Environmental Assessment for the Proposed HIO 13R-31L RSA Improvements

Final EA

Hillsboro Airport (HIO), Hillsboro, Oregon | August 2021

Appendix D: Final Cultural Resource Technical Report

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Final Cultural Resource Technical Report

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ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	DEFINITION
AC	Advisory Circular
APE	Area of Potential Effect
BP	Before Present
cm	Centimeters
cmbs	Centimeters below surface
CFR	Code of Federal Regulations
EA	Environmental Assessment
FAA	Federal Aviation Administration
HIO	Hillsboro Airport
IDP	Inadvertent Discovery Plan
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
NAVAIDS	Navigational aid system
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OAR	Oregon Administrative Rules
OARRA	Oregon Archaeological Records Remote Access
ORS	Oregon Revised Statues
Port	Port of Portland
RSA	Runway safety area
SHPO	State Historic Preservation Officer
SP	Shovel probe
U.S.	United States
U.S.C.	United States Code
USGS	United States Geology Survey

1. INTRODUCTION

The Port of Portland (Port) and Federal Aviation Administration (FAA) are preparing an environmental assessment (EA) for proposed improvements to the northern end of Runway 13R-31L (Runway 13R) and the associated runway safety area (RSA) at Hillsboro Airport (HIO) (the Project) (Figure 1 and Figure 2). The purpose of the proposed improvements is to meet current FAA airfield design standards for Runway 13R and its RSA. The design standards are listed in FAA's Advisory Circular (AC) 150/5300-13A, Change 1, Airport Design (dated February 26, 2014). The northern portion of Runway 13R and the portion of the RSA northwest of the end of Runway 13R do not fully comply with FAA design standards for longitudinal gradients (the grade or slope along the length of the runway and part of the RSA that extends beyond the runway) and for drainage of stormwater. In some areas, the grades exceed those permitted by the FAA standards or there are slope changes in surface grades that are greater than permitted by the FAA standards.

Runway 13R and the Runway 13R RSA do not fully comply with current FAA design standards, as they deviate from FAA standards in the following ways:

- Runway 13R has a 200-foot vertical curve starting 3,415 feet from the end of Runway 13R and there are several other modest changes in grade in the last quarter of the runway; these are deviations from FAA standards, since these standards do not allow any grade change in the first or last quarter (1,650 feet) of the runway length.
- Longitudinal grades in the Runway 13R RSA range from -11.1 percent to +16.0 percent, which exceed the allowable grade of -5.0 percent to +5.0 percent by as much as 11 percent.
- Runway 13R RSA is bisected by a tributary, Glencoe Swale, and wetlands that impound water year-round; therefore, the RSA deviates from drainage design standards.

For Runway 13R to meet the FAA design standards, the Port proposes an asphalt overlay of the northernmost 500 feet of existing pavement. To meet the FAA standards for the Runway 13R RSA, the Port proposes to raise and grade the ground surface in the RSA and to route Glencoe Swale into a concrete box culvert where it traverses the RSA.

This report has been prepared to assist the FAA in complying with the Project's Section 106 of the National Historic Preservation Act (NHPA) obligations. It will also be used to support the Project's National Environmental Policy Act (NEPA) documentation and analysis requirements. It describes the existing cultural resource conditions in the area that may be affected by the Port's proposal and its anticipated construction, direct, and indirect impacts on cultural resources.

Figure 1. Project Vicinity

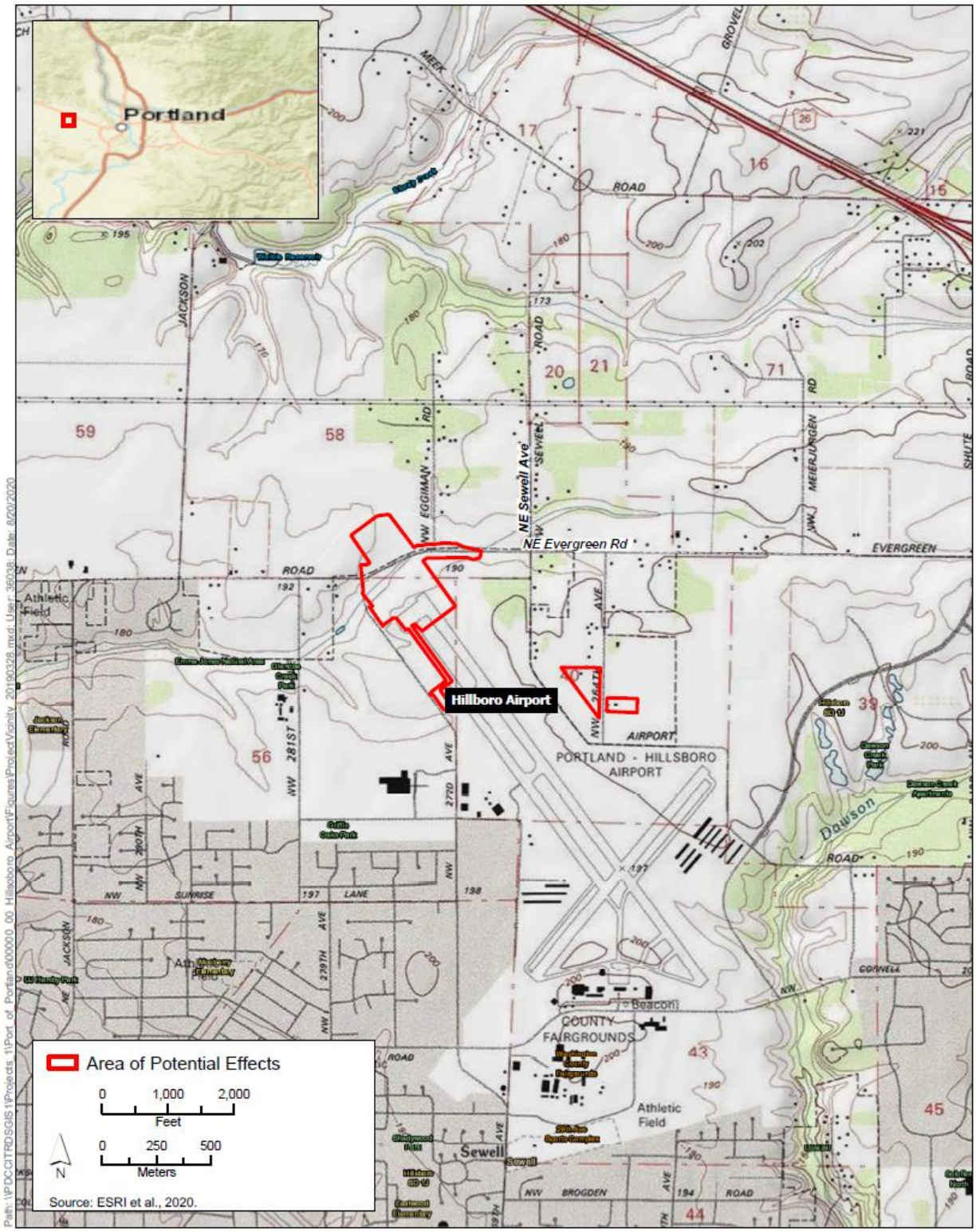
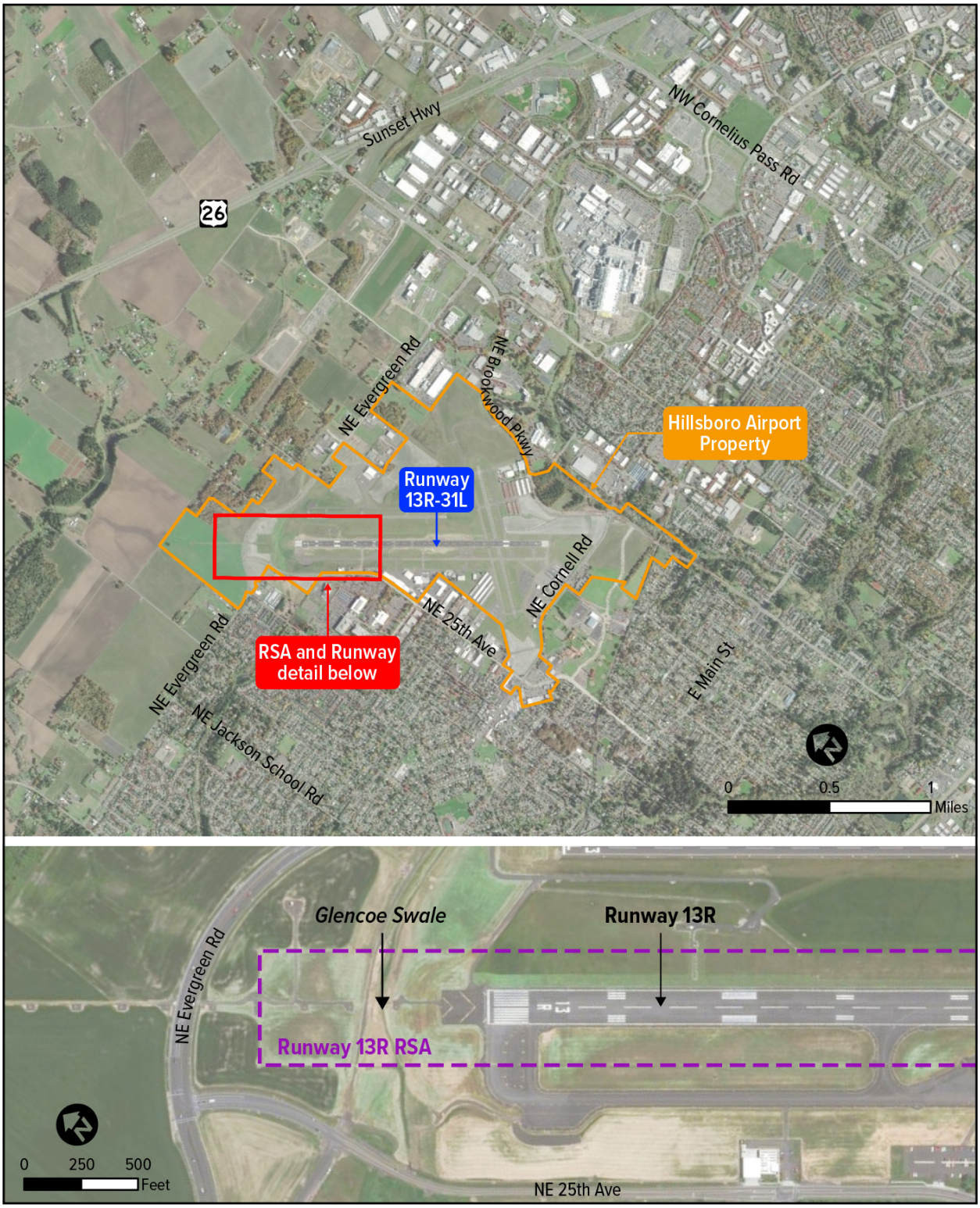


Figure 2. HIO Property Boundaries and RSA



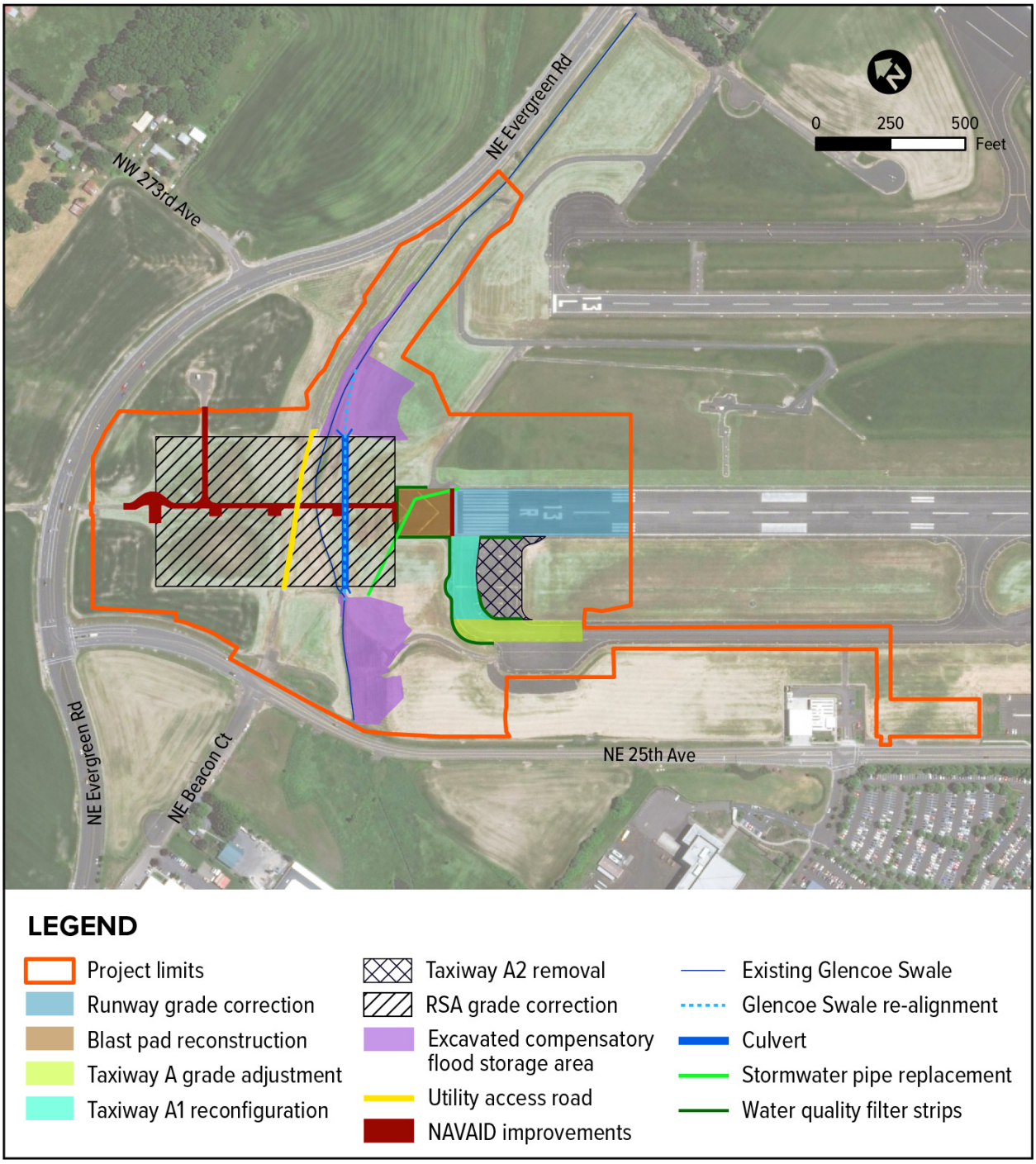
2. PROJECT DESCRIPTION

The Project would adjust the longitudinal grade of Runway 13R and the Runway 13R RSA to meet current FAA standards. It would accommodate a standard 1,000-foot RSA by conveying the portion of Glencoe Swale that traverses the Runway 13R RSA under the RSA in a concrete box culvert as shown in Figure 3 and Figure 4. The RSA (including the existing swale and associated resources) and Runway 13R would be regraded to comply with FAA design standards.

All permanent Project elements would occur within the existing airport property boundary. These elements are shown in Figure 3 and would include:

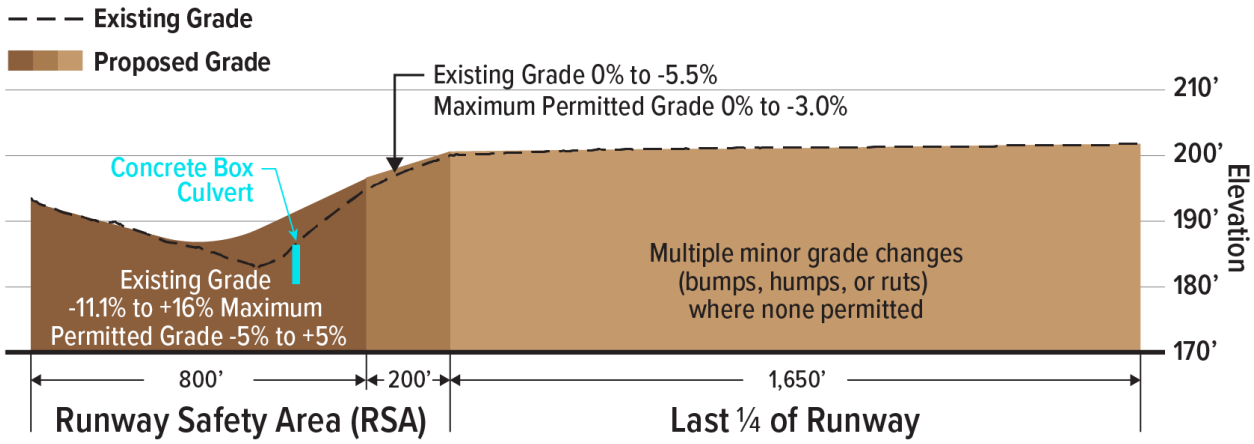
- Runway grade correction: Milling and asphalt overlay (or just overlay of new pavement) of the northern 513 feet of Runway 13R would correct the runway grade to meet current FAA requirements.
- Blast pad reconstruction: The blast pad at the north end of Runway 13R would be removed to the gravel base and reconstructed to meet FAA grade requirements.
- Taxiway A grade adjustment: The longitudinal grade of Taxiway A would be adjusted as necessary to meet the grade correction proposed for Runway 13R.
- Taxiway A1 reconfiguration: Taxiway A1 would be reconfigured to meet or exceed current FAA geometric requirements including taxiway fillet design criteria and longitudinal and transverse grades. The existing pavement would be adjusted as necessary to meet the grade correction proposed for Runway 13R. This would add approximately 1,950 square feet of additional pavement.
- Taxiway A2 removal: Taxiway A2 no longer meets current design standards, so it would either have to be relocated or removed. The Port determined this taxiway is no longer needed operationally, so Taxiway A2 would be removed and replaced with grass. This would remove approximately 41,850 square feet of pavement.
- RSA grade correction: The Runway 13R RSA would be regraded to meet current FAA requirements.
- Compensatory flood storage: Compensatory storage would be created upstream and downstream of the culvert to offset fill placed in the Glencoe Swale floodplain.
- Utility adjustments/protection: There are a variety of existing utilities within the RSA including, water, sewer, power, and communication lines. Some utilities (e.g., stormwater pipe, communication junction box) would be modified as necessary to comply with proposed improvements. Other utilities (e.g., sewer, water, and communication lines) would be protected during the construction phase and remain in place.

Figure 3. Permanent Project Elements



Note: Two additional areas within the Project limits are located southeast of the area shown in this figure; however, no Project elements are proposed in the additional areas, they are stockpile areas to be used as a fill material source during construction. The two additional Project limit areas are shown in Figure 5.

Figure 4. Cross-Section of Proposed Gradient Corrections



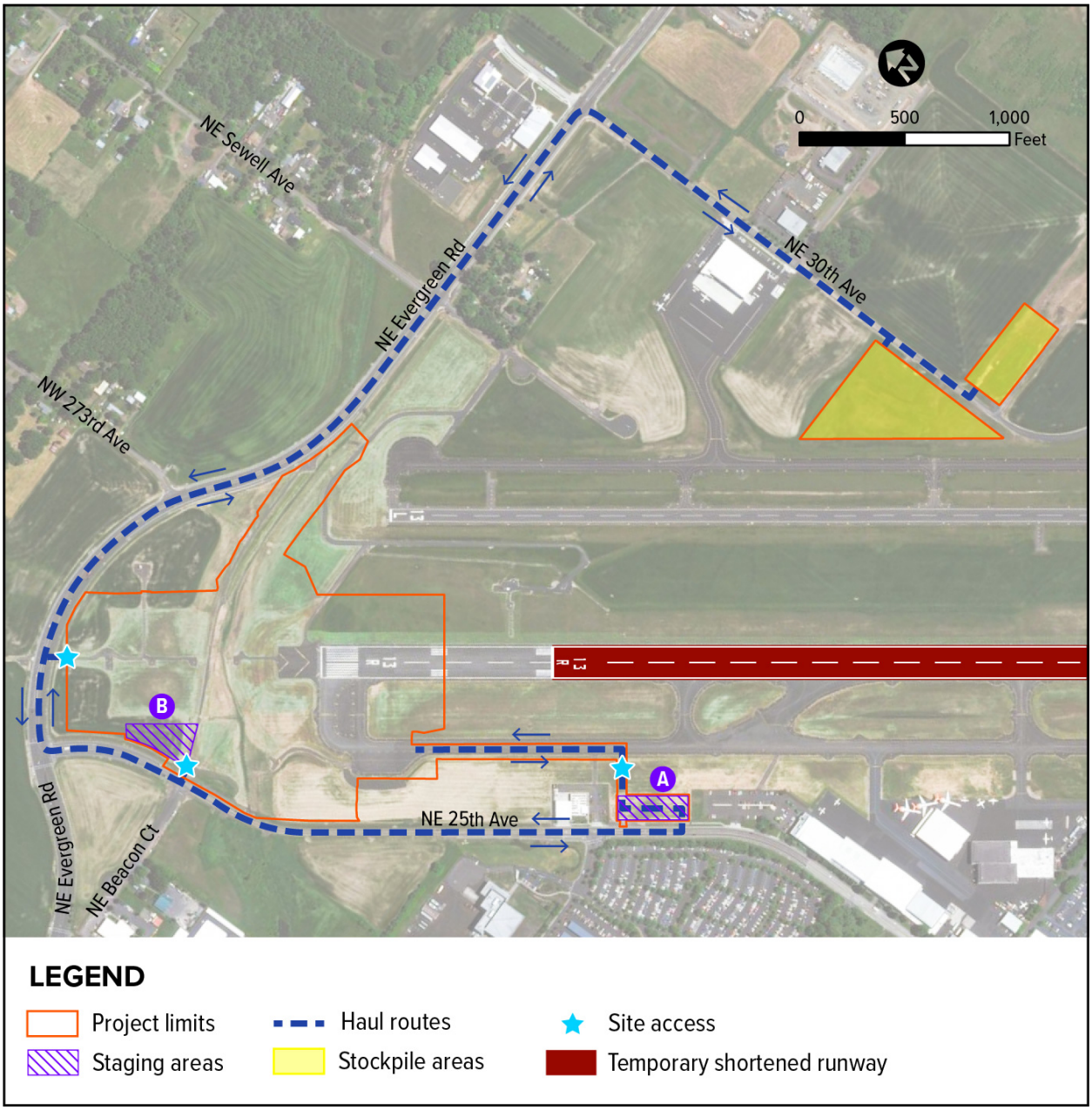
Sources: Maximums permitted from FAA 2014; existing grades from January 2019 survey conducted by the Port
Note: Illustration not to scale

- Navigational aid system (NAVAIDs) improvements: The Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) would be removed and reconstructed due to changes in the RSA grading. The existing access road to this equipment would be removed and reconstructed to provide access to the MALSR through the full RSA limits.
- Glencoe Swale re-alignment and culvert: Glencoe Swale would be realigned and enclosed in a new 6-foot high by 14-foot wide concrete box culvert that would be approximately 500 feet in length. The culvert would be underground and would be installed perpendicular across the RSA. Hinged gates made of 3-inch by 3-inch metal grating would be installed at both ends of the culvert to prevent wildlife that could affect aviation safety from entering the culvert. The gates could be secured in the open position during the rainy season and closed, blocking wildlife access, during the dry summer months.
- Stormwater pipe replacement: Minor pipe replacements would be required where the new culvert would conflict with an existing stormwater pipe. There would also be some minor stormwater pipe replacement activities performed as maintenance during Project construction.
- Water quality filter strips: Vegetated water quality filter strips would be installed to manage water quality from new impervious surfaces. The total area of the filter strips would be approximately 7,410 square feet.

Temporary Project elements needed during Project construction, which would take place over one construction season, approximately May through October 2023, are illustrated in Figure 5. These include:

- Staging areas: Two staging areas have been identified for the Project. Both are located on NE 25th Avenue, one adjacent to the Hillsboro Fire Station (Staging Area A) and one to the west of the RSA just north of the end of the runway (Staging Area B). These are shown as Staging Areas A and B, respectively, in Figure 5.
- Haul routes: The contractor would transport materials from the stockpile areas (described below) to the project area via public roadways. Specifically, the contractor would travel north on NE 30th Avenue to then travel west on NE Evergreen Road and then either use the access point at the north end of the airfield or travel south on NE 25th Avenue to use one of the access points on that roadway.
- Site access: The contractor would access the Project area from NE 25th Avenue through a gate in Staging Area A, which would provide access to Taxiway A for work on Runway 13R or the taxiways. Alternatively, the contractor would also access the Project area from NE 25th Avenue through a gate to Staging Area B or from NE Evergreen Road through a gate that provides access to the MALSR access road.
- Stockpile areas: There are two existing stockpiles of fill material on the east side of the HIO property that would be used as fill for the RSA grade correction. Materials from these stockpiles would be transported by truck via NE 30th Avenue to NE Evergreen Road and/or to NE 25th Avenue access locations. Additional fill material would be brought in from a suitable off-site location to be determined by the construction contractor.
- Temporarily shortened runway: During construction, the runway threshold would be temporarily relocated to the south with temporary pavement markings to shorten the runway from 6,600 feet to 5,500 feet. This temporary reconfiguration is intended to safely accommodate construction at the north end of Runway 13R and in the Runway 13R RSA.
- Runway closures: The estimated construction schedule anticipates three distinct closures of Runway 13R-31L:
    - An approximately one-week long closure at the beginning of the Project to reconfigure the runway to a 5,500-foot operational length during construction.
    - An approximately two-week closure within the Project duration. This period is planned as a 24-hour-per-day 7-day-per-week work schedule for the work necessary on the runway and taxiways.
    - An approximately one-week long closure at the end of Project construction to reconfigure the runway back to its full 6,600-foot operational length.

Figure 5. Construction Project Elements



3. REGULATIONS, STANDARDS, AND GUIDELINES

Federal, state, and local regulations, standards, and guidelines relevant to cultural resources that apply to the Project are listed below:

- Section 106 of the National Historic Preservation Act of 1966, 16 United States Code (U.S.C.) Section 470 et seq.; implementing regulations are in 36 Code of Federal Regulations (CFR) 800
- NEPA of 1969, 42 U.S.C. Section 4321 et seq; implementing regulations are 40 CFR 1500-1508
- American Indian Religious Freedom Act of 1978, 42 U.S.C. Section 1996
- Oregon Revised Statues (ORS) 358.905-358.961, Archaeological Objects and Sites
- ORS 97.740-97.760, Indian Graves and Protected Objects
- ORS 358.653, Protection of Publicly Owned Historic Properties
- ORS 390.235-390.240, Permits and Conditions for Excavation or Removal of Archaeological or Historical Material; Removal without Permit; and Mediation and Arbitration of Disputes (implementing regulations are included in Oregon Administrative Rules (OAR) 736-051)
- Oregon Statewide Land Use Planning Goal 5; implementing regulations are included in OAR 660-023 and OAR 660-016

4. EXISTING DATA AND BACKGROUND DATA

4.1. Area of Potential Effect

The area of potential effects (APE) was established in order to evaluate the geographic area in which the Project may pose direct and indirect effects to historic properties should any such properties exist (36 CFR part 800.16(d)). For the purposes of this Project the APE is considered the horizontal and vertical extent of anticipated ground disturbance associated with the proposed improvements (Figure 1 and Figure 6). The proposed improvements to the RSA would occur on the HIO property in Hillsboro, Oregon (Township 1 N, Range 2 W, SE ¼ of Section 20, the east ½ of section 29, and west ½ of section 28). It is anticipated that the Project would result in minimal and temporary construction-related indirect effects (e.g., dust, noise, and light) to areas that fall outside of the immediate vicinity of the proposed improvements. As a result, indirect effects on cultural resources outside of the Project's construction footprint are not anticipated, and no above ground historic properties resources would be directly affected. Therefore, the horizontal extent of the APE would consist of three discrete areas with a 100-foot (30.5 meter) buffer from the proposed improvement-related ground disturbing activities and encompass the location of staging and materials stockpiling areas. The vertical extent of the APE is defined as the depth of proposed improvement-related ground disturbing activities, which would vary across the APE. The greatest extent of ground disturbance is anticipated in the western portion of the HIO property where culvert installation, re-grading of the RSA, and reconstructing the taxiway are to occur. The additional two dispersed APE are areas for materials storage and soils stockpiling; minimal vertical ground disturbance is expected in these areas.

The proposed APE was sent to the Oregon State Historic Preservation Office (SHPO) for concurrence in a Cultural Resources Methodology Memorandum dated January 15, 2020. SHPO concurred with the proposed APE regarding archaeological resources in a letter dated February 18, 2020, and regarding the built environment on February 12, 2020.

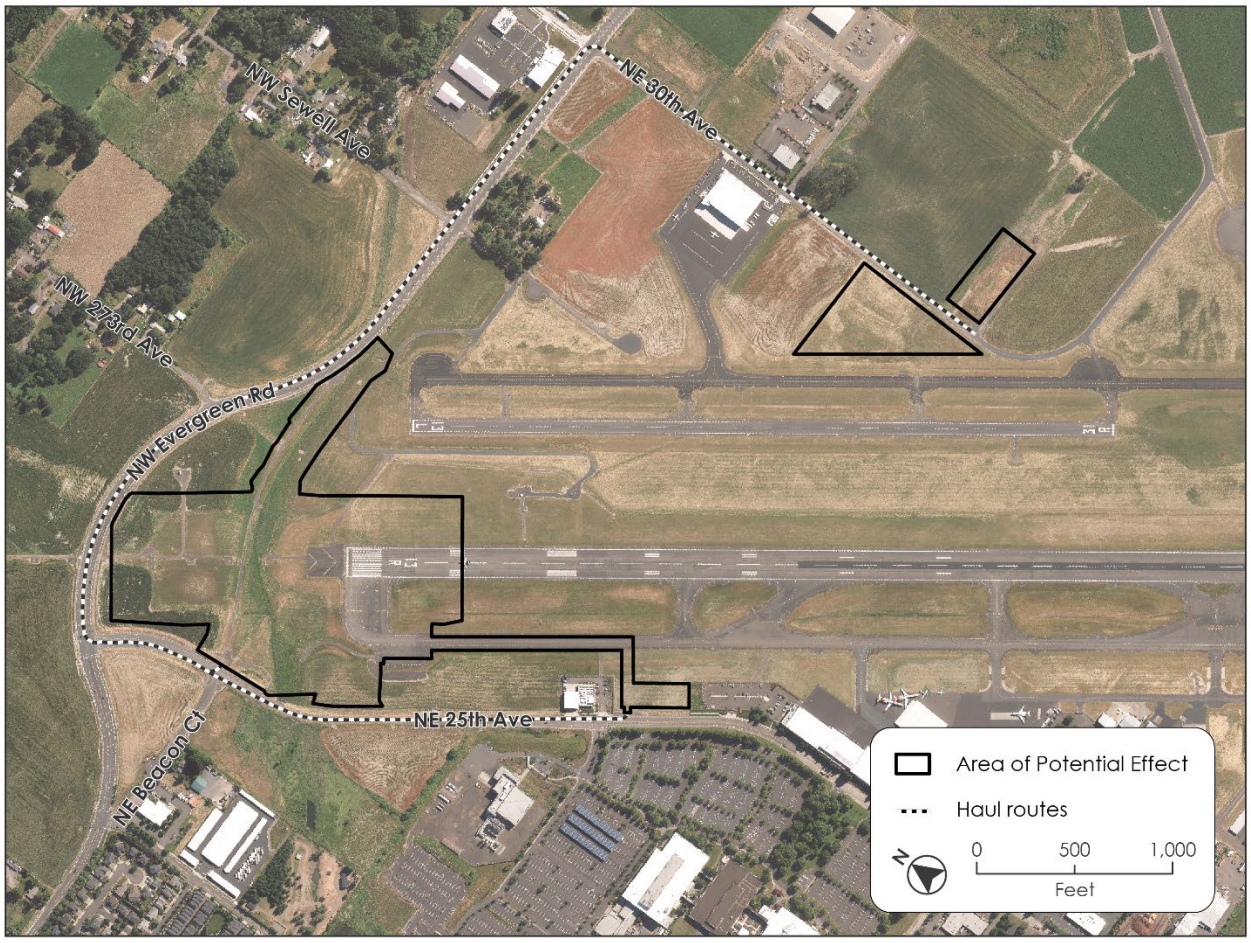
The proposed APE was also sent to the appropriate federally recognized tribes in Oregon, including the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon on January 24, 2020. To date, only the Confederated Tribes of the Warm Springs Reservation of Oregon have replied. The response offered no feedback on the APE itself but did request the opportunity to review a completed draft of this report. Correspondence with SHPO and tribes is included in Attachment C.

5. METHODOLOGY

This section outlines the methodology used to assess impacts to cultural resources.

Archaeologists and historic preservation specialists employed two field methods to identify cultural resources in the APE (Figure 6): a pedestrian survey for both archaeology and the built environment, and excavation of shovel probes (SPs) for archaeology. These methods were conducted in accordance with the *Guidelines for Conducting Field Archaeology in Oregon* (Oregon SHPO 2007) as well as *Guidelines for Historic Resource Surveys in Oregon* (Oregon SHPO 2011) and are described in detail below.

Figure 6. Cultural Resource Area of Potential Effect



5.1. Research

A record search using the Oregon Archaeological Records Remote Access (OARRA) was performed to identify previously documented archaeological, ethnographic, and historic resources within a 0.5-mile radius of the APE. OARRA contains all records and reports on file with the Oregon SHPO, including completed cultural resources survey reports, properties listed in or determined eligible for listing in the National Register of Historic Places (NRHP), archaeological sites, and inventoried built environment resources.

Background research was conducted as it pertained to the APE. Research efforts included: 1) background research of previously recorded resources and completed reports within the APE, 2) outreach to organizations that might have relevant information, and 3) in-depth research to identify typologies associated with the identified historic themes, time period, and geographical area.

The following record collections and repositories were used:

- The NRHP from the National Park Service
- The Oregon SHPO Historic Sites Database online
- Washington County's Individual Property/Tax Lot Research Tool available online
- Historical maps available from the United States (U.S.) Geological Survey (USGS) available online
- Historical donation land claims and plats from the Bureau of Land Management, Government Land Office archives available online
- Historical aerial photographs provided online by Historic Aerials by NETRonline
- Research published by the nonprofit online encyclopedia Oregon Encyclopedia
- Port's archival records as provided by Port staff

Results of the background records search (including previous cultural resource surveys, historic aerial photography, and historic maps) indicate that the APE has undergone previous ground disturbance that has altered the original surface of the area. The Project is not anticipated to encounter any previously undocumented archaeological deposits/cultural materials. These previously recorded archaeological sites and surveys are recorded in the sections below and in Table 1 and Table 2.

5.2. Previous Cultural Resource Studies

A total of 11 archaeological resource surveys have been performed within 0.5-mile radius of the APE vicinity. Table 1 provides a complete list of surveys and their distance from the APE.

Table 1. Previously Conducted Cultural Resources Surveys (within 0.5 Mile of APE)

AUTHOR/DATE	INVESTIGATION TYPE; NADB #	TITLE	ARCHAEOLOGICAL RESOURCES WITHIN CURRENT APE	DISTANCE AND DIRECTION FROM APE
Anderson 2012	Survey Report; # 1944	Cultural Resource Investigations for the Keeler-Forest Grove No. 1 14-Pole Replacement Project, Washington County, Oregon	Historic refuse scatter	0.4 miles northeast
Buchanon et al. 2007	Survey Report; # 22123	Cultural Resource of the Proposed Hillsboro Airport Project in Hillsboro, Washington County, Oregon	None recorded	<0.25 miles southeast of APE
Ellis 1999	Survey Report; # 22507	Cultural Resources Survey for the Brookwood Avenue Extension Project	Historic refuse scatter	0.25 miles southeast of APE
Ellis 2001	Survey Report; # 17603	Cultural Resources Study for the Hillsboro Airport Runway Safety Area Project Hillsboro and Washington County, Oregon	None recorded	Within APE
Foutch et al. 2008	Survey Report; # 22122	Cultural Resource Survey of the Proposed Hillsboro Airport Acquisition Location in Hillsboro, Washington County, Oregon	None recorded	Within APE
Kolar 2013	Survey Report; # 26040	Cultural Resources Investigations for Bonneville Power Administration's Keeler-Forest Grover, Forest Grove-Tillamook No. 1Transmission Line Rebuild/Reconductor Project (OR 2012 029) In Washington and Tillamook Counties, Oregon	Four prehistoric isolates and one historic isolate	0.4 miles north of APE
McClintock 1996	Survey Report; # 15484	A Cultural Resource Survey of the Tualatin Valley Water District's North Transmission Line, Washington County, Oregon	Two prehistoric lithic debitage sites	0.35 miles north of APE

AUTHOR/DATE	INVESTIGATION TYPE; NADB #	TITLE	ARCHAEOLOGICAL RESOURCES WITHIN CURRENT APE	DISTANCE AND DIRECTION FROM APE
Oetting 2009	Survey Report; # 22486	Hillsboro Airport Parallel Runway Project 12L/30R Archaeological and Historic Resources Technical Memorandum	None recorded	Within APE
Reed 2017	Survey Report	Hillsboro Airport Runway Rehabilitation Project Cultural Resources Survey	None recorded	Within APE
Sharma et al. 2009	Survey Report; # 24143	Cultural Resource Inventory for Clean Water Services District's Dawson Creek Pump Station and Forcemain Project, Hillsboro, Washington County, Oregon	One prehistoric site and one prehistoric isolate, lithic debitage and tools	0.2 miles southeast of APE
Williams 2014	Survey Report; # 26772	Cultural Resource Survey of the NE Jackson School Road (NE Grant Street to NE Evergreen Road) Improvement Project, Washington County, Oregon	One historic isolate, one historic culvert	0.5 miles west of APE
Williams 2014	Survey Report	Cultural Resource Survey of NW Brookwood Parkway (NW Meek Road to NE Shute Road) Improvements Project, Washington County, Oregon	Two previously identified historic resources, transmission lines	0.5 miles northeast of APE

Source: SHPO OARRA 2020

5.3. Previously Recorded Archaeological Sites and Built Environment Resources

Three archaeological sites have been identified within 0.5 miles of the APE. Of these, two are precontact lithic materials (45CL00661; 45CL00958) containing lithic debitage. The remaining archaeological site is a small historic debris scatter (45CL00677) containing late 19th century to early 20th century materials.

Two previously recorded built environment resources were identified within a 0.5-mile buffer of the APE, however, there were no previously recorded resources within the APE itself. Table 2 lists the addresses and distance from the APE of previously recorded built environment resources.

Table 2. Previously Recorded Cultural Resource Sites (within 0.5 Mile of APE)

RESOURCE ID	ADDRESS	NAME	CONSTRUCTION DATE	SHPO ELIGIBILITY	DISTANCE AND DIRECTION FROM APE
48528	4180 NE Sewell Ave,	Sewell Clay Works	1880	Undetermined	280 feet east of APE
653157	4590 Jackson School Road	(House)	c. 1910	Eligible/Contributing	0.41 miles northwest of APE

Source: SHPO OARRA 2020

5.4. Cultural Setting and Contexts

5.4.1. Precontact

Cultural developments in the Willamette Valley have been summarized by Beckham et al. (1981) and Pettigrew (1990), and the following section is based, in part, on their summaries. Additional sites, predating the culture history outlined by these authors, have been discovered in the Willamette Valley after the regional culture history was summarized, necessitating the addition of a period that predates the established chronology. The prehistoric cultural sequence of the Willamette Valley has been divided into four periods spanning from 12,000 Before Present (BP) to approximately 200 BP. These periods, listed below, are academic in nature and do not necessarily reflect tribal viewpoints.

- Pre-Archaic (12,000 BP to 8,000 BP)
- Early Archaic (8,000 BP to 6,000 BP)
- Middle Archaic (6,000 BP to 1,750 BP)
- Late Archaic (1,750 BP to 200 BP)

Where applicable, references to the Portland Basin archaeological record are incorporated into this context.

Pre-Archaic Period (12,000 BP to 8,000 BP)

Artifacts from sites dated to this period usually represent economic strategies that focused on the exploitation of now-extinct megafauna and include large fluted bifaces and bone shafts (Bonnichsen and Turnmire 1991). Across the Pacific Northwest, the Pre-Archaic (also called Paleoindian) period is marked by the distinctive artifacts of the Clovis culture. Traditional interpretation is toward an unbalanced economic strategy emphasizing fauna over flora; however, there is increasing evidence for use of groundstone for processing plants during this period, blurring its distinction from what some archaeologists call the Archaic period (Ames and Maschner 1999).

Archaeological evidence indicating human occupation of the area during this time is extremely limited and no Paleoindian sites have been reported in the Tualatin Basin or Portland Basin. However, understanding of this time period is limited by environmental processes (e.g., geological, chemical, and physical weathering) that have removed, selectively preserved, or buried portions of the archaeological record from this period. The apparent use of acorns has been reported at approximately 10,000 BP (O'Neill et al. 2004) in the central Willamette Valley and at the Lebanon site (Cressman and Laughlin 1941).

Early Archaic Period (8,000 BP to 6,000 BP)

Evidence of the Early Archaic occupation of the Willamette Valley region is more common than in the preceding Pre-Archaic period; however, many sites ascribed to this period lack precise dating. Inhabitants of the region during this period were highly mobile hunter-gatherers (Ames 1988), what Binford (1980) called foragers. Foragers shifted residences frequently, probably several times per year, to position themselves near available resources. The Early Archaic period represents a shift toward broad-spectrum plant and animal gathering and hunting.

This period roughly coincides with a shift in climate toward warmer and dryer conditions. Lakes and marshes reduced in size or, in some cases, dried up completely (Beckham et al. 1981). Inhabitants of the region began to adapt to localized resources, although use of acorns and camas was noted during the prior cultural period, and exploitation of camas increased (Toepel 1985). Floral remains, such as hazelnuts, have been recovered from hearth features at Cascadia Cave site dating to 7,960 BP (Toepel 1985). Artifacts from the Early Archaic period include projectile points, large ovate bifaces, stone mortars and pestles, and edge-ground cobbles. Point styles from this period are characterized by willow--leaf--shaped projectile points including Cascade (8,500 BP to 6,500 BP) and Windust points (10,000 BP to 7,000 BP) (Lohse 1985). Chronological placement of the few older sites in the basin relies on artifact form, specifically projectile point chronologies; however, Connolly and Baxter (1986) suggest that some of these points probably persisted longer west of the Cascades than they did in the east.

Middle Archaic Period (6,000 BP to 1,750 BP)

The Middle Archaic period is associated with a further shift expanding the varieties of subsistence activities (Ames 1994; Toepel 1985). This period is marked with evidence of population growth, and the first evidence of circular pit house features also have been identified from this period (Hurd site: 2,850 BP). During this period, heavy-stemmed projectile points were replaced by smaller narrow-necked points, which became the dominant artifact type (Toepel 1985). Plant-processing features, such as camas roasting ovens (Hannavan Creek site: 5,800 BP, Flanagan site 5,700 BP) and hearths with charred acorns (Luckiamute Hearth site: 5,500 BP, Long Tom site: 4,160 BP) began to appear as well. At the Flanagan site (Toepel 1985) over a dozen radiocarbon dates were recovered with dates of 5,700 BP to 900 BP, showing the site was occupied from the Middle to Late Archaic periods.

Toepel identified three cultural phases from the Flanagan site related to projectile point chronology. Changes in these chronologies are traced to paleoenvironmental changes occurring between the Hypsithermal and Late Post Glacial climactic periods. Many of the sites with occupation during the Middle Archaic period also have components dating to the Early and Late Archaic periods.

Late Archaic Period (1,750 BP to 200 BP)

The Late Archaic period is associated with the introduction of bow-and-arrow technology (Ames et al. 2010) and the development of land-management techniques, such as systematic burning, that do not involve direct manipulation of plants or animals (Toepel 1985). Systematic burning prevented the growth of climax vegetation, such as large trees and shrubs, which allowed the growth of culturally significant plants, such as camas. In addition to maintaining habitat for valued plants, systematic burning increased the amount of open parkland, resulting in an increase in the amount of deer, and increased visibility for hunting. The first evidence of fish use is seen during this period as is the first evidence for the exploitation of freshwater mussels (Toepel 1985). During this period, projectile-point styles shift to narrow-necked points. Artifacts include bone and antler tools, fishing implements (McKinney 1984), and materials buried with human interments, such as marine shells. This period extends to the point in time where European American trade goods enter the archaeological record.

5.4.2. Ethnography and Ethnohistory

The APE vicinity was traditionally inhabited by the Tualatin (or Atfalati) people, who spoke the Tualatin-Yamhill dialect of the Kalapuya language. Descendants of the Tualatin people became members of the Confederated Tribes of the Grand Ronde Community of Oregon (Ruby and Brown 1995). The Tualatin people traditionally inhabited the Tualatin River basin, as well as the drainages of Chehalam Creek and the North Yamhill River south of Lafayette (Zenk 1976).

Following a seasonal subsistence pattern, Kalapuyans (including the Tualatin people) spent the late spring, summer, and early fall months harvesting bulbs and berries, hunting/trapping terrestrial animals, and fishing. During these months, Kalapuyans would live in open camps near the resources that they were collecting. These camps often consisted of little more than the shelter of a grove of trees or brush windbreak (Jacobs 1945; Zenk 1976). During the winter months, Kalapuyans occupied multifamily houses in permanent villages. Winter houses tended to be rectangular, built of planks or bark, and either had shed- or gable-style roofs. The Tualatin also occasionally built gabled cedar plank houses similar to their Chinookan neighbors (Zenk 1990).

Aside from a few notable avoidances (i.e., brown bear and coyote), Kalapuyans collected a wide range of plant and animal resources (Zenk 1976). Vegetable resources, including camas, wapato, tarweed seeds, hazelnuts, dried berries and acorns, were particularly important to Kalapuyans but were also supplemented by fish (salmon, lamprey eels and non-anadromous species), small-to-large game (deer, elk, small and medium mammals, waterfowl and other birds) and some insects (grasshoppers, caterpillars and yellow jacket larvae) (Zenk 1976). Of these resources, the Kalapuyans are known to have relied most heavily on vegetable resources, the single most important of which was likely camas (Jacobs 1945).

Contact with European Americans prompted rapid changes to traditional lifeways of the Kalapuyan people. Starting in the early nineteenth century, fur trade routes were established, and a limited number of European Americans regularly visited the region, introducing metal tools, new clothing styles, foods, and epidemic diseases. The epidemic diseases, particularly malaria, devastated Native American inhabitants of the region. One particularly dramatic malaria epidemic occurred between 1830 and 1833 and resulted in a nearly 95 percent decline in the population of Native Americans in the Willamette Valley (Boyd 1975). Following the passage of the Donation Land Act of 1850, large waves of European Americans settlers made their way into the region to establish homesteads. As a result of this influx, traditionally used lands became increasingly inaccessible to Native Americans, prompting conflict between Native Americans and European Americans (Beckham 1990).

In response to continuing conflict, the U.S. congress appointed a treaty commission in 1850. By 1851, the commission had negotiated agreements with several bands of the Kalapuya, including the Tualatin. Before these agreements could be ratified, however, the U.S. congress revoked the commission's credentials. Following further conflict, the Oregon superintendent of Indian Affairs, Joel Palmer, organized a second treaty with several tribes from the Portland Basin and Willamette Valley. This treaty, the Kalapuya Treaty of 1855, set aside less reservation land than the first treaty, but promised that the U.S. would provide long-term support in exchange for Native Americans ceding their lands and relocating to the Grand Ronde Reservation. This support included money, supplies, health care, and the promise of protection from further attacks by European Americans (Beckham 1990; Ruby and Brown 1995).

Following a continued decline in the number of Native Americans enrolled at the Grand Ronde Reservation, and in an attempt to prompt integration, the U.S. government dissolved the reservation in 1954 (Ruby and Brown 1995). After several years of fighting for recognition, the remaining members of the confederated tribes argued for, and successfully regained, their federal recognition and treaty commitments in 1983 (Beckham 1990).

5.4.3. Post-Contact History

The Tualatin basin was one of the earliest to be settled by European Americans in Oregon. Starting in the 1820s and 1830s, the British Hudson's Bay Company used the basin to range cattle during the summer. Shortly thereafter, European Americans began to settle the region for agricultural use (Zenk 1990). By the middle of the nineteenth century, several land claims had been staked in the Tualatin basin (GLO 1862).

Although the Tualatin basin remained a rural agricultural area throughout the nineteenth century and during the early twentieth century, the population grew rapidly. Several large technology and manufacturing companies moved to the region in the late twentieth century, prompting a further increase in population growth, as well as rapid development. Despite this, agriculture continued to remain a principal industry in the region (Oregon Historical County Records Guide 2015).

The APE is located just east of the community of Kinton. The community is named for Peter Kindt, who travelled to Oregon in 1853 and staked a donation land claim near the east bank of the Tualatin River. By the early twentieth century, the community had a grange, schoolhouse, and post office – the latter of which closed in 1903. Kinton has remained a small unincorporated community throughout the twentieth and twenty-first centuries (McArthur and McArthur 2003).

The community of Kinton is located across the river from the community of Scholls, named for Peter Scholl, who ran a ferry on the Tualatin River during the late nineteenth century (McArthur and McArthur 2003). The road to Scholl's Ferry (Scholl Ferry Road) from Raleigh Hills passes through Kinton and along the southern margin of the APE.

5.4.4. Airport History

Early Aviation in the United States

Early experimentation in American aeronautics began in 1896 with Samuel Pierpont Langley's first sustained flight of a heavier-than-air vehicle. Langley's success with this steam-powered machine gave rise to what he called the "Aerodrome A" that crashed into the Potomac River near Quantico, Virginia, just nine days prior to Orville and Wilbur Wright's first successful and controlled flights on December 17, 1903, near Kitty Hawk, North Carolina. Despite the brothers' having designed a practical flying machine, the early use of airplanes centered around exhibitions that highlighted the aviator just as much, if not more, than the plane itself (Milbrooke, et al. 1998). Two exhibitions in particular captured the imagination of the public and the entrepreneurship of promotors: the first at Rheims, France, in September 1909 and then Los Angeles, California, in January 1910. As the popularity of exhibitions grew, so did their competitive nature. Aviation troupes staged these exhibitions and groups formed by the Wright Brothers and Glen Curtiss were among the most well-known. Oregon's interest in aviation began in earnest in 1905 with a dirigible airship demonstration which cleverly took place at the same time as the Lewis and Clark Exposition in Portland. By 1910, Oregon businessmen were sponsoring exhibition flights, exalting both pilot and machine (Harris 1986).

However, with the use of aeronautics in World War I, the heroic sheen of aviation had been tarnished in the eyes of the public. Airplanes were no longer simply an exhilarating technology pushing the limits of human ingenuity, they were machines of war (Harris 1986). When the U.S. entered the war in 1917, only a small number of aircraft were in use and most were already obsolete. The country struggled to keep up with other nations and had only a nascent aviation industry with limited factories, professionals, airfields, and nearly no commercial aviation. World War I was a catalyst for the development of American aviation beyond the exhibition era. But while the number and innovation of planes, airfields, and pilots increased during the war, this growth came to a near standstill post-war. Airmail, with services established by the U.S. Postal Service in 1918, maintained a small demand for aircraft and pilots. Airports along the mail service route were built until 1925 when the Kelly Air Mail Act allowed contracts with private operators to

deliver mail. With limited funding, a small interest in military aviation saw the establishment of the Navy's Bureau of Aeronautics in 1921 and the first aircraft carrier, the U.S.S. Langley, in 1922. Also, in 1922, flights began over a national airway established by the Army Air Service allowing for the development of commercial aviation supported by a system of landing fields (Milbrooke, et al. 1998).

With Charles Lindbergh's transatlantic flight in 1927, America's romance with aviation was rekindled. Businessmen across the country began investing in the development of commercial, private, and sport facilities (Milbrooke, et al. 1998). Oregon was swept up in the national trend. Building off the earlier success of aviation exhibitions in the state, new and previously underutilized airfields dotted the map including the Albany Municipal Airport (1920), Swan Island Municipal Airport (1927), and Bernard's Airport and Watts Field both in Beaverton (1928) (Harris 1986).

Development of the Hillsboro Airport

Perhaps anticipating a renewed love for aviation and recognizing the industry's potential commercial opportunities, Dr. Elmer H. Smith established the private HIO at 3355 NE Cornell Rd (Parcel # 1N2280001550) in 1928. The airport consisted of 100 acres of the Hawthorn Estate and boasted two turf runways, the construction of which were assisted by the American Legion. Dr. Smith died in the early 1930s and local businessmen acquired the deed for the airfield and quickly leased the property to the City of Hillsboro (the City) for the next five years with the option to purchase at the end of the lease. From 1933 to 1938, the city built two runways with the help of the Works Progress Administration. One runway, oriented northeast to southwest (modern Runway 2-20), was 3,000 feet in length and the second, oriented northwest to southeast (modern Runway 13R-31L), measured 2,800 ft. long. The runways remained turf until at least 1941. The city purchased the airport outright in 1935 for $7,500 (Port of Portland 2017).

Beginning in 1939, the Hillsboro Aviation Club leased the airfield from the city. The club refurbished existing hangers and built new structures. By 1940 there were three hangers and an office building. The club also offered flight lessons from instructors and club members Edward Ball and Norman Ralston who eventually established the Ball-Ralston Flying Service (Fitzgerald and Raber 2009).

Like many airports across the country, HIO received federal funding for improvements to the facility at the outbreak of World War II. In 1941, $600,000 was spent on the airport to serve as a satellite facility for the Portland Air Base. In addition to a 280-acre expansion, HIO received upgrades to its lighting, drainage, and grading. Military use of the airport during the war was limited and ownership of the airport returned to the City in 1945. The Navy briefly considered the airport for use as a Naval air station in 1946 and 1955, but neither instance came to fruition (McKinney 1976; Haulman 2011).

HIO, did however, continue to function as a satellite of the Portland Air Base (1936) and Portland -Columbia Airport (otherwise known as the Portland International Airport, built in 1941). HIO was utilized by business, public commercial passenger, and cargo operations as well as the U.S. Air Force for relief operations during the 1948 flooding along the Columbia River that closed Portland International Airport and obliterated the City of Vanport. HIO is still considered a reliever airport for Portland International and is today the second busiest facility in the state (McKinney 1976).

In a callback to the exhibition era of aviation in Oregon, HIO began hosting airshows at least as early as 1957 with the Jaycee Air Fair. Also known as the Jaycees Air Show, this event was a precursor to the Oregon International Air Show that was hosted by the airport from 1988 to 2019 when the event moved to the McMinnville Municipal Airport to accommodate construction plans at HIO (Fitzgerald and Raber 2009).

In the early 1960s, companies with a need for air operations were stationing out of HIO including Georgia Pacific and Tektron Instruments. In 1964, the City requested that the Port assume ownership of the

facility, as the airport had been struggling financially and was in desperate need of maintenance and repair. This was worsened by the 1962 Columbus Day Storm that destroyed or damaged most of the structures on the property. By 1966, the Port owned and operated the airport, marking the occasion with a $400,000 air traffic control tower manned by the FAA, two parallel taxiways, additional acreage, and fencing. An additional 700 acres of land were acquired in the 1970s and a terminal building was constructed in 1975 (McKinney 1976).

Since 2004 HIO has undergone a number of improvements listed in Section 5.4.5. Additionally, the HIO Master Plan was published in March 2019 and identifies development and capacity goals for the facility through 2036.

5.4.5. HIO Construction Timeline and Important Dates

- 1925: HIO established as private airfield by Dr. Elmer Smith
- 1933 to 1938: "X" runway pattern created by the Works Progress Administration
- 1939: Leased by the Hillsboro Aviation Club
- 1940: Three new hangers and an office building added by the Hillsboro Aviation Club
- 1941: WWII military improvements including grading, drainage, and lighting equipment; runways are paved; addition of 280 acres
- 1960: Construction on air traffic control tower begins
- 1962: Many structures are lost or damaged in Columbus Day Storm
- 1966: The Port assumes ownership of HIO; two parallel taxiways are constructed; fencing installed
- 1970s: 700 acres additional land purchased
- 1970: Fuel Island known as "The Mushroom" built
- 1975: Terminal building constructed
- 1976: Runway 12-30 (modern 13R-31L) was extended 6,300 feet; Instrument Landing System installed
- 1977: Threshold taxiway constructed at Runway 30 (modern 13R-31L), extending usable length to 6,600 feet
- 1999-2000: Airport Improvement Program grants drive Evergreen Road Relocation and multi-year RSA improvements
- 2004: Grants funding begins with pavement maintenance; construction of Runway 13L-31R; rehabilitation of Runway 2-20; various taxiways
- 2010: Taxiway C Extension was built which began the pathway towards building the parallel Runway 13L-31R
- 2013: Runway 2-20 reconstructed
- 2014: Parallel Runway 13L-31R constructed
- 2015: Parallel Runway 13L-31R opened

- 2019: Primary Runway 13R-31L repaving
- 2023: Proposed improvements scheduled to be complete

5.5. Pedestrian Survey Methods

A pedestrian survey was conducted of the APE to identify any potential historic structures or archaeological deposits exposed on the ground surface in all areas where ground disturbance is proposed for the Project. This involved walking across the APE and visually inspecting the ground surface. Systematic pedestrian survey transects were spaced at 20-meter intervals across the entire APE.

5.6. Subsurface Investigations Methods

Shovel probes (SPs) were used to characterize subsurface stratigraphy and to determine whether subsurface archaeological deposits were present. SPs were 40 centimeters (cm) in diameter and excavated at approximately 30-meter intervals in locations not covered in asphalt, concrete, buildings, or other modern infrastructural or structural features, and where access has been granted. SPs were excavated to a depth of 1 meter below ground surface unless undisturbed glacial deposits or impassable conditions were encountered at shallower depths. All SPs were excavated by hand and sediments screened through a 6-millimeter (0.25-inches) mesh hardware cloth. SPs were excavated within the APE where ground disturbing Project activities would occur, and not excavated in areas where ground disturbance was not planned in accordance with communications with Port staff. Areas not excavated include the segments of the RSA not along the Glencoe Swale alignment, the spoil pile areas, and the access roads.

Following excavation, the sediments within each SP were analyzed. Key sedimentary context indicators were recorded, including sediment composition listed from smallest constituent to largest constituent (e.g., gravelly sandy silt) and their grain sizes (fine to coarse), structure (e.g., laminated, blocky, massive), compaction (loosely, densely), inclusions of historic-period or modern debris, and the depth below surface for interfaces between distinct sediment units. SPs were then photographed, mapped with the Collector ArcGIS application, and backfilled.

6. SURVEY RESULTS

6.1. Archaeology

An archaeological survey of the APE was performed on July 15 and 16, 2020. The survey included pedestrian survey at 30-meter intervals and the excavation of 40 SPs within the RSA.

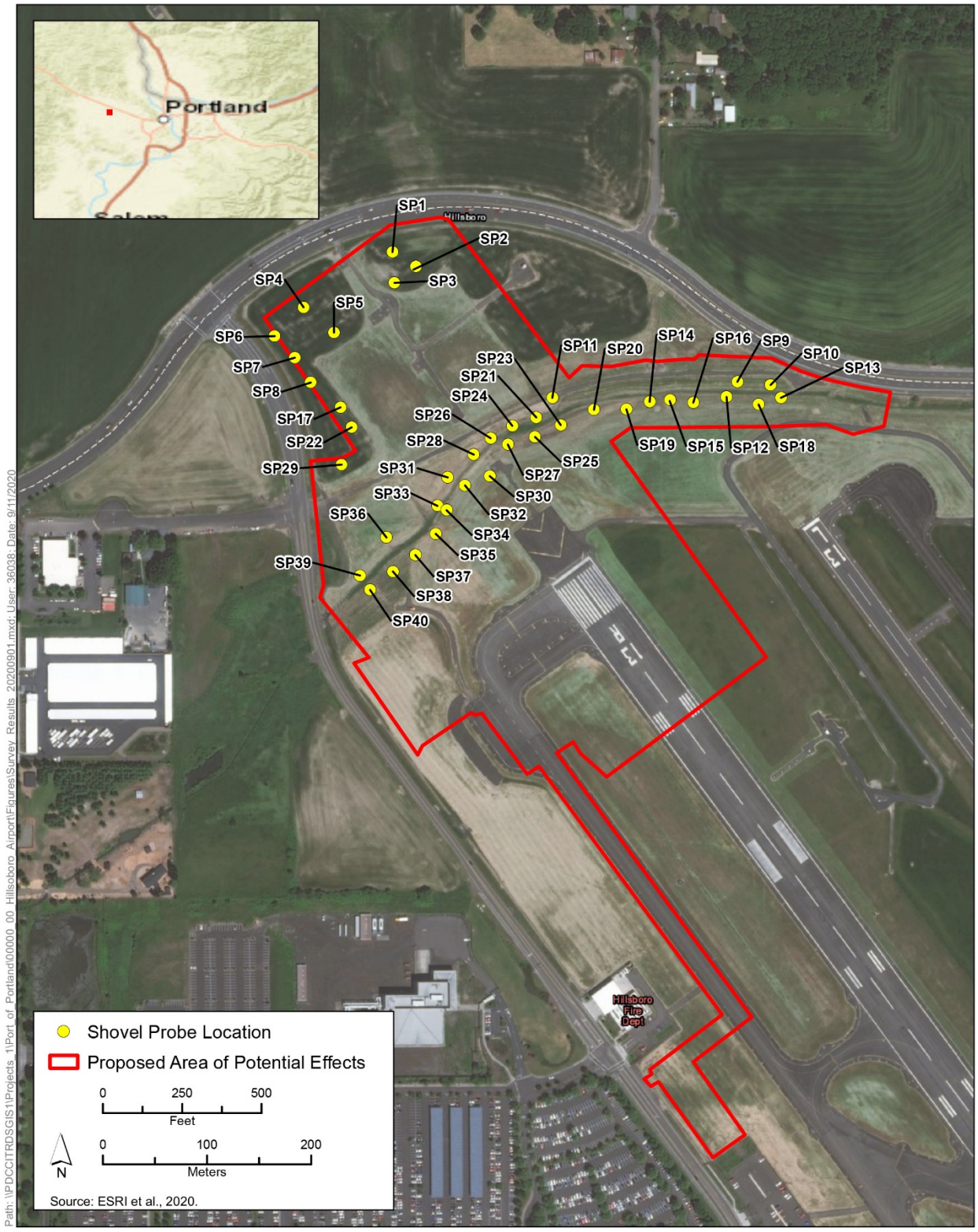
During the pedestrian survey reconnaissance, a historic refuse scatter in the vicinity of the RSA was found and documented using the Collector ArcGIS application. The scatter consisted of undiagnostic potentially historic artifacts with mixed modern refuse and comprised an area of 1.24 acres in the northeastern corner of the APE. Artifacts were diffuse throughout this area and were primarily comprised of clear glass, green bottle glass, and undecorated ceramic. This scatter was indeterminate in age due to the lack of undiagnostic artifacts and was not recorded as an archaeological site. The two stockpile areas were found to be previously disturbed by Port staff and, therefore, SPs were not conducted in this area due to this disturbed nature of the deposits as well as the existing stockpiles blocking ground visibility in this area.

Review of the sedimentary composition and stratigraphy of the SP profile walls revealed three discrete deposits, with differing means of deposition. Figure 7 outlines the locations of the excavated SPs. The upper deposit (Strat A), was a compact to moderately compact yellow brown fine sandy silt with no gravel content present. This deposit was disturbed via agricultural ploughing to a depth of approximately 35 cm (13.8 inches), and the sediments were reworked and secondarily deposited through aeolian processes following the Missoula Flood event. Strat A ranged from 30 cm (11.8 inches) to 100 cm (39.4 inches) in depth. The lower boundary of Strat A was abrupt and overlaid the second deposit (Strat B) a compacted grayish brown fine silt deposit, aeolian deposition during post Missoula Flood processes as flood waters recede and winds transport the finest silts. This deposit was encountered from 30 cm (11.8 inches) to 100 cm (39.4 inches) below ground surface. Strat A and Strat B were primarily encountered in the fields north of the stream and surrounding the RSA. Strat C was encountered along the margins of the stream and consisted of dark brown alluvially deposited clayey silt with high organic content and gleying. Strat C ranged from 30 cm (11.8 inches) to 90 cm (35.5 inches) in thickness beginning at the ground surface. Data for each SP is provided in Attachment A and photographs of representative SPs and the survey area are included in Attachment B.

Overall, the stratigraphic profile is consistent with the mapped soil survey deposits of Oregon Geology Map and consisted of Quaternary silts and clays. These sediments are interpreted here as reworked alluvial and aeolian sediments over intact alluvial deposits.

No cultural deposits or sites were identified in any of the SPs. No buried surfaces, as indicated by the presence of buried soil horizons, were discovered at any point during this subsurface survey.

Figure 7. Shovel Probe Locations



6.2. Built Environment

No built resources at least 50 years in age were identified. The survey concluded that there are no historic properties present within the APE.

7. FINDING OF EFFECT

Based on the results of the records search and survey presented in this report, a finding of No Historic Properties Affected for the proposed undertaking is recommended. The cultural resources investigation determined that there were no historic properties present. Indirect effects to the APE were also considered and no lasting visual, auditory, or other incidental impacts were identified as a result of the Project.

8. RECOMMENDATIONS

As the study did not result in the identification of any direct or indirect effects to historic properties, no additional cultural resources studies are recommended for the Project at this time.

If, over the course of the Project, modifications are made to the Project resulting in ground disturbance in locations that were not previously subject to cultural resources survey, it is recommended that the Oregon SHPO be consulted with to determine whether additional archaeological studies or monitoring is warranted.

An Inadvertent Discovery Plan (IDP) will be developed for this Project. The IDP will indicate that all ground disturbance would be halted if cultural resources are discovered during Project activities. A designated Port representative and archaeologist would then be notified to determine how work should proceed.

The IDP will also state that if human remains are uncovered due to Project activities, all work would be stopped immediately, the Project area would be secured and protected with a 100-foot buffer, remains would be covered, and the proper entities would be notified. Work would not resume in the buffered area until a plan was developed and carried out between SHPO, state police, the Legislative Commission on Indian Services, and the appropriate Native American tribes.

9. REFERENCES

Ames, K.M. and D.G. Maschner. 1999. Peoples of the Northwest Coast: Their Archaeology and Prehistory. Thames & Hudson, London, England.

Ames, K.M. 1988. Early Holocene Forager Mobility Strategies of the Southern Columbia Plateau. In Early Human Occupation in Western North America, edited by J.A. Willig, C.M. Aikens, and J. Fagan. Nevada State Museum papers No. 21. Carson City, Nevada.

Ames, K.M. 1994. Archaeological Context Statement: Portland Basin. Wapato Valley Archaeological Project Report No. 4. Department of Anthropology, Portland State University.

Ames, Kenneth M., Kristen A. Fuld, and Sarah Davis. 2010. Dart and Arrow Points on the Columbia Plateau of Western North America. American Antiquity 75(2):287-326.

Anderson, Frederick. 2012. Cultural Resource Investigations for the Keeler-Forest Grove No. 1 14-Pole Replacement Project, Washington County, Oregon.

Beckham, S.D. 1976a. Kinton Church (48572). Washington County Cultural Resource Inventory. State of Oregon Historic Sites and Buildings. Copies available from the Oregon State Historic Preservation Office.

Beckham, S.D. 1976b.The Kindt House (48882). Washington County Cultural Resource Inventory. State of Oregon Historic Sites and Buildings. Copies available from the Oregon State Historic Preservation Office.

Beckham, S.D. 1990. History of Western Oregon Since 1846. In, Handbook of North American Indians. vol. 7. Northwest Coast. Ed. Wayne Suttles. Smithsonian Institution, Washington D.C.

Beckham, S.D., R. Minor, and K.A. Toepel. 1981. Prehistory and History of BLM Lands in West-Central Oregon: A Cultural Resources Overview. In University of Oregon Anthropological Papers 25. Eugene, Oregon.

Binford, L.R. 1980. Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45(1):4–20.

Bonnichsen, R. and K.L. Turnmire.1991. Clovis: Origins and Adaptations. Peopling of the Americas Publications. Center for the Study of the First Americans, Oregon State University, Corvallis, Oregon.

Boyd, R.T. 1975. Another Look at the "Fever and Ague" of Western Oregon. Ethnohistory 22 (2).

Buchanon, Kelsey, Judith S. Chapman, and John L. Fagan. 2007. Cultural Resource of the Proposed Hillsboro Airport Project in Hillsboro, Washington County, Oregon.

Cressman L.S. and Laughlin W.S. 1941. A Probable Association of Mammoth and Artifacts in the Willamette Valley, Oregon. American Antiquity 6 (1):339–342.

Ellis, David. 1999. Cultural Resources Survey for the Brookwood Avenue Extension Project.

Ellis, David and Judith S. Chapman. 2001. Cultural Resources Study for the Hillsboro Airport Runway Safety Area Project, Hillsboro and Washington County, Oregon

Federal Aviation Administration (FAA). 2014. Advisory Circular (AC) 150/5300-13A, Change 1, Airport Design. February 26, 2014.

Fitzgerald, Kimberli and Deborah Raber. 2009. Hillsboro. Hillsboro Historic Landmarks Advisory Committee. Images of America, Arcadia Publishing. Charleston, South Carolina.

Foutch, Amy E., Jonathan Held, and John L. Fagan. 2008. Cultural Resource Survey of the Proposed Hillsboro Airport Acquisition Location in Hillsboro, Washington County, Oregon.

General Land Office (GLO). 1851. Master Title Plat, T2S, R1W, Willamette Meridian. BLM Portland. 1862 Master Title Plat, T2S, R1W, Willamette Meridian. BLM Portland.

Goodwin, M.F. 2014. Archaeological Survey for Proposed 155th and Beard Telecommunications Facility, Washington County, Oregon. Willamette Cultural Resource Associates, Ltd. Submitted to Adapt Engineering. Copies available from the Oregon State Historic Preservation Office.

Google Earth Pro. 2020. Historic Aerial Photograph, 2008, 2009, 2012, 2013, 2014. Electronic document. Accessed August 11, 2020.

Harris, Patrick. 1986. "The Exhibition Era of Early Aviation in Oregon, 1910-1915." Oregon Historical Quarterly 87, no. 3 (1986): 245-76. Available: www.jstor.org/stable/20614080. Accessed: August 11, 2020.

Haulman, Daniel L. 2011. "The United States Air Force and Humanitarian Airlift Operations 1947–1994." Reference Series. Air Force Historical Research Agency. Archived from the original on 22 July 2011. Available: http://www.afhra.af.mil/shared/media/document/AFD-100126-106.pdf. Accessed: August 4, 2020.

Hillsboro Aviation. 2020. "Hillsboro Aviation History – Helicopter Charter & Aircraft Sales." Available: https://www.hillsboroaviation.com/history/. Accessed: August 12, 2020.

Jacobs, M. 1945. Kalapuya Texts: Santiam Kalapuya Ethnologic Texts. University of Washington Publications in Anthropology Vol. 11, Pt. 1. University of Washington, Seattle, Washington.

Kolar, Kendra. 2013. Cultural Resources Investigations for Bonneville Power Administration's Keeler-Forest Grover, Forest Grove-Tillamook No. 1 Transmission Line Rebuild/Reconductor Project (OR 2012 029) in Washington and Tillamook Counties, Oregon.

Lohse E.S. 1985. Rufus Woods Lake Projectile Point Chronology. In Summary of Results, Chief Joseph Dam Cultural Resources Project. Washington. Ed by Sarah K. Campbell, Office of Public Archaeology, University of Washington, Seattle, Washington.

McArthur, L.A. and L.L. McArthur. 2003. Oregon Geographic Names (7th ed.). Portland, Oregon: Oregon Historical Society Press.

McClintock, Robin, James C. Bard. 1996. A Cultural Resource Survey of the Tualatin Valley Water District's North Transmission Line, Washington County, Oregon.

McKinney, F.A. 1984. Kalapuyan Subsistence: Reexamining the Willamette Falls Salmon Barrier. Northwest Anthropological Research Notes (18):23–33.

McKinney, Walter. 1976. "Port of Portland acquired municipal airport in 1965; Local airport serves aviation; Hillsboro boasts air history;" Hillsboro Argus, October 19, 1976. p. 9.

Milbrooke, Anne, Patrick Andrus, Jody Cook, and David B. Whipple. 1998. National Register Bulletin 43; Guidelines for Evaluating and Documenting Historic Aviation Properties. U.S. Department of the Interior. National Park Service. National Register of Historic Places.

NETR Online. 2020. Historic Map, 1916, 1939, 1948, 1961, 1977. Electronic document. Available: http://www.historicaerials.com/. Accessed August 11, 2020.

Oetting, Albert C. and Tama K. Tochihara. 2009. Hillsboro Airport Parallel Runway Project 12L/30R Archaeological and Historic Resources Technical Memorandum.

O'Neill, B.L., T.J. Connolly, and D.E. Freide. 2004. A Holocene Geoarchaeological Record for the Upper Willamette Valley, Oregon: The Long Tom and Chalker Sites. Volume 61: University of Oregon Press, Eugene, Oregon.

Oregon Historical County Records Guide. 2015. Washington County History. Electronic document. Available: http://arcweb.sos.state.or.us/pages/records/local/county/washington/hist.html. Accessed February 3, 2015.

Oregon State Historic Preservation Office (SHPO). 2007. Guidelines for Conducting Field Archaeology in Oregon. Salem, Oregon. Electronic document. Available: http://www.oregon.gov/OPRD/HCD/ARCH/docs/draft_field_guidelines.pdf. Accessed April 19, 2012.

Pettigrew, R.M. 1990. Prehistory of the Lower Columbia and Willamette Valley. In Wayne Suttles (ed.), Handbook of North American Indians Volume 7: Northwest Coast. Smithsonian Institution, Washington, D.C.

Port of Portland. 2017. Hillsboro Airport Master Plan Update. Available: https://www.portofportland.com/HIO/MasterPlan. Accessed: August 12, 2020.

Reed, Patrick, Kelly Yeates, Tait Elder. 2017. Hillsboro Airport Runway Rehabilitation Project Cultural Resources Survey. Prepared for Port of Portland, Portland, OR.

Ruby, R.H. and J.A. Brown. 1995. A Guide to the Indian Tribes of the Pacific Northwest. University of Oklahoma Press, Norman Oklahoma.

Sharma, Mini, R. Todd Baker, Jason Allen, Kelsey Brethower, and Matthew J. Steinkamp. 2009. Cultural Resource Inventory for Clean Water Services District's Dawson Creek Pump Station and Forcemain Project, Hillsboro, Washington County, Oregon.

Toepel, K.A. 1985. The Flanagan Site: 6,000 years of Occupation in the Upper Willamette Valley. Oregon, Department of Anthropology, University of Oregon.

Williams, Alexandra C., Judith A. Chapman, and Elizabeth J. O'Brien. 2014. Cultural Resource Survey of the NE Jackson School Road (NE Grant Street to NE Evergreen Road) Improvement Project, Washington County, Oregon.

Williams, Alexandra C., Judith A. Chapman, and Elizabeth J. O'Brien. 2014. Cultural Resource Survey of NW Brookwood Parkway (NW Meek Road to NE Shute Road) Improvements Project, Washington County, Oregon.

Zenk, H. 1976. Contributions to Tualatin Ethnography. Unpublished Master's Thesis. Department of Anthropology, Portland State University.

Zenk, H. 1990. Kalapuyan in Handbook of North American Indians. W.C. Sturtevant (ed.). Vol. 7. Seattle: Smithsonian.

ATTACHMENT A

Shovel Probe Data Table

SHOVEL PROBE NUMBER	DEPTH CM BELOW SURFACE (CMBS)	DESCRIPTIONS	COMMENTS	ORIGIN	CULTURAL MATERIAL PRESENCE
SP1	0-45	Strat B – compacted gray fine silt		Reworked Aeolian	None
SP2	0-30	Strat A – ploughed topsoil		Reworked Alluvium	None
	30-100	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Alluvium	None
SP3	0-41	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	6 clear glass fragments, 1 olive green glass fragment, 2 aqua glass fragments, 1 red and clear glass fragment; Undiagnostic
SP4	0-100	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
SP5	0-35	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
	35-95	Strat B – compacted gray fine silt		Reworked Aeolian	None
	95-100	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
SP6	0-75	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content	Terminated due to obstruction	Reworked Alluvium	None
SP7	0-100	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
SP8	0-100	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
SP9	0-45	Strat C – dark brown clayey silt with high organic content and gleying	Mixed basalt gravels	Alluvium	None
SP10	0-45	Strat C – dark brown clayey silt with high organic content and gleying	Mixed basalt gravels	Alluvium	None

SHOVEL PROBE NUMBER	DEPTH CM BELOW SURFACE (CMBS)	DESCRIPTIONS	COMMENTS	ORIGIN	CULTURAL MATERIAL PRESENCE
SP11	0-100	Strat C – dark brown clayey silt with high organic content and gleying		Alluvium	None
SP12	0-70	Strat C – dark brown clayey silt with high organic content and gleying	Water table 70 cmbs	Alluvium	None
SP13	0-70	Strat C – dark brown clayey silt with high organic content and gleying	Water table 70 cmbs	Alluvium	None
SP14	0-20	Strat C – dark brown clayey silt with high organic content and gleying	High mixed gravel content	Alluvium	None
	20-50	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
	50-66	Strat C – dark brown clayey silt with high organic content and gleying	water table 66 cmbs	Alluvium	None
SP15	0-20	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
	20-66	Strat C – dark brown clayey silt with high organic content and gleying		Alluvium	None
SP16	0-80	Strat C – dark brown clayey silt with high organic content and gleying	Water table 80 cmbs	Alluvium	None
SP17	0-90	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
SP18	0-85	Strat C – dark brown clayey silt with high organic content and gleying	Water table 85 cmbs	Alluvium	None
SP19	0-85	Strat C – dark brown clayey silt with high organic content and gleying	Water table 85 cmbs	Alluvium	None
SP20	0-61	Strat C – dark brown clayey silt with high organic content and gleying	Water table 61 cmbs	Alluvium	None
SP21	0-76	Strat C – dark brown clayey silt with high organic content and gleying	Water table 76 cmbs	Alluvium	None

SHOVEL PROBE NUMBER	DEPTH CM BELOW SURFACE (CMBS)	DESCRIPTIONS	COMMENTS	ORIGIN	CULTURAL MATERIAL PRESENCE
SP22	0-40	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content	Plough zone	Reworked Alluvium	None
	40-95	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
	95-100	Strat C – dark brown clayey silt with high organic content and gleying		Alluvium	None
SP23	0-60	Strat C – dark brown clayey silt with high organic content and gleying	Water table 60cmbs	Alluvium	None
SP24	0-80	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 80cmbs	Alluvium	None
SP25	0-67	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 67 cmbs	Alluvium	None
SP26	0-69	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 69 cmbs	Alluvium	None
SP27	0-66	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 66 cmbs	Alluvium	None
SP28	0-69	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 69 cmbs	Alluvium	None
SP29	0-38	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content	Plough zone	Reworked Alluvium	None
	38-85	Strat A – compact to moderately compact yellow brown fine sandy silt with no gravel content		Reworked Alluvium	None
	85-95	Strat C – dark brown clayey silt with high organic content and gleying		Alluvium	None
SP30	0-70	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 70 cmbs	Alluvium	None
SP31	0-75	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 75 cmbs	Alluvium	None
SP32	0-68	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 68 cmbs	Alluvium	None

SHOVEL PROBE NUMBER	DEPTH CM BELOW SURFACE (CMBS)	DESCRIPTIONS	COMMENTS	ORIGIN	CULTURAL MATERIAL PRESENCE
SP33	0-68	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 68 cmbs	Alluvium	None
SP34	0-90	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 68 cmbs	Alluvium	None
SP35	0-40	Strat C – dark brown clayey silt with high organic content and gleying	Very high basalt gravel content, terminated due to gravels	Alluvium/mixed fill	None
SP36	0-50	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 50 cmbs	Alluvium	None
SP37	0-70	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 70 cmbs	Alluvium	None
SP38	0-79	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 79 cmbs	Alluvium	None
SP39	0-56	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 56 cmbs	Alluvium	None
SP40	0-60	Strat C – dark brown clayey silt with high organic content and gleying	Water table at 60 cmbs	Alluvium	None

ATTACHMENT B

Shovel Probe Photographs

Upland SP example

Glencoe Swale area SP example

Overview of survey area, view southeast toward Glencoe Swale

Overview of survey area, view east

ATTACHMENT C

Area of Potential Effect Correspondence

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

February 12, 2020

Ms. Cayla Morgan
FAA Seattle Airports Dist Office
1601 Lind Ave SW Ste 250
Renton, WA 98057-3356

RE: SHPO Case No. 20-0087
FAA Project Hillsboro Airport - HIO, Runway 13R-31L Runway Safety Area Improvements
Improve runways
1N 2W 20, 29,, Hillsboro, Washington County

Dear Ms. Morgan:

Our office recently received a letter from your agency requesting concurrence regarding the Area of Potential Effect (APE) for the proposed HIO 13R-31L RSA Improvements, as referenced above. Thank you for the early consultation on this undertaking.

Upon review of your proposed APE, and with the understanding that all potentially historic above-ground resources affected by the undertaking are included within the boundaries submitted to our office, we concur with the project's proposed APE for direct effects. We recommend considering impacts that may occur overtime as a result of the undertaking (indirect effects). Should this reveal that additional above-ground resources will be impacted by the project or if project actions are revised, an amended APE may be necessary. As you identify historic properties within the APE, please note that some resources may be individually eligible or contributing features to a historic district, linear resource, or landscape. Specifically we recommend recording and evaluating the National Register eligibility of the Hillsboro Airport and, if determined eligible, considering if contributing resources are within the APE and how they will be affected.

This letter refers to above-ground resources only and comments pursuant to an APE review for archaeological resources will be sent separately. Our office looks forward to receiving a copy of the cultural resource survey report once it has been completed and continuing consultation.

Sincerely,

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

cc: Marla Harrison, Port of Portland

Oregon

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

February 18, 2020

Ms. Cayla Morgan
FAA Seattle Airports Dist Office
1601 Lind Ave SW Ste 250
Renton, WA 98057-3356

RE: SHPO Case No. 20-0087
FAA Project Hillsboro Airport - HIO, Runway 13R-31L Runway Safety Area Improvements
Improve runways
1N 2W 20, 29,, Hillsboro, Washington County

Dear Ms. Morgan:

Our office has recently received a letter from your agency requesting concurrence regarding your Area of Potential Effect (APE) boundaries for the project referenced above. Upon review of your letter/ document, we concur with the proposed project's APE boundaries.

Our office looks forward to receiving a copy of the cultural resource survey report for the project once it has been completed. Under federal and state law archaeological sites, objects, and human remains are protected on both public and private lands 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 or comments regarding this letter, please do not hesitate to contact me. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

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

Sincerely,

Jamie French, M.A.
SHPO Archaeologist
(503) 986-0729
Jamie.French@oregon.gov

cc: Marla Harrison, Port of Portland

From: Harrison, Marla
To: Minister, Maureen; Rabby, Jennifer; Polzin, Scott
Subject: Fwd: Hillsboro Airport, Runway Safety Area Improvements
Date: Tuesday, February 25, 2020 9:42:19 AM

Sent from my iPhone

Begin forwarded message:

From: "Morgan, Cayla (FAA)" <Cayla.Morgan@faa.gov>
Date: February 25, 2020 at 10:32:32 AM MST
To: Christian Nauer <christian.nauer@ctwsbnr.org>
Cc: Robert Brunoe <robert.brunoe@ctwsbnr.org>, "Harrison, Marla" <Marla.Harrison@portofportland.com>, "Minister, Maureen" <Maureen.Minister@portofportland.com>
Subject: RE: Hillsboro Airport, Runway Safety Area Improvements

EXTERNAL EMAIL:

Christian,

Thank you for your review and response. We will keep you in the loop and provide an opportunity to review the cultural resources resport.

Cayla D. Morgan
Environmental Protection Specialist
Seattle Airports District Office
(206) 231-4130

From: Christian Nauer <christian.nauer@ctwsbnr.org>
Sent: Tuesday, February 18, 2020 3:11 PM
To: Morgan, Cayla (FAA) <Cayla.Morgan@faa.gov>
Cc: Robert Brunoe <robert.brunoe@ctwsbnr.org>
Subject: Re: Hillsboro Airport, Runway Safety Area Improvements

Hi Cayla,

Thank you very much for the opportunity to provide comment on the Hillsboro Airport Runway Safety Area Improvements Project.

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):

We appreciate you providing providing this office with the Cultural Resources Methodology Memorandum for this Project. Please keep us in the loop; we would appreciate an opportunity to review the forthcoming cultural resources report.

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 541.420.2758

> On Jan 24, 2020, at 11:52 AM, Morgan, Cayla (FAA) <Cayla.Morgan@faa.gov> wrote:
>
> Good Afternoon,
>
> 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 Tribal Governments and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedure.

Attached is a project description, proposed methodology and information about the APE.

Please let me know if you have any questions or concerns.

Thanks,

Cayla D. Morgan
Environmental Protection Specialist
Seattle Airports District Office
Federal Aviation Administration
(206) 231-4130

<200115_HIO_CulturalMethodology_Memo.docx>

From: Harrison, Marla
To: Polzin, Scott; Rabby, Jennifer
Subject: FW: Hillsboro Airport, Runway Safety Area Improvements
Date: Monday, January 27, 2020 8:37:24 AM
Attachments: 200115_HIO_Cultural[redacted]Memo.docx

As info. Cayla has initiated consultation for the HIO RSA project.

From: Morgan, Cayla (FAA) <Cayla.Morgan@faa.gov>
Sent: Friday, January 24, 2020 11:52 AM
To: christian.nauer@ctwsbnr.org; Cheryl Pouley <Cheryl.Pouley@grandronde.org>; Rkentta@ctsi.nsn.us; Johnson Meninick <Johnson@yakama.com>
Cc: Harrison, Marla <Marla.Harrison@portofportland.com>; Callahan, Sean (FAA) <Sean.Callahan@faa.gov>
Subject: Hillsboro Airport, Runway Safety Area Improvements

EXTERNAL EMAIL:

Good Afternoon,

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 Tribal Governments and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedure.

Attached is a project description, proposed methodology and information about the APE.

Please let me know if you have any questions or concerns.

Thanks,

Cayla D. Morgan
Environmental Protection Specialist
Seattle Airports District Office
Federal Aviation Administration
(206) 231-4130

Environmental Assessment for the Proposed HIO 13R-31L RSA Improvements

Cultural Resources Methodology Memorandum

January 15, 2020

Prepared for:

PORT OF PORTLAND

Prepared by:

ICF

615 SW Alder Street
Suite 200
Portland, Oregon 97205

WSP

851 SW Sixth Avenue
Suite 1600
Portland, Oregon 97204

TABLE OF CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	DEFINITION
AIP	Airport Improvement Program
ALP	Airport Layout Plan
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
EA	Environmental Assessment
FAA	Federal Aviation Administration
GIS	Geographic Information System
HIO	Hillsboro Airport
NAVAIDs	Navigation Aids
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
Port	Port of Portland
RSA	Runway Safety Area
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office

1. PROJECT DESCRIPTION

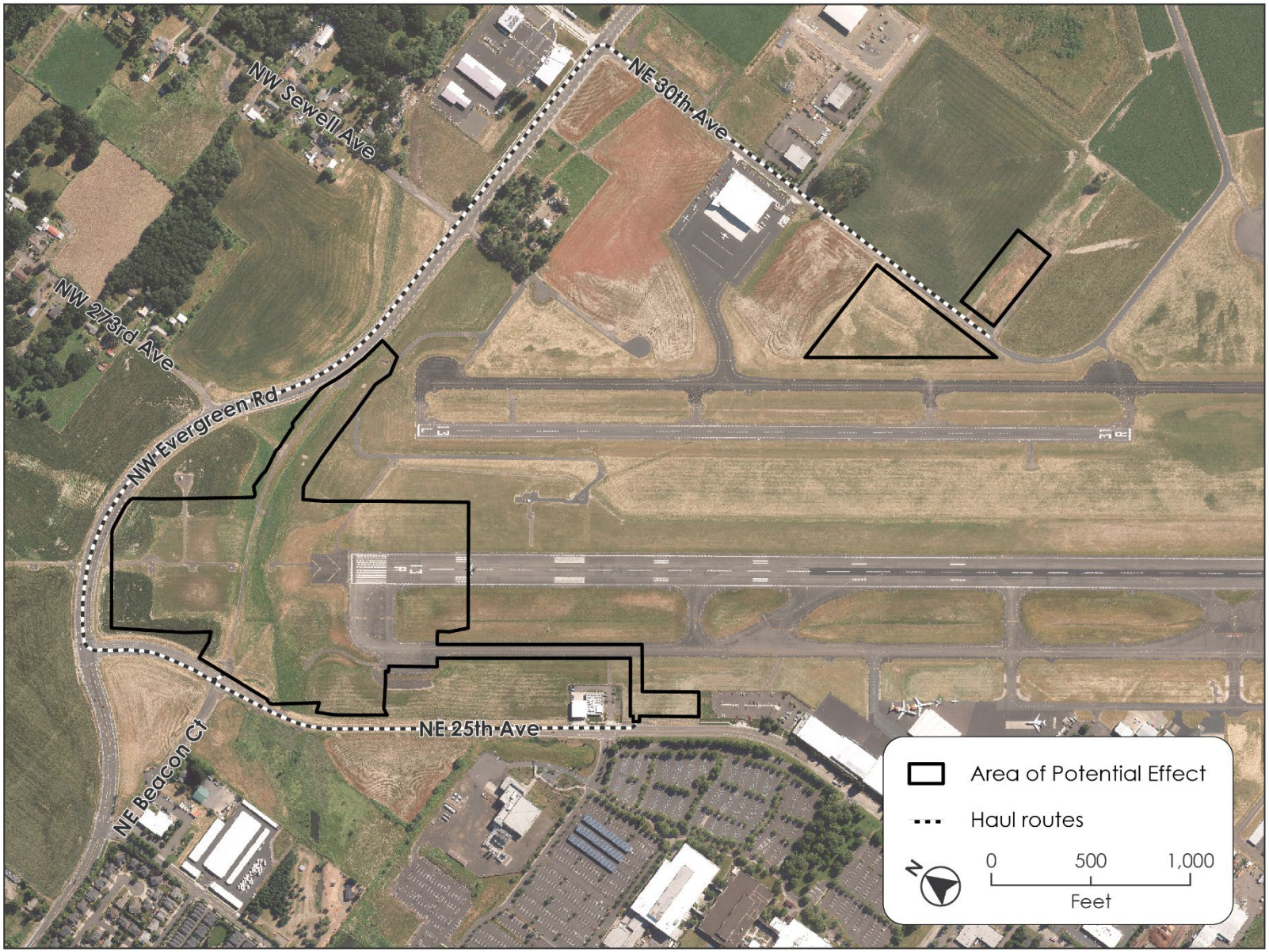
The Port of Portland (Port) is preparing an Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) for proposed improvements to the northern end of Runway 13R-31L and the associated runway safety area (RSA) at Hillsboro Airport (HIO). An EA is required under NEPA because there are federal actions needed to implement the project – specifically the use of FAA Airport Improvement Program (AIP) funding, approval of a change to the Airport Layout Plan (ALP) and the upgrade of navigations aids (NAVAIDs) associated with the runway. The purpose of the proposed improvements is to meet current FAA airfield design standards for Runway 13R and its' RSA. The northern portion of Runway 13R 31L and the portion of the RSA northwest of the end of Runway 13R do not fully comply with FAA design standards for longitudinal gradients. In some areas, the grades exceed those permitted by the FAA standards or there are changes in the grade that are greater than permitted by the current FAA standards. In the Runway 13R RSA, which is not paved, the RSA is bisected by a tributary, Glencoe Swale, and wetlands that impound water most of the year. These areas include depressions that deviate from the gradient and drainage standards.

The project will receive funding from the FAA and will result in a change to the ALP and would therefore be considered a federal undertaking. Thus, the project must be performed in compliance with Section 106 of the National Historic Preservation Act (NHPA), which requires Federal agencies to take into account the effects of funded or approved undertakings that have the potential to affect historic properties such as any district, site, building, structure, or object that is listed in, or eligible for listing in, the National Register of Historic Places. The project is also subject to the rules and regulations that govern the treatment of archaeological sites in the state of Oregon. These laws and regulations require analysts to consider how a project might affect cultural resources and to take steps to avoid or reduce potential damage to them. A cultural resource can be considered as any property valued (e.g., monetarily, aesthetically, religiously) by a group of people. Valued properties can be historical in character or date to the prehistoric past (i.e., the time prior to written records).

2. AREA OF POTENTIAL EFFECT (APE)

The area of potential effect (APE) is the area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of cultural resources, if any such resources exist. For the purposes of this project the APE is considered the horizontal and vertical extent of anticipated ground disturbance associated with the proposed improvements (Figure 1). The proposed improvements to the RSA would occur on the HIO property in Hillsboro, Oregon (Township 1 N, Range 2 W, SE ¼ of Section 20, the east ½ of section 29, and west ½ of section 28). It is anticipated that the Project would result in minimal and temporary construction-related effects (e.g., dust, noise, and light) to areas that fall outside of the immediate vicinity of the proposed improvements. As a result, effects on cultural resources outside of the project's construction footprint are not anticipated, and no above ground historic properties resources would be affected. Therefore, the horizontal extent of the APE would consist of four discrete areas with a 100-foot (30.5 meter) buffer from the proposed improvement-related ground disturbing activities and encompass the location of staging and materials stockpiling areas. The vertical extent of the APE is defined as the depth of proposed improvement-related ground disturbing activities, which would vary across the APE. The greatest extent of ground disturbance is anticipated in the western portion of the HIO property where culvert installation, re-grading of the RSA, and reconstructing the taxiway are to occur. The additional three dispersed APE segments are areas for materials storage and soils stockpiling; minimal vertical ground disturbance is expected in these areas.

Figure 1. Area of Potential Effect (APE)



3. METHODOLOGY

In order to assess impacts that the proposed improvements would have on any cultural resources present in the APE two methods will be implemented: (1) a records review, and (2) field investigations that include pedestrian and subsurface survey. As the project would primarily occur on an undeveloped portion of the HIO property it is assumed that no above-ground historic resources would be affected; thus, the cultural resources investigation and methodology presented here is primarily focused on the identification of precontact archaeological resources.

3.1. Records Review

A records review will be implemented to gather information related to known or anticipated cultural resources in the APE and vicinity. Records on file at the Oregon State Historic Preservation Office (SHPO) and pertinent literature on the archaeology, ethnography, and history of the APE and vicinity will be consulted to identify previously recorded cultural resources and assess the potential for encountering undocumented cultural resources within the APE. In addition, the results of the records review and previous cultural resources studies within the vicinity of the project will be used to focus research on the development history of the APE. This review will establish a historic context for the HIO property, which will aid in the identification and evaluation of resources that might be encountered during the cultural resources survey. Previous cultural resources studies, historic buildings and structures inventories, ethnographies, local histories, historic maps, and other primary and secondary research sources will be consulted.

3.2. Field Investigations

To verify whether as-yet undocumented cultural resources are located within the APE, archaeological investigations will be performed in the APE. The archaeological investigations will be conducted in accordance with the SHPO guidelines for conducting field archaeology in Oregon. Since no previous archaeological sites have been recorded within the APE or immediate vicinity, and it is not anticipated that any undocumented archaeological sites or cultural resources will be encountered in the APE a SHPO permit is not required. Should any undocumented archaeological sites or cultural resources will be encountered in the APE archeological investigations in the vicinity will stop and in consultation with SHPO, Tribal Historic Preservation Offices (THPOs), and FAA, required state and or federal permits will be obtained to investigate and delineate the boundary of the archaeological site. An Archaeological Resources Protection Act (ARPA) permit will be obtained prior to starting the archaeological investigations if required by FAA. A pedestrian survey of the APE will be conducted to identify archaeological deposits exposed on the ground surface. The pedestrian survey will also be used to inspect the local topography to identify and document areas that have been subject to modern anthropogenic landscape alterations.

The records review, previous cultural resources studies, historic aerial photographs, and geologic data will be used to develop a field investigation strategy. The purpose of this strategy will be to focus subsurface investigations in areas of the APE where the potential for encountering buried cultural resources is undefined and project-related ground disturbance is anticipated. In these locations, strategically placed (i.e., along stream margins) shovel probes will be excavated to determine the nature of subsurface deposits, and to assess the potential for buried intact archaeological sites in locations where the potential for encountering buried cultural resources is undefined based on the review described above. Investigations will be accomplished by excavating up to 60 shovel probes (hand dug holes, no more than 50 centimeters wide at the surface) to assess APE-wide depositional context. Shovel probes will be excavated to a depth of approximately 100 centimeters or to Pleistocene aged or older sediments, or to

dense gravel deposits of obstructing rocks, whichever is encountered first. If there appears to be potential for deeper deposits, a hand auger will be used to probe to a maximum depth of 2 meters below the ground surface. Sediments from shovel probes and auguring will be screened through ¼ inch mesh unless clearly identified as recent fill. Archaeologists will record the contents, stratigraphy, and location of each shovel probe, and photograph representative probes. All shovel probes will be backfilled upon completion.

3.3. Technical Report

A Cultural Resources Technical Report that documents the methods, findings, and impacts as they relate to cultural resources in the APE will be prepared. The report will also include information relating to the affected environment and environmental consequences under NEPA, including discussion of direct, indirect, temporary construction, and cumulative impacts to archaeological, above ground architectural resources, and historical context of the APE vicinity and the potential impacts that project may have on these cultural resources. If needed, measures to avoid, minimize, or mitigate adverse effects will be identified. Additionally, the report will include a suggested inadvertent discovery plan that outlines the procedures to follow in the event of an unanticipated discovery of human skeletal remains or cultural resources during the construction. The report will meet state and federal standards for reporting as outlined in the guidelines provided by the National Park Service and the Oregon SHPO and will serve to fulfill the project's Section 106 reporting obligations. The final technical report and related geographic information system (GIS) shapefiles including the APE boundary, and the location of any resources identified during the survey will be submitted to the Oregon SHPO.

4. TRIBAL CONSULTATION

Under Section 106, the lead federal agency must provide an opportunity for the SHPO, affected tribes, and other stakeholders to comment on the undertaking. Consultation will include notifying and requesting the Oregon SHPO, affected tribes (identified below), and other stakeholders (local governments, historical societies, and/or other interested parties) to comment. Consultation letters will include a detailed project description and figures that clearly identify the project location, the APE, and the proposed improvements to the RSA. All consultation with affected tribes would be performed by the FAA, as the lead federal agency for the project.

4.1. Tribes to be Consulted

Tribes to be consulted for this project include:

- Confederated Tribes of the Grand Ronde Community of Oregon
- Confederated Tribes of Siletz Indians
- Confederated Tribes of the Warm Springs Reservation of Oregon
- Cowlitz Indian Tribe

Environmental Assessment for the Proposed HIO 13R-31L RSA Improvements

Final EA

Hillsboro Airport (HIO), Hillsboro, Oregon
August 2021