

APPENDICES

APPENDIX A

AIR QUALITY AND CLIMATE MEMO



memorandum

date June 13, 2018
to Peter Murphy, P.E., Century West Engineering
cc Project file
from Luke Johnson and Susan Cunningham, Environmental Science Associates
subject Aurora State Airport Air Quality and Greenhouse Gas Emissions (Task 4.1)

The Aurora State Airport (UAO or “the Airport”), owned and operated by the Oregon Department of Aviation (ODA), proposes two improvements at the apron and approach of Runway 17-35 as part of its Capital Improvement Plan (CIP) Phase II (2017 – 2021). These projects will be funded by the Federal Aviation Administration (FAA) and therefore must comply with the requirements of the National Environmental Policy Act (NEPA). The proposed improvements include:

- ***Work Item 2018-1 Construct Runway 17 run-up apron***
- ***Work Item 2018-2 Remove obstructions (trees) in the Runway 17-35 approach and transitional surfaces***

The purpose of this memorandum is to review regional air quality regulations by Oregon Department of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA) and to identify potential concerns and mitigation options for air quality and greenhouse gas (GHG) emissions impacts.

STUDY AREA

The Airport is located on 144 acres of land approximately one mile northwest of the city center of Aurora, between Highway 551 and Airport Road NE. The legal location of the Airport is Section 2, Township 3, Range 1 West in Marion County, Oregon. Surrounding land use consists primarily of agricultural uses and plant nurseries with pockets of residential areas and commercial businesses. The Airport is designated as a “Community General Aviation” airport, accommodating a variety of aircrafts from Portland and other communities in the Willamette Valley.

CONTEXT

Exhibit 4-1 of FAA Order 1050.1F provides the FAA’s significance thresholds for Air Quality: the action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the EPA under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations. The Clean Air Act is a federal law designed to control air pollution and

is implemented by the EPA on a national level. Oregon DEQ implements these air quality standards on a statewide level.

FINDINGS

AIR QUALITY

The Aurora Airport and surrounding areas are not located within a NAAQS Non-Attainment or Maintenance area for the State. In addition, the EPA Air Quality Index (AQI) rates the average air quality within the Airport vicinity as “good”.

Work Item 1 and Work Item 2 may involve an increase in short-term emissions for construction, but would not have a long-term impact on air quality. Construction of a run-up apron and obstruction removal may result in a localized, short-term reduction in air quality due to emissions from vehicles and equipment used to pour asphalt and remove the tree obstructions. Work Item 1 would involve equipment that is typical for a pavement project, such as graders, asphalt, rollers, and asphalt trucks. Work Item 2 would involve equipment typical of that used for cutting and removing trees from a site, such as chainsaws, masticators, grinders, forwarders/skidders, harvester-processors, and log trucks. Air quality impacts from construction activities would be temporary in nature and limited in duration to periods when equipment/vehicles are operating. Such impacts are not expected to be significant with respect to DEQ criteria for pollutants, based on the existing good air quality conditions of the area.

On May 23, 2018 DEQ Air Quality Program Western Region contact, Patty Hamman, was consulted for comments on the proposed projects at the Airport. DEQ determined the only air concerns would likely be airborne dust traveling off site from the removal of trees, if chipped on site, and odors associated with new asphalt paving for the apron. These projects would not exceed any of the NAAQS, as established by EPA. Per DEQ recommendations, Best Management Practices (BMPs) to manage fugitive dust and asphalt odors will be implemented during the excavation, construction, and paving processes.

CLIMATE

Construction of the north run-up apron and the obstruction removal would cause short-term, localized increases in Greenhouse Gas (GHG) emissions from vehicles and equipment used in the tree obstruction removal. The proposed projects would neither change the airport layout or aircraft circulation patterns on the airport, nor increase aircraft traffic or emissions from aircraft, ground support equipment/vehicles, or stationary sources. Therefore, it is not expected that there would be an increase in GHG emissions in the long-term.

APPENDIX B

BIOLOGICAL RESOURCES

AURORA STATE AIRPORT RUN-UP APRON Biological Assessment

Prepared for
Century West Engineering and Oregon
Department of Aviation

June 2019



AURORA STATE AIRPORT RUN-UP APRON

Biological Assessment

Prepared for
Century West Engineering and Oregon
Department of Aviation

June 2019

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EXECUTIVE SUMMARY

Oregon Department of Aviation (ODA) proposes to construct a run-up apron at the northeast end of the Aurora State Airport (Airport) parallel to Taxiway A for safety purposes and to enhance capacity and traffic flow. The Airport is located on 144 acres about 22 miles south of Portland; 2.5 miles south of the Interstate 5 (I-5) Exit 282A; and 1.5 miles north / northwest of the City of Aurora. The purpose of a run-up apron is to allow pilots to safely perform last-minute checks on aircraft prior to takeoff. This may include checking engine power or flight instrumentation.

The project would generate 0.36 acres of new impervious surface and proposes to treat run-off for water quality and quantity according to Standard Local Operating Procedures (SLOPES) V. Treated stormwater would ultimately discharge to Deer Creek, which is in the Molalla River/Pudding River watershed and designated critical habitat for Upper Willamette River (UWR) Chinook salmon and steelhead, both listed as threatened under the federal Endangered Species Act.

The Action Area for this project includes the project footprint (including construction access and staging areas), and the following streams anticipated to receive stormwater runoff from the project: Deer Creek, Senecal Creek, Mill Creek, Pudding River, and the Molalla River to the confluence with the Willamette River located approximately at river mile 36.

Measures to avoid and minimize impacts to listed species include, but are not limited to:

1. A stormwater management plan consistent with SLOPES V would be prepared for the project.
2. Erosion and sediment controls (ESCs) would be implemented and may include silt fencing, inlet protection, and street sweeping to minimize the mobilization of sediments.
3. Best practices outlined in the 2018 Stormwater Pollution Control Plan prepared for Aurora Airport would be implemented.
4. No construction would occur in streams or in riparian areas.

Because of the limited amount of new impervious surface (0.36 acre); the proposed stormwater swales would meet SLOPES V for water quality and quantity and provide up to 40 percent infiltration; and the fact that the proposed project would address current safety issues and not increase the volume of air traffic, the effect determination for the project on UWR Chinook and steelhead is: ***May Affect, Not Likely to Adversely Affect***. The effect determination for the project on Essential Fish Habitat (EFH) for Pacific salmon is: ***May Affect, Not Likely to Adversely Affect***.

The following species under the jurisdiction of the U.S. Fish and Wildlife Service are excluded from analysis in this BA because they are not present in the Action Area and the project would have no effect on them: northern spotted owl, streaked horned lark, Fender's blue butterfly, Bradshaw's desert parsley, golden paintbrush, Kincaid's lupine, Nelson's checkermallow, water howelia, and Willamette daisy.

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Acronyms and Abbreviations

Airport	Aurora State Airport
BA	Biological Assessment
cf	cubic feet
CFR	Code of Federal Regulations
CIA	contributing impervious area
Corps	U.S. Army Corps of Engineers
DO	dissolved oxygen
DPS	distinct population segment
EFH	essential fish habitat
ESA	Endangered Species Act
ESC	erosion and sediment control
ESU	evolutionarily significant unit
FAA	Federal Aviation Administration
FR	Federal Register
I-5	Interstate 5
LAA	Likely to Adversely Affect
msl	mean sea level
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
OHWM	ordinary high water mark
ORBIC	Oregon Biodiversity Information Center
PAHs	polycyclic aromatic hydrocarbons
PCE	primary constituent element
SLOPES	Standard Local Operating Procedures
TMDL	Total Maximum Daily Load
UWR	Upper Willamette River
WM	Willamette Meridian

1. INTRODUCTION

1.1 Background and Consultation History

This Biological Assessment (BA) evaluates the potential effects of the Aurora State Airport Run-Up Apron Project (the project) on fish species listed under Section 7 of the federal Endangered Species Act (ESA) of 1973, as amended. The proposed action requires approval from the Federal Aviation Administration (FAA), which is the lead federal agency for ESA consultation.

The Aurora State Airport (Airport) covers 144 acres in the Willamette Valley and is owned and operated by the Oregon Department of Aviation (ODA). The Airport was originally built by the United States Army Air Forces in 1943 and was later closed and turned over to the state after World War II. Today the Airport is the third busiest airport in Oregon and is home to over 260 daily aircraft operations. The Airport is identified as a public use General Aviation Airport in the National Plan of Integrated Airport System (NPIAS) defined by FAA and a Category II – Urban General Aviation Airport in the Oregon Aviation System Plan (OASP).

This BA was developed using existing information from Century West Engineering, the Oregon Biodiversity Information Center (ORBIC), StreamNet, species lists and information from the National Oceanic and Atmospheric Administration (NOAA) Fisheries website, literature reviews, and recent field studies. NOAA Fisheries has not been contacted to date regarding this project. Environmental Science Associates conducted site visits in March, April, June and July 2018 to delineate wetlands and document general habitat conditions to inform the BA analysis.

1.2 Project Location

The proposed project would occur in the northeast portion of the Airport. The Airport entrance is on Stenbock Way NE, located 0.25 miles east of the of State Highway 551. The Airport is about 22 miles south of Portland; 2.5 miles south of the Interstate 5 (I-5) Exit 282A; and 1.5 miles north / northwest of the City of Aurora (Figure 1, Appendix A). ODA owns a majority of the project site, which consists of tax lots of 41W02A00700, 41W02A00501, 41W02A90016, 41W02A90000, 41W02D00100, and 41W02D00200 (Figure 2, Appendix A), but would need to acquire a portion of 41W02A00500 for the project. The centroid of the parcel is approximated at 42.253635 North and -122.767793 West.

2. PROJECT DESCRIPTION

2.1 Site Description

The project area consists of a portion of the northeast end of the airport along Taxiway A (Figure 2, Appendix A). The project area is generally bound to the west by Runway 17-35, to the north by Taxiway A1, to the east by airplane T-hangars and access roads, and to the south by Taxiway A3 (Figure 2, Appendix A).

The terrain of the project area is relatively flat with elevations averaging 195 feet above mean sea level. The highest elevation at the Airport is west of the project area on Runway 17-35 at 199 feet. The lowest elevations at the Airport and in the project area are located at the bottom of stormwater swales that convey runoff from the north portion of Airport property to facilities west of the runway.

Cover types in the project area include: mowed infields, vegetated stormwater swales, gravel, pavement and airport structures. Refer to the photo page in Appendix B for a depiction of typical ground conditions. The infields consisted of mowed grass and weedy herbs including tall fescue (*Schedonorus arundinaceus*), white clover (*Trifolium repens*), English plantain (*Plantago lanceolata*), and hairy cat's ear (*Hypochaeris radicata*).

The stormwater swales within the project area were delineated in March 2018 (ESA 2018). The Department of State Lands concurred with the findings that despite meeting wetland criteria, the swales were artificially created for the purpose of collecting and conveying runoff (DSL 2018). During site investigations, the stormwater swale north of taxiway A1 was densely vegetated with reed canarygrass (*Phalaris arundinacea*) and meadow foxtail (*Alopecurus pratensis*) with little to no open water. In contrast, the swale south of Taxiway A1 was more sparsely vegetated with grasses and rushes and contained large areas of open water up to 12 inches deep (photo page, Appendix B).

Land use adjacent to the Airport property consists of a mix of transportation corridors, agriculture fields, and commercial and residential development. Current operations adjacent to the project area include active taxiways, runways, access roads, parking lots, and airfield operations buildings. The Airport property is zoned by Marion County as a Public (P) zone. Refer to Appendix C for a depiction of existing conditions.

Nearby fish-bearing streams include the Pudding River, approximately 1 mile east of the proposed project, and Deer Creek, just under a mile west of the project area (Figure 3, Appendix A). Deer Creek joins Senecal Creek which flows into Mill Creek, and in turn enters the Pudding River about 2 miles south of the Airport. The Pudding River is a tributary of the Molalla River which joins the Willamette River at river mile 36 within the Molalla River State Park.

Stormwater from the project area as well as from the north and east is collected in the vegetated swales located west of Taxiway A and then piped to a vegetated swale just east of Boones Ferry Road (Figure 6, Appendix A). Ultimately, stormwater from the project area enters the Pudding River basin via an unnamed tributary to Deer Creek (Figure 6, Appendix A). Neither the Unnamed Tributary to Deer Creek,

Deer Creek, nor Senecal Creek is mapped as Essential Salmonid Habitat (ESH) (DSL, 2019). Mill Creek, the Pudding River and the Molalla River are mapped as ESH.

2.2 Project Summary

ODA proposes to construct a run-up apron at the northeast end of the airport parallel to Taxiway A for safety purposes and to enhance capacity and traffic flow (Figure 4, Appendix A). The project would involve adjusting the property line on tax lot 41W02A00500 to construct the run-up apron. The need for a run-up apron in this location was identified in the Airport Master Plan update (WH Pacific 2012). The purpose of a run-up apron is to allow pilots to safely perform last-minute checks on aircraft prior to takeoff. This may include checking engine power or flight instrumentation.

Without the availability of a run-up area for Runway 17, aircraft performing pre-flight checks must sit on Taxiway A, effectively blocking aircraft from exiting Runway 17 onto Taxiway A and creating unsafe conditions. Existing apron areas at the airport are located on both ODA and privately owned property and support a variety of uses including aircraft parking, fueling and FPO operations, but none is located close to Runway 17. Construction of a new run-up area would allow aircraft to perform run-up operations in a consistent location and to park off of Taxiway A, allowing other aircraft to pass by safely and continual usage of Taxiway A for aircraft taxiing on and off of the runway. Currently pilots are instructed to run-up at various areas on the airport including aprons, taxiways and taxilanes. The locations for the pilots to perform their run-up are not consistent and can lead to confusion. In addition, performing run-up operations in non-designated areas may cause the blocking of other traffic and may be a safety hazard.

Major project elements include the following:

- ***New pavement area*** – The proposed apron would be designed to FAA ADG II aircraft design standards. New pavement would be constructed along the east side of existing Taxiway A to accommodate the new run-up area.
- ***New Lighting and Signage*** – The proposed run-up area would require new edge lighting and signage that would tie into the existing Taxiway A edge lighting and current signage configuration.
- ***Storm Water Facilities*** - The proposed run-up area would require the construction of storm water facilities to manage runoff from additional impervious surface created. Treatment facilities would be designed to meet SLOPES V and would provide up to 40 percent infiltration. Final design is planned for 2020.

2.3 Construction Activities and Schedule

The proposed run-up apron would be designed in 2020 and constructed over 6 months in 2021. The precise timing has not been identified, but construction would likely occur during the dry season from May to October. Construction access, staging and stockpiling would occur on existing pavement. The types of equipment anticipated for use during construction include: front end loaders, excavators, dump trucks, graders, asphalt pavers, rollers, and pickup trucks. Materials that require removal from the project

area (i.e. sod or pavement) would be hauled off-site by the contractor and disposed of at an approved location.

2.4 Stormwater

Earthwork for the project would occur in stormwater drainage basins No. 1 and 2, which collectively drain 67.3 acres including 37.2 acres of impervious area (Figure 5, Table 1). New impervious surface proposed for the project is 0.46 acre with 0.10 acre proposed for removal, for a net new impervious surface area of 0.36 acre (Table 1). The 0.10 acre of existing pavement proposed for removal would be seeded with a low-growing turf grass mix.

TABLE 1: PRE - AND POST-CONSTRUCTION IMPERVIOUS AREAS OF THE RUN-UP APRON PROJECT AND PROPOSED STORMWATER TREATMENT FACILITY

Contributing Impervious Areas	Acres				Proposed Stormwater Treatment
	Existing	Removed	New	Total Post-Construction	
Run-up apron project area – Basins No. 1 and 2	37.2	0.10	0.46	37.56	Swale to be designed per SLOPES V*

*A stormwater management plan would be prepared along with final design of the run-up apron.

Stormwater facilities proposed for the project would be designed according to best practices defined in Standard Local Operating Procedures (SLOPES) V for Stormwater, Transportation or Utilities (NMFS, 2014a). Although no U.S. Army Corps of Engineers (Corps) permit would be needed for the project, SLOPES V stormwater guidelines are considered the best available science for addressing water quality and quantity treatment. Proposed treatment per SLOPES V would consist of the following:

- a. **Water quality (pollution reduction) treatment for post-construction stormwater runoff from all contributing impervious area.** Pollutants of concern for the site include oils, grease, sediment, and heavy metals (e.g., copper and zinc).
- b. **Water quantity treatment (retention or detention facilities).** Retention or detention facilities must limit discharge to match pre-developed discharge rates (i.e., the discharge rate of the site based on its natural groundcover and grade before any development occurred) using a continuous simulation for flows between 50 percent of the 2-year event and the 10-year flow event (annual series).

Stormwater treatment proposed for the site would likely include three vegetated swales adjacent to the proposed run-up apron (Table 2). While the characteristics of the proposed stormwater facility are in draft form, the facilities would be designed to treat water quality and quantity according to SLOPES V. Side slopes are anticipated to be at a 4H:1V ratio.

ODA would maintain the proposed stormwater facility. In general, ODA would clear the facility of debris and trash and inspect it under both wet and dry conditions to ensure proper operations.

Treated stormwater from the proposed facility would be discharged into the existing stormwater system for the Airport. Soils in the study area are classified as Amity silt loam, 0 to 3 percent slopes, somewhat

poorly drained (NRCS, 2019). Based on the mapped soil type and flat slopes, approximately 40 percent of stormwater runoff is expected to infiltrate into the soils on site (Century West Engineering, 2019).

The treated stormwater would be piped to a vegetated swale just east of Boones Ferry Road for additional treatment and detention (Figure 6) and ultimately discharged to an unnamed tributary of Deer Creek, which is a tributary to Senecal Creek/Mill Creek and the Pudding River.

TABLE 2: DESIGN CHARACTERISTICS OF THE PROPOSED STORMWATER TREATMENT FACILITY

Location	Design Length (feet)	Max. Side Slopes	Detention (cf)
Stormwater swales adjacent to the proposed run-up apron	100 (two swales) and 150 (one swale)*	4H:1V	TBD*

*The proposed facility would meet design standards of SLOPES V.

2.5 Avoidance and Minimization Measures

The following list summarizes the measures incorporated into the project to avoid and minimize impacts on the environment and Endangered Species Act-listed species and habitat during construction and post-construction.

- A stormwater management plan consistent with SLOPES V would be prepared for the project.
- Erosion and sediment controls (ESCs) would be implemented and may include silt fencing, inlet protection, and street sweeping to minimize the mobilization of sediments.
- Best practices outlined in the 2018 Stormwater Pollution Control Plan prepared for Aurora Airport would be implemented.
- No construction would occur below the ordinary high water mark (OHWM) of any waterbody or in riparian areas.
- Work areas would be confined to the minimum area needed to complete the work.
- Construction vehicles and equipment would be stored, fueled, and maintained on designated areas on-site or on nearby paved areas adjacent to the site.
- Haul routes would use the existing road system to the extent feasible.
- All disturbed areas would be restored by seeding and/or topsoil to stabilize exposed soils.

2.6 Action Area

The Action Area addressed in this BA encompasses all areas affected directly or indirectly by the proposed project. The Action Area for this project includes the project footprint (including construction access and staging areas), and the following streams anticipated to receive stormwater runoff from the project: Deer Creek, Senecal Creek, Mill Creek, Pudding River, and the Molalla River to the confluence with the Willamette River. The Action Area was determined based on the extent of measurable effects

from the dispersion of contaminants associated with stormwater discharge in the Molalla River/Pudding River watershed due to the proposed project.

3. STATUS/PRESENCE OF LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

A list of Endangered Species Act-protected species was obtained from the NOAA Fisheries website (Appendix D). This list was reviewed along with other records to determine the potential presence of Endangered Species Act-listed fish species in the Action Area (Table 3). Records reviewed include StreamNet, Federal Register (FR) rulings, and watershed assessment reports (Adolfson Associates 2006, ABR, Inc. 2003).

Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*) evolutionarily significant unit, or ESU, includes naturally spawned spring-run Chinook salmon originating from the Clackamas River and from the Willamette River and its tributaries above Willamette Falls. This ESU also includes spring-run Chinook salmon from six artificial propagation programs:

- McKenzie River Hatchery Program (Oregon Department of Fish and Wildlife (ODFW) Stock #23)
- Marion Forks Hatchery/North Fork Santiam River Program (ODFW Stock #21)
- South Santiam Hatchery Program (ODFW Stock #24) in the South Fork Santiam River and Mollala River
- Willamette Hatchery Program (ODFW Stock #22)
- Clackamas Hatchery Program (ODFW Stock #19)

Upper Willamette River (UWR) steelhead (*Oncorhynchus mykiss*) distinct population segment, or DPS, includes naturally spawned anadromous winter-run steelhead originating below natural and manmade impassable barriers from the Willamette River and its tributaries upstream of Willamette Falls to and including the Calapooia River.

Critical habitat for UWR Chinook and steelhead was designated on September 2, 2005 and includes Senecal Creek, Mill Creek, Pudding River, and the Molalla River in the Action Area. Deer Creek in the Action Area is not listed as critical habitat. StreamNet maps the Molalla River, Pudding River and Mill Creek in the Action Area as rearing and migration habitat for UWR Chinook and steelhead. Within these areas, the primary constituent elements (PCEs) essential for the conservation of these ESUs are those sites and habitat components that support one or more life stages, relevant to the Action Area include:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
- Freshwater rearing sites with:
 - Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;
 - Water quality and forage supporting juvenile development; and
 - Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic

vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

TABLE 3: ESA-LISTED SPECIES UNDER NOAA FISHERIES JURISDICTION THAT MAY OCCUR IN THE ACTION AREA

Species Common Name (Scientific Name) and ESU or DPS	Federal ESA Listing and Critical Habitat Status
Chinook salmon (<i>Oncorhynchus tshawytscha</i>), Upper Willamette River ESU	Listed as Threatened June 28, 2005 (70 FR 37160). Critical Habitat was Designated September 2, 2005 (70 FR 52630). Senecal Creek, Mill Creek, Pudding River and Molalla River are considered Critical Habitat. Threatened determination was re-issued on April 14, 2014 (79 FR 20802).
Steelhead (<i>Oncorhynchus mykiss</i>), Upper Willamette River DPS	Listed as Threatened January 5, 2006 (71 FR 834). Critical Habitat was Designated September 2, 2005 (70 FR 52630). Senecal Creek, Mill Creek, Pudding River and Molalla River are considered Critical Habitat. Threatened determination was re-issued on April 14, 2014 (79 FR 20802).

Adult Chinook salmon enter the Willamette River between January and April and ascend Willamette Falls from April to August (ODFW and NMFS 2011). After entering the Molalla River/Pudding River subbasin, adults seek deep pools with cooler water and “hold” through the summer. Currently, spawning occurs from late August to early October with peak spawning in September (ODFW and NMFS 2011). Historically, the spawning period for Chinook salmon was thought to begin in July and extend through October (ODFW and NMFS 2011). Spawning occurs in gravels of larger headwater streams with fry emerging from December to March, sometimes as late as June. Juvenile UWR Chinook will rear in the larger tributaries of the Molalla River/Pudding River watershed and in the mainstem Willamette River. Juvenile Chinook can spend up to 12 to 14 months in freshwater, sometimes 2 to 5 months (ODFW and NMFS 2011).

Because of the historic influence of the Willamette Falls preventing passage during low summer and fall flows, the UWR steelhead run typically begins in the lower Willamette River in January to April, with adults passing the falls from mid-February to mid-May (ODFW and NMFS 2011). UWR steelhead typically migrate farther upstream compared with UWR Chinook and spawn in smaller, higher gradient streams from March through June (ODFW and NMFS 2011). Repeat spawners, typically females, will spend up to a year post-spawning in the ocean and return to natal streams the following spring. Juvenile UWR steelhead can spend anywhere from one to 4 years in headwater tributaries or upper portions of subbasins prior to smoltification in April and May. Juveniles generally out-migrate quickly through the Willamette River and Columbia River to the Pacific Ocean (ODFW and NMFS 2011).

3.1 Species Excluded from the BA Analysis

The following species under the jurisdiction of the U.S. Fish and Wildlife Service are excluded from analysis in this BA because they are not present in the Action Area and the project would have no effect on them: northern spotted owl, streaked horned lark, Fender's blue butterfly, Bradshaw's desert parsley, golden paintbrush, Kincaid's lupine, Nelson's checkermallow, water howelia, and Willamette daisy. Refer to the no effect letter prepared for this project for more details (ESA, 2019).

4. ENVIRONMENTAL SETTING

The environmental setting is described for the Molalla River/Pudding River watershed where stormwater effects are anticipated to have the greatest effects on fish habitat. The project area is in the lower Pudding River and Molalla River watershed which covers 786 mi.² in the mid-Willamette Valley. Major cities and towns in the watershed include Salem, Woodburn, and Canby. Major tributaries of the Pudding River include Rock Creek, Butte Creek, Abiqua Creek, Silverton Creek and the Little Pudding River. In addition to the Pudding River, major tributaries of the Molalla River include Milk Creek.

Fish habitat is degraded in the Molalla River/Pudding River watershed due to a combination of factors including agricultural practices, forestry practices, roads and road crossings, and residential, commercial and industrial development. Poor water quality and quantity as well as altered channel habitat conditions limit salmon production in the basin (ABR 2003). Water temperatures in the lower Molalla River regularly exceed water quality standards (64 degrees F) in the summertime (ABR 2003). Additionally, biological integrity is considered severely impaired in the Molalla River approximately 1 mile upstream of the Pudding River confluence (ABR 2003).

UWR Chinook and steelhead runs in the Molalla River/Pudding River watershed are substantially lower than historic levels. The number of Chinook salmon currently returning is less than 10,000 compared with the approximately 300,000 wild spring Chinook that used to return to the upper Willamette basin (ODFW and NMFS 2011). The UWR steelhead run is estimated at about 5,000, which is down from 25,000 historically.

The Oregon Department of Environmental Quality (ODEQ) lists the following stream segments as water quality limited and in need of a Total Maximum Daily Load (TMDL) (Table 4).

TABLE 4: CATEGORY 5 STREAM SEGMENTS: WATER QUALITY LIMITED AND IN NEED OF A TMDL

Stream Segment	Parameter
Mill Creek (tributary to the Pudding River), river mile 0 to 12.5	Arsenic
	Biological criteria
Molalla River, river mile 0 to 48.2	Lead
Pudding River, river mile 0 to 35.4	Biological criteria
	Guthion (toxic substance)
	Lead

Source: ODEQ 2012.

A summary of the environmental baseline conditions in the Molalla River/Pudding River watershed is presented in Table 5.

TABLE 5: ENVIRONMENTAL BASELINE CONDITIONS AND EFFECTS OF THE ACTION

Pathways Indicators	Environmental Baseline			Effects of the Action		
	Properly Functioning	At Risk	Not Properly Functioning	Restore	Maintain	Degrade
Water Quality						
Temperature			X		X	
Dissolved oxygen			X		X	
Heavy metals (chemical contamination)			X		X	
Habitat Access						
Fish passage		X			X	
Habitat Elements						
Substrate embeddedness			X		X	
Large woody debris total		X			X	
Large woody debris key pieces		X			X	
Pool frequency		X			X	
Pool quality		X			X	
Off channel habitat			X		X	
Channel Condition & Dynamics						
Stream bank condition			X		X	
Floodplain connectivity			X		X	
Flow / Hydrology						
Flow regime change			X		X	
Water quantity			X		X	
Basin Conditions						
Biological processes			X		X	
Riparian canopy closure		X			X	

Source: Table populated by Environmental Science Associates

5. EFFECTS OF ACTION

5.1 Direct Effects

The project would not involve work in or adjacent to fish-bearing streams and would not include the removal of riparian vegetation. The project area is just under 1 mile from the nearest fish-bearing stream, Deer Creek, and no direct adverse impacts on listed fish would occur.

5.2 Indirect Effects

Indirect effects from the proposed run-up apron include the potential for sedimentation and erosion of downslope fish-bearing waters during construction, and the potential for an increase in stormwater runoff from new impervious surface to degrade fish-bearing streams. New impervious surface for the project would net 0.36 acres but the project would not result in an increase in air traffic as the run-up apron is intended to address safety issues on the airfield.

The potential for erosion increases substantially during construction when groundcover is removed from a site. To prevent sediment-laden runoff from reaching downstream fish-bearing waters, ESCs would be implemented and maintained for all phases of the proposed development.

Proposed new impervious surface has the potential to increase the amount of runoff entering surface waters and negatively affect the water quality of fish habitat, which could in turn reduce the fitness of protected fish species and lead to reduced productivity. Both the quantity and quality of stormwater runoff from development can have detrimental effects on the aquatic life of surface waters. Stormwater runoff from impervious surfaces contains a variety of pollutants including metals (e.g., copper and zinc), petroleum-related compounds (polycyclic aromatic hydrocarbons [PAHs]), and sediment (Kayhanian et al., 2003). These pollutants can have lethal and sublethal effects on salmon, including disrupted behavior, reduced olfactory function, and cellular damage (LCREP, 2007). Contaminants can also attach to sediments and travel long distances in aquatic systems. Despite the potential adverse effects of new impervious surface, the project would not increase the volume of air traffic, but is designed to address existing air traffic safety issues.

Measures to reduce the concentration of metals and other pollutants in stormwater include filtration, adsorption, and bioaccumulation in plants. The project would treat 0.36 acre of new impervious surface from the proposed run-up apron in three vegetated stormwater swales according to SLOPES V and would receive additional treatment and detention in an existing 400-foot vegetated swale. Based on the mapped soils in the study area and flat slopes, up to 40 percent infiltration of runoff is anticipated to be achieved. Because of the limited amount of new impervious surface, the proposed stormwater treatment, and type of project (safety improvements), the project is not anticipated to adversely affect UWR Chinook salmon, UWR steelhead and critical habitat.

5.3 Effects from Interrelated and Interdependent Actions

An interdependent activity is an activity that has no independent utility apart from the proposed action (50 Code of Federal Regulations [CFR] 402.02). An interrelated activity is an activity that is part of a larger action and depends on the larger action for its justification (50 CFR 402.02).

The proposed action is constructing a run-up apron primarily to address safety issues along Taxiway A. The project is not part of a larger action or series of actions that depend on the proposed run-up apron for justification.

5.4 Cumulative Effects

Cumulative effects are those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the Action Area of the federal action subject to consultation (50 CFR 402.02).

Any future projects at the Airport that may affect listed fish would dependent on federal grant funding, and each would be subject to federal ESA consultation requirements, as necessary. No private or state projects have been identified for the Action Area, and no cumulative effects are anticipated.

6. EFFECTS DETERMINATIONS

The following effects determinations are made for the Aurora State Airport Run-Up Apron Project:

UWR Chinook Salmon, UWR steelhead and Critical Habitat:

May Affect, Not Likely to Adversely Affect (NLAA)

The project **may affect** UWR Chinook salmon, UWR steelhead and critical habitat because:

- The project would add 0.36 acre of new impervious surface to the Molalla River/Pudding River watershed that supports spawning, rearing, and migration habitat for Chinook salmon and steelhead as well as other non-federally listed fish species.

The project is **not likely to adversely affect** UWR Chinook salmon, UWR steelhead and critical habitat because:

- A limited amount of new impervious surface (0.36 acre) is proposed;
- Proposed stormwater swales would meet SLOPES V for water quality and quantity and provide up to 40 percent infiltration; and
- The proposed project would address current safety issues and not increase the volume of air traffic.

7. ESSENTIAL FISH HABITAT ASSESSMENT

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires federal agencies to consult with NOAA Fisheries on activities that may adversely affect essential fish habitat (EFH). Essential fish habitat is defined in the Magnuson-Stevens Act as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

The objective of this EFH assessment is to determine whether or not the proposed action “may adversely affect” designated EFH for relevant commercially, federally managed fisheries species within the Action Area. Adverse effects occur when EFH quality or quantity is reduced by a direct or indirect physical, chemical, or biological alteration of the waters or substrate, or by the loss of (or injury to) benthic organisms, prey species in their habitat, or other ecosystem components. Conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects on designated EFH resulting from the proposed action are described in Section 2.5 of this report.

The effects of the proposed action on EFH are similar to those described in the ESA portion of this document. Based on the analysis of effects presented, no negative effects on EFH designated for Pacific salmon are anticipated. Refer to Table 6 for a summary of EFH determinations.

TABLE 6: EFH DETERMINATION

Fishery Management Plan	Is EFH present in Action Area?	Would Project Adversely Affect EFH?	Justification
Pacific Coast Salmon	Yes, Deer Creek, Senecal Creek, Mill Creek, Pudding River and Mollala River	No	Project would result in small amount of new impervious surface; proposed swales would meet SLOPES V and provide up to 40 percent infiltration. Project would address existing safety issues.
Pacific Coast Groundfish	No	No	Effects on EFH at the mouth of the Columbia River with the Pacific Ocean from proposed stormwater discharge would be insignificant and discountable.
Coastal Pelagic Species	No	No	Effects on EFH at the mouth of the Columbia River with the Pacific Ocean from proposed stormwater discharge would be insignificant and discountable.

8. REFERENCES

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https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/willamette_lowercol/willamette/will-final-plan.pdf

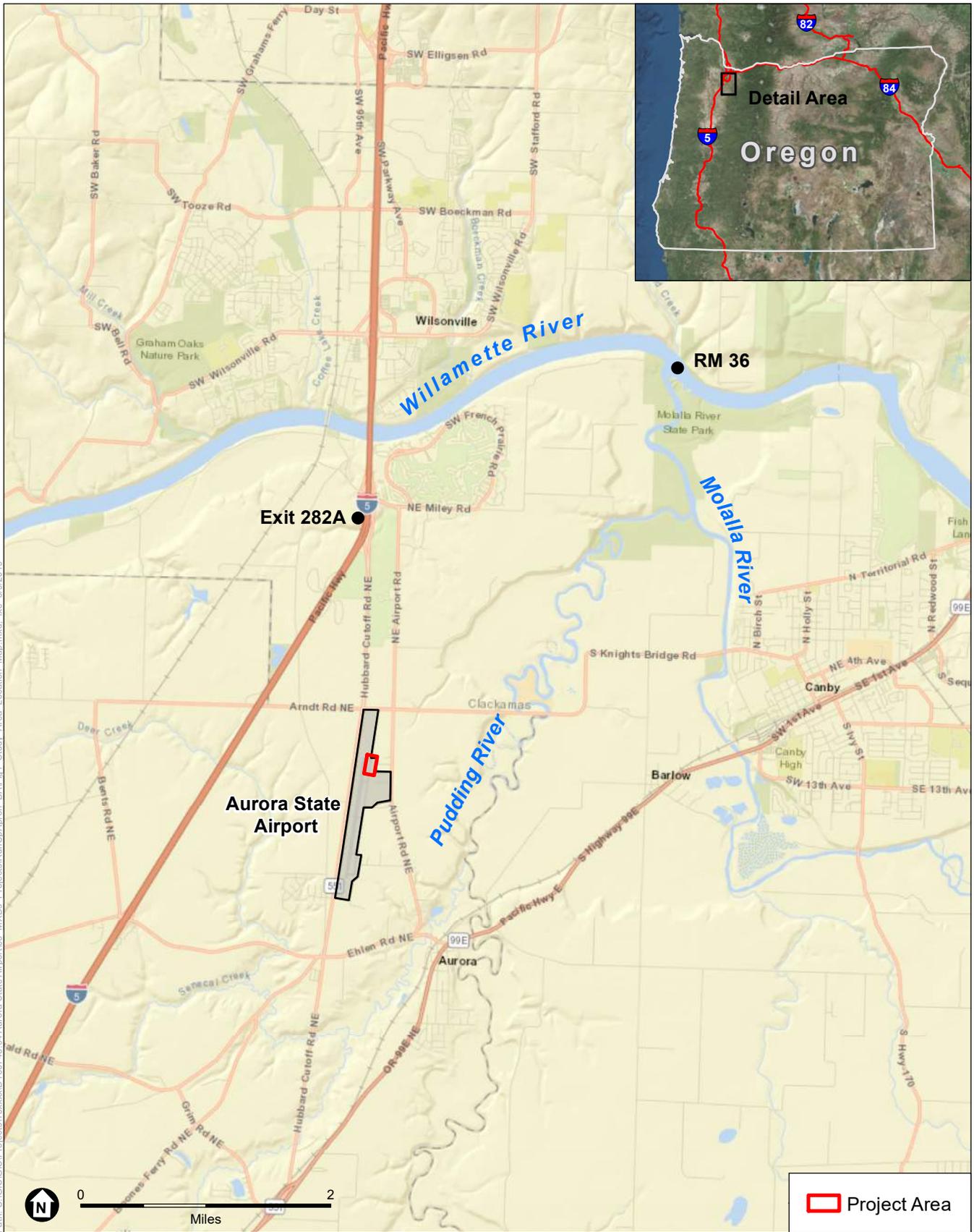
ORBIC (Oregon Biodiversity Information Center). 2018. Data system search for rare, threatened and endangered plants and animals in the vicinity of the Aurora State Airport.

StreamNet. 2019. Fish distribution data query for the Pudding River and Molalla River. Available: <https://www.streamnet.org/data/interactive-maps-and-gis-data/>.

WH Pacific, Inc. 2012. Aurora State Airport-Airport Master Plan Update. Prepared for: Oregon Department of Aviation, 3040 25th Street Southeast, Salem, Oregon 97302.

Appendix A

Figures



SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport

Figure 1
Project Area Location
Aurora, OR



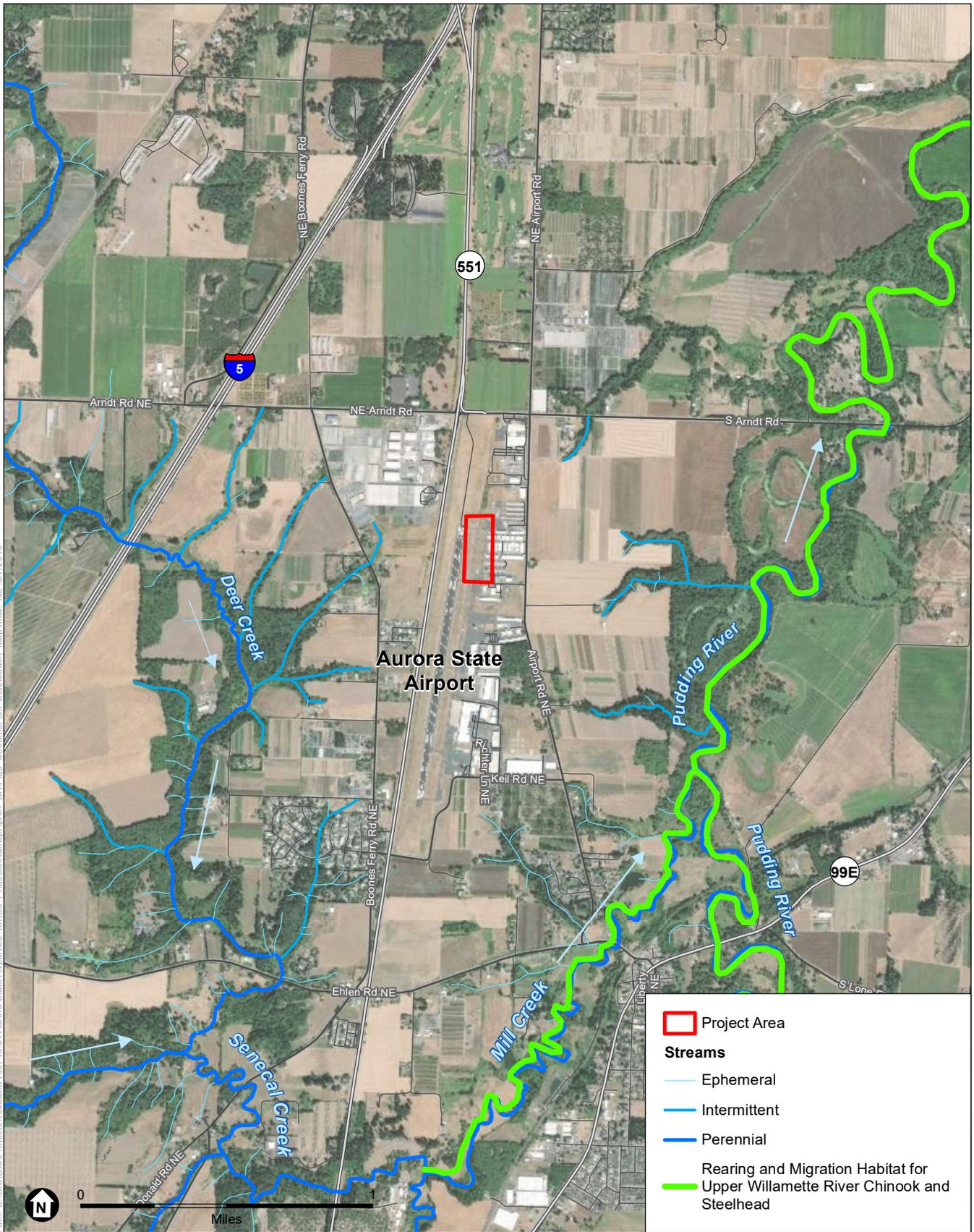


SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport

Figure 2
Taxlot and Aerial Map
Aurora, OR

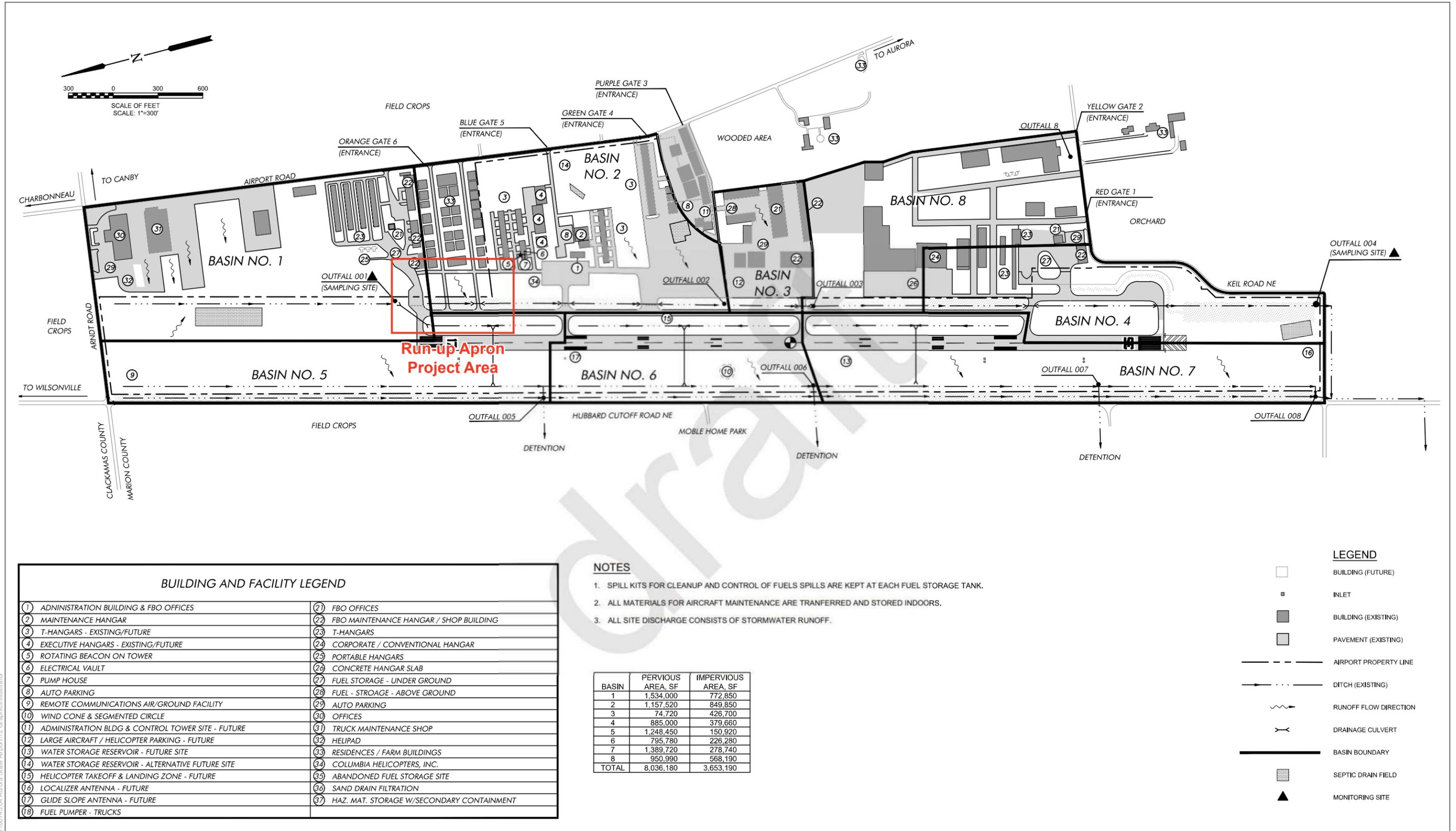




SOURCE: DigitalGlobe, 2016; Open Street Map, 2016; Streamnet, 2018; ESA; 2018

D160745.04. Aurora Airport

Figure 3
Streams and Fish Distribution Map
Aurora, OR



BUILDING AND FACILITY LEGEND

1 ADMINISTRATION BUILDING & FBO OFFICES	21 FBO OFFICES
2 MAINTENANCE HANGAR	22 FBO MAINTENANCE HANGAR / SHOP BUILDING
3 T-HANGARS - EXISTING/FUTURE	23 T-HANGARS
4 EXECUTIVE HANGARS - EXISTING/FUTURE	24 CORPORATE / CONVENTIONAL HANGAR
5 ROTATING BEACON ON TOWER	25 PORTABLE HANGARS
6 ELECTRICAL VAULT	26 CONCRETE HANGAR SLAB
7 PUMP HOUSE	27 FUEL STORAGE - UNDER GROUND
8 AUTO PARKING	28 FUEL - STORAGE - ABOVE GROUND
9 REMOTE COMMUNICATIONS AIR/GROUND FACILITY	29 AUTO PARKING
10 WIND CONE & SEGMENTED CIRCLE	30 OFFICES
11 ADMINISTRATION BLDG & CONTROL TOWER SITE - FUTURE	31 TRUCK MAINTENANCE SHOP
12 LARGE AIRCRAFT / HELICOPTER PARKING - FUTURE	32 HELIPAD
13 WATER STORAGE RESERVOIR - FUTURE SITE	33 RESIDENCES / FARM BUILDINGS
14 WATER STORAGE RESERVOIR - ALTERNATIVE FUTURE SITE	34 COLUMBIA HELICOPTERS, INC.
15 HELICOPTER TAKEOFF & LANDING ZONE - FUTURE	35 ABANDONED FUEL STORAGE SITE
16 LOCALIZER ANTENNA - FUTURE	36 SAND DRAIN FILTRATION
17 GLIDE SLOPE ANTENNA - FUTURE	37 HAZ. MAT. STORAGE W/SECONDARY CONTAINMENT
18 FUEL PUMPER - TRUCKS	

NOTES

1. SPILL KITS FOR CLEANUP AND CONTROL OF FUELS SPILLS ARE KEPT AT EACH FUEL STORAGE TANK.
2. ALL MATERIALS FOR AIRCRAFT MAINTENANCE ARE TRANSFERRED AND STORED INDOORS.
3. ALL SITE DISCHARGE CONSISTS OF STORMWATER RUNOFF.

BASIN	PERVIOUS AREA, SF	IMPERVIOUS AREA, SF
1	1,534,000	772,850
2	1,157,520	849,850
3	74,720	426,700
4	885,000	379,660
5	1,248,450	150,920
6	795,780	226,280
7	1,389,720	278,740
8	950,990	568,190
TOTAL	8,036,180	3,653,190

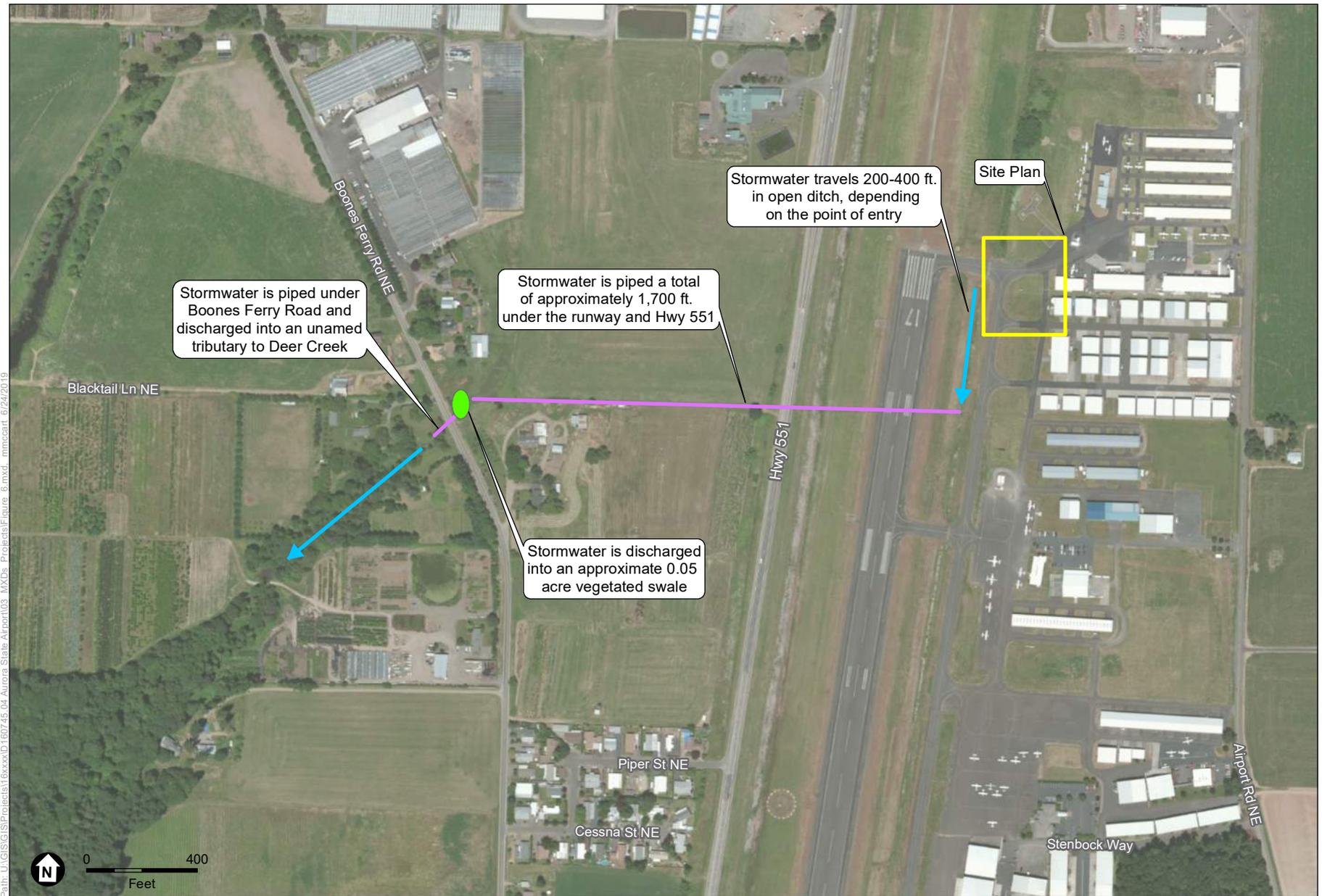
LEGEND

- BUILDING (FUTURE)
- INLET
- BUILDING (EXISTING)
- PAVEMENT (EXISTING)
- AIRPORT PROPERTY LINE
- DITCH (EXISTING)
- RUNOFF FLOW DIRECTION
- DRAINAGE CULVERT
- BASIN BOUNDARY
- SEPTIC DRAIN FIELD
- MONITORING SITE

SOURCE: Century West Engineering, 2019

D160745 . Aurora State Airport

Figure 5
Stormwater Drainage Map
Aurora, OR



SOURCE: ESA 2019; DigitalGlobe, 2017; Century West Engineering, 2019

D160745.04 Aurora State Airport

Figure 6
Proposed Stormwater Treatment
Aurora, OR

Appendix B

Photos

Photo: 1

Looking: South

Notes: Typical vegetation in the run-up apron project area, March 27, 2018.



Photo: 2

Looking: North

Notes: Stormwater drain inlet which outlets to a vegetated swale west of Taxiway A.



Photo: 3

Looking: South

Notes: Drain field area bound by taxiways



Photo: 4

Looking: at ground

Notes: Upland, pasture grass areas – typical vegetation



Photo: 5

Looking: west

Notes: At intersection of taxiway A (A1) and hangar access road



Photo: 6

Looking: North

Notes: Stormwater swale north of A1, runoff flows from north to south, March 2018.



Photo: 7

Looking: West

Notes: Stormwater is piped under A1 and flows south through the vegetated swale.



Photo: 8

Looking: South

Notes: Taxiway A is on the left and Runway 17-35 is to the right. Stormwater swale south of A1.



Photo: 9

Looking: South (south of A1)

Notes: Runoff drains to the west side of Runway 17-35 through the inlet pipe shown below.

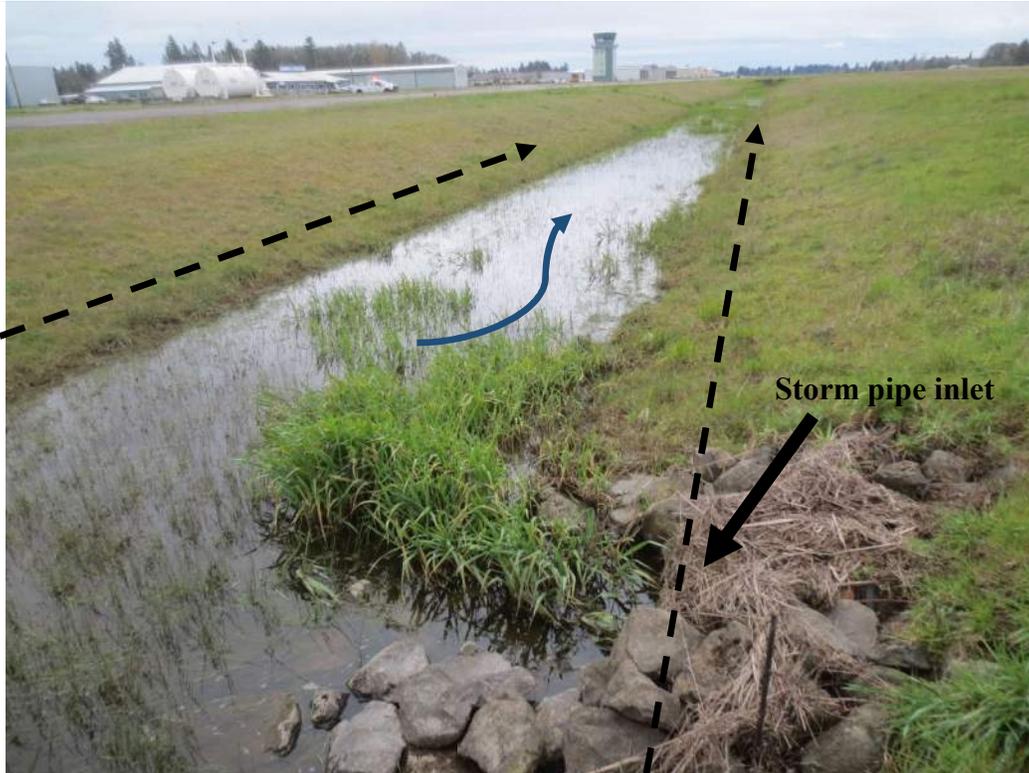


Photo: 10

Looking: Southeast

Notes: Stormwater swale north of taxiway A2, March 27, 2018.



Photo: 11

Looking: South

Notes: Existing stormwater swale north of A1 is considerably drier in April 25, 2018.



Photo: 12

Looking: North

Notes: Existing off-site stormwater swale (in yellow) east of Boones Ferry Rd. Manhole is approximated by the white arrow. Runoff enters a wetland complex that transitions to an unnamed tributary to Deer Creek, June 2019.



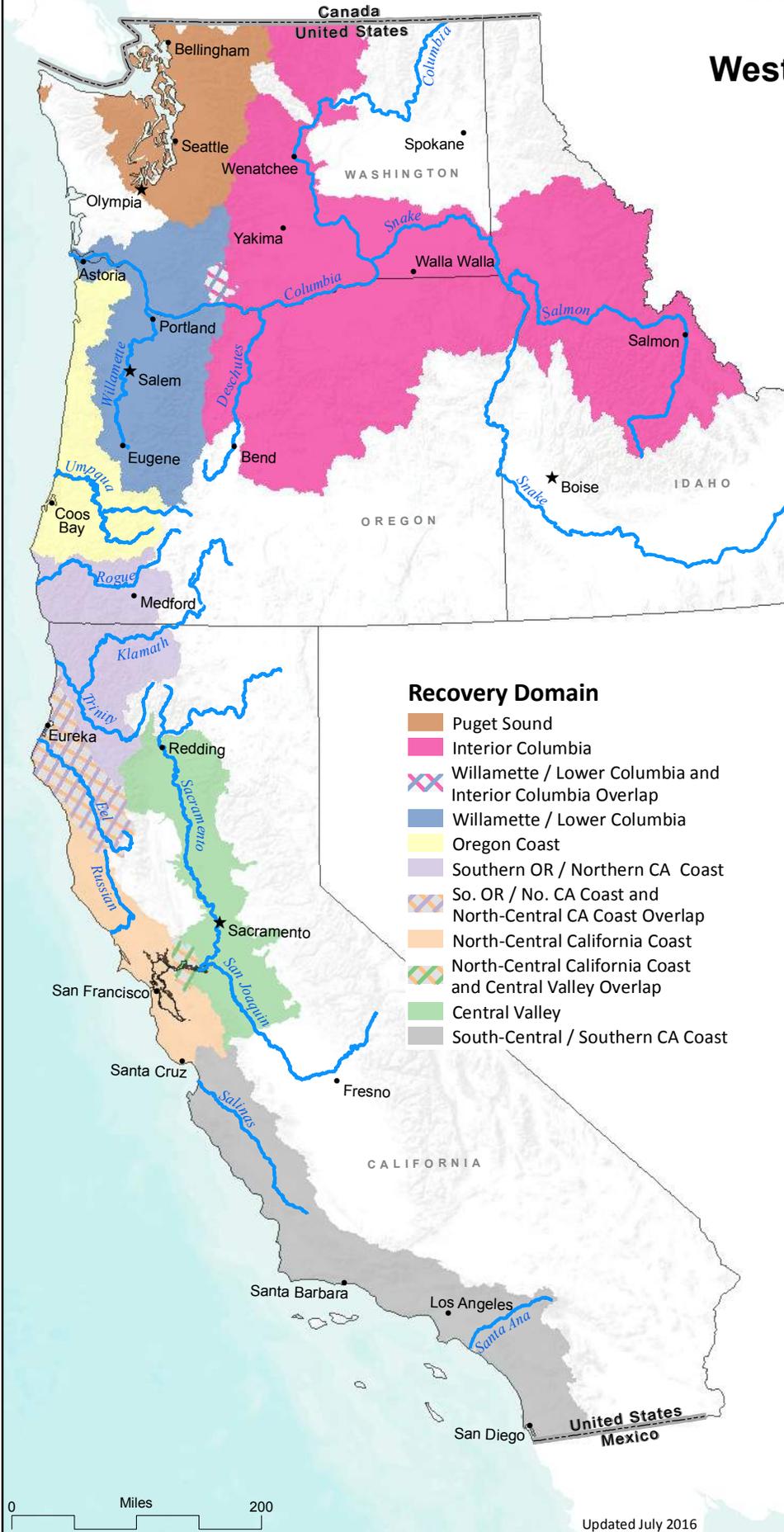
Appendix C

Attachments

Appendix D

Species List

Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead



Recovery Domain

- Puget Sound
- Interior Columbia
- Willamette / Lower Columbia and Interior Columbia Overlap
- Willamette / Lower Columbia
- Oregon Coast
- Southern OR / Northern CA Coast
- So. OR / No. CA Coast and North-Central CA Coast Overlap
- North-Central California Coast
- North-Central California Coast and Central Valley Overlap
- Central Valley
- South-Central / Southern CA Coast

Evolutionarily Significant Unit / Distinct Population Segment	ESA Status	Date of ESA Listing	Date of CH Designation
Puget Sound Recovery Domain			
Hood Canal Summer-run Chum Salmon	T	3/25/1999	9/2/2005
Ozette Lake Sockeye Salmon	T	3/25/1999	9/2/2005
Puget Sound Chinook Salmon	T	3/24/1999	9/2/2005
Puget Sound Steelhead	T	5/11/2007	2/24/2016

Interior Columbia Recovery Domain			
Middle Columbia River Steelhead	T	3/25/1999 1/5/2006	9/2/2005
Snake River Fall-run Chinook Salmon	T	4/22/1992	12/28/1993
Snake River Spring / Summer-run Chinook Salmon	T	4/22/1992	10/25/1999
Snake River Sockeye Salmon	E	11/20/1991	12/28/1993
Snake River Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Upper Columbia River Spring-run Chinook Salmon	E	3/24/1999	9/2/2005
Upper Columbia River Steelhead	T	8/18/1997 1/5/2006	9/2/2005

Willamette / Lower Columbia Recovery Domain			
Columbia River Chum Salmon	T	3/25/1999	9/2/2005
Lower Columbia River Chinook Salmon	T	3/24/1999	9/2/2005
Lower Columbia River Coho Salmon	T	6/28/2005	2/24/2016
Lower Columbia River Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Upper Willamette River Chinook Salmon	T	3/24/1999	9/2/2005
Upper Willamette River Steelhead	T	3/25/1999 1/5/2006	9/2/2005

Oregon Coast Recovery Domain			
Oregon Coast Coho Salmon	T	2/11/2008	2/11/2008

Southern Oregon / Northern California Coast Recovery Domain			
Southern OR / Northern CA Coasts Coho Salmon	T	5/6/1997	5/5/1999

North-Central California Coast Recovery Domain			
California Coastal Chinook Salmon	T	9/16/1999	9/2/2005
Central California Coast Coho Salmon	E	10/31/1996 (T) 6/28/2005 (E) 4/2/2012 (RE)	5/5/1999
Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Northern California Steelhead	T	6/7/2000 1/5/2006	9/2/2005

Central Valley Recovery Domain			
California Central Valley Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Central Valley Spring-run Chinook Salmon	T	9/16/1999	9/2/2005
Sacramento River Winter-run Chinook Salmon	E	11/5/1990 (T) 1/4/1994 (E)	6/16/1993

South-Central / Southern California Coast Recovery Domain			
South-Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Southern California Steelhead	E	8/18/1997 5/1/2002 (RE) 1/5/2006	9/2/2005

ESA = Endangered Species Act, CH = Critical Habitat, RE = Range Extension
E = Endangered, T = Threatened

Critical Habitat Rules Cited

- 2/24/2016 (81 FR 9252) Final Critical Habitat Designation for Puget Sound Steelhead and Lower Columbia River Coho Salmon
- 2/11/2008 (73 FR 7816) Final Critical Habitat Designation for Oregon Coast Coho Salmon
- 9/2/2005 (70 FR 52630) Final Critical Habitat Designation for 12 ESU's of Salmon and Steelhead in WA, OR, and ID
- 9/2/2005 (70 FR 52488) Final Critical Habitat Designation for 7 ESU's of Salmon and Steelhead in CA
- 10/25/1999 (64 FR 57399) Revised Critical Habitat Designation for Snake River Spring/Summer-run Chinook Salmon
- 5/5/1999 (64 FR 24049) Final Critical Habitat Designation for Central CA Coast and Southern OR/Northern CA Coast Coho Salmon
- 12/28/1993 (58 FR 68543) Final Critical Habitat Designation for Snake River Chinook and Sockeye Salmon
- 6/16/1993 (58 FR 33212) Final Critical Habitat Designation for Sacramento River Winter-run Chinook Salmon

ESA Listing Rules Cited

- 4/2/2012 (77 FR 19552) Final Range Extension for Endangered Central California Coast Coho Salmon
- 2/11/2008 (73 FR 7816) Final ESA Listing for Oregon Coast Coho Salmon
- 5/11/2007 (72 FR 26722) Final ESA Listing for Puget Sound Steelhead
- 1/5/2006 (71 FR 5248) Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead
- 6/28/2005 (70 FR 37160) Final ESA Listing for 16 ESU's of West Coast Salmon
- 5/1/2002 (67 FR 21586) Range Extension for Endangered Steelhead in Southern California
- 6/7/2000 (65 FR 36074) Final ESA Listing for Northern California Steelhead
- 9/16/1999 (64 FR 50394) Final ESA Listing for Two Chinook Salmon ESUs in California
- 3/25/1999 (64 FR 14508) Final ESA Listing for Hood River Canal Summer-run and Columbia River Chum Salmon
- 3/25/1999 (64 FR 14517) Final ESA Listing for Middle Columbia River and Upper Willamette River Steelhead
- 3/25/1999 (64 FR 14528) Final ESA Listing for Ozette Lake Sockeye Salmon
- 3/24/1999 (64 FR 14308) Final ESA Listing for 4 ESU's of Chinook Salmon
- 3/19/1998 (63 FR 13347) Final ESA Listing for Lower Columbia River and Central Valley Steelhead
- 8/18/1997 (62 FR 43937) Final ESA Listing for 5 ESU's of Steelhead
- 5/6/1997 (62 FR 24588) Final ESA Listing for Southern Oregon / Northern California Coast Coho Salmon
- 10/31/1996 (61 FR 56138) Final ESA Listing for Central California Coast Coho Salmon
- 1/4/1994 (59 FR 222) Final ESA Listing for Sacramento River Winter-run Chinook Salmon
- 4/22/1992 (57 FR 14653) Final ESA Listing for Snake River Spring/summer-run and Snake River Fall Chinook Salmon
- 11/20/1991 (56 FR 58619) Final ESA Listing for Snake River Sockeye Salmon
- 11/5/1990 (55 FR 46515) Final ESA Listing for Sacramento River Winter-run Chinook Salmon



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memorandum

date April 23, 2019
to Pete Murphy, P.E., Century West Engineering
from Sarah Hartung, Environmental Science Associates
subject Environmental Inventory and No Effect Letter: Aurora State Airport

The Oregon Department of Aviation (ODA), owner and operator of the Aurora State Airport (Airport), proposes two projects at the Airport as part of its Capital Improvement Plan (CIP) Phase II (2017 – 2021): (1) obstruction removal in the approach surfaces of Runway 17-35, and (2) improvements to the run-up apron of Runway 17. These projects would be funded by the Federal Aviation Administration (FAA) and therefore must comply with requirements of the National Environmental Policy Act (NEPA). Obstruction removal would occur primarily on private or commercial properties and is planned for the fall/winter of 2019. No obstruction removal is proposed for Airport property. The run-up apron project is planned for design in 2020 and construction in 2021.

Environmental Science Associates (ESA) prepared this memorandum for Century West Engineering and ODA for the following purposes:

- To describe results from an inventory of state and federally listed fish, wildlife, and plant species that may occur in the vicinity of the projects.
- To provide justification of *no effect* for listed fish, wildlife, and plant species, with recommended conservation measures, due to the obstruction removal project.
- To provide justification of *no effect* for listed wildlife and plant species for the run-up apron project. Potential project impacts on federally listed fish due to the run-up apron project are described separately in a Biological Assessment.

PROJECT AREAS

The project areas consist of the run-up apron in the northeast portion of the Airport and proposed obstruction removal areas, either single trees or small stands of mature trees, located north and south of Runway 17-35 (Figures 1 and 2; Photo page attached). The Airport and a majority of the project areas are in Marion County and outside the City of Aurora. The Marion County line runs along the north property boundary of the Airport and, as a result, the north portion of the project area is located within unincorporated Clackamas County. The project area lies within Sections 1, 2, 11, 12, 14, 35, and 36, Townships 3 and 4, Range 1 West.

Existing conditions in the run-up apron project area consist of turf grass, landscaped areas and infields, as well as paved surfaces adjacent to the taxiway and Airport buildings (Photo 1, attached). The obstruction removal areas are a mix of rural residential lots, agricultural areas and rights-of-way (Photo 2, attached). The south obstruction removal areas consist of grass seed fields, orchards, and residential lots with large street trees. The north obstruction removal areas consist of patches of remnant forest and residential property with large ornamental trees, and light industrial and commercial properties.

METHODS

The environmental inventory was conducted based on: (1) a database search and review of existing literature; (2) a reconnaissance-level field visit of the obstruction removal areas, and (3) reconnaissance surveys of the run-up apron project area and adjacent Airport property. Records from the Oregon Biodiversity Information Center (ORBIC) were reviewed, and species lists were obtained from the U.S. Fish and Wildlife Service (USFWS) (2018a) as well as the National Oceanic and Atmospheric Administration (NOAA) Fisheries (2016). No coordination with USFWS or and NOAA Fisheries has been conducted to date.

Two ESA biologists conducted a reconnaissance survey of the proposed obstruction removal areas in the spring of 2018 to characterize existing conditions and determine if potential suitable habitat for state or federally listed species was present. The reconnaissance was conducted from road rights-of-way; no access to private properties was granted. No wetland determinations or formal delineations were conducted as part of the reconnaissance.

Surveys for listed plants and the streaked horned lark (SHLA) were conducted at the Airport in April, June, and July 2018. Results from the SHLA surveys are described in detail in a separate memo (ESA 2018). ESA conducted walking surveys in the run-up apron project area and immediate vicinity in search of listed plants or associated species. Refer to Table 1 for a list of protected plant species that may occur in the project vicinity.

PROJECT DESCRIPTIONS

The proposed Airport improvement projects are briefly described below.

Construct Runway 17 Run-up Apron

The project includes construction of a run-up apron on the east side of the parallel Taxiway for Runway 17. Activities include site preparation, excavation, paving, striping, taxiway lighting, installation of drainage improvements, and seeding (Aurora Master Plan CIP, Appendix L; Century West Engineering 2012). The impact area for the north run-up apron is generally composed of maintained pasture grasses, a gravel shoulder, and pavement. Approximately 3 acres of new impervious surface would result from the project. No in-water work or fill in wetlands would occur as part of the project.

Remove Obstructions (Trees) in the Runway 17-35 Approach and Transitional Surfaces

Century West Engineering has identified obstructions (trees generally over 50 feet in height) in the approach zone and transitional surfaces that require removal. Obstructions have been identified in approximately 20 sites. Proposed removal would involve site preparation, cutting or topping of trees, timber processing, hauling, and site cleanup. Whether a tree is topped or removed depends on the landowner, but this memo assumes that trees will be entirely cut down with the stumps grubbed and removed to allow replacement shrubs and trees to be planted.

Potential impacts would be limited to the footprint of proposed tree removal and the immediate vicinity. Best management practices (BMPs) including silt fencing and/or inlet protection would prevent adverse effects from potential erosion or sedimentation.

AVOIDANCE AND MINIMIZATION MEASURES

The following measures are recommended to avoid and minimize impacts on state and federal listed species due to the obstruction removal project:

- Fence or clearly mark work limits.
- Remove trees and shrubs outside of the bird breeding season (generally after August 15 until the following March 15).
- Use existing paved surfaces for haul roads and/or staging.
- Replace removed trees with shorter statured vegetation using a native species where possible. Stabilize the soils with a native grass and forb mix.

ENVIRONMENTAL INVENTORY RESULTS

Table 1 below summarizes the state and federal threatened and endangered species that may occur in the project area and vicinity based on a review of records from ORBIC, USFWS, and NOAA Fisheries.

Table 1. Federal and State Listed Species that May Occur in the Project Vicinity

	Species Name (Scientific Name)	Federal Status/ State Status*	Habitat Requirements	Critical Habitat Present in Vicinity?
Fish	Upper Willamette River (UWR) Chinook (<i>Oncorhynchus tshawytscha</i>)	FT, CH	Clear, cold water, clean gravels for spawning, deep pools for holding, backwater or slow-moving water for rearing.	Yes – Mill Creek-Pudding River
	Upper Willamette River Steelhead (<i>Oncorhynchus mykiss</i>)	FT, CH	Clear, cold water, clean gravels for spawning, deep pools for holding, backwater or slow-moving water for rearing.	Yes – Mill Creek-Pudding River
Wildlife	Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT, CH	Requires extensive mature or old-growth forests for essential life functions.	No
	Streaked horned lark (<i>Eremophila alpestris strigata</i>)	FT, CH	Inhabits sparsely vegetated, open landscapes with no trees and few shrubs.	No
	Fender’s blue butterfly (<i>Icaricia icariodes fenderi</i>)	FE, CH	Requires native, upland prairie and oak savanna habitats or indicator species have been observed within the project vicinity.	No
Plants	Bradshaw’s desert parsley (<i>Lomatium bradshawii</i>)	FE SE	Occurs on seasonally saturated or flooded prairies, adjacent to creeks and small rivers in the southern Willamette Valley. Blooms mid-April to July.	N/A
	Golden paintbrush (<i>Castilleja levisecta</i>)	FT SE	Requires native, upland prairie and native grassland habitats.	N/A
	Kincaid’s lupine (<i>Lupinus sulphureus</i>)	FT, CH ST	Requires native, upland prairie habitats.	No
	Nelson’s checkermallow (<i>Sidalcea nelsoniana</i>)	FT/ST	Occurs in Oregon ash (<i>Fraxinus latifolia</i>) swales and meadows with wet depressions, or along streams. Blooms mid-May to mid-July.	N/A
	Peacock larkspur (<i>Delphinium pavonaceum</i>)	SE	Occurs in native wet prairies, on the edges of ash and oak woodlands, and along roadsides and fence rows. Blooms May to June.	N/A
	Water howelia (<i>Howelia aquatilis</i>)	FT/ST	Occurs in small, vernal, freshwater wetlands, glacial pothole ponds, or former river oxbows that have an annual cycle of filling with water.	N/A
	White rock larkspur (<i>Delphinium leucophaeum</i>)	SE	Found on the edges of oak woodlands, in dry roadside ditches, on basalt cliffs, along river banks and bluffs, on moist rocky slopes, and in moist lowland meadows. Blooms May to June.	N/A
	White-topped aster (<i>Sericocarpus rigidus</i>)	ST	Occurs in open, grassy, seasonally moist prairie and habitats. Blooms July to September.	N/A
	Willamette Daisy (<i>Erigeron decumbens</i>)	FE, CH SE	Occurs on soils in the Wapato, Bashaw, and Mcalpin Series and mainly within bottomland habitats. Blooms June to July.	No

*FE – Federal Endangered, FT – Federal Threatened, SE – State Endangered, ST – State Threatened
 CH = Critical Habitat

Field Survey Results - Run-up Apron Project

No state or federally listed plants or wildlife (e.g., streaked horned larks) were detected during spring 2018 field surveys for the run-up apron project area and immediate vicinity. Groundcover in the run-up apron project area consists either of turf grass, landscaped areas, or paved surfaces, and no suitable habitat for listed plants or wildlife occurs within the project area or immediate vicinity. Field surveys for the presence of listed fish were not

conducted in the project area or immediate vicinity; however, these species were presumed to occur. Refer to the Run-Up Apron Project BA (ESA, 2019) for a description of potential project impacts on listed fish species and habitat.

Reconnaissance Survey Results - Obstruction Removal Areas

Four of the 20 obstruction removal polygons have the potential to provide habitat for listed plant species due to the presence of associated species and/or presence of native groundcover: Polygon #4, 5, 19, and 23 (Figure 2). Refer to Table 2 and the summaries below for additional information. No state or federally listed plants or SHLA were detected in the run-up apron project area or immediate vicinity. Groundcover in the run-up apron project area consists either of turf grass, landscaped areas, or paved surfaces. Two of the 20 polygons contain potential wetlands (polygon #23, 30), although these potential wetlands do not have a surface connection to streams that contain listed fish species.

Table 2. Field Reconnaissance Results for the Obstruction Removal Project

Polygon #	Habitat Notes	Potential Suitable Habitat for State or Federally Listed Plant species?
4	Not wetland, oaks present	Yes: peacock larkspur, white rock larkspur, white-topped aster
5	Likely non-wetland, primarily oaks	Yes: peacock larkspur, white rock larkspur, white-topped aster
6	Likely non-wetland, redwood with laurel understory	No
7	Likely non-wetland, redwood with laurel understory	No
11	Not wetland, Ponderosa pine and lawn	No
12	Likely non-wetland, redwood with laurel understory	No
17	Not wetland - planted tall conifers	No
18	Not wetland - planted tall conifers	No
19	Not wetland, Douglas fir with some oaks, Himalayan blackberry	Yes: Nelson's checkermallow, peacock larkspur, white-topped aster
23	Potential wetlands - ponded water in depression among oaks	Yes: Nelson's checkermallow, Bradshaw's desert parsley, peacock larkspur, white rock larkspur, white-topped aster
24	Not wetland - mixed stand of firs, ornamentals	No
30	Potential wetland – Douglas firs near seasonal water feature - groundcover and hydrology not verified	No
31	Not wetland - mixed canopy firs, ornamentals	No
34	Not wetland - mixed canopy firs, ornamentals	No
36	Not wetland, Ponderosa pine and lawn	No
37	Not wetland - upland forest patch	No
38	Not wetland, landscaped vegetation	No
39	Not wetland, landscaped vegetation	No
40	Not wetland, landscaped vegetation	No
46	Not wetland - Douglas firs	No

Summary of Results by Federally-listed and State Listed Species

Upper Willamette River Chinook Salmon and Steelhead

Chinook salmon and steelhead, both federally threatened species, are mapped within 1 mile of the project areas in Mill Creek and the Pudding River (StreamNet 2018; 70 FR 52720; 70 FR 52848). No streams occur within the proposed obstruction removal areas, and the two obstruction removal polygons with the potential for wetlands do not have a surface water connection to fish-bearing streams. Because of the localized impacts from proposed tree removal and the absence of work in streams, the proposed obstruction removal project would have **no effect** on listed fish species. Refer to the Run-Up Apron Project BA (ESA, 2019) for a description of potential project impacts on listed fish species and habitat.

Northern Spotted Owl

Northern spotted owls occur in the North Cascades bioregion, but require extensive mature or old-growth forests for nesting, roosting, foraging, and dispersal. The Airport site and surrounding areas do not contain suitable habitat. There are no recent or historic sightings of northern spotted owls within a 2-mile radius of the Airport (ORBIC 2018). The proposed projects would have **no effect** on the northern spotted owl.

Streaked Horned Lark

Streaked horned larks prefer open landscapes with few to no shrubs and trees, and are known to breed at several Willamette Valley airports. No SHLA were detected at the Airport during 2018 surveys, and the obstruction removal areas do not provide habitat for SHLA because of the presence of trees and shrubs. The obstruction removal project and the run-up apron project would have **no effect** on SHLA.

Fender's Blue Butterfly

This species occurs in native prairie habitats and is known to occupy areas where three specific lupine species occur, one of which is Kincaid's lupine (below). No records of Fender's blue butterfly are known for the project vicinity (Oregon Flora Project 2018). During the field reconnaissance, no direct observations were made of native upland prairie habitats. The projects would have **no effect** on Fender's blue butterfly due to the lack of suitable habitat in the impact areas.

Bradshaw's Desert Parsley

This species is commonly found on seasonally saturated or flooded prairies, adjacent to creeks and small rivers in the southern Willamette Valley (USFWS 2018b). The Oregon Flora Project (2018) has mapped an observation of this species within 15 miles of the project area. There is potential for Bradshaw's desert parsley to occur in obstruction removal polygon #23; therefore, a site-specific survey during the growing season is recommended to confirm absence of this species to conclude that obstruction removal would have no impact on Bradshaw's desert parsley.

Golden Paintbrush

The Oregon Flora Project (2018) has mapped an observation of this species within 25 miles of the project area. However, this species is assumed to be extirpated from the Willamette Valley. Golden paintbrush occurs in upland prairies, on generally flat grasslands, including some that are characterized by mounded topography. Low deciduous shrubs are commonly present as small to large thickets (USFWS 2018c). During the field reconnaissance, no observations were made of native upland prairie habitats. The projects would have **no effect**

on golden paintbrush due to the lack of suitable habitat in the impact areas and the fact that this species is likely extirpated from the Willamette Valley.

Kincaid's Lupine

The distribution of this species has a close association with native upland prairie sites that are characterized by heavier soils and mesic to slightly xeric soil moisture levels (USFWS 2018d). During the field reconnaissance, no observations were made of native upland prairie habitats. The projects would have **no effect** on Kincaid's lupine due to the lack of suitable habitat in the impact areas.

Nelson's Checkermallow

The Oregon Flora Project (2018) has mapped an observation of this species within 20 miles of the project area, which indicates the potential for other specimens in the vicinity. The species grows in remnant prairie grasslands, and some populations occur along roadsides where non-native plants, such as reed canarygrass (*Phalaris arundinacea*), are also present (USFWS 2018e). Nelson's checkermallow primarily occurs in open areas with little or no shade and will not tolerate encroachment of woody species (USFWS 2018e). There is potential for Nelson's checkermallow to occur in obstruction removal polygons #19 and 23; therefore, a site-specific survey during the growing season is recommended.

Peacock Larkspur

The Oregon Department of Agriculture Native Plant Conservation Program indicates the potential for peacock larkspur to occur in the project vicinity (Oregon Department of Agriculture 2018a). The Oregon Flora Project (2018) has mapped an observation of peacock larkspur within 18 miles of the project area. Peacock larkspur inhabits low, nearly flat areas in moist, silty soils of the Willamette River floodplain at elevations ranging from 150–400 feet. It occurs in native wet prairies, on the edges of ash and oak woodlands, and along roadsides and fence rows (Oregon Department of Agriculture 2018a). There is potential for peacock larkspur to occur in obstruction removal polygons # 4, 5, 19, and 23; therefore, a site-specific survey during the growing season is recommended.

Water Howelia

The Oregon Flora Project (2018) has mapped an observation of water howelia in the floodplain of the Willamette River within 4 miles of the project area. This species tends to occur in small, freshwater wetlands or former river oxbows that have an annual cycle of filling with water in the fall through spring followed by drying during the summer months (USFWS 2018f). These specific habitat conditions do not occur on the Airport property or within the project vicinity. The projects are anticipated to have **no effect** on water howelia due to the lack of suitable habitat in the impact areas.

White Rock Larkspur

The Oregon Department of Agriculture Native Plant Conservation Program indicates the potential for white rock larkspur to occur in the project vicinity. The Oregon Flora Project (2018) has mapped an observation of white rock larkspur within 10 miles of the project area. White rock larkspur is found on the edges of oak woodlands, in dry roadside ditches, on basalt cliffs, along river banks and bluffs, on moist rocky slopes, and in moist lowland meadows (Oregon Department of Agriculture 2018b). It inhabits loose, shallow soils typically 5–7 cm deep with a high organic matter content and high level of sand relative to the soils in which other Pacific Northwest delphiniums occur. It grows on slopes ranging from horizontal plateaus to vertical cliffs in open exposed areas to

fairly deeply shaded spots at 125–500 feet in elevation. There is potential for white rock larkspur to occur in obstruction removal polygons # 4, 5, 19, and 23, and a site-specific survey during the growing season is recommended.

White-topped Aster

The Oregon Department of Agriculture Native Plant Conservation Program indicates the potential for white-topped aster to occur in the project vicinity. The southernmost populations of this species occur in Oregon and occupy deep, poorly drained clayey soils. The species occurs in open, grassy, seasonally moist prairie and savannah habitats, at elevations ranging from about 90–1,250 feet. The species is occasionally found in partially shaded areas under Oregon white oak (*Quercus garryana*) and Pacific madrone (*Arbutus menziesii*) canopies (Oregon Department of Agriculture 2018c). There is potential for white-topped aster to occur in obstruction removal polygons # 4, 5, 19, and 23, and a site-specific survey during the growing season is recommended.

Willamette Daisy

There are no known occurrences within the immediate vicinity of the project area (ORBIC 2018), and the majority of this species occurs in the alluvial soils of bottomlands adjacent to rivers and creeks (USFWS 2018g). This species is known to occur in three distinct Natural Resources Conservation Service (NRCS) mapped soil series, none of which occurs in the impact areas (NRCS 2018). The projects are anticipated to have **no effect** on water; howelia due to the lack of suitable habitat in the impact areas.

CONCLUSIONS AND RECOMMENDATIONS

Four of the 20 obstruction removal polygons have the potential to provide habitat for listed plant species due to the presence of associated species and/or presence of native groundcover: Polygon #4, 5, 19, and 23 (Table 3, Figure 2). Site-specific surveys at these locations are recommended prior to obstruction removal to conclude no effect for listed species due to the project.

Table 3. Obstruction Removal Polygons Recommended for Site-specific Plant Surveys

Polygon #	Habitat Notes	Potential Suitable Habitat for State or Federal Listed Plant species?
4	Not wetland, oaks present	Yes: peacock larkspur, white rock larkspur, white-topped aster
5	Likely non-wetland, oaks primarily	Yes: peacock larkspur, white rock larkspur, white-topped aster
19	Not wetland, Douglas fir with some oaks, Himalayan blackberry	Yes: Nelson’s checkermallow, peacock larkspur, white-topped aster
23	Potential wetlands - ponded water in depression among oaks.	Yes: Nelson’s checkermallow, Bradshaw’s desert parsley, peacock larkspur, white rock larkspur, white-topped aster

The obstruction removal project is anticipated to have **no effect** on the following species due to lack of suitable habitat and the limited footprint of disturbance: Upper Willamette River Chinook salmon and steelhead; northern spotted owl; streaked horned lark; Fender’s blue butterfly; golden paintbrush; Kincaid’s lupine; water howelia; and Willamette daisy. If survey results are negative for plant species identified above in Table 3, the obstruction

removal project may also have *no effect* on: Bradshaw's desert parsley, Nelson's checkermallow, peacock larkspur, white rock larkspur, and white-topped aster.

The run-up apron project would have *no effect* on state and federally listed plants and wildlife species due to the lack of suitable habitat. Project effects on federally-listed fish and critical habitat have not been addressed in this memo. Refer to the Run-Up Apron Project BA (ESA, 2019) for a description of potential project impacts to listed fish species and habitat.

REFERENCES AND SOURCES CONSULTED

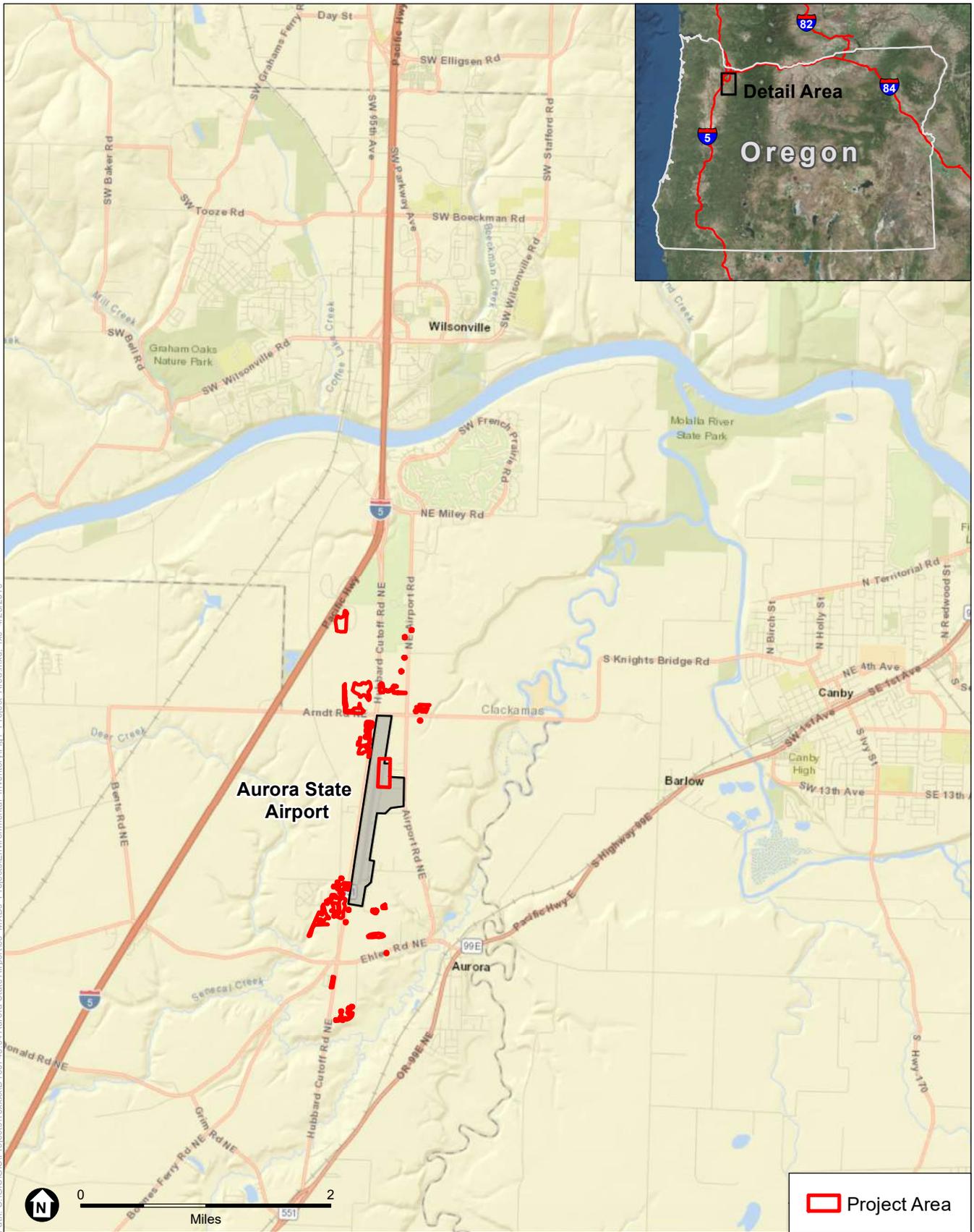
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USFWS (U.S. Fish and Wildlife Service). 2018f. Oregon Fish and Wildlife Office (OFWO). Water howelia Species Fact Sheet. Available at: <https://www.fws.gov/oregonfwo/articles.cfm?id=149489516>. Accessed March 6, 2018.

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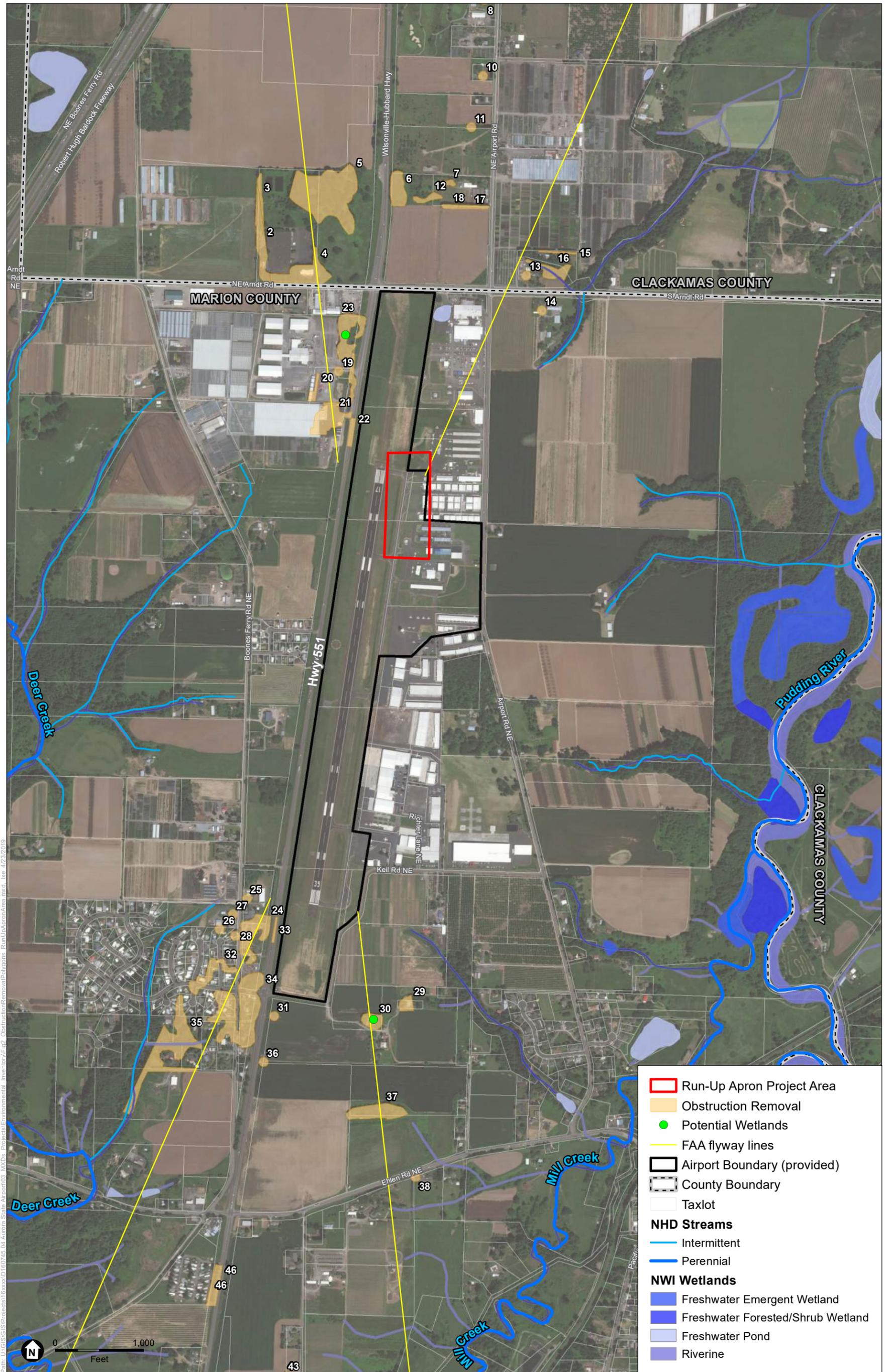
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SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport

Figure 1
Project Area
Aurora, OR





SOURCE: ESA, 2017; NRCS NWI, 2017; Open Street Maps, 2016; RLIS, 2017, Marion County Streams 2017

160745.04 Aurora State Airport

Figure 2
Obstruction Removal Polygons and Run-Up Apron Project Area
Marion County and Clackamas County, OR

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Clackamas and Marion counties, Oregon



Local office

Oregon Fish And Wildlife Office

☎ (503) 231-6179

📠 (503) 231-6195

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398

<https://www.fws.gov/oregonfwo/articles.cfm?id=149489416>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Streaked Horned Lark <i>Eremophila alpestris strigata</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7268	Threatened

Insects

NAME	STATUS
Fender's Blue Butterfly <i>Icaricia icarioides fenderi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6659	Endangered

Flowering Plants

NAME	STATUS
Bradshaw's Desert-parsley <i>Lomatium bradshawii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5743	Endangered
Kincaid's Lupine <i>Lupinus sulphureus</i> ssp. <i>kincaidii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3747	Threatened
Nelson's Checker-mallow <i>Sidalcea nelsoniana</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7340	Threatened

Water Howellia *Howellia aquatilis* Threatened
No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/7090>

Willamette Daisy *Erigeron decumbens* Endangered
There is final critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/6270>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

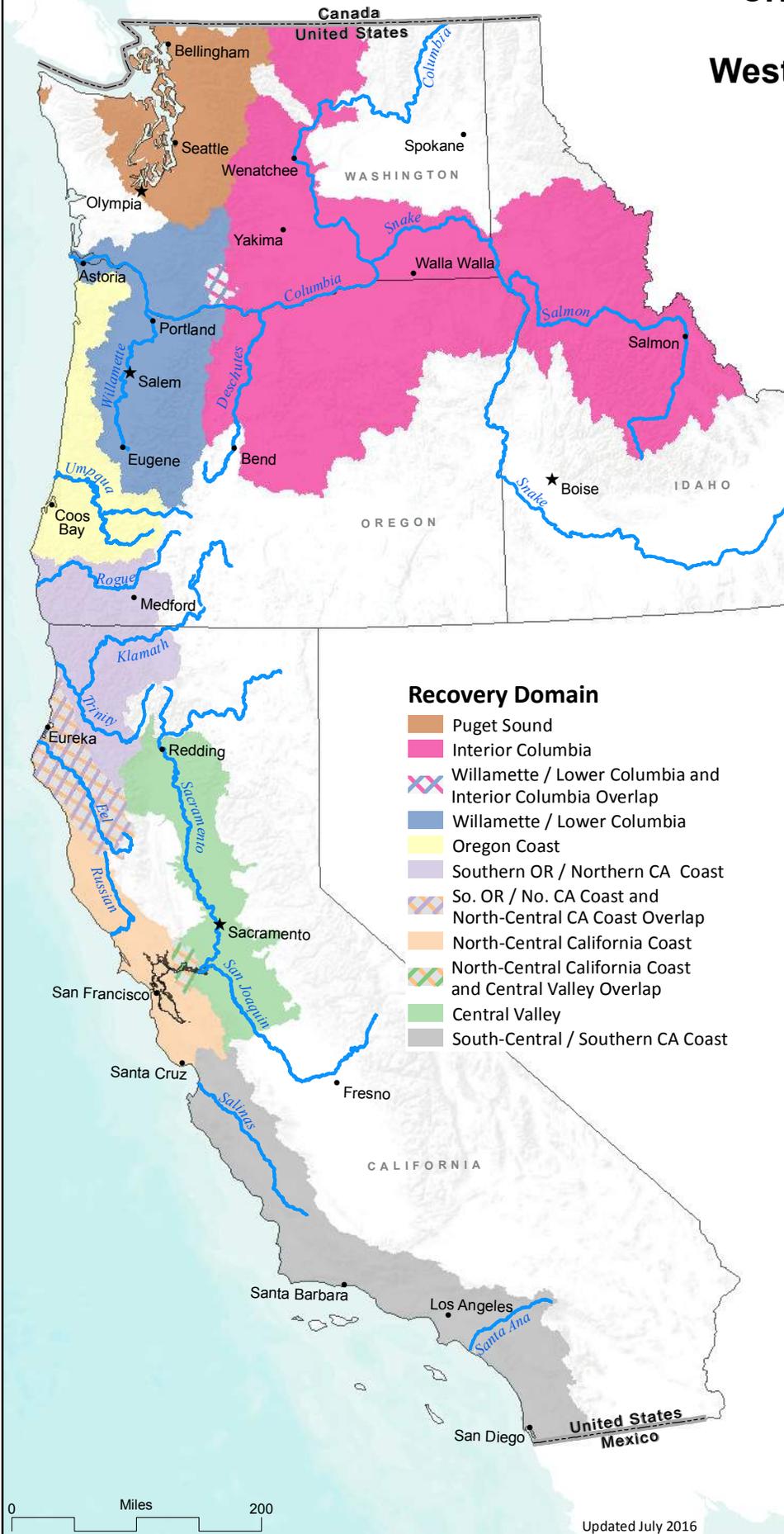
Bald Eagle *Haliaeetus leucocephalus*
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Sep 30

Clark's Grebe *Aechmophorus clarkii*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jan 1 to Dec 31

Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead



Recovery Domain

- Puget Sound
- Interior Columbia
- Willamette / Lower Columbia and Interior Columbia Overlap
- Willamette / Lower Columbia
- Oregon Coast
- Southern OR / Northern CA Coast
- So. OR / No. CA Coast and North-Central CA Coast Overlap
- North-Central California Coast
- North-Central California Coast and Central Valley Overlap
- Central Valley
- South-Central / Southern CA Coast

Evolutionarily Significant Unit / Distinct Population Segment	ESA Status	Date of ESA Listing	Date of CH Designation
Puget Sound Recovery Domain			
Hood Canal Summer-run Chum Salmon	T	3/25/1999	9/2/2005
Ozette Lake Sockeye Salmon	T	3/25/1999	9/2/2005
Puget Sound Chinook Salmon	T	3/24/1999	9/2/2005
Puget Sound Steelhead	T	5/11/2007	2/24/2016

Interior Columbia Recovery Domain			
Middle Columbia River Steelhead	T	3/25/1999 1/5/2006	9/2/2005
Snake River Fall-run Chinook Salmon	T	4/22/1992	12/28/1993
Snake River Spring / Summer-run Chinook Salmon	T	4/22/1992	10/25/1999
Snake River Sockeye Salmon	E	11/20/1991	12/28/1993
Snake River Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Upper Columbia River Spring-run Chinook Salmon	E	3/24/1999	9/2/2005
Upper Columbia River Steelhead	T	8/18/1997 1/5/2006	9/2/2005

Willamette / Lower Columbia Recovery Domain			
Columbia River Chum Salmon	T	3/25/1999	9/2/2005
Lower Columbia River Chinook Salmon	T	3/24/1999	9/2/2005
Lower Columbia River Coho Salmon	T	6/28/2005	2/24/2016
Lower Columbia River Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Upper Willamette River Chinook Salmon	T	3/24/1999	9/2/2005
Upper Willamette River Steelhead	T	3/25/1999 1/5/2006	9/2/2005

Oregon Coast Recovery Domain			
Oregon Coast Coho Salmon	T	2/11/2008	2/11/2008

Southern Oregon / Northern California Coast Recovery Domain			
Southern OR / Northern CA Coasts Coho Salmon	T	5/6/1997	5/5/1999

North-Central California Coast Recovery Domain			
California Coastal Chinook Salmon	T	9/16/1999	9/2/2005
Central California Coast Coho Salmon	E	10/31/1996 (T) 6/28/2005 (E) 4/2/2012 (RE)	5/5/1999
Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Northern California Steelhead	T	6/7/2000 1/5/2006	9/2/2005

Central Valley Recovery Domain			
California Central Valley Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Central Valley Spring-run Chinook Salmon	T	9/16/1999	9/2/2005
Sacramento River Winter-run Chinook Salmon	E	11/5/1990 (T) 1/4/1994 (E)	6/16/1993

South-Central / Southern California Coast Recovery Domain			
South-Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Southern California Steelhead	E	8/18/1997 5/1/2002 (RE) 1/5/2006	9/2/2005

ESA = Endangered Species Act, CH = Critical Habitat, RE = Range Extension
E = Endangered, T = Threatened

Critical Habitat Rules Cited

- 2/24/2016 (81 FR 9252) Final Critical Habitat Designation for Puget Sound Steelhead and Lower Columbia River Coho Salmon
- 2/11/2008 (73 FR 7816) Final Critical Habitat Designation for Oregon Coast Coho Salmon
- 9/2/2005 (70 FR 52630) Final Critical Habitat Designation for 12 ESU's of Salmon and Steelhead in WA, OR, and ID
- 9/2/2005 (70 FR 52488) Final Critical Habitat Designation for 7 ESU's of Salmon and Steelhead in CA
- 10/25/1999 (64 FR 57399) Revised Critical Habitat Designation for Snake River Spring/Summer-run Chinook Salmon
- 5/5/1999 (64 FR 24049) Final Critical Habitat Designation for Central CA Coast and Southern OR/Northern CA Coast Coho Salmon
- 12/28/1993 (58 FR 68543) Final Critical Habitat Designation for Snake River Chinook and Sockeye Salmon
- 6/16/1993 (58 FR 33212) Final Critical Habitat Designation for Sacramento River Winter-run Chinook Salmon

ESA Listing Rules Cited

- 4/2/2012 (77 FR 19552) Final Range Extension for Endangered Central California Coast Coho Salmon
- 2/11/2008 (73 FR 7816) Final ESA Listing for Oregon Coast Coho Salmon
- 5/11/2007 (72 FR 26722) Final ESA Listing for Puget Sound Steelhead
- 1/5/2006 (71 FR 5248) Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead
- 6/28/2005 (70 FR 37160) Final ESA Listing for 16 ESU's of West Coast Salmon
- 5/1/2002 (67 FR 21586) Range Extension for Endangered Steelhead in Southern California
- 6/7/2000 (65 FR 36074) Final ESA Listing for Northern California Steelhead
- 9/16/1999 (64 FR 50394) Final ESA Listing for Two Chinook Salmon ESUs in California
- 3/25/1999 (64 FR 14508) Final ESA Listing for Hood River Canal Summer-run and Columbia River Chum Salmon
- 3/25/1999 (64 FR 14517) Final ESA Listing for Middle Columbia River and Upper Willamette River Steelhead
- 3/25/1999 (64 FR 14528) Final ESA Listing for Ozette Lake Sockeye Salmon
- 3/24/1999 (64 FR 14308) Final ESA Listing for 4 ESU's of Chinook Salmon
- 3/19/1998 (63 FR 13347) Final ESA Listing for Lower Columbia River and Central Valley Steelhead
- 8/18/1997 (62 FR 43937) Final ESA Listing for 5 ESU's of Steelhead
- 5/6/1997 (62 FR 24588) Final ESA Listing for Southern Oregon / Northern California Coast Coho Salmon
- 10/31/1996 (61 FR 56138) Final ESA Listing for Central California Coast Coho Salmon
- 1/4/1994 (59 FR 222) Final ESA Listing for Sacramento River Winter-run Chinook Salmon
- 4/22/1992 (57 FR 14653) Final ESA Listing for Snake River Spring/summer-run and Snake River Fall Chinook Salmon
- 11/20/1991 (56 FR 58619) Final ESA Listing for Snake River Sockeye Salmon
- 11/5/1990 (55 FR 46515) Final ESA Listing for Sacramento River Winter-run Chinook Salmon

Photo: 1	Looking: South	Notes: Typical groundcover in the Run-up Apron area – weedy grasses and forbs and pavement. April 2018.
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Photo: 2	Looking: West	Notes: Photo courtesy of Google 2018. Stand of oak trees at obstruction removal polygon #23 off Hwy 551.
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819 SE Morrison Street
Suite 310
Portland, OR 97214
503.274.2010 [phone](#)
503.274.2024 [fax](#)

www.esassoc.com

memorandum

date August 20, 2018

to Peter Murphy, PE, Century West Engineering

cc Project file

from Sarah Hartung and Luke Johnson, Environmental Science Associates

subject Aurora State Airport; Streak Horned Lark Presence/Absence Survey

BACKGROUND

This streaked horned lark (*Eremophila alpestris strigata*) (SHLA) presence/absence survey is intended to support the Environmental Assessment for proposed airport improvements at the Aurora State Airport (Airport). These improvement projects will be funded by the Federal Aviation Administration (FAA) and therefore must comply with the requirements of the National Environmental Policy Act.

The SHLA is a federally threatened species protected under the Endangered Species Act (78 FR 61451 61503). The surveys are required for Section 7 of Endangered Species Act consultation with the U.S. Fish and Wildlife Service by FAA. Critical habitat has been designated for this species (78 FR 61505 61589) but is not present in the survey area.

The Oregon Department of Aviation owns and operates the Airport, which is located on 144 acres of land approximately one mile northwest of the city center of Aurora, between Highway 551 and Airport Road NE (Attachment 1, Figure 1). The legal location of the Airport is Section 2, Township 3, Range 1 West in Marion County, Oregon. Surrounding land use consists primarily of agricultural uses and plant nurseries with pockets of residential areas and commercial businesses.

The survey area includes the 144-acre Airport property, with a primary focus on herbaceous habitat adjacent to Runway 17-35, six supporting taxiways, and the runway safety areas on either end of the runway (Attachment 1, Figure 1). Formal transects were established at the edges of paved areas (Attachment 1, Figure 1). The hangers and other structures at the Airport were also surveyed.

Potential suitable habitat for SHLA includes open terrain with few to no shrubs, trees, or other tall structures such as buildings (78 FR 61505 61589). This species is known to nest on airport infields, or other sparsely vegetated

areas in the Willamette Valley and near the Puget Sound, Washington, and on dredge-spoils islands in the Lower Columbia River. Preferred nesting sites have sparse vegetation cover – generally no more than 80% –and short clump-grasses and/or forbs (generally less than 13 inches in height) that provide cover for nest sites (78 FR 61505 61589). The nearest breeding population of SHLA is the McMinnville Municipal Airport, approximately 18 miles west of the survey area (Streaked Horned Lark Working Group, 2017). The nearest designated critical habitat is at the Basket Slough National Wildlife Refuge, approximately 30 miles to the southwest of the Survey Area.

METHODS

Surveys were conducted in accordance with *Survey Protocols and Strategies for Assessing Streaked Horned Lark Site Occupancy Status, Population Abundance, and Trends* (protocol) (Pearson et al. 2016). All areas of potential suitable habitat were surveyed using the protocol.

Three surveys were conducted during the 2018 breeding season on April 25, June 19, and July 3. Surveys were conducted by ESA biologists experienced with SHLA habitat and biology: Sarah Hartung, Ilon Logan, and Luke Johnson. Surveys were conducted in the morning, within one half-hour of sunrise. Conditions for each survey were conducive to bird activity and detection. Surveys consisted of walking each longitudinal transect and stopping at point stations for five-minute intervals while scanning with binoculars (10x42 magnification) and listening for vocalizations.

Using ArcGIS prior to field surveys, longitudinal transects were established at the edges of pavement to avoid the potential for flushing birds that may have been breeding in the adjacent habitat (Attachment 1, Figure 1). The longitudinal transects were walked, with point stations positioned every 575 feet (approximately every 3rd runway light). Areas in close proximity to buildings that are not typically considered potential suitable habitat were also informally examined. Potential suitable habitat was present near Runway 17-35, the six supporting taxiways, and the runway safety areas on either end of the runway. Vegetation in these areas consisted of short, dense grasses and forbs with occasional patches of bare ground or gravel. Grasses and forbs along the runway and taxiways are mowed two to three times during the breeding season. Typical vegetation characteristics of the infield between the taxiway and runway are shown in Attachment 3.

RESULTS AND CONCLUSIONS

No SHLA were detected during any of the three presence/absence surveys performed at Aurora State Airport. Field data sheets from these surveys are provided as an attachment to this memo (Attachment 2).

Breeding SHLA are known to prefer sparsely vegetated areas (less than 80% vegetation cover) of bunched or tufted vegetation that they use as nest cover. Nest sites are typically surrounded by flat, obstacle-free ground that allows unobstructed flight-paths between breeding territories and feeding or socializing patches. These habitat characteristics are often available at airports, particularly where gravel shoulders are located between paved portions of runways and taxiways.

Although the Airport is flat and obstacle free, there are several habitat variables that likely influence the absence of SHLA. The gravel shoulders at the edge of runways and taxiways are not as wide and bare as they are at other

airports known to support the species. The existing vegetation in these areas forms dense and near complete cover. Compared to areas known to support SHLA, the Airport is surrounded by shrubs, fencing, and development. Nearby tall vegetation or buildings on all sides of the Airport create a narrow corridor of open space that is likely not as suitable for breeding SHLA as other municipal airports in the valley with different geometry. Fencing, signs, and control lights provide ample perch sites for aerial predators, further degrading the quality of SHLA breeding habitat. Numerous species that are competitors or predators of SHLA were observed during all three surveys, including American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), and red-winged black bird (*Agelaius phoeniceus*) (Attachment 2). The presence of higher quality habitat in nearby Willamette Valley locations may allow SHLA to choose to avoid what is available at Aurora State Airport.

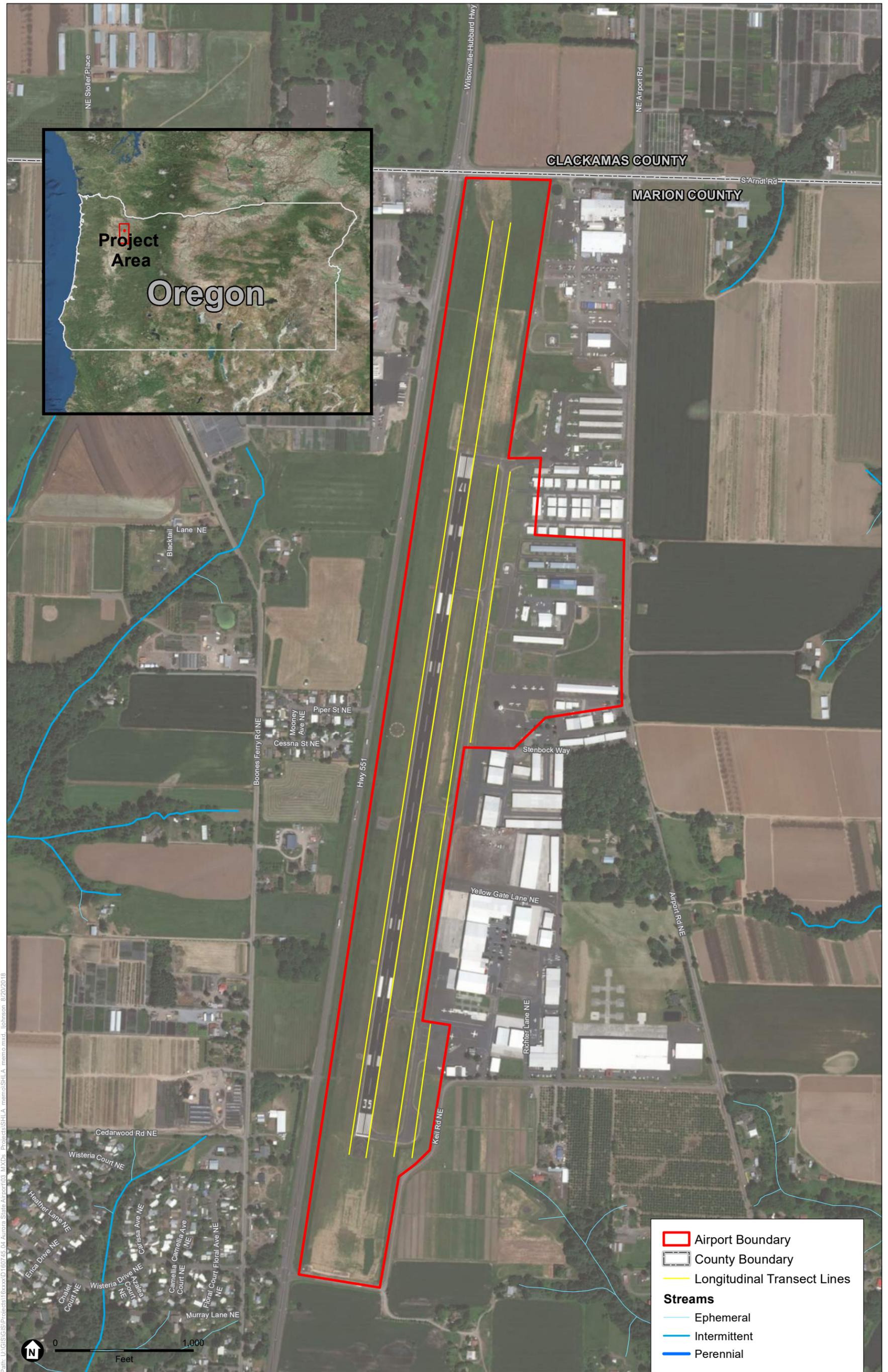
LITERATURE CITED

Pearson, S.F., M. Linders, I. Keren, H. Anderson, R. Moore, G. Slater, and A. Kreager. 2016. Survey Protocols and Strategies for Assessing Streaked Horned Lark Site Occupancy Status, Population Abundance, and Trends. Wildlife Science Division, Washington Department of Fish and Wildlife, Olympia, Washington.

Streaked Horned Lark Working Group. 2017. Annual Meeting, October 16 & 17, Portland Oregon. Available at: https://cascadiaprairieoak.org/wp-content/uploads/2018/06/2017SHLAWorkingGroupMinutes_Final.pdf

ATTACHMENT 1

Attachment 1, Figure 1



SOURCE: ESA, 2017; Open Street Maps, 2016; RLIS, 2017, Marion County Streams 2017

160745.04 Aurora State Airport SHLA Survey

Figure 1
2018 SHLA Survey Area
Marion County, OR

ATTACHMENT 2

Streaked Horned Lark Bird Detection Form (20 March 2015)

Lj 14

Bird #	Time	Age	Sex	Initial Detcn	If AUDIO S	Other Behavior					Notes - If banded record color
						FD	MF	CO	NM	FC	

Lj 15

Lj 16

Lj 17

Lj 18

Lj 19

Lj 20

Lj 21

Lj 22

Lj 23

Lj 24

Lj 25

Lj 26

Lj 27

Lj 28

Lj 29

Lj 30

1
1000



Streaked Horned Lark Bird Detection Form (20 March 2015)

IEL 14

Bird #	Time	Age	Sex	Initial Detcn	If AUDIO S	Other Behavior					Notes - If banded record color
						FD	MF	CO	NM	FC	

IEL 15

IEL 16

IEL 17

IEL 18

IEL 19

IEL 20

IEL 21

IEL 22

IEL 23

IEL 24

IEL 25

IEL 26

IEL 27

IEL 28

IEL 29

IEL 30

Streaked Horned Lark Bird Detection Form (20 March 2015)

SH 14

Bird #	Time	Age	Sex	Initial Detcn	If AUDIO S	Other Behavior					Notes - If banded record color
						FD	MF	CO	NM	FC	

SH 15

SH 16

SH 17

SH 18

SH 19

SH 20

SH 21

SH 22

SH 23

SH 24

SH 25

SH 26

SH 27

SH 28

SH 29

SH 30

ATTACHMENT 3

Photos of conditions at Aurora State Airport during SHLA survey on April 25, 2018



Photo 1: Looking southwest from the west edge of Runway 17-35.



Photo 2: Looking northwest from the east edge of the taxiway.

APPENDIX C

CULTURAL RESOURCES

From: [Callahan, Sean \(FAA\)](#)
To: thpo@grandronde.org; [Robert Kentta \(rkentta@ctsi.nsn.us\)](mailto:rkentta@ctsi.nsn.us); [Ms. Roberta Kirk \(roberta.kirk@ctwsbnr.org\)](mailto:roberta.kirk@ctwsbnr.org)
Subject: Emailing: Prj_Des_Aurora Obstruction Removal Project Description, Map_Aurora Obstruction Removal Project
Date: Monday, January 08, 2018 12:43:00 PM
Attachments: [Prj_Des_Aurora Obstruction Removal Project Description.pdf](#)
[Map_Aurora Obstruction Removal Project.pdf](#)

The Federal Aviation Administration (FAA) would like to initiate consultation with you in accordance with Section 106 of the National Historic Preservation Act of 1966, and implementing regulations 36 CFR Part 800 for the aforementioned project. We are also initiating consultation in accordance with Executive Order 13175, Consultation and Coordination with Indian and Tribal Governments and FAA Executive Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures. Attached is the APE and Project description for your review.

Sean Callahan
Environmental Protection Specialist
F.A.A. – Northwest Mountain Region
Seattle Airports District Office
1601 Lind Ave SW - Suite 250, Renton, WA 98057-3356
425-227-2629



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



January 24, 2018

Mr. Sean Callahan
FAA - NW Mountain Region
Seattle Airports Dist Off
1601 Lind Ave SW, Ste 250
Renton, WA 98057-3356

RE: SHPO Case No. 18-0037
FAA, Aurora State Airport Obstruction Removal Project
Remove trees and run up construction
22801 Airport Rd NE long 1224620 lat 4514.83, Marion County

Dear Mr. Callahan:

Our office has received the initial submission for the Environmental Assessment (EA) being prepared for this project. We have no questions at this time, and look forward to receiving the results of the cultural resources study. If you have any questions, please feel free to contact our office.

Sincerely,

Jason Allen, M.A.
Historic Preservation Specialist
(503) 986-0579
jason.allen@oregon.gov

State Historic Preservation Office Report Cover Page

Year:

Title:

Author(s):

Agency/Client:

District/Contractor:

Agency/Client Report#:

Project Acres:

Survey Acres:

County(ies):

Township:

Range:

Section(s):

Township:

Range:

Section(s):

Archaeological Permit Number(s):

Accession Number:

Reports submitted to:

Tribes:

UOMNCH:

LCIS:

Curation:

Report Addresses Testing:

Have tribes been contacted or consulted?

List tribes:

List any other groups contacted or consulted:

Report is associated with: PA

MOA

REPORTS WITHOUT A COMPLETE AND ACCURATE COVER PAGE AND APPROPRIATE ADDITIONAL PAGES MAY BE RETURNED. CHECK THE SHPO WEBSITE TO MAKE SURE YOU HAVE THE MOST CURRENT VERSION.

Report #

State Historic Preservation Office Report Summary of Resources and NRHP Eligibility

Archaeological:

Site: Isolate: Built Environment: TCP: HPRCSIT: Other:

Count:

***Please be sure all archaeological forms have been submitted on-line**

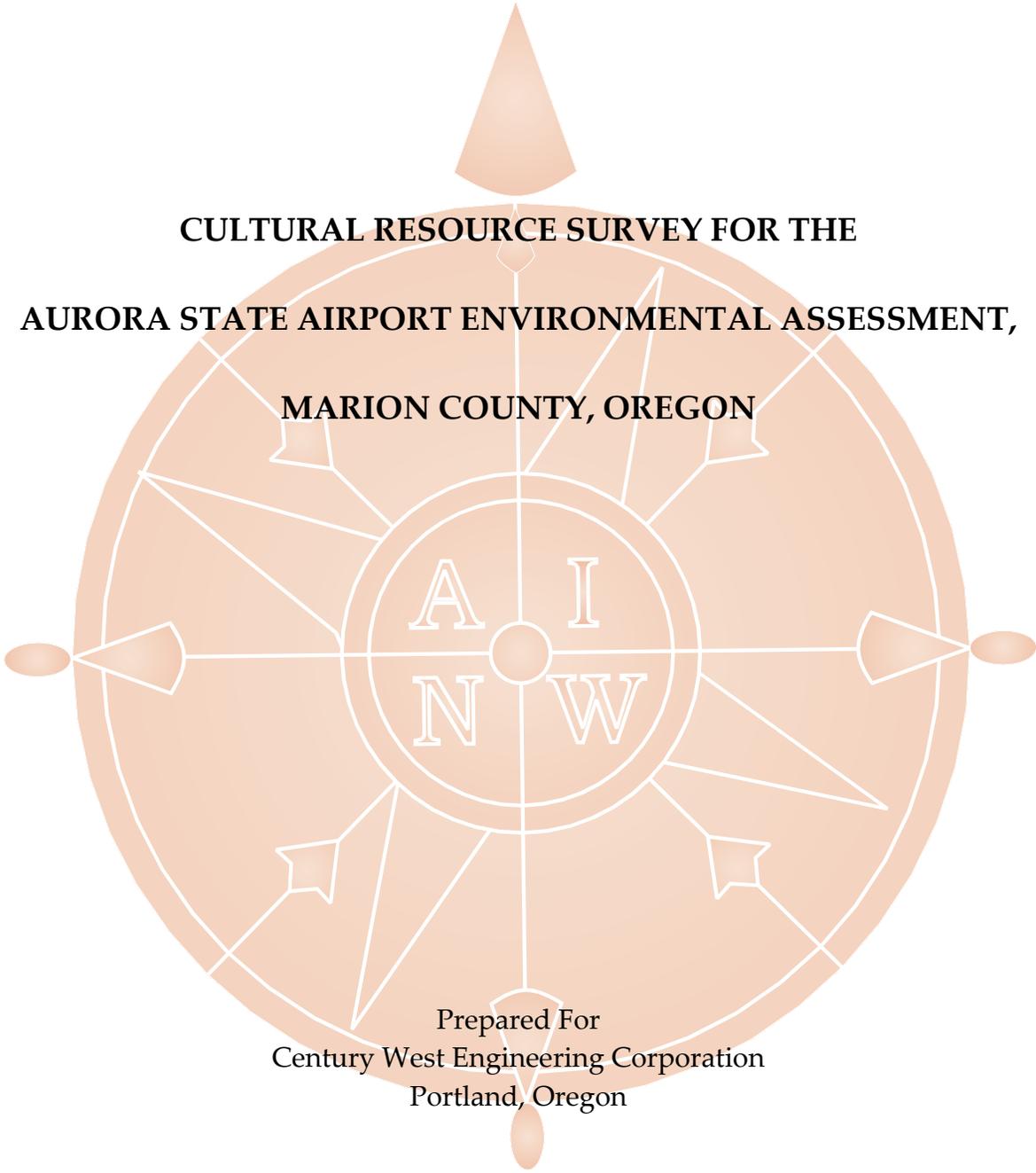
***EVALUATE PROPERTIES UNDER ALL FOUR CRITERIA.
BE SURE TO INCLUDE JUSTIFICATION IN THE REPORT***

Oregon
On-Line

Form #: Trinomial: Temp# or Name: Criterion A: Criterion B: Criterion C: Criterion D:

RESOURCES

NRHP ELIGIBILITY



**CULTURAL RESOURCE SURVEY FOR THE
AURORA STATE AIRPORT ENVIRONMENTAL ASSESSMENT,
MARION COUNTY, OREGON**

Prepared For
Century West Engineering Corporation
Portland, Oregon

January 10, 2018
Revised May 13, 2019

REPORT NO. 3979

Archaeological Investigations Northwest, Inc.

3510 NE 122nd Ave. • Portland, OR • 97230

Phone 503 761-6605 • Fax 503 761-6620

**CULTURAL RESOURCE SURVEY FOR THE
AURORA STATE AIRPORT ENVIRONMENTAL ASSESSMENT,
MARION COUNTY, OREGON**

PROJECT: Airport improvements and obstruction (tree) removal

TYPE: Cultural resource survey

LOCATION: Section 35, Township 4 South, Range 1 West; and
Sections 2, 11, and 14, Township 4 South, Range 1 West, Willamette Meridian

USGS QUAD: *Sherwood, Oreg., 7.5-minute, 1991*
Woodburn, Oreg., 7.5-minute, 1985

COUNTY: Marion

PROJECT AREA: 210.5 acres

AREA SURVEYED: 4.7 acres

FINDINGS: **Conditional “No Historic Properties Affected”**

Archaeological Resources

- No archaeological resources were identified during the pedestrian survey of the north run-up area. No further archaeological work is recommended for the north run-up area.
- Not all of the project Area of Potential Effects (APE) has been surveyed; AINW recommends survey of those areas that will be directly impacted once the specific trees within the clearing areas have been identified for removal.

Historic Resources

- Seventeen historic resources are located within the project APE.
- A 1951 Ranch house at 14094 Ehlen Road NE is recommended eligible for listing in the National Register of Historic Places (NRHP) under Criterion C. This house will not be affected by planned tree removal in its vicinity.
- Four historic resources were identified in association with the Aurora State Airport. It is AINW’s opinion that these resources are not eligible for listing in the NRHP, and that the Aurora State Airport has limited potential to meet NRHP eligibility criteria as a historic district.

PREPARERS: Louis Fortin, Ph.D., R.P.A., Andrea Blaser, M.S., and
Lucie Tisdale, M.A., R.P.A.

INTRODUCTION

Archaeological Investigations Northwest, Inc. (AINW), has completed a cultural resource survey in support of improvements proposed at the Aurora State Airport in Marion County, Oregon (Figures 1 through 3). The Oregon Department of Aviation, the agency that owns and operates the Aurora State Airport, is proposing construction of a run-up apron adjacent to Runway 17-35 and the removal of trees in areas north and south of the airport in the Runway 17-35 flight path. The Federal Aviation Administration (FAA) has requested that an Environmental Assessment be conducted prior to the completion of these improvements, and will serve as the lead agency. State-owned portions of the Aurora State Airport and proposed clearing areas to the south define the project's Area of Potential Effects (APE) (Figures 1 and 2). Direct impacts currently planned within the APE will be limited to the location of the proposed run-up apron and the clearing areas.

The cultural resources survey was done to meet the standards of Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulations, 36 CFR 800. The survey was also conducted in accordance with state laws addressing significant archaeological sites (ORS 358.910) and significant buildings and structures that are publicly owned (ORS 358.653). The cultural resource work was performed by AINW staff members who meet the professional qualifications of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

The project APE is approximately 210.5 acres and includes all of the airport property and the clearing areas. The north run-up apron and clearing areas account for approximately 39.3 acres. A pedestrian survey was conducted of the run-up apron (4.7 acres). The clearing areas (34.6 acres) to the north, south, and outside of airport property were informally surveyed. At the time of survey it was not known which trees would be removed from the clearing areas and permission from the landowners had not yet been granted to access their private property. The property was observed from the boundary fronting the roadway.

A historic resource survey of the Aurora State Airport identified 17 historic resources, four of which are located within the airport property (Figures 4 and 5). Thirteen of the 17 historic resources were identified within the clearing areas outside of airport property. Just one historic resource was identified as eligible for listing on the National Register of Historic Places (NRHP); however, the removal of trees will not affect the characteristics from which the house derives its significance.

LOCATION AND ENVIRONMENTAL SETTING

The project APE is north of the City of Aurora in the southeastern portion of Section 35, Township 3 South, Range 1 West and the eastern portions of Sections 2, 11, and 14 of Township 4 South, Range 1 West, Willamette Meridian (Figure 1). The project APE is located 1.4 kilometers (km) (0.9 mile [mi]) west of the Pudding River, 3.7 km (2.3 mi) south of the Willamette River, and 1.6 km (1 mi) north of Aurora.

The project APE is located in the northeastern corner of Marion County and the northeastern portion of the Willamette Valley physiographic province. The Willamette Valley extends from Cottage Grove in the south to the Columbia River in the north, and is characterized by broad alluvial flats

(Franklin and Dyrness 1988). The physiographic province is bordered by the Oregon Coast Range to the west and the Cascade Range to the east (Baldwin 1964) and is part of a continental shelf that is overlain with layers of alluvium on top of pre-Tertiary bedrock (Orr et al. 1992). During the Missoula floods massive amounts of water and debris repeatedly inundated the valley causing large amounts of silts, sand, clay, and boulders to be deposited throughout the valley (Orr and Orr 1996). The flood-derived deposits within the Willamette Valley are known as the Willamette formation and make up the top 100 meters (m) (330 feet [ft]) of sediments (McDowell 1991).

The project APE lies within the Willamette Valley, which is bounded on either side by the *Tsuga heterophylla* vegetation zone (Franklin and Dyrness 1988). This interior valley contains *Quercus* woodland zones and conifer forest areas. The *Quercus* woodland is known for its forest stands, groves, and savannas that contain deciduous oaks and evergreens. The conifer forests are known for their Douglas-firs, grand firs, and ponderosa pines (Franklin and Dyrness 1988:111-116). Across the project APE, native Douglas-fir, bigleaf maple, and western redcedar are present. The surrounding landscape contains modern agricultural activity with cultivated crops and non-native invasive grass-species.

The soils in the project area are mapped as the Amity silt loam and Woodburn silt loam series. The Amity series consists of very deep, somewhat poorly drained soils formed in stratified silty glaciolacustrine deposits on broad terraces (United States Department of Agriculture, Natural Resources [USDA, NRCS] 2009a). The Woodburn series consists of very deep, moderately well drained soils formed in stratified silty glaciolacustrine deposits on broad valley terraces (USDA, NRCS 2009b)

CULTURAL SETTING

Native Peoples – Contact Period

The northern portion of the Willamette Valley was divided into multiple small independent groups who spoke a language shared with the Kalapuyan family (Aikens 1993). The project APE lies within the area traditionally inhabited by the Ahantchuyuk, or Pudding River people (Zenk 1990:547) and is bordered closely to the east by the Northern Molala people (Zenk and Rigsby 1998). Similar to other native groups in the region, they were named after local geographic features. The Ahantchuyuk were located between the Willamette River and the Pudding River, northeast of Salem, Oregon. According to McArthur (1992:692), during severe weather the Ahantchuyuk would make the French dish boudin, or blood pudding, after an elk hunt. The nearby waterway was therefore renamed the Pudding River, as it is seen today.

The Kalapuyans traditionally occupied permanent villages during the harsh winter months, and more transitory camps during the summer (Zenk 1990). Their permanent villages consisted of multi-family households in semi-subterranean rectangular plank houses. Their summer shelters were less permanent, consisting of tree groves and brush windbreaks.

Differing views exist regarding Kalapuyan social organization. Aikens (1993:187) states that neither major chiefs nor any well-defined elite class is present in the Willamette Valley, whereas Zenk (1990:550) states that chiefs and their immediate families were on one end of the social spectrum, and slaves were on the other. Overall, the Kalapuyans did not place a strong emphasis on rank like the

neighboring Chinookan system, and they did not differentiate between “commoners.” In addition, while uncommon, it was not unknown for a free person to marry a slave (Zenk 1990:550).

A large portion of Kalapuyan’s subsistence consisted of vegetable resources. Camas was considered the most valuable resource and was abundant in the Willamette Valley. Camas was often roasted, dried, and pressed into cakes, which could then be used as a trade item (Zenk 1990:547). Other subsistence resources included wapato, tarweed seeds, hazelnuts, various berries, and occasionally, acorns. Animal resources varied throughout the valley, but included birds, small mammals, black-tailed and white-tailed deer, elk, and black bear (Zenk 1990:547, 548).

Historical Background

The Aurora State Airport is located between the Pudding River to the east and Deer Creek to the west, and is less than 1.6 km (1 mi) northwest of the town of Aurora. During the mid-nineteenth century, this general area was populated with several farms. With Oregon City located approximately 17.7 km (11 mi) to the northwest and the Willamette River in close proximity to the north and west, Euroamerican settlers flocked to this area to take advantage of the Donation Land Claim Act of 1850.

An 1852 General Land Office (GLO) map of Township 4 South, Range 1 West, Willamette Meridian, shows the farm of Jesse G. Hoffman in the project APE, in the northwest quarter of Section 11 (GLO 1852). The land is noted as gently rolling with first rate clay loam; vegetation included white oak, fir, cedar, white ash, willow, and maple trees. Two roads converged in Section 11, after which one road continued east before connecting to a sawmill on Mill Creek in Section 12. A ferry northwest of the sawmill provided service across the Pudding River (GLO 1852).

Dr. Wilhelm (William) Keil established the Aurora Colony in 1856 just north of the ferry (Kopp 2017). Keil was a man of many talents, but preaching would emerge as his strongest calling. He participated in organized religion, but eventually turned away from established churches and towards more utopian communities of like-minded Christians who were seeking moral living outside of traditional power structures (Kopp 2017). He amassed a personal following while living at the Old Harmony Colony in Pennsylvania, after which he established his own colony in Pennsylvania (Will 1955). Eventually, the community’s desire to freely practice their religious beliefs led them on a steady move westward, first to Missouri where the Bethel Colony was established, and later to a location on the Pudding River in Oregon that was named Aurora Mills, and later, Aurora (Will 1955).

The Aurora Colony became known throughout the Pacific Northwest for its hospitality, and more specifically, the hearty food prepared for visitors and music provided by the Aurora Colony Band (Kopp 2017; Will 1955). The hospitality business was such an important economic driver for the colony that Keil advocated for and succeeded in bringing the Oregon & California Railroad through Aurora in 1870 (Kopp 2017). When Keil passed away in 1877, a board of trustees that had been assembled to manage the colony’s interest decided to dissolve the settlement and sell the land that Keil had purchased on behalf of the colony (Kopp 2017). An 1878 map of the project area shows the Aurora Colony as still owning the townsite of Aurora, which was platted in 1872 (Edgar Williams & Co. 1878). The Aurora Colony and some of its members, such as Samuel Miller and descendants of Keil, are also noted on this map as owning land in the project APE along a historic-period road alignment that is now referred to as Boones Ferry Road NE (Edgar Williams & Co. 1878).

Major twentieth-century developments in the APE and its immediate vicinity include the construction of the West Portland-Hubbard Highway (now OR 551) in 1937 and the establishment of an emergency airfield at Aurora in 1943 that would eventually become the Aurora State Airport (Oregon Department of Transportation 2017:51-1). The emergency airfield, which was also referred to as the Aurora Flight Strip, was constructed by the State Highway Department during World War II for use by air carrier craft and as an airline alternate to the Portland International Airport (CH2M Hill 1976; Oregon Department of Aviation 2017). The airstrip was used so infrequently that drag races were often held there; the races were eventually permitted by state authorities, but the drivers were asked to pause and allow any circling planes to land as needed (*The Oregonian* 1948, 1955). An unsanctioned race in 1948 drew an estimated 75 to 100 cars to the airstrip (*The Oregonian* 1948).

During its early years of intermittent operation, this airstrip was administered by the Bureau of Public Roads. The Board of Aeronautics¹ began to lease the airport from the Bureau of Public Roads in 1953, and in 1973 the title for the airfield was transferred to the Board of Aeronautics (CH2M Hill 1976). After this change in ownership, a master plan study was completed for the airport, which had limited airport facilities. The 1976 master plan reported that there was no parallel taxiway to the runway, no public aircraft parking apron, and no traffic control tower at the airport (CH2M Hill 1976). Although several buildings and structures had been constructed by fixed-base operators (FBOs) on private lands east of the airport runway, the only facilities located on state land at that time were the airport runway and three taxiway exits, which had been privately constructed (CH2M Hill 1976).

Since the completion of this master plan in 1976, the Aurora State Airport has been extensively upgraded and modernized. Between 1977 and 1978, the runway was reconstructed, a parallel taxiway was added, drainage improvements were completed, runway lighting and a rotating beacon were installed, and tiedown aprons were constructed (WHPacific 2012:2-2). Using funds provided by FAA, a 22-acre parcel near the center of the airport was purchased and has since been developed by private FBOs through the construction of airplane hangars and other facilities (WHPacific 2012:2-2). The runway was extended in 1995 and reconstructed in 2004, and the parallel taxiway was relocated in 2009 (WHPacific 2012:2-2). These improvements have led to an increase in air traffic at the airport and the modernization of FBO facilities located on private land to the east.

PREVIOUS CULTURAL RESOURCE STUDIES

Archaeological Resources

AINW reviewed archaeological site and survey records in the Oregon Archaeological Records Remote Access (OARRA) system maintained by the Oregon State Historic Preservation Office (SHPO), and materials in the AINW library to determine if cultural resources have been identified in or near the project APE. The records were also reviewed to determine whether cultural resource surveys have been previously conducted in or near the APE. GLO and other historical maps, historical photographs, and other relevant documents were reviewed to determine the potential for historic-period archaeological resources within the project APE.

¹ The Oregon Board of Aeronautics was later renamed the Division of Aeronautics. The Division of Aeronautics has since been reorganized as the Oregon Department of Aviation.

An examination of the OARRA database identified a total of 14 cultural resource surveys within a 3.2-km (2-mi) radius of the project APE, including one previously completed survey within a portion of the project APE (O'Neill and Ruiz 2015). These 14 surveys have identified eight archaeological resources: 35MA201, 35MA226, 35MA227, 35MA258, 35MA355, 35CL200, 35CL273, and 35CL274.

Approximately 1.3 km (0.8 mi) southeast of the project APE are three archaeological resources: a historic-period refuse scatter, 35MA258 (Mills et al. 1998); the historic-period Williams Court site, 35MA226 (Wilt 2006); and the historic-period Aurora Colony hotel site, 35MA201 (Minor 1993). Approximately 2.3 km (1.4 mi) east of the project APE is a large pre-contact lithic scatter (site 35CL273) that may represent a permanent habitation site (Brown 2000). Farther east (2.6 km [1.6 mi]) is a site (35CL274) containing multiple burials, lithic material, and fire-cracked rock (Reese and Fagan 1995). Approximately 2.9 km (1.8 mi) west of the project APE is a historic-period cabin site (35MA227) associated with Amable Arcouet (Brauner 1987).

In 2015, the University of Oregon Museum of Natural and Cultural History completed a cultural resource survey along a portion of OR-551 that overlaps with a portion of the current project APE (O'Neill and Ruiz 2015). During their survey, they identified site 35MA355, a historic-period refuse scatter that is believed to represent remnants of a barn. The refuse scatter is approximately 135 m (443 ft) northeast of the Boones Ferry Road/OR-551 clearing area of the current APE and contains various nails, two fragments of a flat metal plate, a rim of colorless glass, a brick fragment, a rotary saw blade, two pieces of galvanized wires, a metal strap, and a porcelain light socket (O'Neill 2015).

Overall, the majority of the previous cultural resource surveys are documented to the east of the project APE. Historic-period archaeological sites are more abundant to the southeast around the former Aurora Colony, and pre-contact archaeological sites are more prevalent east between the Pudding River and Mollala River. The documented archaeological sites to the east of the project APE are most likely due to the cultural resources surveys conducted in that area.

Overall, the project APE has a low probability of encountering cultural resources based on its existing condition. The airport property has been extensively upgraded and modernized over the years with construction of a parallel taxiway, rotating beacon, drainage improvements, runway lighting and new runway, and tiedown aprons (WH Pacific 2012).

Historic Resources

A search of the Oregon Historic Sites Database revealed that one previously documented historic house is located in the APE at 21830 Boones Ferry Road NE. Documented in 1990, the house was noted as having been constructed circa 1890s and moved to its location on Boones Ferry Road NE in 1980 (Sekora et al. 1990). This house has a current status of Eligible/Contributing in the Oregon Historic Sites Database.

ARCHAEOLOGICAL FIELD SURVEY METHODS AND FINDINGS

The archaeological pedestrian survey for the north run-up apron and the clearing areas (Figure 2) was conducted on December 5, 2017 and April 10, 2019, by AINW Supervising Archaeologist Louis Fortin, Ph.D., R.P.A. AINW Senior Archaeologist Lucie Tisdale, M.A., R.P.A., managed the project and provided general oversight. Fieldwork included a systematic survey of the run-up apron area and an informal roadside survey of the clearing areas. The project APE is approximately 210.5 acres in size and includes all of the airport property and the clearing areas to the north and south; however, only the north run-up apron was surveyed because this area will be constructed in the near future (Figure 2). The north run-up surveyed area is 4.7 acres in size.

Run-up Apron

For the north run-up apron the pedestrian survey was accomplished using transects spaced approximately 5 m (16 ft) apart. The AINW archaeologist used aerial photographs, U. S. Geological Survey (USGS) quadrangle maps, and a Trimble Geo XH Global Positioning System (GPS) to orient themselves, identify project limits, and to plot any features identified during survey. The ground surface was previously modified from machine grading and runway leveling (Photos 1 and 2). Near the mid-field aircraft hangers is a drainage improvement area (Photo 3), and along the parallel taxiway are lights and their accompanied underground power lines (Photo 4). The mineral soil visibility was low to moderate (0% to 40%) due to landscaped grasses and the presence of asphalt. The majority of the run-up area is covered in asphalt. No archaeological resources were found. AINW recommends that no additional fieldwork or archaeological testing is needed for the airport property run-up apron.

Clearing Areas

The clearing areas consist of two general regions: the northern portion located around OR-551 and Arndt Road (Photo 5), and the southern portion located along OR-551 (Photo 5) and Ehlen Road NE (Photo 6). OR-551 runs north-south and parallels the western boundary of the Aurora Airport property, Arndt Road is at the north end of the airport and Ehlen Road NE is at the south end of the airport. Both roads are outside of the airport property (Figure 2). At the time of the fieldwork, an obstruction analysis had not been conducted and it was not known which trees were to be removed. Permission from landowners to access private property had also not been granted. An informal survey was conducted along the roadside and an examination of the trees and obstruction area was conducted from a distance.

It is AINW's opinion that most of the clearing areas within the project APE have a low probability of encountering cultural resources. AINW reviewed a 1953 USGS aerial imagery to determine whether the trees in the current clearing areas were present in earlier historic contexts (USGS 1953). The trees identified in the 1953 aerial were not, in most areas, present in the current clearing areas (Figure 3). Exceptions to this are the trees located between OR-551 and Boones Ferry Road north of Wisteria Road NE (Photo 7), and the trees surrounding the property at 22050 Boones Ferry Road NE. Both locations are in close proximity (42 m [138 ft]) to the previously recorded historic-period scatter 35MA355. The area around the intersection of Arndt Road and OR-551 also depict trees in the 1953 aerial photo (Figure 2; Photo 8).

HISTORIC RESOURCE SURVEY FIELD METHODS AND FINDINGS

Survey Methodology

The survey for historic resources was completed on December 5, 2017, and April 15, 2019, by AINW Senior Architectural Historian/Historian Andrea Blaser, M.S. Ms. Blaser was escorted through state-owned portions of the Aurora State Airport by John P. Wilson Jr., Airport Operation Specialist for the Oregon Department of Aviation. Access to and views of portions of the airport that extend outside of state-owned land were limited. The survey of clearing areas south of the airport was done from public rights-of-way.

Prior to visiting the project APE, a search of Marion County Assessor's Office records and historical documents pertaining to development of the Aurora State Airport was done to identify the likely locations of historic resources in the APE. Historic resources were defined as buildings, structures, sites, objects, and districts that were at least 45 years in age or older when the survey was initiated in 2017 (i.e., constructed in or before 1972). Although features of the built environment must generally be at least 50 years old to meet minimum eligibility requirements for listing in the NRHP, including features in this survey that will meet or exceed the minimum age threshold within five years extends the validity of AINW's survey results through project planning and construction phases.

Features of the built environment that were identified as meeting the 45 year age requirement for inclusion in this survey were prioritized for documentation. All other built environment features of the APE were observed and assessed for the presence of historical features. Historic resources identified were photographed, and notes were taken pertaining to their physical features and historical integrity. In anticipation of the Aurora State Airport potentially representing a historic district, photographs and notes were taken to capture the historical features and integrity of the airport that were visible from publicly accessible areas.

Survey Results

As a result of this survey, four historic resources were identified within the APE at the Aurora State Airport (Figure 4) and thirteen were identified in clearing areas to the south of the airport (Figure 5). These 17 historic resources are documented in a baseline table attached to this report (Table 1). This baseline table provides a physical description, an assessment of historical integrity, a recommendation of NRHP eligibility, and a representative photograph of each resource. The locations of these 17 historic resources are mapped on Figures 4 and 5.

Just one historic resource identified in the APE, a 1951 Ranch house at 14094 Ehlen Road NE, is recommended eligible for listing in the NRHP (Figure 5; Photo 9). Most all other historic resources of the APE have diminished historical integrity due to modifications that have occurred since they were originally constructed. For instance, the previously recorded house at 21830 Boones Ferry Road NE is the oldest building in the APE (circa 1890s); however, it has been moved from its original location, and its siding and windows have recently been replaced with those of modern materials and appearance (Figure 5; Photo 10). The house retains its historic-period saltbox roofline, but otherwise has a modern appearance. This diminished historical integrity detracts from potential associations that this house may

have to significant events or people of the past (Criteria A and B), and the house is no longer a good example of a type, period, or method of construction (Criterion C).

A determination of eligibility and finding of effect for the Ranch house at 14094 Ehlen Road NE is included below. Also included is a detailed discussion of the potential eligibility of the Aurora State Airport for listing in the NRHP as a historic district.

14094 Ehlen Road NE (Figure 5; Photos 9, 11, and 12)

Determination of Eligibility

The Ranch house at 14094 Ehlen Road NE was constructed in 1951. Compared to other historic homes in the project area, this Ranch house is highly representative of its type and period of construction. This is due, in part, to the house's high level of historical integrity. The house retains its original Roman brick and wood lap siding in addition to its original wood windows.

This house is situated on a nearly 28-acre land parcel, and has two associated outbuildings; a machine shop that appears to have been constructed prior to the house, circa 1940s, and a concrete block pumphouse that may also pre-date the 1951 house (Photos 11 and 12). This land parcel was once part of a larger land parcel owned by the Aurora Colony, and later by William Kraus in 1929 and Eugene and Maude Cole in 1971 (Edgar Williams & Co. 1878; Metsker Maps 1929, 1971). William Kraus' parents were members of the Aurora Colony, but were later arrivals (Corning 1939). Kraus was born in Missouri in 1853; he arrived in Aurora for the first time in 1878, and lived in Prineville for a short while before returning back to Aurora in 1882 (Corning 1939). Kraus died in 1944; thus, the construction of the Ranch house at 14094 was likely done in association with a change in land ownership as Kraus' land holdings were sold by his estate.

AINW recommends that the house at 14094 Ehlen Road NE is eligible for listing in the NRHP under Criterion C. The house is a good example of its type and period of construction within its local context. Although the house is located on land that was once owned by William Kraus, a member of the Aurora Colony, the house was constructed after Kraus' death in 1944. AINW recommends that the house has no known historical associations with patterns of events or significant people of the past that would qualify it as eligible for listing in the NRHP under Criterion A or Criterion B. The house retains good integrity of location, design, materials, workmanship, feeling, and association, but has a somewhat diminished integrity of setting. Considering this diminished integrity of setting, in addition to the house's significance as a good representation of its type and period of construction under Criterion C, AINW recommends that the boundary of this NRHP-eligible resource be limited to the footprint of the house.

Finding of Effect

The Ranch house at 14094 Ehlen Road NE is located within a proposed clearing area where the Oregon Department of Aviation may remove trees to improve sight lines toward Runway 17-35. An obstruction analysis has not yet been performed to identify individual trees for removal, so there is no detailed information to report at this time concerning specific trees that might be removed within the designated clearing areas of the APE.

Since the Ranch house at 14094 Ehlen Road NE is recommended to have a boundary that includes only the footprint of the house, it is AINW's opinion that if tree removal does occur on the parcel on which the house is associated, no effect on a historic property will occur. The setting of the house does not contribute to its eligibility for listing in the NRHP as a good example of its type and period of construction under Criterion C. Thus, any changes to the setting of the house will not meet the definition of an effect as outlined in 36 CFR 800.16(i). If tree removal does occur at this location, the house will remain eligible for listing in the NRHP under Criterion C. No further work is recommended for this historic property.

Aurora State Airport (Figure 4; Photos 13 through 20)

Only four historic resources were identified within the project APE at the Aurora State Airport. These resources are Runway 17-35 (Photo 13), which was constructed in 1943 as the Aurora Flight Strip, and a drainage ditch and two wind cones (Photo 14) that appear to have been constructed when the Board of Aeronautics began to lease the airport from the Bureau of Public Roads in 1953. The drainage ditch is located parallel to and west of Runway 17-35, and the two wind cones are situated immediately east of the historic-period drainage ditch (see Figure 5). Only one of the historic wind cones, located near the north end of Runway 17-35, was observed at the time of survey. The second wind cone is located further south, near to where Keil Road NE once crossed through an area that is now airport property, connecting to Boones Ferry Road NE to the west.

As reported in the "Historical Background" section of this report, Runway 17-35 has been modified since its original construction as an emergency airstrip in 1943. Plans for the Aurora Flight Strip were drawn in 1943 by H.S. Swart, an engineer with Oregon's State Highway Department (Swart 1943). These plans indicate that the central landing area of the runway was constructed of asphaltic concrete, while the runway approaches and shoulders that directly abutted the runway were constructed of compacted rock and transitioned outward into graded areas that were seeded with grass. No taxiways, air traffic control, or FBO facilities were included in the design. Two wind cones are included in this original design, but do not align with the locations of historic-period wind cones that are currently in use at the airport. The historic-period drainage ditch is not included in this design, either.

There are at least seven historic-period buildings associated with private FBOs at the Aurora State Airport; these buildings are not located within the project APE, but they were observed during the survey of the APE from state-owned lands (see Figure 4 for building locations). These buildings include four T-hangers, an office building, and a shop located near the area proposed for run-up apron construction (Photos 15 and 16), and a hangar located within a limited entry FBO area near the south end of Runway 17-35 (Photo 17). They represent the few historic-period buildings on private land that operate in association with the Aurora State Airport, as the airport underwent major changes after the Board of Aeronautics (which has since become the Oregon Department of Aviation) took ownership of the airport from the Bureau of Public Roads in 1973. This change in ownership led to a master planning process and instigated an effort to modernize and expand the airport's existing facilities (CH2M Hill 1976). Most of the buildings and structures that are operated in association with the airport in the present day were constructed from the late 1970s onward, giving the airport a modern feeling and appearance (Photos 18 through 20).

It is AINW's opinion that that the four historic resources in the APE at the Aurora State Airport are not eligible for listing in the NRHP. Runway 17-35 has been significantly modified since it was originally constructed in 1943 for emergency use, and late twentieth century changes to the Aurora State Airport have served to diminish its historical integrity of design, setting, materials, workmanship, feeling, and association. Likewise, the improvement and expansion of airport and FBO facilities during the modern era detract from the historical appearance and integrity of the drainage ditch and wind cones that were constructed on airport property circa 1953. The diminished historical integrity of these individual resources affects their ability to convey potentially significant associations with broad patterns of events relating to World War II defense tactics and infrastructure development under Criterion A. These resources have no known associations with significant people of the past under Criterion B, and they are not distinctive examples of a type, period, or construction under Criterion C.

In addition, it is unlikely that the historic resources documented in the APE at the Aurora State Airport would contribute to a potential Aurora State Airport Historic District. Although a survey of private lands associated with the Aurora State Airport was not completed for this project, it is AINW's opinion that modern infill and the modification and/or replacement of historic features at the airport diminish the airport's potential to be eligible for listing in the NRHP as a historic district. Such a district would lack integrity of design, setting, materials, workmanship, feeling, and association. This overall loss of historical integrity detracts from the airport's potentially significant associations with World War II-era infrastructure projects and the development of small airports during the mid-twentieth century to supplement and relieve pressure on major regional airports.

SUMMARY AND RECOMMENDATIONS

AINW has completed a cultural resource survey of the Aurora Airport Environmental Assessment project. During the pedestrian survey within the project APE of the north run-up apron, no archaeological resources were identified. The run-up apron was identified as a low probability area for encountering archaeological resources due to the presence of previous ground modifications and asphalt covering. AINW recommends that no additional fieldwork or archaeological testing is needed for the airport property run-up apron.

Proposed clearing areas were observed from the roadside because permission from landowners had not yet been granted to access their private property. In addition, the specific locations for the removal of trees are not yet known. Once specific obstructions have been identified for removal in the clearing areas, AINW recommends a survey be conducted. However, a majority of the clearing areas have been disturbed from residential construction, underground utilities, and roadway construction, and are unlikely to have high probability for archaeological resources.

There are 17 historic resources in the APE, four of which are operated in association with the Aurora State Airport. It is AINW's recommendation that these four historic resources are not eligible for listing in the NRHP, and that they do not contribute to a potential historic district at the Aurora State Airport. It is unlikely that a historic district defined at this airport would meet minimum eligibility requirements for listing in the NRHP, as a majority of buildings and structures at the airport were constructed from the late 1970s to the present day.

Thirteen historic resources were documented in proposed clearing areas that are south of the airport. Only one of these historic resources, a 1951 Ranch house at 14094 Ehlen Road NE, is recommended eligible for listing in the NRHP. As this house is a good example of its type and period of construction under Criterion C, the possible removal of trees from the parcel on which it is situated will not affect the characteristics from which the house derives its significance.

AINW recommends a finding of “No Historic Properties Affected” for the Aurora State Airport Environmental Assessment project. This finding is contingent upon the inspection of the private land that would be disturbed for obstruction removal, the specific locations of which have yet to be determined. Based on AINW’s observation of tree clearing areas from adjacent public land, there is limited potential for archaeological resources to be present at these areas.

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TABLE 1
HISTORIC RESOURCES IDENTIFIED IN THE APE

Name	Description	Integrity	NRHP Recommendation	Photograph
Runway 17-35, Aurora State Airport	Originally constructed in 1943 as the Aurora Flight Strip, this runway was intended for use in emergency situations and for general support of aviation needs during World War II. The runway has since been extended and reconstructed, and is operated as part of the Aurora State Airport.	The extension and reconstruction of the runway, in addition to the construction of modern facilities within the immediate vicinity of the runway, have diminished its historical integrity of design, setting, materials, workmanship, feeling, and association.	Recommended Not Eligible/ Non-Contributing, Aurora State Airport	
Drainage Ditch, Aurora State Airport	This ditch is not included in original plans for the Aurora Flight Strip, but is visible in aerial photography from 1953. This may indicate that the ditch was constructed circa 1953, the year that the Board of Aeronautics began to lease the airport from the Bureau of Public Roads. It runs the length of the airport property parallel to and west of Runway 17-35. This ditch is approximately 15 feet wide and 5 feet deep.	This ditch appears to retain integrity of location, design, materials, and workmanship; modernization of the adjacent Runway 17-35 and the overall Aurora State Airport have diminished its integrity of setting, feeling, and association.	Recommended Not Eligible/ Non-Contributing, Aurora State Airport	
Wind Cones (n=2), Aurora State Airport	Two wind cones are located immediately east of the drainage ditch at Aurora State Airport; one is near each end of Runway 17-35. These wind cones do not align with the locations of wind cones in the 1943 design for the Aurora Flight Strip, and appear to have been installed at the same time the drainage ditch was constructed, circa 1953. They feature a base of three metal poles that support a single upper pole from which a nylon sock is hung.	The wind cones appear to retain integrity of location, design, materials, and workmanship; the modernization of Runway 17-35 and the overall Aurora State Airport have diminished their integrity of setting, feeling, and association.	Recommended Not Eligible/ Non-Contributing, Aurora State Airport	

TABLE 1, continued

Name	Description	Integrity	NRHP Recommendation	Photograph
<p>22050 Boones Ferry Road NE (Clearing Area at OR 551)</p>	<p>This house has a reported construction date of 1920, but its two-story central mass indicates that it may have been constructed earlier in the twentieth century and has since been expanded. A shed roof addition (unknown construction date) is at the south elevation, and gables extending from the west façade and north elevation appear to have been constructed circa 1920. The house is clad with modern wood lap siding, and windows are vinyl hung sashes.</p>	<p>Modifications to the plan, cladding, and windows of the house diminish its historical integrity of design, materials, workmanship, feeling, and association</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	
<p>Deer Creek Estates (Clearing Area at OR 551)</p>	<p>This circa 1972 manufactured home park has common streets and recreation areas, but lots are individually owned. Stonework accentuates the entry at Boones Ferry Road NE, where one original globe accent light was observed. Globe lights were replaced on all metal post streetlamps observed. Permanent construction overlapping the APE includes foundations, pathways, and outbuildings from the 1970s.</p>	<p>Retains integrity of location, design, setting, workmanship, feeling, and association; integrity of materials slightly diminished by changes to streetlamps</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	
<p>14018 Keil Road Road NE (Clearing Area at OR 551)</p>	<p>This 1940 house is clad with T1-11 siding, has vinyl windows, and is capped with a hip roof with standing seam metal. A 1996 manufactured house is on the same land parcel, as are several sheds and a large modern outbuilding.</p>	<p>Modifications to the cladding and fenestration of the house, and the addition of a manufactured house and modern outbuildings to its immediate setting have diminished the house's integrity of design, setting, materials, workmanship, feeling, and association.</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	

TABLE 1, continued

Name	Description	Integrity	NRHP Recommendation	Photograph
<p>21860 Boones Ferry Road NE (Clearing Area at OR 551)</p>	<p>This 1967 Ranch house has been significantly expanded to the northeast, giving it an irregular footprint. The main body of the house is clad with wood lap siding and brick veneer, and has aluminum windows. The large addition is clad with a mixture of wood lap siding and T1-11 siding, and features vinyl windows.</p>	<p>Modifications to the plan, siding, and windows of the house diminish its historical integrity of design, materials, workmanship, feeling, and association.</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	
<p>21861 Boones Ferry Road NE (Clearing Area at OR 551)</p>	<p>This 1920 house has a U-shaped plan, is clad with T1-11 and board-and-batten siding, and has a mixture of vinyl, aluminum, and anodized aluminum windows. Most of the east façade porch appears to have been infilled circa 1980s. Two smaller sheds that may date to the historic period, in addition to a modern storage building, were also observed on the parcel.</p>	<p>Modifications to the plan, cladding, and fenestration of the house diminish its integrity of design, materials, workmanship, feeling, and association</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	
<p>21830 Boones Ferry Road NE (Clearing Area at OR 551)</p>	<p>In 1990, this house was documented as having been constructed circa 1890s but moved to 21830 Boones Ferry Road NE in 1980 (Sekora et al. 1990). At the time of the AINW survey, a remodeling project was nearing completion that replaced all original windows and the exterior cladding. Aerial photography indicates that this house was recently moved to its current location on the land parcel.</p>	<p>Recent modifications to the house, in addition to a likely move from its original location, diminish its historical integrity of location, design, setting, materials, workmanship, feeling, and association. Only the form of the house remains visibly identifiable as dating to the historic period.</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	

TABLE 1, continued

Name	Description	Integrity	NRHP Recommendation	Photograph
21810 Boones Ferry Road NE (Clearing Area at OR 551)	This 1940 house is clad with vertical wood siding and brick veneer, and is capped with a gable roof with standing seam metal. All original windows have been replaced with vinyl sashes. A detached garage to the north is capped with a gable roof with boxed eave returns and is clad with combed shingle siding. A small shed with a hip roof is adjacent to the garage, and a large metal-clad outbuilding is located south of the house.	Modifications to the cladding and fenestration of the house have diminished its integrity of design, materials, workmanship, feeling, and association.	Recommended Not Eligible/ Non-Contributing	
14188 Keil Road NE (Clearing Area at OR 551)	This circa 1970 barn and general purpose building are used in association with a mobile home and possible pumphouse. The barn was partially blocked from view by trees, but is clad with vertical wood board siding and is capped with a gable roof. The general purpose building is also capped with a gable roof, and is clad with corrugated metal. The mobile home appears to date to the 1960s or early 1970s. The possible pumphouse is situated west of these buildings in an open field.	Retains integrity of location, design, setting, materials, workmanship, feeling, and association	Recommended Not Eligible/ Non-Contributing	
14198 Keil Road NE (Clearing Area at Keil Road)	This 1950 house has expanded from its original footprint, likely due to additions to its north and south elevations. The house now features a two-story section at the south end that appears to have been constructed circa 1970s. The house is clad with composite wood siding, has gridded vinyl windows, and has clay tiles on the gable roof.	Modifications to the plan, siding, and fenestration have diminished its integrity of design, materials, workmanship, feeling, and association	Recommended Not Eligible/ Non-Contributing	

TABLE 1, continued

Name	Description	Integrity	NRHP Recommendation	Photograph
<p>21415 Hubbard Cutoff NE (Clearing Area at Ehlen Road NE)</p>	<p>This 1932 Colonial Revival/ Craftsman house is now clad with vinyl siding and has vinyl windows. A detached garage, constructed in 1940, is also clad with vinyl siding and features a clipped gable roof, matching the house to the north. North of the house is a large building of unknown use, constructed circa 1970. It has a rectangular footprint, is capped with a flat roof, is clad with tilt-up panels with exposed aggregate, and has anodized aluminum windows and three oversized overhead rolling doors.</p>	<p>Modifications to the siding, and fenestration of the house, in addition to the introduction of a large building in its immediate vicinity circa 1970, diminish its historical integrity of setting, design, materials, workmanship, feeling, and association.</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	
<p>Wagon Wheel Village 21356 Hubbard Cutoff NE (Clearing Area south of Ehlen Road NE)</p>	<p>This circa 1965 mobile home park is situated immediately west of OR 551. It has paved roadways, metal poles with mounted signs, and a row of trees at its east edge that help to block noise and provide privacy from the adjacent highway.</p>	<p>Retains integrity of location, design, setting, materials, workmanship, feeling, and association</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	

TABLE 1, continued

Name	Description	Integrity	NRHP Recommendation	Photograph
<p>14094 Ehlen Road NE (Clearing Area at Ehlen Road NE)</p>	<p>This 1951 Ranch house is a good example of its type and period of construction in the project area. It has a rectangular footprint, is capped with a cross hip roof, and is clad with Roman brick veneer and wood lap siding. Original wood windows have been retained, including a distinctive circular window on the north façade. An outbuilding that may predate the house is situated to the southwest.</p>	<p>The house appears to retain integrity of location, design, materials, workmanship, feeling, and association. The house's integrity of setting has been slightly diminished by the construction of a circa 1970 building immediately west and a likely reduction in the original size of the 27.89-acre land parcel on which the house is situated.</p>	<p>Recommended Eligible/Contributing, Criterion C</p>	
<p>21458 Oak Lane NE (Clearing Area at Ehlen Road NE)</p>	<p>This 1956 Ranch house has an L-shape plan and is clad with wood lap siding; all original windows have been replaced with vinyl sashes. A detached outbuilding is located southwest of the house that is clad with wood boards and corrugated metal, and a small shed is located south of the house that is clad with corrugated metal. A large machine shed, pictured at right, is located on the adjacent land parcel to the east. It has a rectangular plan, is capped with a gable roof, and is clad with corrugated metal.</p>	<p>The replacement of the house's original windows with modern vinyl sashes detracts from the house's historical integrity of design, materials, workmanship, feeling, and association.</p>	<p>Recommended Not Eligible/ Non-Contributing</p>	

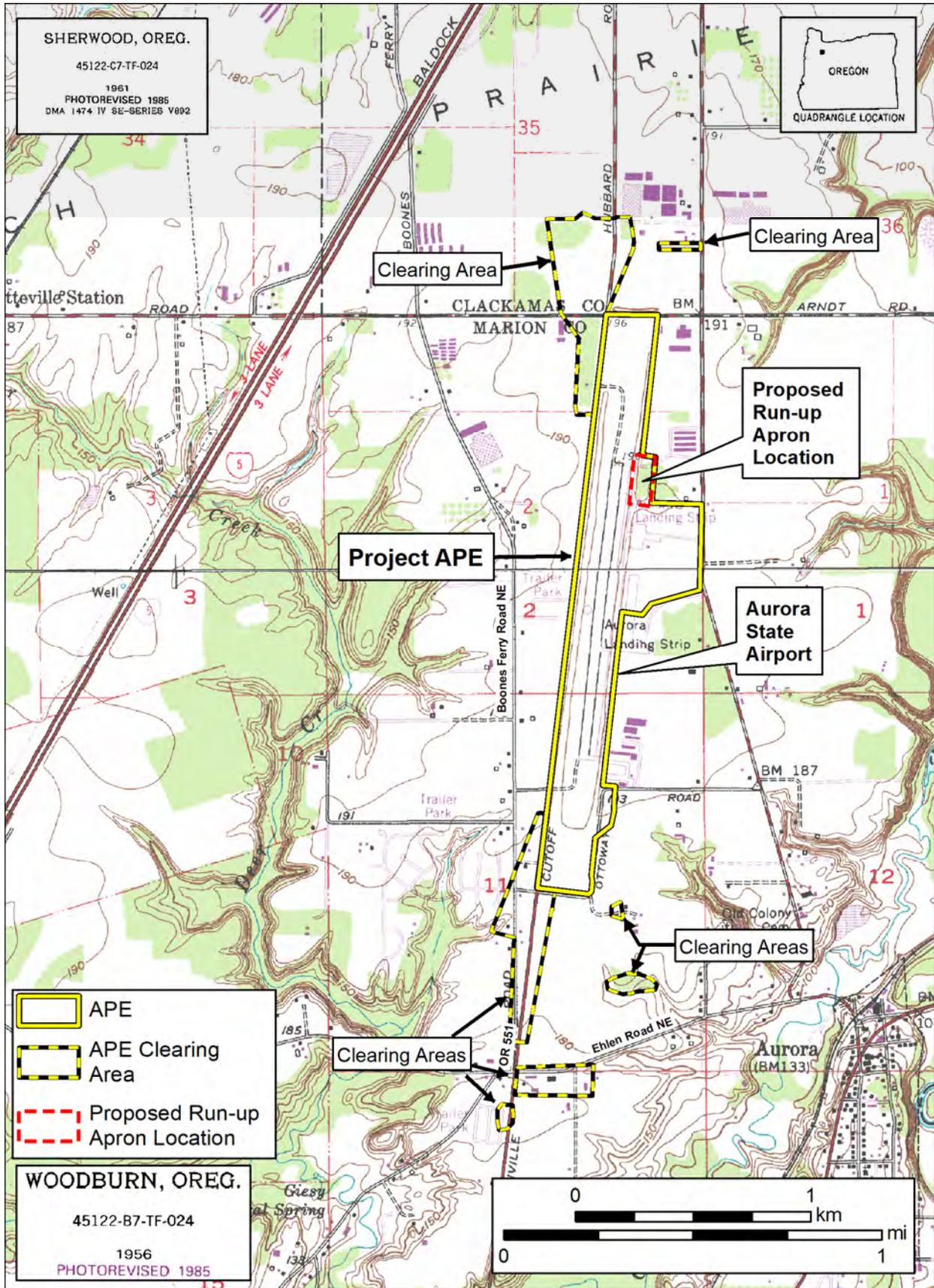


Figure 1. The Aurora State Airport is located in unincorporated Marion County, Oregon.

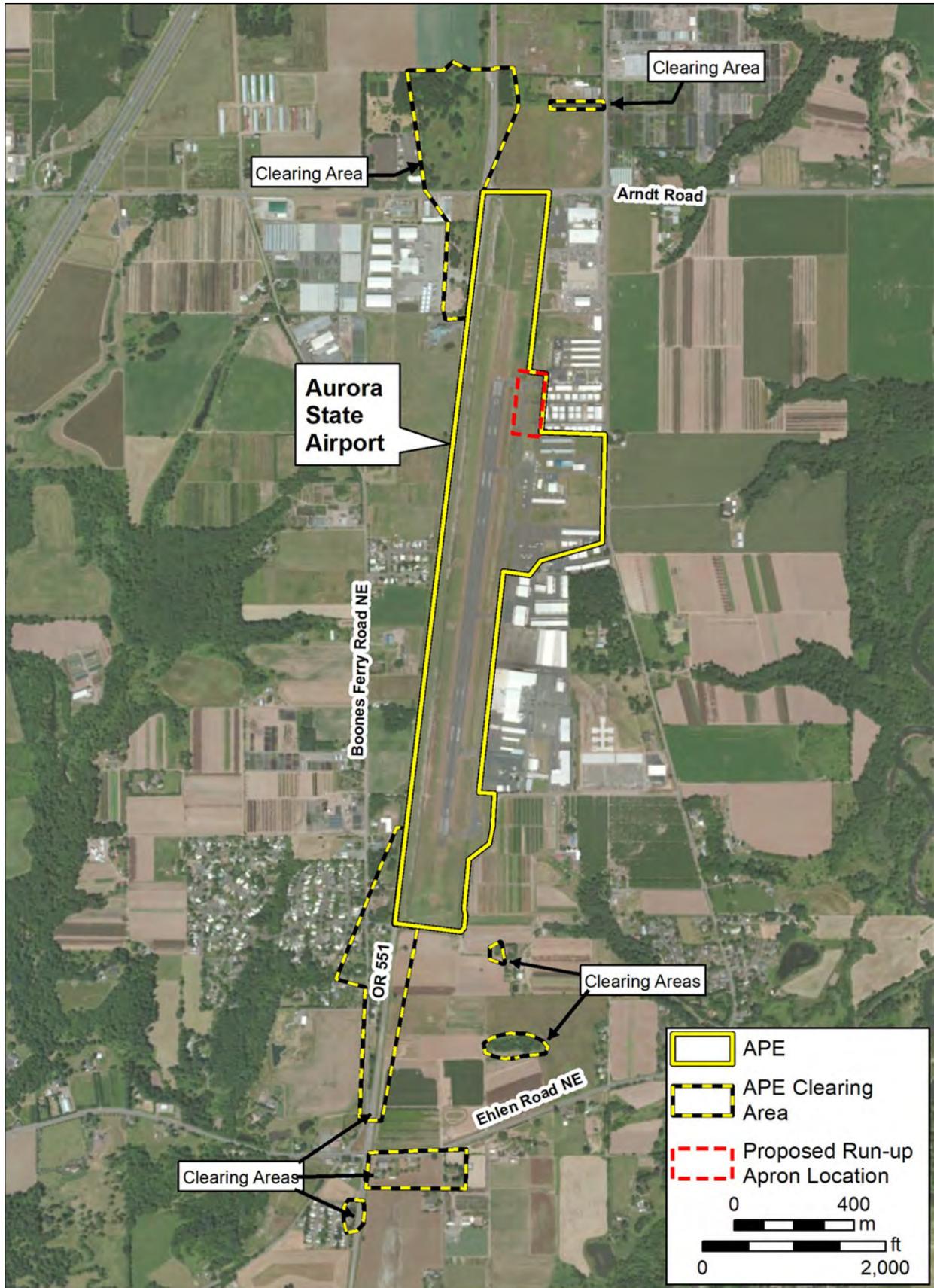


Figure 2. The Oregon Department of Aviation is proposing the construction of a run-up apron at the Aurora State Airport and the removal of trees in clearing areas.

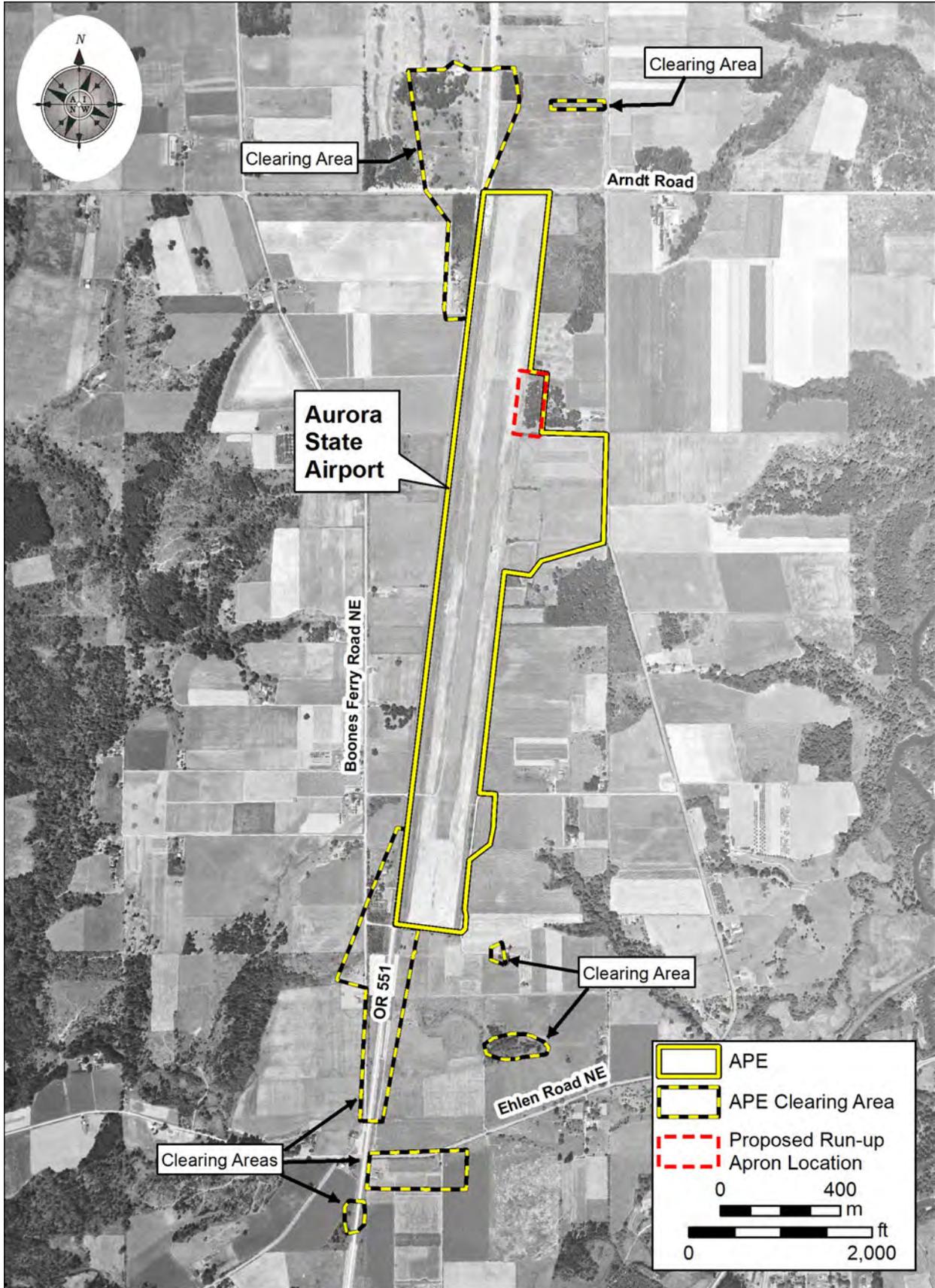


Figure 3. 1953 aerial of the Aurora State Airport showing the project APE.

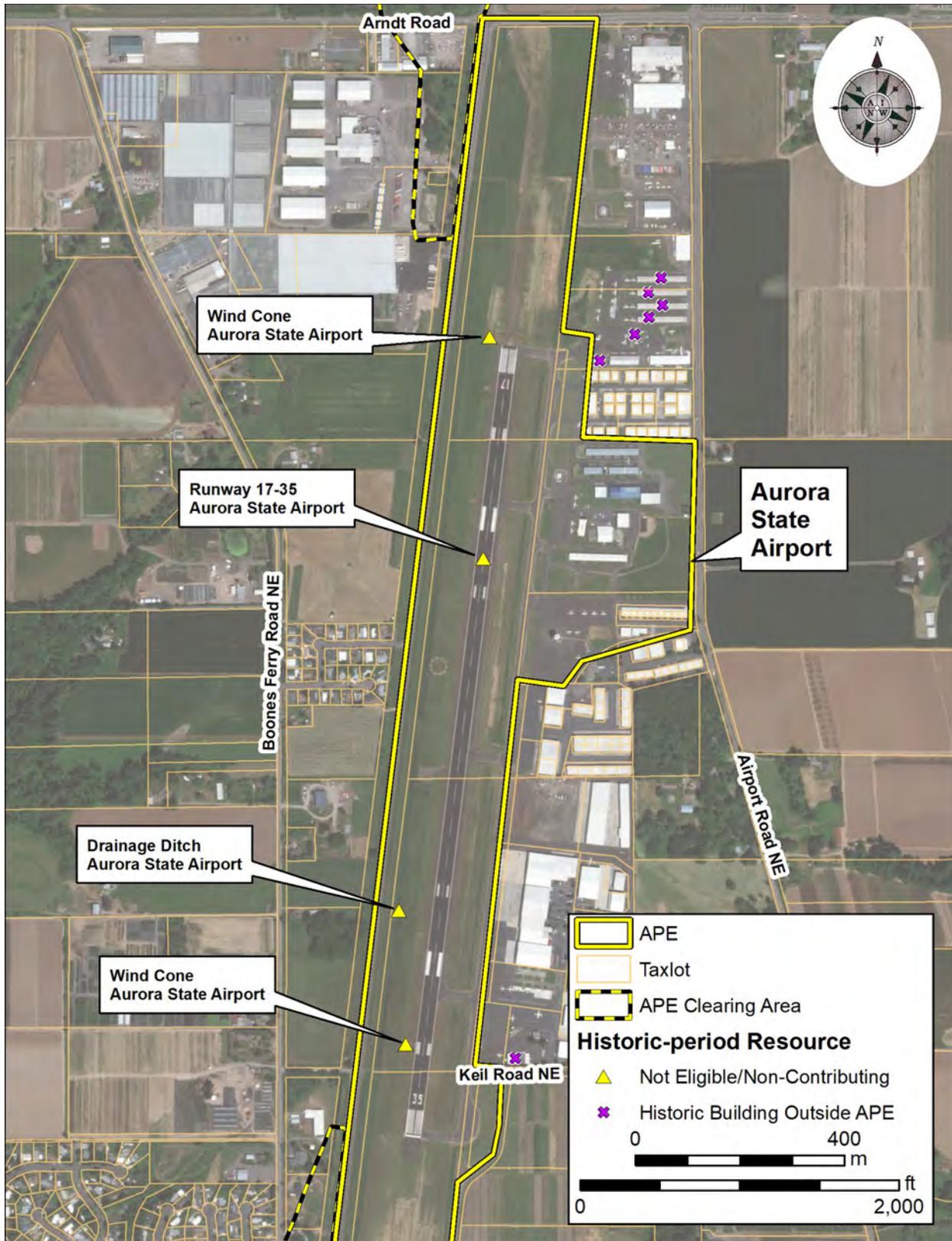


Figure 4. Four historic resources were identified in the APE at the Aurora State Airport and they are recommended not eligible for listing in the NRHP. The Aurora State Airport and associated FBO facilities on private land to the east have limited potential to be eligible for listing in the NRHP as a historic district. Just seven historic-period FBO buildings are situated amongst modern FBO buildings outside of the APE at the Aurora State Airport.

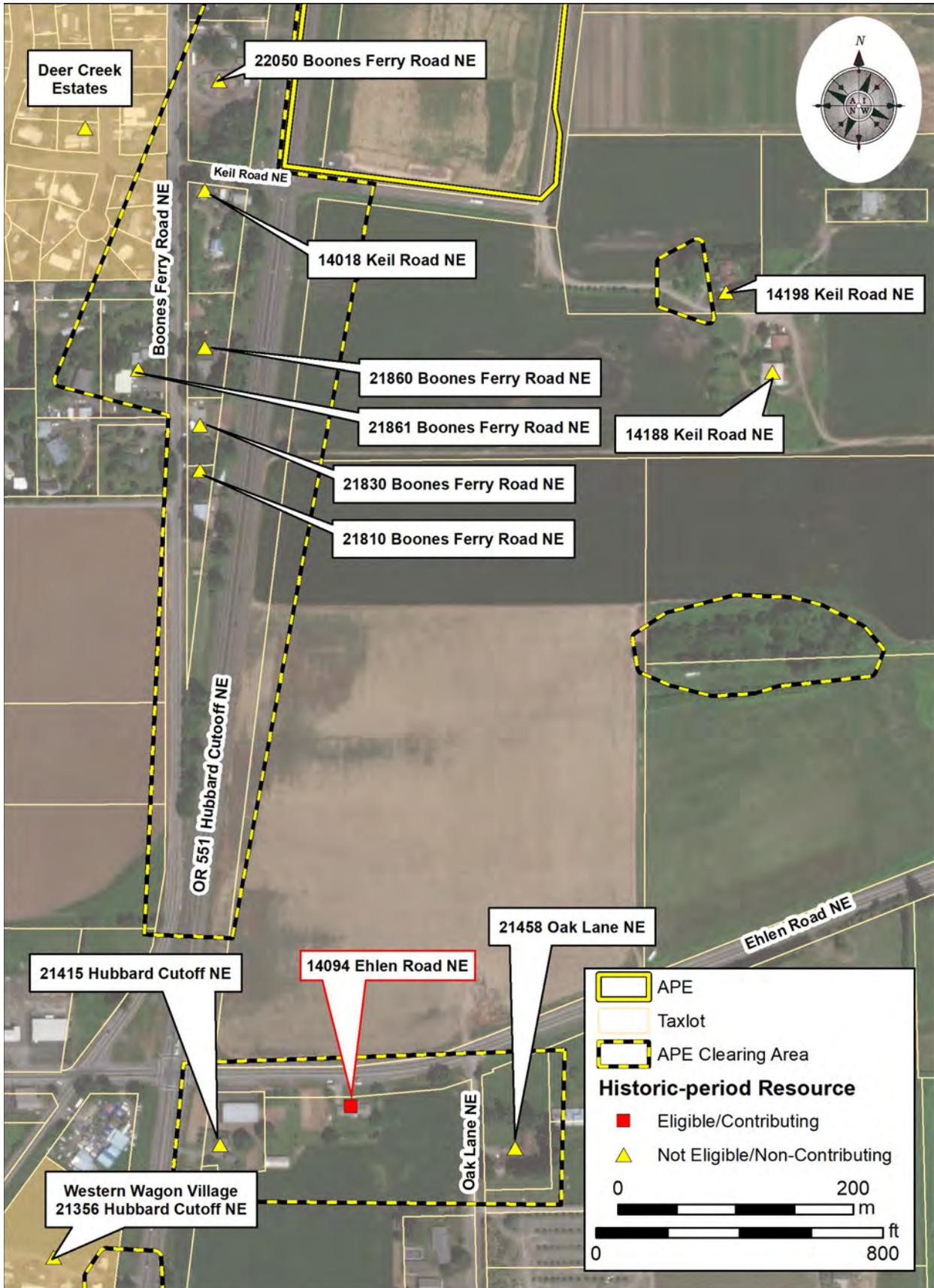


Figure 5. Thirteen historic resources were identified at proposed clearing areas. Only one of these historic resources, a Ranch house at 14094 Ehlen Road NE, is recommended to be eligible for listing in the NRHP. This house will not be affected by the project.



Photo 1. Overview of the north run-up apron. The view is towards the north.



Photo 2. Overview of the proposed north run-up apron area. The view is towards the south.



Photo 3. Overview of the drainage improvement at the Aurora State Airport. The view is towards the north.



Photo 4. Overview of the north run-up apron with lighting (at arrow) along taxiway. The view is towards the north.



Photo 5. Overview of clearing area north of Arndt Road. The view is towards the southwest.



Photo 6. Overview of a portion of the clearing area along Ehlen Road NE. The view is towards the southeast.



Photo 7. Overview of the trees within the northern portion of Boones Ferry Road/OR-551 clearing area.



Photo 8. Overview of the northern clearing area on the west side of OR 551. The view is towards the southwest.



Photo 9. The 1951 Ranch house at 14094 Ehlen Road NE is recommended eligible for listing in the NRHP. The view is facing southwest.



Photo 10. This circa 1890s house at 21830 Boones Ferry Road NE has been moved from its original location and was recently remodeled. AINW recommends that the house is not eligible for listing in the NRHP. The view is facing east-northeast.



Photo 11. The machine shop located southwest of the house at 14094 Ehlen Road NE appears to have been constructed circa 1940s, or before the 1951 Ranch house. The view is facing south from Ehlen Road NE.



Photo 12. The concrete block pumphouse (at left) associated with the house at 14094 Ehlen Road NE (at right). The view is facing west-southwest from Oak Lane NE.



Photo 13. Runway 17-35 at the Aurora State Airport is recommended not eligible for listing in the NRHP. The view is facing south from the north end of the runway.



Photo 14. One of two wind cones (left) and a drainage ditch (right) were constructed circa 1953 at the Aurora State Airport. The wind cones and drainage ditch are recommended not eligible for listing in the NRHP. The view is facing south.



Photo 15. Four T-hangers and an office building located northeast of the proposed run-up apron construction area were constructed during the historic period, but are outside of the APE on private property. The view is facing northeast.



Photo 16. A shop building constructed during the historic period is located immediately east of the proposed run-up apron construction area, but is outside of the APE on private property. The view is facing southeast.



Photo 17. A hangar constructed during the historic period is located near the south end of Runway 17-35 and immediately north of Keil Road NE. It is outside of the APE on private property. The view is facing northeast.



Photo 18. Modern hangars located east of the proposed run-up apron construction area. The view is facing east.



Photo 19. From left to right: modern hangars, air traffic control tower, parallel taxiway to runway 17-35, and drainage improvements at the Aurora State Airport. The view is facing south.



Photo 20. View towards the east-northeast of modern FBO buildings from Keil Road NE.

From: [Callahan, Sean \(FAA\)](#)
To: [David Harrelson \(David.Harrelson@grandronde.org\)](#); [THPO@grandronde.org](#); [Christian Nauer \(christian.nauer@ctwsbnr.org\)](#); [robert.brunoe@ctwsbnr.org](#); [tribalcouncil@ctsi.nsn.us](#); [Robert Kentta \(rkentta@ctsi.nsn.us\)](#)
Subject: FAA Government to Government Tribal Consultation for the Aurora State Airport Obstruction Removal and Apron Construction Project
Date: Thursday, July 25, 2019 9:34:00 AM
Attachments: [Cul Rpt Aurora State Airport 72519.pdf](#)

This correspondence is in furtherance of our consultation initiated with the Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Grand Ronde Community of Oregon, and Confederated Tribes of the Siletz Indians of Oregon on January 8, 2018, wherein an Area of Potential Effect (APE) and project description was submitted. A cultural resources assessment was prepared by a Consultant (Louis Fortin, Andrea Blaser, and Lucie Tisdale) and the FAA is submitting it to your office.

The project proponent had engaged, Archaeological Investigations Northwest, Inc. to prepare an Archaeological Resources Memorandum for the Obstruction Removal and Run up apron construction project to address the potential for archaeological resources.

Fieldwork included a systematic survey of the run-up apron area and an informal roadside survey of the clearing areas. For the north run-up apron the pedestrian survey was accomplished using transects spaced approximately 5 m (16 ft) apart. The mineral soil visibility was low to moderate (0% to 40%) due to landscaped grasses and the presence of asphalt. The majority of the run-up area is covered in asphalt. No archaeological resources were found. An informal survey was conducted along the roadside and an examination of the trees and obstruction area was conducted from a distance. A majority of the clearing areas have been disturbed from residential construction, underground utilities, and roadway construction, and are unlikely to have high probability for archaeological resources.

Based upon the findings and recommendations in the memorandum, we have determined that our Federal undertaking will have **No Historic Properties Affected** and request your concurrence. Should you have any questions or wish to discuss aspects of the project in further detail, please contact me at (206) 231-4143.

Sean Callahan
Environmental Protection Specialist
F.A.A. – Northwest Mountain Region
Seattle Airports District Office
2200 S. 216th Street, Des Moines, WA. 98198
206-231-4143

From: [Christian Nauer](#)
To: [Callahan, Sean \(FAA\)](#)
Cc: [Robert Brunoe](#)
Subject: Re: FAA Government to Government Tribal Consultation for the Aurora State Airport Obstruction Removal and Apron Construction Project
Date: Tuesday, July 30, 2019 3:22:36 PM
Attachments: [PastedGraphic-1.pdf](#)

Hi Sean,

Thank you very much for opportunity to provide comment on the Aurora State Airport Obstruction Removal and Apron Construction Project archaeological report.

General Comment:

As the technical reviewer for NHPA Section 106 and other cultural resource issues for the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO), the CTWSRO Tribal Historic Preservation Office (THPO) has concerns with the potential effects to historic properties or cultural resources within the Project Area of Potential Effects (APE). The Project APE is within the areas of concern for the CTWSRO.

Project-specific Comment(s):

This office considers the report (Fortin, Blaser, and Tisdale 2019) to represent a reasonable and good faith effort to identify, evaluate, and protect historic properties and cultural resources within the Project APE, and concurs with the finding of *No Historic Properties Affected*. However, to protect cultural resources that may not have been identified, this office recommends that an explicit Inadvertent Discovery Plan (IDP) for human remains, items of cultural patrimony, and intact archaeological deposits is in place in advance of Project implementation; construction crews should be trained/briefed on the contents and importance of the IDP.

Thank you for your efforts to protect cultural resources.

Best Regards,

Christian

Christian Nauer, MS
Archaeologist
Confederated Tribes of the Warm Springs Reservation of Oregon
Branch of Natural Resources

christian.nauer@ctwsbnr.org

Office 541.553.2026

Cell 541.460.8448

Standard Disclaimers:

*The Confederated Tribes of the Warm Springs Reservation of Oregon have reserved treaty rights in Ceded Lands, as well as Usual and Accustomed and Aboriginal Areas, as set forth through the Treaty with the Middle Tribes of Oregon, June 25, 1855.

*Please know that review by the Tribal Historic Preservation Office does not constitute Government-to-Government consultation. Please ensure that appropriate Government-to-Government consultation is made with the Confederated Tribes of the Warm Springs Tribal Council.

On Jul 25, 2019, at 9:35 AM, Callahan, Sean (FAA) <Sean.Callahan@faa.gov> wrote:

This correspondence is in furtherance of our consultation initiated with the Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Grand Ronde Community of Oregon, and Confederated Tribes of the Siletz Indians of Oregon on January 8, 2018, wherein an Area of Potential Effect (APE) and project description was submitted. A cultural resources assessment was prepared by a Consultant (Louis Fortin, Andrea Blaser, and Lucie Tisdale) and the FAA is submitting it to your office.

The project proponent had engaged, Archaeological Investigations Northwest, Inc. to prepare an Archaeological Resources Memorandum for the Obstruction Removal and Run up apron construction project to address the potential for archaeological resources.

Fieldwork included a systematic survey of the run-up apron area and an informal roadside survey of the clearing areas. For the north run-up apron the pedestrian survey was accomplished using transects spaced approximately 5 m (16 ft) apart. The mineral soil visibility was low to moderate (0% to 40%) due to landscaped grasses and the presence of asphalt. The majority of the run-up area is covered in asphalt. No archaeological resources were found. An informal survey was conducted along the roadside and an examination of the trees and obstruction area was conducted from a distance. A majority of the clearing areas have been disturbed from residential construction, underground utilities, and roadway construction, and are unlikely to have high probability for archaeological resources.

Based upon the findings and recommendations in the memorandum, we have determined that our Federal undertaking will have **No Historic Properties Affected** and request your concurrence. Should you have any questions or wish to discuss aspects of the project in further detail, please contact me at (206) 231-4143.

Sean Callahan
Environmental Protection Specialist
F.A.A. – Northwest Mountain Region
Seattle Airports District Office
2200 S. 216th Street, Des Moines, WA. 98198
206-231-4143

<Cul Rpt_Aurora State Airport 72519.pdf>



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



August 15, 2019

Mr. Sean Callahan
FAA - NW Mountain Region
Seattle Airports Dist Off
2200 S 216th St
Des Moines, WA 98198

RE: SHPO Case No. 18-0037
FAA, Aurora State Airport Obstruction Removal Project
Remove trees and run up construction
22801 Airport Rd NE long 1224620 lat 4514.83, Marion County

Dear Mr. Callahan:

Our office recently received a report of archaeological investigations for the project referenced above. The report has been assigned SHPO Report# 30548 and added to the SHPO Library. We have reviewed the report and concur that the project will likely have no effect on any significant archaeological objects or sites. However, our concurrence is based on the report which is specific to the north run-up area. Once access to the remainder of the project area is available, then additional survey will be needed.

Under state law (ORS 358.905-955 & ORS 97.740) archaeological sites, objects and human remains are protected on both public and private land in Oregon. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If you have any questions regarding any future discovery or this letter, feel free to contact me at your convenience.

This letter refers to archaeological resources only. Comments pursuant to a review for above-ground historic resources will be sent separately.

Sincerely,

John Pouley, M.A., RPA
Assistant State Archaeologist
(503) 986-0675
john.pouley@oregon.gov





August 20, 2019

Mr. Sean Callahan
FAA - NW Mountain Region
Seattle Airports Dist Off
2200 S 216th St
Des Moines, WA 98198

RE: SHPO Case No. 18-0037

FAA, Aurora State Airport Obstruction Removal Project
Remove trees and run up construction
22801 Airport Rd NE long 1224620 lat 4514.83, Marion County

Dear Mr. Callahan:

Thank you for submitting documentation on the project referenced above. Based on the information provided, we concur that the following properties are not eligible for listing:

- 22050 Boones Ferry Road NE (due to a loss of integrity that could be observed in the documentation).
- 14198 Keil Road NE (due to a loss of integrity that could be observed in the documentation).
- 21861 Boones Ferry Road NE (due to a loss of integrity that could be observed in the documentation).

We also concur that the following properties are eligible for listing:

- 14094 Ehlen Road NE. However, please provide an aerial map of the property showing the property boundary and additional discussion as to why the outbuilding is outside of the boundary. Is there a potential historic district in the area and could this property also be contributing?

Based on the information provided, we are not able to concur with the following determinations of eligible:

- Aurora State Airport. Until the entire property has been documented and evaluated for National Register eligibility, the property should be treated as eligible. Based on our understanding of the proposed scope of work, it is likely that the undertaking would not adversely affect the Aurora State Airport.
- 21830 Boones Ferry Road NE. Please provide updated documentation showing the relocation and additional photos from all elevation indicating the loss of design, materials, and workmanship. Also, an evaluation of historic significance under all four National Register criteria is needed.
- 21860 Boones Ferry Road NE. Please provide additional photos and a discussion of integrity. The documentation notes that modifications to the windows have resulted in a loss of integrity, however aluminum windows were common for the date of construction. Further, is there a potential historic district in the area and could this property be contributing? Also, an evaluation of historic significance under all four National Register criteria is needed.
- Deer Creek Estates. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.
- Wagon Wheel Village. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.
- 14018 Keil Road NE. Please provide additional, higher quality photos of the property.
- 21810 Boones Ferry Road NE. Please provide additional, higher quality photos of the property.
- 14188 Keil Road NE. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.
- 21415 Hubbard Cutoff NE. Please provide additional, higher quality photos of the property that clearly show the loss of integrity.

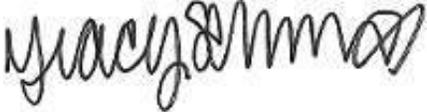


- 21458 Oak Lane NE. Please provide additional, higher quality photos of the property that clearly show the loss of integrity. Is there a potential historic district in the area and could this property be contributing?

We recommend recording all resources on an Oregon SHPO Section 106 Documentation Form. In the future, if the project requires recording multiple resources within the Area of Potential Effect, please contact our office to obtain a copy of the Oregon Historic Sites Database. More information on this can be found at: https://www.oregon.gov/oprd/HCD/SHPO/pages/preservation_106_historicresources.aspx/.

This letter refers to above-ground historic resources only. Comments pursuant to a review for archaeological resources were sent separately. Our response here is to assist you with responsibilities under Section 106 of the National Historic Preservation Act. Local regulations, if any, still apply and review under local ordinances may be required. Please feel free to contact me if you have any questions, comments, or need additional

Sincerely,

A handwritten signature in black ink, appearing to read "Tracy Schwartz". The signature is fluid and cursive, with the first name "Tracy" being more prominent than the last name "Schwartz".

Tracy Schwartz
Historic Preservation Specialist
(503) 986-0677
tracy.schwartz@oregon.gov



The Confederated Tribes of the Grand Ronde Community of Oregon

Cultural Resources Department
Historic Preservation Office
9615 Grand Ronde Road
Grand Ronde, OR 97347-9712

Phone: (503) 879-2226
Toll Free: 1-800-422-0232
Fax: (503) 879-2126
Email: THPO@grandronde.org

September 4, 2019

Sean Callahan, Environmental Protection Specialist
FAA – Northwest Mountain Region
Seattle Airports District Office
2200 S. 216th Street
Des Moines, WA 98198

Sent via email to:
Sean.Callahan@faa.gov

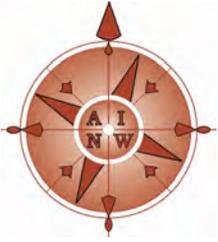
RE: Aurora State Airport Environmental Assessment

Dear Mr. Callahan,

Thank you for submitting a copy of the report titled “Cultural Resource Survey for the Aurora State Airport Environmental Assessment, Marion County, Oregon” to our office. We have reviewed the report, and have no comments to offer at this time. We ask to be contacted if any changes are made to the planned scale and/or scope of work. In the event of an inadvertent discovery of cultural resources during project implementation, please promptly contact our Historic Preservation Office Manager, Briece Edwards, at (503) 879-2084. If you have any questions please feel free to contact me at (503) 879-1667 or via email at cheryl.pouley@grandronde.org.

Sincerely,

Cheryl K. Pouley
Archaeologist



Archaeological Investigations Northwest, Inc.

3510 N.E. 122nd Ave. • Portland, Oregon 97230
Phone (503) 761-6605 • Fax (503) 761-6620

Vancouver Phone (360) 696-7473
E-mail: ainw@ainw.com
Web: www.ainw.com

MEMO

Date: September 12, 2019

To: Sean Callahan, Environmental Protection Specialist, Federal Aviation Administration
Peter Murphy, PE, Century West Engineering

From: Andrea Blaser, M.S., Senior Architectural Historian/Historian

Re: Aurora State Airport Obstruction Removal Project
Aurora, Marion County, Oregon
SHPO Review Comments for Historic Resources
SHPO Case No. 18-0037
AINW Report No. 4291

Introduction

Archaeological Investigations Northwest, Inc. (AINW), has completed cultural resource investigations in support of minor improvements and obstruction removal proposed at the Aurora State Airport in Marion County, Oregon. The results of these investigations were reported to Century West Engineering and the Federal Aviation Administration (FAA) in a report dated May 13, 2019 (AINW Report No. 3979). This report was recently reviewed by the Oregon State Historic Preservation Office (SHPO), prompting a series of comments and questions relating to historic resources identified within the project's Area of Potential Effects (APE). The comments and questions were outlined in a letter sent to FAA Environmental Protection Specialist Sean Callahan on August 20, 2019. This memo provides information requested by the SHPO to facilitate concurrence with recommendations outlined in AINW's report.

Scope of Proposed Work and Methodology for the Documentation of Historic Resources

AINW's reporting methodology for the Aurora State Airport Obstruction Removal project reflected the limited potential for historic properties to be adversely affected by the proposed undertaking. The scope of work proposed includes the construction of a run-up apron at Runway 17-35, and the removal of trees in areas north and south of the runway that obstruct the flight path.

- Construction of the run-up apron would occur within a confined area of the airport, and would not require the removal or modification of existing historic-period components of the airport. The likelihood that run-up apron construction would result in an adverse effect on a historic property is limited.

- The targeted removal of trees would occur on privately owned parcels within the vicinity of the airport. This type of modification to a historic property does not typically meet the criteria of adverse effect outlined in 36 CFR 800.5(a)(1). For a historic property to be adversely affected by tree removal, its historic setting/landscaping would need to be regarded as a characteristic that qualifies the property for inclusion in the National Register of Historic Places (NRHP). The alteration of this significant characteristic would also need to be assessed as diminishing the property's historical integrity. The survey of the tree removal areas identified no historic properties with significant landscaping in the APE.

During the historic resource survey of the APE, care was taken to not only document those historic resources within the APE, but to observe buildings, structures, sites, and objects within the vicinity that might indicate potential for historic districts to be present. As discussed on page 10 of AINW's report, all publicly accessible areas of the Aurora State Airport were observed to assist in evaluating the airport's eligibility for listing in the NRHP as a historic district. Based on these observations, in addition to an assessment of the airport's historical integrity, AINW recommended that the airport has limited potential to represent a historic district that is eligible for listing in the NRHP.

At tree removal areas, no potential historic districts were identified. Historic resources ranged from a highly modified circa 1890s house, to mid-twentieth century Ranch houses, to mobile home parks established during the early 1970s. A majority of these resources have lost several aspects of their historical integrity, and no cohesive and significant narrative was identified that would historically or aesthetically link these individual resources as a potential historic district.

A baseline table was used to present the results of the historic resource survey (Table 1 in AINW Report No. 3979). Baseline tables provide an efficient format to report the location, physical features, historical integrity, and NRHP eligibility of historic resources. The baseline table included in AINW's report did not specifically mention the NRHP evaluation criteria; however, the NRHP eligibility recommendation provided for each resource was derived by applying the criteria and evaluating the resource's historical integrity. For those resources that are eligible for listing in the NRHP, or those like the Aurora State Airport that required a more intensive evaluation to determine NRHP eligibility, additional information was provided in the body of the report to supplement the summary information presented in the baseline table.

The baseline table format constrains the size of photographs provided for each resource. However, photography cannot be solely relied upon to relate all physical characteristics and historical integrity of historic resources. This is why AINW provides an in-depth description of each resource that includes detailed information on physical features and modifications observed at the time of survey. AINW views photographs as being important but ultimately supplemental data. At their best, photographs help to convey observations made in the field by professional architectural historians, but the observations themselves are the key to evaluating the NRHP eligibility of a given historic resource.

Responses to SHPO's Questions and Comments

Below are comments excerpted from a letter sent by SHPO staff to FAA staff on August 20, 2019. AINW's responses are provided as a bullet point below each comment.

Comment: 14094 Ehlen Road NE. Please provide an aerial map of the property showing the property boundary and additional discussion as to why the outbuilding is outside of the boundary.

- A map outlining the property boundary has been prepared and is attached to this memo (Figure 1). The house is recommended to be eligible for listing in the NRHP under Criterion C, as a good example of its type and period of construction in the project area. The associated outbuilding appears to predate the house, and does not contribute to the house's embodiment of distinctive features of its type and period of construction. Furthermore, the house's setting does not contribute to its historical significance under Criterion C. There is no potential for a historic district at this location.

Comment: Aurora State Airport. Until the entire property has been documented and evaluated for National Register eligibility, the property should be treated as eligible.

- All historic-period features of the Aurora State Airport were documented in Table 1 of the AINW report. They are Runway 17-35 (1943), a drainage ditch (1953), and two wind cones (circa 1953). All remaining infrastructure within the state airport boundary was constructed during the modern period, after the cutoff date set for historic resources for this project (1972). Figure 4 of the AINW report mapped all historic-period features that are within the airport boundary and on adjacent property that is privately owned and used by fixed-base operators (FBOs); a copy of this map is attached to this memo for ease of reference (Figure 2). An evaluation of the airport's eligibility for listing in the NRHP was also included in the AINW report, on pages 10 and 11. Below is the NRHP evaluation, copied from the report in its entirety, with references to figures and citations having been removed.

Only four historic resources were identified within the project APE at the Aurora State Airport. These resources are Runway 17-35, which was constructed in 1943 as the Aurora Flight Strip, and a drainage ditch and two wind cones that appear to have been constructed when the Board of Aeronautics began to lease the airport from the Bureau of Public Roads in 1953. The drainage ditch is located parallel to and west of Runway 17-35, and the two wind cones are situated immediately east of the historic-period drainage ditch. Only one of the historic wind cones, located near the north end of Runway 17-35, was observed at the time of survey. The second wind cone is located further south, near to where Keil Road NE once crossed through an area that is now airport property, connecting to Boones Ferry Road NE to the west.

As reported in the "Historical Background" section of this report, Runway 17-35 has been modified since its original construction as an emergency airstrip in 1943. Plans for the

Aurora Flight Strip were drawn in 1943 by H.S. Swart, an engineer with Oregon's State Highway Department. These plans indicate that the central landing area of the runway was constructed of asphaltic concrete, while the runway approaches and shoulders that directly abutted the runway were constructed of compacted rock and transitioned outward into graded areas that were seeded with grass. No taxiways, air traffic control, or FBO facilities were included in the design. Two wind cones are included in this original design, but do not align with the locations of historic-period wind cones that are currently in use at the airport. The historic-period drainage ditch is not included in this design, either.

There are at least seven historic-period buildings associated with private FBOs at the Aurora State Airport; these buildings are not located within the project APE, but they were observed during the survey of the APE from state-owned lands. These buildings include four T-hangers, an office building, and a shop located near the area proposed for run-up apron construction, and a hangar located within a limited entry FBO area near the south end of Runway 17-35. They represent the few historic-period buildings on private land that operate in association with the Aurora State Airport, as the airport underwent major changes after the Board of Aeronautics (which has since become the Oregon Department of Aviation) took ownership of the airport from the Bureau of Public Roads in 1973. This change in ownership led to a master planning process and instigated an effort to modernize and expand the airport's existing facilities. Most of the buildings and structures that are operated in association with the airport in the present day were constructed from the late 1970s onward, giving the airport a modern feeling and appearance.

It is AINW's opinion that that the four historic resources in the APE at the Aurora State Airport are not eligible for listing in the NRHP. Runway 17-35 has been significantly modified since it was originally constructed in 1943 for emergency use, and late twentieth century changes to the Aurora State Airport have served to diminish its historical integrity of design, setting, materials, workmanship, feeling, and association. Likewise, the improvement and expansion of airport and FBO facilities during the modern era detract from the historical appearance and integrity of the drainage ditch and wind cones that were constructed on airport property circa 1953. The diminished historical integrity of these individual resources affects their ability to convey potentially significant associations with broad patterns of events relating to World War II defense tactics and infrastructure development under Criterion A. These resources have no known associations with significant people of the past under Criterion B, and they are not distinctive examples of a type, period, or construction under Criterion C.

In addition, it is unlikely that the historic resources documented in the APE at the Aurora State Airport would contribute to a potential Aurora State Airport Historic District. Although a survey of private lands associated with the Aurora State Airport was not completed for this project, it is AINW's opinion that modern infill and the modification

and/or replacement of historic features at the airport diminish the airport's potential to be eligible for listing in the NRHP as a historic district. Such a district would lack integrity of design, setting, materials, workmanship, feeling, and association. This overall loss of historical integrity detracts from the airport's potentially significant associations with World War II-era infrastructure projects and the development of small airports during the mid-twentieth century to supplement and relieve pressure on major regional airports.

Comment: 21830 Boones Ferry Road NE. Please provide updated documentation showing the relocation and additional photos from all elevation indicating the loss of design, materials, and workmanship. Also, an evaluation of historic significance under all four National Register criteria is needed.

- Previous documentation of this house completed in 1990 notes that it was moved to its current location 10 years prior; this information was provided by the resident at that time (Sekora et al. 1990). Detailed plan maps prepared by the Oregon State Highway Department in 1936 for the construction of OR 551 (then referred to as the West Portland-Hubbard Highway) show no buildings at or near the current location of the circa 1890s house. A building appears at the house's general location in a 1960 aerial photograph, indicating that the house may have been moved to its current location earlier than the circa 1980 date suggested by the resident in 1990. A photograph included in the 1990 documentation shows that the house retained two-over-two wood windows at that time; the house now has vinyl windows and modern siding.

Since the house was moved to its current location, its potential historical associations with significant events and people of the past remain unknown (Criteria A and B). Furthermore, due to the replacement of its original windows and siding, the house no longer embodies distinctive characteristics of a type, period, or method of construction (Criterion C) (Photos 1 and 2). The house does not have integrity of location, design, setting, materials, workmanship, feeling, or association.

Comment: 21860 Boones Ferry Road NE. Please provide additional photos and a discussion of integrity. The documentation notes that modifications to the windows have resulted in a loss of integrity, however aluminum windows were common for the date of construction.

- As is mentioned in Table 1 of the AINW report, this house has a large addition to the rear (east) elevation that significantly expanded the house's size and footprint (Photos 3 and 4). The window modifications mentioned refer to vinyl windows, not the house's original aluminum sliding windows. The photograph included in Table 1 of AINW's report shows the southwest corner of the house; it provides the clearest view of the house from the adjacent roadway, but does not capture the large addition to the northeast that is partially blocked by trees.

The sizeable addition to the east elevation of the 1967 Ranch house has diminished the house's integrity of design, materials, workmanship, feeling, and association. The house no longer embodies distinctive characteristics of a type, period, or method of construction (Criterion C),

and it has no known associations with significant events or people of the past (Criteria A and B). No potential historic district was identified at this location.

Comment: Deer Creek Estates. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.

- Deer Creek Estates is a manufactured home park with limited permanent site features; they include a sign and stone walls at the entry, modified streetlamps, and curved roads. The APE overlaps the southeast corner of this site to capture proposed tree removal that would occur behind privately owned manufactured homes.

As a designed landscape, the mobile home park does not embody distinctive characteristics of a type, period, or method of construction that would qualify it for listing in the NRHP under Criterion C. The extent and cohesion of the site design is limited, and does not distinguish itself from other subdivision designs of the period. Established historical contexts for this area do not include significant patterns of events regarding the development of manufacturing housing sites during the 1970s (Criterion A), and the site has no known association with a significant person of the past (Criterion B). Thus, Deer Creek Estates does not represent an NRHP-eligible site or designed landscape.

Comment: Wagon Wheel Village. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.

- Similar to Deer Creek Estates, Wagon Wheel Village has common roads and landscaping but has few designed elements. It is AINW's opinion that the paved roads and trees planted at Wagon Wheel Village do not constitute a designed landscape that embodies distinctive characteristics of a type, period, or method of construction under Criterion C. Furthermore, the development of this mobile home park circa 1965 does not align with significant patterns of events in the area's history (Criterion A), nor does it have an association with a significant person of the past (Criterion B). No further work is recommended for this resource.

Comment: 14018 Keil Road NE. Please provide additional, higher quality photos of the property.

- See Photos 5 and 6.

Comment: 21810 Boones Ferry Road NE. Please provide additional, higher quality photos of the property.

- See Photos 7 and 8.

Comment: 14188 Keil Road NE. It is noted that the integrity is highly intact, but there is no discussion of historic significance under all four National Register criteria and context.

- The circa 1970 barn and general purpose building at 14188 Keil Road NE represent building types that are ubiquitous to the area. These utilitarian buildings do not embody distinctive characteristics of a type, period, or method of construction that would qualify them as eligible for listing in the NRHP under Criterion C. They are currently associated with a manufactured home, but aerial photographs indicate that they were likely constructed in association with the 1950 house at 14198 Keil Road NE. The buildings have no known associations with significant patterns of events or people of the past identified in historical context statements for the area (Criteria A and B).

Comment: 21415 Hubbard Cutoff NE. Please provide additional, higher quality photos of the property that clearly show the loss of integrity.

- See Photo 9. As stated in Table 1 of the AINW report, the house is clad with vinyl siding and has vinyl windows that do not appear to conform to the historic-period fenestration. In addition to the circa 1970 construction of a large utilitarian building of unknown use to the north of the house, these modifications have diminished the house's integrity of design, setting, materials, workmanship, feeling, and association.

Comment: 21458 Oak Lane NE. Please provide additional, higher quality photos of the property that clearly show the loss of integrity. Is there a potential historic district in the area and could this property be contributing?

- See Photo 10, which captures vinyl windows on the west facade. Vinyl windows were also observed on the north elevation of the house, but photographs taken of this side of the house are obscured by trees and brush. No potential historic district was identified in this area.

Conclusion

In response to questions and requests for additional information from SHPO staff, AINW has provided clarifications and supplemental information in support of the recommendation that the Aurora State Airport Obstruction Removal project would have no effect on historic properties. There is one historic property in the APE: a Ranch house at 14094 Ehlen Road NE. Since the house's setting does not contribute to its historical significance under Criterion C, and proposed tree removal would occur outside of the house's historic property boundary, the house would not be affected by the project.

A majority of the historic resources identified in the project APE have incurred modifications since their original date of construction. The replacement of original windows is the most common modification, although many buildings have been re-sided or expanded from their original footprint. The diverse dates of construction represented and resource types identified do not convey a cohesive narrative that is significant to local history, nor do the historic resources identified represent an aesthetically unified entity.

Sean Callahan, FAA, and Peter Murphy, Century West Engineering
Aurora State Airport Obstruction Removal
SHPO Review Comments for Historic Resources
AINW Report No. 4291

The one potential historic district identified, the Aurora State Airport, has limited potential to meet minimum qualifications for listing in the NRHP. The airport has four historic features (a runway, two wind cones, and a drainage ditch) that have a shared history of use but no longer convey their association with broad patterns of events in Oregon's aviation history. A historic district at the Aurora State Airport would lack integrity of design, setting, materials, workmanship, feeling, and association, and would encompass a majority of modern buildings and structures.

Sources

Sekora, Lynda, Carolyn Sorrels, and Nahani Stricker
1990 Marion County Cultural Resources Inventory form for 21830 Boones Ferry Road. On file,
Oregon State Historic Preservation Office, Salem.

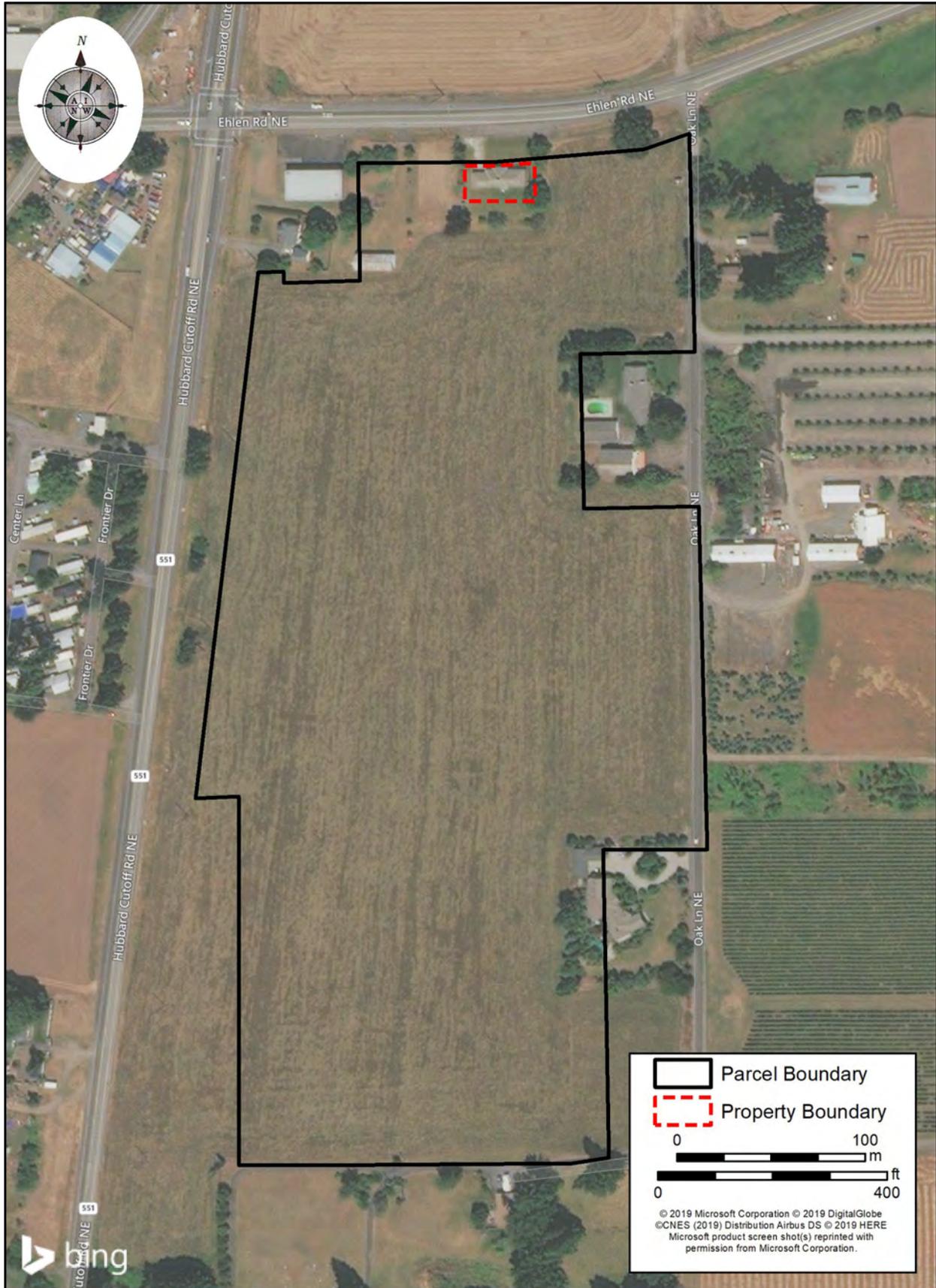


Figure 1. The Ranch house at 14094 Ehlen Road NE is eligible for listing in the NRHP under Criterion C. The historic property boundary encompasses the house's footprint.

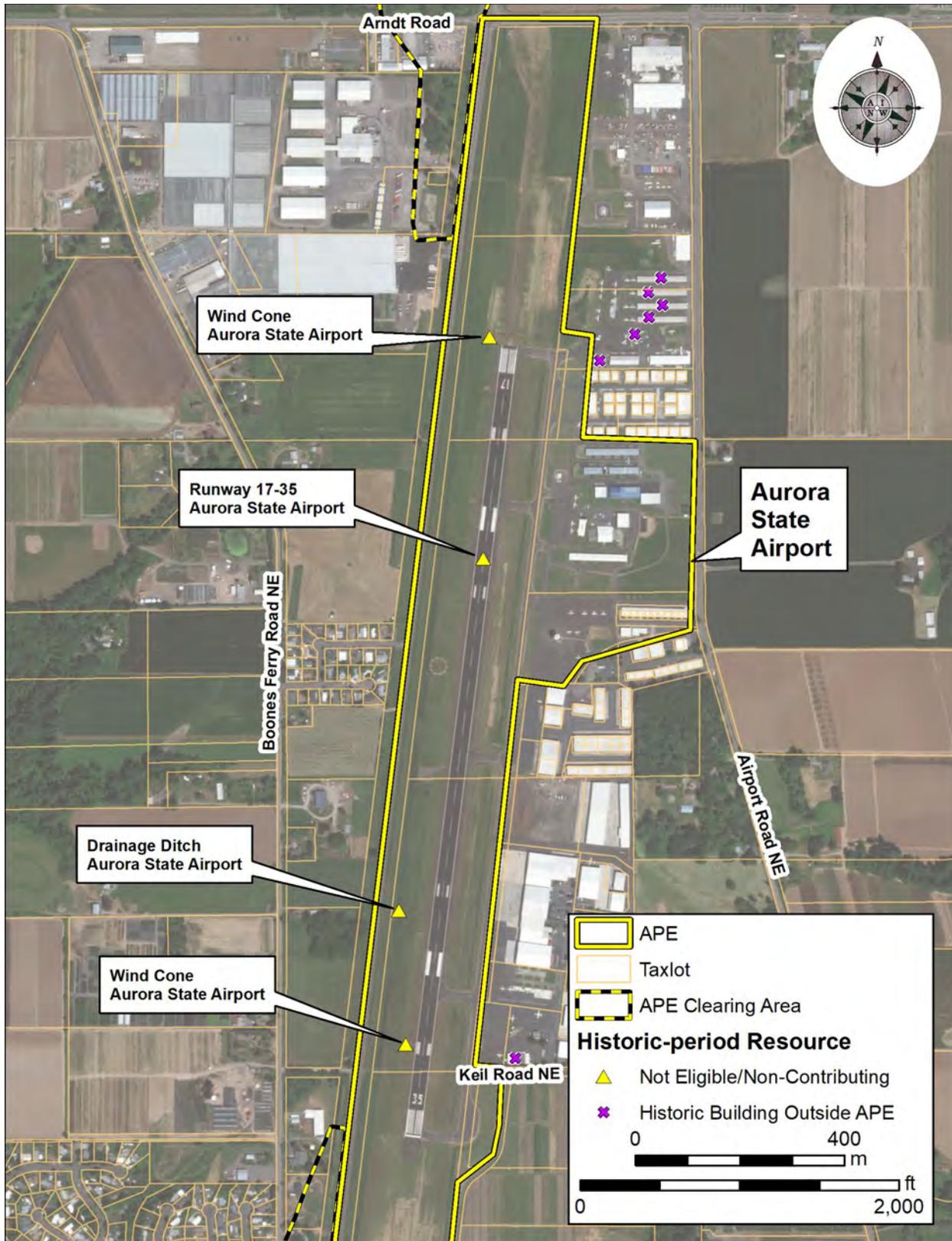


Figure 2. Four historic resources were identified in the APE at the Aurora State Airport and they are recommended not eligible for listing in the NRHP. The Aurora State Airport and associated FBO facilities on private land to the east have limited potential to be eligible for listing in the NRHP as a historic district. Just seven historic-period FBO buildings are situated amongst modern FBO buildings outside of the APE at the Aurora State Airport.



Photo 1. The west and south elevations of the house at 21830 Boones Ferry Road NE as viewed towards the east-northeast.



Photo 2. The north elevation of the house at 21830 Boones Ferry Road NE as viewed towards the southeast.



Photo 3. The addition to the Ranch house at 21860 Boones Ferry Road NE is at the house's northeast corner. The view is facing southeast.

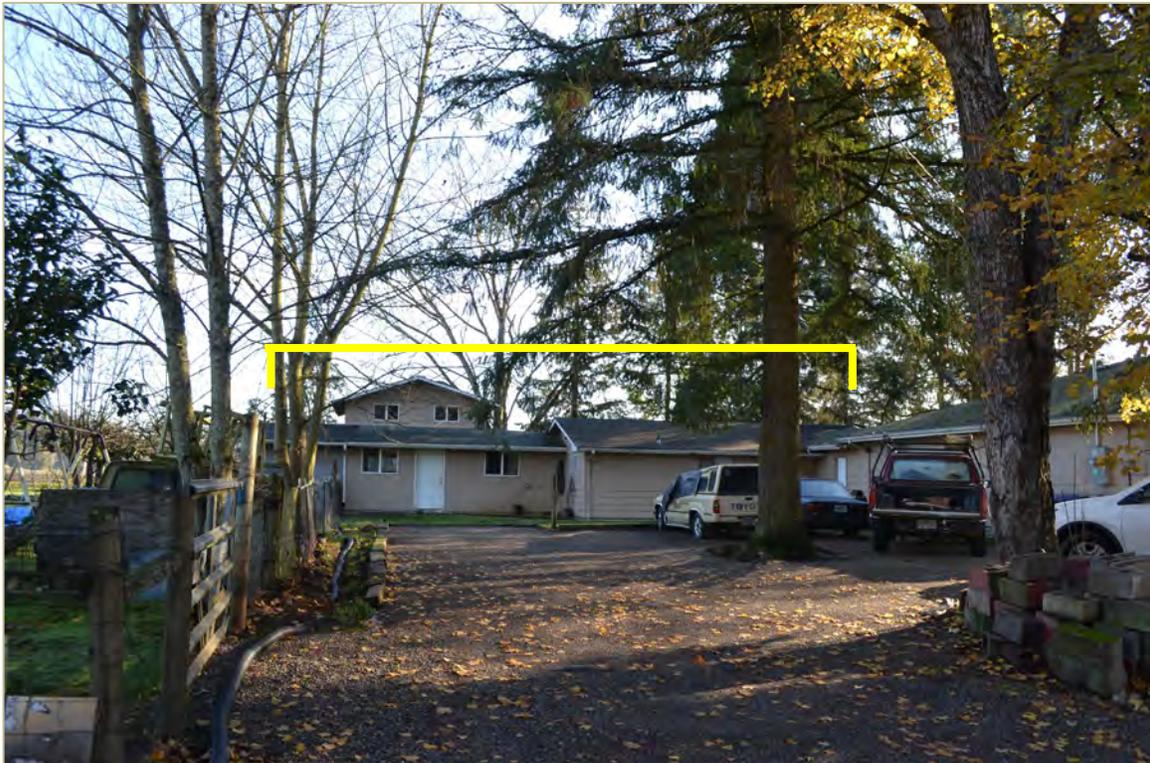


Photo 4. The addition to the Ranch house at 21860 Boones Ferry Road NE is at the house's northeast corner. The view is facing southeast.



Photo 5. The north façade and west elevation of the house at 14018 Keil Road NE, viewed towards the southeast.



Photo 6. The north façade and east elevation of the house at 14018 Keil Road NE, viewed towards the southwest.



Photo 7. The west façade and north elevation of the house at 21810 Boones Ferry Road NE, viewed towards the southeast.



Photo 8. The west façade of the house at 21810 Boones Ferry Road NE, viewed towards the east.



Photo 9. The west façade and south elevation of the house at 21415 Hubbard Cutoff NE, viewed towards the east-northeast. The house has modern vinyl siding and vinyl windows.



Photo 10. The west façade of the house at 21458 Oak Lane NE, viewed towards the east-southeast.



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

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Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



October 15, 2019

Mr. Sean Callahan
FAA - NW Mountain Region
Seattle Airports Dist Off
2200 S 216th St
Des Moines, WA 98198

RE: SHPO Case No. 18-0037

FAA, Aurora State Airport Obstruction Removal Project
Remove trees and run up construction
22801 Airport Rd NE long 1224620 lat 4514.83, Marion County

Dear Mr. Callahan:

Thank you for submitting additional documentation on the project referenced above. We concur that the following properties are not eligible for listing in the National Register of Historic Places:

- 21830 Boones Ferry Road NE due to a loss of historic integrity.
- 21860 Boones Ferry Road NE due to a loss of historic integrity.
- Deer Creek Estates due to a lack of significance.
- Wagon Wheel Village due to a lack of significance.
- 14018 Keil Road NE.
- 21810 Boones Ferry Road.
- 14188 Keil Road NE.
- 21415 Hubbard Cutoff NE due to a loss of historic integrity.
- 21458 Oak Lane NE.

However, we are still unable to concur that the Aurora State Airport is not eligible as it was not fully documented. The consultant notes that the "survey of private lands associated with the Aurora State Airport was not completed for this project." While the consultant does point out that the historic integrity of a potential Aurora State Airport historic district is compromised, without adequate survey and documentation provided to our office (including photos, maps, construction dates, etc.) we are unable to concur with the determination of eligibility. However, if the Aurora State Airport is treated as eligible, we believe that the proposed undertaking will result in no adverse effect to historic properties.

This letter refers to above-ground historic resources only. Comments pursuant to a review for archaeological resources were sent separately. Unless there are changes to the project, this concludes the requirement for consultation with our office under Section 106 of the National Historic Preservation Act (per 36 CFR Part 800) for above-ground historic properties. Local regulations, if any, still apply and review under local ordinances may be required. Please feel free to contact me if you have any questions, comments, or need additional assistance.

Sincerely,

Tracy Schwartz



Historic Preservation Specialist
(503) 986-0677
tracy.schwartz@oregon.gov

APPENDIX D

COMPATIBLE LAND USE DOCUMENTATION

Chapter 17.177 AIRPORT OVERLAY ZONE

Sections:

- [17.177.010](#) Purpose.
- [17.177.020](#) Definitions.
- [17.177.030](#) Airport districts.
- [17.177.040](#) Procedure.
- [17.177.050](#) Nonconforming uses.
- [17.177.060](#) Marking and lighting.
- [17.177.070](#) Variances.

17.177.010 Purpose.

The airport overlay zone is intended to minimize potential dangers from, and conflicts with, the use of aircraft at public airports based on the adopted master plans for each airport. It is to be used in conjunction with the underlying zone. If any conflict in regulation or procedure occurs with the underlying zoning districts, the more restrictive provisions shall govern. This section is intended to comply with Federal Aviation Agency Regulation FAR-77 and all other applicable federal and state laws regulating hazards to air navigation. [Ord. 602 § 5, 1981. RZ Ord. § 177.010.]

17.177.020 Definitions.

- A. "Airport" means a public airport as defined in MCC [17.110.040](#).
- B. "Airport elevation" means the highest point of an airport's usable landing area measured in feet from mean sea level. This elevation above mean sea level shall be shown on the official zoning map.
- C. "Airport surfaces" means the specific dimensions, slopes and elevations of the airport surfaces shall be delineated on the official zoning map.
 - 1. "Primary surface" means the surface of the runway and adjacent land on each side of the runway centerline and 200 feet beyond the ends of the runway. The length of this surface is determined by using the existing runway length or the runway length identified in an adopted state airport master plan, if longer. The width is the same as the end of the approach surface that is closest to the runway.
 - 2. Approach Surface. This surface begins at the end of the primary surface. From its initial width, that is the same as the width of the primary surface, it extends upward and outward on both sides of the projected centerline of the runway with a specified slope and terminates where it intersects the horizontal surface.
 - 3. "Horizontal surface" is a horizontal plane which surrounds the airport 150 feet above the airport elevation. The interior portion of this surface terminates where it intersects with the transitional and approach surfaces. Its outer edge terminates where it intersects with the conical surface.
 - 4. "Transitional surface" means an imaginary plane that extends upward and outward from the sides of the primary surface and approach surface to the horizontal surface.
 - 5. "Conical surface" means a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to one for a horizontal distance of 4,000 feet.

D. "Hazard to air navigation" means an obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

E. "Height" is the highest point of any structure as further defined in MCC [17.110.260](#). The official zone map identifies the maximum height permitted for any obstruction calculated from the airport elevation as defined in subsection (B) of this section and from mean sea level.

F. "Obstruction" is any structure, tree or other object, including a mobile object, which extends above airport surfaces as defined in subsection (C) of this section.

G. "Runway" is a defined area on the airport prepared for landing and takeoff of aircraft along its length.

H. "Tree" means any natural vegetation. [Ord. 602 § 5, 1981. RZ Ord. § 177.020.]

17.177.030 Airport districts.

In order to carry out the provisions of this airport overlay zone, three airport development districts are provided within the airport overlay zone. These three districts are shown on the official zoning map showing the height limits adopted at the time the airport overlay zone is applied.

A. Airport Development District. This district consists of those lands, waters and airspace area at or below the primary, transitional and approach surfaces described in MCC [17.177.020\(C\)](#).

1. Use Limitations. Any use, accessory use, buildings and structures otherwise allowed in the underlying zone shall be permitted provided the following requirements are satisfied:

- a. No obstruction or object shall be permitted if it extends above the transitional and approach surfaces as defined in MCC [17.177.020\(C\)](#).
- b. Roadways, parking areas and storage yards shall be located in such a manner that vehicle lights will not result in glare in the eyes of the pilots, or in any other way impair visibility in the vicinity of the runway approach.
- c. Sanitary landfills, sewage lagoons or sewage sludge disposal shall not be permitted closer than 10,000 feet to the airport runway.
- d. No game preserve or game reservation shall be permitted if the animals or birds have the potential to become a hazard to air navigation.
- e. No structure or use intended for public assembly shall be allowed except by a conditional use permit.

B. Horizontal Surface District. This district consists of the land, water and airspace underneath the horizontal surface as described in MCC [17.177.020\(C\)](#).

1. Use Limitations. Any use, accessory use, building and structure allowed in the underlying zone shall be permitted provided the following requirements are satisfied:

- a. No obstruction shall penetrate the horizontal surface as defined in MCC [17.177.020\(C\)](#).
- b. Sanitary landfills, sewage lagoons or sewage sludge disposal shall not be permitted closer than 10,000 feet to the airport runway.

C. Conical Surface District. This district consists of the land, water and airspace underneath the conical surface as described in MCC [17.177.020\(C\)](#).

1. Use Limitations. Any use and accessory uses, buildings and structures allowed in the underlying zone shall be permitted; provided, that no obstruction penetrates the conical surface as defined in MCC [17.177.020\(C\)](#). [Ord. 602 § 5, 1981. RZ Ord. § 177.030.]

17.177.040 Procedure.

A. An applicant seeking a building permit involving any use or structure regulated by the airport overlay zone shall provide the following information in addition to any other information required in the permit application:

1. Property boundary lines as they relate to the airport approach and the end of the runway;
2. Location and height of all existing and proposed buildings, structures, utility lines and roads.

B. Proposed buildings or structures shall be approved by the building inspector if it is determined that they will not extend above the airport surfaces as defined in MCC [17.177.020\(C\)](#).

C. An applicant seeking rezoning, a conditional use permit or a variance involving any use, building or structure regulated by the underlying zone or the airport overlay zone shall be reviewed in accordance with the applicable procedure in this title. During this review process, the State Aeronautics Division shall be notified of the proposal and any public hearing, be given an opportunity to comment and be notified of the decision. [Ord. 602 § 5, 1981. RZ Ord. § 177.040.]

17.177.050 Nonconforming uses.

The regulations prescribed by the airport overlay zone shall not be construed to require the removal, lowering or other change or alteration of any structure or tree not conforming to the regulations as of the effective date of the ordinance codified in this title, or otherwise interfere with the continuance of the nonconforming use except as provided in MCC [17.110.405](#). Nothing contained herein shall require any change in the construction, alteration or intended use of any structure, otherwise permitted, the construction or alteration of which was begun prior to the effective date of the ordinance codified in this title. [Ord. 602 § 5, 1981. RZ Ord. § 177.050.]

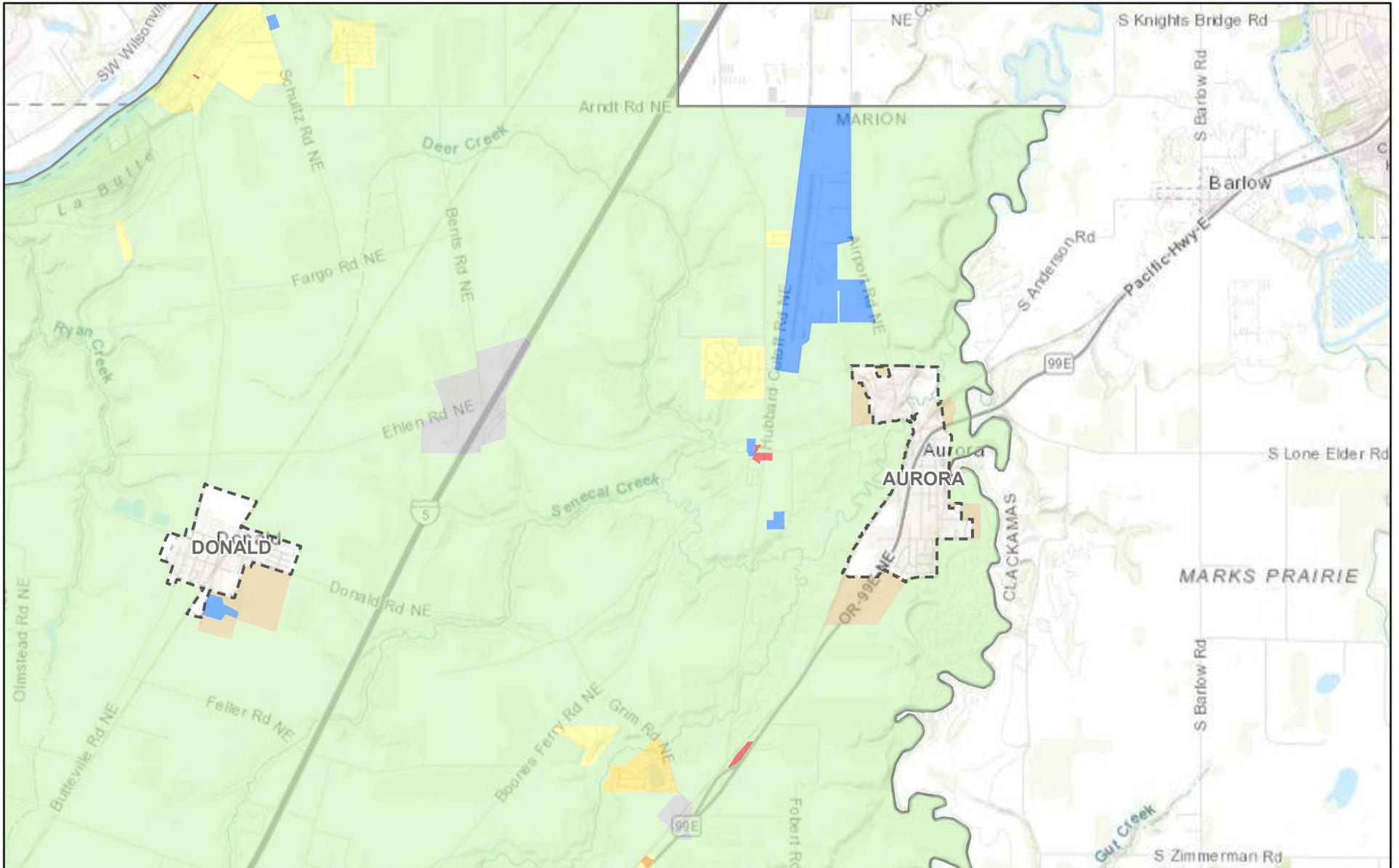
17.177.060 Marking and lighting.

The owner of any existing nonconforming structure or tree shall permit the installation, operation and maintenance thereon of such markers and lights as shall be deemed necessary by the Oregon Department of Transportation to indicate to the operators of aircraft the presence of such airport obstruction. Such markers and lights shall be installed, operated and maintained at the expense of the airport owner. [Ord. 602 § 5, 1981. RZ Ord. § 177.060.]

17.177.070 Variances.

The provisions of this overlay zone may be varied subject to the procedures and criteria for considering variances set forth in Chapter [17.122](#) MCC. Variances may be allowed where it is found that the proposal will not create a hazard to air navigation, and will be in accordance with the spirit and intent of this overlay zone. [Ord. 602 § 5, 1981. RZ Ord. § 177.070.]

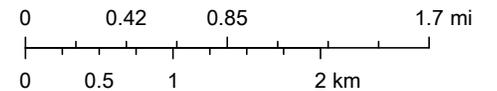
ArcGIS Web Map



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|--|--|---|
| County Zoning | EFU | Public |
| Acreage Residential | Industrial | Single Residential |
| Commercial | Multi Residential | Urban Transition |

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Web AppBuilder for ArcGIS

713 PUBLIC USE AIRPORT AND SAFETY OVERLAY ZONES

713.01 PURPOSE

Section 713 is adopted to implement Oregon Revised Statutes 836.600 through 836.630 and policies of the Comprehensive Plan as they relate to public use airports. When applied, it provides for their continued operation and vitality consistent with state law by allowing certain compatible airport related commercial and recreational uses. It also provides for safety standards to promote air navigational safety at such public use airports and to reduce the potential for safety hazards for property and for persons living, working, or recreating on lands near such airports.

713.02 APPLICATION

This special use zoning district may be applied to publicly owned airports that are shown in the records of the Oregon Department of Aviation (ODA) on December 31, 1994. It also may be applied to those privately owned, public use airports identified pursuant to Oregon Revised Statutes (ORS) 836.610(3) by the ODA as providing important links in air traffic in Oregon, providing essential safety or emergency services, or are of economic importance to the County.

The boundaries of this special use district are coterminous with airport boundaries as described in Oregon Administrative Rules (OAR) 660-013-0040. The boundaries of safety overlay zones radiate from points at the ends of the airport's primary surface as described in OAR 660-013-0070(1)(a) and Exhibits 1 and 4 that accompany that rule. The definitions in Subsection 713.03 are consistent with ORS Chapter 836, OAR 660-013, and Exhibits 1 and 4 of that rule.

If an airport that had this special use zoning district applied is removed from the State's list of airports in a manner described in ORS 836.610, the application of this special use zoning district is automatically terminated.

713.03 DEFINITIONS

- A. Aircraft. Means airplanes and helicopters, but not hot air balloons or ultralights.
- B. Airport. The strip of land used for taking off and landing aircraft, together with all adjacent land used in connection with the aircraft landing or taking off from the strip of land, including but not limited to land used for existing airport uses.
- C. Airport Elevation. The highest point of an airport's usable runway, measured in feet above mean sea level.
- D. Airport Imaginary Surfaces. Imaginary areas in space and on the ground that are established in relation to the airport and its runways. Imaginary surfaces are defined by the primary surface, runway protection zone, approach surface, horizontal surface, conical surface and transitional surface.

- E. Airport Noise Impact Boundary. Areas located within 1,500 feet of an airport runway or within established noise contour boundaries exceeding 55 Ldn.
- F. Airport Sponsor. The owner, manager, or other person or entity designated to represent the interests of an airport.
- G. Approach Surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface.
 - 1. The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:
 - a. 1,250 feet for a utility runway having only visual approaches;
 - b. 1,500 feet for a runway other than a utility runway with only visual approaches;
 - c. 2,000 feet for a runway with a non-precision instrument approach;
 - d. 3,500 feet for a non-precision instrument runway other than utility, having visibility minimums greater than three-fourths statute mile;
 - e. 4,000 feet for a non-precision instrument runway, other than utility, having a non-precision approach with visibility minimums as low as three-fourths statute mile; and
 - f. 16,000 feet for precision instrument runways.
 - 2. The approach surface extends for a horizontal distance of:
 - a. 5,000 feet at a slope of 20 feet outward for each foot upward for all utility and visual runways;
 - b. 10,000 feet at a slope of 34 feet outward for each foot upward for all non-precision instrument runways, other than utility; and
 - c. 10,000 feet at a slope of 50 feet outward for each one foot upward, with an additional 40,000 feet at a slope of 40 feet outward for each one foot upward, for precision instrument runways.
 - 3. The outer width of an approach surface will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.
- H. Conical Surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to one for a horizontal distance of 4,000 feet.

- I. Hazard. All hazards within and around airports shall be as determined by the Oregon Department of Aviation or Federal Aviation Administration (FAA).
- J. Heliports. A heliport is an area of land, water, or structure designated for the landing and take-off of helicopters or other rotorcraft. The heliport overlay zone applies the following imaginary surfaces. The heliport approach surfaces begin at each end of the heliport primary surface and have the same width as the primary surface. They extend outward and upward for a horizontal distance of 4,000 feet where their width is 500 feet. The slope of the approach surfaces is eight to one for civilian heliports and 10 to one for military heliports. The heliport primary surface coincides in size and shape with the designated takeoff and landing area of a heliport. The heliport primary surface is a horizontal plane at the established heliport elevation. The heliport transitional surfaces extend outward and upward from the lateral boundaries of the heliport primary surface and from the approach surfaces at a slope of two to one for a distance of 250 feet measured horizontally from the centerline of the primary and approach surfaces.
- K. Horizontal Surface. A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:
 - 1. 5,000 feet for all runways designated as utility or visual.
 - 2. 10,000 feet for all other runways.
 - 3. The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a 5,000 foot arc is encompassed by tangents connecting two adjacent 10,000 foot arcs, the 5,000 foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.
- L. Non-Precision Instrument Runway. A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in non-precision instrument approach has been approved, or planned, and for which no precision approach facilities are planned or indicated on an FAA-approved airport layout plan or other FAA planning document.
- M. Other than Utility Runway. A runway that is constructed for and intended to be used by turbine-driven aircraft or by propeller-driven aircraft exceeding 12,500 pounds gross weight.

- N. Precision Instrument Runway. A runway having an existing instrument approach procedure utilizing air navigation facilities that provide both horizontal and vertical guidance, such as an Instrument Landing System (ILS) or Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated by an FAA-approved airport layout plan or other FAA planning document.
- O. Primary Surface. A surface longitudinally centered on a runway. When a runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway. When a runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is:
1. 250 feet for utility runways having only visual approaches;
 2. 500 feet for utility runways having non-precision instrument approaches;
 3. For other than utility runways the width is:
 - a. 500 feet for visual runways having only visual approaches;
 - b. 500 feet for non-precision instrument runways having visibility minimums greater than three-fourths statute mile;
 - c. 1,000 feet for a non-precision instrument runway having a non-precision instrument approach with a visibility minimum as low as three-fourths statute mile, and for precision instrument runways.
- P. Public Assembly Facility. A permanent or temporary structure or facility, place or activity where concentrations of people gather in reasonably close quarters for purposes such as deliberation, education, worship, shopping, employment, entertainment, recreation, sporting events, or similar activities. Public assembly facilities include, but are not limited to, schools, places of worship, conference or convention facilities, employment and shopping centers, arenas, athletic fields, stadiums, clubhouses, museums, and similar facilities and places, but do not include parks, golf courses or similar facilities unless used in a manner where people are concentrated in reasonably close quarters. Public assembly facilities also do not include air shows, structures or uses approved by the FAA in an adopted airport master plan, or places where people congregate for short periods of time such as parking lots or bus stops.
- Q. Runway. A defined area on an airport prepared for landing and takeoff of aircraft along its length.

- R. Runway Protection Zone (RPZ). An area off the runway end used to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The inner width of the RPZ is the same as the width of the primary surface. The outer width of the RPZ is a function of the type of aircraft and specified approach visibility minimum associated with the runway end. The RPZ extends from each end of the primary surface for a horizontal distance of:
1. 1,000 feet for utility runways.
 2. 1,700 feet for other than utility runways having non-precision instrument approaches.
 3. 2,500 feet for precision instrument runways.
- S. Structure. Any constructed or erected object which requires location on the ground or is attached to something located on the ground. Structures include but are not limited to buildings, decks, fences, signs, towers, cranes, flagpoles, antennas, smokestacks, earthen formations and overhead transmission lines. Structures do not include paved areas.
- T. Transitional Surface. Those surfaces that extend upward and outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven feet horizontally for each foot vertically from the sides of the primary and approach surfaces to the point of intersection with the horizontal and conical surfaces. Transitional surfaces for those portions of the precision approach surfaces which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at a 90 degree angle to the extended runway centerline.
- U. Utility Runway. A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight or less.
- V. Visual Runway. A runway intended solely for the operation of aircraft using visual approach procedures, where no straight-in instrument approach procedures or instrument designations have been approved or planned, or are indicated on an FAA-approved airport layout plan or any other FAA planning document.
- W. Water Impoundment. Includes wastewater treatment settling ponds, surface mining ponds, detention and retention ponds, artificial lakes and ponds, and similar water features. A new water impoundment includes an expansion of an existing water impoundment except where such expansion was previously authorized by land use action approved prior to the effective date of Section 713.

713.04 USES PERMITTED OUTRIGHT

The following uses and activities are permitted outright in the Public Use Airport special use zoning district:

CLACKAMAS COUNTY ZONING AND DEVELOPMENT ORDINANCE

- A. Customary and usual aviation-related activities, including but not limited to takeoffs and landings; aircraft hangars and tie-downs; construction and maintenance of airport facilities; fixed-base operator facilities; one single-family dwelling in conjunction with an airport (if there is not one there already) for an airport manager, caretaker, or security officer; and other activities incidental to the normal operation of an airport. Except as provided in this ordinance, "customary and usual aviation-related activities" do not include residential, commercial, industrial, manufacturing, and other uses.
- B. Air passenger and air freight services and facilities, at levels consistent with the classification and needs identified in the Oregon Department of Aviation Airport System Plan.
- C. Emergency medical flight services, including activities, aircraft, accessory structures, and other facilities necessary to support emergency transportation for medical purposes. Emergency medical flight services do not include hospitals, medical offices, medical labs, medical equipment sales, and other similar uses.
- D. Law enforcement, military, and firefighting activities, including aircraft and ground-based activities, facilities and accessory structures necessary to support federal, state or local law enforcement or land management agencies engaged in law enforcement or firefighting activities. Law enforcement and firefighting activities include transport of personnel, aerial observation, and transport of equipment, water, fire retardant and supplies.
- E. Search and rescue operations, including aircraft and ground based activities that support the orderly and efficient conduct of search or rescue related activities.
- F. Flight instruction, including activities, facilities, and accessory structures located at airport sites that provide education and training directly related to aeronautical activities. Flight instruction includes ground training and aeronautic skills training, but does not include schools for flight attendants, ticket agents or similar personnel.
- G. Aircraft service, maintenance and training, including activities, facilities and accessory structures provided to teach aircraft service and maintenance skills and to maintain, service, refuel or repair aircraft and aircraft components. "Aircraft service, maintenance and training" includes the construction and assembly of aircraft and aircraft components for personal use, but does not include activities, structures or facilities for the manufacturing of aircraft, aircraft components or other aircraft-related products for sale to the public.
- H. Aircraft rental, including activities, facilities and accessory structures that support the provision of aircraft for rent or lease to the public.

- I. Aircraft sales and the sale of aeronautic equipment and supplies, including activities, facilities and accessory structures for the storage, display, demonstration and sales of aircraft and aeronautic equipment and supplies to the public but not including activities, facilities or structures for the manufacturing of aircraft, aircraft components or other aircraft-related products for sale to the public.
- J. Crop dusting activities, including activities, facilities and structures accessory to crop dusting operations. Crop dusting activities include, but are not limited to, aerial application of chemicals, seed, fertilizer, defoliant and other chemicals or products used in a commercial agricultural, forestry or rangeland management setting.
- K. Agricultural and Forestry Activities, including activities, facilities and accessory structures that qualify as a "farm use" as defined in ORS 215.203 or "farming practice" as defined in ORS 30.930.
- L. Aeronautic recreational and sporting activities, including activities, facilities and accessory structures at airports that support recreational usage of aircraft and sporting activities that require the use of aircraft or other devices used and intended for use in flight. Aeronautic recreation and sporting activities authorized under this paragraph include, but are not limited to, fly-ins; glider flights; hot air ballooning; ultralight aircraft flights; displays of aircraft; aeronautic flight skills contests; and gyrocopter flights, but do not include flights carrying parachutists or parachute drops (including all forms of skydiving).
- M. Flights carrying parachutists, and parachute drops (including all forms of skydiving) onto an airport, but only upon demonstration that the parachutist business has secured approval to use a drop zone that is at least 10 contiguous acres in size. The configuration of the drop zone shall roughly approximate a square or a circle and may contain structures, trees, or other obstacles only if the remainder of the drop zone provides adequate areas for parachutists to land safely.
- N. Uses not identified in Subsection 713.04, but permitted in the underlying zoning district, may be permitted if they do not conflict with permitted uses in Subsection 713.04, safety, or the continued operation and vitality of the airport.

713.05 USES PERMITTED SUBJECT TO REVIEW

Uses not identified in Subsection 713.04 and contained in an Airport Expansion Plan approved by the County as part of the Comprehensive Plan shall require review as a Type III application pursuant to Section 1307 and shall be subject to the following standards and criteria:

- A. The use is, or will be, supported by adequate types and levels of public facilities, services, and transportation systems authorized by applicable statewide land use planning goals;

- B. The use does not seriously interfere with existing land uses in areas surrounding the airport; and
- C. For airports where the underlying zoning district is EFU, the use shall comply with the standards described in ORS 215.296.
- D. The development standards in Section 1000 shall be applied appropriate to the type of use permitted.
- E. An applicant may demonstrate that these standards will be satisfied through the imposition of clear and objective conditions.

713.06 IMAGINARY SURFACE AND NOISE IMPACT BOUNDARY DELINEATION

The airport elevation, the airport noise impact boundary, and the location and dimensions of the runway, primary surface, runway protection zone, approach surface, horizontal surface, conical surface and transitional surface, direct and secondary impact boundaries shall be delineated for each public use airport where this district is applied and shall be made part of the zoning maps adopted pursuant to Subsection 103.02. All lands, waters, and airspace, or portions thereof, that are located within these boundaries or surfaces shall be subject to the requirements of this zone.

713.07 LAND USE COMPATIBILITY REQUIREMENTS

Applications for land use or building permits for properties within the boundaries of these safety overlay zones shall comply with the requirements of this Section as provided herein.

713.08 WATER IMPOUNDMENTS WITHIN SAFETY OVERLAY ZONES

Any use or activity that would result in the establishment or expansion of a water impoundment shall comply with the requirements of this section.

713.09 NONCONFORMING USES

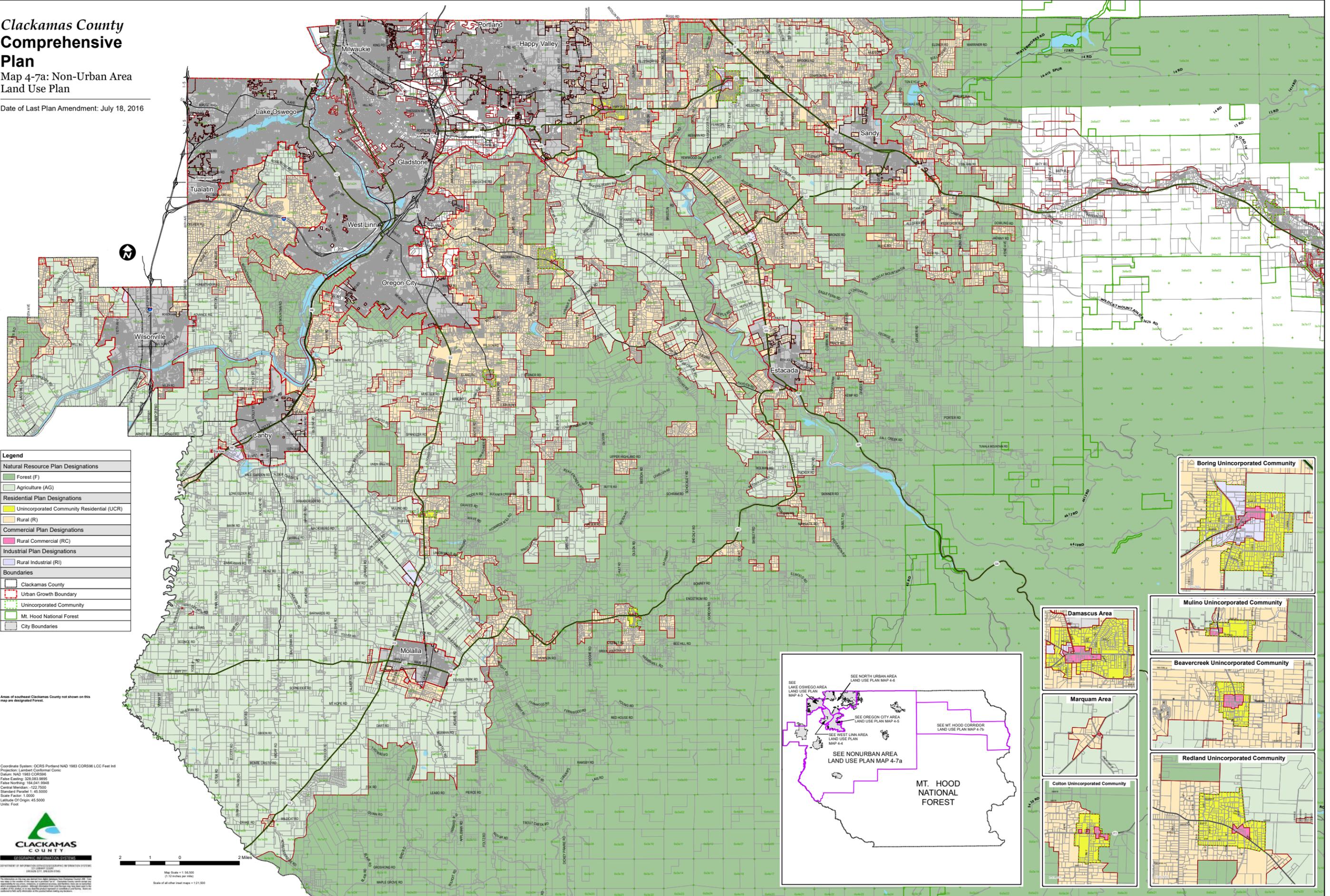
Section 713 shall not be construed to require the removal, lowering, or alteration of any existing structure or vegetation not conforming to Section 713. Section 713 shall not require any change in the construction, or alteration of the intended use of any structure, the construction or alteration of which was begun or completed prior to the effective date of this safety overlay zone.

[Amended by Ord. ZDO-248, 10/13/14; Amended by Ord. ZDO-268, 10/2/18]

Clackamas County Comprehensive Plan

Map 4-7a: Non-Urban Area
Land Use Plan

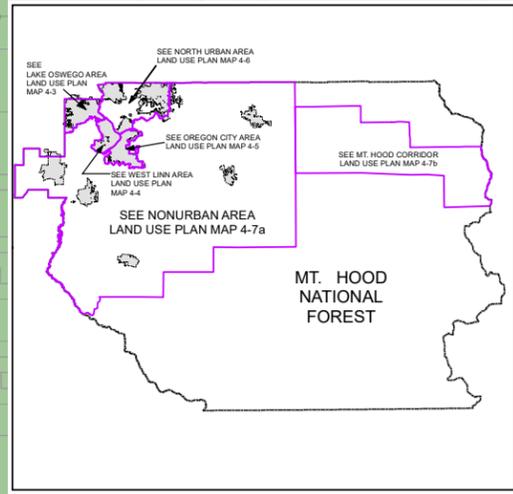
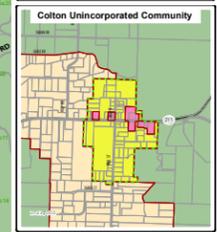
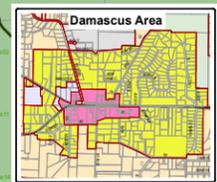
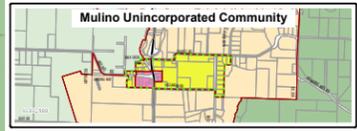
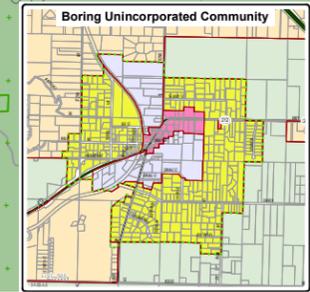
Date of Last Plan Amendment: July 18, 2016



Legend	
Natural Resource Plan Designations	
	Forest (F)
	Agriculture (AG)
Residential Plan Designations	
	Unincorporated Community Residential (UCR)
	Rural (R)
Commercial Plan Designations	
	Rural Commercial (RC)
Industrial Plan Designations	
	Rural Industrial (RI)
Boundaries	
	Clackamas County
	Urban Growth Boundary
	Unincorporated Community
	Mt. Hood National Forest
	City Boundaries

Areas of southeast Clackamas County not shown on this map are designated Forest.

Coordinate System: OGRS Portland NAD 1983 CORSS6 LCC Feet Int
 Projection: Lambert Conformal Conic
 Datum: NAD 1983 CORSS6
 False Easting: 528,083.9895
 False Northing: 164,041.9948
 Central Meridian: -122.7500
 Standard Parallel 1: 45.5000
 Scale Factor: 1.0000
 Latitude Of Origin: 45.5000
 Units: Feet



APPENDIX E

WATER RESOURCES



2863 NW Crossing Drive
Suite 100
Bend, OR 97701
541.241.2818 phone
541.241.2869 fax

www.esassoc.com

memorandum

date May 22, 2018

to Peter Murphy, P.E., Century West Engineering

cc Project file

from Luke Johnson and Sarah Hartung, Environmental Science Associates

subject Aurora State Airport Wetland Reconnaissance (Task 3.6)

The Aurora State Airport (UAO or “the Airport”), owned and operated by the Oregon Department of Aviation (ODA), proposes to remove obstructions (trees) in the Runway 17-35 approach and transposal surfaces as part of its Capital Improvement Plan (CIP) Phase II (2017 – 2021). This project will be funded by the Federal Aviation Administration (FAA) and therefore must comply with the requirements of the National Environmental Policy Act (NEPA). The Study Area includes the potential impact areas for where trees would be removed.

The purpose of this memorandum is to identify potential jurisdictional wetlands and waterways within the Study Area and provide recommendations for additional study or coordination with the Oregon Department of State Lands (DSL) or the US Army Corps of Engineers (Corps). Project activities in or adjacent to wetlands and waterways may require permitting with DSL and the Corps.

STUDY AREA

The Airport is located on 144 acres of land approximately one mile northwest of the city center of Aurora, between Highway 551 and Airport Road NE (Figure 1, attached). The legal location of the Airport is Section 2, Township 3, Range 1 West in Marion County, Oregon. Surrounding land use consists primarily of agricultural uses and plant nurseries with pockets of residential areas and commercial businesses. The Airport is designated as a “Community General Aviation” airport, accommodating a variety of aircrafts from Portland and other communities in the Willamette Valley.

The Study Area for the wetland reconnaissance encompasses off-site properties to the south and north on which obstructions (trees) to the approach exist. A total of 20 polygons or impact areas have been identified for obstruction removal. The Marion County line runs along the north property boundary of the Airport and, as a result, approximately one-third of the obstruction removal impact areas are located in unincorporated Clackamas County.

METHODOLOGY

ESA conducted a wetland reconnaissance in the Study Area according to methods defined in the *Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys and Coast Region Regional Supplement* to the 1987 Manual. The study was conducted based on a desktop analysis and a windshield survey.

The desktop analysis involved reviewing existing data sources to determine the presence of potential wetlands, or those areas with a high likelihood of containing the three wetland parameters - hydric soils, hydrophytic plants, and wetland hydrology. These data sources included: geospatial data from the U.S. Fish and Wildlife Service National Wetland Inventory (NWI), the U.S. Geological Survey National Hydrography Dataset (NHD), the Natural Resources Conservation Service (NRCS) Web Soil Survey, aerial imagery (Google Earth 1994-2017) and the Oregon LiDAR Consortium provided by the Oregon Department of Geology and Mineral Services.

Through the desktop analysis, potential wetlands were identified if any portion of an impact area included one of the following:

- An NRCS mapped hydric soil unit; or
- An NRCS mapped soil unit that contains 4-6% hydric inclusions and contours that indicate a depression or swale; or
- An NHD mapped headwater stream within 100 feet.

A windshield survey for the 20 obstruction removal impact areas located off Airport property were conducted on March 22, 2018 by a Professional Wetland Scientist and a wetland technician. Each of these impact areas was evaluated to verify results of the desktop analysis using indicators in the field, such as understory vegetation, tree species, physical geography, surface hydrology, and presence of fill or development. Some areas identified as potential wetlands in the desktop analysis were ruled out during the field reconnaissance. The windshield survey was done from road rights-of-way and public access points. No on-site investigations were conducted. The locations and descriptions of potential wetlands and waterways were recorded in the field using an iPad tablet and ESRI Collector for ArcGIS.

FINDINGS

NATIONAL WETLAND INVENTORY

The NWI has mapped several wetlands within the Study Area vicinity (Figure 1), however, none of the mapped NWI wetlands occur in the obstruction removal.

SOILS

Four mapped soil units occur in the Study Area (Figure 1; NRCS, 2018). The largest number of mapped soil units is in the far north and far south obstruction removal areas. Table 1 summarizes the four soil map units within the Study Area.

Table 1. Mapped Soil Units in the Study Area

Map Unit Symbol	Map Unit Name	Hydric Soil	Hydric Inclusions Present?	Landform of hydric inclusions	Impact Area Polygon Numbers
*3/Am	Amity silt loam	No	Yes – 5%	Terraces and swales on terraces	4, 5, 6, 7, 11, 12, 17, 18, 19, 23, 24, 30, 31, 36, 46
*86A/WIA	Willamette silt loam, 0 to 3 percent slopes	No	¹ Yes – 1%	¹ Floodplains	36, 37, 38
*91A/WuA	Woodburn silt loam, 0 to 3 percent slopes	No	*Yes – 6% / 1%	Terraces, swales on terraces, and floodplains	11, 17, 40, 46
WuD	Woodburn silt loam, 12 to 20 percent slopes	No	Yes – 5%	Terraces	37, 39, 40

* Clackamas County Soil Unit Symbol / Marion County Soil Unit Symbol

¹Only applies to soils in Marion County

Refer to Table 1 for a summary of the hydric rating of the map unit and the percent of hydric inclusions within each mapped soil unit. For additional details of each mapped soil unit, refer to Exhibit A, attached.

OBSTRUCTION REMOVAL AREAS

The desktop analysis identified two obstruction removal impact areas with soils, topography, and hydrology that could be conducive to wetland conditions. All of the four mapped soil units have hydric inclusions that range from four to six percent (Table 2). There are no hydric soils mapped within obstruction removal impact areas. Aerial photography and elevation contours identified four impact areas with the possible presence of swales or depressions that may be conducive to wetland conditions; however, the windshield survey excluded two of these areas because upland conditions were observed.

There is the potential for jurisdictional wetlands to occur in two of the obstruction removal impacts areas because at least one of the criteria described in the methods was met. The results of the reconnaissance are summarized in Table 2.

RECOMMENDATIONS

A wetland and waterway delineation is recommended for the two obstruction removal impact areas because there is the potential for these resources to occur (Table 2). Permission to access property would be needed to perform the recommended wetland delineations.

Table 2. Wetland Reconnaissance Results

Polygon Number (Impact area)	Potential Wetland	Approximate Area (acres)	Hydric Inclusions	Mapped depression or swales	Mapped NWI wetlands	Mapped Stream within 100 ft	Field Reconnaissance Notes
4	No	2.7	Yes	No	No	No	Not wetland
5	No	8.2	Yes	No	No	No	Likely non-wetland, Oaks primarily
6	No	1.4	Yes	No	No	No	Likely non-wetland, redwood with laurel understory
7	No	0.2	Yes	No	No	No	Likely non-wetland, redwood with laurel understory
11	No	0.2	Yes	No	No	No	Not wetland Ponderosa and lawn
12	No	0.4	Yes	No	No	No	Likely non-wetland, redwood with laurel understory
17	No	0.3	Yes	No	No	No	Not wetland - planted tall conifers
18	No	0.2	Yes	No	No	No	Not wetland - planted tall conifers
19	No	0.2	Yes	No	No	No	Not wetland, PSME with some oaks, RUAR
23	Yes	3.1	Yes	Yes	No	No	Potential wetlands - ponded water in depression among oaks.
24	No	2.4	Yes	No	No	No	Not wetland- mixed canopy firs, ornamentals
30	Yes	0.8	Yes	Yes	No	No	Potential wetland – Doug firs near seasonal water feature-groundcover and hydrology not verified
31	No	0.2	Yes	No	No	No	Not wetland - mixed canopy firs, ornamentals
34	No	6.6	Yes	Yes	No	Yes	Not wetland - mixed canopy firs, ornamentals

Polygon Number (Impact area)	Potential Wetland	Approximate Area (acres)	Hydric Inclusions	Mapped depression or swales	Mapped NWI wetlands	Mapped Stream within 100 ft	Field Reconnaissance Notes
36	No	0.2	Yes	No	No	No	Not wetland Ponderosa and lawn
37	No	2.1	Yes	Yes	No	No	Not wetland - upland forest patch
38	No	0.2	Yes	No	No	No	Not wetland
39	No	0.8	Yes	No	No	No	Not wetland
40	No	0.2	Yes	No	No	No	Not wetland
46	No	1.0	Yes	No	No	No	Not wetland - Doug firs

REFERENCES

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- U.S. Fish and Wildlife Service National Wetland Inventory. Updated March 15, 2018.
<https://www.fws.gov/wetlands/data/mapper.html> Website accessed February 13, 2018.
- U.S. Geological Survey National Hydrography Dataset. Updated August 3, 2017.
https://nhd.usgs.gov/NHD_High_Resolution.html Website accessed February 13, 2018.
- Williams, Lynn H. U.S. Department of Agriculture. NRCS. Soil Survey of Marion County Area Oregon. 1972.
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Accessed March 31, 2018

EXHIBIT A – SOIL DESCRIPTIONS

- **Amity Silt Loam** – This somewhat poorly drained soil has formed in mixed alluvial silts. They occur on broad valley terraces at elevations of 150 to 350 feet. In a typical profile, the surface layer is very dark grayish-brown silt loam that is mottled in the lower part and is about 17 inches thick. The subsurface layer is mottled dark-gray silt loam about 7 inches thick. In the field, upland areas with soils mapped as Amity Silt Loam had a color of 10 YR 3/2 within the first 5-8 inches and had a silt loam texture. Between 7 and 20 inches the field sample had a color of 10 YR 5/2 (Gerig, 1985). This matches the soil description.
 - Amity silt loam is mapped in the entire north run-up apron impact area and many obstruction removal impact areas located in the north and south approaches.
- **Willamette silt loam, 0 to 3 percent slopes** – This soil series, Willamette silt loam, consists of deep, well-drained soils that have formed in silty alluvium. Willamette silt loam, 0 to 3 percent slopes is on broad valley terraces at elevations that range from 150 to 400 feet. Areas of Amity and Woodburn soils were included within this soil mapping. The areas of Amity soils make up less than 2 percent of the total mapping unit. Those of Woodburn soils make up as much as 15 percent of the mapping unit. In a typical profile, the surface layer within the first 6 inches is very dark grayish-brown with a color of 10YR 3/2 and a silt loam texture. The second layer is from 6 to 12 inches and is a very dark grayish-brown (10YR 3/2) silt loam. The third layer, 12 to 17 inches, is very dark grayish-brown (10YR 3/2) silt loam and is 3 to 12 inches thick. From 17 to 24 inches this soil is a dark-brown (10YR 3/3) silt loam (Gerig, 1985).
 - The majority of Willamette silt loam, 0 to 3 percent slopes within the Study Area is mapped in several small obstruction removal impact areas in the east portion of the south approach. There is
- **Woodburn silt loam, 0 to 3 percent slopes WuA and 91A** – This deep, moderately well drained soil is on broad valley terraces. It formed in stratified glaciolacustrine deposits. The vegetation in areas not cultivated is mainly native grasses, western hazel, poison-oak, Douglas-fir, and Oregon white oak. Elevation is 150 to 400 feet. In a typical soil profile, the surface layer is very dark brown and dark brown silt loam about 16 inches thick. The upper 22 inches of the subsoil is dark yellowish brown and dark brown silty clay loam, and the lower 16 inches is dark brown silt loam. Small areas of Aloha, Amity, Huberly, Dayton, and Willamette soils are included in this mapped unit. Permeability of this Woodburn soil is moderate (Gerig, 1985; Williams 1972).
 - Woodburn silt loam, 0 to 3 percent slopes is mapped in several obstruction removal impact areas located in the central portion of the north approach and the central portion of the south approach.
- **Woodburn silt loam, 12 to 20 percent slopes** – The primary characteristic that distinguishes this mapping unit from Woodburn silt loam, 0 to 3 percent slopes (described above) is the distinctly steeper slopes on which this soil is mapped. Where this soil occurs along creeks, intermittent drainageways, and terrace fronts, its slopes are short and abrupt. Runoff is rapid, and the hazard of erosion is moderate. Included with this soil in mapping were small areas that have a thin surface layer and that have distinct mottling within 12 inches of the surface (Williams 1972).
 - Woodburn silt loam, 12 to 20 percent slopes (described above) is mapped in several obstruction removal impact areas located in the east and far south portions of the south approach.



SOURCE: ESA, 2017; NRCS NWI, 2017; Open Street Maps, 2016; RLIS, 2017, Marion County Streams 2017

160745.04 Aurora State Airport

Figure 1
Wetland Reconnaissance
Marion County and Clackamas County, OR

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF of the completed cover form and report may be e-mailed to: Wetland_Delineation@dsl.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information	
<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: John Wilson Oregon Department of Aviation 3040 25th Street SE	Business phone # (503) 378-2521 Mobile phone # (optional) E-mail: john.p.wilson@aviation.state.or.us
<input type="checkbox"/> Authorized Legal Agent, Name and Address (if different):	Business phone # Mobile phone # (optional) E-mail:
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.	
Typed/Printed Name: <u>John Wilson</u> <u>Matthew Maass</u> Signature:	
Date: <u>02AUG2018</u> Special instructions regarding site access: _____	
Project and Site Information	
Project Name: <u>Aurora State Airport Improvements</u>	Latitude: <u>45°14'49.52"N</u> Longitude: <u>122°46'10.56"W</u> decimal degree - centroid of site or start & end points of linear project
Proposed Use: <u>Expansion of apron for runway 17</u>	Tax Map # <u>041W02A</u> Tax Lot(s) <u>008, 012, 010, 009, 016, 100, 500, 501, 700</u>
Project Street Address (or other descriptive location): <u>22801 Airport Rd NE</u> <u>Aurora, OR 97002</u>	Tax Map # <u>041W02D</u> Tax Lot(s) <u>200</u>
City: <u>Aurora</u> County: <u>Marion</u>	Township <u>3S</u> Range <u>1W</u> Section <u>2</u> <u>QQ</u> Use separate sheet for additional tax and location information
Waterway: _____ River Mile: _____	
Wetland Delineation Information	
Wetland Consultant Name, Firm and Address: <u>Sarah Hartung, PWS</u> <u>Environmental Science Associates</u> <u>819 SE Morrison St, Ste. 310</u> <u>Portland, OR 97214</u>	Phone # (503) 274-2010 Mobile phone # (if applicable) E-mail: shartung@esassoc.com
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.	
Consultant Signature:	Date: <u>7-30-2018</u>
Primary Contact for report review and site access is <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Study Area size: _____ Total Wetland Acreage: _____	
Check Applicable Boxes Below	
<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Industrial Land Certification Program Site <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) <input checked="" type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # <u>03-0509</u>	<input checked="" type="checkbox"/> Fee payment submitted \$ <u>437</u> <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report <input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) DSL # _____ Expiration date _____ <input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____
For Office Use Only	
DSL Reviewer: _____ Fee Paid Date: ____/____/____	DSL WD # _____
Date Delineation Received: ____/____/____ Scanned: <input type="checkbox"/> Electronic: <input type="checkbox"/>	DSL App.# _____

AURORA STATE AIRPORT IMPROVEMENTS; WATER RESOURCE DELINEATION REPORT

Prepared for
Century West Engineering

May 2018



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A) LANDSCAPE SETTING AND LAND USE

The Aurora State Airport (Airport) is owned and operated by the Oregon Department of Aviation (ODA). The Airport was originally built by the United States Army Air Forces in 1943 and was later closed and turned over to the state government after World War II. Today the Airport is the third busiest airport in Oregon and is home to over 260 daily aircraft operations.

The Airport is located approximately one mile northwest of the city center of Aurora; east of State Highway 551 and west of Airport Road NE; (Appendix A, Figure 1). The site is 22 miles south of Portland and the legal location of the site is in Section 2, Township 3, Range 1 West, Willamette Meridian.

The water resource delineation study area consists of a 9-acre site located on Airport-managed property that encompasses six Airport buildings and three active taxiways (Appendix A, Figure 2). The study area is bound to the west by Runway 17-35, which supports regular aircraft operations, and is bound to the east by the six airplane T-hangars and access roads. An ODA escort is required at all times to access Airport property. The Airport entrance is on Stenbock Way NE, located 0.25 miles east of the of State Highway 551.

Land use adjacent to the Airport property consists of a mix of transportation corridors, agriculture fields, and commercial and residential development (Appendix A, Figure 3). Current development adjacent to the study area includes active taxiways, runways, access roads, parking lots, and airfield operations buildings. These land uses have been in place for the past two decades, and likely much longer. The Airport property is zoned by Marion County as a Public (P) zone. Current land use within the study area is primarily non-commercial aircraft operations, maintenance vehicle traffic, and regular maintenance of turf grasses on Airport property. In addition to stormwater ditches, there is one septic drain field located within the study area (Appendix A, Figure 5).

The Airport is situated on flat terrain within the western foothills of the central Cascades. The average elevation of the Airport is 200 feet above mean sea level. The topography is

mostly flat with the elevation varying from the mean by no more than 10 feet over most of the site (Appendix A, Figure 6b). The lowest elevations in the study area are located at the bottom of the swales, or ditches, that convey stormwater from the north portion of Airport property to the central stormwater facilities on the property.

B) SITE ALTERATIONS

Alterations in and adjacent to the study area that have influenced the presence, location, and boundaries of potentially jurisdictional wetlands include: excavation, grading, and development.

The stormwater ditches on site were apparently constructed shortly after the Airport was built to capture runoff and drain the airfield (Photo 2, Appendix E). A dark ditch line on both sides of the runway is visible in a historical photograph from 1956, but is not visible in a 1944 image (Appendix E). The ditches (Wetland 1 and Wetland 2) are composed of natural substrate (i.e. are not lined), are vegetated, and are maintained to maximize stormwater capture and conveyance (Appendix C, Photos 6-14).

According to examination of historic aerial photography (1944-2017), the study area experienced the most substantial development between 1976 and 1983, between 2008 and 2010, and between 2013 and 2015. Between 1976 and 1983 an approximate 50-acre portion of agriculture fields were redeveloped into a taxiway, more than a dozen T-hangars, several office buildings, and associated access roads and stormwater infrastructure.

Between 2008 and 2010, the ditch alignment for the area south of taxiway A1 and the associated stormwater infrastructure was shifted 55 feet west and the Taxiway A was shifted 105 feet east. As a result, the drainage ditch and taxiway effectively switched alignments. The drainage ditch, formerly located east of Taxiway A, is currently located west of the Taxiway A. As a part of this project, the storm pipes were replaced and installed to their existing alignments (Appendix A, Figure 6). The outlet of the ditch is

located out of the study area and drains into a stormwater swale west of Runway 17-35 on Airport property.

C) PRECIPITATION DATA AND ANALYSIS

The climate in the study area is characterized by mild, wet winters, and warm, dry summers. The typical annual precipitation ranges between 27.2 and 46.7 inches, and the average annual air temperature is 53.9 degrees F (USDA 2018).

Historic precipitation information was available from the WETS Station: Aurora State Airport (USDA 2018) located on Airport property. Based on this station record ranging from 1997 to 2018, the growing season is from March 21 through November 12, at the 50 percent interval (USDA 2018). Field indicators observed suggest the growing season had very recently begun at the time of the field survey – there were several signs of budding and other recent new growth on trees and shrubs within the survey area vicinity.

Recorded precipitation for the three months prior to the field investigation totaled 10.6 inches, which was 3.42 inches below average for that interval and within the normal range (USDA 2018) (Table 1). Precipitation for January, 3 months prior to field work, was four percent above average and within normal range. Precipitation for February, 2 months prior to field work, was more than 40 percent below average and was not within normal range. Precipitation for March, the month prior to field work, was more than 30 percent below average and was not within the normal range. All precipitation that fell during this three-month period was rain.

Ambient temperatures during the survey were about average; ranging from the mid-40 degrees to mid-50 degrees, F.

Table 1. Summary of Precipitation for Aurora, OR; Values are in Units of Inches.

Time Interval	Recorded Precip.	WETS			Within Normal Range?
		Average	30% Chance Less	30% Chance More	
2018 Water Year (March 27, '17-March 26, '18)	44.01	39.46	27.15	46.73	Yes
Three Months Prior to Survey					

March 2018	2.97	4.71	3.61	5.48	No (below normal)
February 2018	2.06	3.94	2.47	4.75	No (below normal)
January 2018	5.57	5.37	3.73	6.38	Yes
Totals	10.6	14.02	9.81	16.61	Yes
Two Weeks Prior to Field Survey					
March 12-26, 2018	3.38	--	--	--	--
During Field Survey					
March 27, 2018	0.03	--	--	--	--

Sources: USDA 2018

D) METHODS

Literature Review

The following resources were reviewed and analyzed to aid in the identification of wetlands and other waters in the study area:

- Soil Map for Marion County Oregon, acquired from the Web Soil Survey, National Cooperative Soil Survey (NRCS-USDA 2018) Appendix A, Figure 4;
- Lists of Hydric Soils, National List, all states (NRCS-USDA 2018);
- National Wetland Inventory (NWI) from Oregon Explorer (2018). No LWI is available for Marion County (Oregon Explorer 2018) Appendix A, Figure 3;
- Precipitation data and Climate Analysis for Wetlands; WETS Station: Aurora (USDA 2018);
- Aerial imagery from 1994 to 2017 (Google Earth 2018), Appendix E;
- Topographic contours (Marion County 2018); and
- Stream and lake polygons, tax parcels and roads (Marion County 2018).

In addition to the resources described above, a wetland delineation conducted in 2003 by W&H Pacific was also reviewed (Jackson and Smyth, 2003; DSL WD# 03-0509). This wetland delineation was conducted for an area that encompasses the entire survey area and additional portions of the Airport property. In April 2005, DSL concurred with the findings in this report and determined that the ditches on the survey site were not subject

to state jurisdiction. In the DSL concurrence letter, no wetlands or waters of the state were identified at the Airport property. The ditches that were determined to be non-jurisdictional have since been filled and reconstructed as a part of a taxiway construction project between 2008 and 2010.

Field Investigations

Environmental Science Associates (ESA) staff conducted wetland investigations in the field on March 27, 2018, following routine wetland determination methods defined in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Regional Supplement) (USACE 2010).

Routine methods for delineating wetlands involved establishing paired plots in potential wetland sites and adjacent uplands. The east half of the site is a series of upland vegetated islands surrounded by taxiways and airplane hangars. These vegetated islands are flat and comprised of turf grasses. SP1 (Appendix B) was established in the grassy infield east of Taxiway A to characterize the typical upland conditions observed in the center and east portions of the site. The west half of the site is contoured to drain to the stormwater ditch located west of Taxiway A. Sample plots were strategically placed to characterize the boundary of the stormwater ditch and any areas exhibiting characteristics of wetlands. Wet season hydrology and early growing season vegetation conditions were present during the survey and were considered in the interpretation of field observations.

All field sampling was performed by Professional Wetland Scientist, Sarah Hartung, and wetland technician, Luke Johnson.

Soil Analysis

Amity Silt Loam, 0 to 3 percent slopes (Am) is the only soil type mapped in the study area by Web Soil Mapper (Appendix A, Figure 4) (NRCS-USDA 2018) (Table 2). This soil is a well-drained mix of silt loam, gravelly clay loam, and cobbly clay loam. It is native and originates from the Willamette River or neighboring tributary alluvium.

Table 2. Mapped Soil Units within the Study Area

Map Unit Symbol	Map Unit Name	Percent of Study Area	Component Landform	Hydric Soil?	% Hydric Inclusions	Hydric Inclusions Landform
Am	Amity Silt Loam	100.0	Stream Terraces	No	5%	Terraces

Source: NRCS-USDA 2018

E) DESCRIPTION OF WETLANDS

Two potentially non-jurisdictional wetlands were delineated during the survey – Wetland 1 and 2 (Appendix A, Figure 5). The two wetlands documented within the study area were similar in vegetation structure, topography, and condition because of shared history of alterations from the establishment of the Airport infield and agricultural use, and through subsequent management. All wetland determination data forms completed for this delineation are presented in Appendix B. Specific characteristics of each delineated water resource are described below.

Wetlands

Wetland 1

Wetland 1 (WL1) is a stormwater ditch that begins approximately 1,800 feet north of the study area just south of Arndt Road. The ditch has an average width of 25 feet and is approximately 200 feet long within the study area. The wetland boundary was delineated at the toe of the gently sloped and approximate 4-foot high banks. WL1 is bound to the south by the culvert inlet at the Taxiway A1 crossing and to the north by the survey area boundary. According to conversations with John Wilson, ODA director of operations, WL1 is a dry ditch during the summer and fall months June – October (J. Wilson, personal communication with ESA field staff, March 27, 2018). During these months, ODA regularly mows the entire ditch length.

This feature would be considered a palustrine emergent wetland (Cowardin et al. 1979) with a hydro-geomorphic classification of Slope. Data collected for WL1 include wetland plot SP2 and upland plot SP3. At the time of the survey, water was slowly moving south through the Taxiway A1 culvert, which drains to Wetland 2. Surface water

in WL1 was 18 inches deep, on average, and soils were a silt loam that met the F3 hydric soil indicator. Water flow was slackened by dense, thin-stemmed vegetation composed principally of reed canarygrass (*Phalaris arundinacea*, FACW) and meadow foxtail (*Alopecaris pratensis*, FAC) (Appendix C, Photo 7). Other plant species present in lower densities include common rush (*Juncus effusus*, FACW) and tall fescue (*Schedonorus arundinaceus*, FAC).

Wetland 2

Similar to WL1, Wetland 2 (WL2) is a stormwater ditch located downstream (south) of WL1. It is bound to the north by taxiway A1, to the east by taxiway A, to the south by Taxiway A2, and to the west by Runway 17-35 (Appendix C, Photo 12). WL2 drains to a vegetated swale on the west side of Runway 17-35 through a storm pipe located midway between Taxiway A1 and A2 (Appendix C, Photo 13). The riprap at the culvert inlet attenuates flows, causes a slight impoundment of water, and created conditions that support a dense stand of reed canarygrass. The wetted width of the channel was a relatively uniform depth of 18 inches at the time of the survey. WL2 is a dry ditch during the summer and fall months June – October. During these months, ODA regularly mows the entire ditch length (J. Wilson, personal communication with ESA field staff, March 27, 2018).

WL2 would be considered a palustrine emergent wetland (Cowardin et al. 1979), with a hydro-geomorphic classification of Slope. The wetland boundary was delineated at the toe of the gently sloped and approximate 4-foot high banks (Appendix C, Photo 10). The ditch topography captures and retains wetland hydrology at the site. Soils were a silt loam, met the F3 hydric soil indicator, and were saturated throughout at the time of survey. SP5 is the wetland plot for WL2 and SP6 is the corresponding upland plot. Dominant plant species in WL2 include annual bluegrass (*Poa annua*, FAC), reed canarygrass, and less frequently observed species that occurred in high density patches including meadow foxtail and common velvet grass (*Holcus lanatus*, FAC).

F) DEVIATION FROM LWI OR NWI

No wetlands or streams are mapped in the study area or vicinity by NWI (Figure 3). A LWI is not available for the study area.

G) MAPPING METHOD

Spatial data (survey points and boundaries) were collected in the field using a Bad Elf GNSS Surveyor bluetooth receiver with a tablet data collector. This data was collected at a mapping grade accuracy of sub-meter and was digitized in real-time into GIS shapefiles using ArcGIS version 10.4.1. Shapefiles were used to produce maps and identify spatial locations presented in this delineation report. All background layers, including the survey boundary, were georeferenced using NAD 1983 State Plane, Oregon North, FIPS3601 (U.S. feet). Background imagery was sourced from Esri.

H) ADDITIONAL INFORMATION

A discussion of state and federal regulations is warranted to aid in explaining why certain wetlands would or would not be considered jurisdictional by the regulatory agencies [DSL and the Corps]. DSL and the Corps typically have concurrent jurisdiction over wetlands and waterways, but each has different regulatory criteria and exemptions.

DSL regulates the removal or fill of more than 50 cubic yards of material in “waters of the state,” or any amount of removal or fill in water bodies that are considered essential salmon habitat (as determined by the Oregon Department of Fish and Wildlife). Waters of the state are defined as natural waterways such as tidal and non-tidal bays, intermittent and perennial streams, lakes, wetlands and other bodies of water on public or private land. Other bodies of water include artificially created wetlands larger than one acre and re-routed streams. DSL regulates isolated wetlands.

The Corps regulates the fill or discharge of dredged spoils in waters of the U.S. under Section 404 of the Clean Water Act (CWA). Waters of the U.S. include: navigable waters (i.e. Willamette River), wetlands adjacent to navigable waters, waters that cross state lines, waters with a commerce nexus, and tributaries to navigable waters.

According to DSL Removal-Fill Jurisdiction Code (141-085-0515), drainage ditches created in uplands are jurisdictional if they meet both of the following characteristics: (1) they have a free an open connection to a waterway; and (2) contain food or game fish. Additionally, drainage ditches that are channelized or straightened natural waterways are considered jurisdictional. If the channelized waterway is shown as an intermittent or perennial stream on a USGS map, it is likely not a ditch, but a channelized stream.

The ditches within the study area have been artificially created from upland, do not have a free and open connection to waterways, and do not contain food or game fish. The stormwater ditches on the airfield are also not shown on USGS maps as intermittent or perennial streams. During the field survey, the off-site areas upstream of the survey area were observed as potential non-wetland and hydrologically disconnected from WL1 and WL2 (Appendix C, Photos 15 and 16). The on-site ditches discharge into a regional, underground stormwater facility that eventually flows into a tributary of Deer Creek. Although Deer Creek is a jurisdictional waterway and is known to support populations of food and game fish, the stormwater treatment facility and outfalls prohibit passage upstream into drainage ditches on Airport property. WL1 and WL2 are not connected to upstream or downstream wetlands or other jurisdictional waters. Six historical aerial photographs ranging from 1944 to 1999 (Appendix E) do not indicate the presence of streams or wetland features on site or upstream of the survey area. According to these photographs, it appears that the first ditches on site were created between 1944 and 1956, during the same period that several acres of trees and shrubs were converted to agricultural lands. This conversion of previously upland areas into ditches indicates that WL1 and WL2 were likely constructed for the purpose of conveying stormwater.

I) RESULTS AND CONCLUSIONS

A total of 0.61 acres of potentially non-jurisdictional wetlands were delineated in the field using routine delineation methods. These potentially non-jurisdictional features are located in constructed ditches, or swales, designed to convey and treat stormwater on the Airport property. Each water resource is summarized in Table 3 below.

Table 3. Water Resource Delineation Summary

Delineated Water Resource	Area (Acres)	HGM	Cowardin Class	DSL Jurisdictional	Corps Jurisdictional
WL1	0.12	Slope	Palustrine emergent	No	No
WL2	0.49	Slope	Palustrine emergent	No	No

J) REQUIRED DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been approved in writing by the reviewing agency/agencies.

APPENDIX A

Figure 1:	Study Area Location Map
Figure 2:	Taxlot and Aerial Map
Figure 3:	NWI Map (LWI not available)
Figure 4:	Soil Survey Map
Figure 5:	Wetland Delineation Map

Figure 1

Study Area Location Map

Figure 2

Taxlot and Aerial Map

Figure 3

NWI Map (LWI not available)

Figure 4

Soil Survey Map

**(Note: only soils within the study area are listed in the legend;
hydric soils and non-hydric soils are identified)**

Figure 5

Wetland Delineation Map Overview

APPENDIX B

Wetland Determination Data Forms

APPENDIX C

Ground Level Color Photographs

APPENDIX D

Literature Cited

APPENDIX E

Historic Aerial Photographs



SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport Wetland Delineation

Figure 1
Study Area Location
Aurora, OR





SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 2
Taxlot and Aerial Map
Aurora, OR





SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016, USFWS, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 3
 NWI Map
 Aurora, OR





SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016, NRCS SSURGO, 2016

D160745. Aurora State Airport Wetland Delineation

Figure 4
Soil Survey Map
Aurora, OR





SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 5
Wetland Delineation Map
Aurora, OR

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Aurora State Airport City/County: Aurora, Marion County Sampling Date: 3/27/2018

Applicant/Owner: Oregon Department of Aviation State: OR Sampling Point: 5

Investigator(s): Sarah Hartung and Luke Johnson Section, Township, Range T3S,R1W,sec2

Landform (hillslope, terrace, etc.): Edge of swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): Willamette Meridian Lat: 45°15'12.59"N Long: 122°46'4.66"W Datum: NAD 83

Soil Map Unit Name Amity Silt Loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No

Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes <u>x</u>	No <u>0</u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u>0</u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u>0</u>			
Remarks:					

VEGETATION – Use scientific names of plants

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: <u>30' R</u>)				
1. _____	_____	_____	0	Number of Dominant Species
2. _____	_____	_____	0	That Are OBL, FACW, or FAC: <u>2</u> (A)
3. _____	_____	_____	0	Total Number of Dominant
4. _____	_____	_____	0	Species Across All Strata: <u>2</u> (B)
	0 = Total Cover			
Sapling/Shrub Stratum				
(Plot size: <u>30' R</u>)				
1. _____	_____	_____	0	Percent of Dominant Species
2. _____	_____	_____	0	That Are OBL, FACW, or FAC: <u>1.00</u> (A/B)
3. _____	_____	_____	0	Prevalence Index worksheet:
4. _____	_____	_____	0	Total % Cover of: _____ Multiply by:
5. _____	_____	_____	0	OBL species <u>0</u> x 1= <u>0</u>
	0 = Total Cover			FACW species <u>0</u> x 2= <u>0</u>
Herb Stratum				FAC species <u>0</u> x 3= <u>0</u>
(Plot size: <u>5' R</u>)				FACU species <u>0</u> x 4= <u>0</u>
1. Phalaris arundinacea	20	1	FACW	UPL species <u>0</u> x 5= <u>0</u>
2. Juncus effusus	5		FACW	Column Totals: <u>0</u> (A) <u>0</u> (B)
3. Holcus lanatus	10		FAC	Prevalence Index = B/A = <u>#DIV/0!</u>
4. Alopecurus pratensis	10		FAC	Hydrophytic Vegetation Indicators:
5. Rumex crispus	2		FAC	<u> </u> 1- Rapid Test For Hydrophytic Vegetation
6. Poa annua	20	1	FAC	<u>x</u> <u> </u> 2- Dominance Test is >50%
7. _____	_____	_____	0	<u> </u> 3- Prevalence Index is ≤3.0 ¹
8. _____	_____	_____	0	<u> </u> 4- Morphological Adaptations ¹ (Provide supporting
9. _____	_____	_____	0	data in Remarks or on a separate sheet)
10. _____	_____	_____	0	<u> </u> 5- Wetland Non-Vascular Plants ¹
11. _____	_____	_____	0	<u> </u> 6- Problematic Hydrophytic Vegetation ¹ (Explain)
	67 = Total Cover			¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum				be present, unless disturbed or problematic.
(Plot size: <u>30' R</u>)				
1. _____	_____	_____	0	Hydrophytic
2. _____	_____	_____	0	Vegetation
	0 = Total Cover			Present?
% Bare Ground in Herb Stratum	0			Yes <u>x</u> No <u> </u>

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10 YR 5/2	70	7.5YR 5/6	30	Conc	Ma	Silty clay loa	
9-20	7.5YR 4/6	80	10Y 5/1	20	epletior	Mat	Silty clay loa	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Mat

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches) _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (Inches): 0
 Water Table Present? Yes No Depth (Inches): 0
 Saturation Present? Yes No Depth (Inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Remarks:

Photo: 1

Looking: Southwest

Notes: Representative upland plot bound by taxiways; Sp1



Photo: 2

Looking: North

Notes: Near Sp1, stormwater drain inlet which outlets into WL2



Photo: 3

Looking: South

Notes: Drain field area bound by taxiways



Photo: 4

Looking: at ground

Notes: Upland, pasture grass areas – typical vegetation



Photo: 5

Looking: west

Notes: At intersection of taxiway A and hangar access road



Photo: 6

Looking: North

Notes: WL1 at Sp2 which extends beyond survey area. Boundary is approximated by dashed lines.



Photo: 7	Looking: Southwest	Notes: Culvert inlet at terminus of WL1. Boundary is approximated by dashed line.
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Photo: 8	Looking: Northwest	Notes: WL1 extends offsite. Boundary is approximated by dashed line.
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Photo: 9

Looking: West

Notes: WL2 at outlet of culvert. Boundary is approximated by dashed line.



Photo: 10

Looking: South

Notes: At Sp5 of WL2; taxiway A on left and Airport infield on right. Boundary is approximated by dashed line.



Photo: 11	Looking: South	Notes: at Sp5 in WL2; taxiway A on left and Airport infield on right. Boundary is approximated by dashed line.
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Photo: 12	Looking: North	Notes: at Sp5 of WL2; taxiway A on right and Airport infield on left. Boundary is approximated by dashed line.
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Photo: 13

Looking: Southeast

Notes: WL2; drains to the east side of Runway 17-35 through this pipe. Boundary is approximated by dashed line.

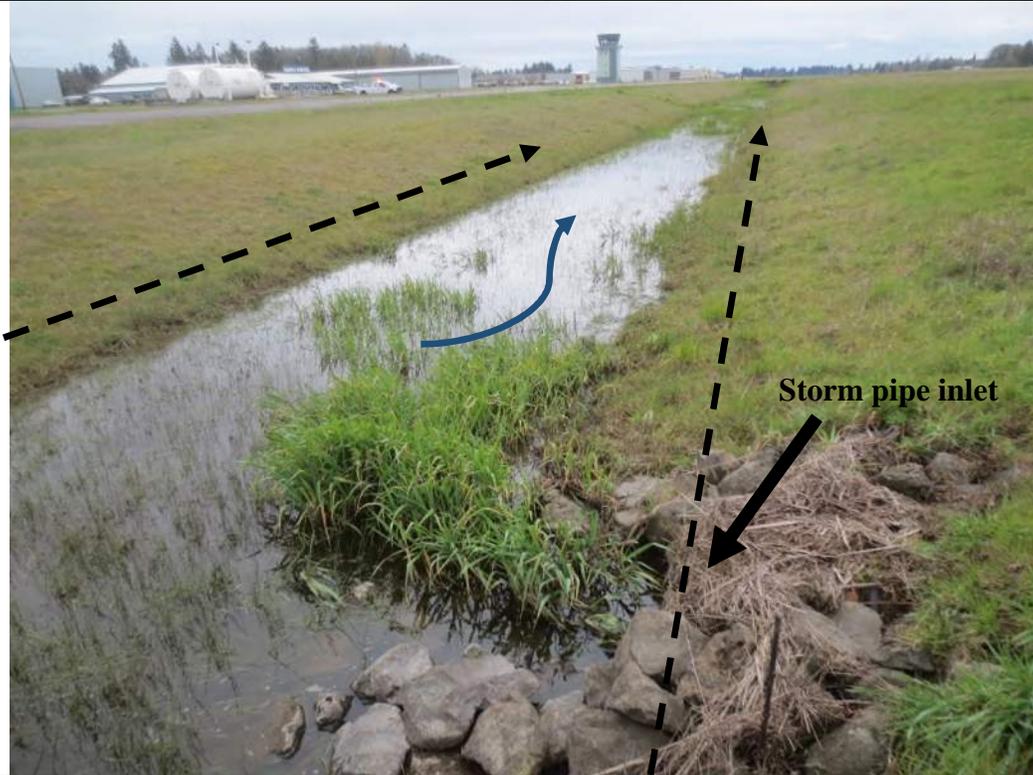


Photo: 14

Looking: Southeast

Notes: WL2; person standing on culvert outlet near taxiway A2



Photo: 15

Looking: East

Notes: Cross section of north portion of swale that drains into WL1, out of survey area limits



Photo: 16

Looking: South

Notes: Adjacent to south draining swale



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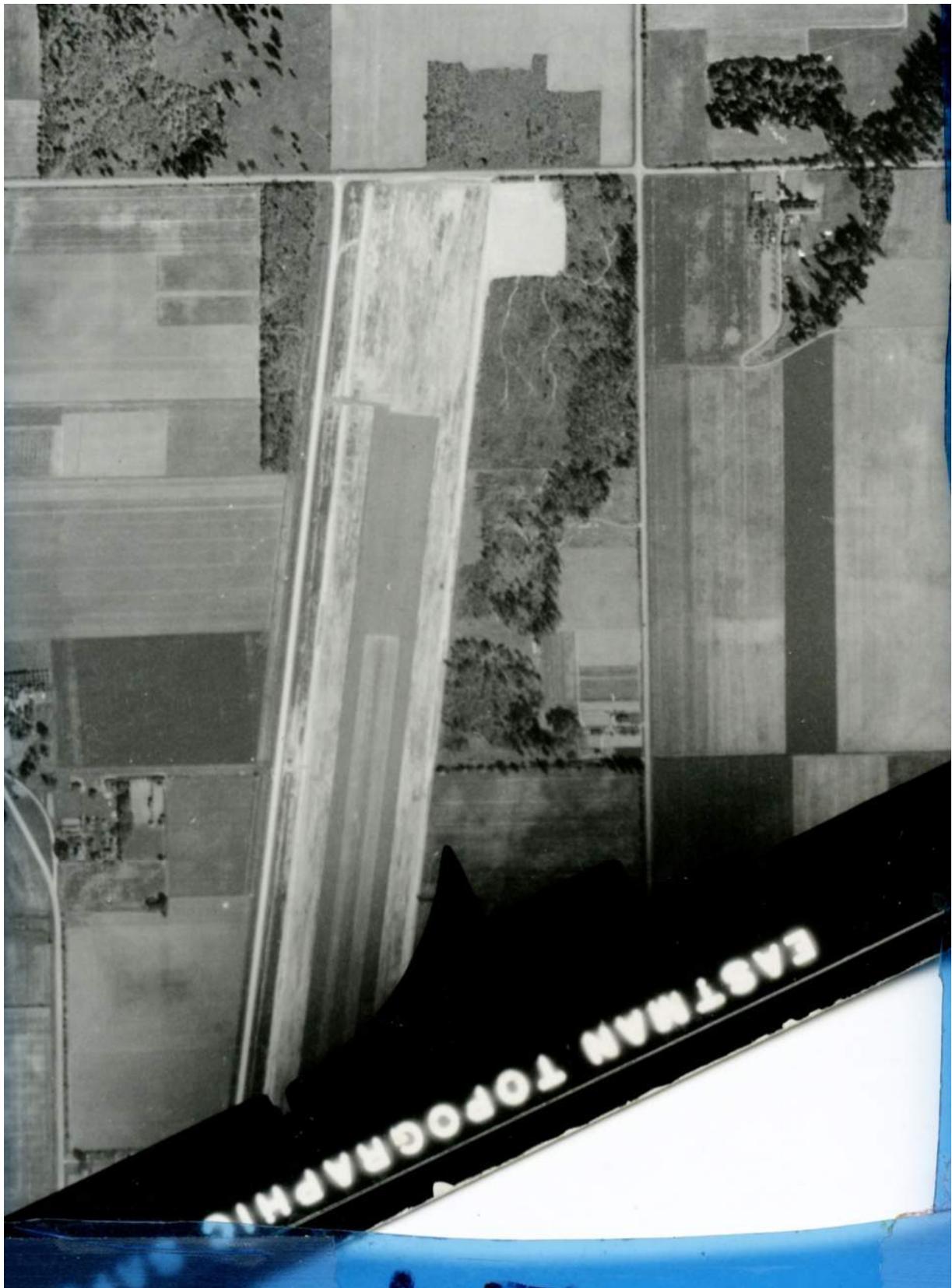


Photo 1. May 1944

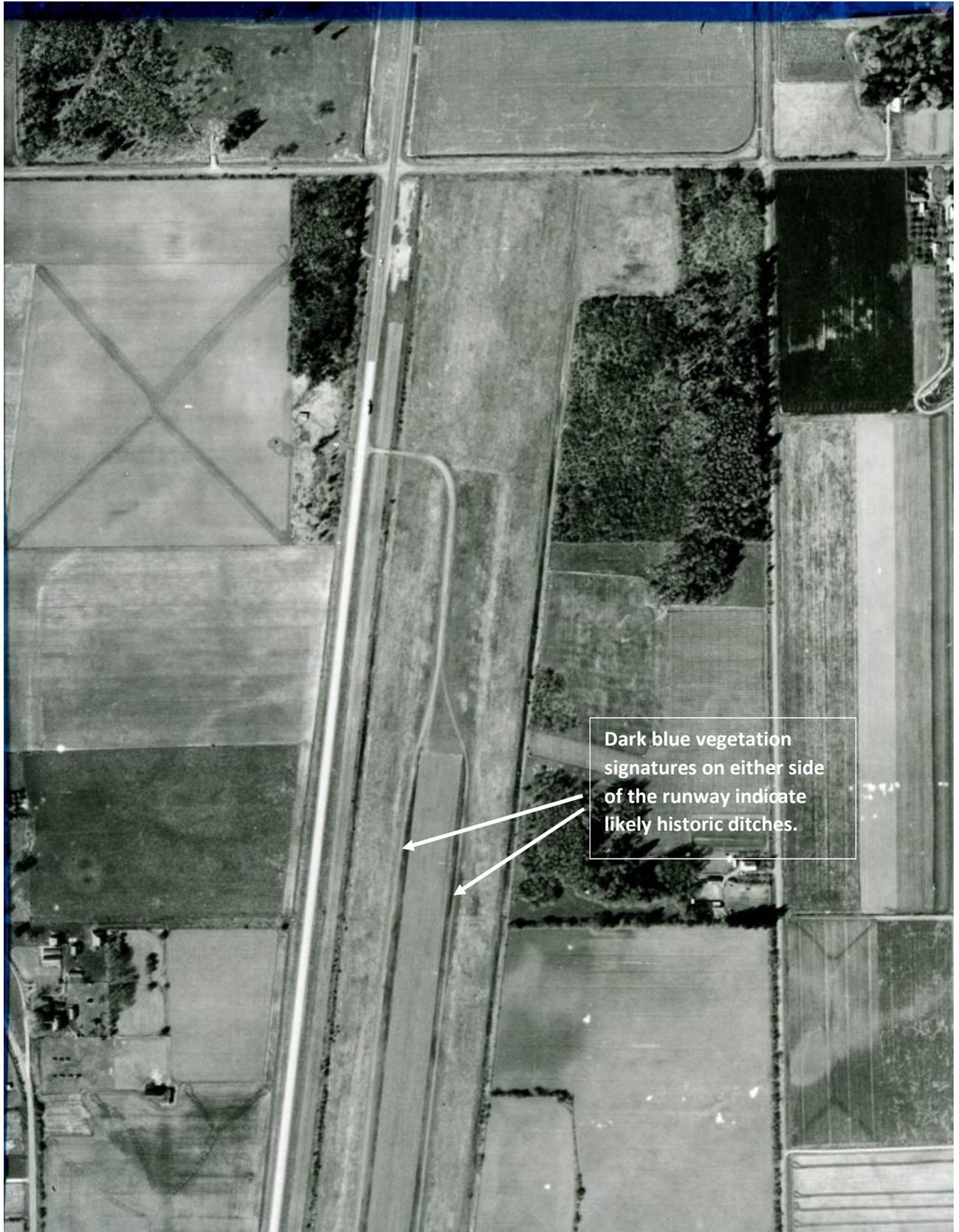


Photo 2. April 1956



Photo 3. May 1969



Photo 4. April 1976



Photo 5. September 1983



Photo 6. May 1999



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

State Land Board

Kate Brown

Governor

Dennis Richardson

Secretary of State

Tobias Read

State Treasurer



November 30, 2018

Oregon Department of Aviation
Attn: Matthew Maass
3040 25th Street SE
Salem, OR 97302

Re: WD # 2018-0480 Wetland Delineation Report for Aurora State
Airport Improvements; Marion County; T4S R1W Sec. 2A,
Tax Lots 90008, 90009, 90012, 90016 and Portions of 500, 501,
700, 90000, and 90010;
Marion County; T4S R1W Sec. 2D, Portions of Tax Lots 100 and 200

Dear Mr. Maass:

The Department of State Lands has reviewed the wetland delineation report prepared by ESA for the site referenced above. Please note that the study areas include only a portion of the tax lots described above (see the attached map). Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland boundaries as mapped in Figure 5 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, two wetlands were identified. However, the wetlands are exempt per OAR 141-085-0515 (7)(c); therefore, neither feature is subject to the requirements of the state Removal-Fill law.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will determine jurisdiction for purposes of the Clean Water Act.

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

Thank you for having the site evaluated. Please phone me at 503-986-5271 if you have any questions.

Sincerely,



Daniel Evans, PWS
Jurisdiction Coordinator

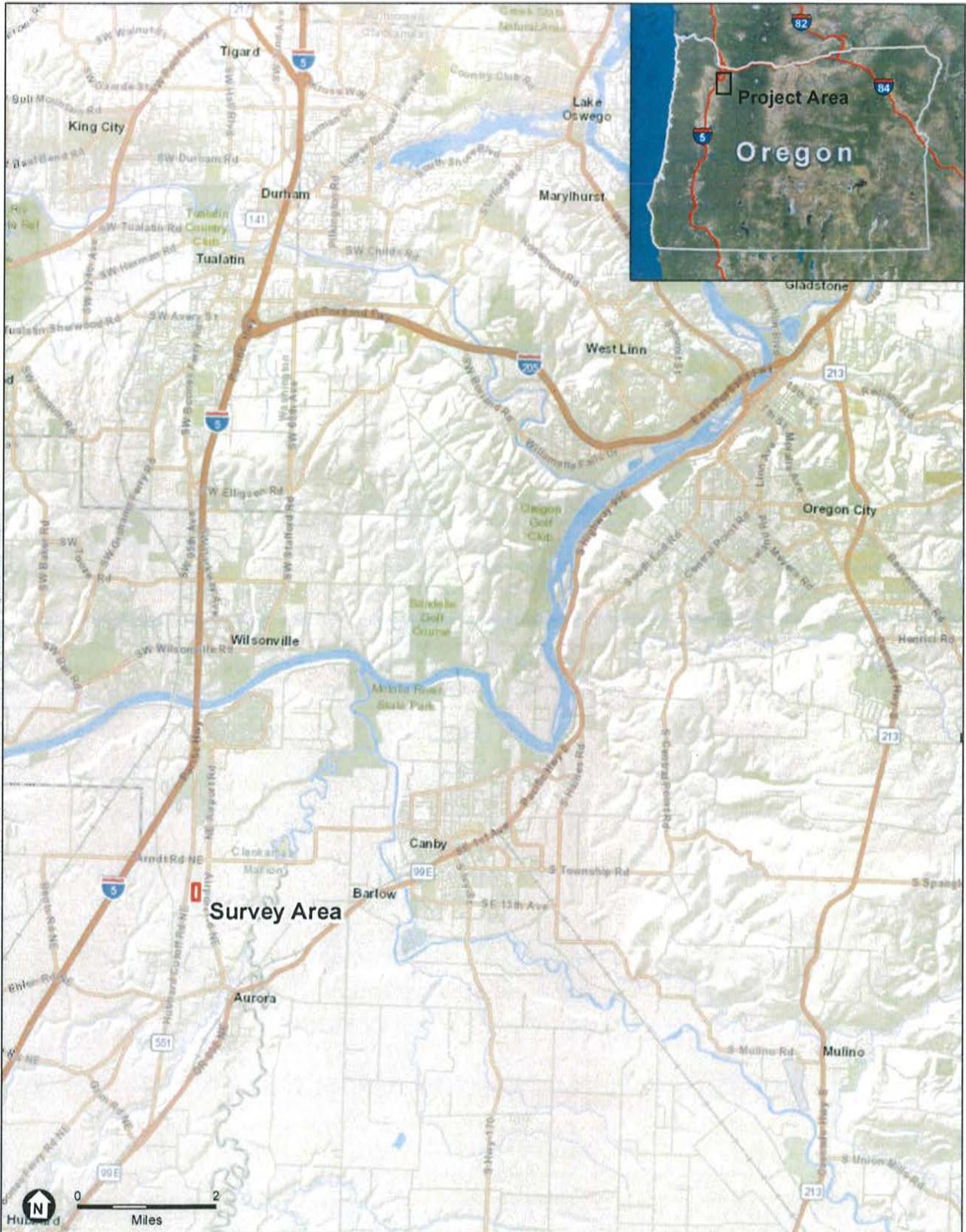
Approved by



Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Sarah Hartung, ESA
Marion County Planning Department (Maps enclosed for updating LWI)
Andrea Wagner, Corps of Engineers
Mike De Blasi, DSL

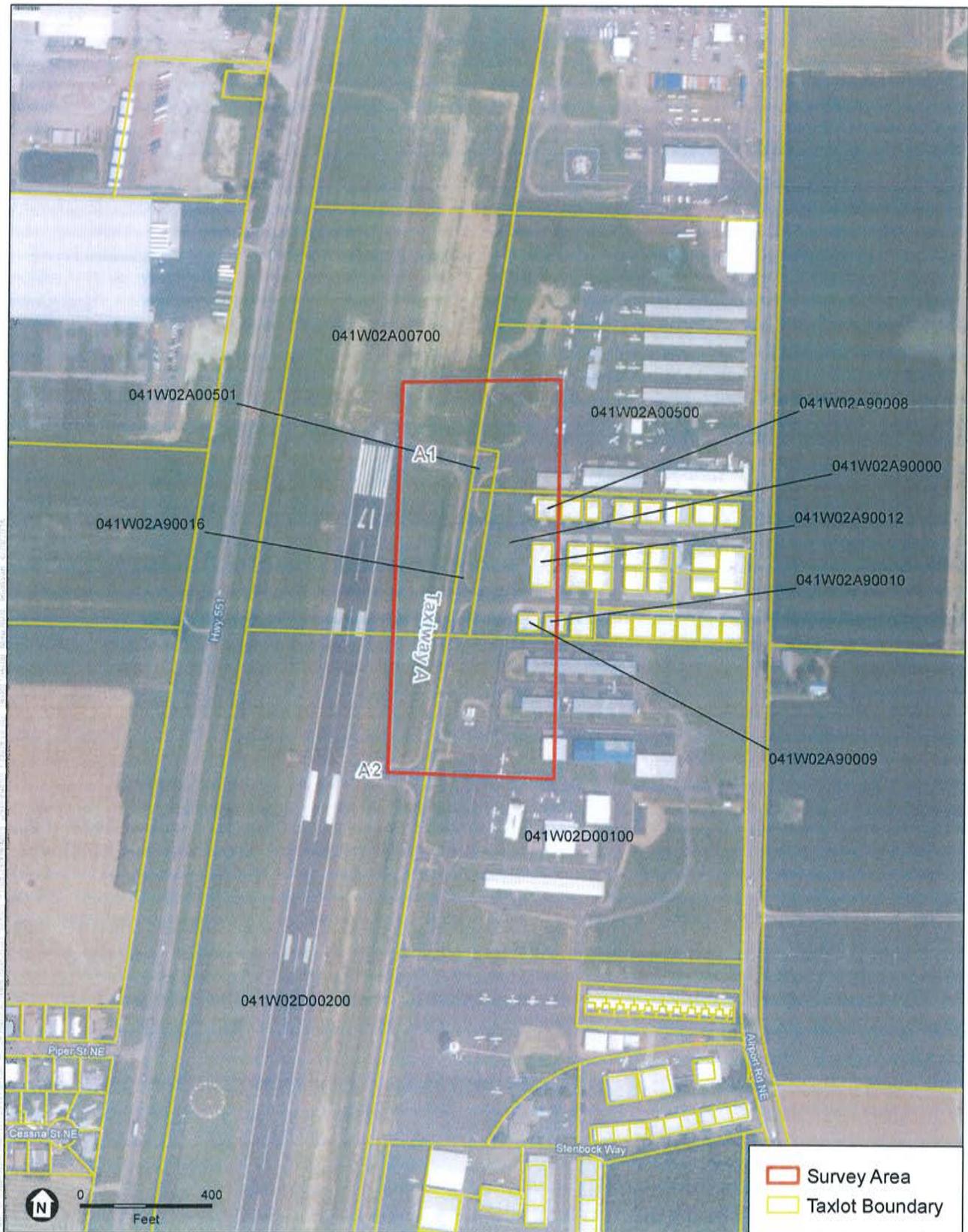


SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport Wetland Delineation

Figure 1
Study Area Location
Aurora, OR

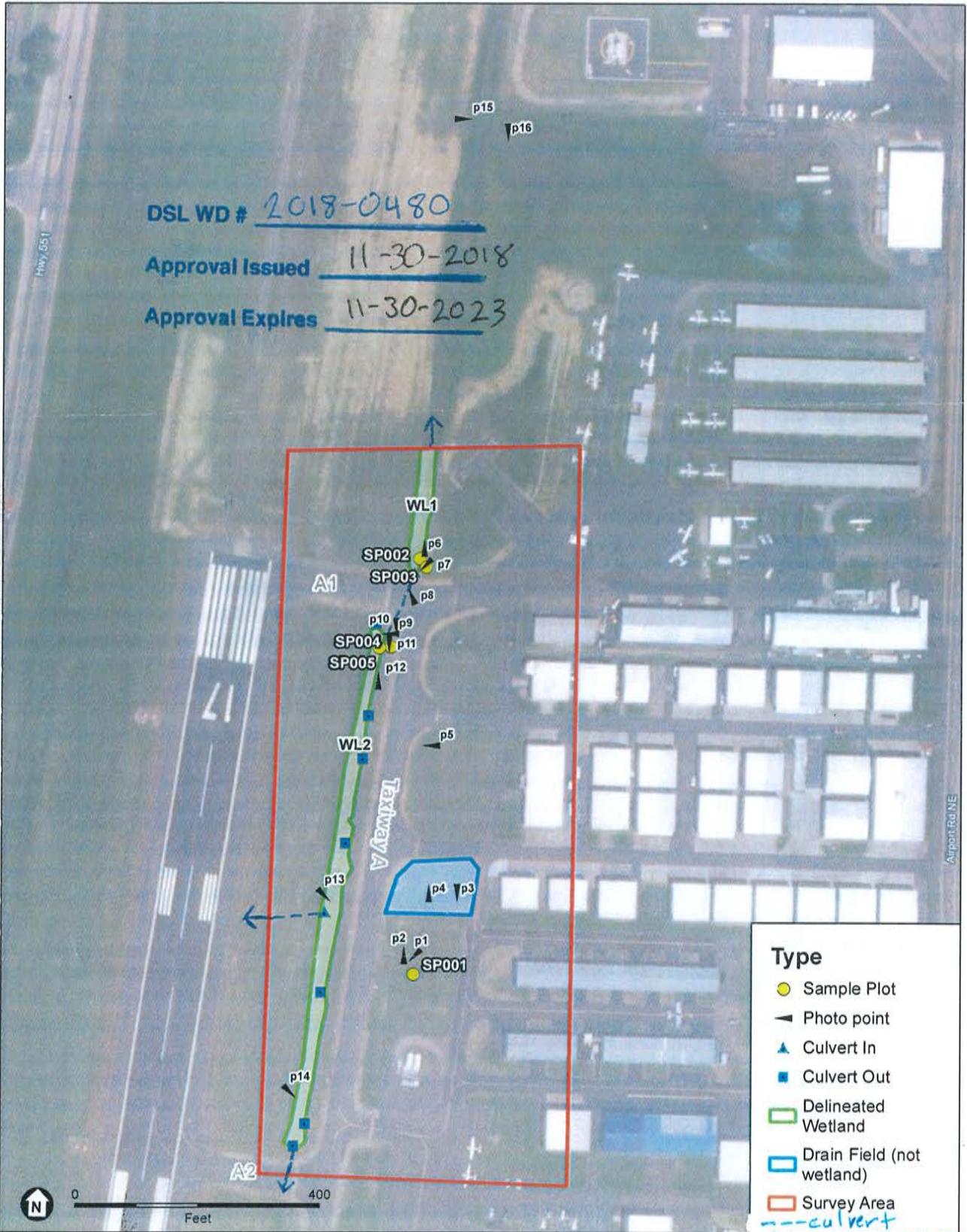




SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 2
Taxlot and Aerial Map
Aurora, OR



SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Wetlands mapped to sub-meter accuracy using GNSS-enabled GPS

Figure 5
Wetland Delineation Map
Aurora, OR



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

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State Land Board

November 30, 2018

Oregon Department of Aviation

Attn: Matthew Maass

3040 25th Street SE

Salem, OR 97302

Kate Brown

Governor

Dennis Richardson

Secretary of State

Re: WD # 2018-0480 Wetland Delineation Report for Aurora State
Airport Improvements; Marion County; T4S R1W Sec. 2A,
Tax Lots 90008, 90009, 90012, 90016 and Portions of 500, 501,
700, 90000, and 90010;
Marion County; T4S R1W Sec. 2D, Portions of Tax Lots 100 and 200

Tobias Read

State Treasurer

Dear Mr. Maass:

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Thank you for having the site evaluated. Please phone me at 503-986-5271 if you have any questions.

Sincerely,



Daniel Evans, PWS
Jurisdiction Coordinator

Approved by



Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Sarah Hartung, ESA
Marion County Planning Department (Maps enclosed for updating LWI)
Andrea Wagner, Corps of Engineers
Mike De Blasi, DSL

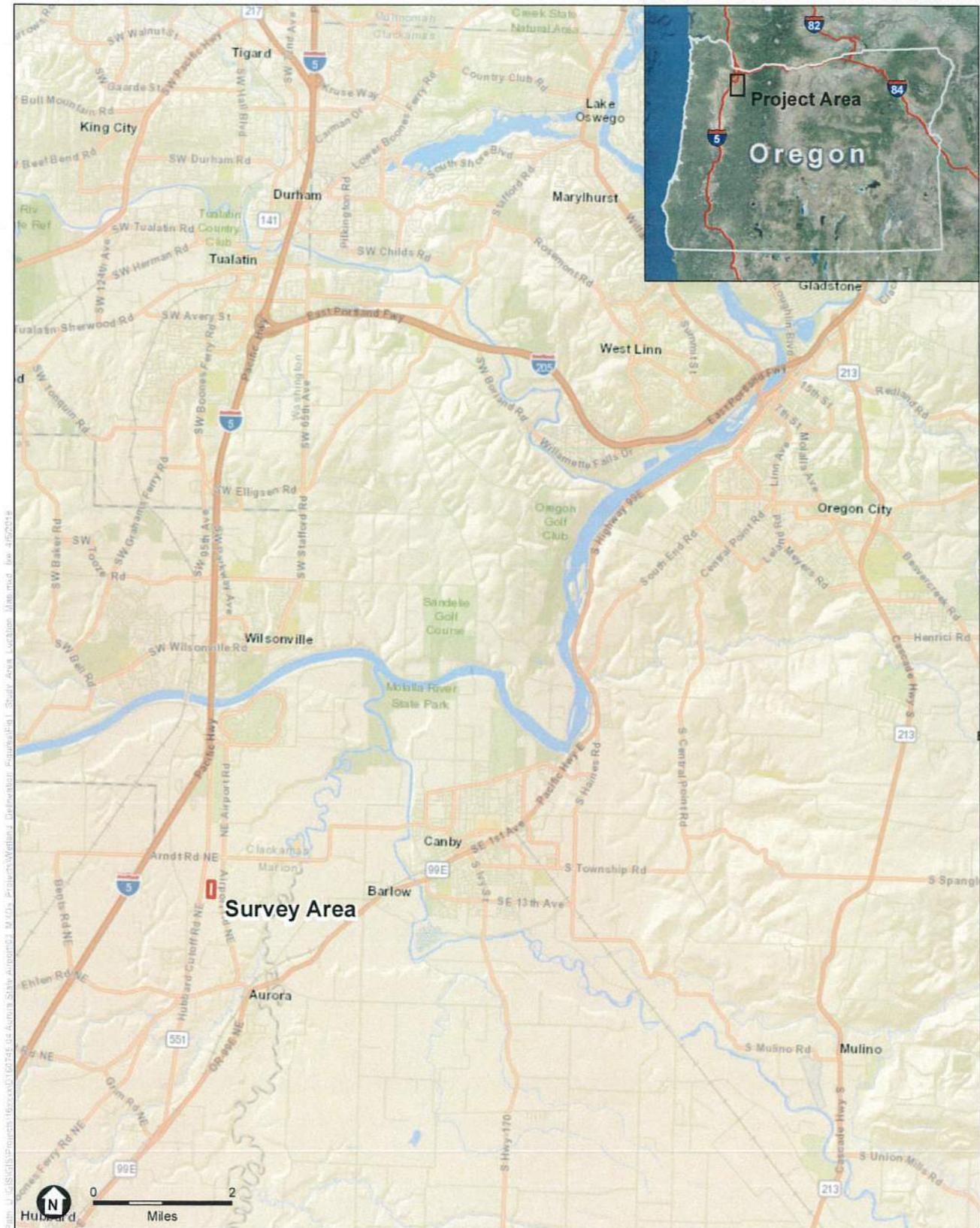
WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF of the completed cover form and report may be e-mailed to: Wetland_Delineation@dsl.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information	
<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: John Wilson Mathew Maass Oregon Department of Aviation 3040 25th Street SE	Business phone # (503) 378-2521 Mobile phone # (optional) E-mail: Mathew.D.Maass@aviation.state.or.us
<input type="checkbox"/> Authorized Legal Agent, Name and Address (if different):	Business phone # Mobile phone # (optional) E-mail:
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.	
Typed/Printed Name: <u>John Wilson Mathew Maass</u> Signature: Date: <u>02AUG2018</u> Special instructions regarding site access:	
Project and Site Information	
Project Name: <u>Aurora State Airport Improvements</u>	Latitude: <u>45.252509</u> Longitude: <u>-122.767804</u> decimal degree - centroid of site or start & end points of linear project
Proposed Use: Expansion of apron for runway 17	Tax Map #041W02A <u>90008, 90009, 90010, 90012, 90016</u> Tax Lot(s) <u>008, 012, 010, 009, 016, 100, 500, 501, 700, 90000</u>
Project Street Address (or other descriptive location): 22801 Airport Rd NE Aurora, OR 97002	Tax Map # 041W02D Tax Lot(s) <u>200, 100</u> Township 3S Range 1W Section 2 QQ Use separate sheet for additional tax and location information
City: <u>Aurora</u> County: <u>Marion</u>	Waterway: River Mile:
Wetland Delineation Information	
Wetland Consultant Name, Firm and Address: Sarah Hartung, PWS Environmental Science Associates 819 SE Morrison St, Ste. 310 Portland, OR 97214	Phone # (503) 274-2010 Mobile phone # (if applicable) E-mail: shartung@esassoc.com
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.	
Consultant Signature:	Date: <u>7-30-2018</u>
Primary Contact for report review and site access is <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Study Area size: Total Wetland Acreage:	
Check Applicable Boxes Below	
<input type="checkbox"/> R-F permit application submitted	<input checked="" type="checkbox"/> Fee payment submitted \$ <u>437</u>
<input type="checkbox"/> Mitigation bank site	<input type="checkbox"/> Fee (\$100) for resubmittal of rejected report
<input type="checkbox"/> Industrial Land Certification Program Site	<input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) DSL # _____ Expiration date _____
<input type="checkbox"/> Wetland restoration/enhancement project (not mitigation)	<input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____
<input checked="" type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # <u>03-0509</u>	
For Office Use Only	
DSL Reviewer: <u>CS</u> Fee Paid Date: <u>9 / 5 / 18</u> DSL WD # <u>2018-0480</u>	Date Delineation Received: <u>8 / 3 / 18</u> Scanned: <input type="checkbox"/> Electronic: <input checked="" type="checkbox"/> DSL App.# _____

#60583

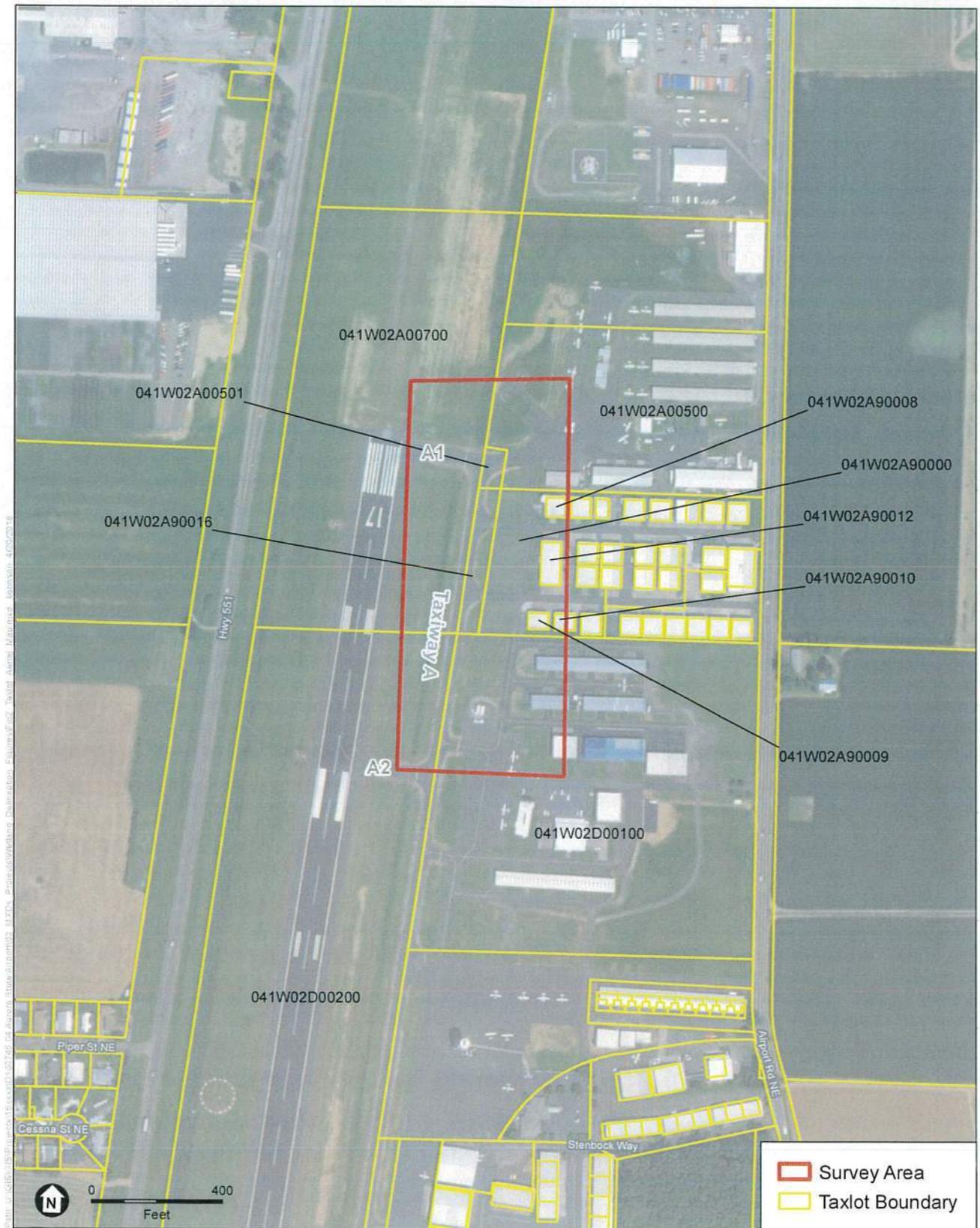


SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport Wetland Delineation

Figure 1
Study Area Location
Aurora, OR





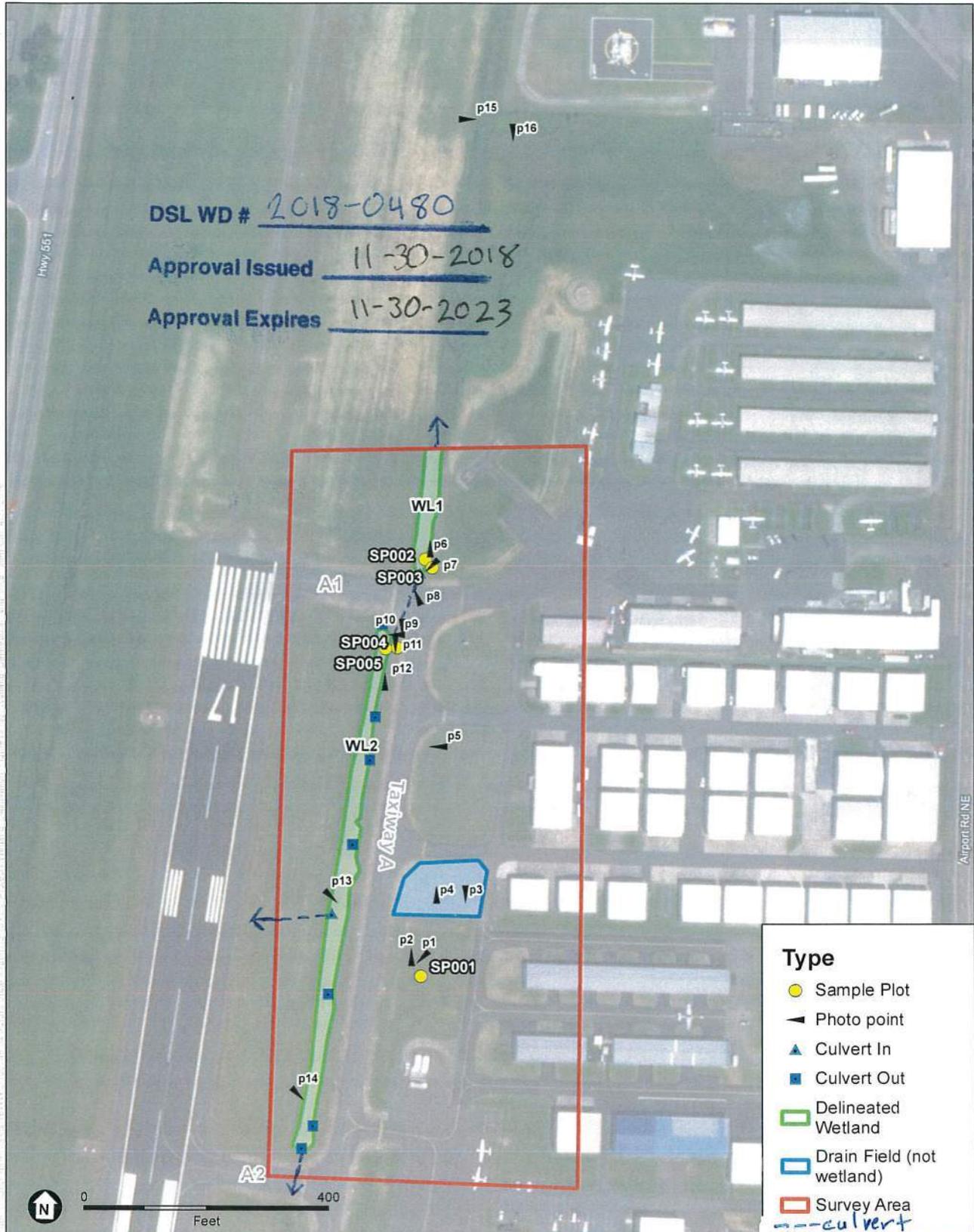
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SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co., 2017

D160745. Aurora State Airport Wetland Delineation

Figure 2
Taxlot and Aerial Map
Aurora, OR





SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 5
Wetland Delineation Map
Aurora, OR



Wetlands mapped to sub-meter accuracy using GNSS-enabled GPS



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, PORTLAND DISTRICT
EUGENE FIELD OFFICE
211 E 7TH AVENUE, SUITE 105
EUGENE, OR 97401-2763

April 16, 2020

Regulatory Branch
Corps No. NWP-2018-613

Ms. Sarah Hartung
Environmental Science Associates
819 Southeast Morrison Street, Suite 310
Portland, Oregon 97214
SHartung@esassoc.com

Dear Ms. Hartung:

The U.S. Army Corps of Engineers (Corps) received your request for a Preliminary Jurisdictional Determination (PJD) of the aquatic resources within the review area as shown on the enclosed drawings (Enclosure 1). The review area is located at Aurora State Airport, 22801 Northeast Airport Road, Aurora, Marion County, Oregon at Latitude/Longitude: 45.247089°, -122.769599°.

The Corps has determined the aquatic resources identified on the enclosed PJD form (Enclosure 2) "may be" waters of the U.S. The aquatic resources shown in Enclosure 1 are considered "potential jurisdictional waters" and the boundaries are approximate. The Corps may use this PJD for the basis of a permit decision. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of this PJD will treat all aquatic resources in the review area as jurisdictional. Please see the enclosed PJD form for additional information on the applicability of a PJD. If you concur with the PJD, please sign and return the PJD form to either the letterhead address above or the email address below within 30 days of the date of this letter.

The enclosed PJD is advisory in nature and may not be appealed. However, you have the option to request an Approved Jurisdictional Determination (AJD). An AJD is an official determination regarding the presence or absence of waters of the U.S. and is an appealable action. The enclosed *Notification of Administrative Appeal Options and Process and Request for Appeal* form describes options regarding PJDs and AJDs (Enclosure 3). If an AJD is requested, please be aware that we may require the submittal of additional information to complete the AJD.

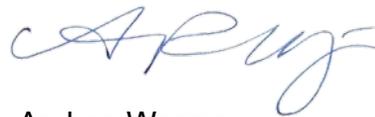
This PJD has been conducted to identify the Corps' jurisdictional limits of the Clean Water Act for the review area shown in Enclosure 1. This PJD may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture program participants, or anticipate participation in

USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to initiating work.

The enclosed PJD finds there "may be" waters of the U.S. in the subject review area and the determination does not have an expiration date. However, the Corps may re-evaluate this determination at any time if new information warrants revisions.

If you have any questions regarding our Regulatory Program or jurisdictional determinations, please contact me by telephone at (541) 465-6882 or email andrea.r.wagner@usace.army.mil.

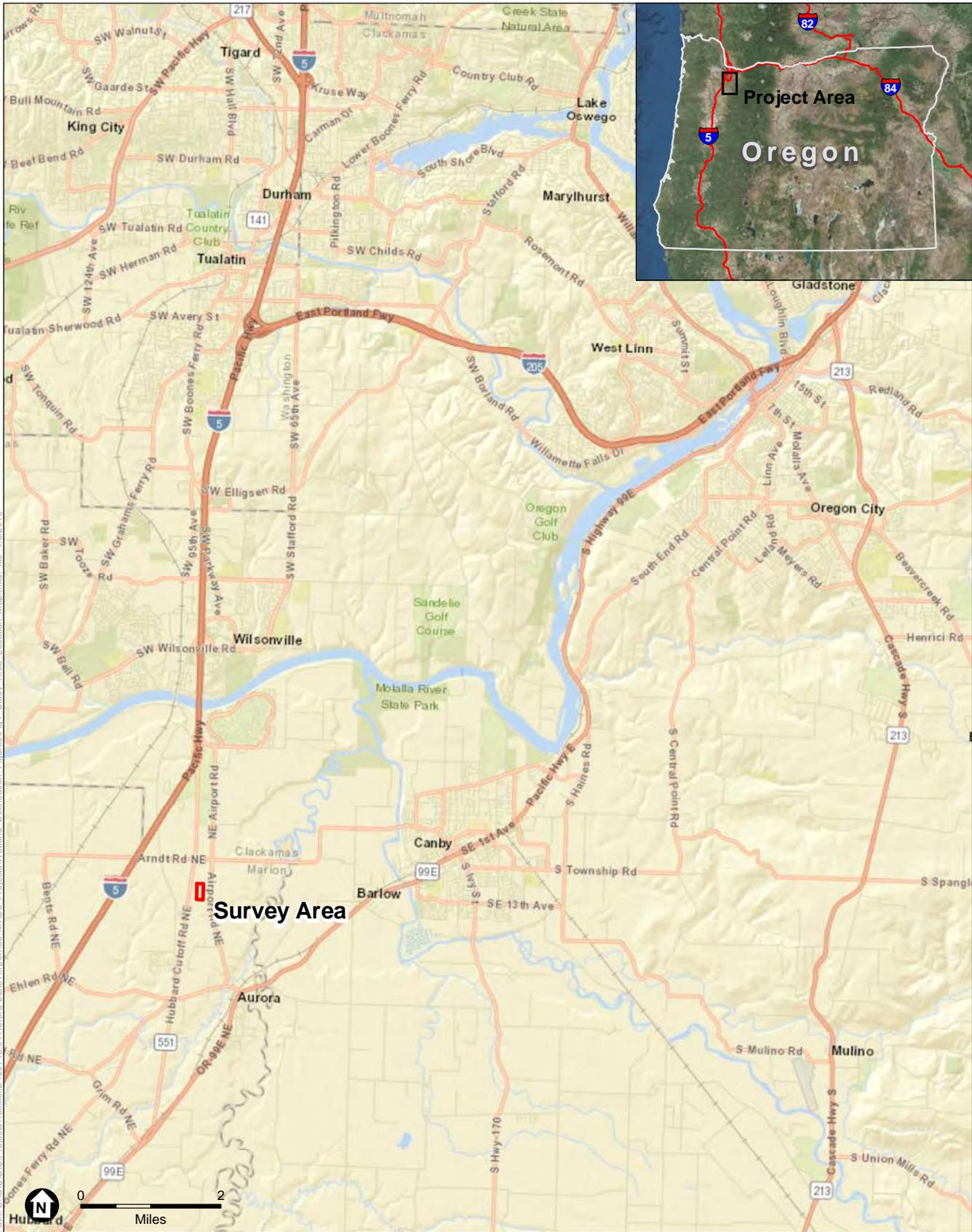
Sincerely,

A handwritten signature in blue ink, appearing to read "ARW", is positioned above the typed name and title.

Andrea Wagner
Project Manager
Regulatory Branch

Enclosures

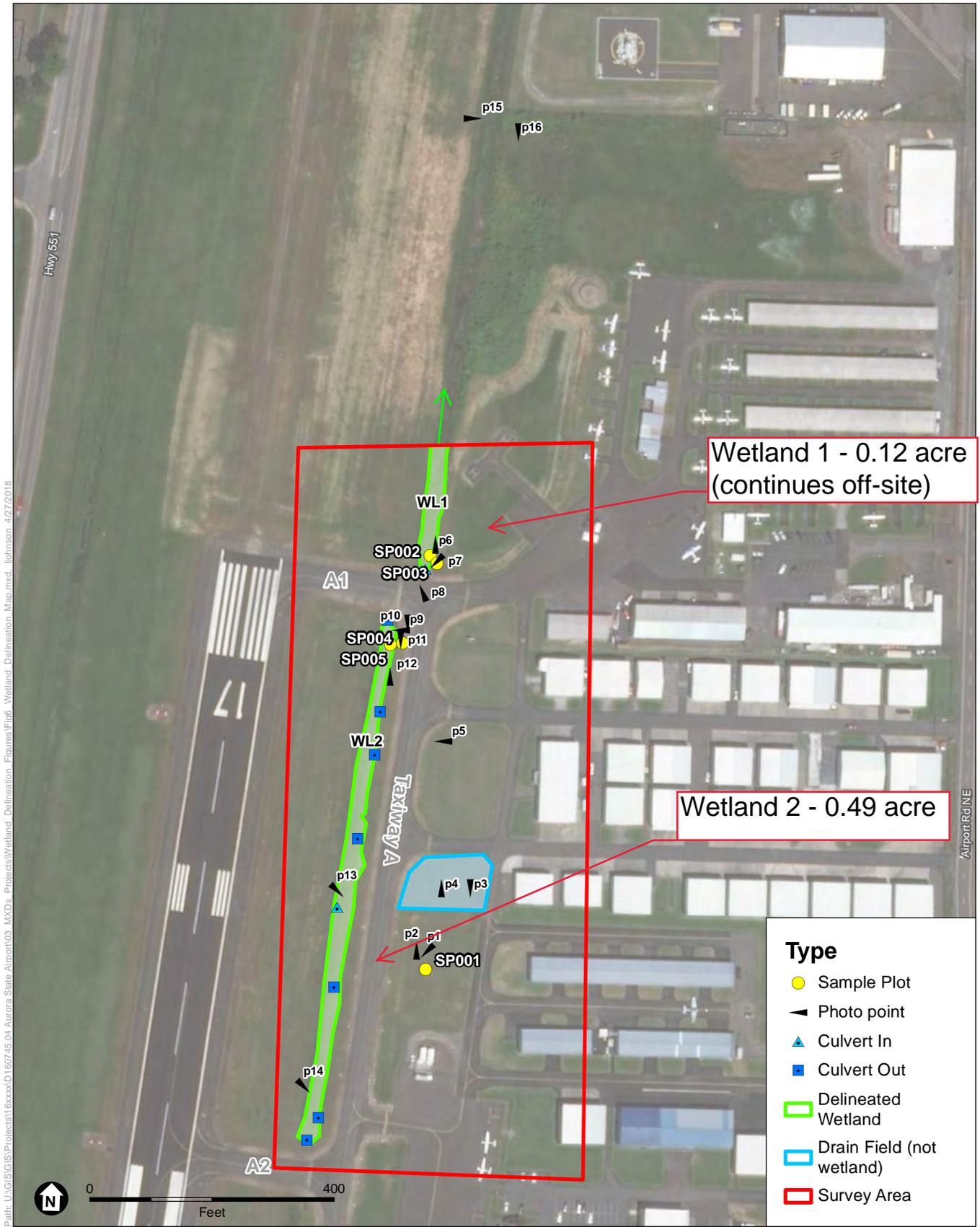
Oregon Department of State Lands (DeBlasi)



SOURCE: ESRI, 2018; ESA 2018; DigitalGlobe, 2016

D160745. Aurora State Airport Wetland Delineation

Figure 1
Study Area Location
Aurora, OR

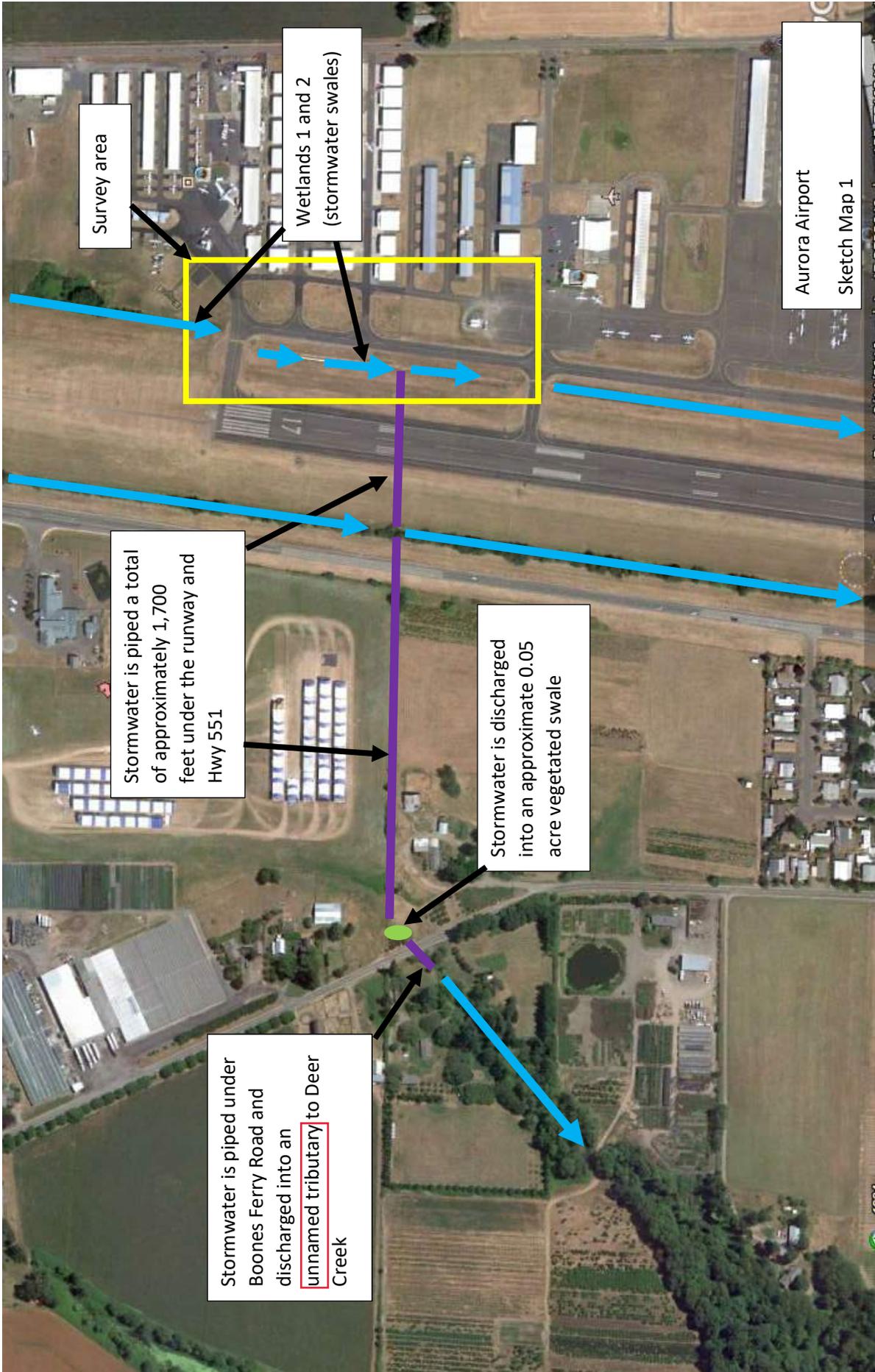


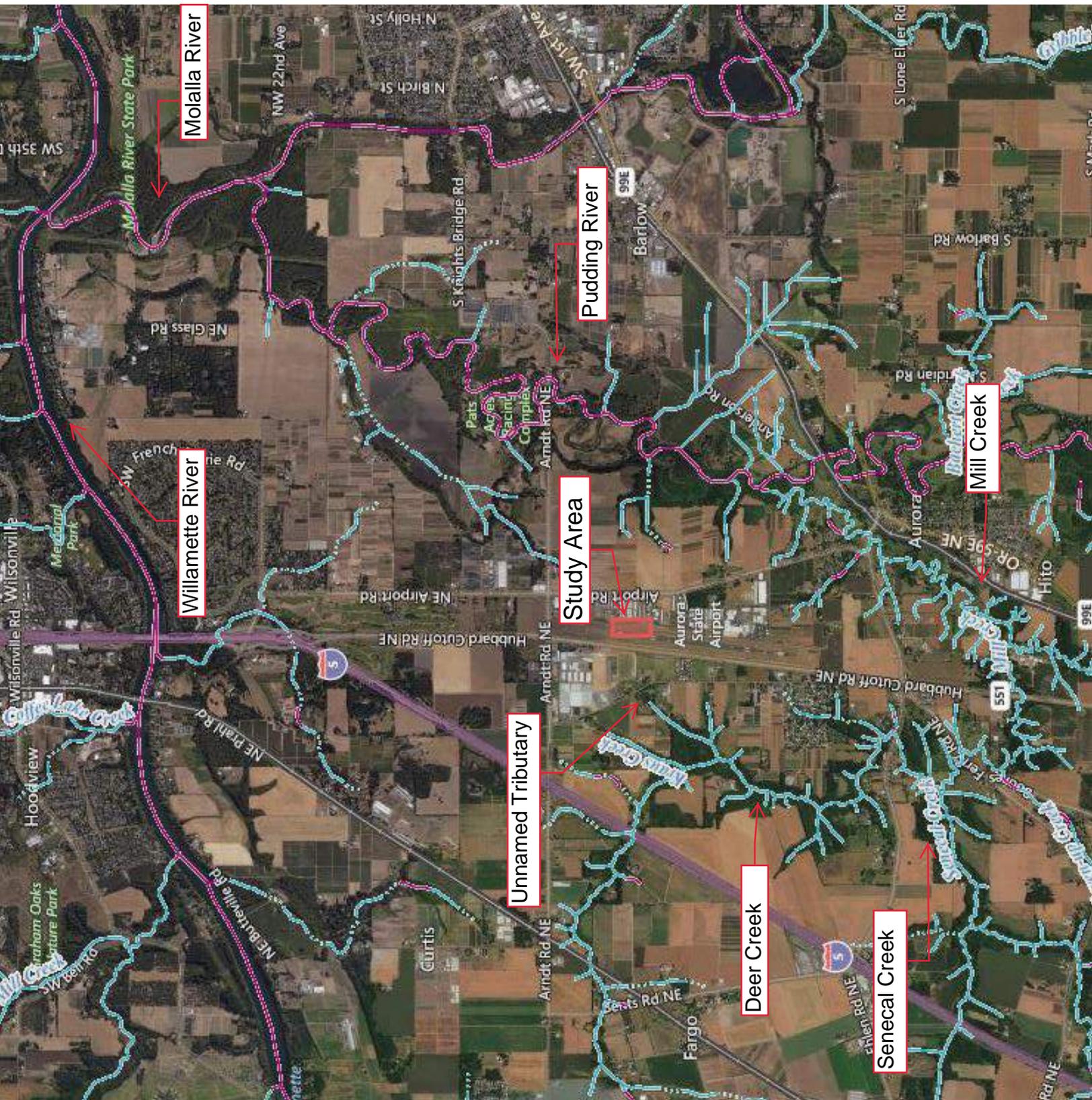
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SOURCE: ESA 2018; DigitalGlobe, 2017; Open Street Map, 2016; Marion Co, 2017

D160745. Aurora State Airport Wetland Delineation

Figure 5
Wetland Delineation Map
Aurora, OR





PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: April 16, 2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

Environmental Science Associates
819 Southeast Morrison Street, Suite 310
Portland, Oregon 97214

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CENWP-OD-G, Aurora State
Airport, NWP-2018-613

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES
AND/OR AT DIFFERENT SITES)**

State: Oregon County: Marion City: Aurora

Center coordinates of site (lat/long in degree decimal format):

Latitude: 45.247089° North, Longitude: 122.769599° West

Universal Transverse Mercator: (see Lat/Long above)

Name of nearest waterbody: Wetlands 1 and 2

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

Office (Desk) Determination.

Date: April 15, 2020

Field Determination.

Date(s):

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT
TO REGULATORY JURISDICTION.**

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimate amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Site 1 Wetland 1	45.25420	-122.76774	0.12 acre	wetland	Section 404
Site 2 Wetland 2	45.25239	-122.76819	0.49 acre	wetland	Section 404

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Included in Wetland Delineation prepared by Environmental Science Associates, May 2018.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale:
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: Senecal Creek (170900090501)
 - USGS NHD data
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24K, OR - Woodburn
- Natural Resources Conservation Service Soil Survey. Citation: Figure 4 from the Wetland Delineation prepared by Environmental Science Associates, May 2018 and Web Soil Survey accessed April 2020
- National wetlands inventory map(s). Cite name: Figure 3 from the Wetland Delineation prepared by Environmental Science Associates, May 2018
- State/local wetland inventory map(s):
- FEMA/FIRM map(s):
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs Aerial (Name & Date): Figure 5 from the Wetland Delineation prepared by Environmental Science Associates, May 2018, StreamStats accessed April 2020 or Other (Name & Date): Photos 1 - 16 from the Wetland Delineation prepared by Environmental Science Associates, May 2018
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

 16 April 2020
Signature and date of Regulatory staff member completing PJD

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)¹

¹ Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: Aurora State Airport		File Number: NWP-2018-613	Date: 16 April 2020
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
X	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found in Corps regulations at 33 CFR Part 331, or at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/FederalRegulation.aspx>

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

<p>If you have questions regarding this decision and/or the appeal process you may contact: William D. Abadie, Chief Regulatory Branch U.S. Army Corps of Engineers, Portland District Office PO Box 2946 Portland, OR 97208-2946 Telephone: (503)808-4373 Email: William.D.Abadie@usace.army.mil</p>	<p>If you only have questions regarding the appeal process you may also contact: Melinda M. Larsen, Regulatory Appeals Review Officer U.S. Army Corps of Engineers, Northwestern Division 1201 NE Lloyd Blvd., Suite 400 Portland, OR 97232 Telephone: (503) 808-3888 Email: Melinda.M.Larson@usace.army.mil</p>
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RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

<p>_____ Signature of appellant or agent.</p>	<p>Date:</p>	<p>Telephone number:</p>
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APPENDIX F

FLOOD INSURANCE RATE MAP

APPENDIX G

PUBLIC REVIEW

Notice of Availability
Draft Environmental Assessment
Aurora State Airport Obstruction Removal and North Run-up Apron Improvement
Project

Draft Environmental Assessment Available

The Federal Aviation Administration (FAA) and the Oregon Department of Aviation (ODA) announce the availability of the Draft Environmental Assessment (Draft EA) for the proposed Obstruction Removal and North Run-up Apron Improvement Projects at the Aurora State Airport in Aurora, Marion County, Oregon, for public review and comment. The Draft EA examines the potential environmental impacts of the proposed action to remove obstructions in the runway approach zone to ensure compliance with current FAA safety and operational standards for airport and the north run-up apron improvement project. The project purpose would be accomplished through tree removal and expanding apron improvements.

The Draft EA will be available for public review and comment beginning on **July 6, 2020** Draft EA copies may be viewed/ made available in electronic format at the following locations:

The ODA website at www.oregon.gov/aviation, or the ODA Facebook page <https://www.facebook.com/ORAviation>.

The PlanWell Enterprise public plan room website at https://order.e-arc.com/arcEOC/PWELL_Main.asp?mem=45

To request a hard copy of the Draft EA, please visit the PlanWell Enterprise public plan room at https://order.e-arc.com/arcEOC/PWELL_Main.asp?mem=45. A copy of the Draft EA will be provided at the cost of printing and shipping costs.

To request to view the Draft EA in person, call Oregon Department of Aviation, Monday –Friday between the hours of 9am and 4pm, at (503) 378-4880, or email ODA at ODAAppt@aviation.state.or.us to set-up an appointment. Contact ODA to request a copy of the EA on CD.

Public Comment Period

Public comment on this document is invited for a 30-day period extending from **July 6, 2020, through August 5, 2020**. The purpose of the Public Comment period is to allow comments on the adequacy of the Draft EA for the proposed obstruction removal and apron improvements at the Aurora State Airport. A public hearing may be requested in response to this notice. Please include your address, phone number, email address, or other identifying information.

To provide written comments on the Draft EA or request a public hearing, please contact:

Sean Callahan
Environmental Protection Specialist

F.A.A. – Northwest Mountain Region
Seattle Airports District Office
2200 S. 216th Street, Des Moines, WA. 98198
206-231-4143
Sean.Callahan@faa.gov

All comments submitted by e-mail must be received by 5:00 pm on August 5, 2020. All mailed comments must be postmarked by August 5, 2020. Please be advised that your entire comment, including such personal identifying information as address, phone number, and e-mail address, may be publically available at any time. While you can ask in your comment to withhold from public review any personal identifying information, we cannot guarantee that we will be able to do so.