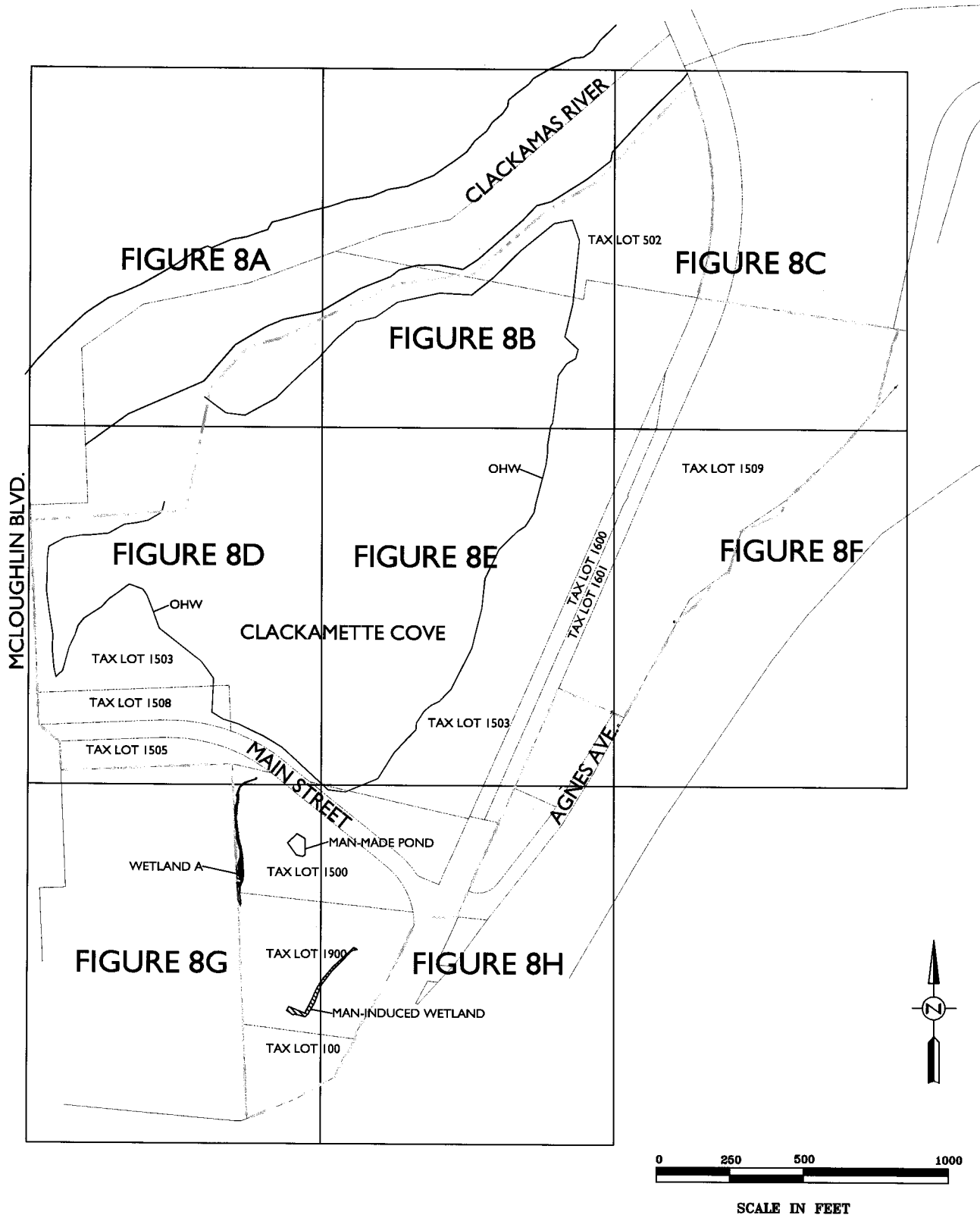
Location and general topography for The Cove project in Oregon City, Oregon (USGS OR City, OR and Gladstone, OR quadrangles; 1961 photos revised 1985 and 1984 respectively).

FIGURE

1

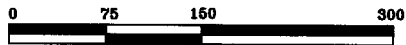


Pacific Habitat Services, Inc.

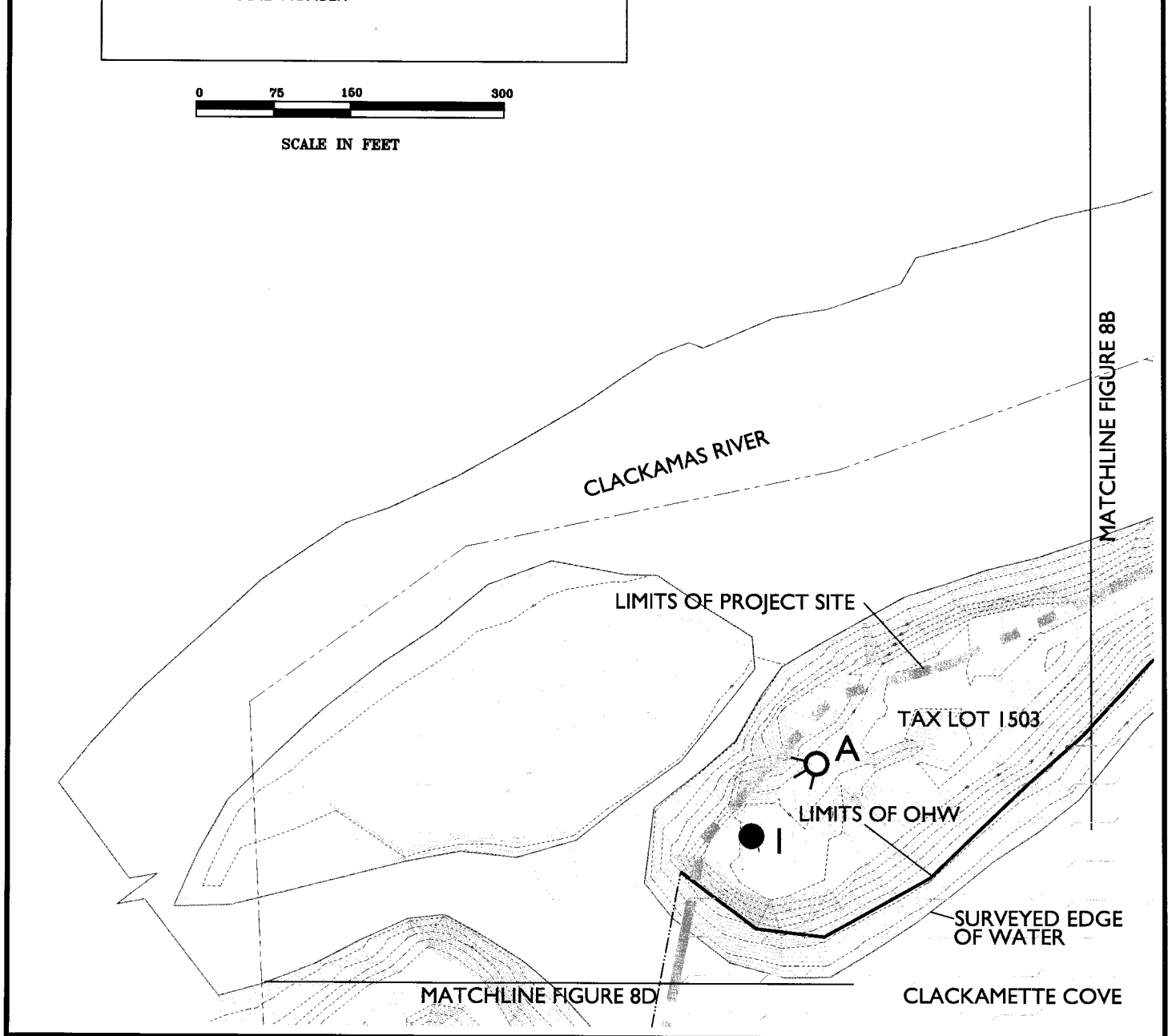


LEGEND

	WETLAND
	NON-WETLAND WATERS OF THE U.S./STATE
● 2	WETLAND DELINEATION DATA POINT AND NUMBER
⊙ 8	PHOTO-DOCUMENTATION POINT AND NUMBER



SCALE IN FEET



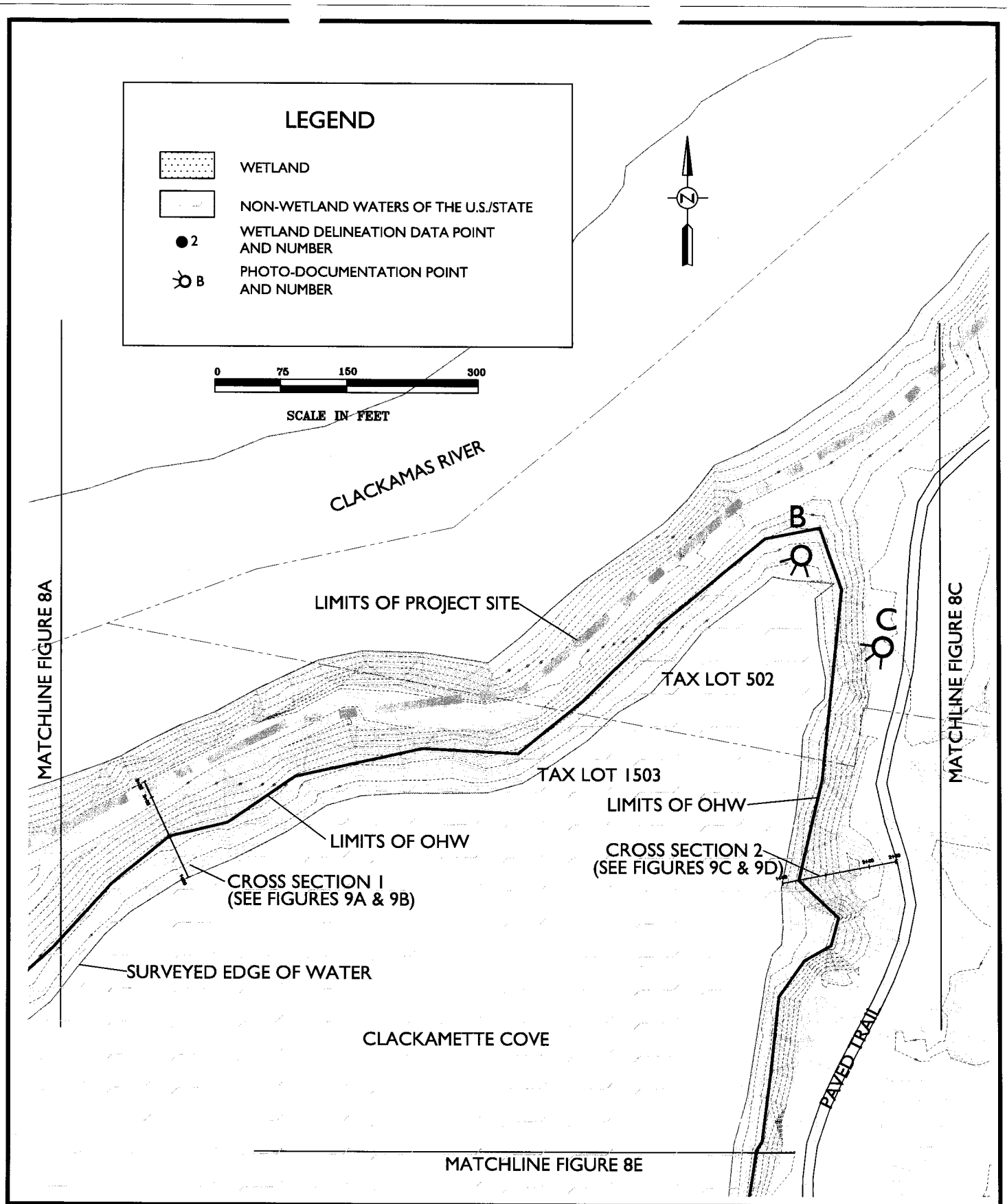
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8A



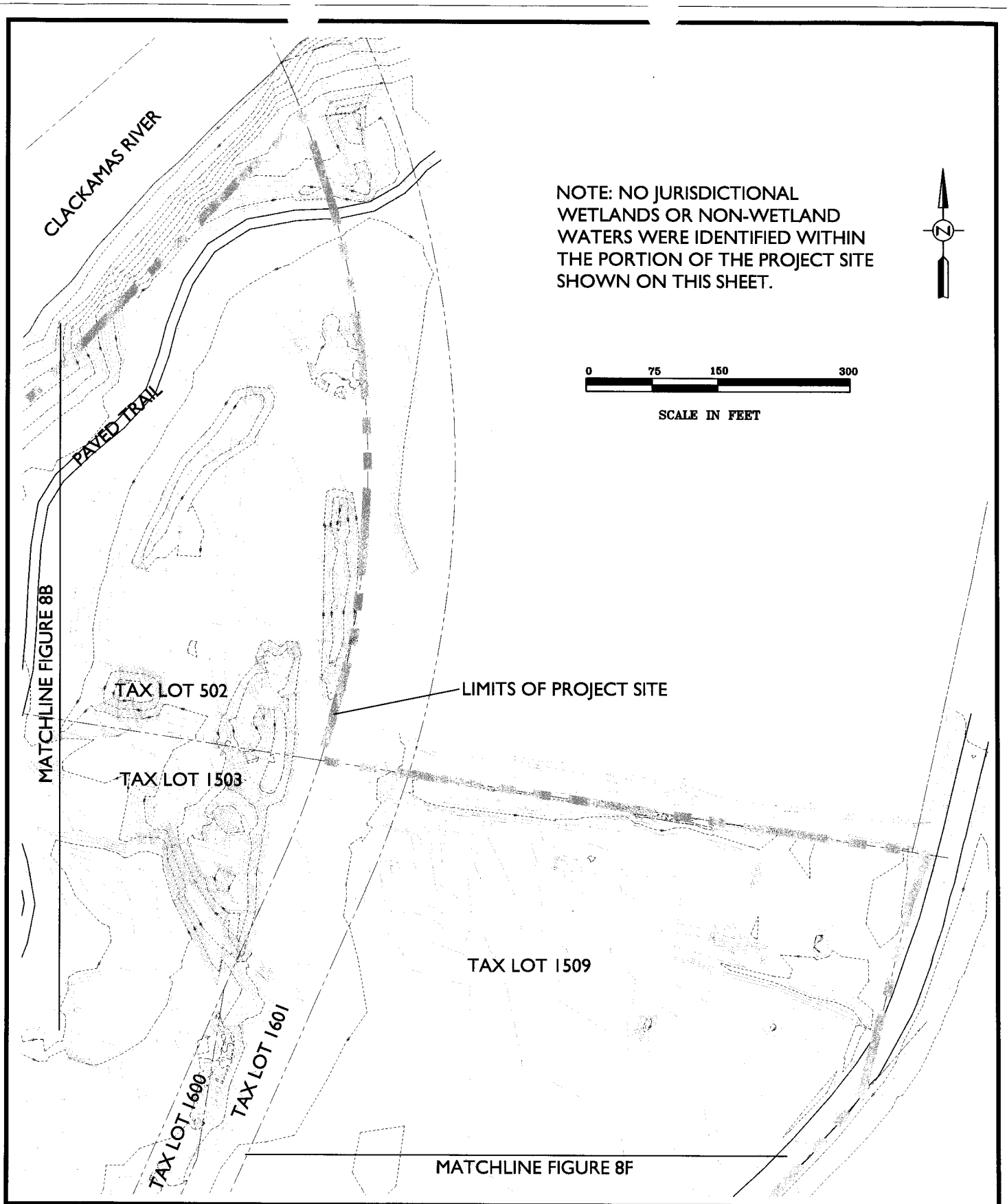
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8B



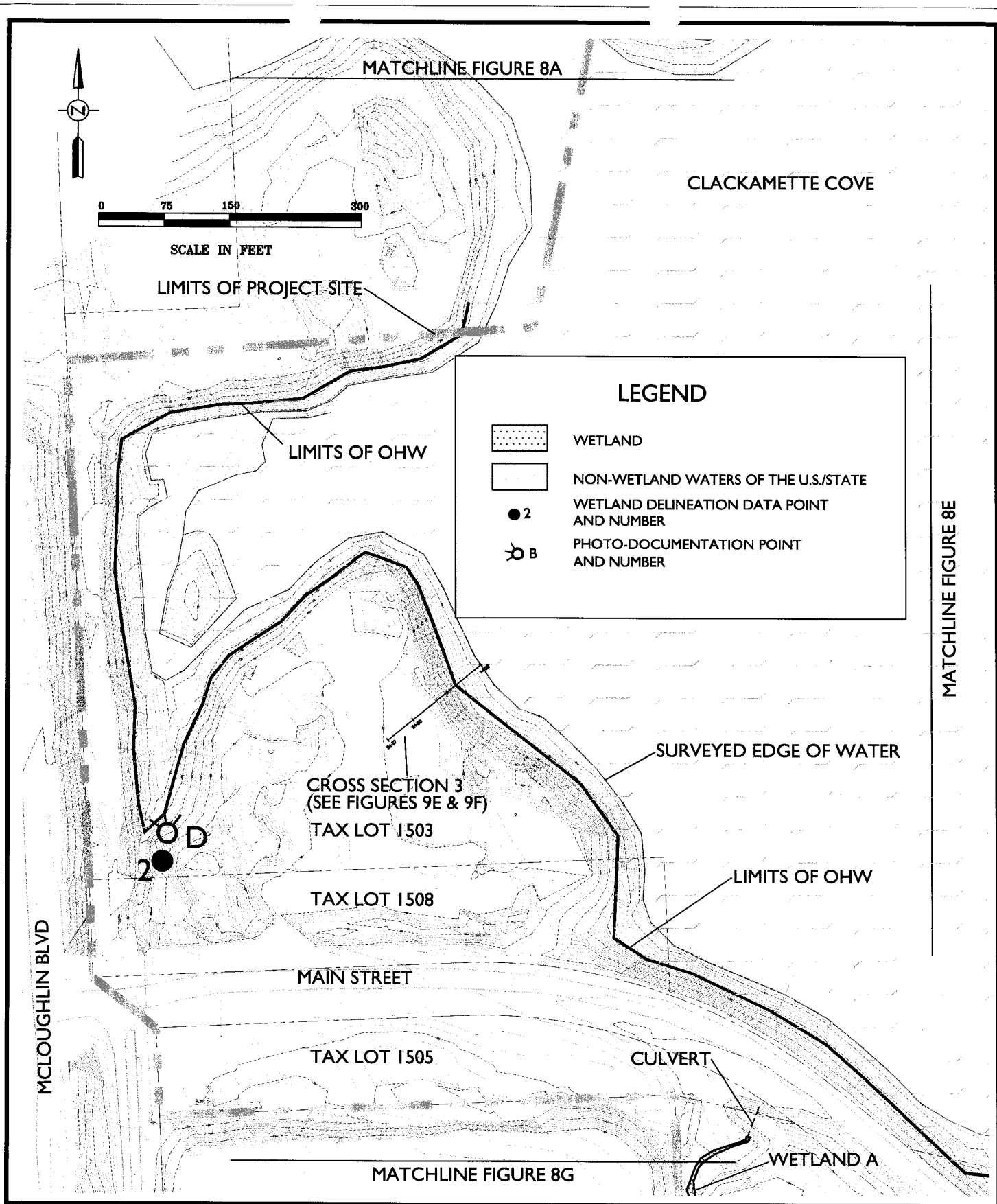
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8C



8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8D

MATCHLINE FIGURE 8C

LEGEND



WETLAND



NON-WETLAND WATERS OF THE U.S./STATE



WETLAND DELINEATION DATA POINT
AND NUMBER



PHOTO-DOCUMENTATION POINT
AND NUMBER



SCALE IN FEET

MATCHLINE FIGURE 8D

CLACKAMETTE COVE

LIMITS OF OHW

CROSS SECTION 4
(SEE FIGURES 9G & 9H)

MATCHLINE FIGURE 8F

CROSS SECTION 5
(SEE FIGURES 9I & 9J)

SURVEYED EDGE OF WATER

TAX LOT 1600
TAX LOT 1601

TAX LOT 1509

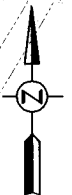
LIMITS OF OHW

TAX LOT 1503

LIMITS OF PROJECT SITE

CROSS SECTION 6
(SEE FIGURES 9K & 9L)

MATCHLINE FIGURE 8H



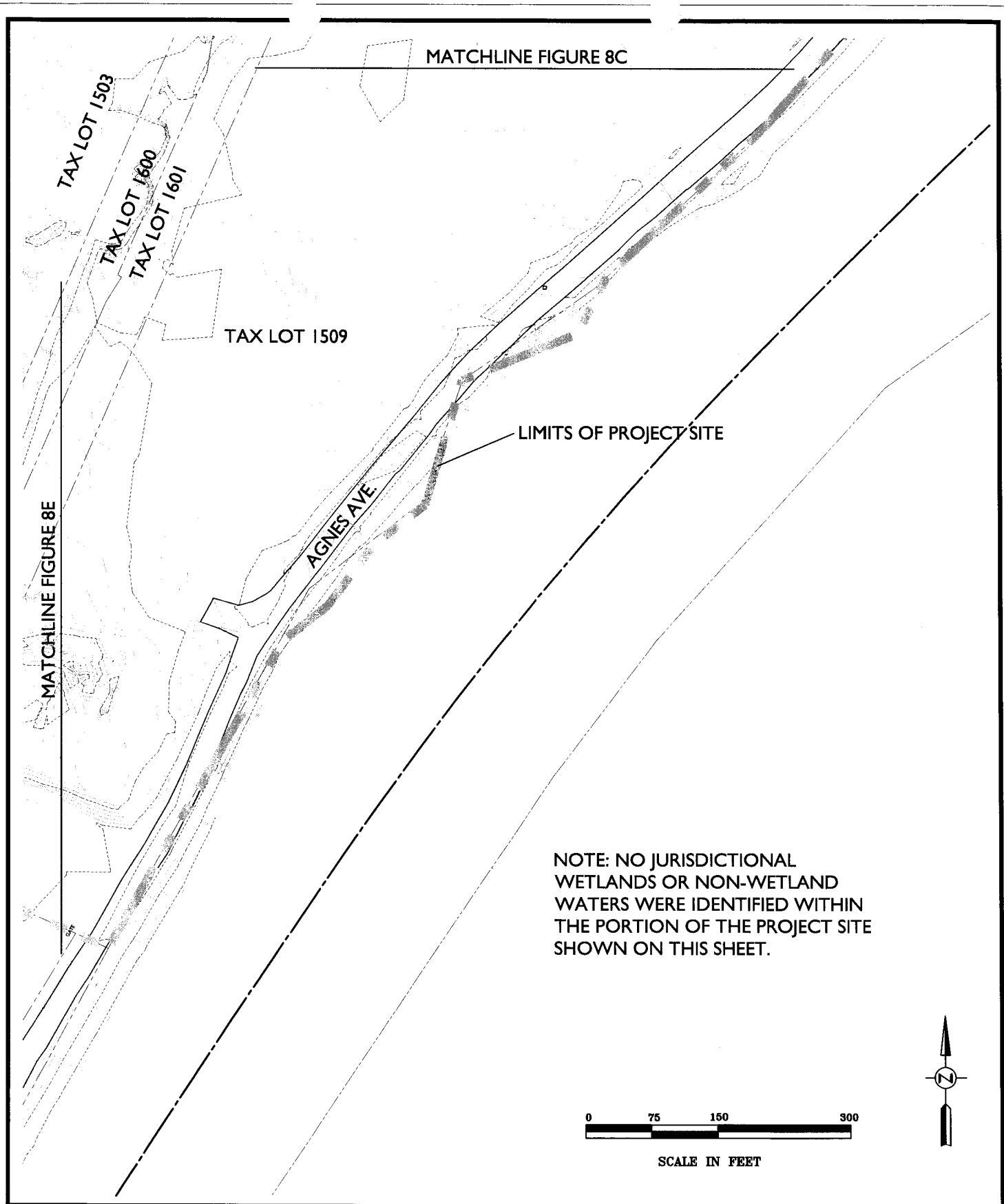
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8E



8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8F

MATCHLINE FIGURE 8D

MAIN ST.

TAX LOT 1500

MAN-MADE POND

WETLAND A

3
H
4
G

TAX LOT 1900

APPROX. LOCATION
MAN-INDUCED
WETLAND

TAX LOT 100

MATCHLINE FIGURE 8H

LEGEND



WETLAND



NON-WETLAND WATERS OF THE U.S./STATE



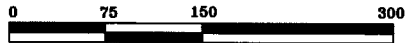
MAN-INDUCED WETLAND



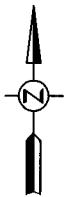
WETLAND DELINEATION DATA POINT
AND NUMBER



PHOTO-DOCUMENTATION POINT
AND NUMBER



SCALE IN FEET



LIMITS OF PROJECT SITE

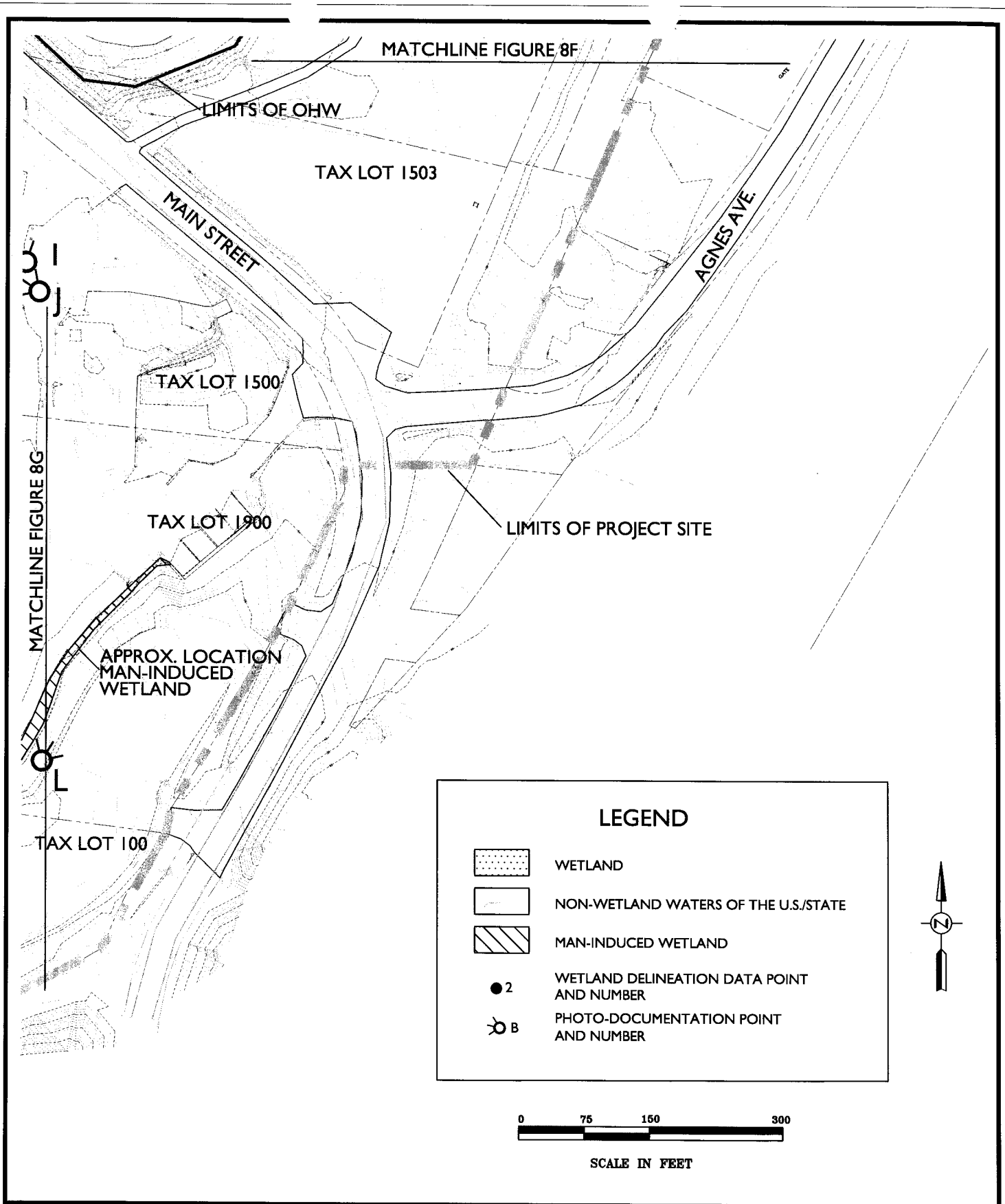
8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8G



8-24-2009
PHS #3602



Existing conditions, data point locations, and photo-documentation points for The Cove site in Oregon City, Oregon. Survey and base map provided by CardnoWRG. Estimated survey accuracy is sub-centimeter.

Pacific Habitat Services, Inc.

FIGURE
8H

Appendix C

Photographs





Photo A:

View to the southwest of the existing bank in the northeastern portion of the Cove.

Photo B:

View to the northeast of the steep banks and debris present along the Cove shoreline.



Project #5954

2/28/2018



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation

The Cove—Phase 2, Oregon City, Oregon

Photos taken December 12, 2017.



Photo C:

View to the northeast of the steep banks and debris present along the Cove shoreline.

Photo D

View to the northeast of the existing steep banks along the Cove shoreline.



Project #5717

8/12/2015



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation

The Cove—Phase 2, Oregon City, Oregon

Photo C taken April 24, 2015, Photo D taken December 13, 2017.

Appendix D

Trees to be Removed



Tree ID	Species	Diameter (in)
5325	Black cottonwood (<i>Populus balsamifera</i>)	8x2
5327	Black cottonwood (<i>Populus balsamifera</i>)	16
5328	Black cottonwood (<i>Populus balsamifera</i>)	14
5329	Black cottonwood (<i>Populus balsamifera</i>)	10
5339	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5340	Black cottonwood (<i>Populus balsamifera</i>)	18
5341	Black cottonwood (<i>Populus balsamifera</i>)	14
6221	Black cottonwood (<i>Populus balsamifera</i>)	8
6218	Black cottonwood (<i>Populus balsamifera</i>)	8
6216	Black cottonwood (<i>Populus balsamifera</i>)	8
6217	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6211	Black cottonwood (<i>Populus balsamifera</i>)	12
6212	Black cottonwood (<i>Populus balsamifera</i>)	14
6203	Black cottonwood (<i>Populus balsamifera</i>)	18
5368	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6200	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6198	Black cottonwood (<i>Populus balsamifera</i>)	16x2
6199	Black cottonwood (<i>Populus balsamifera</i>)	14
6184	Black cottonwood (<i>Populus balsamifera</i>)	10x2
6183	Black cottonwood (<i>Populus balsamifera</i>)	24
6146	Black cottonwood (<i>Populus balsamifera</i>)	12
6142	Black cottonwood (<i>Populus balsamifera</i>)	18
6136	Black cottonwood (<i>Populus balsamifera</i>)	10
6131	Black cottonwood (<i>Populus balsamifera</i>)	14x2

Tree ID	Species	Diameter (in)
6129	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6128	Black cottonwood (<i>Populus balsamifera</i>)	14
5652	Black cottonwood (<i>Populus balsamifera</i>)	14x2
6126	Black cottonwood (<i>Populus balsamifera</i>)	10
6125	Black cottonwood (<i>Populus balsamifera</i>)	12
6120	Black cottonwood (<i>Populus balsamifera</i>)	12
6122	Black cottonwood (<i>Populus balsamifera</i>)	12
6119	Black cottonwood (<i>Populus balsamifera</i>)	24
6117	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5654	Black cottonwood (<i>Populus balsamifera</i>)	12
5655	Black cottonwood (<i>Populus balsamifera</i>)	12
5657	Black cottonwood (<i>Populus balsamifera</i>)	14
5659	Black cottonwood (<i>Populus balsamifera</i>)	16
6111	Black cottonwood (<i>Populus balsamifera</i>)	12
6109	Black cottonwood (<i>Populus balsamifera</i>)	14
5661	Black cottonwood (<i>Populus balsamifera</i>)	14
5662	Black cottonwood (<i>Populus balsamifera</i>)	16
5665	Black cottonwood (<i>Populus balsamifera</i>)	10
5664	Black cottonwood (<i>Populus balsamifera</i>)	12
6108	Black cottonwood (<i>Populus balsamifera</i>)	12
6106	Black cottonwood (<i>Populus balsamifera</i>)	14
6105	Black cottonwood (<i>Populus balsamifera</i>)	10
5666	Black cottonwood (<i>Populus balsamifera</i>)	12
5667	Black cottonwood (<i>Populus balsamifera</i>)	14

Tree ID	Species	Diameter (in)
5668	Black cottonwood (<i>Populus balsamifera</i>)	12
6103	Black cottonwood (<i>Populus balsamifera</i>)	10
5670	Black cottonwood (<i>Populus balsamifera</i>)	14
5671	Black cottonwood (<i>Populus balsamifera</i>)	14x3
5674	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5676	Black cottonwood (<i>Populus balsamifera</i>)	18
5678	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5683	Black cottonwood (<i>Populus balsamifera</i>)	6
5687	Black cottonwood (<i>Populus balsamifera</i>)	10
5690	Black cottonwood (<i>Populus balsamifera</i>)	14
5691	Black cottonwood (<i>Populus balsamifera</i>)	10
5692	Black cottonwood (<i>Populus balsamifera</i>)	12
5693	Black cottonwood (<i>Populus balsamifera</i>)	12
6095	Black cottonwood (<i>Populus balsamifera</i>)	14
6094	Black cottonwood (<i>Populus balsamifera</i>)	10x3
6097	Black cottonwood (<i>Populus balsamifera</i>)	DEAD
5689	Black cottonwood (<i>Populus balsamifera</i>)	10
5688	Black cottonwood (<i>Populus balsamifera</i>)	10
5686	Black cottonwood (<i>Populus balsamifera</i>)	12
5685	Black cottonwood (<i>Populus balsamifera</i>)	12
5684	Black cottonwood (<i>Populus balsamifera</i>)	10
6088	Black cottonwood (<i>Populus balsamifera</i>)	12x2
6086	Black cottonwood (<i>Populus balsamifera</i>)	8
6082	Black cottonwood (<i>Populus balsamifera</i>)	6

Tree ID	Species	Diameter (in)
6084	Black cottonwood (<i>Populus balsamifera</i>)	8
6078	Black cottonwood (<i>Populus balsamifera</i>)	20x2
6075	Black cottonwood (<i>Populus balsamifera</i>)	20
6076	Black cottonwood (<i>Populus balsamifera</i>)	22x2
5748	Black cottonwood (<i>Populus balsamifera</i>)	24
5738	Douglas-fir (<i>Pseudotsuga menziesii</i>)	6
5737	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12x2
6052	Black cottonwood (<i>Populus balsamifera</i>)	16x2
5734	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
5733	Douglas-fir (<i>Pseudotsuga menziesii</i>)	8
5758	Black cottonwood (<i>Populus balsamifera</i>)	12
5759	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
6051	Black cottonwood (<i>Populus balsamifera</i>)	10
6050	Black cottonwood (<i>Populus balsamifera</i>)	12
5769	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
5775	Douglas-fir (<i>Pseudotsuga menziesii</i>)	12
6045	Black cottonwood (<i>Populus balsamifera</i>)	20
5776	Black cottonwood (<i>Populus balsamifera</i>)	6
5777	Black cottonwood (<i>Populus balsamifera</i>)	10
5883	Black cottonwood (<i>Populus balsamifera</i>)	10
5882	Black cottonwood (<i>Populus balsamifera</i>)	12x2
5881	Black cottonwood (<i>Populus balsamifera</i>)	12
6027	Black cottonwood (<i>Populus balsamifera</i>)	18
6024	Black cottonwood (<i>Populus balsamifera</i>)	12x2

Tree ID	Species	Diameter (in)
5878	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5877	Black cottonwood (<i>Populus balsamifera</i>)	14x2
5844	Black cottonwood (<i>Populus balsamifera</i>)	22
5849	Black cottonwood (<i>Populus balsamifera</i>)	14
5850	Black cottonwood (<i>Populus balsamifera</i>)	14
5852	Black cottonwood (<i>Populus balsamifera</i>)	22
5851	Black cottonwood (<i>Populus balsamifera</i>)	12
5843	Black cottonwood (<i>Populus balsamifera</i>)	22
5842	Black cottonwood (<i>Populus balsamifera</i>)	8
6001	Black cottonwood (<i>Populus balsamifera</i>)	22
6002	Black cottonwood (<i>Populus balsamifera</i>)	22
6003	Black cottonwood (<i>Populus balsamifera</i>)	24
5999	Black cottonwood (<i>Populus balsamifera</i>)	24
5991	Black cottonwood (<i>Populus balsamifera</i>)	22x2
5990	Black cottonwood (<i>Populus balsamifera</i>)	10
5988	Black cottonwood (<i>Populus balsamifera</i>)	24x3