

# VANPORT WETLANDS LONG-TERM MANAGEMENT PLAN

JANUARY 2018

PREPARED FOR

**Port of Portland**

7200 NE Airport Way  
Portland, OR 97218

PREPARED BY

**SWCA Environmental Consultants**

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SWCA



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## ABBREVIATIONS

AINW	Archaeological Investigations Northwest, Inc.
BDS	Bureau of Development Services
BMPs	Best management practices
COP	City of Portland
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DSL	Oregon Department of State Lands
E-zone	City of Portland Environmental Overlay Zone
FES	Fishman Environmental Services
HGM	Hydrogeomorphic Assessment
I-5	Interstate 5
JPA	Joint Permit Application
LUR	Land Use Regulations
MCVC	Multnomah County Vector Control
Metro	Metropolitan Service District
MCDD	Multnomah County Drainage District
NGVD	National Geodetic Vertical Datum
OFWAM	Oregon Freshwater Wetland Assessment Methodology
OHW	Ordinary high water
ORS	Oregon Revised Statutes
NRMP	Natural resource management plan
PDX	Portland International Airport
PEM	Palustrine emergent
Pen 1	Peninsula Drainage District No. 1
PFO	Palustrine forested
PIC	Portland International Center
PIR	Portland International Raceway
Port	Port of Portland
PSS	palustrine scrub-shrub
SWCA	SWCA Environmental Consultants
UFO	Forested upland
UM	Upland meadow
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USS	Upland scrub-shrub
WET II	Wetland Evaluation Technique, Volume II
WHA	Wildlife Habitat Assessment
Xerces	Xerces Society for Invertebrate Conservation





# 1. MITIGATION MANAGEMENT PROGRAM

## Introduction

The Port of Portland (Port) initiated their Mitigation Management Program in 1997 to respond to ongoing and proposed mitigation requirements and mandates from various regulatory agencies to address impacts to wetlands and other natural resources. The Port currently manages 15 different mitigation projects and several enhancement sites along the Columbia Slough, the Willamette and Columbia Rivers, and in the Tualatin River basin. Overall, the Port currently manages over 900 acres of natural area.

Mitigation and other natural resource enhancement projects are designed to provide a number of wildlife, ecological, and community benefits. These include increasing wildlife value by enhancing or creating nesting, foraging, and resting habitat; creating and enhancing riparian zone functions; improving connectivity between wildlife areas; improving or restoring wetland hydrological functions; improving water quality; providing flood attenuation through water storage; reducing and controlling the spread of invasive weeds; and improving habitat for wildlife including avifauna, sensitive turtles, amphibians and pollinators while providing valuable “green space” in highly urbanized areas. Mitigation planning, designing, monitoring, and reporting follow federal and state regulations, general authorizations, and guidelines.

Permit requirements by the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (USACE) in 2015 for the Vanport Wetlands mitigation site have been met and the site was subsequently released from regulatory obligations. However, to meet the Port’s objective to “attain and maintain a high quality of functional performance and increased habitat value,” stewardship over the Vanport Wetlands mitigation site will need to be continued into the future. Long-term management will help to ensure habitat integrity continues to improve and that the site sustains its enhanced condition with minimal intervention.

The long-term management of mitigation sites is vital to ensure that these areas continue to provide ecological benefits to the community and local wildlife. The Port’s primary mission is “to enhance the region’s economy and quality of life by providing efficient cargo and air passenger access to national and global markets.” Given this, the Port’s stewardship practices ensure that ecological site functions continue beyond the immediately foreseeable future. As the number and overall acreage of Port mitigation sites continue to grow, it has become necessary to look to conservation groups and land trusts to continue managing the Port’s mitigation lands that have met regulatory obligations, including the Vanport property. The conservation group or land trust that will assume responsibility for the ongoing management of this site shall be referred to as the “Steward” for the remainder of this document.

## Site Description and History

The approximately 90-acre Vanport Wetlands mitigation site is located in Multnomah County, east of N Vanport Road, north of N Broadacre Road, and west of N Expo Road in an industrial area in northern Portland, Oregon (see Appendix A for maps). The site is bordered to the north

by the Expo Center; to the east by right-of-ways for an access road to the Expo Center (N Expo Road), the Tri-Met interstate rail line, and Interstate 5 (I-5); to the south by the Portland International Raceway (PIR); and to the west by N Force Avenue along with an undeveloped property owned by the Port and an overflow parking area owned by the Metropolitan Service District (Metro). In addition, Heron Lakes Golf Course is located to the west and North Slough is located to the southwest within a few hundred feet of the Vanport Wetlands mitigation site.

Prior to European settlement, the Vanport Wetlands site was described as a mostly marshy area with a small lake in the northern portion, connected to a system of sloughs to the south as seen on a General Land Office map from 1852 (See Figure 1 in Appendix A). By the early 1900s, the site's lake was given the name Force Lake and it occupied the site's entire low basin area. The system of sloughs was a complex of waterways consisting of wetlands, open water ponds, and drainageways, hydrologically driven by the seasonal fluctuations of the nearby Columbia River to the north and the Willamette River to the southwest. The general ground surface elevation of the Vanport Wetlands bottomland wetlands (elevation 4 to 5 feet National Geodetic Vertical Datum [NGVD]) sits several feet lower than the ordinary high water (OHW) elevations of either the Columbia River (elevation 17.6 feet NGVD at OHW) or Willamette River (elevation 16.6 feet NGVD at OHW) in the vicinity of the site. Thus, historically there was seasonal flooding of the Vanport Wetlands area along with swelling groundwater levels likely due to increased pressures from the hyporheic zones from both rivers, which result in a seasonally high groundwater table during periods when the rivers are high (Port 2004).

To protect the site from seasonal flooding, a complex of dikes, drainageways, and mechanical pumping stations were installed beginning in 1917 by the new Peninsula Drainage District No. 1 (Pen 1). In the early 1920s, the lake was drained and the majority of the site converted to agricultural row crops. Agriculture continued at the site when the community of Vanport was developed in the surrounding areas to serve the war effort in the 1940s. Also during this time, the site was used for transmitting radio signals, as transmitter towers had been installed in the 1930s, and a transmitter building constructed by 1935. The radio station, KGW-AM, was one of the earliest commercial stations in Portland, and the site has long been associated with this use (Port 2004).

For the most part, this flood protection system performed satisfactorily, allowing development of the Vanport area, along with a severe disconnection with the nearby rivers' hydrologic cycles. The flood protection system was disrupted in May 1948 by the Vanport Flood, when a dike on the Columbia River failed and gave way during high water, flooding the entire Vanport area including the Vanport Wetlands. The Vanport Flood temporarily disrupted both agricultural and radio transmission activities, with numerous residential buildings floating onto the site from nearby housing complexes, along with other flood debris. Following the flood, the Vanport community was abandoned and new developments in the area took shape, including the PIR, the Heron Lakes Golf Course, and the Expo Center, all adjacent developments to the present-day Vanport Wetlands mitigation site (Port 2004).

Following a comprehensive evaluation of potential mitigation properties and discussions with the Columbia Slough Watershed Council, the Port purchased the Vanport Wetlands property (formerly referred to as the 'Radio Towers Site') in May 1999, effectively ending commercial radio's tenure at the site. In December 2000, the Port removed the underground copper

grounding wire network, and on December 26, 2000, the two 625-foot-high transmission towers were removed. The radio transmitter building and access roads, all that remained from its use as a transmission facility, were left intact for another 5 years. During this time, the transmitter building was listed in the Historic Resource Inventory for the City of Portland (COP) as a Rank III resource (Rank III resources are recognized in the COP's inventory but are not afforded protection under COP ordinances) and was recommended for listing on the National Register of Historical Places by the Oregon State Historic Preservation Office (Port 2004). However, in 2005, the transmitter building was removed largely because of the degraded condition of the building from flooding, and leaving the building in place did not align with the ecological goals for the mitigation site.

Initial mitigation site preparation was completed in 2001, and wetland planting was completed in 2002/2003, as mitigation for wetlands impacts at Portland International Airport (PDX) and the nearby Portland International Center (PIC). Active monitoring of the Vanport Wetlands mitigation site began in 2003 and was concluded in 2010 (8 years). The site was managed to provide compensatory wetland mitigation for unavoidable wetland impacts for the Cascade Station, PIC Sub-district B, SW Quad, T-5 Powerline, PDX Airfield Safety, and N Simmons Road Projects, which were released from mitigation obligation after the 5-year monitoring period in 2008, as well as the PDX Taxiway B Project, which was released from mitigation obligation after the 5-year monitoring period in 2010.

The Vanport Wetlands mitigation site received local and state honors in 2001 and 2004 by winning the Columbia Slough Watershed Council's Achievement Award and the Oregon State Land Board Award for wetland restoration, respectively.

## **2. ECOLOGICAL SETTING**

### **Habitat Description and Corridor Connectivity**

The Vanport Wetlands mitigation site is a bottomland wetland that was historically connected to the large river systems of the Columbia and Willamette Rivers but is now hydrologically disconnected from these systems by surrounding developments, with water levels controlled by pumping stations and a water control weir. The site consists of multiple habitats, including palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) wetlands and upland meadow (UM), upland scrub-shrub (USS), and forested upland (UFO) areas. Table 1 below presents pre- and post-mitigation acreage for each habitat type within the Vanport Wetlands mitigation site.

**Table 1.** Pre-mitigation and Post-mitigation Acreage per Habitat Type

Habitat Type	Pre-mitigation (acres)	Post-mitigation (acres)
PEM	52.36	52.80
PSS	6.06	9.72
PFO	3.11	5.32
UM	6.39	6.39
USS	1.91	1.91
UFO	5.10	12.23
Other <sup>1</sup>	15.51	2.57
<b>TOTAL</b>	<b>90.44</b>	<b>90.94<sup>2</sup></b>

<sup>1</sup>Roads and other structures

<sup>2</sup>Includes 0.5-acre berm creation

The functionality of the Vanport Wetlands mitigation site was assessed by the COP’s inventory and analysis of the Columbian Corridor (COP 1989), the Natural Resource Management Plan (NRMP) (1997), the Adolfson and Associates *Multnomah County Corrections Facility Radio Towers Site: Wetlands Study Report* (1997), and Fishman Environmental Services’ (FES’s) *Hydrogeomorphic Assessment of the Vanport Wetlands* (2003).

COP’s inventory and analysis used the Wildlife Habitat Assessment (WHA) rating system that was developed for the City of Beaverton as part of their Goal 5 update for sites that contain wetlands or water bodies. COP’s inventory analysis report identified the Vanport Wetlands site as Site 53 (82 acres), within the Western Columbia Corridor subarea. The site was categorized as a large wetland with plant species that suggest recent vegetation disturbance. According to the report, plant diversity was limited and vegetation was almost entirely non-native. Fencing generally deters larger wild and domestic mammals from entering the site; however, some large mammals, including frequent black-tailed deer and one elk, have been observed within the site despite the fencing. The report's "wildlife habitat inventory score" for the site was 24 (out of a possible 100), a relatively low score.

The NRMP included an assessment of functional values for the study area wetlands. While the assessment methodology did not result in the same level of detail as the Wetland Evaluation Technique Volume II (WET II) method, it examined the same characteristics and conditions for the same major functional values. Each functional value (12 total) was rated as low, medium, or high. The results for the Vanport Wetlands site were nine low ratings, three medium ratings, and no high ratings.

The Adolfson and Associates assessment used the Oregon Freshwater Wetland Assessment Methodology (OFWAM), with information gathered during the wetland delineation field investigations. The report concluded that the Vanport Wetlands site’s bottomland wetland area (Wetland A in the report) provided limited habitat for wildlife and was described as being dominated by dense stands of reed canarygrass, with scattered patches of native wetland species. The Northwest and Southwest Drainages (Wetlands B, C, and D in the report) received the highest value for wildlife and aesthetics, and also contributed to water quality and flood control.

Isolated emergent wetlands in the vicinity of the central ditch and pumping station pond (Wetlands E, F, and G in the report) ranked low in all functions other than flood control.

The Hydrogeomorphic Assessment (HGM) prepared by FES for the Port evaluated pre-mitigation and predicted 5-year conditions (following mitigation) for the lakebed, berm, linear ditches, wetland fringe, northwest swale, and southwest swale. Existing conditions in the emergent wetlands received relatively high scores for sediment stabilization, primary production, and songbird habitat support, and conditions in the swales also received high scores for water storage, nitrogen removal, and amphibian support. Predicted 5-year conditions substantially lifted the function scores in most of the evaluated categories for the lakebed and wetland fringe but resulted in only minimal increases for the berm, linear ditches, and swales. Primary productivity and songbird habitat were predicted to have a minimal decrease in value in several of these locations as a result of mitigation activities. FES (which became SWCA in 2004) conducted 8 years of monitoring on the site, and along with the Port, extensively documented site conditions during and after mitigation. Fauna observed on the site throughout the 8 years of monitoring and during wildlife surveys are listed in Appendix C.

## Surrounding Land Use

The surrounding landscape is dominated by industrial land uses, with some high-intensity recreational land use to the west. The site is largely surrounded by roads, including N Expo Road, N Force Avenue, and N Vanport Road. Beyond the immediately adjacent roads, the site is adjacent to Metro property, North Slough, and the PIR to the south; the Heron Lakes Golf Course to the west; the Expo Center and metro overflow parking to the north; and I-5 to the east. All of the surrounding land uses are highly managed and are active vectors that may facilitate the spread of non-native and invasive species into the site. For this reason, continued active management will likely be necessary into the foreseeable future.

## Hydrology

The hydrology in the Vanport Wetlands mitigation site is primarily influenced by surface water runoff and a shallow groundwater table. These two sources combined heavily influence the wetland functions and habitat types present on the site.

### Surface Hydrology

The on-site surface hydrology consists of point and non-point inflows onto the site and outflows exiting the site controlled by pumps and a water-control weir. The major inflows onto the site are driven by direct precipitation and the associated stormwater runoff from adjacent properties. Precipitation falls mainly from October through June, with the heaviest amounts occurring in the winter months of December through March, for a total of approximately 44 inches of rainfall annually. Stormwater runoff from the Expo Center property enters the north ditch, bypassing the primary wetland; lesser inputs exist from Expo Road and I-5 to the east and PIR's north parking area to the south. The contributing watershed that feeds the stormwater inflows is relatively small but predominantly consists of impervious surface. See Figure 2 in Appendix A for stormwater input locations.

The Vanport Wetlands mitigation site does not have a natural surface water outflow due to a combination of its low-lying position on the landscape, its historical developments, and development modifications made to surrounding properties. In order to keep the site free from standing water for development purposes, Pen 1 constructed a mechanical pumping station on the site in the 1920s to pump excess surface water from the central wetland to a modified drainageway on the western portion of the site. The drainageway gravity-flows off-site into North Slough to the southwest of the site. In addition, evapotranspiration and groundwater recharge also affect seasonal surface water levels.

The site's western drainageway consists of two sections that are hydrologically connected via an underground pipe located between them. The northwest drainageway section receives pumping outflows and off-site stormwater runoff from the Expo Center property and outflows from the mitigation site through a south-flowing straight and narrow channel. This channel is confined to the east by a steep embankment and has a small terrace on the west side that receives overbank flow from the channel. This water ultimately ends at the mid-point of the site where water is piped underground for approximately 400 linear feet before emerging into the north end of the southwest drainageway section. The southwest drainageway section consists of a relatively broad (10–25 feet wide) swale confined by steep embankments on either side. The surface water in this section outflows through a culvert under Broadacre Street and drains into the North Slough off-site on the PIR property. Figure 2 in Appendix A illustrates the primary hydrologic features and flow directionality.

#### Groundwater Hydrology

Groundwater levels at the Vanport Wetlands mitigation site are influenced primarily by the site's low-lying position on the landscape and are managed by a mechanical pump station. In addition, the close proximity of the site to two large rivers, the Willamette River approximately 3 miles to the southwest and the Columbia River less than 0.5 mile to the north, has an influence on groundwater levels. The surface elevation of the bottomland wetland is approximately 11 to 12 feet below the OHW elevations of the Willamette and Columbia Rivers, respectively. The low-lying position of the site and the high water elevations of the rivers seasonally influence the site's groundwater elevations.

Groundwater elevation monitoring at the site between 1999 and 2004 shows that during the dry summer months, when no pumping occurs, groundwater drops to depths of 1 to 2 feet below the ground surface and rises quickly with the onset of fall rains.

#### Pump Station and Water Control Weir

Multnomah County Drainage District (MCDD) controls the settings on the site's pump station which can be easily modified to pump water at a selected elevation. Prior to the winter of 2000, pumping consistently occurred at an approximate elevation of 5 NGVD, which actively prevented surface water from accumulating on the majority of the site and protected the former radio transmission facilities from flooding. Following a proposal by the Port to use flooding as a means of reed canary grass (*Phalaris arundinacea*) control, an evaluation of potential impacts to adjacent areas from flooding was performed by the MCDD with hydrologic modeling (May 2000). The results of the modeling indicated a surface barrier (berm) and water control weir

needed to be constructed along the north edge of the wetland to prevent potential flooding of Expo Road and to manage water levels in the wetland.

Construction of the proposed earthen berm and the installation of the water control weir were completed in December 2001 as part of the mitigation design. These features allow flooding to rise to an elevation of 8.5 feet NGVD and allow the minimum 2.5-foot target depth of inundation for reed canary grass control to be achieved throughout most of the wetland site without adversely impacting adjacent properties to the north.

Drawdown has continued to be conducted by MCDD under direction from Port mitigation staff. The rate and extent of drawdown is determined through evaluating water depth and vegetation cover and using adaptive management to achieve mitigation goals. During the 2000/2001 winter season, which was prior to the construction of the berm, pumping was modified to allow some surface water to accumulate on the site. By 2002, the flooding-drawdown regime was being implemented. The flooding-drawdown regime has been conducted using an adaptive management approach, but typically follows an annual pattern of drawdown starting in June or July followed by closing the weir once rains begin again, usually in October. This management approach has been very effective in controlling the spread of reed canary grass throughout most of the wetland mitigation site. Currently, flooding is managed beginning in May when water is released from the wetland at approximately 3 inches per week if water levels are high (over 7 feet NGVD at the MCDD gauge) or June if water levels are below 7 feet on June 1. Drawdown is ideally completed by mid-September when the water elevation in the wetland swale is approximately 2.75 feet NGVD. In the fall, the water control structure is inspected to ensure functionality by MCDD and is closed before the wet season to retain water for the following season. This cycle is repeated annually and adapted as needed.

## **Invasive Species**

Effective invasive species management is a critical component of the Port's internal and external stewardship role. Invasive species can have ecological and economic impacts, and are one of the primary maintenance concerns for the Port's wetland mitigation sites. Once established, invasive species can be costly to remove; therefore, preventing the introduction and establishment of invasive species has been shown to be the most cost-efficient strategy for long-term management. Prior to the Port's purchase of the Vanport property in 1999, the bottomland wetlands were an approximately 62-acre monoculture of the invasive reed canary grass, except for a small depressional area in the central portion of the wetlands that was a near monoculture of climbing nightshade (*Solanum dulcamara*), another invasive species. In addition, the surrounding uplands were dominated by non-native pasture grasses, Himalayan blackberry (*Rubus armeniacus*), and some black cottonwood (*Populus balsamifera*) and were primarily used for grazing cattle. The cessation of farming in this area in the 1960s allowed reed canary grass to aggressively take over the site, which was a common scenario for abandoned agricultural land throughout western Oregon and Washington. In addition, the mechanical pumping of surface/groundwater by MCDD for flood control prevented surface water from ponding on the site for prolonged periods, resulting in seasonally saturated soils at or near the surface through spring, and creating optimal hydrologic conditions for reed canary grass growth. During the mitigation monitoring period, controlled flooding of the wetlands was used to reduce reed canary

grass throughout the wetlands, and reed canary grass has been almost completely eliminated from the site.

Other major invasive species that were initially identified on-site included Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), tall oatgrass (*Arrhenatherum elatius*) and Fuller's teasel (*Dipsacus fullonum*). In addition, there have been occasional observations and control of purple loosestrife (*Lythrum salicaria*), black nightshade (*Solanum nigrum*) and climbing nightshade (*Solanum dulcamara*) in the primary wetland. Invasive species are managed with a combination of controlled flooding, cutting and glyphosate application in the wetland areas, and mowing weed whacking and herbicide treatments in upland areas. Where large areas of weeds were removed, re-seeding or planting occurred to compete with, or shade out, the invasive species. By Year 8 of monitoring (2010), invasive species were nearly eliminated, with very low cover of reed canary grass and climbing nightshade remaining. Maintenance and weed control, primarily for reed canary grass, Canada thistle, bull thistle, Fuller's teasel, Himalayan blackberry, and nightshade, has been ongoing, and the site will likely require further management of invasive species to ensure that none of the above-mentioned species, or any other invasive species, become re-established on the site. Additional invasive species observed within the site since initial surveys include shiny geranium (*Geranium lucidum*) and Caper spurge (*Euphorbia lathyris*). The seed bank is known to have a high prevalence of invasive species; therefore, care must be taken to manage any sprouting invasive species after any ground disturbance occurs.

## Restored Native Vegetation

Site modification, planting, and increased controlled flooding have resulted in approximately 65.5 acres of enhanced wetland habitat within the Vanport Wetlands mitigation site. Prior to wetland mitigation activities, the site was dominated primarily by invasive reed canary grass, due to the near year-round saturation in the central portion of the original wetland. As mentioned previously, the Port worked with the MCDD to alter flood management within the site to allow increased water depth within the wetland basin to stress and ultimately reduce the prevalence of reed canary grass within the wetland areas so that native wetland species could become established. In addition, mowing and treating remaining reed canary grass took place along with plowing, seeding, and planting the wetland and adjacent upland buffer habitats with native trees, shrubs, and herbaceous species (See Figure 3 in Appendix A).

The most common species seeded in the wetland portions of the site were American slough grass (*Beckmannia syzigachne*), ovate spike rush (*Eleocharis ovata*), needle spike rush (*E. palustris*), soft-stem bulrush (*Scirpus validus*), slough sedge (*Carex obnupta*), spiked bent grass (*Agrostis exarata*), tufted hair grass (*Deschampsia caespitosa*), and meadow barley (*Hordeum brachyantherum*), along with wapato (*Sagittaria latifolia*) bulbs planted in emergent, swale, and bank areas. In addition, the PSS and PFO wetland areas were predominantly bare-root planted with red-osier dogwood (*Cornus stolonifera*), Nootka rose (*Rosa nutkana*), Oregon ash (*Fraxinus latifolia*), red alder (*Alnus rubra*), and Douglas hawthorn (*Crataegus douglasii*), as well as with cuttings of Pacific willow (*Salix lucida*) and Sitka willow (*S. sitchensis*) in the PSS wetland area. The wetland and upland buffers were also planted with various types of stock, including bare-root, containers, cuttings, plugs, and tubers. Each habitat type received a



customized blend of seeds and plantings to create native diversity and stratum complexity across the entire site. See Appendix D for a complete list of species used on the site.

Within the existing riparian forest habitat along the Northwest Swale, additional enhancement was conducted that involved removing invasive species and planting native trees, shrubs, and herbs. A total of 16 black cottonwood, 8 Oregon ash (*Fraxinus latifolia*), 280 red osier dogwood (*Cornus alba*) and 280 willow (*Salix* spp.) stakes were installed. Additional plantings included slough sedge (*Carex obnupta*), lady fern (*Athyrium filix-femina*), sword fern (*Polystichum munitum*) and piggy-back plant (*Tolmiea menziesii*) with over-seeding of tall manna grass (*Glyceria elata*), sawbeak sedge (*Carex stipata*), and blue wildrye (*Elymus glaucus*).

All of the physical modifications to the site were complete by December 2001, and the native planting/seeding was completed in March 2003. Native vegetation has been successfully established throughout the Vanport Wetlands mitigation site, with high levels of natural recruitment within the wetland and increased species diversity occurring in the surrounding upland buffer habitats. Native vegetation in the final year of monitoring, 2010, averaged 72% cover within the lakebed emergent vegetation area. Invasive species cover averaged less than 1% and included reed canary grass and climbing nightshade. The dominant native plant species within this area included broad-fruit bur-reed (*Sparganium eurycarpum*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), curve-pod yellowcress (*Rorippa curvisiliqua*), and broad-leaf cat-tail (*Typha latifolia*). During the same year, the Taxiway B mitigation areas were dominated by native species and did not have any recorded invasive species within those transects. The emergent vegetation area located on the north end of the lakebed area had native vegetation cover averaging 60%, which was dominated by witchgrass (*Panicum capillare*), marsh seedbox (*Ludwigia palustris*), water foxtail (*Alopecurus geniculatus*), creeping spike-rush (*Eleocharis palustris*), upright burrhead (*Echinodorus berteroi*), and Pennsylvania smartweed. The wetland woody vegetation area located in the southwest corner of the lakebed had greater than 80% native cover, high vigor, heights ranging from 20 to 30 feet, and survival rate greater than 80%. The upland buffer had only one tree mortality in 2010, with all remaining trees and shrubs showing high vigor.

In addition to the restored native vegetation associated with the wetland mitigation areas, four patches of upland were cleared and planted in 2015-16 with a hardy pollinator seed mix that included common yarrow (*Achillea millefolium*), farewell to spring (*Clarkia amoena*), bluehead gilia (*Gilia capitata*), tall alumroot (*Heuchera chlorantha*), Oregon iris (*Iris tenax*), fernleaf biscuitroot (*Lomatium dissectum*), American bird's-foot trefoil (*Lotus purshianus*), smallflower lupine (*Lupinus polycarpus*), common madia (*Madia elegans*), Oregon yampah (*Perideridia oregana*), western buttercup (*Ranunculus occidentalis*), prairie burnet (*Sanguisorba annua*), purple sanicle (*Sanicula bipinnatifida*), meadow checker-mallow (*Sidalcea campestris*), and dwarf checkerbloom (*Sidalcea malviflora* ssp. *virgate*). A total of 20 bee blocks were installed in these areas. Another pollinator patch was created in the SE corner in 2017 and seeded with similar species.

## Wildlife Species

Wildlife use of the Vanport Wetlands mitigation site primarily includes a large variety of bird species, along with some mammal, amphibian, reptile, and macroinvertebrate species. Of the more than 100 species of birds that use the habitats provided by the site, the most commonly sighted bird species include bald eagle (*Haliaeetus leucocephalus*), blue-winged teal (*Anas discors*), brown creeper (*Certhia americana*), cedar waxwing (*Bombycilla cedrorum*), cinnamon teal (*Anas cyanoptera*), common yellowthroat (*Geothlypis trichas*), gadwall (*Anas strepera*), great blue heron (*Ardea herodias*), greater yellowlegs (*Tringa melanoleuca*), least sandpiper (*Calidris minutilla*), lesser scaup (*Aythya affinis*), long-billed dowitcher (*Limnodromus scolopaceus*), marsh wren (*Cistothorus palustris*), northern pintail (*Anas acuta*), northern shoveler (*Anas clypeata*), osprey (*Pandion haliaetus*), pied-billed grebe (*Podilymbus podiceps*), redhead (*Aythya americana*), ruddy duck (*Oxyura jamaicensis*), savannah sparrow (*Passerculus sandwichensis*), spotted sandpiper (*Actitis macularia*), Vaux's swift (*Chaetura vauxi*), western wood-peewee (*Contopus sordidulus*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), yellow-rumped warbler (*Dendroica coronate*), and numerous other sparrows, warblers, and swallows. Many of these bird species nest and raise young on the site, such as great horned owl (*Bubo virginianus*), yellow-headed blackbird, red-winged blackbird (*Agelaius phoeniceus*), marsh wren, ruddy duck, American coot (*Fulica americana*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), and American robin (*Turdus migratorius*).

The primary mammals that have been observed at the Vanport Wetland mitigation site include small rodents, North American beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), nutria (*Myocastor coypus*), coyote (*Canis latrans*), and black-tailed deer (*Odocoileus hemionus columbianus*). In addition, amphibian species that are frequently observed on the site include Pacific tree frog (*Pseudacris regilla*), long-toed salamander (*Ambystoma macrodactylum*), and bullfrog (*Lithobates catesbeianus*). Western painted turtles have been observed infrequently.

The Vanport Wetlands mitigation site is occasionally visited by several Oregon state-listed sensitive wildlife species, as evidenced by incidental observations during site monitoring and inventory surveys. Sensitive species observed once or infrequently at the site include northern red-legged frog (*Rana aurora*), western painted turtle (*Chrysemys picta bellii*), black-necked stilt (*Himantopus mexicanus*), chipping sparrow (*Spizella passerina*), harlequin duck (*Histrionicus histrionicus*), olive-sided flycatcher (*Contopus cooperi*), and Oregon vesper sparrow (*Pooecetes gramineus*). Other sensitive species have been observed periodically but are not known to nest on the site, including peregrine falcon (*Falco peregrinus*), pileated woodpecker (*Dryocopus pileatus*), purple martin (*Progne subis*), and white-breasted nuthatch (*Sitta carolinensis*). The Oregon state-listed sensitive species and federally listed species of concern willow flycatcher (*Empidonax traillii*) is frequently observed and heard during breeding season and may nest on the site. Therefore, it is likely that the site currently supports one or more populations of sensitive species and is acting as a valuable habitat resource, while functioning as a stop-over area for other sensitive species. Species observations recorded throughout the monitoring of the site are listed in Appendix C.

### 3. REGULATORY FRAMEWORK

Port mitigation projects provide compensation for unavoidable permanent and temporary impacts to wetlands and other natural resources, resulting from development and operational activities undertaken by the Port. If new development is proposed where wetlands or other regulated natural resources are impacted, federal, state, and local laws and regulations require that project alternatives be evaluated that 1) avoid the impact, 2) minimize the impact, and 3) mitigate or compensate for the unavoidable impacts to these natural resources. Mitigation usually takes the form of restoration, establishment (creation), enhancement, or preservation of the habitats and functions similar to those impacted by development activities.

Permitting and compliance responsibilities for all mitigation sites are primarily enforced by USACE, DSL, and Oregon Department of Environmental Quality (DEQ), with associated federal, state, and local agencies having influence and offering comments on permit compliance. Mitigation for development impacts may also be required through local municipal regulations. Vanport has been fully released from further obligations associated with mitigation and a summary of DSL released permits was provided by DSL in 2015 (letter dated November 17, 2015). See Appendix F for this letter provided by DSL.

#### Federal and State Regulations

##### Clean Water Act, Section 404

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and mining projects. Section 404 requires a permit from the USACE before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities). The applicant must first show that steps have been taken to avoid impacts to wetlands, streams, and other aquatic resources; that potential impacts have been minimized; and that compensation will be provided for all remaining unavoidable impacts. A Joint Permit Application (JPA) satisfies the requirements for Section 404 within the State of Oregon and adheres to the state removal-fill law described below.

##### Oregon Department of State Lands Removal-Fill Law

DSL's Removal-Fill Law (Oregon Revised Statute [ORS] 196.795-990) requires people who plan to remove or fill material in waters of the state to obtain a permit from DSL. The purpose of the law, enacted in 1967, is to protect public navigation, fishery, and recreational uses of the waters. "Waters of the state" are defined as "natural waterways including all tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and non-navigable, including that portion of the Pacific Ocean that is in the boundaries of this state." The law applies to all landowners, whether private individuals or public agencies.

### Migratory Bird Treaty Act

The purpose of the Migratory Bird Treaty Act (MBTA), initially enacted in 1918, is to protect migratory bird species through making it illegal for anyone to “take, possess, import, export, transport, sell, purchase, barter, or offer of sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. It is administered and enforced by the U.S. Fish and Wildlife Service (USFWS). The MBTA implements conventions between the United States and four other countries (Canada, Mexico, Japan, and Russia) for protection of migratory birds. A complete list of migratory bird species protected under this act are listed in 50 CFR 10.13.

## **Local Ordinances**

### Multnomah County Land Use Regulations

Actions requiring a development application are reviewed by Multnomah County staff for compliance with standards under the Multnomah County Land Use Regulations. These codes and regulations outline protections for the health, safety, and welfare of the public and environment and ensure compatible land uses are co-located. The standards within the Multnomah County Code are based on a collection of standards established by the Oregon State Statutes, Oregon State Administrative Rules, and ordinances adoption by the Multnomah County Board of Commissioners. Guidance for protection of wetland resources is included therein. These regulations are modified and often defer to the standards and ordinances in the City of Portland Land Use Regulations for areas within those city limits.

### City of Portland Land Use Regulations

Development activities within the COP city limits are regulated locally by the Environmental Overlay Zones (E-zone) under the COP Land Use Regulations (LUR). Specifically, there are two environmental overlay zones that can often apply to mitigation sites within COP city limits. The Environmental Protection overlay zone is applied wherever the COP determines that *highly* significant resources and functional values are present, which is shown on the Official Zoning Maps with a “p” symbol (p-zone). The Environmental Conservation overlay zone is applied wherever the COP determines that significant resources and functional values are present, which is shown on the Official Zoning Maps with a “c” symbol (c-zone). Development and other activities within areas mapped as p- and c-zones that are not exempt must adhere to the regulations included in Chapter 33.430 of the Overlay Zoning Code. Additional environmental regulations may either supplement or supersede the regulations outlined in Chapter 33.430 of the Overlay Zoning Code if the mitigation site is located within one of the specific Plan Districts or NRMPs listed in Chapter 33.430.030 of the Overlay Zoning Code. The Vanport Wetlands mitigation site is located within the NRMP for the Peninsula Drainage District No. 1, which is regulated in partnership with the MCDD and the COP.

## 4. VANPORT WETLANDS MITIGATION SITE PERMITTING

### Permit Summary

The Vanport Wetlands mitigation site has undergone extensive permitting to stay in compliance with numerous state, federal, and local laws and ordinances. The Vanport Wetlands site was prepared as a wetland mitigation site for impacts to wetlands associated with the Cascade Station, PIC Sub-district B, SW Quad, T-5 Powerline, PDX Airfield Safety, N Simmons Road, and PDX Taxiway B Projects. The following permits were received from USACE, DSL, and COP for the impacts associated with the above projects and establishment of the Vanport Wetlands mitigation site. Table 2 is a summary of permits under different regulatory bodies for each impact area for which the Vanport Wetlands site mitigates impacts.

**Table 2.** Vanport Wetlands Mitigation Site Permits

Project Name	Cascade Station	PIC Sub-district B	SW Quad	T-5 Powerline	PDX Airfield Safety	N Simmons Road	PDX Taxiway A	PDX Taxiway B
USACE Permit No.	1999-632	1999-632	2004-00091	1995-00534	2000-00043	2001-00564	NWP-2010-066	2005-00131
DSL Permit No.	FP-17198	30286-RF	31722-RF	FP-9836	FP-21878	FP-24248	N/A	N/A
COP LUR	00-00365	N/A	04-28327	N/A	00-00365	N/A	N/A	N/A
Start of mitigation	Jun. 2000	Jun. 2000	Jan. 2005	Jun. 2000	Jun. 2000	Jun. 2000	Jun. 2000	Nov. 2005
Planting complete	Mar. 2003	Mar. 2003	Jan. 2005	Mar. 2003	Mar. 2003	Mar. 2003	Mar. 2003	Nov. 2005
Monitoring start date	Oct. 2003	Oct. 2003	Nov. 2005	Oct. 2003	Oct. 2003	Oct. 2003	Oct. 2003	Nov. 2006
Impact acres (federal/state)	5.77	5.47/3.41	3.94	4	8.25	0.22	0.29	0.435
USACE mitigation requirement (acres)	17.31	10.23	8.66	4	24.75	0.22	0.87	3.04
DSL mitigation requirement (acres)	17.31	10.23	8.66	4	24.75	0.22	N/A	N/A
COP mitigation requirement (acres)	17.31*	N/A	8.66*	N/A	24.75*	N/A	N/A	N/A
Creation(C)/Enhancement(E)/Restoration(R)	E	E	E/R	R	E	R	E	C/E/R

\*COP permits not necessarily based on acreage but permit the restoration activities required by ACOE and DSL permits within the City's Environmental Zone

Mitigation for impacts related to the above-mentioned projects required restoration, creation and enhancement of PEM, PSS, PFO, and UFO habitat at the Vanport Wetlands site. Table 3 is a summary of the baseline wetland acreage and the created, enhanced, and restored wetland areas by Cowardin classification and project.

**Table 3.** Summary of Created, Enhanced, and Restored Wetland Areas

Type <sup>1</sup> :	PEM-E	PEM-R	PSS-E	PSS-R	PSS-C	PFO-E	PFO-R	UFO	Wetland outside Lakebed <sup>2</sup>	TOTAL
Baseline (acres)	59.12	–	–	–	–	–	–	–	2.47	61.59
Post-mitigation (acres)	52.36	0.38	6.06	3.16	0.50	0.70	2.21	–	–	65.37
Post-demolition (acres)	52.36	0.56	6.06	3.16	0.50	0.70	2.21	–	–	65.55
Section 404 Mitigation (acres)										
Cascade Station	15.84	–	1.47	–	–	–	–	–	–	17.31
PIC Sub-district B	10.16	–	0.07	–	–	–	–	–	–	10.23
PIC Sub-district B Wetland 63 credit	-1.68	–	–	–	–	–	–	–	–	-1.68
SW Quad	4.64	0.38	2.19	0.25	0.50	–	0.70	–	–	8.66
T-5 Powerline	–	–	–	2.51	–	–	1.49	–	–	4.00
PDX Airfield Safety	21.83	–	2.22	–	–	0.70	–	–	–	24.75
N Simmons Road	–	–	–	0.22	–	–	–	–	–	0.22
PDX Taxiway A	0.87	–	–	–	–	–	–	–	–	0.87
PDX Taxiway B	–	0.18	–	0.10	–	–	–	2.76	–	0.28
Total Acreage Used for Mitigation	51.55	0.56	6.06	3.08	0.50	0.70	2.19	–	–	64.64
Total Acreage Remaining	0.81	0.00	0.00	0.08	0.00	0.00	0.02	–	–	0.91

<sup>1</sup>PEM - palustrine emergent wetland, PFO - palustrine forested wetland, PSS - palustrine scrub shrub wetland, UFO - Upland Forest, E- Enhancement area; R- Restoration area.

<sup>2</sup>Wetland outside of lakebed includes forested drainage swales located to the north and west of the lakebed.

## Mitigation Plan and Progress

The goal of the wetland mitigation project was to restore, create, and enhance wetlands, and to replace wetland functions and values lost primarily as a result of PIC and PDX project impacts. The Vanport Wetlands mitigation site provides 59.12 acres of enhanced wetland, 0.50 acres of created wetland, and 5.93 acres of restored wetland area, for a total of 65.55 acres of wetland mitigation, totaling 25.97 wetland mitigation credits to compensate for the loss of 29.32 acres of wetlands. The objectives of the Vanport Wetlands comprehensive management plan included increasing diversity of plant and wildlife habitat by establishing a native plant–dominated wetland with a surrounding scrub-shrub or forested buffer. A controlled flooding technique was established as the preferred method for reducing the prevalence of reed canary grass within the wetland area so that native wetland species could become established.

Additional site preparation included topographic modifications, such as creating a low earthen berm and weir in the northern portion of the property to prevent flooding of Expo Road and the site’s north ditch and reconfiguration of the central drainage channel to provide a meandering

swale, mowing and treating the remaining reed canary grass, and plowing, seeding, and planting the wetland and enhancing adjacent upland and buffer habitats with native trees, shrubs, and herbaceous species. Other major work on the site included ground disturbance for the removal of copper wiring associated with the old radio transmission tower. This work was within the jurisdiction of the COP E-zone protection areas, which required mitigation in the form of enhancement of 0.1 acre of the existing riparian forest habitat in the Northwest Swale by removing invasive species and planting native trees and shrubs in riparian wetland forest habitat. The physical modifications to the site were complete by December 2001, and the native planting/seeding was completed in March 2003. Baseline vegetation, wildlife, and hydrology data were collected in 2001; post-project herbaceous vegetation species cover, tree/shrub survival, wildlife, and hydrology data were collected annually from 2003 to 2010.

Smith and Bybee Wetlands Natural Area and Ridgefield National Wildlife Refuge were used as reference sites to identify appropriate species composition and planting densities.

## **Mitigation Results**

Successful mitigation for project impacts was contingent on the success of the Vanport Wetlands mitigation site's key success criteria expressed in the DSL Permit Nos. FP-17198, 30286-RF, 31722-RF, FP-9836, FP-21878, and FP-24248 and USACE Permit Nos. 1995-00534, 1999-632, 2000-00043, 2001-00564, 2004-00091, and 2005-00131. The required success criteria and measured level of success are listed below based on site characteristics at the end of the monitoring period (2010).

### **Mitigation Success Criteria**

#### **All Sites**

1. 80% survival of woody plantings, including recruits, annually.
2. No more than 20% cover of reed canary grass, 10% cover of other invasive species, and 0% cover of purple loosestrife by the end of the monitoring period.
3. The enhanced and restored wetland sites meet wetland criteria (as defined in the USACE 1987 *Corps of Engineers Wetland Delineation Manual* [Environmental Laboratory 1987]).

#### **Airfield/Cascade Station Mitigation (42.05 acres)**

4. Greater than 50% cover of native emergent species in the enhanced emergent wetland.
5. Greater than 75% cover at the end of Year 5 for the swale bench and upper slopes.

#### **N Simmons Road Mitigation Area (0.22 acre)**

6. Minimum of five shrub species and minimum stem count of 300 stems/acre (66 stems) by the end of 3 years.

#### **Radio Towers Grounding Wires Removal at Vanport (NW Swale)**

7. 90% cover after Year 1.
8. No non-native invasive species will be dominant within its respective stratum by Year 5.

**T-5 Powerline Compensation Mitigation Area (3.7–4.0 acres)**

- 9. Minimum of four shrub species and minimum stem count of 330 stems/acre (828 stems) at the end of 5 years in the scrub-shrub wetland.
- 10. Minimum of three tree species and 150 stems per acre (223 stems) at the end of Year 5 in the forested wetland.

**PIC Mitigation (8.55 acres)**

- 11. Greater than 50% cover of native emergent species in the enhanced emergent wetland.

**SW Quad Mitigation (8.66 acres)**

- 12. Greater than 50% cover of native emergent species in the enhanced emergent wetland.
- 13. Minimum of four shrub species and minimum stem count of 142 stems at the end of 5 years in the scrub-shrub wetland; minimum of three tree species and 152 stems at the end of 5 years in the forested wetland.

**Taxiway A Mitigation (0.87 acre)**

- 14. Advanced emergent wetland mitigation.

**Taxiway B Mitigation (3.04 acres)**

- 15. In the southwest area of site, 0.1 acre shall be enhanced wetland scrub-shrub, and in the location where the transmission building was removed, 0.18 acre of emergent wetland shall be restored. Cover of desirable native species shall be 80% each year after Year 2, except where inundation precludes plant coverage. No more than 20% cover reed canary grass, 10% cover other invasive species, and 0% cover of purple loosestrife.
- 16. In the created 2.76-acre upland forest, 80% survival of the original 1,200 plantings, including desirable recruits each year during the 5-year monitoring period.

**Mitigation Success by Criteria**

All of the above mitigation criteria were met prior to the site being released from permitting requirements by the regulatory agencies in 2015. Table 4 summarizes the permit requirements and the status of meeting those requirements for each parameter.

**Table 4.** Permit Requirement and Status Summaries

Permit	Requirement	Status
DSL FP-17198 Modified DSL FP-21878 USACE 99-632	Wetland enhancement shall begin no later than November 1, 1999. Wetland enhancement shall begin with mowing and spraying the site.	Mowing and spraying began September 1999.
DSL 24248-FP	Construction for N Simmons Road mitigation shall begin by November 2001 and be completed by March 31, 2003.	Construction of the site began October 2001; completed by March 2003.
USACE 99-632	A historical evaluation of the buildings at the site shall be conducted to determine their historical significance and eligibility for the National Register of Historic Places.	Evaluation completed November 1998; memorandum of agreement (MOA) signed December 2000.



**Table 4.** Permit Requirement and Status Summaries

Permit	Requirement	Status
DSL FP-17198 Modified DSL FP-21878 USACE 99-632 DEQ Letters of Modification	A vegetated buffer of an average of at least 25 feet shall be maintained on the periphery of the entire 62-acre wetland mitigation site. This condition was superseded by letters of modification.	Completion of buffer planting March 2003.
DSL FP-17198 Modified DSL FP-21878	A planting plan for the buffer area shall be submitted to DSL for approval before planting.	Planting plan submitted July 2001.
DSL FP-17198 Modified DSL FP-21878 DSL 24248-FP DSL 31722-RF USACE 99-632 USACE 2000-043 USACE 2001-00564 USACE 2004-00091 USACE 2005-00131	The site shall be monitored for 5 years following planting (3 years for N Simmons Road mitigation).	Year 5 monitoring completed October 2007. Year 7 report documents overall site conditions and provides Year 4 (of 5) monitoring results for the Taxiway B mitigation.
DSL FP-17198 Modified DSL FP-21878 DSL 24248-FP DSL 9836 DSL 30286-RF DSL 31722-RF USACE 99-632 USACE 99-632-1 USACE 2000-043 USACE 2001-00564 USACE 2004-00091 USACE 2005-00131	An annual monitoring report is due December 1 of each year for a period of 5 years (3 years for N Simmons Road mitigation and to COP) following planting. Specifications for report are detailed in each permit.	Year 5 monitoring report submitted December 2007. Year 7 report submitted November 2009.
USACE 99-632 USACE 99-632-1 DSL 24248-FP DSL 9836 USACE 2005-00131	An as-built mitigation site report shall be submitted the year in which the site is constructed and planted. As-built for the Taxiway B mitigation to be provided within 90 days of completion.	Final as-built report submitted June 2003. Taxiway B as-built submitted to USACE in February 2006.
DSL 24248-FP	Shrubs and trees shall be physically protected from herbivory.	Shrub and tree protection installed following planting.
DSL FP-17198 DSL FP-21878 DSL 30286-RF	A bond in the amount of \$118,000 and \$185,000 shall be assigned to DSL before filling any wetlands; an additional bond in the amount of \$74,000 shall be assigned for the PIC fill.	Bonds assigned July 1, 1999, and April 29, 2000, respectively; additional bond assigned October 2, 2003.
DSL 31722-RF	A bond in the amount of \$62,000 has been assigned to DSL.	Bond No. 104252672 was received in June 2004.
DSL FP-17198 Modified DSL FP-21878 DSL 31722-RF USACE 99-632 Modified	A conservation easement shall be filed for two sites (17.31 acres, 24.75 acres) by June 30, 2000.	Recorded for 42.44 acres, Multnomah County July 20, 2000.

**Table 4.** Permit Requirement and Status Summaries

Permit	Requirement	Status
DSL 24248-FP	A conservation easement for the N Simmons Road property shall be in place no later than February 28, 2002.	Conservation easement amended to include total property, 90.4 acres, November 27, 2001.
DSL 9836 USACE 1995-00534	Mitigation for the T-5 Powerline site shall be excavated and revegetated according to the mitigation plan.	Excavation completed 2002; final planting completed March 2003.
DSL 31722-RF	The site shall be monitored for a minimum of 5 years beginning in 2005.	Year 3 monitoring completed October 2006.
USACE NWP-2010-066	Mitigation for impacts to two stormwater ditches (0.29 acre) south of Taxiway A at PDX.	Advanced mitigation credit at Vanport for 0.87 acre approved by USACE.
LUR 00-365	A site development permit will be obtained before ground-disturbing activities.	Site development permit issued October 2, 2001, and finalized on March 21, 2003.
LUR 00-365	Enhancement plantings shall be installed by December 2002.	Planting began November 2002 and completed March 2003.
LUR 00-667 EN	Annual monitoring report required for 5 years.	Year 5 report submitted July 2006.
LUR 00-667 EN	A site development permit must be applied for on July 1, 2006, for the purpose of inspection.	Inspected and approved by COP in October 2006.
LU 04-028327 EN	A Landscape Self-Certification Form shall be submitted to the Site Development Section of the Bureau of Development Services (BDS) after plant installation.	Sent Landscape Certification to BDS March 23, 2005.
LU 04-028327 EN	Submit letter to BDS within 9–18 months after installation of the required plantings. Submit first letter by January 2006.	Sent December 2005 with Vanport Monitoring Report.
LU 04-028327 EN	Submit letter to BDS within 24–27 months after installation of the required plantings. Submit second letter by March 2007.	Sent December 2006 with Vanport Monitoring Report.
LU 04-043122 EN	Plant and seed regraded area. Building was removed by January 2004 and the area planted and seeded in February 2004 (95% of plantings were removed by waterfowl).	Due to incorrect elevation, the site was regraded in October 2005 and reseeded.
MOA	Draft Tier I Mitigation Documentation due before February 24, 2001.	Draft report submitted February 15, 2001; final report submitted April 24, 2001.
MOA	Port will prepare a photographic exhibit of the history of the radio facility.	Website exhibit online as of January 11, 2002.
MOA	Port will begin the preparation of a maintenance plan for preservation of the facility building by March 1, 2001.	Preservation of the building has been investigated; other alternatives were considered.
MOA	Port will investigate the structural soundness of the building by March 1, 2001.	Preliminary structural investigation completed March 2001, final completed January 2003.
MOA	Port will evaluate access, security, handicapped access, and visitor provisions related to the site and the facility building by March 1, 2001.	Evaluation of building completed March 2001; public use restricted by conservation easement and building structure.

**Table 4.** Permit Requirement and Status Summaries

Permit	Requirement	Status
MOA (First Amendment to demolish KGW building)	The Port will submit to State Historic Preservation Office floor plans, interior photography of building, and an additional historical report.	Photography, floor plans, and report submitted August 2004; building demolished in January 2005.

Source: Port of Portland (2017).

## Current Site Conditions

The Vanport Wetland mitigation site met all permit requirements and was released from obligation by DSL and USACE by August 3, 2010. The following summary of the current state of the Vanport Wetlands mitigation site is based on wildlife data and site observations collected during site inspections. Current site conditions are also based on the Port’s Site Status Report for 2015–2016. Since the completion of the required mitigation site monitoring, the site was periodically inspected for maintenance and habitat enhancement purposes and to collect wildlife data from 2011 to present.

The Vanport Wetlands mitigation site is periodically flooded using mechanical pumping infrastructure managed by the MCDD. These actions will continue into the foreseeable future of the site and promote wetland hydrologic characteristics throughout the wetland mitigation portion of the site. These unique hydrologic functions cause periods of prolonged surface water far into the growing season that maintain wetland conditions and act to prevent reed canary grass re-establishment, but the site will require active hydrologic management by MCDD in perpetuity. Water levels throughout the majority of the site are slowly drawn down starting usually around May or June, exposing extensive mudflats that provide habitat for migrating shorebirds.

The Vanport Wetlands mitigation site, along with 49 other freshwater wetlands throughout the Willamette Valley, was included in a 3-year-long study of invertebrate communities and basic water chemistry parameters to aid in the development of a monitoring tool to assess biological integrity of Pacific Northwest wetlands (Xerces Society for Invertebrate Conservation [Xerces] 2009). Detailed data on the invertebrate community and water chemistry parameters were collected at this site and available from the Port upon request. A list of macroinvertebrates observed during this study from 2007 through 2009 is included in the observed species list in Appendix C.

A complete list of wetland delineation, annual monitoring, and amphibian survey reports are listed in the Vanport Wetlands Mitigation Site Documentation List in Appendix E. Also included on this list are mitigation plans, reports, soil data, water quality data, grading plans, as-built reports and more.

## 5. CONSERVATION AND MANAGEMENT STRATEGY

The goal for long-term management of the Vanport Wetlands mitigation site is to conserve and maintain natural conditions through continued monitoring and management of on-site natural resources. Long-term management is intended to be adaptive; therefore, adaptive management should be implemented, as defined in the federal mitigation rule 33 Code of Federal Regulations (CFR) 2.332 (2008):

*Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems.*

Most permit requirements specify that mitigation sites be monitored for 5 years; however, after such a short period of time, the functions and values of mitigation sites rarely match those of natural sites. To meet the Port's objective to "attain and maintain a high quality of functional performance and increased habitat value," the Port's stewardship over the Vanport Wetlands mitigation site will be passed to the Steward, who will continue to monitor and maintain the site into the future. Long-term maintenance will help to ensure that habitat integrity continues to improve and the site sustains its enhanced condition with minimal intervention.

The long-term vision of management actions should be based on the following key parameters:

- Continual monitoring of vegetation and hydrology
- Controlling invasive species and promoting native vegetation
- Providing wetland and riparian habitat for wildlife
- Through management actions, strive to achieve sites that are more sustainable.
- Protecting the site from incompatible land uses
- Support community outreach, research and education opportunities

### Permanent Protection Instrument

As required by DSL Permit Nos. FP-17198, 30286-RF, 31722-RF, FP-9836, FP-21878, and FP-24248 and USACE Permit Nos. 1995-00534, 1999-632, 2000-00043, 2001-00564, 2004-00091, and 2005-00131, a conservation easement has been secured with MCDD to protect the ecological and aesthetic value of the Vanport Wetlands mitigation site (referred to as "Property" below) in perpetuity regardless of ownership. According to the Conservation Easement (Port Agreement No. 2000-094, Amendment 1, Multnomah County Record Fee No. 2001-188440), "There shall be no change in the natural habitat of the Protected Property as set forth in the Wetlands Mitigation Plans..." The Conservation Easement is an explicit condition of the DSL permit. The

Steward would be required to comply with the DSL and USACE permits mentioned above to achieve the stated purpose. If the Steward fails to maintain the “natural habitat” of the Property then DSL and USACE may enforce the restrictive covenant against them. The Conservation Easement is included in Appendix F.

## **Limits of Responsibility**

The Steward will not be responsible for future failure of the Vanport Wetlands mitigation site attributed to natural catastrophes such as flood, drought, disease, regional pest infestation, and other circumstances that are beyond their reasonable control. Active management is not expected to prevent events of natural ecological change that come about as a result of processes such as climate change, sedimentation due to flooding, excessive drought, and other naturally occurring events that were not caused by or that could not have been prevented by on-site management activities. Over time, natural processes could occur that may reduce wetland function or reduce the current wetland habitat acreage. For example, deposition of sediments during high flows and flooding in parts of the wetland could result in a natural filling of some areas. Regular, frequent management activities to prevent this natural filling are unnecessary.

## **Public Use and Access**

Given that the mitigation site is in the middle of a highly developed area dominated by industrial and transportation infrastructure, vandalism and transients are major issue that affect the maintenance of and public access to the Vanport Wetlands mitigation site. To protect the site to the best degree possible from vandalism, transients, weeds, and disturbances to wildlife, access to the mitigation site is currently restricted by fencing and several locked gates. In the future, the site will continue to be protected with fencing and gates maintained by the Steward. The site will be protected from trespassing and vandalism, and access will only be allowed for monitoring, management, or restoration activities. Future public access may include limited access for research and educational opportunities, such as bird watching or plant identification, if the Steward determines that these uses will not conflict with the terms of the Conservation Easement. The site has access roads and additional infrastructure within the secured fence line that will need to be periodically accessed by the easement holder (MCDD), to monitor and service existing infrastructure required for both on- and off-site flood control. The remainder of the site is intended to remain in natural condition with development limited to the existing infrastructure and minimally invasive trails needed to access portions of the site for monitoring and maintenance, as is compliant with the deed restriction.

## **6. LONG-TERM MONITORING AND RESEARCH**

### **Previous Monitoring**

The Vanport Wetlands mitigation site has been regularly monitored since 2002/2003 and has involved many different organizations and consultants as well as Port mitigation staff. After initial site preparation and planting/seeding completed by 2002, the site was monitored for 8

years, during which maintenance and additional restoration activities occurred. Previous monitoring efforts focused on these key aspects of site characteristics:

- Invasive species presence and cover
- Vegetation quality (species richness, cover, tree mortality, etc.)
- Amphibian presence/absence and egg mass surveys
- Wildlife observations (birds, reptiles, mammals, fish, and invertebrates)
- Hydrology (ground water and surface water)
- Water quality (2001-2004)
- Macroinvertebrate surveys by Xerces
- Multnomah County Vector Control (MCVC) mosquito egg sampling

A complete list of monitoring and delineation reports can be found in the Vanport Wetlands Mitigation Site Documentation List in Appendix E. In particular, there are monitoring details that can be found in the Vanport Wetlands Mitigation Site Mitigation Monitoring Reports for Years 1 to 8.

## **Future Monitoring**

Future monitoring activities on the Vanport Wetlands mitigation site are not mandated by DSL or USACE, but the Port would prefer to have monitoring continue on the site to ensure conservation of habitat and wetland functionality. In addition, existing monitoring activities in partnerships with other groups would likely continue into the future. These monitoring activities include MCVC mosquito egg sampling, bee pollen studies with Tim Wessels, and on-going monitoring and maintenance conducted by the MCDD. Future hydrology monitoring on the site could involve continued surface water level observation, as well as new lines of monitoring, which could either study site-specific characteristics or be a part of a larger watershed study. Additional future monitoring activities should include continued invasive species monitoring to ensure proper control of invasive species. Other possible monitoring activities could include monitoring plant growth and changes over time (herbaceous productivity, tree/shrub growth, etc.) and avian utilization of the site.

Additionally, amphibian and bird monitoring on the Vanport Wetlands mitigation site should continue, especially since the site holds tremendous value to these species, including sensitive species. Winter egg mass surveys should continue to monitor the relative health of amphibian populations on-site. Monitoring of on-site amphibians can provide insights into the overall health of the local ecosystem.

## **Future Restoration**

Continued restoration or enhancement of on-site natural resources could increase ecological functions and habitat diversity within the Vanport Wetlands mitigation site to benefit both the local community and natural environment. This site is a popular birding spot and has garnered

interest from many different stakeholders; therefore, continued public outreach should be incorporated into the long-term goals and restoration activities on the site. Future restoration programs could involve enhancement of one or more functions, such as improving nesting bird habitat through the creation or installation of snags, and enhancement of upland buffers by increasing native plant diversity and creating a habitat mosaic with inter-meadow spaces. Other restoration opportunities may present themselves in the future and could be pursued in conjunction with other monitoring and research efforts. Because the site is dedicated mitigation for wetland impacts, any volume of new removal or fill activities that result in a loss of wetland area or function would require at least double mitigation, per DSL rules, Oregon Administrative Rule (OAR) 141-085-0520(3), and would be subject to additional local, state, and federal permitting.

## **Opportunities for Research**

Long-term management of the Vanport Wetlands mitigation site could allow for multiple research opportunities in the future, which could be undertaken by the Steward or an outside research institution. Many research ideas could be implemented in conjunction with regular management activities with minimal additional cost. Information resulting from research conducted on the site would help to inform future management actions that could support enhancements of ecological functions using the best available science. Understanding the effectiveness of conservation strategies could help inform future wetland mitigation programs. Select research studies may be eligible for additional funding from outside sources to aid in implementation. The research opportunities discussed below are just some of the possible ideas for long-term research that could be conducted at this site.

### **Vegetation**

- Vegetation growth and productivity could be studied over the long term for various native species, especially in the inter-meadow spaces.
- Research could be conducted on how succession progresses or is suppressed in a controlled flood environment.
- Study could take place on how different management techniques produce different results in planting and seeding, as well as how prescribed burns could affect the plant communities in the inter-meadow areas and potentially improve native species diversity.

### **Invasive Species**

- Reed canary grass was nearly eliminated within the wetland mitigation area, when it was previously dominant throughout the whole site. The successful strategy utilizing controlled flooding in combination with targeted herbicide application could be further studied at other restoration sites using the Vanport Wetlands mitigation site as a reference.
- Additional research on invasive species encroachment or various management practices for invasive species could be tested in areas where invasive species still occur, especially along the sloughs and in the inter-meadow portions of the site.

- Long-term studies could be conducted on the effects of controlled flooding on species richness, diversity, and native/non-native competition in shallow water environments.

### **Hydrology**

- Long-term studies could be conducted on site hydrology and local flooding control regarding how they affect the local watershed and on-site vegetation succession, such as the hyporheic groundwater exchange between the site and surrounding Columbia and Willamette Rivers.
- Studies could be conducted on how the surrounding land uses affect flood attenuation on the site and in nearby sloughs during storm events.

### **Wildlife**

- Honey bee pollen studies could be expanded to other native pollinators, which could include studies on local pollinators' use of the site, ways to increase their usage of this site, and restoration of the inter-meadow spaces.
- Amphibian studies could be conducted that analyze their use of the site and population dynamics. In addition, habitat suitability for the northern red-legged frog should be studied and occurrences monitored throughout the life of the site, including studies on the interactions between water levels and egg mass attachment and success rates.
- Bird use of the site has been continually monitored across different seasons for over 15 years. Additional research into specific bird habitat improvements (such as creating snags or other nesting structures) or detailed species population studies could be conducted at the site and would garner local interest.
- Further studies on wetland invertebrates and water quality could be conducted, building on the existing Xerces data.

## **7. LONG-TERM MANAGEMENT ACTIONS**

Management actions will need to be taken to ensure continued enhanced wetland and habitat functions. These actions should be based on results of annual monitoring and may change over time in response to changes in site conditions. Management activities at a minimum should include coordination with MCDD for management of on-site hydrology, invasive species management and restoration of areas where invasive species have displaced native vegetation. Other management activities may include ongoing monitoring of wildlife use and site conditions, replanting or reseeding areas of native plant diversity decline, continuing to restore inter-meadow spaces on the site with native species that support pollinators, and repairing or installing wildlife structures, such as standing snags, bee boxes, or other habitat improvement structures. Details of preferred best management practices (BMPs), vegetation management, and site maintenance are described in this section.



## Best Management Practices

BMPs should be implemented for all management actions, including ground disturbance, herbicide application, seed application, and planting. BMPs are especially important when handling and applying herbicides on-site, because misuse of these chemicals can cause negative impacts to native plants, wildlife, and water quality. The Port's Vegetation Management Plan details herbicide application, and includes a detailed graphic list of invasive species commonly encountered at Vanport Wetlands mitigation site, the types of herbicides to use, and handling and operation of relevant equipment, as well as BMPs regarding the prevention of invasive species reestablishment, invasive species monitoring, wildlife considerations, general equipment cleaning, and long-term herbicide use considerations. The latest version is available online: <http://www2.portofportland.com/Inside/MitigationManagement>.

An invasive species control plan is important to establish before implementation of new methods or use of new applications. The plan should include the species that will be controlled by the measures and the strategies that will most efficiently control them. These strategies should attempt to integrate the use of mechanical, chemical, and biological methods of controlling the target species, as opposed to relying on one single method of control. Herbicides should always be applied according to their labels and the BMPs described in the most recent Port Vegetation Management Plan.

The Vanport Wetlands site supports hundreds of wildlife species and site management practices can potentially interfere with critical life cycles or endanger animals in other ways. BMP's provided in the Port's Vegetation Management Plan help minimize impacts to wildlife by avoiding certain management activities during critical life cycle stages, cleaning boots and other equipment to prevent the spread of amphibian disease, and minimizing the use of herbicides.

One of the primary goals of the site is to establish a diverse, native wetland plant community. Given this, it is very important to use chemicals selectively on the target species in order to avoid contact with and harm to native plants. In general, herbicides will be applied by spot spraying or wicking rather than broadcast spraying in order to avoid native plants. All herbicide applicators must be certified and licensed by the Oregon Department of Agriculture.

## Ongoing Vegetation Management

Prior to the creation of the Vanport Wetlands mitigation site, the property contained numerous invasive and non-native species, dominated largely by reed canary grass in the wetland areas and Himalayan blackberry in the upland areas. Through restoration and expansion of the original wetlands, these invasive and non-native species have been nearly eliminated from the site. However, because management of these species on adjacent properties is not within the control of the Port (and will not be within the control of the Steward either), possible reintroduction and spread of invasive species is a continual threat to the site.

The Vanport Wetlands mitigation site, along with many other wetland mitigation sites, is sensitive to "edge effects" because it is less than 10 hectares of habitat surrounded by substantially different land uses, in this case industrial and transportation, and would be considered entirely "edge habitat." Edge habitats are prone to invasion from surrounding non-

native and invasive plant species. This situation creates a constant stress on site managers to maintain native-dominant vegetation communities. For this reason, invasive species prevention and control is a primary focus for long-term management of the Vanport Wetlands mitigation site.

The best management strategy to prevent the colonization of invasive species is to maintain a healthy, diverse native plant community. Plant communities that have a complex and diverse composition are typically more resilient in the face of invasive and non-native species encroachment. However, if invasive species become established within the site, then the following guidelines can help control them.

An adaptive management strategy is the best approach for developing long-term management actions to prevent the establishment and spread of non-native and invasive species. Management actions should be tailored to the specific situation and conditions whenever possible to achieve the best results. These actions should entail identifying weeds on the site, mapping the distribution of these weeds, researching currently accepted methods for control, implementing species-specific weed control plans, and monitoring the efficacy of control efforts.

Specific objectives to be achieved through adaptive non-native and invasive species management include:

1. Protect and maintain healthy plant communities by minimizing unnatural ground disturbance that promotes the invasion of non-native/invasive species.
2. Prevent the establishment of new non-native/invasive infestations.
3. Reduce the vigor of existing non-native/invasive populations and limit their spread.
4. Eliminate non-native/invasive plant populations or portions of populations.
5. Exhaust the non-native/invasive seed bank: prevent seed production and eradicate established plants.
6. Conduct regular surveillance for new non-native/invasive infestations—practice Early Detection Rapid Response.
7. Monitor efficacy of control methods.
8. As infestations decrease in size, locate and monitor isolated patches.
9. Reevaluate species and control methods.
10. Seed or plant in areas that have been disturbed or treated for invasive species with native species to establish native plant communities.

These guidelines are circular and reflect an adaptive management approach to controlling non-native and invasive species. The intensity of the monitoring and management actions should depend on the relative threat the invasive species pose to the site's integrity and ecosystem and the speed at which the particular species can become established and spread within the site.

## **Vegetation Succession**

Vegetation succession is a constant driver upon the landscape. In most situations, given a lack of human or natural controls, vegetation in the Willamette Valley will trend towards becoming a mature forested community. However, because of the unique flooding regime of the Vanport Wetlands mitigation site, much of the site will remain as an emergent wetland habitat with continued hydrologic management and shrub establishment around areas of seasonal open water. The upland areas of the site may trend toward becoming more forested. To retain the current interspersed open and forested upland habitats, management practices would need to focus on maintaining open habitat areas, which may be accomplished through mowing outside of the nesting season or cutting tree saplings along the forested edges of these targeted open areas. Wetlands on this site are not required to maintain their original wetland types, as long as wetland characteristics persist; however, retaining a higher diversity and interspersed community types would be more beneficial to wildlife (e.g., bird species). Due to the site's location within a highly urbanized setting, the Vanport Wetlands mitigation site will require continued vegetation management in perpetuity to protect the existing habitat diversity on the site.

## **Maintenance**

In addition to vegetation maintenance, the Steward will be responsible for general maintenance of the site. The Steward will maintain the existing fences and gates surrounding the Vanport Wetlands mitigation site, including the maintenance of trees within 30 feet of the perimeter fence as a buffer from surrounding development. Any tree removal within the site and along the perimeter fencing must be coordinated with the COP if the tree is greater than 6 inches DBH. Other maintenance activities within the site have been conducted by a Port contract crew. The current signage associated with the mitigation site, and any signs that are erected in the future, will also be maintained by the Steward. The Steward will remove trash from the site and work to correct any damage resulting from trespassing or vandalism.

## **8. LONG-TERM MANAGEMENT CONSIDERATIONS**

### **Conservation Threats and Management Limitations**

Long-term management of the Vanport Wetlands mitigation site is limited to areas within the property boundaries. Surrounding properties will likely be outside of the influence of the Steward but could potentially affect conditions within the site. The condition of surrounding properties, their land uses, and management practices could potentially be threats to the continued conservation of natural resources within the Vanport Wetlands mitigation site. The current zoning designations, landscape positions, and potential threats to natural resources associated with surrounding properties are as follows:

#### Portland Expo Center

The Portland Expo Center property is located to the north of the Vanport Wetlands mitigation site and is zoned as the Industrial General 2 with Design and Aircraft Landing overlay zones (IG2dh). The Portland Expo Center is dominated by impervious surfaces from parking lots and

buildings. Possible threats to the long-term ecological objectives of the mitigation site would be limited to normal runoff, which would not be likely to have any negative long-term effects. In addition, this property is not likely to change uses in the foreseeable future.

#### Heron Lakes Golf Club

The Heron Lakes Golf Club property is located to the west of the Vanport Wetlands mitigation site and is zoned as the Open Space with Aircraft Landing overlay zone (OSh). The highly managed golf club is located downstream of the mitigation site. Management techniques on this property may affect the ecology on the site through invasive species encroachment and possible pesticide spraying. If this property were to become developed for commercial or industrial land uses, then additional threats to the mitigation site could include an increase in site trespassing and vandalism, an increase in invasive species encroachment, or an increase in noise levels.

#### Portland International Raceway

The properties south of the Vanport Wetlands mitigation site are zoned as Open Space and are dominated by the PIR property zoned as the Open Space with Aircraft Landing overlay zone (OSh) as well as sloughs zoned as the Open Space with Environmental Conservation overlay zone (OSc). These properties are mostly mowed and managed for recreational events and activities. Similar to the golf club to the west, management techniques on the PIR property may affect the ecology on the site through invasive species encroachment and possible pesticide spraying, but would also include noise disturbances to wildlife. Runoff from this property does not flow into the mitigation site and would not pose a threat to the site's water quality. These properties are unlikely to change in land use for the foreseeable future. If zoning were changed for the parcel adjacent to the site (now an off-leash dog park) and development were to occur, impervious runoff would likely increase.

#### Interstate 5 Right-of-Way

The property to the east of the Vanport Wetlands mitigation site consists of the right-of-way for I-5 and the MAX light rail and is zoned as the Industrial General 2 overlay zone (IG2). This property is a possible vector for introducing or spreading invasive species to the mitigation site, as well as being a possible collision risk for wildlife that occupy or pass through the site. In addition, this property creates a nearly constant noise impact on the mitigation site from traffic and could potentially affect water and air quality due to petroleum runoff, hazmat spills, brake dust, and air pollutants. This property is unlikely to change in land use for the foreseeable future.

## **Human Influence**

Human influences could harm the Vanport Wetlands mitigation site in multiple ways, including vandalism, unauthorized habitation, trespassing, and littering. Regular site visits and maintenance will be necessary to address these issues. Regular site clean-ups could be implemented as part of a community volunteer program or non-profit organization's operations. During regular site visits, the site can be checked for the presence of illegal camps on the site and vandalism. Vandalism could cause damage to existing human infrastructure, including that managed by the MCDD and perimeter fences, which can cause further security issues to the site. Illegal campers entering and residing in the mitigation site is another common issue in the area

due to the mitigation site's proximity to urban industrial and transportation services and may increase in proportion to increases in regional houselessness rates. For these reasons, monitoring public access to the site and maintaining proper fencing and gates is an important issue for the management of the site.

Overall, the surrounding landscape is fully developed and would not experience any significant change in land use. In addition, on-site hydrology is highly managed and could experience changes in surface water depths and durations if the MCDD hydrologic management strategy is altered, which could possibly occur in response to changing conditions in the natural environment. Invasive species can encroach onto the site from adjacent properties, which could create additional management challenges.

## **Catastrophic Events**

Catastrophic events could be naturally driven or human caused. The possible catastrophic events may include fires, massive floods, new species invasions, diseases, excessive long-term drought, etc. These rare events seldom occur in the area but could cause drastic changes to the Vanport Wetlands mitigation site. If they were to occur, they may affect the Steward's ability to meet the biological goals and objectives in the future. If such events were to occur, the ecological functions of the site should be documented and analyzed to determine future management goals. The management plan could then be revised based on the new site conditions and environmental/human drivers.

## 9. LITERATURE CITED AND REVIEWED

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**APPENDIX A**

**FIGURES**

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Oregon General Land Office Map 1N2E, 1852

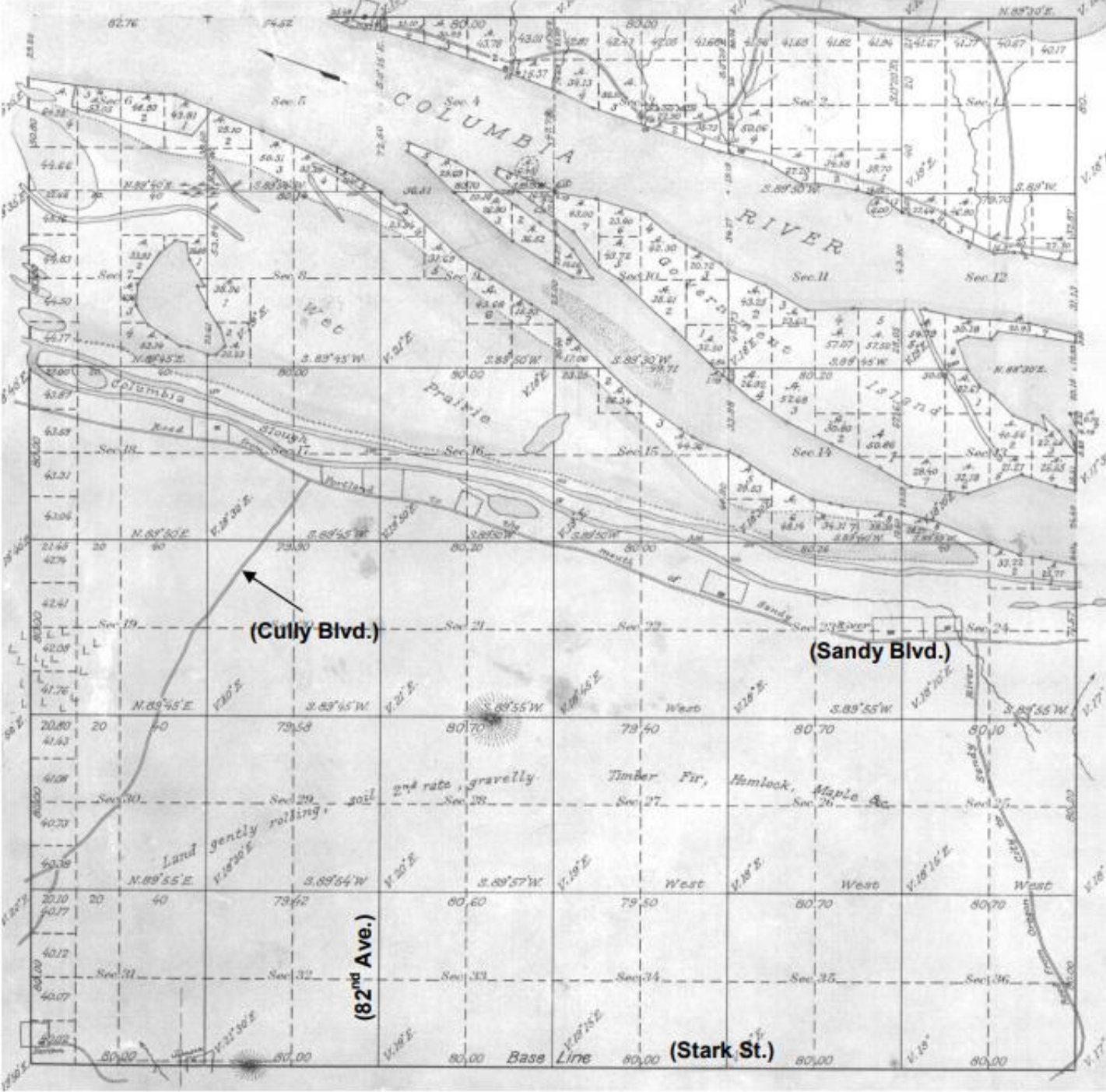


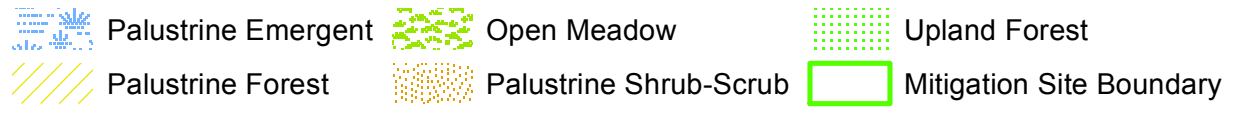
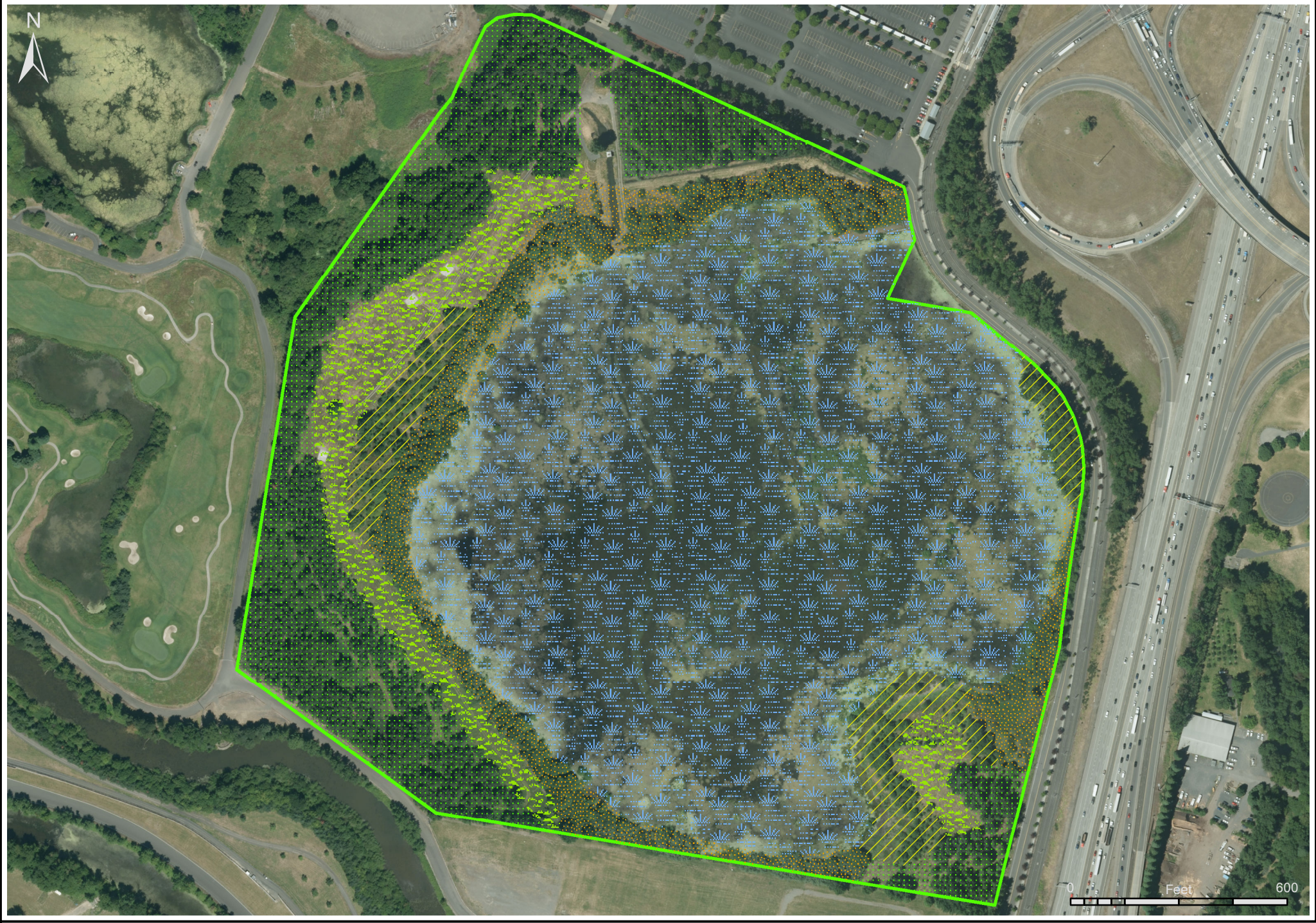
Figure 1  
OGLOM, 1852





- |  |   |   |  |
|--|---|---|--|
| <span style="color: red;">■</span> Culvert Opening | <span style="color: orange;">▲</span> Weir    | <span style="color: cyan;">→</span> Flow Direction          | <span style="color: green;">—</span> Open Ditch    |
| <span style="color: purple;">●</span> Outfall      | <span style="color: red;">⊕</span> Pump House | <span style="color: cyan;">- - -</span> Underground Culvert | <span style="color: green;">■</span> Settling Pond |

**Figure 2**  
**Primary Hydrologic Features and Flow Directionality**  
 2016 Aerial Photo



**Figure 3**  
**Native Plant Communities**  
 2016 Aerial Photo

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**APPENDIX B**

**PHOTOGRAPHS**

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April 24, 2000



April 30, 2018



April 24, 2000



April 20, 2018



April 24, 2000



April 24, 2002



April 30, 2018



June 20, 2001



April 24, 2002



April 30, 2018



June 20, 2001



April 30, 2018





July 11, 2000



June 12, 2013



April 24, 2002



4/24/2002 10:56

April 30, 2018



2018. 4. 30

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**APPENDIX C**

**OBSERVED WILDLIFE LIST**

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Common Name	Species	1999 - 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
house wren	<i>Troglodytes aedon</i>					X				X				X				
hummingbird, unidentified	<i>unidentified</i>				X		X	X	X	X	X	X	X	X				
hybrid mallard	<i>Hybrid mallard</i>														X			
killdeer	<i>Charadrius vociferus</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
least sandpiper	<i>Calidris minutilla</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
lesser Goldfinch	<i>Carduelis psaltria</i>											X					X	X
lesser scaup	<i>Aythya affinis</i>		X	X	X	X	X		X	X		X	X	X	X	X	X	X
lesser yellowlegs	<i>Tringa flavipes</i>		X	X	X	X	X	X	X	X	X	X		X		X	X	
Lincoln's sparrow	<i>Melospiza lincolnii</i>					X	X	X	X	X				X	X		X	
long-billed dowitcher	<i>Limnodromus scolopaceus</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
mallard	<i>Anas platyrhynchos</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
marsh wren	<i>Cistothorus palustris</i>	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
mew gull	<i>Larus canus</i>		X							X		X						X
mourning dove	<i>Zenaida macroura</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Nashville Warbler	<i>Oreothlypis ruficapilla</i>																	X
northern flicker	<i>Colaptes auratus</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
northern harrier	<i>Circus cyaneus</i>	X		X	X	X		X	X	X		X		X	X			
northern pintail	<i>Anas acuta</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>								X									
northern shoveler	<i>Anas clypeata</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
northern shrike	<i>Lanius excubitor</i>			X														
olive-sided Flycatcher	<i>Contopus cooperi</i>													X				
orange-crowned warbler	<i>Vermivora celata</i>		X				X	X	X		X	X	X		X	X		X
osprey	<i>Pandion haliaetus</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
pacific-slope Flycatcher	<i>Empidonax difficilis</i>											X						
pectoral sandpiper	<i>Calidris melanotos</i>			X		X	X		X			X				X		
peregrine falcon	<i>Falco peregrinus</i>	X	X	X	X	X	X		X	X								
pied-billed grebe	<i>Podilymbus podiceps</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
pigeon	<i>Columbia livia</i>	X			X	X	X	X				X						
pileated woodpecker	<i>Dryocopus pileatus</i>						X		X	X		X		X			X	
pine siskin	<i>Carduelis pinus</i>							X										
purple finch	<i>Haemorhous purpureus</i>																	X
purple martin	<i>Progne subis</i>						X		X			X					X	X
red-breasted Nuthatch	<i>Sitta canadensis</i>											X		X				
red-breasted Sapsucker	<i>Sphyrapicus ruber</i>												X		X		X	X
red-eyed vireo	<i>Vireo olivaceus</i>									X								
redhead	<i>Aythya americana</i>		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
red-necked phalarope	<i>Phalaropus lobatus</i>			X	X			X				X		X		X		
red-shouldered hawk	<i>Buteo lineatus</i>						X			X								
red-tailed hawk	<i>Buteo jamaicensis</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
red-winged blackbird	<i>Agelaius phoeniceus</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ring-billed gull	<i>Larus delawarensis</i>	X		X		X												
ring-necked duck	<i>Aythya collaris</i>	X	X	X		X			X	X	X	X		X	X	X	X	X
rock pigeon	<i>Columba livia</i>											X			X	X	X	X
Ross's goose	<i>Chen rossii</i>		X															
rough-legged hawk	<i>Buteo lagopus</i>		X	X														
ruby-crowned kinglet	<i>Regulus calendula</i>	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X
ruddy duck	<i>Oxyura jamaicensis</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
rufous hummingbird	<i>Selasphorus rufus</i>		X					X				X		X				X

Common Name	Species	1999 - 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
sandpiper, unidentified	<i>unidentified</i>		X	X	X	X			X	X				X		X		
savannah sparrow	<i>Passerculus sandwichensis</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
scaup, unidentified	<i>Aythya sp.</i>		X	X	X		X	X	X	X		X			X			
semipalmated plover	<i>Charadrius semipalmatus</i>		X	X	X			X	X		X				X	X	X	
semipalmated sandpiper	<i>Calidris pusilla</i>		X				X		X		X	X						
sharp-shinned hawk	<i>Accipiter striatus</i>			X			X			X	X							
shorebird unidentified	<i>shorebird unidentified</i>						X											
short-billed dowitcher	<i>Limnodromus griseus</i>			X	X	X	X		X						X		X	
snow goose	<i>Chen caerulescens</i>		X	X	X	X	X		X		X	X			X			
solitary sandpiper	<i>Tringa solitaria</i>		X		X		X		X		X	X		X				X
song sparrow	<i>Melospiza melodia</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
sora	<i>Porzana carolina</i>	X		X	X									X				
sparrow, unidentified	<i>unidentified</i>		X															
spotted sandpiper	<i>Actitis macularia</i>	X	X	X	X	X	X	X	X	X	X	X		X	X		X	
spotted towhee	<i>Pipilio maculatus</i>	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Stellar's jay	<i>Cyanocitta stelleri</i>				X										X			
stilt sandpiper	<i>Calidris himantopus</i>			X														X
Swainson's thrush	<i>Catharus ustulatus</i>		X				X				X				X	X	X	X
swallow, unidentified	<i>unidentified</i>		X	X										X				
swamp sparrow	<i>Melospiza georgiana</i>											X						
swan, unidentified	<i>Cynus sp.</i>		X	X														
Thayer's Gull	<i>Larus thayeri</i>											X						
townsend's warbler	<i>Setophaga townsendi</i>												X	X				X
tree swallow	<i>Tachycineta bicolor</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
tri-colored blackbird	<i>Agelaius tricolor</i>	X										X						
tundra swan	<i>Cygnus columbianus</i>								X		X				X			
turkey vulture	<i>Cathartes aura</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
varied thrush	<i>Ixoreus naevius</i>														X	X		
Vaux's swift	<i>Chaetura vauxi</i>	X	X		X	X	X	X	X	X	X	X	X	X			X	X
vermillion flycatcher	<i>Pyrocephalus rubinus</i>											X						
vesper sparrow	<i>Poecetes gramineus</i>			X														
violet-green swallow	<i>Tachycineta bicolor</i>	X	X	X	X		X	X	X	X	X	X		X	X	X	X	
Virginia rail	<i>Rallus limicola</i>			X	X	X	X	X	X			X		X		X	X	
warbling vireo	<i>Vireo gilvus</i>								X	X		X					X	X
western grebe	<i>Aechmophorus occidentalis</i>						X											
western gull	<i>Larus occidentalis</i>	X	X	X	X													
western kingbird	<i>Tyrannus verticalis</i>					X												
western sandpiper	<i>Calidris mauri</i>	X	X	X	X	X	X	X	X	X	X	X				X	X	
western tanager	<i>Piranga ludoviciana</i>			X					X	X	X	X	X	X	X			X
western wood-peewee	<i>Contopus sordidulus</i>	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
white-breasted nuthatch	<i>Sitta carolinensis</i>					X	X		X						X	X		X
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
white-faced ibis	<i>Plegadis chihi</i>			X														
white-throated sparrow	<i>Zonotrichia albicollis</i>					X												
willow flycatcher	<i>Empidonax traillii</i>		X	X	X			X	X	X	X	X		X	X	X		
Wilson's warbler	<i>Wilsonia pusilla</i>	X							X	X	X	X	X	X	X	X		X
Wilson's phalarope	<i>Phalaropus tricolor</i>		X		X				X	X								
Wilson's snipe	<i>Gallinago delicata</i>				X	X	X	X	X	X	X	X		X	X	X	X	
wood duck	<i>Aix sponsa</i>	X			X				X			X					X	









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**APPENDIX D**

**COMPREHENSIVE PLANT SPECIES LISTS**

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## VANPORT WETLANDS - PLANTED AND SEEDED NATIVE SPECIES

Botanical Name	Common Name
<b>TREES &amp; SHRUBS</b>	
<i>Acer macrophyllum</i>	Big-leaf maple
<i>Alnus rubra</i>	Red alder
<i>Arbutus menziesii</i>	Pacific madrone
<i>Cornus stolonifera (ssp. Cericea)</i>	Red-osier dogwood
<i>Crataegus douglasii</i>	Douglas hawthorn
<i>Frangula purshiana</i>	Cascara buckthorn
<i>Fraxinus latifolia</i>	Oregon ash
<i>Lonicera involucrata</i>	Black twinberry
<i>Mahonia aquifolium</i>	Tall Oregon grape
<i>Oemleria cerasiformis</i>	Indian plum
<i>Physocarpus capitatus</i>	Pacific ninebark
<i>Populus balsamifera (ssp. trichocarpa)</i>	Black cottonwood
<i>Quercus garryana</i>	Oregon white oak
<i>Rosa gymnocarpa</i>	Wood rose
<i>Rosa nutkana</i>	Nootka rose
<i>Rosa pisocarpa</i>	Clustered wild rose
<i>Rubus parviflorus</i>	Thimbleberry
<i>Salix lucida</i>	Pacific willow
<i>Salix sessilifolia</i>	Northwest sandbar willow
<i>Salix sitchensis</i>	Sitka willow
<i>Sambucus cerulea</i>	Blue elderberry
<i>Sambucus racemosa</i>	Red elderberry
<i>Symphoricarpos albus</i>	Common snowberry
<i>Thuja plicata</i>	Western red cedar
<b>GRASSES &amp; FORBS</b>	
<i>Achillea millefolium</i>	Common yarrow
<i>Agrostis exarata</i>	Spike bentgrass
<i>Alisma plantago-aquatica</i>	American water plantain
<i>Amsinckia menziesii var. intermedia</i>	Common fiddleneck
<i>Asclepias speciosa</i>	Showy milkweed
<i>Athyrium filix-femina</i>	Lady fern
<i>Beckmannia syzigachne</i>	American sloughgrass
<i>Bromus carinatus</i>	California brome
<i>Carex aperta</i>	Columbia sedge
<i>Carex densa</i>	Dense sedge
<i>Carex obnupta</i>	Slough sedge
<i>Clarkia amoena</i>	Farwell to spring
<i>Collinsia grandiflora</i>	Giant blue eyed Mary

Botanical Name	Common Name
<i>Deschampsia cespitosa</i>	Tufted hairgrass
<i>Eleocharis ovata</i>	Ovate spike rush
<i>Eleocharis palustris</i>	Creeping spike rush
<i>Elymus glaucus</i>	Blue wildrye
<i>Epilobium densiflorum</i>	Denseflower willowherb
<i>Eriophyllum lanatum</i>	Common woolly sunflower
<i>Gilia capitata</i>	Bluehead gilia
<i>Glyceria occidentalis</i>	Western mannagrass
<i>Grindelia integrifolia</i>	Gumweed
<i>Hordeum brachyantherum</i>	Meadow barley
<i>Juncus ensifolius</i>	Dagger-leaf rush
<i>Juncus oxymeris</i>	Pointed rush
<i>Lupinus rivularis</i>	Riverbank lupine
<i>Madia elegans</i>	Common madia
<i>Phacelia heterophylla</i>	Varileaf phacelia
<i>Polystichum munitum</i>	Sword fern
<i>Potentilla gracilis</i>	Slender cinquefoil
<i>Prunella vulgaris var. lanceolata</i>	Lance selfheal
<i>Ranunculus occidentalis</i>	Western buttercup
<i>Sagittaria latifolia</i>	Wapato
<i>Scirpus microcarpus</i>	Small-fruited bulrush
<i>Scirpus validus</i>	Soft-stem bulrush
<i>Sidalcea campestris</i>	Meadow checkermallow
<i>Sidalcea malviflora ssp. Virgate</i>	Dwarf checkerbloom
<i>Solidago elongata</i>	Rough Canada goldenrod
<i>Sparganium angustifolium</i>	Narrowleaf bur-reed
<i>Sparganium eurycarpum</i>	Giant burreed
<i>Symphyotrichum hallii</i>	Halls aster
<i>Tolmiea menziesii</i>	Piggy-back plant

## VANPORT WETLANDS - OTHER SPECIES OBSERVED

Botanical Name	Common Name	*N/I/B
<b>TREES &amp; SHRUBS</b>		
<i>Arbutus menziesii</i>	Pacific madrone	N
<i>Rhododendron macrophyllum</i>	Pacific rhododendron	N
<i>Salix hookeriana</i>	Dune willow	N
<i>Malus sp.</i>	Crabapple	Unk.
<b>GRASSES &amp; FORBS</b>		
<i>Agrostis capillaris</i>	Colonial bentgrass	I
<i>Agrostis stolonifera</i>	Creeping bentgrass	I
<i>Alisma triviale</i>	Northern Water Plantain	N
<i>Alopecurus geniculatus</i>	Water foxtail	I
<i>Alopecurus pratensis</i>	Meadow foxtail	I
<i>Amaranthus retroflexus</i>	Red-root amaranth	N
<i>Anthoxanthum odoratum</i>	Sweet vernalgrass	I
<i>Arrhenatherum elatius</i>	Tall oat grass	I
<i>Azolla microphylla</i>	Mexican mosquito fern	N
<i>Barbarea orthoceras</i>	American yellowrocket	N
<i>Bidens cernua</i>	Nodding beggartick	N
<i>Bidens frondosa</i>	Devil's beggartick	N
<i>Bovista sp. (fungi)</i>	True Puffballs	Unk.
<i>Bromus hordeaceus</i>	Soft brome	I
<i>Callitriche heterophylla</i>	Water-starwort	N
<i>Callitriche stagnalis</i>	Pond water-starwort	I
<i>Carex amplifolia</i>	Bigleaf sedge	N
<i>Carex pellita</i>	Wooly sedge	N
<i>Carex stipata</i>	Saw-beaked sedge	N
<i>Centaureum erythraea</i>	Common centaury	I
<i>Cerastium fontanum</i>	Common mouse-ear chickweed	I
<i>Chenopodium album</i>	Lambsquarters	B
<i>Chenopodium rubrum</i>	Red goosefoot	N
<i>Cichorium intybus</i>	Chicory	I
<i>Cirsium arvense</i>	Canada thistle	I
<i>Cirsium vulgare</i>	Bull thistle	I
<i>Conium maculatum</i>	Poison hemlock	I
<i>Convolvulus arvensis</i>	Field bindweed	I
<i>Conyza canadensis</i>	Canadian horseweed	N
<i>Cyperus erythrorhizos</i>	Red-root flatsedge	N
<i>Cyperus esculentus</i>	Yellow nutsedge	B
<i>Dactylis glomerata</i>	Orchardgrass	I
<i>Datura stramonium</i>	Jimsonweed	I

Botanical Name	Common Name	*N/I/B
<i>Daucus carota</i>	Queen Anne's lace	I
<i>Dianthus armeria</i>	Deptford pink	I
<i>Diplacus sp.</i>	Monkey flower	Unk.
<i>Dipsacus fullonum</i>	Fuller's teasel	I
<i>Echinochloa crus-galli</i>	Barnyard grass	I
<i>Echinodorus berteroi</i>	Upright burhead	n/a
<i>Epilobium ciliatum</i>	Fringed willowherb	N
<i>Equisetum arvense</i>	Field Horsetail	N
<i>Equisetum telmateia</i>	Giant horsetail	N
<i>Euphorbia lathyris</i>	Moleplant	I
<i>Galium aparine</i>	Stickywilly	N
<i>Geranium lucidum</i>	Shining geranium	I
<i>Geranium molle</i>	Dovefoot geranium	I
<i>Gnaphalium palustre</i>	Western marsh cudweed	N
<i>Gnaphalium uliginosum</i>	Marsh cudweed	I
<i>Holcus lanatus</i>	Common velvetgrass	I
<i>Holcus mollis</i>	Creeping velvetgrass	I
<i>Hydrocotyle ranunculoides</i>	Floating marshpennywort	N
<i>Hypericum perforatum</i>	Common St. Johnswort	I
<i>Hypochaeris radicata</i>	Hairy cats ear	I
<i>Juncus bufonius</i>	Toad rush	N
<i>Juncus effusus</i>	Common rush	N
<i>Juncus tenuis</i>	Poverty (slender) rush	N
<i>Juncus torreyi</i>	Torrey's rush	N
<i>Lactuca serriola</i>	Prickly lettuce	I
<i>Lemna minor</i>	Common duckweed	N
<i>Leucanthemum vulgare</i>	Oxeye daisy	I
<i>Lindernia dubia</i>	Yellowseed false pimpernell	N
<i>Lolium perenne</i>	Perennial ryegrass	I
<i>Ludwigia palustris</i>	Marsh seedbox	N
<i>Lythrum portula</i>	Spatulaleaf loosestrife	I
<i>Lythrum salicaria</i>	Purple loosestrife	I
<i>Matricaria discoidea</i>	Disc mayweed	I
<i>Melilotus officinalis</i>	Sweetclover	I
<i>Myosotis discolor</i>	Changing forget-me-not	I
<i>Navarettia intertexta</i>	Needleleaf navarretia	N
<i>Navarretia squarrosa</i>	Skunkbush	N
<i>Panicum capillare</i>	Witchgrass	N
<i>Parentucellia viscosa</i>	Yellow glandweed	I
<i>Phacelia</i>	Scorpionweeds	Unk.
<i>Phalaris arundinaceae</i>	Reed canarygrass	I
<i>Phytolacca americana</i>	American pokeweed	I <sup>1</sup>

Botanical Name	Common Name	*N/I/B
<i>Plagiobothrys figuratus</i>	Fragrant popcornflower	N
<i>Plantago lanceolata</i>	Narrowleaf plantain	I
<i>Plantago major</i>	Common plantain	I
<i>Poa annua</i>	Annual bluegrass	I
<i>Poa pratensis</i>	Kentucky bluegrass	B
<i>Polygonum amphibium</i>	Water knotweed	N
<i>Polygonum cuspidatum</i>	Japanese knotweed	I
<i>Polygonum hydropiperoides</i>	Swamp smartweed	N
<i>Polygonum lapathifolium</i>	Curlytop knotweed	N
<i>Polygonum pensylvanicum</i>	Pennsylvania smartweed	N
<i>Polygonum persicaria</i>	Spotted lady's thumb	I
<i>Potentilla glandulosa</i>	Sticky cinquefoil	N
<i>Potentilla gracilis</i>	Slender cinquefoil	N
<i>Ranunculus occidentalis</i>	Western buttercup	N
<i>Ranunculus scleratus</i>	Cursed buttercup	N
<i>Ricciocarpus natans</i>	Floating liverwort	N <sup>2</sup>
<i>Rorippa curvisiliqua</i>	Curvepod yellowcress	N
<i>Rorippa islandica</i>	marshy yellow-cress	?
<i>Rubus armeniacus</i>	Himalayan blackberry	I
<i>Rubus ursinus</i>	California blackberry	N
<i>Rumex acetosella</i>	Common sheep sorrel	I
<i>Rumex crispus</i>	Curly dock	I
<i>Salix exigua</i>	Narrowleaf willow	N
<i>Schedonorus arundinaceus</i>	Tall fescue	I
<i>Schoenoplectus tabernaemontani</i>	Softstem bulrush	N
<i>Senecio sp.</i>	Ragwort	Unk.
<i>Silene latifolia</i>	White Campion	I
<i>Solanum dulcamara</i>	Climbing nightshade	I
<i>Solanum nigrum</i>	Black nightshade	I
<i>Sonchus asper</i>	Spiny sowthistle	I
<i>Sonchus oleraceus</i>	Common sowthistle	I
<i>Stachys chamissonis</i>	Coastal hedgenettle	N
<i>Trifolium arvense</i>	Rabbit-foot clover	I
<i>Trifolium pratense</i>	Red clover	I
<i>Trifolium repens</i>	White clover	I
<i>Typha latifolia</i>	Broadleaf cattail	N
<i>Urtica dioica</i>	Stinging nettle	B
<i>Verbascum blattaria</i>	Moth mullein	I
<i>Verbascum thapsus</i>	Common mullein	I
<i>Verbena hastata</i>	Swamp verbena	N
<i>Veronica americana</i>	American speedwell	N
<i>Veronica chamaedrys</i>	Germander speedwell	I



Botanical Name	Common Name	*N/I/B
<i>Vicia sativa</i>	Garden vetch	I
<i>Vicia tetrasperma</i>	Lentil vetch	I
<i>Vulpia myuros</i>	Rattail fescue	I
<i>Xanthium strumarium</i>	Rough cocklebur	N

\*N=native, I=introduced, B=Both

1. American pokeweed known locally to be introduced and invasive is not recognized as such by the USDA Plants Database.

2. Floating liverwort not listed on USDA Plants Database but is thought to be native or naturalized.

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**APPENDIX E**

**VANPORT WETLANDS MITIGATION SITE  
DOCUMENT LIST**

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**Table E-1. Vanport Wetlands Mitigation Site Document List**

<b>Document</b>	<b>Author</b>	<b>Date</b>
Multnomah County Corrections Facility Radio Towers Site Portland, Oregon Wetland Study Report	Adolfson and Associates	September 1997
Cultural Resources Investigations for a Proposed New Multnomah County Correctional Facility, Portland, Oregon	Archaeological Investigations Northwest, Inc. (AINW)	November 1998
Port of Portland Cascade Station Project Jurisdictional Determinations	Oregon Department of State Lands (DSL)	March 1999
Cascade Station Final Technical Report	David Evans	April 1999
Biological Assessment Cascade Station	M. Smyth	April 1999
Functional Assessment of Wetlands	Port of Portland (Port) (?)	April 1999
Port of Portland Radio Tower Site Wetland Mitigation Plan	Fishman Environmental Services (FES)	December 1999
Port of Portland Cascade Station Project Jurisdictional Determinations	U.S. Army Corps of Engineers (USACE)	February 1999
Radio Tower Site Ground Wire Removal Mitigation Plan ANZ 2000-126 No. 4	Port	October 2000
NW Swale Mitigation	FES	November 2000
Geotechnical Engineering Report Proposed Wetland Mitigation Berm Radio Towers Site	Geo Engineering	November 2000
Radio Towers Mitigation Site Amphibian Survey	Port	November 2000
Preliminary Soil Investigation Radio Tower Site, Final Report	URS Corporation	December 2000
KGW Radio Towers Mitigation Documentation Tier 1	AINW, Inc.	February 2001
Brief Synopsis of Mosquito Species Characteristics of KGW site	Multnomah County Vector Control (MCVC)	September 2001
Port of Portland N Simmons Road Development Wetland Mitigation Plan	FES	September 2001
T-5 Powerline Mitigation Acreage Compensation Wetland Mitigation Plan	FES	June 202
Vanport Wetlands Preliminary As-built Report as of February 2002	Port	March 2002
Vanport Wetlands Mitigation Site As-built Report	Port	June 2003
PIC Subdistrict B Development Wetland Mitigation Plan	Port	June 2003
Port of Portland SW Quad Wetland Mitigation Plan	FES	January 2004
Hydrogeomorphic Assessment of the Vanport Wetlands	FES	June 2004
Port of Portland Vanport Wetlands Comprehensive Management Plan	Port	July 2004
KGW Radio Transmission Building Documentation Record	AINW	August 2004
Radio Towers Wetland Mitigation Project Status Report – December 1999	FES	December 1999
Port of Portland Radio Towers Wetland Mitigation 2000 Status Report	FES	November 2000
Port of Portland Radio Towers Wetland Mitigation 2001 Status Report	FES	January 2002
Vanport Wetlands Wildlife Exclusion Enclosure Experiment Baseline Data	Port	August 2002

**Table E-1. Vanport Wetlands Mitigation Site Document List**

<b>Document</b>	<b>Author</b>	<b>Date</b>
Wildlife Exclusion Enclosure Experiment: Vegetation Monitoring – Year 1	Port	October 2002
Vanport Wetlands NW Swale Mitigation Monitoring Report – Year 1	Port	September 2002
Vanport Wetlands NW Swale Mitigation Monitoring Report – Year 2	Port	September 2003
Vanport Wetlands NW Swale Mitigation Monitoring Report – Year 3	Port	August 2004
Vanport Wetlands NW Swale Mitigation Monitoring Report – Year 4	Port	August 2005
Vanport Wetlands NW Swale Mitigation Monitoring Report – Year 5	Port	July 2006
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 1	FES	October 2003
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 2	FES	December 2004
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 3	FES	November 2005
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 4	FES	November 2006
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 5	SWCA Environmental Consultants (SWCA)/FES	December 2007
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 6	SWCA	December 2008
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 7	SWCA	December 2009
Vanport Wetlands 2003 Mitigation Monitoring Report – Year 8	SWCA	December 2010
Radio Towers Site Update No. 1	Port	February 2001
Radio Towers Site Update No. 1	Port	May 2001
Radio Towers Site Update No. 1	Port	October 2001
Vanport Wetlands News Update No. 4	Port	March 2002
Vanport Wetlands News Update No. 45	Port	November 2002

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**APPENDIX F**

**SUPPORTING DOCUMENTS**

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# Oregon

Kate Brown, Governor

## Department of State Lands

775 Summer Street NE, Suite 100  
Salem, OR 97301-1279  
(503) 986-5200  
FAX (503) 378-4844  
[www.oregon.gov/dsl](http://www.oregon.gov/dsl)  
State Land Board

November 17, 2015

MB600/9890, 10863, 21878, 24248, 30286, 31722

PORT OF PORTLAND  
ATTN CARRIE BUTLER  
7200 NE AIRPORT WAY  
PORTLAND OR 97218

Kate Brown  
Governor

Re: DSL Removal-fill Permit No. 9890-FP (9836), 10863-FP (7198)  
21878-FP, 24248-FP, 30286-RF, 31722-RF  
Vanport Mitigation Site, Multnomah County  
Final Year Monitoring Report Approval

Jeanne P. Atkins  
Secretary of State

Ted Wheeler  
State Treasurer

Dear Ms. Butler:

The Department of State Lands wishes to commend Port of Portland for achieving of the goals and success criteria for this mitigation effort. This letter releases the Vanport Mitigation site from future monitoring. All the related permits have been included in this letter even though DSL has already issued mitigation release letters for some of these permits. The purpose is to hopefully reduce confusion by creating one letter than clearly state the release of all related permits.

Please be advised that wetlands designated as compensatory mitigation areas under this permit are subject to protection under the State of Oregon's Removal-Fill Law, as is the case for any wetlands under State of Oregon jurisdiction. Furthermore, permits are required for any alterations to wetland mitigation areas and, under OAR 141-085-0690(4), mitigation ratios for such impacts will be doubled.

In conclusion, this letter constitutes formal notice from the Oregon Department of State Lands that you are in compliance with your Removal-Fill Permit conditions. You are released from further obligations under this permit. Thank you for your good stewardship and concern for Oregon's environment.

Sincerely,

Lori Warner-Dickason  
Aquatic Resource Manager  
Aquatic Resource Management  
Oregon Department of State Lands

MB:td

Enclosures: Table 1, Figure 1 through 5

cc: Dana Green, Port of Portland  
Richard Chong, US Army Corps of Engineers, Portland Office  
City of Portland Planning Dept.

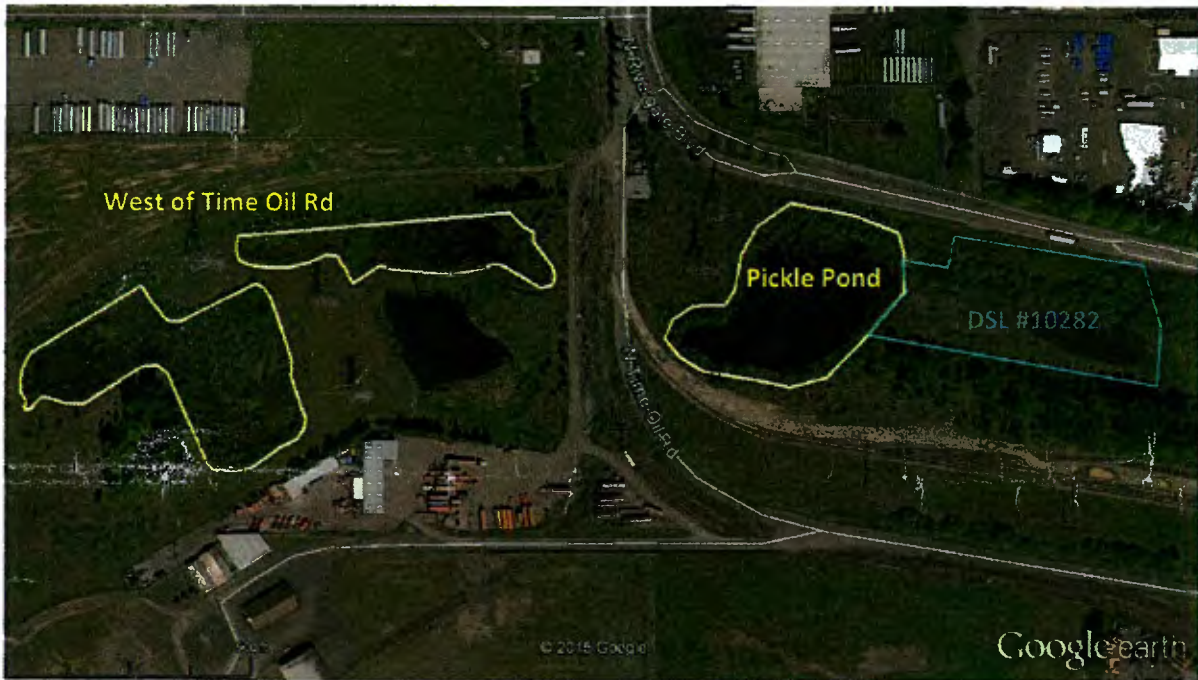
Table 1: Impact and Mitigation Summary - Mitigation is at the Vanport Site Unless Otherwise Noted

Site Name	DSL RGL #	DSL App #	USACE App #	Wetland		Impacts		Mitigation						
				Cowardin	HGM	Permitted (acres)	Actual (acres)	Type	Ratio	Permitted (acres)	Constructed (acres)	Credits (acres)		
Terminal 5	2171	9890 (FP-9836)	1995-534	PEM	-	0.16	0.16	Restoration	1:1	3.30	-	-		
				multi	-	4.95	4.95	Restoration - W. of Time Oil Rd	1:1	-	4.19	4.19		
				multi	-	-	-	Restoration - Pickle Pond	1:1	-	2.60	2.60		
				PSS	-	2.07	2.07	Restoration	1:1	5.80	2.51	2.51		
				PFO	-	2.23	2.23	Restoration	1:1	1.50	1.49	1.49		
				PAB	-	-	-	Restoration	1:1	6.60	-	-		
T5 Additional Mitigation not approved for Advanced Credit											-1.38			
subtotals:						9.41	9.41			17.20	10.79	9.41		
Cascade Station	1442	10863 (FP-17198)	1999-632	multi	-	5.77	4.09	-	-	-	-	-		
				1.68 A Wetland 63 impacts did not occur										
				PEM	SF	-	-	Enhancement	3:1	17.31	15.84	5.28		
				PSS	SF	-	-	Enhancement	3:1	-	1.47	0.49		
subtotals:						5.77	4.09			17.31	17.31	5.77		
Airfield Safety	1443	21878	2000-043	PEM	Dep	8.25	8.25	-	-	-	-	-		
				PEM	Flat	-	-	Enhancement	3:1	24.75	21.83	7.28		
				PSS	-	-	-	Enhancement	3:1	-	2.22	0.74		
				PFO	-	-	-	Enhancement	3:1	-	0.70	0.23		
subtotals:						8.25	8.25			24.75	24.75	8.25		
N. Simmonds Rd	1441	24248	2001-564	PSS	Dep	0.11	0.11	-	-	-	-	-		
				PEM	Dep	0.11	0.11	-	-	-	-	-		
				PSS	Flat	-	-	Restoration	1:1	0.22	0.22	0.22		
subtotals:						0.22	0.22			0.22	0.22	0.22		
PIC Sub-district B	1876	30286	1999-632	PEM	Dep	0.83	0.83	-	-	-	-	-		
				PEM	Riverine	0.01	0.01	-	-	-	-	-		
				PEM	SF	2.57	2.57	-	-	-	-	-		
				PSS	SF	-	-	Enhancement	3:1	0.70	0.18	0.06		
				PEM	Flat	-	-	Enhancement	3:1	9.53	10.05	3.35		
subtotals:						3.41	3.41			10.23	10.23	3.41		
SW Quad	2142	31722	2004-091	PFO	Flat	0.86	0.86	Restoration	1:1	0.82	0.70	0.70		
				PSS	Dep	0.63	0.63	-	-	-	-	-		
				PEM	Dep	2.45	2.45	Restoration	1:1	0.38	0.38	0.38		
				PEM	Dep	-	-	Enhancement	3:1	4.64	4.64	1.55		
				PSS	-	n/a	n/a	Restoration	1:1	-	0.25	0.25		
				PSS	Dep	n/a	n/a	Creation	1.5:1	0.50	0.50	0.33		
				PSS	SV	n/a	n/a	-	-	-	-	-		
				PEM	Flat	n/a	n/a	-	-	-	-	-		
				PSS	Flat	-	-	Enhancement	3:1	2.19	2.19	0.73		
subtotals:						3.94	3.94			8.53	8.66	3.94		
Taxiway A	No permit Req.		2010-066	PEM	-	No Permit Req		Enhancement	3:1	-	0.00	0.00		
subtotals:						0	0			0	0	0		
Taxiway B	No permit Req.		2005-131	PEM	-	No Permit Req		Restoration	1:1	-	0.18	0.18		
				PSS	-	No Permit Req		Restoration	1:1	-	0.10	0.10		
subtotals:						0	0			0	0.28	0.28		
Addition				PSS	-			Restoration	1:1		0.08	0.08		
				PFO	-			Restoration	1:1		0.02	0.02		
subtotals:						0	0			0	0.10	0.10		

Vanport Mitigation Site: 45.602428, -122.687487 (West of North Expo Road)  
 Pickle Mitigation Site: 45.617824, -122.778767 (East of Time Oil Road, Portland)  
 West of Oil Time Rd Mitigation Site: 45.617821, -122.784814 (West of Time Oil Road, Portland)

Impact and Mitigation Summary in Acres

Type	Impacts		Mitigation			DSL Credit Balance
	Permitted	Actual	Permitted	Constructed	Credits	
PEM	14.38	14.38	59.91	52.92	18.02	2.06
PSS	2.81	2.81	9.41	9.72	5.51	
PFO	3.09	3.09	2.32	2.91	2.44	
PAB	0	0	6.6	0	0	
POW	0	0	0	0	0	
multi	10.72	9.04	0	6.79	5.41	
<b>Total:</b>	<b>31.00</b>	<b>29.32</b>	<b>78.24</b>	<b>70.96</b>	<b>31.38</b>	
<b>Minus T5 Areas</b>	<b>23.91</b>		<b>65.55</b>	<b>25.97</b>	<b>2.06</b>	



DSL

Figure 1: Approximate Mitigation Boundaries overlay on Aerial.

Note: The blue area is mitigation for another already released permit (DSL # 10282) and is not related to the closure of the Vanport file.

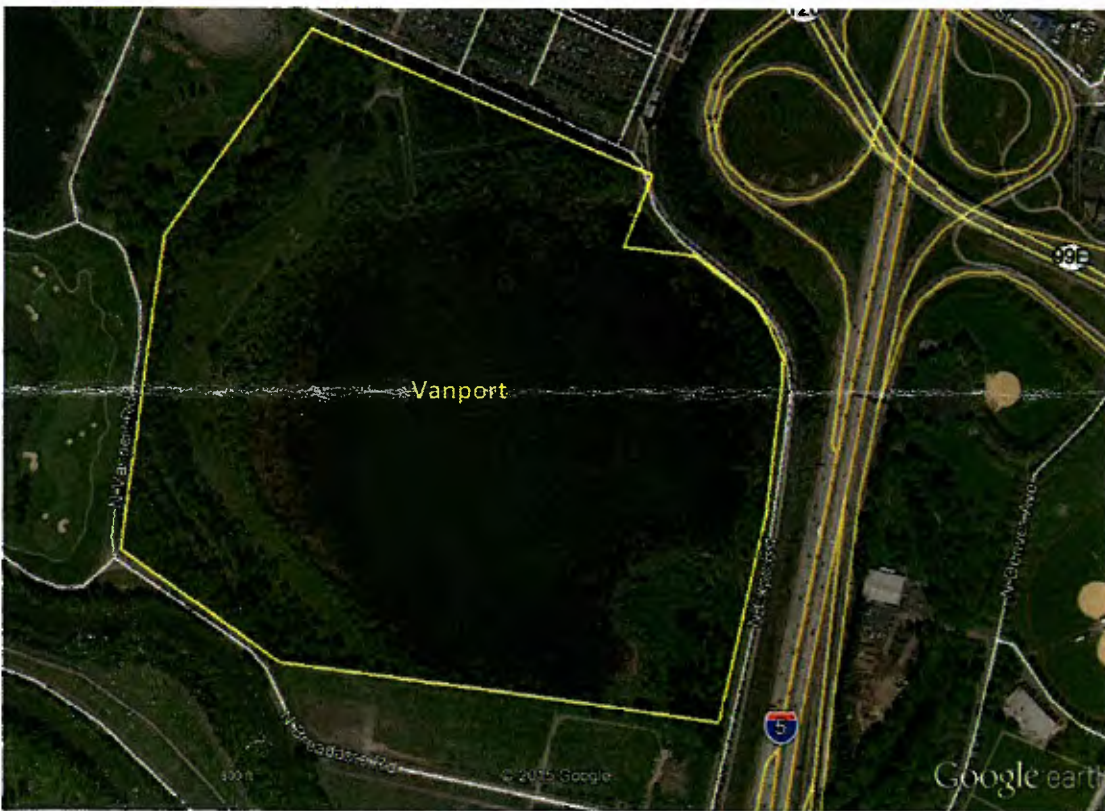
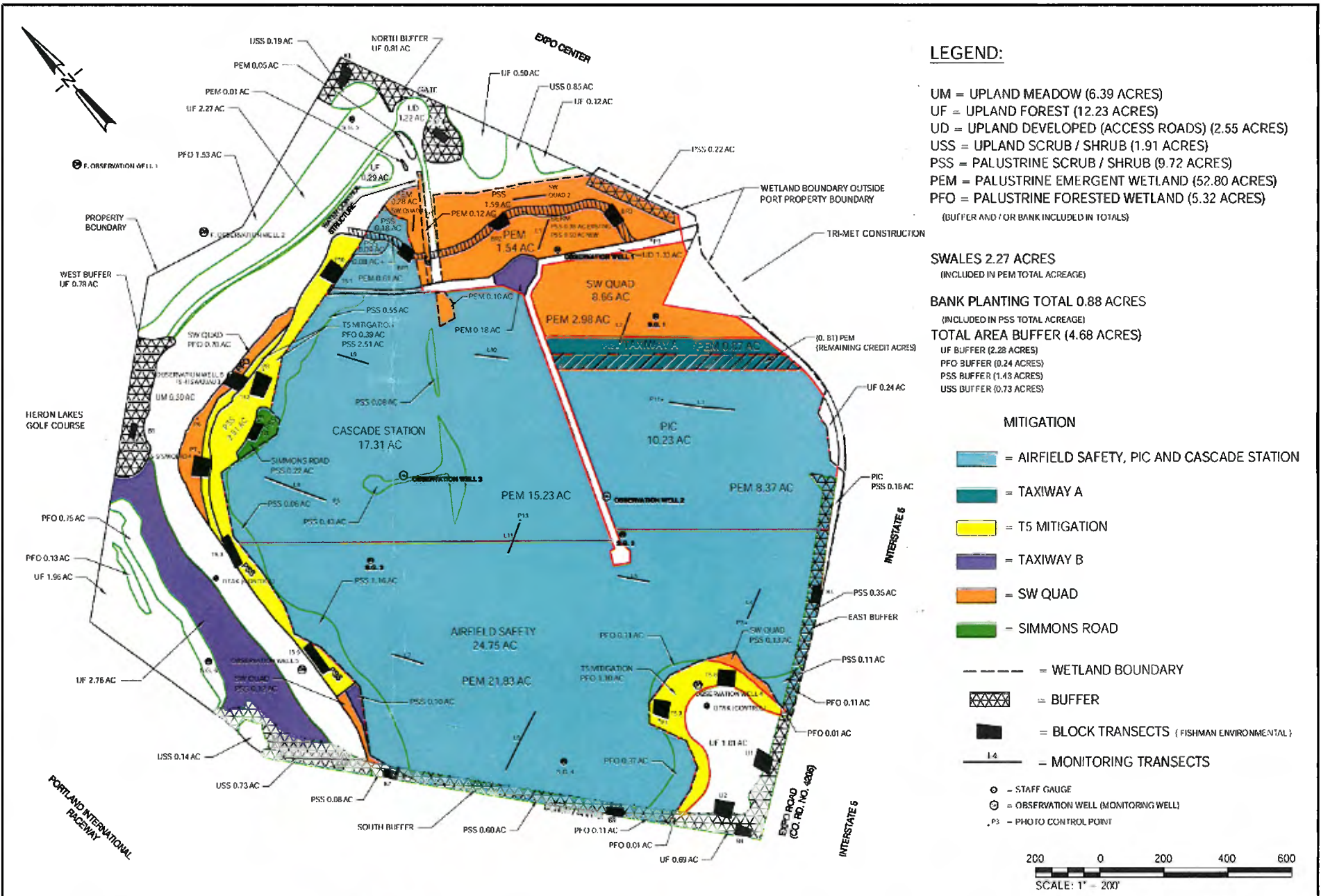


Figure 2: Approximate Mitigation Boundaries overlay on Aerial.



Figure 3: Final Vanport Mitigation Site



BK	SC
BK	SC

NO	DATE	BY	REVISIONS	CHKD	APP'D



PORT OF PORTLAND  
 PORTLAND, OREGON

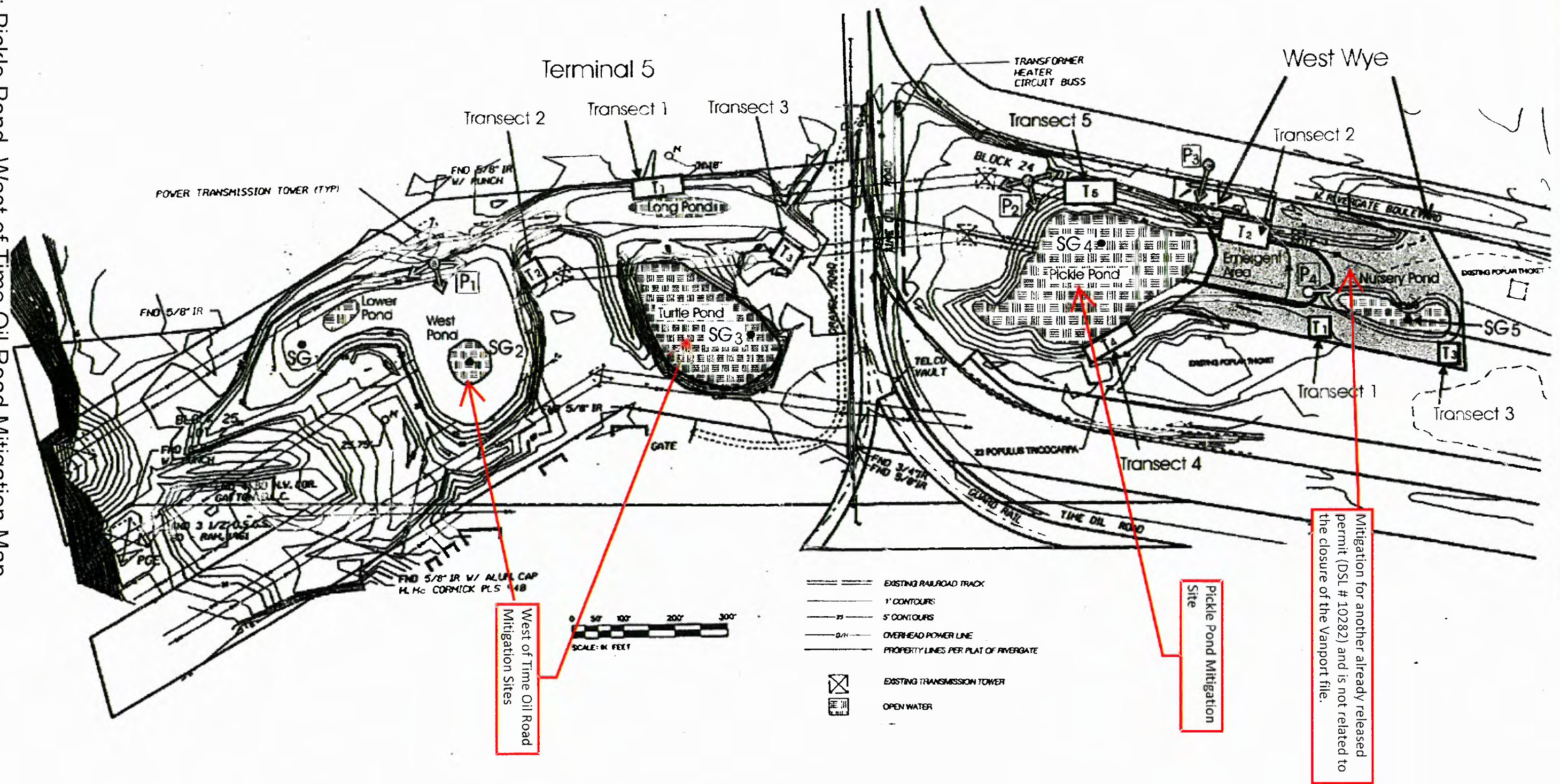
2010 PGEN DIST. # 2010-01  
 1113 PFO. T. TRUONG

DESIGNED BY: C. BUTLER  
 DRAWN BY: T. TRUONG  
 CHECKED BY: C. BUTLER  
 DATE: APR 2010  
 SCALE: 1" = 200'

VANPORT WETLANDS  
 2010 ANNUAL REPORT  
 VANPORT WETLANDS SITE MAP

SUBMITTED BY: [Signature]  
 TYPE: PD  
 DRAWING NO: MISC 2010-1  
 1/1 P-1

Figure 4: Pickle Pond, West of Time Oil Road Mitigation Map



<p><b>LEGEND</b></p> <p>T<sub>1</sub> Plant Transect</p> <p>• SG<sub>1</sub> Staff Gage</p> <p>P<sub>3</sub> Photo-point</p> <p>Source: Port of Portland, 12/96</p>	<p><b>Consultants in ecology and natural resource management</b></p> <p>Fishman Environmental Services 434 NW Sixth Avenue • Suite 304 Portland, Oregon 97209-3600 (503)224-0333</p>	<p>DRAWN: S. Benjamin</p>	<p><b>Terminal 5 / West Wye Rail Wetland Monitoring Report</b></p>	
		<p>APPROVED: C. Galen</p>		<p><b>MONITORING LOCATIONS</b></p>
		<p>DATE: November 2000</p> <p>SCALE: As shown</p>		<p>Figure # 2</p> <p>Project # 77003/4</p>

Figure 5: West of Time Oil Road Delineated Wetland Area

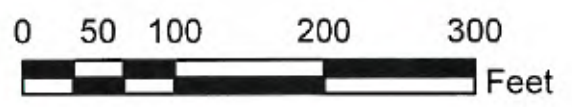


### Port of Portland Wetland Delineation T-5 Powerline Mitigation Site

- Sampling Plots
- ▨ Delineated Wetland--4.188 acres
- ▭ Port Taxlot Boundaries



Survey Date: May 1, 2006  
Surveyors: Carrie Butler & Larry Devroy





November 27, 2001

Gloria J. Gallego  
Office Assistant  
Multnomah County Drainage District No. 1  
1880 NE Elrod Drive  
Portland OR 97211

Re: Radio Towers Conservation Easement Amendment  
Port Agreement No. 2000-094

Dear Gloria:

As promised, please find enclosed a fully executed and recorded copy of the Conservation Easement Amendment. This should complete your file.

Please contact me if you have any questions or concerns. Thank you.

Sincerely,

A handwritten signature in cursive script that reads 'Lorali Sinnen'.

Lorali Sinnen  
Contract Administrator  
Property & Development Services  
Phone: 503-944-7538  
Fax: 503-944-7466  
Email: [sinnel@portptld.com](mailto:sinnel@portptld.com)

cc: ~~/~~ Denise Rennis

After recording return to:  
Port of Portland  
121 NW Everett St.  
Portland OR 97209  
Attn: Manager, Property & Development

Send all tax statements to:  
No change.

Recorded in the County of Multnomah, Oregon  
C. Swick, Deputy Clerk  
Total : 49.00  
2001-188440 11/27/2001 10:47:49am ATLJH  
E55 7 REC SUR DOR OLIS  
35.00 3.00 10.00 1.00

**AMENDMENT NO. 1 TO CONSERVATION EASEMENT  
BETWEEN  
THE PORT OF PORTLAND  
AND  
MULTNOMAH COUNTY DRAINAGE DISTRICT NO. 1**

This AMENDMENT NO. 1 TO CONSERVATION EASEMENT ("Amendment No. 1") is made and entered into by and between THE PORT OF PORTLAND, a port district of the State of Oregon ("Grantor"), and MULTNOMAH COUNTY DRAINAGE DISTRICT NO. 1 ("Grantee").

**RECITALS**

A. Grantor is the owner in fee simple of certain real property consisting of approximately 3,939,384 square feet located in the City of Portland, Multnomah County, Oregon, commonly known as the Radio Towers Site, which property is legally described on **Exhibit A** and more particularly shown on **Exhibit B** hereto (the "Site").

B. Portions of the Site ("Protected Property") are subject to Wetland Fill Permits No. FP-17198 and No. FP-21878 issued by the Oregon Division of State Lands ("DSL") to Grantor, and No. 99-632 issued by the United States Army Corps of Engineers (the "Corps") to Grantor (collectively, the "Permits").

C. In connection with the Permits, Grantor granted to Grantee a Conservation Easement dated July 19, 2000 and recorded in the Multnomah County Deed Records July 20, 2000 at Fee #2000-100288 (Port Agreement No. 00-094) (the "Easement") covering the Protected Property as more particularly shown and legally described in Exhibits A-1 and A-2 to the Easement.

D. Grantor desires to perform additional mitigation to the wetland portions of the Site, including portions of the Site not currently covered by the Easement or Permits.

7

E. Grantor has requested the issuance by the Corps and DSL of a letter amendment to the Permits ("Permit Amendment") to provide, among other things, for the Permits to cover the entire wetland mitigation as defined in the Permit Amendment and the Port of Portland Wetland Mitigation Plans dated May 1999 and December 1999.

F. As a condition to the issuance of the Permit Amendment, Grantor and Grantee are amending the Easement to amend the description of the real property subject to the Easement to cover the entire Site.

NOW THEREFORE, Grantor and Grantee hereby agree as follows:

**DESCRIPTION OF PROPERTY**

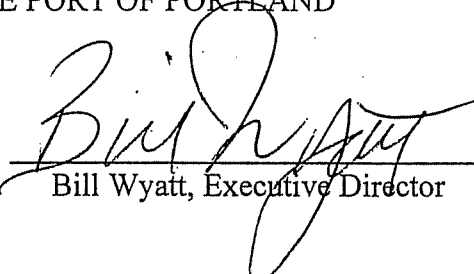
The description of the real property consisting of Exhibits A-1 and A-2 of the Easement is hereby deleted and replaced by **Exhibit A** attached hereto.

**SAVINGS CLAUSE**


Except as expressly modified by this Amendment No. 1, the Easement shall remain in full force and effect according to its terms.

IN WITNESS WHEREOF, Grantor has set its hand the day and year first above written, and Grantee has caused this instrument to be signed in its name, attested to the day and year first above written.

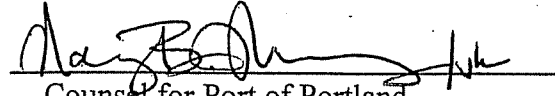
GRANTOR:  
THE PORT OF PORTLAND

By:   
Bill Wyatt, Executive Director

GRANTEE:  
MULTNOMAH COUNTY DRAINAGE  
DISTRICT NO. 1

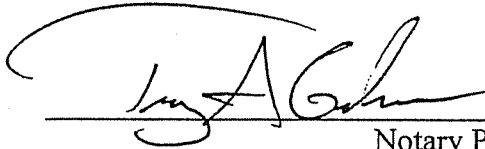
By:   
Title: DIRECTOR

APPROVED AS TO LEGAL SUFFICIENCY  
FOR THE PORT OF PORTLAND

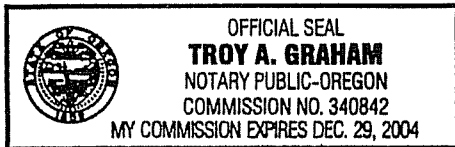
By:   
Counsel for Port of Portland

STATE OF OREGON )  
 ) ss.  
COUNTY OF MULTNOMAH )

This instrument was acknowledged before me on November 21, 2001, by Bill Wyatt as Executive Director of the Port of Portland.



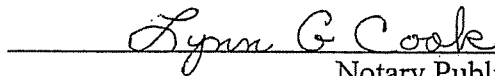
Notary Public for Oregon



My Commission Expires: December 29, 2004

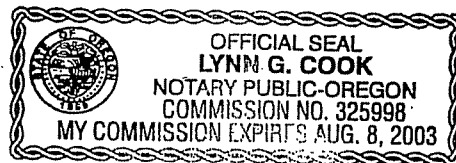
STATE OF OREGON )  
 ) ss.  
COUNTY OF MULTNOMAH )

This instrument was acknowledged before me on November 1, 2001, by Robert P. Groncznack as Director of Multnomah County Drainage District No. 1.



Notary Public for Oregon

My Commission Expires: August 8, 2003



**Exhibit A**  
Legal Description

A tract of land in the North one-half of Section 4, Township 1 North, Range 1 East of the Willamette Meridian, in the City of Portland, County of Multnomah and State of Oregon, said tract being more particularly described as follows:

Beginning at a point from which Station 45+36.04 on the Union Meat Company Base Line bears North 23°28'23" East, 794.50 feet; thence North 66°31'37" West, 756.03 feet; thence North 23°28'23" East, 722.00 feet, said Point of Beginning being further described as a point from which the Northeast corner of said Section 4 bears North 52°27'31" East, 1445.13 feet; thence from said point of beginning North 23°28'23" East along a line perpendicular to the Union Company Base Line, 263.70 feet to a point on the Westerly line of Expo Road (Co. Rd. No. 4205); thence Northerly along said Westerly line along the arc of a non-tangent curve (the radius point of which bears North 71°53'23" East, 353.25 feet) through a central angle of 02°36'54", 16.12 feet (chord bears North 16°48'10" West, 16.12 feet) to a point on a line which is parallel to and South 23°28'23" West, 1241.60 feet from, when measured at right angles to, said Union Meat Company Base Line; thence North 66°31'37" West along said line parallel to said Base Line, 1226.10 feet to a point on the Easterly line of that tract of land described as "Exhibit A" in Deed Document Number 96127264 as recorded August 22, 1996 in the Multnomah County Records; thence Southerly tracing the boundary of said tract the following courses and distances, South 28°45'23" West, 611.68 feet; thence South 60°23'23" West, 333.00 feet to a ¾ inch iron pipe marking the most Southerly corner of said Document No. 96127264 tract, which point is an angle point on the Northerly portion of the Easterly line of that tract of land described in Deed Book 2054, Page 313 as recorded March 27, 1961 in said Deed Records, and which point is an angle point on the Westerly line of that tract of land described in Deed Book 2508, page 1576 as recorded February 1, 1992 in said Deed Records; thence Southerly and Easterly tracing portions of the boundaries of said Deed Book 2054, Page 313 and Deed Book 2508, Page 1576 tracts the following courses and distances: South 08°00'00" West, 1096.03 feet to the most Northerly corner of that tract of land described in Deed Book 1910, Page 130 as recorded August 1, 1958 in said Deed Records; thence Southeasterly along the Northerly line of said Deed Book 1910, Page 130 tract the following courses and distances: South 52°06'00" East, 12.96 feet; thence along the arc of a 924.14 foot radius curve left through a central angle of 03°16'31", 52.83 feet (the chord of which bears South 53°44'15" East, 52.82 feet); thence South 55°22'31" East, 447.50 feet; thence along the arc of a 439.26 foot radius curve right through a central angle of 15°05'56", 115.76 feet (chord bears South 47°49'42" East, 115.42 feet) to a point on the Northerly line of said Deed Book 2054, Page 313 tract; thence South 55°44'58" East along said Northerly line, 63.43 feet; thence continuing along said Northerly line South 81°58'23" East, 1564.42 feet to a point on the Westerly line of Expo Road (Co. Rd. No. 4205); thence Northerly along said Westerly line the following courses and distances: North 12°37'43" East, 798.02 feet; thence

(Legal Description continues)



North 09°12'43" East, 346.81 feet; thence along the arc of a 416.19 foot radius curve left through a central angle of 61°14'30", 444.86 feet (chord bears North 21°24'33" West, 423.98 feet); thence North 52°01'47" West, 100.00 feet; thence along the arc of a 735.00 foot radius curve right through a central angle of 05°47'56", 74.39 feet (chord bears North 49°07'49" West, 74.36 feet) to the Southerly line of that certain tract of land described in Book 851 Page 259 as recorded February 1, 1972 in the said Deed Records; thence leaving said Westerly line of Expo Road and tracing said Southerly line, North 82°09'37" West, 290.42 feet to the Point of Beginning. Containing 3,963,387 square feet, 90.986 acres, more or less.

**Excepting therefrom:** a parcel of land located in the Northeast one-quarter of Section 4, Township 1 North, Range 1 East, Willamette Meridian, City of Portland, Multnomah County, Oregon, being further described as follows:

Commencing at the Northeast corner of Section 4, Township 1 North, Range 1 East; thence South 69°15'46" West a distance of 1405.05 feet; thence South 07°44'00" East a distance of 9.80 feet, to a point on the Northerly line of Port of Portland tract, Fee No. 99-224531, recorded 12-15-99, Multnomah County Records; thence along said Northerly line, South 66°31'37" East a distance of 291.33 feet, to a point on the Southwesterly right-of-way line of Expo Road (Co. Rd. No. 4205); thence along said Southwesterly right-of-way line, along the arc of a 353.25 foot radius curve to the left, through a central angle of 02°36'53" a distance of 16.12 feet to a point that bears South 16°48'10" East a distance of 16.12 feet from the last described point; thence leaving said right-of-way line, along the Westerly line of Multnomah County tract recorded in Book 851, Page 259, on 2-10-1972, Multnomah County Records, South 23°28'23" West, a distance of 263.70 feet; thence along the Southerly line of said Multnomah County tract, South 82°09'37" East a distance of 235.74 feet to the True Point of Beginning; thence continuing along said Southerly line, South 82°09'37" East a distance of 54.68 feet to a point on the aforesaid Southwesterly right-of-way line of Expo Road; thence leaving said Southerly line along said Southwesterly right-of-way line the following five (5) courses: (1) along the arc of a 735.00 foot radius curve to the left, through a central angle of 05°47'57" a distance of 74.39 feet to a point that bears South 49°07'49" East a distance of 74.36 feet from the last described point; (2) thence South 52°01'47" East a distance of 100.00 feet; (3) thence along the arc of a 416.20 foot radius curve to the right, through a central angle of 61°14'30" a distance of 444.86 feet to a point that bears South 21°24'33" East a distance of 423.98 feet from the last described point; (4) thence South 09°12'43" West a distance of 346.81 feet; (5) thence South 12°37'43" West a distance of 66.81 feet; thence leaving said right-of-way line North 05°40'03" East a distance of 250.12 feet; thence North 07°25'36" East a distance of 192.13 feet; thence along the arc of a 370.00 foot radius curve to the left through a central angle of 59°59'41" a distance of 387.43 feet to a point that bears North 22°34'15" West a distance of 369.97 feet from the last described point; thence North 52°34'06" West a distance of 228.44 feet to the True Point of Beginning. Containing 20,144 square feet more or less.

(Legal Description continues)

The bearings in this description are based upon Survey No. 57017, Multnomah County Survey Records, dated January 24, 2000 by OTAK, Inc.

**And further excepting therefrom:** a parcel of land located in the Northeast one-quarter of Section 4, Township 1 North, Range 1 East, Willamette Meridian, City of Portland, Multnomah County, Oregon, being further described as follows:

Commencing at the Northeast corner of Section 4, Township 1 North, Range 1 East; thence South  $69^{\circ}15'46''$  West a distance of 1405.05 feet; thence South  $07^{\circ}44'00''$  East a distance of 9.80 feet, to a point on the Northerly line of Port of Portland tract, Fee No. 99-224531, recorded 12-15-99, Multnomah County Records; thence along said Northerly line South  $66^{\circ}31'37''$  East a distance of 227.89 feet to the True Point of Beginning; thence continuing South  $66^{\circ}31'37''$  East a distance of 63.44 feet to a point on the Southwesterly right-of-way line of Expo Road (Co. Rd. No. 4205); thence, leaving said Northerly line, along said Southwesterly right-of-way line, along the arc of a 353.25 foot radius curve to the left, through a central angle of  $02^{\circ}36'53''$  a distance of 16.12 feet to a point that bears South  $16^{\circ}48'10''$  East a distance of 16.12 feet from the last described point; thence leaving said right-of-way line, along the Westerly line of Multnomah County tract recorded in Book 851, Page 259, on 2-10-1972, Multnomah County Records, South  $23^{\circ}28'23''$  West, a distance of 84.48 feet; thence leaving said Westerly line along the arc of a 418.00 foot radius curve to the right, through a central angle of  $16^{\circ}14'46''$  a distance of 118.52 feet to a point that bears North  $14^{\circ}02'03''$  West a distance of 118.13 feet from the last described point; thence North  $08^{\circ}43'28''$  West a distance of 3.63 feet to the True Point of Beginning. Containing 3,859 square feet more or less.

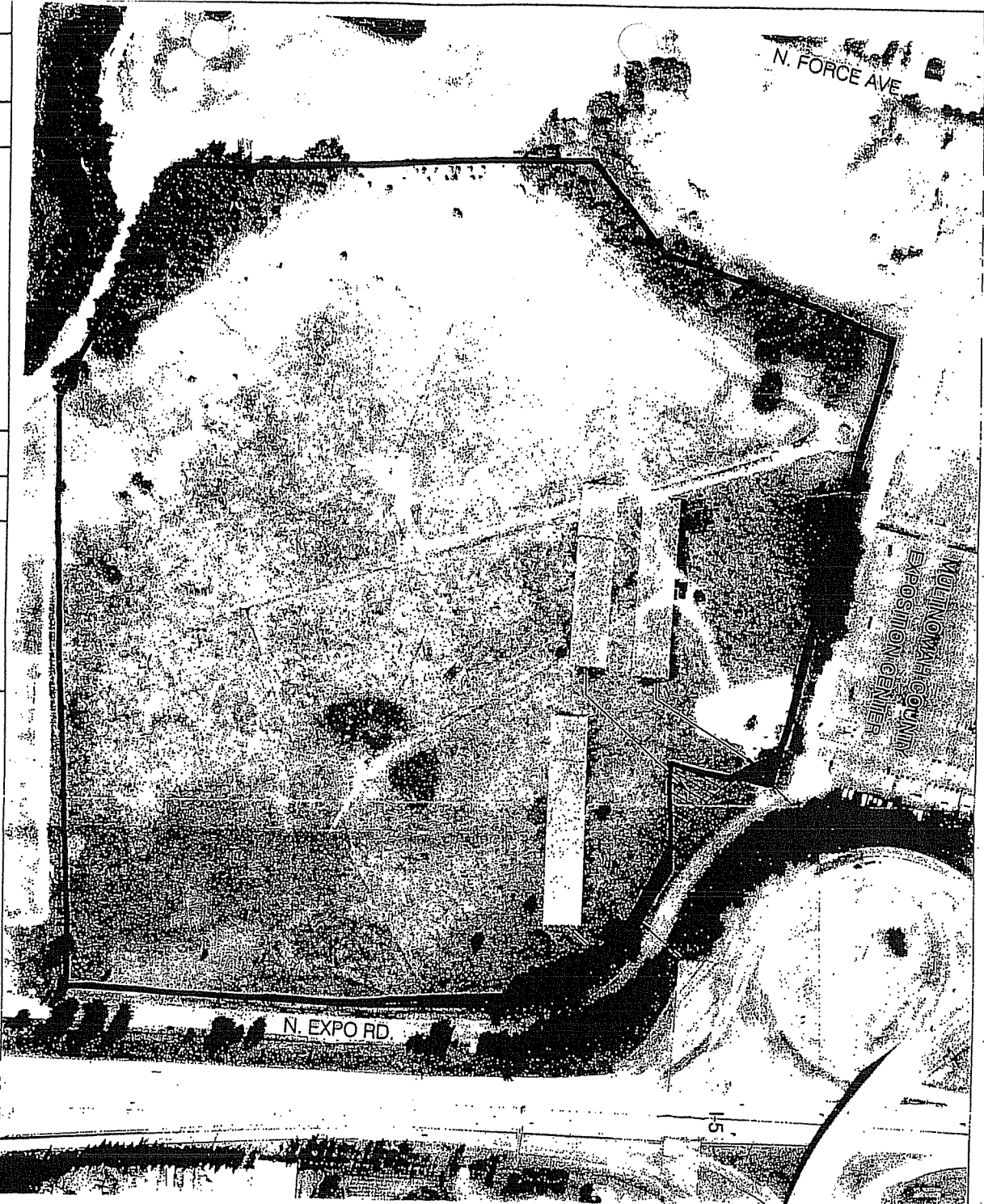
The bearings in this description are based upon Survey No. 57017, Multnomah County Survey Records, dated January 24, 2000 by OTAK, Inc.

(End of Legal Description)

N. FORCE AVE

MULTNOMAH COUNTY  
EXPOSITION CENTER

N. EXPO RD



For  
Location  
Purposes  
Only

NO.	DATE	BY	REVISIONS	CHKD	APP'D



PORT OF PORTLAND  
PORTLAND, OREGON

DESIGN NUMBER	2001PGEN	PROJECT NUMBER	52099 - 110
---------------	----------	----------------	-------------

DESIGNED BY	_____
DRAWN BY	P. REYNOLDS
CHECKED BY	R. SONNIKSEN
DATE	JAN 2001
SCALE	1" = 300'

SUBMITTED BY		PROJECT ENGINEER	
RADIO TOWERS MITIGATION SITE		_____	
RADIO TOWERS SITE		_____	
TYPE		DRAWING NO.	
PD		_____	

*Varport Westlands*

CONSERVATION EASEMENT

This indenture is made this 19 day of July, 2000 between the Port of Portland, a port district of the State of Oregon ("Grantor"), and the Multnomah County Drainage District No. 1 ("Grantee").

Whereas, the Grantor is the owner in fee simple of certain real property consisting of approximately 42.44 acres located in the City of Portland, Multnomah County, Oregon (hereinafter referred to as in the "Protected Property") which has aesthetic and ecological value as a natural area appropriate for wetlands habitat, which property is more particularly shown and legally described on Exhibits A-1 and A-2 hereto, and is subject to Wetland Fill Permits No. FP-17198 and No. FP-21878, Exhibits B-1 and B-2 hereto, issued to Grantor by the Oregon Division of State Lands, and No. 99-632 issued to Grantor by the United States Army Corps of Engineers, Exhibit B-3 hereto (the "Wetlands Permits"); and

Whereas, the condition of the Protected Property at the time of this grant is evidenced by:

A. On-site photographs taken at appropriate locations on the Protected Property which Grantor shall make available to Grantee; and

B. The Fishman Environmental Services report dated May 2, 2000 entitled Mitigation Project Tasks 1999/2000, Radio Towers Wetland Mitigation Project, Exhibit C hereto; and

other documentation possessed at present by the Grantor which the Grantor shall make available to Grantee, its successors and assigns, which documentation shall be sufficient to establish the condition of the Protected Property at the time of this grant.

Now, therefore, the Grantor, for good and valuable consideration, and in consideration of the covenants, mutual agreements, conditions, and promises herein contained, does hereby freely give, grant, bargain, and convey unto Grantee, its successors and assigns, in perpetuity, a Conservation Easement over the Protected Property consisting of the following:

AFFIRMATIVE RIGHTS

Grantor's Reservation of Rights

Grantor specifically reserves to itself the right to undertake any activity on the Protected Property that is reasonably necessary or prudent, in the judgment of Grantor, to undertake the mitigation, enhancement, maintenance, and monitoring required by the Wetlands Permits, including but not limited to the maintenance of the existing roads and drainage ditches and to continue to maintain the Protected Property as wetlands. Grantor's intent with respect to undertaking the wetland mitigation, maintenance, enhancement and monitoring authorized by the Wetland Permits is set forth in the Port of Portland Wetland Mitigation Plans dated May 1999 and December 1999 (the "Wetland Mitigation Plans")

which Grantor shall make available to Grantee. The Wetland Mitigation Plans include (among other things) the flooding and subsequent draining of the Protected Property in order to stress and kill non-native reed canary grass.

Grantor further reserves to itself the right to amend the Wetlands Mitigation Plans if reasonable or necessary to fulfill the purposes contemplated by the Wetlands Permits, subject to the review and consent of the Oregon Division of State Lands and the Army Corp of Engineers.

Grantor further expressly reserves to itself the right to amend the boundaries as shown on **Exhibits A-1** and **A-2** of the Protected Property, but not to reduce the total acreage protected as wetlands by this Conservation Easement, if necessary to accommodate either the Oregon Department of Transportation, the City of Portland, or Tri-Met's needs in the construction and operation of the extension of light-rail adjacent to the Protected Property. Grantee agrees to execute an amendment or such other document as is reasonably necessary to amend the boundaries of the Protected Property in accordance with the foregoing reservation of right by Grantor.

Grantor further reserves to itself the right to continue the term of the existing lease to Citicasters, Inc. on the Protected Property up to August 24, 2000 (the "Citicasters Lease") and to remove or cause to be removed from the Protected Property on or before December 1, 2000 such grounding systems and radio towers as currently exist on site.

#### **Grantee's Affirmative Rights**

Grantee shall have the right, in a reasonable manner and at reasonable times and upon notice to the Port, to enter upon the Protected Property to determine compliance with this Conservation Easement, and to enforce by proceedings at law or in equity the covenants hereinafter set forth including, but not limited to, the right to require the implementation and compliance with all mitigation, maintenance, and monitoring terms and conditions of the Wetlands Permits. Grantee does not waive or forfeit the right to take action as may be necessary to insure compliance with the covenants and purposes of this grant by any prior failure to act. Nothing herein shall be construed to entitle Grantee to institute any proceedings against Grantor for any changes to the Protected Property due to causes beyond the Grantor's reasonable control such as changes caused by fire, floods, storms, earthquakes or other acts of Nature, or unauthorized wrongful acts of third persons or Grantee.

In furtherance of the foregoing affirmative rights of Grantor and Grantee, the Grantor, with the intent that the same shall run with and bind the Protected Property in perpetuity from the date of this grant, does hereby make, with respect to the Protected Property, the following:

#### **COVENANTS**

Except as expressly provided in the Reservation of Rights of Grantor as set forth above, which Reservation of Rights shall act to give Grantor reasonable discretion to carry out

the intent of the Wetland Permits pursuant to Grantor's Wetlands Mitigation Plans, or as authorized in accordance with this Conservation Easement:

1. There shall be no change in the natural habitat of the Protected Property except as set forth in the Wetlands Mitigation Plans which specifically allow for the flooding and subsequent draining of the Protected Property to kill non-native reed canary grass.
2. There shall be no agricultural, commercial or industrial activity undertaken or allowed on the Protected Property; nor shall any right of passage across or upon the Protected Property be allowed or granted if that right of passage is used in conjunction with agricultural, commercial or industrial activity except as allowed by the Citicasters Lease or as required to remove the radio towers and grounding systems.
3. No domestic animals shall be allowed on the Protected Property.
4. There shall be no filling, excavating, dredging, mining or drilling; no removal of topsoil, sand, gravel, rock, minerals or other materials, nor any dumping of ashes, trash, garbage, or of any other material, and no changing of the topography of the land of the Protected Property in any manner except as required by or as necessary to comply with the Wetland Mitigation Plans, for the maintenance of drainage ditches or roads, as required for security, or pursuant to the removal of the radio towers or grounding systems.
5. There shall be no construction or placing of buildings, mobile homes, advertising signs, billboards, or other advertising material, or other structures on the Protected Property except for fencing as reasonably required in the discretion of the Grantor. The Protected Property does not include any of the existing buildings or roads on site.
6. There shall be no building of new roads or any other new rights of way, nor widening of existing roads onto the Protected Property, except that Grantor may grant such easements for right of way as may be required by the Oregon Department of Transportation, the City of Portland, or Tri-Met for the extension of light-rail adjacent to the Protected Property, as specifically reserved in Grantor's Affirmative Rights.
7. There shall be no operation of any type of motorized vehicles on the Protected Property except as reasonable and necessary to carry out Grantor's Wetland Mitigation Plan or as otherwise required to maintain or preserve the Protected Property.
8. Any use of the Protected Property and any activity thereon, which is inconsistent with the intent of this grant for the preservation of the Protected Property predominantly in its condition as wetland, and the protection of environmental systems that allow for such continuation of the Protected Property as wetland, is prohibited.

In the event that a breach of these Covenants by the Grantor comes to the attention of Grantee, Grantee must promptly notify the Grantor in writing of such breach. Grantor shall have thirty (30) days after receipt of such written notice to undertake action, including restoration of the Protected Property, that is reasonably calculated to correct the conditions constituting such a breach. If the Grantor fails to take such corrective action, Grantee may, at its discretion, undertake such corrective action, including appropriate

legal proceedings, as are reasonably necessary to effect such correction; and the cost of such correction, including Grantee's expenses, court costs, reasonable attorney fees and consultant's costs, shall be paid by the Grantor.

### GENERAL PROVISIONS

The Grantor agrees that the terms, conditions, restrictions, and purposes of this grant will be inserted in any subsequent deed or other legal instrument by which the Grantor divests itself of either fee simple, or its possessory interest in all or portions of the Protected Property and that the Grantor will notify Grantee, its successors and assigns, of any such conveyance.

This Conservation Easement is in gross and may not be assigned without the written consent of the Port, which consent may be granted or withheld in the sole and unfettered discretion of the Port.

Grantee may terminate its right, title and interest in the Protected Property granted by this Conservation Easement by giving 180 days advance written notice to the Grantor of such intent. Upon the giving of such notice and the expiration of the notice period, Grantee shall execute and deliver to Grantor a quit claim deed releasing all of its right, title and interest to the Protected Property. Should Grantee terminate its right, title and interest to the Protected Property, Grantor shall grant a replacement conservation easement to a new grantee on substantially the same terms and conditions as contained in this Conservation Easement.

Any notices required in this Conservation Easement shall be in writing and may be delivered by personal delivery or by deposit in the United States mail, postage prepaid, as certified mail, return receipt requested, and addressed as follows or such address as may be hereafter specified by notice in writing:

**GRANTOR:**

The Port of Portland  
P.O. Box 3529  
Portland, OR 97208-3529  
Attention: Manager, Property and  
Development Services

**With copies to:**

The Port of Portland  
P.O. Box 3529  
Portland, OR 97208-3529  
Attention: Aviation Environmental  
Services

**GRANTEE:**

Multnomah County Drainage District No. 1  
1880 N.E. Elrod Drive  
Portland, OR 97211

**With copy to:**

Oregon Division of State Lands  
775 Summer Street NE  
Salem, OR 97301-1279

The Port of Portland  
P.O. Box 3529  
Portland, OR 97208-3529  
Attention: Legal

In the event any provision of this grant is determined by a court of competent jurisdiction to be void and unenforceable, all remaining terms shall remain valid and binding.

The burdens of this Conservation Easement shall run with the Protected Property and shall be enforceable against the Grantor and all future owners in perpetuity as established by this grant.

The Grantor hereby represents that the Grantor is seized of the Protected Property in fee simple and has good right to grant and convey this Conservation Easement.

The rights hereby granted shall be in addition to, and not in limitation of, any other rights and remedies available to Grantee for enforcement of this Conservation Easement.

Nothing in this Conservation Easement gives or shall be construed to give or provide any benefit, direct, indirect, or otherwise, to any third parties.

TO HAVE AND TO HOLD this Conservation Easement together with all the appurtenances and privileges belonging or in any way pertaining thereto, either in law or in equity, either in possession or expectance, for the proper use and benefit of Grantee, its successors and assigns, until the termination of this Conservation Easement as provided for herein. The true and actual consideration for this conveyance is \$0 and other good and valuable consideration.

IN WITNESS WHEREOF, the Grantor has set its hand the day and year first above written, and Grantee has caused this instrument to be signed in its name, attested to the day and year first above written.



THE PORT OF PORTLAND

By: [Signature]  
Executive Director

APPROVED AS TO LEGAL SUFFICIENCY

[Signature]  
Counsel, Port of Portland

STATE OF OREGON )  
 )  
COUNTY OF Multnomah )

This instrument was acknowledged before me on July 18  
2000, by Mike Thorne as Executive Director  
of the (Grantor).



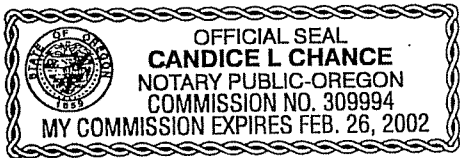
[Signature]  
Notary Public for Oregon

My Commission Expires: 2/26/02

GRANTEE  
By: [Signature]  
Title: District Engineer / Director

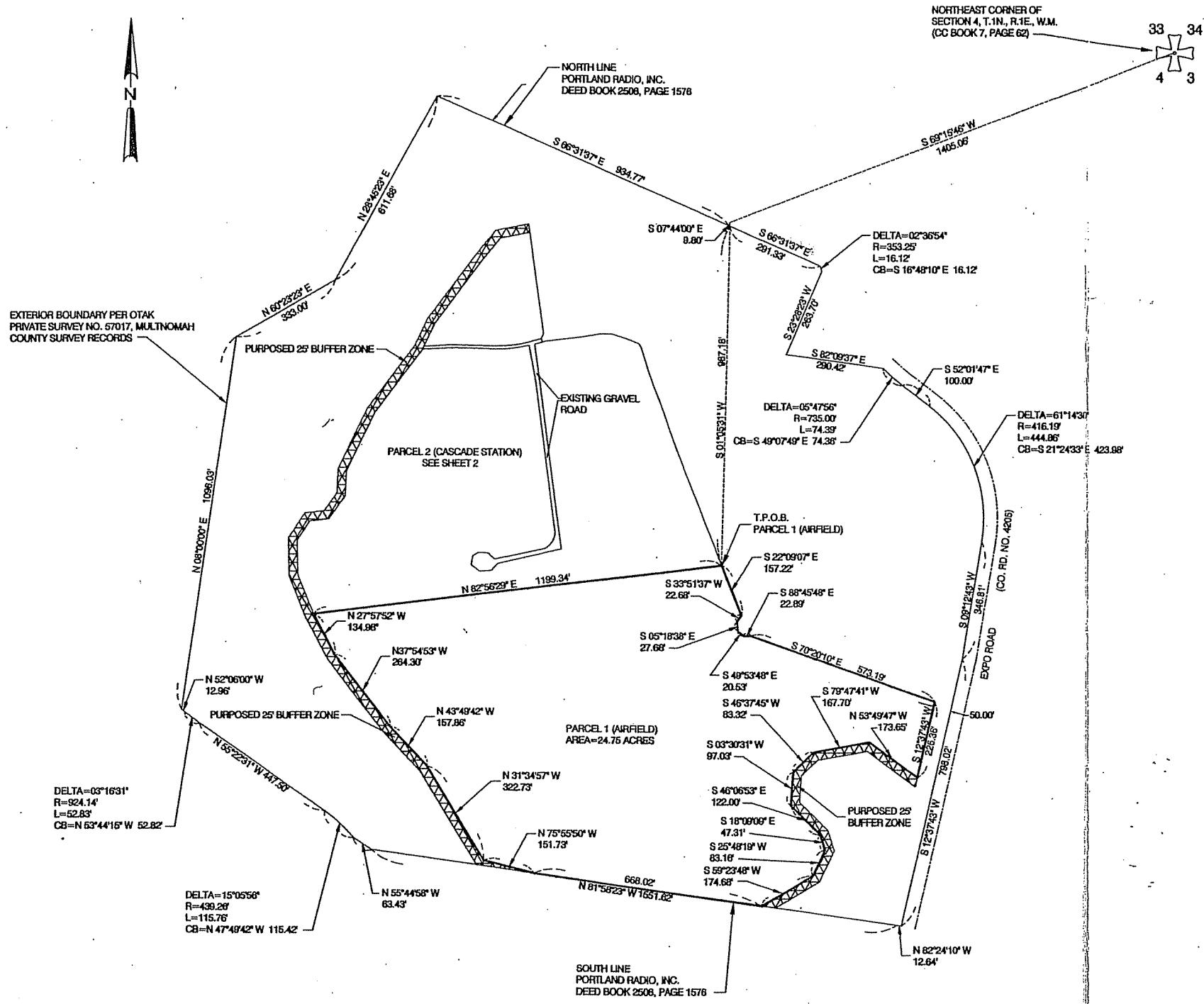
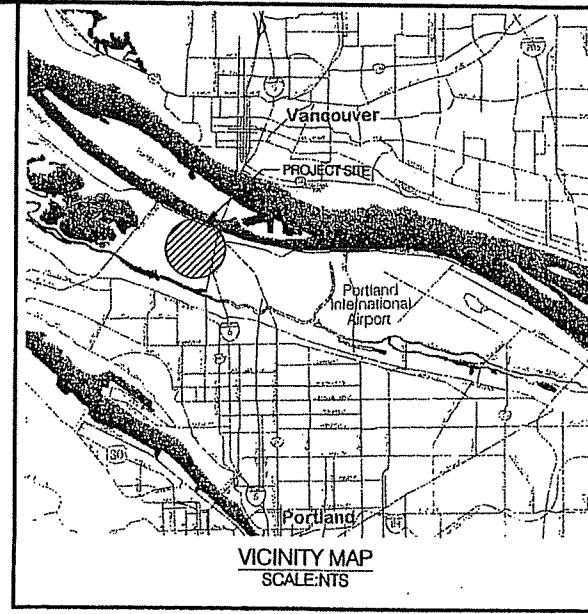
STATE OF OREGON )  
 )  
COUNTY OF )

This instrument was acknowledged before me on July 19  
2000, by Robert P. Gronczack as District Engineer / Director  
of the Multnomah County Drainage District No. 1. and Peninsula Drainage District No. 1



[Signature]  
Notary Public for Oregon

My Commission Expires: 2/26/02



**PARCEL 1 (AIRFIELD) LEGAL DESCRIPTION**

A TRACT OF LAND SITUATED IN THE NORTHEAST ONE-QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 1 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF PORTLAND, MULTNOMAH COUNTY, OREGON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 1 EAST, WILLAMETTE MERIDIAN; THENCE SOUTH 69°15'46" WEST A DISTANCE OF 1405.05 FEET; THENCE SOUTH 07°44'00" EAST A DISTANCE OF 9.80 FEET TO A POINT ON THE NORTH LINE OF THAT TRACT OF LAND DESCRIBED IN THAT DEED TO PORTLAND RADIO, INC. RECORDED FEBRUARY 1, 1992, IN DEED BOOK 2508, PAGE 1576, MULTNOMAH COUNTY DEED RECORDS; THENCE LEAVING SAID NORTH LINE SOUTH 01°05'31" WEST A DISTANCE OF 987.18 FEET TO A POINT ON THE WESTERLY EDGE OF AN EXISTING GRAVEL ROAD AND THE TRUE POINT OF BEGINNING; THENCE, ALONG SAID WESTERLY EDGE, SOUTH 22°09'07" EAST A DISTANCE OF 157.22 FEET; THENCE SOUTH 33°51'37" WEST A DISTANCE OF 22.68 FEET; THENCE SOUTH 05°18'38" EAST A DISTANCE OF 27.66 FEET; THENCE SOUTH 49°53'48" EAST A DISTANCE OF 20.53 FEET; THENCE SOUTH 88°45'48" EAST A DISTANCE OF 22.89 FEET; THENCE, DEPARTING SAID WESTERLY EDGE, SOUTH 70°20'10" EAST A DISTANCE OF 573.19 FEET TO A POINT 50.00 FEET FROM WHEN MEASURED AT RIGHT ANGLES TO THE WESTERLY RIGHT OF WAY LINE OF EXPO ROAD (COUNTY ROAD NUMBER 4205); THENCE ALONG A LINE PARALLEL WITH AND 50.00 FEET FROM WHEN MEASURED AT RIGHT ANGLES TO SAID RIGHT OF WAY LINE SOUTH 12°37'43" WEST A DISTANCE OF 226.36 FEET; THENCE LEAVING SAID PARALLEL LINE NORTH 53°49'47" WEST A DISTANCE OF 173.65 FEET; THENCE SOUTH 79°47'41" WEST A DISTANCE 167.70 FEET; THENCE SOUTH 46°37'45" WEST A DISTANCE OF 83.32 FEET; THENCE SOUTH 03°30'31" WEST A DISTANCE OF 97.03 FEET; THENCE SOUTH 46°06'53" EAST A DISTANCE OF 122.00 FEET; THENCE SOUTH 18°09'09" EAST A DISTANCE OF 47.31 FEET; THENCE SOUTH 25°48'19" WEST A DISTANCE OF 83.16 FEET; THENCE SOUTH 59°23'48" WEST A DISTANCE OF 174.68 FEET TO THE SOUTH LINE OF SAID PORTLAND RADIO, INC. TRACT; THENCE ALONG SAID SOUTH LINE NORTH 81°58'23" WEST A DISTANCE OF 668.02 FEET; THENCE LEAVING SAID SOUTH LINE NORTH 75°55'50" WEST A DISTANCE OF 151.73 FEET; THENCE NORTH 31°34'57" WEST A DISTANCE OF 322.73 FEET; THENCE NORTH 43°49'42" WEST A DISTANCE OF 157.86 FEET; THENCE NORTH 37°54'53" WEST A DISTANCE OF 264.30 FEET; THENCE NORTH 27°57'52" WEST A DISTANCE OF 134.98 FEET; THENCE NORTH 82°56'29" EAST A DISTANCE OF 1,199.34 FEET TO THE TRUE POINT OF BEGINNING, CONTAINING 24.75 ACRES MORE OR LESS.

THE BEARINGS IN THIS DESCRIPTION ARE BASED UPON PRIVATE SURVEY NUMBER 57017 (OTAK), MULTNOMAH COUNTY SURVEY RECORDS.

**NOTES:**

THE PURPOSED 25 FOOT BUFFER ZONE SHOWN ON THIS EXHIBIT PLAT WAS DERIVED BY A TOPOGRAPHIC SURVEY OF THE SITE. THE 8.6' (NGVD) CONTOUR LINE WAS HELD FOR INSIDE EDGE OF THE BUFFER ZONE.

**EXHIBIT A-1**

NO.	DATE	BY	REVISIONS	CKD	APPVD	NO.	DATE	BY	REVISIONS	CKD	APPVD



**PORT OF PORTLAND**  
PORTLAND, OREGON

*Charles L. Wiley*  
PROJECT MANAGER

1999D067  
DESIGN NUMBER

52086  
PROJECT NUMBER

EXP: 6/30/2002

REGISTERED PROFESSIONAL LAND SURVEYOR

*Charles L. Wiley*  
OREGON  
JULY 26, 1990  
CHARLES L. WILEY  
2474

DESIGNED BY: C. BERGSTROM  
DRAWN BY: RALDERSEBAES  
CHECKED BY: C. VANDERWERF  
DATE: JUN 2000  
SCALE: 1"=200'

RADIO TOWER SITE

RADIO TOWER SITE  
PARCEL 1 / AIRFIELD MITIGATION SITE

SUBMITTED BY: *Stanger*  
DESIGN MANAGER

TYPE: EP  
DRAWING NO.: M 2000-2  
SCALE: 1/2  
C-1

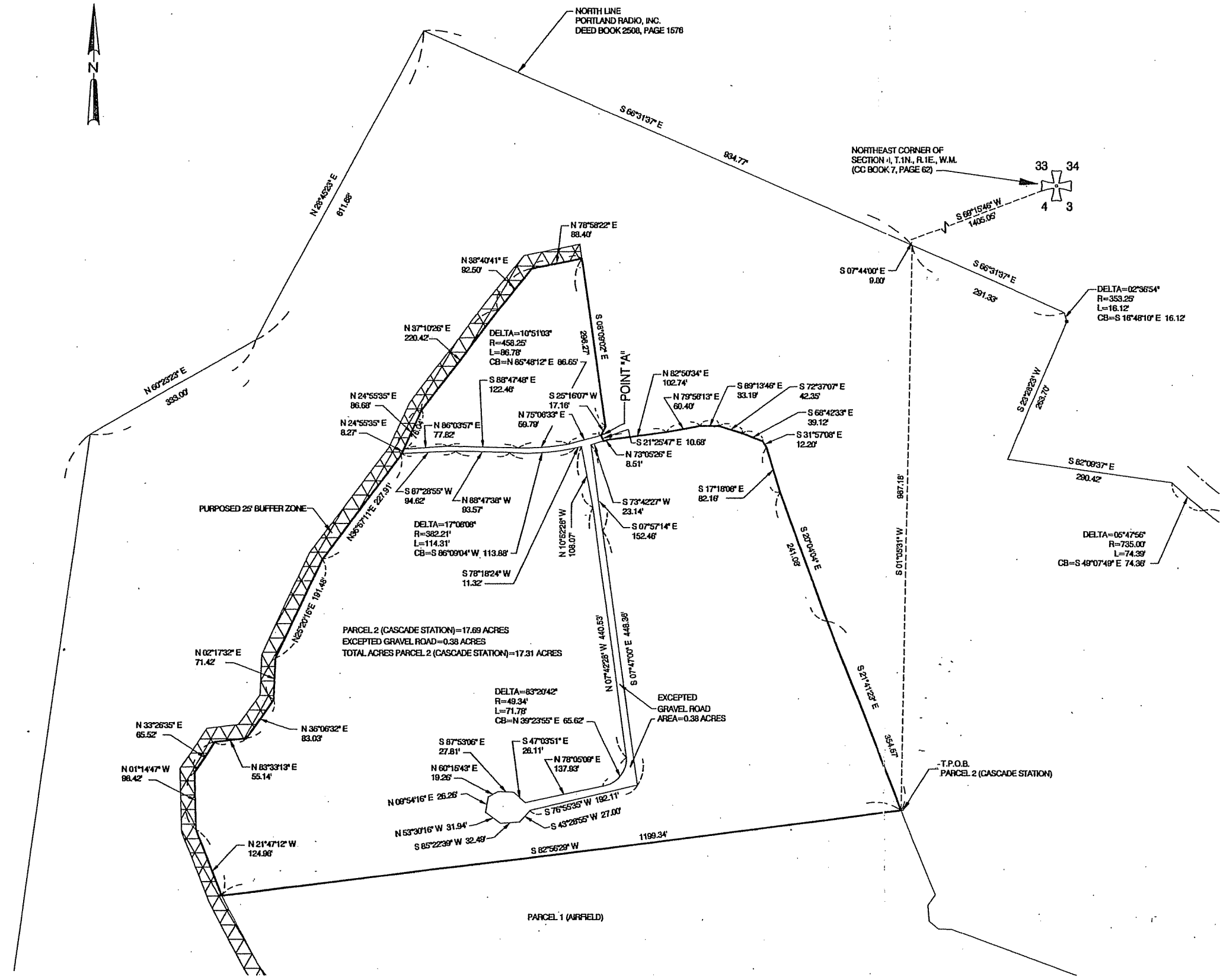
**PARCEL 2 (CASCADE STATION) LEGAL DESCRIPTION**

A TRACT OF LAND SITUATED IN THE NORTHEAST ONE-QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 1 EAST, WILLAMETTE MERIDIAN; THENCE SOUTH 69°15'46" WEST A DISTANCE OF 1405.05 FEET; THENCE SOUTH 07°44'00" EAST A DISTANCE OF 9.80 FEET TO THE NORTH LINE OF THAT TRACT OF LAND DESCRIBED IN THAT DEED TO PORTLAND RADIO, INC., RECORDED FEBRUARY 1, 1992, IN DEED BOOK 2508, PAGE 1576, MULTNOMAH COUNTY DEED RECORDS; THENCE LEAVING SAID NORTH LINE, SOUTH 01°05'31" WEST A DISTANCE OF 987.18 FEET TO A POINT ON THE WESTERLY EDGE OF AN EXISTING GRAVEL ROAD AND THE TRUE POINT OF BEGINNING, SAID POINT BEING THE NORTHEAST CORNER OF PARCEL 1 (AIRFIELD) MITIGATION DESCRIPTION AS DESCRIBED ON SHEET 1; THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL 1, SOUTH 82°56'29" WEST A DISTANCE OF 1199.34 FEET TO THE NORTHWEST CORNER OF SAID PARCEL 1; THENCE, LEAVING SAID NORTHERLY LINE, NORTH 21°47'12" WEST A DISTANCE OF 124.96 FEET; THENCE NORTH 01°14'47" WEST A DISTANCE OF 98.42 FEET; THENCE NORTH 33°26'35" EAST A DISTANCE OF 65.52 FEET; THENCE NORTH 88°33'13" EAST A DISTANCE OF 55.14 FEET; THENCE NORTH 36°06'32" EAST A DISTANCE OF 83.03 FEET; THENCE NORTH 02°17'32" EAST A DISTANCE OF 71.42 FEET; THENCE NORTH 25°20'16" EAST A DISTANCE OF 191.48 FEET; THENCE NORTH 36°57'11" EAST A DISTANCE OF 227.91 FEET; THENCE NORTH 24°55'35" EAST A DISTANCE OF 86.68 FEET; THENCE NORTH 37°10'26" EAST A DISTANCE OF 220.42 FEET; THENCE NORTH 38°40'41" EAST A DISTANCE OF 92.50 FEET; THENCE NORTH 78°58'22" EAST A DISTANCE OF 88.40 FEET; THENCE SOUTH 08°09'02" EAST A DISTANCE OF 296.27 FEET; THENCE SOUTH 25°16'07" WEST A DISTANCE OF 17.16 FEET TO A POINT ON THE NORTHERLY SIDE OF A GRAVEL ROAD HEREIN DESCRIBED AS POINT 'A'; THENCE SOUTH 21°25'47" EAST A DISTANCE OF 10.68 FEET; THENCE NORTH 73°05'26" EAST A DISTANCE OF 8.51 FEET; THENCE NORTH 82°50'34" EAST A DISTANCE OF 102.74 FEET; THENCE NORTH 79°56'13" EAST A DISTANCE OF 60.40 FEET; THENCE SOUTH 89°13'46" EAST A DISTANCE OF 33.19 FEET; THENCE SOUTH 72°37'07" EAST A DISTANCE OF 42.35 FEET; THENCE SOUTH 68°42'33" EAST A DISTANCE OF 39.12 FEET; THENCE SOUTH 31°57'08" EAST A DISTANCE OF 12.20 FEET; THENCE SOUTH 17°18'08" EAST A DISTANCE OF 82.16 FEET; THENCE SOUTH 20°04'04" EAST A DISTANCE OF 241.08 FEET; THENCE SOUTH 21°41'23" EAST A DISTANCE OF 354.57 FEET TO THE TRUE POINT OF BEGINNING, CONTAINING 17.69 ACRES MORE OR LESS.

**EXCEPTING THEREFROM A PARCEL OF LAND DESCRIBED AS FOLLOWS:**

BEGINNING AT POINT 'A' OF THE ABOVE DESCRIBED PARCEL; THENCE SOUTH 21°25'47" EAST A DISTANCE OF 10.68 FEET; THENCE SOUTH 73°42'27" WEST A DISTANCE OF 23.14 FEET; THENCE SOUTH 07°57'14" EAST A DISTANCE OF 152.46 FEET; THENCE SOUTH 07°47'00" EAST A DISTANCE OF 448.36 FEET; THENCE SOUTH 76°55'35" WEST A DISTANCE OF 192.11 FEET; THENCE SOUTH 43°28'55" WEST A DISTANCE OF 27.00 FEET; THENCE SOUTH 85°22'39" WEST A DISTANCE OF 32.49 FEET; THENCE NORTH 53°30'16" WEST A DISTANCE OF 31.94 FEET; THENCE NORTH 09°54'16" EAST A DISTANCE OF 26.26 FEET; THENCE NORTH 60°15'43" EAST A DISTANCE OF 19.26 FEET; THENCE SOUTH 87°53'06" EAST A DISTANCE OF 27.81 FEET; THENCE SOUTH 47°03'51" EAST A DISTANCE OF 26.11 FEET; THENCE NORTH 78°05'09" EAST A DISTANCE OF 137.93 FEET; THENCE ALONG THE ARC OF A 49.34 FOOT RADIUS CURVE TO THE LEFT THROUGH A CENTRAL ANGLE OF 83°20'42" A DISTANCE OF 71.78 FEET TO A POINT THAT BEARS NORTH 39°23'55" EAST A DISTANCE OF 65.62 FEET FROM THE LAST DESCRIBED POINT; THENCE NORTH 07°42'28" WEST A DISTANCE OF 440.53 FEET; THENCE NORTH 10°52'26" WEST A DISTANCE OF 108.07 FEET; THENCE SOUTH 78°18'24" WEST A DISTANCE OF 11.32 FEET; THENCE ALONG THE ARC OF A 382.21 FOOT-RADIUS CURVE TO RIGHT THROUGH A CENTRAL ANGLE OF 17°08'08" A DISTANCE OF 114.31 FEET TO A POINT THAT BEARS SOUTH 86°09'04" WEST A DISTANCE OF 113.88 FEET FROM THE LAST DESCRIBED POINT; THENCE NORTH 88°47'38" WEST A DISTANCE OF 93.57 FEET; THENCE SOUTH 87°28'55" WEST A DISTANCE OF 94.62 FEET TO A POINT ON THE WEST LINE OF PARCEL 2 (CASCADE STATION) AS DESCRIBED ABOVE; THENCE ALONG SAID WEST LINE NORTH 24°55'25" EAST, A DISTANCE OF 8.27 FEET; THENCE LEAVING SAID WEST LINE NORTH 86°03'57" EAST A DISTANCE OF 77.82 FEET; THENCE SOUTH 88°47'48" EAST A DISTANCE OF 122.46 FEET; THENCE ALONG THE ARC OF A 458.25 FOOT RADIUS CURVE TO THE LEFT THROUGH A CENTRAL ANGLE OF 10°51'03" A DISTANCE OF 86.78 FEET TO A POINT THAT BEARS NORTH 85°48'12" EAST A DISTANCE OF 86.65 FEET FROM THE LAST DESCRIBED POINT; THENCE NORTH 75°06'33" EAST A DISTANCE OF 59.79 FEET TO THE POINT OF BEGINNING, CONTAINING 0.38 ACRES MORE OR LESS.

THE BEARINGS IN THIS DESCRIPTION ARE BASED UPON PRIVATE SURVEY NUMBER 57017 (OTAK), MULTNOMAH COUNTY SURVEY RECORDS.



**EXHIBIT A-2**

<p>PORT OF PORTLAND PORTLAND, OREGON</p> <p>REGISTERED PROFESSIONAL LAND SURVEYOR <i>Charles L. Wiley</i> OREGON JULY 24, 1950 CHARLES L. WILEY 2474 EXP: 6/30/2002</p>										<p>DESIGNED BY C. N. BERGSTROM DRAWN BY R. K. ALDERSEBAES CHECKED BY C. M. VANDERWERF DATE JUN 2000 SCALE 1"=100'</p>										<p>RADIO TOWER SITE RADIO TOWER SITE PARCEL 2 / CASCADE STATION MITIGATION SITE</p>									
<p>19990067 DESIGN NUMBER</p>										<p>52086 PROJECT NUMBER</p>										<p>SUBMITTED BY <i>Wiley</i> TYPE EP DRAWING NO. M 2000-2 2/2 C-2</p>									
NO.	DATE	BY	REVISIONS	CKD	APPVD	NO.	DATE	BY	REVISIONS	CKD	APPVD																		

Division of State Lands  
775 Summer Street NE  
Salem, OR 97310  
503-378-3805

Permit No.:	FP-17198
Permit Type:	Fill
Waterway:	Wetland
County:	Multnomah
Expiration Date:	June 18, 2000
Corps No.:	99-632

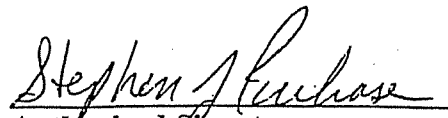
PORT OF PORTLAND

IS AUTHORIZED IN ACCORDANCE WITH ORS 196.800 TO 196.990 TO PERFORM THE OPERATIONS DESCRIBED IN THE ATTACHED COPY OF THE APPLICATION, SUBJECT TO THE SPECIAL CONDITIONS LISTED ON ATTACHMENT A AND TO THE FOLLOWING GENERAL CONDITIONS:

1. This permit does not authorize trespass on the lands of others. The permit holder shall obtain all necessary access permits or rights-of-way before entering lands owned by another.
2. This permit does not authorize any work that is not in compliance with local zoning or other local, state, or federal regulation pertaining to the operations authorized by this permit. The permit holder is responsible for obtaining the necessary approvals and permits before proceeding under this permit.
3. All work done under this permit must comply with Oregon Administrative Rules, Chapter 340; Standards of Quality for Public Waters of Oregon. Specific water quality provisions for this project are set forth on Attachment A.
4. Violations of the terms and conditions of this permit are subject to administrative and/or legal action which may result in revocation of the permit or damages. The permit holder is responsible for the activities of all contractors or other operators involved in work done at the site or under this permit.
5. A copy of the permit shall be available at the work site whenever operations authorized by the permit are being conducted.
6. Employees of the Division of State Lands and all duly authorized representatives of the Director shall be permitted access to the project area at all reasonable times for the purpose of inspecting work performed under this permit.
7. Any permit holder who objects to the conditions of this permit may request a hearing from the Director, in writing, within 10 days of the date this permit was issued.
8. In issuing this permit, the Division of State Lands makes no representation regarding the quality or adequacy of the permitted project design, materials, construction, or maintenance, except to approve the project's design and materials, as set forth in the permit application, as satisfying the resource protection, scenic, safety, recreation, and public access requirements of ORS Chapters 196, 390 and related administrative rules.
9. Permittee shall defend and hold harmless the State of Oregon, and its officers, agents, and employees from any claim, suit, or action for property damage or personal injury or death arising out of the design, material, construction, or maintenance of the permitted improvements.

**NOTICE:** If removal is from state-owned submerged and submersible land, the applicant must comply with leasing and royalty provisions of ORS 274.530. If the project involves creation of new lands by filling on state-owned submerged or submersible lands, you must comply with ORS 274.905 - 274.940. This permit does not relieve the permittee of an obligation to secure appropriate leases from the Division of State Lands, to conduct activities on state-owned submerged or submersible lands. Failure to comply with these requirements may result in civil or criminal liability. For more information about these requirements, please contact the Division of State Lands, 378-3805.

Earle A. Johnson, Manager  
Western Region Field Operations  
Oregon Division of State Lands

  
Authorized Signature

**EXHIBIT B-1**

June 18, 1999  
Date Issued

Page 1 of 4

## ATTACHMENT A

### Special Conditions for Fill Permit No. 17198

1. This permit authorizes the placement of up to 24,328 cubic yards of gravel, sand, and other clean fill in Sections 9, 10, 15 and 16, T1N, R2E (5.77 acres of permanent impact to wetlands) for mixed use commercial complex as outlined in the attached permit application, map and drawings. This permit also authorizes 0.29 acres of temporary impacts to wetlands 58, 64, 66 and 68 for installation of storm sewer lines as presented in a letter dated June 16, 1999 (attached).
2. This permit also authorizes removal and filling activities necessary to complete mitigation actions identified below.
3. Turbidity shall not exceed 10% above natural stream turbidities as a result of the project. The turbidity standard may be exceeded for a limited duration, (per OAR 340-41) provided all practicable erosion control measures have been implemented as applicable, including, but not limited to:
  - use of filter bags, sediment fences, silt curtains, leave strips or berms, or other measures sufficient to prevent offsite movement of soil;
  - use of an impervious material to cover stockpiles when unattended or during a rain event;
  - graveled construction accesses to prevent movement of material offsite via construction vehicles;
  - sediment traps or catch basins to settle out solids prior to water entering ditches or waterways; and
4. An Erosion and Sediment Control Plan shall be submitted to the East Multnomah Soil and Water Conservation District (James Barrett (503) 231-2270) for review and approval prior to filling wetlands. Erosion control measures shall be maintained as necessary to ensure their continued effectiveness, until soils become stabilized.
5. Petroleum products, chemicals, or other deleterious materials shall not be allowed to enter the water.
6. If any archaeological resources and/or artifacts are uncovered during excavation, all construction activity shall immediately cease and the State Historic Preservation Office shall be contacted (Le Gilson, phone: 378-6378, extension 232).

### MITIGATION CONDITIONS

7. The following conditions apply to the mitigation actions as described in the Wetland Mitigation Plan, dated May, 1999 and the addendum dated June 14, 1999. Mitigation for impacts authorized by this permit shall be conducted by enhancement of 17.31 acres within the 93 acre Radio Tower Site. Additional areas within the Radio Towers site shall be enhanced to mitigate for impacts from subsequent fill permits as needed.
8. Mitigation for temporary impacts (0.29 acres) shall consist of re-vegetation immediately following (within 1 week) storm sewer installation. Failure to comply with this condition may result in additional mitigation at the Radio Towers site.
9. Wetland enhancement shall begin in the fall of 1999.
10. A vegetated buffer of an average of at least 25 feet shall be maintained on the periphery of the mitigation site.
11. A planting plan for the buffer area shall be submitted to the division for approval prior to planting.

### MONITORING CONDITIONS

11. The mitigation site shall be monitored for 5 years following planting.
12. A monitoring report shall be submitted annually to the Division of State Lands for a period of five years after planting. The annual report is due December 1 of each year.
13. The monitoring report shall include:
  - a) A site map that shows which 17.31 acres within the Radio Towers site which is covered by this authorization. The site map shall include a schematic drawing of seeding of the various emergent species and the location of the established photo monitoring points.
  - b) Photographs from established, fixed photo monitoring points.
  - c) Percent survival of planted species in the buffer area.
  - d) Percent cover of exotic species canary grass in the wetland area.
  - e) Percent cover of native emergent species in the wetland area.

### CONTINGENCY MEASURES

14. Following receipt of the annual monitoring report, the Division of State Lands, in consultation with the Oregon Department of Fish and Wildlife, shall review the data submitted and the site conditions with the applicant. Necessary measures to ensure achievement of the mitigation objectives will be determined during the monitoring period.
15. At the end of the monitoring period, the mitigation site shall be deemed successful if:
  - a) There is greater than 50% cover of native emergent species in the enhanced wetland area.
  - b) There is less than 30% cover of exotic species.
  - c) There is 80% survival of buffer area plantings.
  - d) 17.31 acres that meet wetland criteria as defined by the Corps of Engineers 1987 Wetland Delineation Manual.
16. A bond in the amount of \$118,000.00 shall be assigned to the Division of State Lands prior to filling any Wetlands. The bond will be released following written determination by the Division that the mitigation was successful at the end of the 5 year monitoring period.
17. Failure to submit annual monitoring reports on the date specified may result in an extension of the monitoring period.
18. If at any time during the monitoring period less than 80% of planted material is observed in the buffer area, the permit holder will replace plantings as directed by the Division.
19. The Division of State Lands retains the authority to require appropriate corrective actions to the mitigation site in the event the enhanced wetlands are not functioning as designed within the monitoring period.
20. The Division of State Lands retains the authority to temporarily halt or modify the project in case of excessive turbidity or damage to natural resources.
21. A conservation easement shall be filed for 17.31 wetland acres at the mitigation site by December 31, 1999. A legal description of the 17.31 acres of wetland referenced in this permit shall be attached to the conservation easement.

June 18, 1999

fo\AttachmentAwest\FP Fill Permits\FP-17198.doc

EXHIBIT B-1

Page 4 of 4

State Lands  
Street NE  
97301-1279  
503-378-3805

Permit No.: FP-21878  
Permit Type: Fill  
Waterway: Wetland  
County: Multnomah  
Expiration Date: May 9, 2001  
Corps No.: 2000-00043


**PORT OF PORTLAND**

IS AUTHORIZED IN ACCORDANCE WITH ORS 196.800 TO 196.990 TO PERFORM THE OPERATIONS DESCRIBED IN THE ATTACHED COPY OF THE APPLICATION, SUBJECT TO THE SPECIAL CONDITIONS LISTED ON ATTACHMENT A AND TO THE FOLLOWING GENERAL CONDITIONS:

1. This permit does not authorize trespass on the lands of others. The permit holder shall obtain all necessary access permits or rights-of-way before entering lands owned by another.
2. This permit does not authorize any work that is not in compliance with local zoning or other local, state, or federal regulation pertaining to the operations authorized by this permit. The permit holder is responsible for obtaining the necessary approvals and permits before proceeding under this permit.
3. All work done under this permit must comply with Oregon Administrative Rules, Chapter 340; Standards of Quality for Public Waters of Oregon. Specific water quality provisions for this project are set forth on Attachment A.
4. Violations of the terms and conditions of this permit are subject to administrative and/or legal action which may result in revocation of the permit or damages. The permit holder is responsible for the activities of all contractors or other operators involved in work done at the site or under this permit.
5. A copy of the permit shall be available at the work site whenever operations authorized by the permit are being conducted.
6. Employees of the Division of State Lands and all duly authorized representatives of the Director shall be permitted access to the project area at all reasonable times for the purpose of inspecting work performed under this permit.
7. Any permit holder who objects to the conditions of this permit may request a hearing from the Director, in writing, within 10 days of the date this permit was issued.
8. In issuing this permit, the Division of State Lands makes no representation regarding the quality or adequacy of the permitted project design, materials, construction, or maintenance, except to approve the project's design and materials, as set forth in the permit application, as satisfying the resource protection, scenic, safety, recreation, and public access requirements of ORS Chapters 196, 390 and related administrative rules.
9. Permittee shall defend and hold harmless the State of Oregon, and its officers, agents, and employees from any claim, suit, or action for property damage or personal injury or death arising out of the design, material, construction, or maintenance of the permitted improvements.

**NOTICE:** If removal is from state-owned submerged and submersible land, the applicant must comply with leasing and royalty provisions of ORS 274.530. If the project involves creation of new lands by filling on state-owned submerged or submersible lands, you must comply with ORS 274.905 - 274.940. This permit does not relieve the permittee of an obligation to secure appropriate leases from the Division of State Lands, to conduct activities on state-owned submerged or submersible lands. Failure to comply with these requirements may result in civil or criminal liability. For more information about these requirements, please contact the Division of State Lands, 378-3805.

Earle A. Johnson, Manager  
Western Region Field Operations  
Oregon Division of State Lands

  
Authorized Signature

**EXHIBIT B-2**  
Page 1 of 5  
May 9, 2000  
Date Issued.



## ATTACHMENT A

Special Conditions for DSL Removal/ Fill Permit Application No. 21878

PLEASE READ AND BECOME FAMILIAR WITH  
CONDITIONS OF YOUR PERMIT.

1. This permit authorizes the placement of up to 21,950 cubic yards of material in Sections 1, 6, 9, and 7, T1N, R1 and 2E, Tax Lot "A" in wetlands, Multnomah County for a Airport Safety Improvement Project. The wetlands proposed for filling include wetlands number 10, 11, 17A, 18, 19, 21, 32, 33, 34, 35, 36, 37, 84, and 104 as shown on the attached application, maps and drawings.
2. **TURBIDITY PREVENTION & LIMITATIONS.** The authorized work shall not cause the turbidity of any affected stream or river to exceed 10 percent above natural turbidity 100 feet downstream of the discharge point. Turbidity shall be frequently monitored during in-water work. Monitoring points shall be 100 feet upstream (representative background), 100 feet downstream, and at the discharge point. A turbidimeter is recommended, however, visual gauging of turbidity is acceptable. Visible turbidity at 100 feet below the discharge would be considered to exceed the standard. The turbidity standard can be exceeded for a maximum of two hours in a 24-hour period provided all practicable erosion control measures have been implemented as applicable, including but not limited to:
  - a. Placing fill in the water using methods that avoid disturbance to the maximum practicable extent;
  - b. Preventing constructed fill and related debris from entering the waterway or its adjacent wetlands by hydroseeding of temporary or permanent disturbances. Additional measures may also be necessary such as filter bags, organic or fabric soil detention systems (silt curtains), leave strips, berms or other measures sufficient to prevent the movement of soil and sediment;
  - c. Using fabric or plastic covers for soil stockpiles that are left idle during rainy seasons;
  - d. Periodic inspections and maintenance of erosion control measures, as necessary, to ensure their continued effectiveness.

EXHIBIT B-2  
Page 2 of 5

- e. Construction access roads and associated staging areas shall be protected with a gravel blanket or other suitable material to protect against erosion of sediments into waterways and wetlands.
  - f. Wetlands adjacent to the construction area are to be flagged or fenced off for protection.
3. This permit also authorizes removal and filling activities necessary to complete mitigation actions identified below.
  4. An Erosion and Sediment Control Plan shall be submitted to the East Multnomah Soil and Water Conservation District (James Barrett (503) 231-2270) for review prior to filling wetlands. Erosion control measures shall be maintained as necessary to ensure their continued effectiveness, until soils become stabilized.
  5. Petroleum products, chemicals, or other deleterious materials shall not be allowed to enter the water.
  6. If any archaeological resources and/or artifacts are uncovered during excavation, all construction activity shall immediately cease and the State Historic Preservation Office shall be contacted (Le Gilson, phone: 378-6378, extension 232).

#### MITIGATION CONDITIONS

7. The following conditions apply to the mitigation actions as described in the Wetland Mitigation Plan, dated December 1999. Mitigation for impacts authorized by this permit shall be conducted by enhancement of 24.75 acres of wetland within the 93 acre Radio Tower Site. Enhancement of 17.31 acres of wetland at the Radio Towers site was included as compensatory mitigation for State permit number FP-17198-Modified, Portland International Center. Additional areas within the Radio Towers site may be enhanced to mitigate for impacts from subsequent fill permits as authorized.
8. Site preparation for the wetland enhancement of the entire 62.3 acres of wetland on the 93 acre Radio Towers site was initiated in summer of 1999. Enhancement activities will continue as planned according to the Mitigation Plan dated December 1999.
9. A vegetated buffer of an average of at least 25 feet shall be maintained on the periphery of the entire 62 acre wetland mitigation site, as proposed in Figure 2, PIC Mitigation Plan, in the Wetland Mitigation Plan.

10. A planting plan for the buffer area shall be submitted to the Division for approval prior to planting.

#### MONITORING CONDITIONS

11. The mitigation site shall be monitored for 5 years following planting.
12. A monitoring report shall be submitted annually to the Division of State Lands for a period of five years after planting. The annual report is due December 1 of each year.
13. The monitoring report shall include:
  - a. A site map that shows the 24.75 acres within the Radio Towers site which is covered by this authorization. The site map shall include a schematic drawing of seeding of the various emergent species and the location of the established photo monitoring points.
  - b. Photographs from established, fixed photo monitoring points.
  - c. Percent survival of planted species in the buffer area.
  - d. Percent cover of exotic species canary grass in the wetland area.
  - e. Percent cover of native emergent species in the wetland area.

#### CONTINGENCY MEASURES

14. Following receipt of the annual monitoring report, the Division of State Lands, in consultation with the Oregon Department of Fish and Wildlife, shall review the data submitted and the site conditions with the applicant. Necessary measures to ensure achievement of the mitigation objectives will be implemented during the following monitoring period.
15. At the end of the monitoring period, the mitigation site shall be deemed successful if:
  - a. There is greater than 50% cover of native emergent species in the enhanced wetland area.
  - b. There is less than 30% cover of exotic species.
  - c. There is 80% survival of buffer area plantings.
  - d. The established 24.75 acres meet wetland criteria as defined by the Corps of Engineers 1987 Wetland Delineation Manual.
16. A bond in the amount of \$185,000.00 shall be assigned to the Division of State Lands prior to filling any Wetlands. The bond will be released following written

EXHIBIT B-2

determination by the Division that the mitigation was successful at the end of the 5-year monitoring period.

17. Failure to submit annual monitoring reports on the date specified may result in an extension of the monitoring period.
18. If at any time during the monitoring period, less than 80% of planted material is observed in the buffer area, the permit holder will replace plantings according to the approved planting plan. Such plantings shall occur during the Port's regular scheduled planting seasons.
19. The Division of State Lands retains the authority to require appropriate corrective actions to the mitigation site in the event the enhanced wetlands are not functioning as designed within the monitoring period.
20. The Division of State Lands retains the authority to temporarily halt or modify the project in case of excessive turbidity or damage to natural resources.
21. A conservation easement shall be filed for 24.75 wetland acres at the mitigation site prior to filling any wetlands. A legal description of the 24.75 acres of wetland referenced in this permit shall be attached to the conservation easement.

May 9, 2000

fo\AttachmentAwestLAS\Fill Permits\FP-21878.doc

## DEPARTMENT OF THE ARMY PERMIT

Permittee: PORT OF PORTLAND

Permit No: 99-00632

Issuing Office: U.S. ARMY CORPS OF ENGINEERS, PORTLAND DISTRICT

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

*Project Description:* Fill 5.77 acres of emergent wetlands for the construction of the Cascade Station project. Temporary impacts to approximately 0.3 acre of wetlands (Site numbers 57, 64, 66, and 68) will occur from the installation of a 72-inch stormsewer pipeline. During installation of the pipeline within wetland sites 64 and 66, at least the upper 12 inches of topsoil will be removed and stockpiled separately from subsurface soils. This topsoil material will be replaced following pipeline installation. For sites 57 and 68, which are jurisdictional drainages, the pipeline will transverse the drainages with no fill being placed. Any fill discharged during construction will be removed and native vegetation planted.

Compensation for permanent wetland impacts will occur at the Radio Tower site and will involve 17.31 acres of enhancement.

*Purpose:* Construction of a mixed-use commercial development.

*Project Location:* Portland International Center (PIC) located adjacent to the Portland International Airport (Sections 9, 10, 15, and 16; T1N; R2E), Portland, Multnomah County, Oregon. The property is bounded by I-205 to the east, 82nd Avenue to the west, Columbia Slough to the south, and Airport Way to the north.

*Drawings:* Ten sheets

### General Conditions:

1. The time limit for completing the work authorized ends on August 31, 2002. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

EXHIBIT B-3  
Page 1 of 5

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions a. through n.:

a. All construction debris shall be disposed of in such a manner that it cannot enter the waterway.

b. When the District Engineer has been notified by a fishery agency that a filling activity is adversely affecting fish or wildlife resources or the harvest thereof, and when the District Engineer subsequently directs remedial measures, the permittee shall comply with such directions as may be received to suspend or modify the activity, to the extent required to mitigate or eliminate the adverse effect.

c. Any ground disturbance activities (scraping, excavating, etc.) within the project area shall be monitored by a professional archaeologist. As required by General Condition 3, work shall be stopped and the Corps of Engineers notified if any cultural resources are identified.

d. Prior to demolition of buildings at the Radio Tower site, an historical evaluation of these buildings shall be conducted to determine their historical significance and eligibility for listing on the National Register of Historic Places.

e. Temporary impacts related to installation of the 72-inch stormsewer pipeline (as described in the letter from the Port of Portland dated June 16, 1999):

1. During installation of the pipeline within wetland sites 64 and 66, at least the upper 12 inches of topsoil will be removed and stockpiled separately from subsurface soils. This topsoil material will be replaced following pipeline installation.

2. For sites 57 and 68: Any fill incidentally discharged during construction activities shall be removed and the banks planted with native vegetation.

3. Restoration of the approximately 0.3 acre pipeline impact area (to include all appropriate erosion control measures) shall occur by November 1, 1999 or within one week of pipeline installation which ever is later.

f. Mitigation shall occur as described in "Port of Portland, Radio Tower Site, Wetland Mitigation Plan", dated May 1999 and the Wetland Mitigation Plan Addendum, dated June 14, 1999. Mitigation for the Cascade Station project involves enhancement of 17.31 acres within the approximately 90 acre Radio Tower site. The Port of Portland's mitigation plan proposes to enhance a total of approximately 62 acres of wetland within the Radio Tower site; excess mitigation will be considered for use in future Port related fill projects.

g. Wetland enhancement of the 17.31 acres shall begin no later than November 1, 1999. Enhancement shall be considered to have started with the mowing and spraying of the mitigation site.

h. A vegetated buffer with an average width of at least 25 feet shall be maintained on the periphery of the entire 62 acre wetland mitigation site.

i. Mitigation Monitoring:

1. The permittee shall provide the Corps of Engineers with a yearly report providing information on the status of the project.

2. For year zero, the year in which the mitigation site is constructed and planted, the permittee shall provide the Corps of Engineers with an as-built mitigation site report. That report shall include as-built plan and cross-section drawings. The report will also include full photographic coverage of the mitigation site from fixed locations.

3. For the first through fifth years after planting of the site (years 1-5) the permittee shall provide the Corps of Engineers with annual mitigation monitoring reports. These reports shall include i) full photographic coverage of the site, ii) percent survival of planted species in the buffer area, iii) percent cover of exotic species, iv) percent cover of native emergent species, v) hydrology information, vi) vegetational transect data, and vii) such other information as may be necessary to substantiate success of the mitigation effort. Sample points (photographic coverage, vegetation transects, hydrology samples, etc.) shall remain constant throughout the monitoring period and shall be clearly indicated on the maps submitted with the report.

4. All reports shall be due by December 1 of each year.

j. Following receipt of the annual monitoring report, the Corps of Engineers, in consultation with the U.S. Fish and Wildlife Service and Environmental Protection Agency, shall review the data and site conditions with the applicant. Measures to ensure achievement of the mitigation objectives shall be implemented during the following monitoring period.

k. At the end of the monitoring period, the mitigation site shall be considered successful if: 1) there is greater than 50 percent cover of native emergent species in the enhanced wetland area, 2) there is less than 30 percent cover of exotic species, and 3) there is 80 percent survival of buffer area plantings.

l. The Permittee shall comply with the conditions of the Water Quality Certification issued by the Oregon Department of Environmental Quality. A copy of the certification is attached to this permit.

m. A conservation easement shall be filed for the 17.31 acre mitigation site by December 31, 1999.

n. Any necessary project modifications within the regulatory authority of the Corps of Engineers shall be reported; written approval from the Corps of Engineers is required prior to implementation of any such project modification. Significant deviations from the permit drawings will be considered a project modification and as such will require Corps of Engineers approval prior to implementation.

#### Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- Section 404 of the Clean Water Act (33 U.S.C. 1344).
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.



6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

*John P. Brockley*  
(PERMITTEE SIGNATURE) Port of Portland

8/13/99  
(DATE)

John P. Brockley  
(PRINTED NAME)

Director of Aviation  
(TITLE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

*Karl Kuebach*  
(DISTRICT ENGINEER)  
FOR  
Randall J. Butler  
Colonel, Corps of Engineers  
District Engineer

August 13, 1999  
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFeree)

\_\_\_\_\_  
(DATE)

FISHMAN ENVIRONMENTAL SERVICES

**MITIGATION TASKS - 1999/2000  
RADIO TOWER WETLAND MITIGATION PROJECT**

TASK	STATUS
Install groundwater monitoring tubes in wetland area	completed 6/99
Weekly monitoring of groundwater/surface water levels	on-going (initiated 6/99)
Obtain small-scale color air photo of site for 1999 baseline conditions	flown 7/5/99; photo @ 1" = 100'
Assess baseline wetland vegetation monitoring with five transects	7/7/99
Reed canarygrass mowed to ground level	completed 7/99
Reed canarygrass sprayed with herbicide (Rodeo)	completed 9/16/99
Install small trial plantings of sedge and wapato in ditch and outflow-pond areas	10/2/99
Conduct baseline plant inventories of wetland area	7/99 - 10/99
Blackberries mowed on site's upland areas	completed 10/18/99
Staff gages installed for recording surface water levels in wetland and drainageways	11/2/99
Site purchase transaction completed by Port	completed 12/99
Install on-site rain gage	completed 1/00
Cutting blackberry thickets along northern wetland boundary	completed 2/00
Installation of willow cuttings along south wetland property boundary	completed 3/00
Trial installation of dogwood cuttings at western upland	completed 3/00
Perform ground elevation survey check	completed 3/00
Establish permanent photo monitoring points	completed 3/00
Trial installation of soft-stem bulrush in tower depression area	completed 4/00
Perform overall site vegetation survey	completed 5/00
Annual site air photo	anticipated July 2000
Hydrologic modeling of site performed by MCDD	anticipated summer 2000
Installation of north-side access gate	anticipated summer 2000
Overflow pipe installation at southwest corner	anticipated summer 2000

EXHIBIT C

Additional mowing & herbicide spraying of reed canarygrass	anticipated summer/fall 2000
Additional upland mowing & herbicide spraying of uplands	anticipated summer/fall 2000
Discing of reed canarygrass wetlands*	anticipated fall 2000
Removal of radio transmission towers*	September/October 2000
Establishment of permanent vegetative monitoring transects	anticipated fall 2000
Begin controlled flooding of site wetlands	fall/winter 2000

\* current tenant lease expires August 24, 2000

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