9.7 Wetlands Report

MSGS ARCHITECTS

PIERCE COLLEGE – PUYALLUP CAMPUS REVISED WETLAND RECONNAISSANCE AND VERIFICATION REPORT

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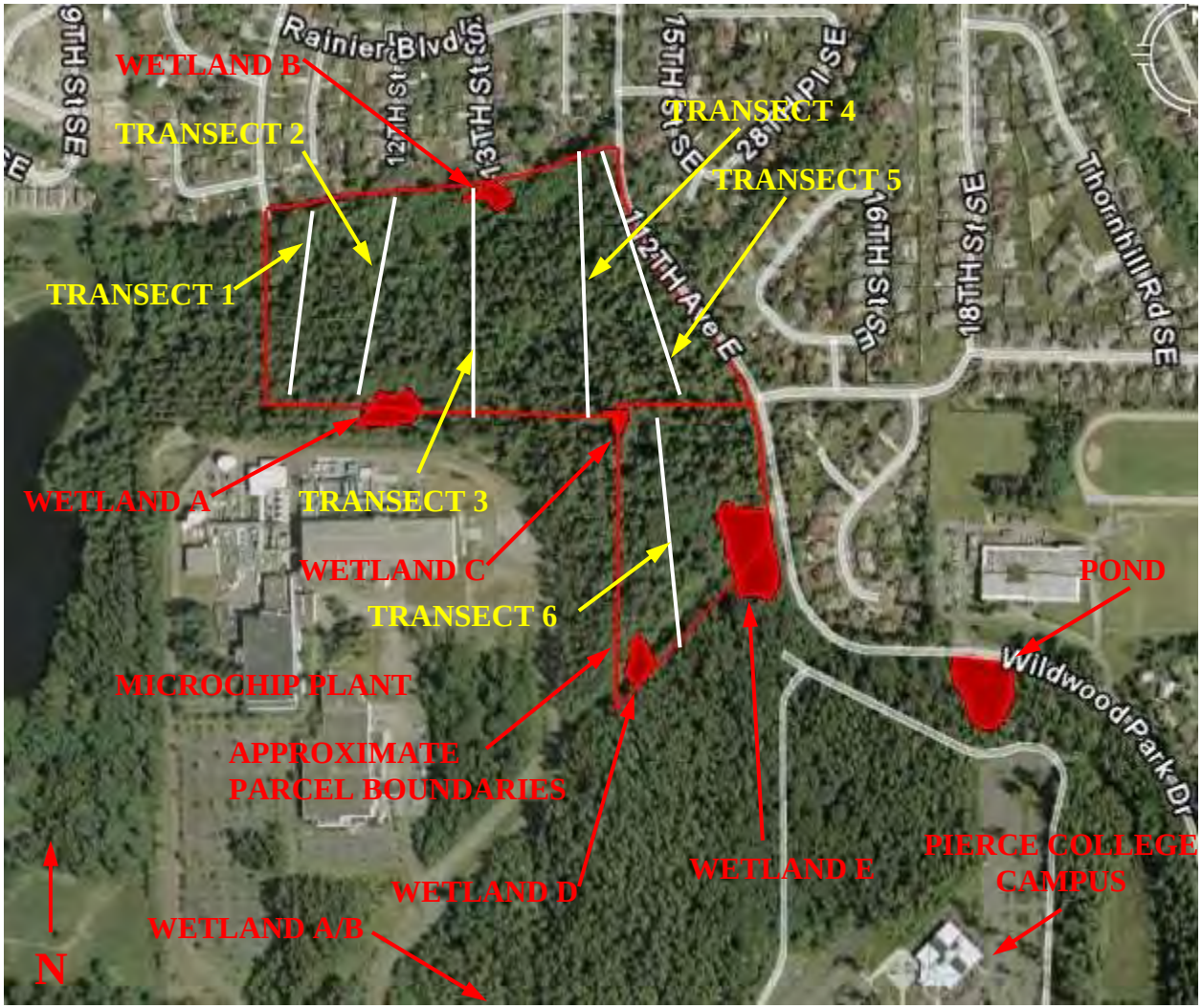


1. INTRODUCTION

Grette Associates, LLC has been contracted by MSGS Architects to perform a wetland reconnaissance and verification investigation of a 43.79-acre site located near Puyallup, Washington. The site is located north of the existing Pierce College – Puyallup campus, approximately ¾ mile east of Meridian Ave E and between Bradley Lake Park and Wildwood Park Drive. The site is in the center of the E ½ of Section 03, Township 19 North, Range 04 East W.M., within the City of Puyallup (Pierce County Parcel Nos. 0419031062, 0419034023). The investigations also included areas of Pierce County Parcel No. 041903418, which is immediately to the south of 0419034023 and also is part of the Pierce College campus, where features extended onto the former.

Grette Associates staff biologists visited the site on April 25, 2006 and conducted a transect survey of the site. The purpose of the investigation was to verify the presence and boundaries of previously delineated wetlands and to document any unidentified wetland areas. The wetlands encountered were not delineated according to US Army Corps of Engineers and Ecology standard methods. Wetland biologists used site topography, vegetation, hydrology, and soils to determine coarse boundaries which were flagged and surveyed during the investigations using a Trimble Pro-XR Differential Global Positioning System (dGPS) unit, as were transect endpoints (Figure 1).

The goal of this work was to provide sufficient spatial and descriptive information to locate and categorize these wetlands for planning purposes for future site use. Complete wetland delineations will be required if development is proposed in or near the buffer areas determined in this report or according to current Puyallup Municipal Code (PMC) at that time. It also is recommended that categorizations be verified at that time using current data and categorization methods required by the City of Puyallup.

2. BASELINE INFORMATION

The site is approximately 43.79 acres in size, and is located west of Wildwood Park Drive between a residential neighborhood to the north and 39th Ave SE to the south. To access the site from Interstate 5 southbound, take Exit 127 to Highway 512 east. Take the Highway 161 (Meridian Ave) exit, and turn right onto Meridian Avenue. Turn left onto 37th Ave SE, which will become 39th Ave SE. Areas of the site may be accessed from the Pierce College Campus, Wildwood Park Drive, or the street ends to the south off of Rainier Boulevard S, which is accessed from Wildwood Park Drive at the north end of the site.

Figure 2. Area Vicinity Map.

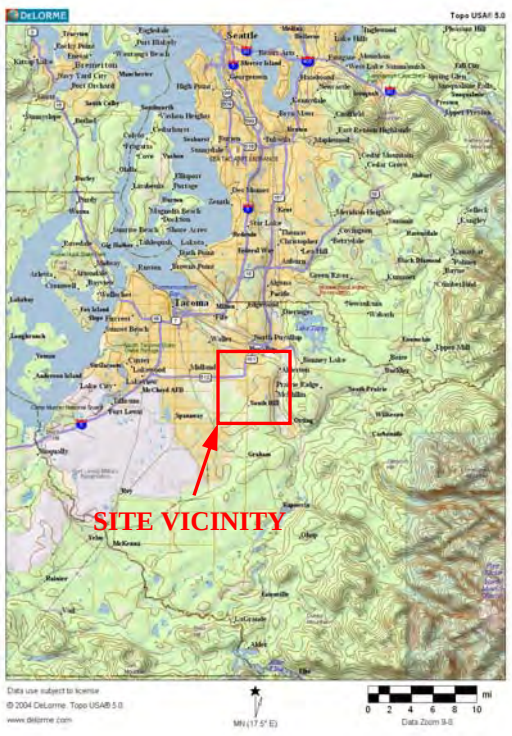


Figure 3. Site Location Map.

Site Characteristics

The site is generally undeveloped, with the exceptions of an unpaved access road running from east to west along the 31st Ave E alignment, and a mowed pipeline right of way on the south property line of parcel 0419034023. Along much of the access road, a fenceline runs immediately south of the access road and delineates the Pierce College property from a property to the south.

North of the access road, the topography of the property is generally flat then sloping downhill toward the residential neighborhood to the north; it also gradually slopes uphill from west to east. There are two main vegetation assemblages in this area. Much of the vegetation north of the access road is characterized as an evergreen canopy dominated by Douglas fir with some western red cedar and few deciduous trees. The understory is composed of shrubs including evergreen huckleberry, salal, Indian plum, and vine maple, and groundcover consisting of sword fern, bracken fern and stinging nettle. Invasive species including Himalayan and trailing blackberry were observed in this assemblage.

Along the north property line, where the topography slopes downhill, the canopy is dominated by red alder and big leaf maple with few Douglas fir; the shrub understory is predominantly salmonberry, vine maple, and Indian plum. Groundcover includes bleeding heart, stinging nettle, and willow herb. Groundcover in areas of more open

canopy includes grasses, particularly along the north property line, and includes some reed canary grass. Invasive blackberry species also are present in this assemblage.

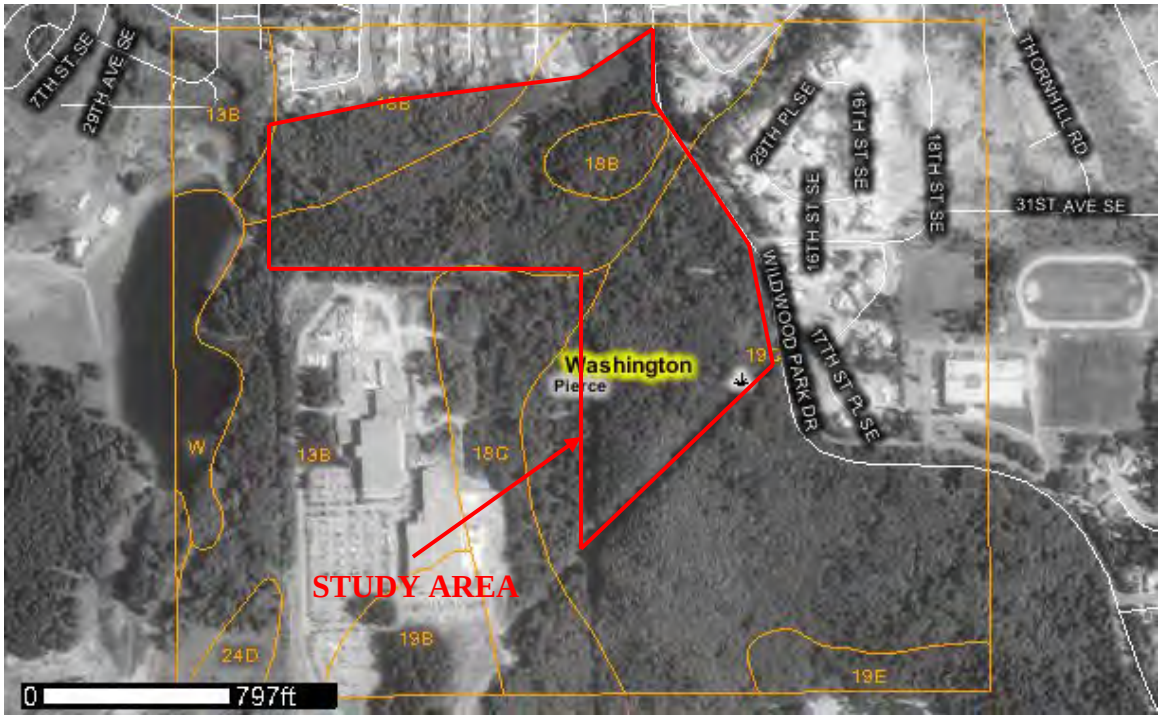
South of the access road, topography is generally flat, although it did slope gently downward to the south at approximately the pipeline right of way. The vegetation in this area is similar to the evergreen-dominated assemblage to the north of the access road and also includes relatively more hemlock and red elderberry. A maintained pipeline right of way marked the southern extent of the investigations; wetland areas that extended south of the right of way were flagged, but no additional transects were walked in this area.

Existing Information

Prior to the field investigations, several public resources were consulted to determine if previously identified wetlands exist on the site. These resources include the Natural Resource Conservation Service's (NRCS) Soil Survey of Pierce County, Washington, the U. S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI), and Pierce County's County Wetland Inventory (CWI). The information gathered from these resources is described below.

The NRCS's Soil Survey of Pierce County, Washington identifies three soil series present on the subject property (Zulauf 1979) (Figure 4). The three soil series identified on the site are Indianola loamy sand, Everett gravelly sandy loam, and Kapowsin gravelly loam. All three of these series are identified as ***not hydric*** on Pierce County's Hydric Soils List (NRCS 2001). Similarly, none of these soils are listed on the list of Hydric Soils of Washington (NRCS 1995).

Figure 4. NRCS Soil Survey Map.

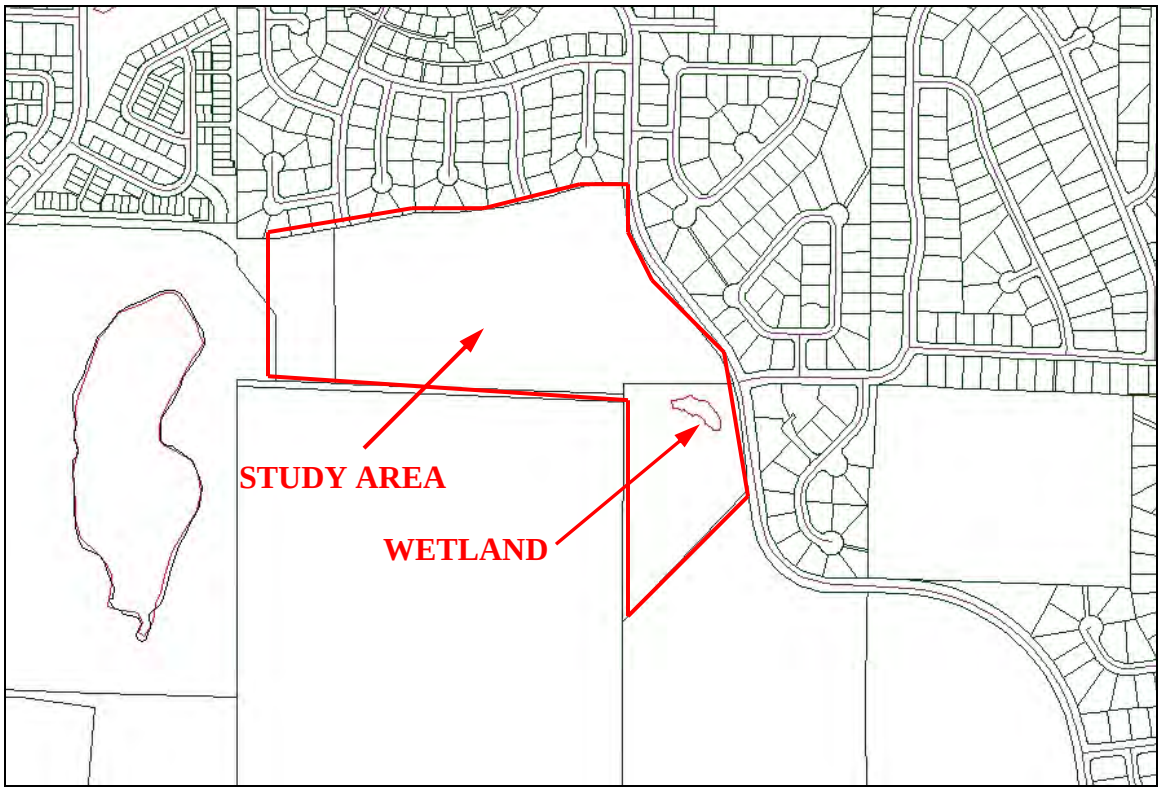


The USFWS's NWI database was queried to determine if previously identified wetlands occur on the site (USGS 2006). The NWI map identifies one wetland in this area, a palustrine forested seasonally flooded area immediately north of the pipeline right of way near Wildwood Park Drive (Figure 5). The NWI does not include polygons in the areas of known wetlands previously delineated on this property.

Figure 5. National Wetland Inventory map.

In addition to the NWI database, the Pierce County Wetlands Inventory (CWI) was queried to determine if previously-identified wetlands exist on or near the subject property. According to the CWI map, one wetland is identified within the Study Area (Figure 6). The wetland identified in the CWI generally corresponds to wetland area identified immediately north of the pipeline right of way near Wildwood Park Drive. As with the NWI above, the CWI does not include polygons in the areas of known wetlands previously delineated on this property.

Figure 6. Pierce County Wetland Inventory map



In addition to these wetland resources, both the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species database and the Washington State Department of Natural Resources (WDNR) Natural Heritage Program were queried to determine if state or federally listed plant or animal species are present on the property. According to these databases, there are no such plant or animal species on the site. Furthermore, there are no natural heritage wetlands or high quality native ecosystems on the site.

3. METHODS

The access road along the 31st Ave S alignment was used a baseline for six north-south transects; five of which were to the north of the access road (transects 1-5) and one of which was south of the it (transect 6). The transects were spaced roughly 300- to 400-ft apart (Figure 1). The biologists walked each transect together looking for indicators of wetland areas based on vegetation, hydrology, and topographic features. When draws or other features were observed from transects, they were followed off of the transects to determine whether they supported wetland areas.

Wetlands identified were coarsely delineated with surveyor's flagging, and each flag was located with the dGPS unit. Each wetland was generally assessed for habitat attributes, vegetation community type and complexity, presence of priority species or habitats (as defined by the WDFW) and hydrologic characteristics. Based on this assessment, each wetland was categorized using the criteria in Section 21.06.810 of the PMC. Buffer width recommendations are as stated in Section 21.06.830 of the PMC.

4. RESULTS

Five wetland areas were identified during this effort, four of which had been previously delineated or flagged. There were no wetland areas located along transects 1, 2, 5, or 6. The wetlands range in approximate area from 2,400 to 38,900 square feet. Table 1 below summarizes the results of the wetland investigation.

Table 1. Pierce College – Puyallup Campus Wetland Summary.

Wetland	Approximate Size (Sq. Ft.)*	Previously Flagged	Category	PMC Buffer Width (Ft)
A	14,763	Yes	III	50
B	5,058	No	III	50
C	2,365	Yes	III	Not Regulated
D	9,774	Yes	III	50
E	38,870	Yes	III	50

*This is an approximate area based on the reconnaissance field flagging; precise wetlands areas would require a full delineation.

4.1 Wetland A

Wetland A is a large wetland area that had been previously delineated as Wetland A/B (Entranco 2003) was flagged adjacent to the access road between transects 1 and 2 (Figure 1). The verification generally agrees with the flagging from the previous delineation. Wetland A is approximately 14,763 square feet in size, and is classified as a Palustrine Scrub-Shrub, Seasonally Flooded wetland. Around the margins the canopy included red alder, pacific dogwood, black cottonwood, and western red cedar; but the majority of the wetland area was shrub-scrub vegetation including red-osier dogwood and salmonberry.

Wetland A is situated in a wide low spot and includes some standing water and areas of thick mud; there also are high spots due to decomposing fallen trees. Hydrology is likely supported from groundwater and runoff from the surrounding areas; there does not appear to be surface water flowing into or out of this area. High spots resulted in areas of drier vegetation including Indian plum and vine maple within the wetland area.

The wetland likely provides several important water quality functions such as filtration of pollutants from runoff originating from the property to the south, and trapping of sediment from the dirt access road running through the south portion of the wetland. However these functions are probably limited due to the location of the wetland within the landscape (the wetland is hydrologically isolated). The wetland also likely provides general wildlife habitat functions such foraging, cover, and nesting/breeding as it is part of a larger, relatively undisturbed forested corridor.

Based on the coarse assessment of wetland boundaries and characteristics observed in the field, Wetland A is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

4.2 Wetland B

Wetland B is the only wetland area that was not either previously flagged or delineated. It is located at the sloping south end of transect 3 adjacent to residential development and the street end for 13th Street SE, and is approximately 5,058 square feet (Figure 1). Wetland B is classified as a Palustrine Forested/Emergent, Seasonally Flooded wetland. The canopy on the hillside is primarily red alder with a grassy understory; there are also large black cottonwoods and Himalayan blackberry along the edges of the wetland near the street.

Wetland B is situated on a slope that flattens out at the north edge of the property. Hydrology appears to be supported by a seep that comes from the slope and collects in a wet swale at the street end. The swale leads west along the north property line, gradually dissipating approximately 50 feet west of the wetland edge.

The water quality functions provided by Wetland B are likely limited due to its relatively small size and lack of hydrologic connection to other surface waters. The wetland may filter small amounts of runoff from the residential areas to the north, however storm drains in these areas direct most stormwater runoff away from the wetland. Similarly, the wetland likely provides little wildlife habitat function because of its small size and close proximity to residential development.

Based on the coarse assessment of wetland boundaries and characteristics observed in the field, Wetland B is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

4.3 Wetland C

Wetland C is located at the northeast corner of the fenceline between the Pierce College property and the adjacent property (Figure 1). Wetland C is classified as a Palustrine Forested/Scrub-Shrub, Seasonally Flooded wetland. There was previous wetland flagging at this site, but it does not appear to correspond to any Entranco delineation reports. Wetland C is a approximately 2,365 square feet, which includes part of the access road/walking path. Vegetation is mostly mixed shrub, ferns, and emergent ground cover with a few red alder and western red cedar. Shrubs include salmonberry and red elderberry, ferns include sword fern and bracken fern, and emergent ground cover includes slough sedge, reed canary grass, and creeping buttercup.

Wetland C is located in a small depression, and hydrology appears to be supported by groundwater or runoff from adjacent areas. There does not appear to be water flowing into or out of this area. Much of the wetland is located on the access road/walking path and within the area disturbed to construct the fence.

As with Wetlands A and B, Wetland C is limited in its ability to provide water quality functions because of its relatively small size and hydrologic isolation. The buffer areas surrounding the wetland are densely vegetated and relatively flat, preventing the wetland from filtering out pollutants or trapping sediment from in-flowing runoff. The wetland likely provides general habitat to birds and small mammals, however a property line

fence bisects the wetland and likely interrupts the movement of large mammals into and out of the wetland. Deer were observed during the investigation elsewhere on the site.

Based on the coarse assessment of wetland boundaries and characteristics observed in the field, Wetland C is a Category III wetland. As Wetland C is a Category III wetland less than 2,500 square feet in size, it is below the minimum size of wetlands regulated by the PMC and therefore no buffer is applied. However, as mentioned previously this size is based on a coarse determination and would need to be field delineated prior to extensive land use planning.

4.4 Wetland D

Wetland D is located at the south end of transect 6 (Figure 1). It spans the pipeline right of way and includes forested and shrub-scrub assemblages on either side of it. The portion of Wetland D within the study area (north of the pipeline right-of-way) is approximately 9,774 square feet in size. Wetland D is classified as a Palustrine Forested, Seasonally Flooded wetland. The portion of the wetland south of the right-of-way was investigated to gauge the accuracy of the previous delineation. The verification generally agrees with the flagging from the previous delineation in this area. The areas immediately on either side of the right of way include a red alder and big leaf maple canopy with understory dominated by red-osier dogwood, slough sedge, salmonberry and sparse common rush, which is more common at the far south end of the wetland. The right of way appears to undergo regular vegetation maintenance and is dominated by reed canary grass. There are a number of large snags at the far south end of the wetland near the parking lot retaining wall.

Wetland D is located in depression, and there are large areas of standing water on either side of the pipeline right of way. Hydrology appears to be supported by groundwater as well as runoff from adjacent areas. Water also enters the wetland from several culverts from the adjacent parking lot to the south.

Water quality functions provided by Wetland D likely include toxin removal, sediment trapping and erosion control, as stormwater from the adjacent parking lot appears to be directed into the wetland. Wetland D also likely provides a high degree of organic productivity due to its dense vegetation and highly stratified vegetative canopy, as well as offering a high degree of wildlife habitat, habitat connectivity and native plant diversity. Deer and deer sign were observed in this area.

Based on the coarse assessment of wetland boundaries and characteristics observed in the field, Wetland D is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

4.5 Wetland E

Wetland E is located at the east edge of the property adjacent to Wildwood Park Drive (Figure 1). It also extends to either side of the pipeline right of way and is approximately 38,870 square feet in size. The area south of the right of way was previously delineated as Wetland C (Entranco 2001). The verification generally agrees with flagging from the previous delineation in this area. The species composition is similar to Wetland D,

although areas of dense willow were noted within the north portion of Wetland E. Wetland E is classified as a Palustrine Scrub-Shrub, Seasonally Flooded wetland.

Wetland E is located in depression. Hydrology appears to be supported by groundwater as well as runoff from Wildwood Park Drive and adjacent areas. There does not appear to be a surface water outlet from this area.

Wetland E likely provides toxin removal, sediment trapping and groundwater recharge functions, as stormwater runoff from Wildwood Park Drive likely enters the wetland and there is no surface water outlet from the wetland. Wetland E also likely provides a high degree of organic productivity due to its dense vegetation, as well as offering a high degree of wildlife habitat, habitat connectivity and native plant diversity.

Based on the coarse assessment of wetland boundaries and characteristics observed in the field, Wetland E is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

4.6 Pond

An existing pond is located immediately south of Wildwood Park Drive, southeast of the primary study area for this investigation (Figure 1). The pond is located opposite Wildwood Park Drive from the entrance to Ferrucci Junior High School, and is approximately 35,616 square feet in size (Entranco 2002).

The pond consists of a sparse canopy of young red alder and western red cedar over a dense understory of Scouler's and Hooker's willow, salmonberry and Himalayan blackberry. Small areas of open water are scattered throughout the wetland, as are numerous standing snags. Buffer vegetation around the perimeter if the pond includes big leaf maple, red alder, western red cedar and Indian plum.

Functions likely provided by the pond include pollution filtration, stormwater retention, groundwater recharge amphibian breeding, and general wildlife habitat. The pond does not contain a surface water outlet and is not contiguous with any other surface waters.

While the pond boundaries were not investigated, the characteristics observed in the field confirm that the pond is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

4.6 Wetland A/B

Wetland A/B was previously delineated in 2002 (Entranco 2002b). This Wetland A/B should not be confused with the wetland delineated in 2003 as "Wetland A/B", which is referred to in this investigation as Wetland A. Wetland A/B is located northwest of the maintenance building in the southwest corner of the campus (Figure 1, not shown). The wetland is approximately 13,978 square feet in size and is classified as a Palustrine Forested, Seasonally Flooded wetland.

The vegetation community consists of a canopy of large, mature red alder and sparse western red cedar over a shrub understory of primarily salmonberry. Emergent wetland

species present are small-fruited bulrush and skunk cabbage. Buffer vegetation around the perimeter of the wetland consists of big leaf maple, red alder and Douglas fir over salmonberry.

According to the Entranco report (2002b), the wetland consists of two large depressions separated by a narrow upland berm. This characteristic indicates that the two depressions may have been created to function as a stormwater detention facility. Areas of open water are present beneath the forested canopy. While no specific culverts or drainages were observed entering the wetland, it is likely that stormwater from the parking areas and access roads is diverted into this area.

Wetland A/B likely performs several water quality functions such as stormwater retention, toxin filtration, sediment trapping, and groundwater recharge. Wildlife functions likely include large and small mammal foraging and cover, amphibian breeding, small bird and raptor nesting and foraging, and general habitat connectivity.

While the boundaries of Wetland A/B were not investigated, the characteristics observed in the field confirm that Wetland A/B is a Category III wetland and would be subject to a 50-ft buffer under the current PMC.

5. REFERENCES

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