## AURORA STATE AIRPORT OBSTRUCTION REMOVAL AND RUN-UP APRON IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

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## DRAFT ENVIRONMENTAL ASSESSMENT FOR AURORA STATE AIRPORT AURORA, OREGON

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the responsible FAA official.

**Responsible FAA Official** 

Date

## TABLE OF CONTENTS

## Chapter 1 - Purpose and Need for Proposed Action

1.1	Introduction1
1.2	Background1
1.3	Existing Conditions
1.4	Non-standard Conditions & Deficiencies8
1.5	Description of the Proposed Action8
1.6	Purpose and Need for the Proposed Action11
Chap	oter 2 - Alternatives
2.1	Alternative 1 – No Action1
2.2	Alternative 2 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property2
2.3	Alternative 3 – Remove Obstructions and Construct Runway 17 Run-up Apron near Mid-field on Existing ODA Property5
2.4	Alternative 4 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property
2.5	Alternative 5 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property9
2.6	Alternative 6 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property9
2.7	Preferred Alternative13
2.8	Discretionary Actions and Permits13
Chap	ter 3 – Affected Environment and Environmental Consequences
3.1	Air Quality1
3.2	Biological Resources2
3.3	Climate/Greenhouse Gas Emissions8
3.4	Coastal Resources9
3.5	Department of Transportation Act, Section 4(f)9
3.6	Farmlands10
3.7	Hazardous Materials, Solid Waste, and Pollution Prevention
3.8	Historical and Archaeological Resources11
3.9	Compatible Land Use
3.10	Natural Resources and Energy Supply13

3.11	Noise and Noise-Compatible Land Use	.14
3.12	Socioeconomics, Environmental Justice, and Children's Environmental Health Safety Risk	and 15
3.13	Visual Effects	20
3.14	Water Resources	20
3.15	Cumulative Impacts	.24
Chapt	er 4 – Public Review Process	

Chapter 5 – Contributors and Agencies Consulted

## APPENDICES

APPENDIX A: AIR QUALITY AND CLIMATE MEMO APPENDIX B: BIOLOGICAL RESOURCES APPENDIX C: CULTURAL RESOURCES APPENDIX D: COMPATIBLE LAND USE DOCUMENTATION APPENDIX E: WATER RESOURCES APPENDIX F: FEMA FLOODPLAIN MAPPING APPENDIX G: PUBLIC REVIEW DOCUMENTATION



## **Chapter 1 - Purpose and Need for Proposed Action**

## 1.1 Introduction

This Environmental Assessment (EA) is prepared in accordance with *Federal Aviation Administration* (*FAA*) Order 1050.1F, Environmental Impacts: Policies and Procedures, and FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions. The documents prescribe policies and procedures for the FAA for Implementing the NEPA of 1969, as amended, and the regulations of the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) Parts 1500-1508. The EA is an informational document intended for use by decision makers and the public. As such, it represents a disclosure of relevant environmental information regarding the proposed action.

## 1.2 Background

The Oregon Department of Aviation (ODA) owns and operates the Aurora State Airport (Airport). The Airport is located east of Interstate 5 and west of Aurora's city limits, in Marion County, Oregon. The north end of the Airport abuts property located within Clackamas County. The Airport is located 23 miles north of the McNary Field Airport in Salem, about mid-way between Portland and Salem. The Airport was established in 1943 and was managed by the United States Bureau of Public Roads until 1953. The State of Oregon has operated the Airport since 1953, although ownership of the land was not transferred from the Highways Division to the Aeronautics Division (ODA's predecessor) until 1973. A vicinity map is provided in **Figure 1-1**.

The airport is located on approximately 144 acres of land in the heart of the Willamette Valley in Marion County. The majority of the County is rural and has abundant agricultural lands, making it the largest producer of agricultural products in the state of Oregon. The Airport has an elevation of 199.8 feet above mean sea level (MSL). Aurora State Airport has 327 based aircraft and has an estimated 94,935 total annual operations, as reported on the FAA 5010-1, Airport Master Record (effective 3/01/2018 with operations for 12 months ending 09/29/2015).

Aurora State Airport is identified as a public use General Aviation Airport in the National Plan of Integrated Airport System (NPIAS) defined by the Federal Aviation Administration (FAA) and a Category II – Urban General Aviation Airport in the Oregon Aviation System Plan (OASP).







## **1.3 Existing Conditions**

#### Airport Overview

The Airport is categorized as FAA Airport Reference Code (ARC) C-II with non-precision instrument approach capabilities. Table 1-1 provides a summary of the runway dimensional standards at the Airport, which can be found in the FAA Advisory Circular 150/5300-13A, Airport Design.

	Runway 17-35
Aircraft Approach Category (AAC)	С
Airplane Design Group (ADG)	II
Runway Width	100 feet
Runway Safety Area Width	500 feet
Runway Object Free Area Width	800 feet
Holding Position	250 feet
Parallel Taxiway/Taxilane Centerline Separation	300 feet
Aircraft Parking Area	400 feet (min.)

## Table 1-1 FAA Runway Dimensional Standards

## **Runways**

The Airport has a single runway (Runway 17-35), which is 5,004 feet long and 100 feet wide. The runway is of asphalt construction with a published weight capacity of is 45,000 pounds for aircraft equipped with dual wheel landing gear configuration. Runway 17-35 is equipped medium intensity runway edge lights (MIRL) with precision approach markings currently in place. The 2015 pavement condition index (PCI) inspection reported Runway 17-35 had a PCI range of 75 - 80, which is considered "satisfactory." The PCI expresses the condition of the pavement using a range of 0 to 100, where 100 is the best possible (new). Pavement condition/failure is an important consideration for safe operations on the airport. Pavement failure occurs when a pavement surface is no longer holding its original shape and has been stressed to the point where it presents signs of pavement failure. Pavement failure issues include cracking, potholes, depressions, rutting, shoving, upheavals, and raveling. The structural integrity will be compromised and the composition of the pavement will no longer hold together. The failures, although not catastrophic, nor requiring the pavement to be deemed out of service, can pose a possible threat to aircraft. These threats include handling problems, debris striking the aircraft or personnel, and possible propeller impacts on the ground surface from travelling over deep ruts, depressions, or potholes.





## <u>Taxiways</u>

Runway 17-35 is served by a full length parallel taxiway (Taxiway A) on its east side with five connector taxiways (A1, A2, A3, A4, A5). Taxiway A is 35 feet wide and has a separation distance between taxiway centerline and runway centerline of 300 feet and complies standards for C-II instrument runways with visibility minimums not lower than  $\frac{3}{4}$  mile. From Taxiway A, ten taxilanes lead to aircraft parking, hangars, and airport businesses. Medium Intensity Taxiway edge Lighting (MITL) is located along Taxiway A and the five runway connector taxiways while the apron and hangar taxilanes are lined with edge reflectors. The 2015 PCI inspection reported Taxiway A with a rating of 89 - 92, which is considered "good." For the five runway connector taxiways, the PCI varied from 59 – 92 indicating "fair to good" pavement. Table 1-2 provides a summary of the taxiway/taxilane dimensional standards for the Airport, which can be found in the FAA Advisory Circular 150/5300-13A, Airport Design.

Airplane Design Group (ADG)	П
Taxiway Safety Area Width	79 feet
Taxiway Object Free Area (OFA)	131 feet
Taxilane OFA	115 feet
Taxiway Separation	
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	105 feet
Taxiway Centerline to Fixed or Moveable Object	65.5 feet
Taxilane Centerline to Parallel Taxilane Centerline	97 feet
Taxilane Centerline to Fixed or Moveable Object	57.5 feet
Taxiway Design Group (TDG)	2
Taxiway Width	35 feet

## Table 1-2 FAA Taxiway/Taxilane Dimensional Standards

## <u>Airport Apron Areas</u>

The Airport has apron areas on both ODA owned and privately owned property, which has through-thefence agreements to access the Airport, that support a variety of uses including aircraft parking, fueling, and FBO operations. Within the ODA owned property there are 46 designated tiedown positions on an apron east of the runway about midfield between connector taxiways A2 and A3. Within the privately owned property there are 37 designated tiedown positions with additional apron areas for large aircraft parking. These apron areas are located east of the runway in the vicinity of connector taxiway A4, and include a self-service fuel island. There are also two helipads located on the private property portion of the Airport and a commercial helicopter operation area for Columbia Helicopters at the northeast end of the Airport.

Figure 1-2 depicts the existing airfield conditions at the Aurora State Airport.





FIGURE 1-2

## **AURORA STATE AIRPORT**



## Part 77 Surfaces

Federal Air Regulation (FAR) Part 77.25, Objects Affecting Navigable Airspace, defines airport imaginary surfaces, which are established to protect the airspace immediately surrounding airports, associated runways, and designated helicopter landing areas. The airspace and ground areas surrounding a runway should be free of obstructions (i.e., structures, parked aircraft, trees, etc.) to the greatest extent possible to provide a safe operating environment for aircraft. A portion of the Part 77 surfaces includes a primary surface, a transitional surface, and approach surfaces. These three components are described in further detail below. A summary of FAR Part 77 airspace surfaces relevant to this project surrounding the Aurora State Airport is shown in Table 1-3.

## Primary Surface

The primary surface is a rectangular, flat plane of airspace longitudinally centered on the runway, with the same elevation as the nearest point on the runway centerline. The primary surface extends 200 feet beyond each runway end, where it connects to the inner portion of the runway approach surfaces. The primary surface should be free of any penetrations, except items with locations fixed by function, in which case they shall be mounted on frangible couplings. The primary surface of Runway 17-35 currently meets the requirements of FAR Part 77.25

## Transitional Surface

The transitional surface is located at the outer edge of the primary surface and is represented by a plane rising perpendicularly at a slope of 7 to 1 to an elevation 150 feet above the airport elevation. The transitional surface connects to the sides of the runway approach surfaces at common elevations. For Runway 17-35, the transitional surface begins 250 feet from the runway centerline, in both directions. The transitional surface of Runway 17-35 currently meets the requirements of FAR Part 77.25

## Approach Surface

The approach surface extends longitudinally along the extended runway centerline, beginning at the end of the primary surface. The existing approach surfaces of both Runway 17 and Runway 35 are instrument approach runways with visibility minimums greater than <sup>3</sup>/<sub>4</sub> miles. The approach surface rises at a slope of 34 to 1 and is 500 feet wide where it begins at the end of the primary surface and flares out to a width of 3,500 feet at a distance of 10,000 feet from the end of the primary surface. As identified in the 2016 AGIS survey the approach surfaces of Runway 17-35 are obstructed by trees that are proposed for removal.





Airspace Item	Runway 17-35 Greater Than ¾ Mile Visibility	Obstruction
Width/Longth of Drimony	500 feet*/200 feet beyond both ends of runway	
Surface	* Width based on approach visibility minimums of Greater than $\frac{3}{4}$	No
Sunace	Miles.	
Transitional Surface	7:1 Slope to 150 feet above runway	No
Approach Surface Length	Existing - 10,000 feet (Rwy 35 & Rwy 17 – Greater than ¾ Mile)	Yes, trees
Approach Surface Slope	Existing - 34:1 (Rwy 35 & Rwy 17 – Greater than ¾ Mile)	Yes, trees
Approach Surface Width at	Eviating 2 500 fact (Buny 25 & Buny 17 Creator than 3/ Mile)	Van traan
End	Existing – 5,500 reet (rwy 55 $\alpha$ rwy 17 – Greater than $\frac{3}{4}$ Mile)	res, liees

## Table 1-3. FAR PART 77 Airspace Surfaces

## **United States Standard for Terminal Instrument Procedures (TERPS)**

FAA Order 8260.3D – United States Standard for Terminal Instrument Procedures (TERPS) sets standardized methods for designing, reviewing, evaluating, and approving instrument flight procedures. TERPS criteria specify the obstacle clearance surfaces required to provide a satisfactory level of vertical protection from obstructions and aircraft when operating under normal operations.

For the Airport the 40:1 Departure Surface, which is the TERPS surface requiring analysis as part of this study, rises at a slope of 40 to 1 and is 1,000 feet wide where it begins at the end of the runway and flares to a width of 7,512.36 feet at a distance of 12,152.23 feet from the end of the runway. As identified in the 2016 AGIS survey the departure surfaces of Runway 17-35 are obstructed by trees that are proposed for removal.

## Visual Glide Slope Indicators – PAPI, VASI, and Obstruction Clearance Surfaces (OCS)

Advisory Circular 150/5340-30J - Design and Installation Details for Airport Visual Aids and FAA Engineering Brief NO. 95 Additional Siting and Survey Considerations for Precision Approach Path Indictor (PAPI) and Other Visual Glide Slope Indicators (VGSI) provide relevant guidance with respect to PAPI and Visual Approach Slope Indicators (VASI) installation and obstruction clearance requirements.

The Airport currently has a VASI system on both runway ends but it is anticipated that the VASIs will be phased out and replaced with the more modern PAPI system at a later date. The PAPI and VASI are similar systems in their function, but different alignment and siting requirements result in slightly different obstruction clearance surfaces (OCS) as depicted in Figure 1-3.

**Figure 1-3A and 1-3B** depict the relationship between FAR Part 77 Airspace surfaces, TERPS surfaces, and PAPI/VASI OCS to be analyzed for obstruction clearing on both Runway 17 and Runway 35.





## **1.4 Non-standard Conditions & Deficiencies**

Several non-standard conditions and/or airfield facility deficiencies were identified in the 2013 Master Plan in addition to more recent studies and evaluations that have taken place at the Aurora State Airport. These reports include the following and revealed these non-standard conditions and deficiencies:

- An AGIS survey was performed in 2016 and using the resultant data, an obstruction analysis identified airspace penetrations in the PART 77 Runway 17-35 approach and transitional surfaces and TERPS departure surfaces. In addition, FAA inspectors doing a routine inspection identified obstructions penetrating the Runway 35 VASI obstacle clearance surface. The VASI approach angle, which was increased due to the obstructions, is no longer coincident to the instrument approach procedure glide slope angle as it should be, therefore, instrument approach procedure visibility minimums to aid with landing during low visibility meteorological conditions have been increased to account for a safer transition from instrument approach to visual approach procedures. Visibility minimums is the altitude, at which, if the runway cannot be seen, the pilot has to abort landing at that airport.
- The 2013 Master Plan identified the need for a run-up area to be constructed near the northern end of the parallel taxiway to enhance capacity and traffic flow for aircraft departing from Runway 17. Run-up areas by design allow pilots preparing for departure to conduct preflight checks of the aircraft off of the taxiway system so as not to obstruct other ground traffic that may be ready for departure or need to bypass other aircraft that may not be ready for departure while conducting ground operations.

## **1.5 Description of the Proposed Action**

ODA is proposing to perform two airport improvements, both of which are included in the Airport's five year capital improvement program and address deficiencies described in Section 1.4. The proposed improvements are:

• *Remove the obstructions penetrating the Runway 17-35 approach and transitional surfaces, TERPs departure surface, and VASI/PAPI OCS* – These obstructions are anticipated to be trees, and will include obstruction removals identified from the evaluation of both the indirect and direct Environmental Assessment Study Areas.

Obstruction removal is planned to begin in 2021.

• *Construct a north run-up area* – The proposed run-up area will be constructed along the east side of Taxiway A leading into exit Taxiway A1 near Runway 17 end. Below is a listing of the elements of this project:





- New pavement area New pavement will be constructed along the east side of existing Taxiway A near the Runway 17 end.
- New Lighting and Signage The proposed run-up area will require new edge lighting and signage that will tie into the existing Taxiway A edge lighting and current signage configuration.
- Storm Water Facilities The proposed run-up area may require the construction of new storm water facilities beyond the existing storm water conveyance features to manage runoff from the new impervious surface created during the construction of the run-up area. Storm water facility requirements and location will be determined during the preliminary design phase.

The proposed run-up area is planned to be constructed in 2023.

The study areas for the proposed projects are described as follows:

- Indirect EA Study Area An area that encompasses the entire Airport property and the off-site properties to the north and south of the Airport that lie within extents of the TERPS 40:1 Departure Surface. The evaluation for this area will encompass obstruction removals associated with penetrations to Part 77 airspace, TERPS surfaces, and obstructions penetrating the existing VASI OCS and future PAPI OCS.
- **Direct EA Study Area** An area which encompasses the entire construction footprint for airside improvements associated with the Runway 17 run-up area.

Figure 1-4 depicts the proposed direct and indirect study areas.





NOTES

- 1. VASI CLEARANCE SURFACE: 2 LINES EXTENDING OUT 4 NAUTICAL MILES AT AN ANGLE OF 1 DEGREE (2.5-1.0=1.5 DEGREES) BELOW THE AIMING ANGLE OF THE VASI UNIT WHERE THE CLEARANCE PLANE BEGINS, AND EACH LINE DIVERGING FROM CENTERLINE BY 10 DEGREES.
- 2. PAPI CLEARANCE SURFACE: THE CLEARANCE SURFACE BEGINS 300 FEET IN FRONT OF THE PAPI SYSTEM AND IS 2 LINES EXTENDING OUT 4 STATUTE MILES AND EACH LINE **DIVERGING FROM CENTERLINE BY 10** DEGREES. THE CLEARANCE SURFACE IS PROJECTED INTO THE APPROACH ZONE ONE DEGREE LESS THAN THE AIMING ANGLE OF THE THIRD LIGHT UNIT FROM THE RUNWAY FOR AN L-880 SYSTEM.
- 3. 34:1 APPROACH: SURFACE BEGINS 200' AWAY FROM THE THRESHOLD, ON THE APPROACH SIDE, AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WITH THE SIDE CLOSEST TO THE THRESHOLD **BEING 500 FEET WIDE AND AN OUTER** WIDTH OF 3,500 FEET, SEPARATED BY 10,000 FEET. THE SURFACE IS ANGLED AT A 34:1 SLOPE.
- 4. TERPS DEPARTURE SURFACE: SURFACE BEGINS AT THE THRESHOLD AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WIT H THE SIDE AT THE THRESHOLD BEING 1,000 FEET WIDE AND AN OUTER WIDTH OF 7,512.36 FEET, SEPARATED BY 12,152.23 FEET. THE SURFACE IS ANGLED AT A 40:1 SLOPE.





NOTES

- 1. VASI CLEARANCE SURFACE: 2 LINES EXTENDING OUT 4 NAUTICAL MILES AT AN ANGLE OF 1 DEGREE (2.5-1.0=1.5 DEGREES) BELOW THE AIMING ANGLE OF THE VASI UNIT WHERE THE CLEARANCE PLANE BEGINS, AND EACH LINE DIVERGING FROM CENTERLINE BY 10 DEGREES.
- 2. PAPI CLEARANCE SURFACE: THE CLEARANCE SURFACE BEGINS 300 FEET IN FRONT OF THE PAPI SYSTEM AND IS 2 LINES EXTENDING OUT 4 STATUTE MILES AND EACH LINE **DIVERGING FROM CENTERLINE BY 10** DEGREES. THE CLEARANCE SURFACE IS PROJECTED INTO THE APPROACH ZONE ONE DEGREE LESS THAN THE AIMING ANGLE OF THE THIRD LIGHT UNIT FROM THE RUNWAY FOR AN L-880 SYSTEM.
- 3. 34:1 APPROACH: SURFACE BEGINS 200' AWAY FROM THE THRESHOLD, ON THE APPROACH SIDE, AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WITH THE SIDE CLOSEST TO THE THRESHOLD **BEING 500 FEET WIDE AND AN OUTER** WIDTH OF 3,500 FEET, SEPARATED BY 10,000 FEET. THE SURFACE IS ANGLED AT A 34:1 SLOPE.
- TERPS DEPARTURE SURFACE: 4. SURFACE BEGINS AT THE THRESHOLD AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WIT H THE SIDE AT THE THRESHOLD BEING 1,000 FEET WIDE AND AN OUTER WIDTH OF 7,512.36 FEET, SEPARATED BY 12,152.23 FEET. THE SURFACE IS ANGLED AT A 40:1 SLOPE.





ENVIRONMENTAL ASSESSMENT FIGURE 1-4 AURORA STATE AIRPORT STUDY AREAS





## 1.6 Purpose and Need for the Proposed Action

The most recent formal evaluation of facility needs at the Airport was conducted as part of the 2013 Airport Master Plan update. The resultant Airport Layout Plan identifies a new run-up area toward the north end of Taxiway A.

The most recent formal obstruction evaluation at the Airport occurred in 2016 with an AGIS survey. This survey and subsequent analysis identified there were existing obstructions penetrating multiple airspace surfaces at the Airport. Furthermore, an FAA certification inspection that occurred since the AGIS survey, has also identified obstructions in the Runway 35 VASI obstacle clearance surface.

## **Obstruction Removal Project**

#### The Purpose of the obstruction removal project is:

To remove existing obstructions that currently penetrate critical airspace at the Airport. Obstruction removals are a top priority for the FAA as the airspace penetrations create line-of-sight and safety issues for approaching aircraft.

#### The Need for the Proposed Action is:

It is the responsibility of the Airport, as identified in the FAA August 18, 2015 Memorandum regarding obstructions, for ensuring clear runway approach and departure surfaces. The Airport must actively identify and remove such obstructions due to grant obligations and assurances administered under the Airport Improvement Program (AIP). Additionally, obstructions must be clear of the VASI/PAPI and other Visual Glide Slope Indicators obstacle clearance surface, which includes the VASI systems that are currently in use at the Airport. Mitigating obstruction clearance within the VASI OCS will allow the VASI's to be re-aimed to a 3.0 degree angle, which corresponds with the published approach procedure. In anticipation of the VASI system being replaced by a more modern PAPI system, this project includes the analysis of the future PAPI obstruction clearance surfaces.

#### North Run-up Area

#### The Purpose of the new run-up area is:

To enhance capacity and improve aircraft ground traffic flow and safety by providing a designated area for aircraft preparing for departure that may otherwise obstruct traffic operating on the existing runway/taxiway system.

#### The Need for the Proposed Action is:

Without the availability of a run-up area for Runway 17, aircraft performing run-up pre-flight checks must sit on Taxiway A effectively blocking aircraft from exiting Runway 17 onto Taxiway





A and requiring a potential back taxi operation. This is considered a safety hazard. Construction of the new proposed 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. Some of these areas include 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 issue.





## Chapter 2 – Alternatives

This chapter provides an overview of each alternative that was considered to address the Purpose and Need of the airport improvements. Six (6) alternatives were considered as part of the Environmental Assessment.

The six (6) alternatives are:

- Alternative 1 No action (maintains existing conditions)
- Alternative 2 Remove obstructions and construct Runway 17 run-up apron on existing privately owned property between Taxilane A1 and Taxilane A 2(will require land acquisition).
- Alternative 3 Remove obstructions and construct Runway 17 run-up apron near mid-field on existing ODA property between Taxilane A3 and Taxilane A7.
- Alternative 4 Remove obstructions and construct Runway 17 run-up apron on existing privately owned property between Taxilane A2 and Taxilane A3 (will require land acquisition).
- Alternative 5 Remove obstructions and construct Runway 17 run-up apron on existing privately owned property to the north of Taxilane A1 (will require land acquisition).
- Alternative 6 Remove obstructions and construct Runway 17 run-up apron on existing privately owned property and would span from Taxilane A2 and northward past Taxiway A1 (will require land acquisition).

A description of each alternative is provided within this chapter and a description of the necessary improvements required to develop each alternative.

## 2.1 Alternative 1 – No Action

The no action alternative maintains the existing facilities and capabilities, without investing in facility improvements to increase safety for approaching and departing aircraft or provide enhanced capacity and traffic flow for aircraft taxiing to and from Runway 17. The existing airfield conditions would remain unchanged from the present conditions and the Airport would essentially be operated in a "minimum maintenance-only" mode. Aircraft departing Runway 17 would continue to conduct run-op operations on their respective ramps.

The primary result of this no-action alternative would be the continued use of aircraft parking ramps for run-up operations and the sustained existence of Part 77, TERPS, and VASI/PAPI OCS surface obstructions. Additionally, the existing VASI OCS obstructions have already resulted in higher than published ceiling and visibility minimums for instrument approach procedures and very likely the imminent shut down of the VASIs. In the event that the VASIs are placed in an inoperable status, it is likely approach minimums would be raised further, which could result in future aviation activity becoming constrained by the safety and operational limits of the existing facilities and obstructions.

## Alternative 1 is depicted in Figure 2-1 (Existing Conditions)





## **2.2** Alternative 2 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property.

The elements of Alternative 2 include:

- Remove obstacles identified in 2016 AGIS that may be an obstruction to one or more of the following surfaces:
  - 34:1 Approach Surface Obstructions
  - TERPS 40:1 Departure Surface Obstructions
  - Existing VASI OCS Obstructions
  - Future PAPI OCS Obstructions
- Construct new north end run-up area located between Taxilane A1 and A2, which includes the following items:
  - Acquire privately owned land (0.68 acres) from
  - Construct 0.32 acres of new pavement for apron construction
  - Closure of the internal taxilane between Taxilane A1 and A2
  - Construct new lighting and signage
  - Construct new storm water facilities for water quality treatment

The primary results of this alternative would be the mitigation of obstructions within the Part 77, TERPS, and VASI/PAPI OCS surfaces would improve safety for aircraft during the approach and departure phase of flight, reduce approach minimums back to the lower published minimums, and also ensure the Sponsor is in compliance with grant assurances and FAR Part 77 requirements.

The construction of a Runway 17 run-up area, between Taxilanes A1 and A2, would be constructed on currently privately owned land as well as Airport property. Property acquisition will need to be negotiated between ODA and the 2 private land owners. The internal taxilane between Taxilane A1 and A2 will fall within the new Object Free Area of the apron and must be closed. With the construction of additional pavement, storm water treatment facilities to address water quality will need to be constructed. The construction of this alternative will not address the direct taxiway access of Taxilane A1 to the Runway 17 north end. The FAA will require this direct access of the Taxilane be addressed by relocating and adjusting the path aircraft along Taxiway A1.

A run-up apron for the Runway 17 end is depicted on the current, approved Airport Layout Plan (ALP), but not in this exact location. An update to the ALP will be required if this alternative is constructed.

## The run-up apron Alternative 2 is depicted in Figure 2-2





FIGURE 2-1

## **AURORA STATE AIRPORT**





## 2.3 Alternative 3 – Remove Obstructions and Construct Runway 17 Run-up Apron near Midfield on Existing ODA Property.

The elements of Alternative 3 include:

- Remove obstacles identified in 2016 AGIS that may be an obstruction to one or more of the following surfaces:
  - o 34:1 Approach Surface Obstructions
  - TERPS 40:1 Departure Surface Obstructions
  - Existing VASI OCS Obstructions
  - Future PAPI OCS Obstructions
- Construct new mid-field run-up area between Taxilane A4 and A7, which includes the following items:
  - Remove privately owned fuel tanks (tanks will be relocated at owners expense before construction of run-up apron project)
  - Realign taxilane routes out of adjacent hangar area
  - Close existing interior taxilane to aircraft traffic
  - Construct 1.0 acres of new pavement
  - Construct new lighting and signage
  - Construct new storm water facilities

The primary results of this alternative would be the mitigation of obstructions within the Part 77, TERPS, and VASI/PAPI OCS surfaces would improve safety for aircraft during the approach and departure phase of flight, reduce approach minimums back to the lower published minimums, and also ensure the Sponsor is in compliance with grant assurances and FAR Part 77 requirements.

The construction of a Runway 17 run-up area near mid-field, between Taxilanes A4 and A7, would be constructed on Airport property. Property acquisition will not need to occur for this alternative. The internal taxilane between Taxilane A3 and A7 will require a closure to aircraft traffic. The taxilane centerline to taxiway centerline separation between the existing internal taxilane must be closed to aircraft traffic, but could remain for vehicle traffic. With the construction of additional pavement, storm water treatment facilities to address water quality will need to be constructed. The location of this alternative is not ideal for the RW 17 end since it is more mid-field located rather than located in close proximity to the RW 17 end.

A run-up apron for the Runway 17 end is depicted on the current, approved Airport Layout Plan (ALP), but not in this exact location. An update to the ALP will be required if this alternative is constructed.

The run-up apron Alternative 3 is depicted in Figure 2-3





## 2.4 Alternative 4 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property.

The elements of Alternative 4 include:

- Remove obstacles identified in 2016 AGIS that may be an obstruction to one or more of the following surfaces:
  - o 34:1 Approach Surface Obstructions
  - TERPS 40:1 Departure Surface Obstructions
  - Existing VASI OCS Obstructions
  - Future PAPI OCS Obstructions
- Construct new north end run-up area between Taxilanes A2 and A3, which includes the following items:
  - Acquire privately owned land (0.78 acres)
  - Close existing interior taxilane to aircraft traffic
  - Construct 0.63 acres of new pavement
  - Construct new lighting and signage
  - Construct new storm water facilities

The primary results of this alternative would be the mitigation of obstructions within the Part 77, TERPS, and VASI/PAPI OCS surfaces would improve safety for aircraft during the approach and departure phase of flight, reduce approach minimums back to the lower published minimums, and also ensure the Sponsor is in compliance with grant assurances and FAR Part 77 requirements.

The construction of a Runway 17 run-up area, between Taxilanes A2 and A3, would be constructed on currently privately owned land as well as Airport property. Property acquisition will need to be negotiated between ODA and the 2 private land owners. The internal taxilane between Taxilane A2 and A3 will require a closure to aircraft traffic. The taxilane centerline to taxiway centerline separation between the existing internal taxiway and the propose run-up apron taxilane would not meet FAA criteria and therefore, the internal taxilane must be closed to aircraft traffic, but could remain for vehicle traffic. With the construction of additional pavement, storm water treatment facilities to address water quality will need to be constructed.

A run-up apron for the Runway 17 end is depicted on the current, approved Airport Layout Plan (ALP), in this location. An update to the ALP will not be required if this alternative is constructed.

#### The run-up apron Alternative 4 is depicted in Figure 2-4









## **2.5** Alternative 5 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property.

The elements of Alternative 5 include:

- Remove obstacles identified in 2016 AGIS that may be an obstruction to one or more of the following surfaces:
  - o 34:1 Approach Surface Obstructions
  - TERPS 40:1 Departure Surface Obstructions
  - Existing VASI OCS Obstructions
  - Future PAPI OCS Obstructions
- Construct new north end run-up area north of Taxilane A1, which includes the following items:
  - Acquire privately owned land (0.92 acres)
  - Remove existing Taxilane A1 (0.15 acres)
  - Construct 0.45 acres of new pavement
  - Construct new lighting and signage
  - Construct new storm water facilities

The primary results of this alternative would be the mitigation of obstructions within the Part 77, TERPS, and VASI/PAPI OCS surfaces would improve safety for aircraft during the approach and departure phase of flight, reduce approach minimums back to the lower published minimums, and also ensure the Sponsor is in compliance with grant assurances and FAR Part 77 requirements.

The construction of a Runway 17 run-up area, north of Taxilanes A1 would be constructed mostly on current privately owned land. Property acquisition will need to be negotiated between ODA and the one private land owner. The construction of this alternative will address the direct taxiway access of Taxilane A1 to the Runway 17 north end. Taxilane A1 will be removed and the aircraft traffic will be re-routed through the proposed run-up apron. The FAA requires this direct access of the taxilane be addressed by relocating and altering the path of aircraft from the FBO to RW 17. With the construction of additional pavement, storm water treatment facilities, to address water quality, will need to be constructed.

A run-up apron for the Runway 17 end is depicted on the current, approved Airport Layout Plan (ALP), but not in this exact location. An update to the ALP will be required if this alternative is constructed.

## The run-up apron Alternative 5 is depicted in Figure 2-5

## 2.6 Alternative 6 – Remove Obstructions and Construct Runway 17 Run-up Apron on Existing Privately Owned Property.

The elements of Alternative 6 include:

• Remove obstacles identified in 2016 AGIS that may be an obstruction to one or more of the following surfaces:





- 34:1 Approach Surface Obstructions
- TERPS 40:1 Departure Surface Obstructions
- Existing VASI OCS Obstructions
- Future PAPI OCS Obstructions
- Construct new north end run-up area between Taxilane A1 and A2, which includes the following items:
  - Acquire privately owned land (0.92 acres)
  - Remove existing pavement (0.10 acres)
  - Construct 0.41 acres of new pavement
  - Construct new lighting and signage
  - Construct new storm water facilities

The primary results of this alternative would be the mitigation of obstructions within the Part 77, TERPS, and VASI/PAPI OCS surfaces would improve safety for aircraft during the approach and departure phase of flight, reduce approach minimums back to the lower published minimums, and also ensure the Sponsor is in compliance with grant assurances and FAR Part 77 requirements.

The construction of a Runway 17 run-up area, between Taxilanes A1 and A2, would be constructed on currently privately owned land as well as Airport property. Property acquisition will need to be negotiated between ODA and the 2 private land owners. The internal taxilane between Taxilane A1 and A2 will fall within the new Object Free Area of the apron and must be closed. This alternative is similar to Alternative 2, however, with this alternative, Taxilane A1 is relocated to the north and existing pavement is removed to re-route aircraft so there is not direct access from the FBO to RW 17. With the construction of additional pavement, storm water treatment facilities to address water quality will need to be constructed.

A run-up apron for the Runway 17 end is depicted on the current, approved Airport Layout Plan (ALP), but not in this exact location. An update to the ALP will be required if this alternative is constructed.

## The run-up apron Alternative 6 is depicted in Figure 2-6









## 2.3 Preferred Alternative

Alternative 6 was selected as the preferred alternative by ODA and FAA to provide enhanced capacity and traffic flow for aircraft taxiing to/from the Runway 17 end by providing a designated area for aircraft to conduct run-up operations. Alternative 6 also realigns Taxilane A1 per FAA requirements. Additionally, Alternative 6 ensures approach, departure, and vertical guidance equipment surfaces are free from obstructions and appropriately maintained to State and Federal standards.

## The Obstruction removal areas are depicted in Figures 2-7 and 2-7A

## 2.4 Discretionary Actions and Permits

The Preferred Alternative may require the following:

- Negotiate access and remediation for tree removal with surrounding property owners.
- Airport Improvement Program (AIP) funding for the Proposed Action
- National Pollutant Discharge Elimination System general permit #1200-C from the Oregon Department of Environmental Control (ODEQ) for clearing, grading, excavation, and erosion control.



#### NOTES

- 1. VASI CLEARANCE SURFACE: 2 LINES EXTENDING OUT 4 NAUTICAL MILES AT AN ANGLE OF 1 DEGREE (2.5-1.0=1.5 DEGREES) BELOW THE AIMING ANGLE OF THE VASI UNIT WHERE THE CLEARANCE PLANE BEGINS, AND EACH LINE DIVERGING FROM CENTERLINE BY 10 DEGREES.
- PAPI CLEARANCE SURFACE: THE 2. CLEARANCE SURFACE BEGINS 300 FEET IN FRONT OF THE PAPI SYSTEM AND IS 2 LINES EXTENDING OUT 4 STATUTE MILES AND EACH LINE **DIVERGING FROM CENTERLINE BY 10** DEGREES. THE CLEARANCE SURFACE IS PROJECTED INTO THE APPROACH ZONE ONE DEGREE LESS THAN THE AIMING ANGLE OF THE THIRD LIGHT UNIT FROM THE RUNWAY FOR AN L-880 SYSTEM.
- 34:1 APPROACH: SURFACE BEGINS 200 3. AWAY FROM THE THRESHOLD, ON THE APPROACH SIDE, AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WITH THE SIDE CLOSEST TO THE THRESHOLD BEING 500 FEET WIDE AND AN OUTER WIDTH OF 3,500 FEET, SEPARATED BY 10,000 FEET. THE SURFACE IS ANGLED AT A 34:1 SLOPE
- TERPS DEPARTURE SURFACE: 4. SURFACE BEGINS AT THE THRESHOLD AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WIT H THE SIDE AT THE THRESHOLD BEING 1,000 FEET WIDE AND AN OUTER WIDTH OF 7.512.36 FEET, SEPARATED BY 12,152.23 FEET. THE SURFACE IS ANGLED AT A 40:1 SLOPE.
- OBSTRUCTION AREAS MAY CONTAIN 5. MORE OBSTRUCTIONS THAN THE POINTS SHOWN, FURTHER SURVEY WILL BE REQUIRED TO DETERMINE THE EXTENT OF THE REMOVAL IN THESE AREAS.
- OBSTRUCTIONS DATA WAS EXTRACTED 6 FROM 2016 AGIS SURVEY.

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# AURORA STATE AIRPORT ENVIRONMENTAL ASSESSMENT RW 35 OBSTRUCTION ANALYSIS

FIGURE 2-7A

NOTES

- 1. VASI CLEARANCE SURFACE: 2 LINES EXTENDING OUT 4 NAUTICAL MILES AT AN ANGLE OF 1 DEGREE (2.5-1.0=1.5 DEGREES) BELOW THE AIMING ANGLE OF THE VASI UNIT WHERE THE CLEARANCE PLANE BEGINS, AND EACH LINE DIVERGING FROM CENTERLINE BY 10 DEGREES.
- 2. PAPI CLEARANCE SURFACE: THE CLEARANCE SURFACE BEGINS 300 FEET IN FRONT OF THE PAPI SYSTEM AND IS 2 LINES EXTENDING OUT 4 STATUTE MILES AND EACH LINE DIVERGING FROM CENTERLINE BY 10 DEGREES. THE CLEARANCE SURFACE IS PROJECTED INTO THE APPROACH ZONE ONE DEGREE LESS THAN THE AIMING ANGLE OF THE THIRD LIGHT UNIT FROM THE RUNWAY FOR AN L-880 SYSTEM.
- 3. 34:1 APPROACH: SURFACE BEGINS 200' AWAY FROM THE THRESHOLD, ON THE APPROACH SIDE, AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WITH THE SIDE CLOSEST TO THE THRESHOLD BEING 500 FEET WIDE AND AN OUTER WIDTH OF 3,500 FEET, SEPARATED BY 10,000 FEET. THE SURFACE IS ANGLED AT A 34:1 SLOPE.
- 4. TERPS DEPARTURE SURFACE: SURFACE BEGINS AT THE THRESHOLD AT THE SAME ELEVATION AS THE RUNWAY END. THE SURFACE IS A TRAPEZOID WIT H THE SIDE AT THE THRESHOLD BEING 1,000 FEET WIDE AND AN OUTER WIDTH OF 7,512.36 FEET, SEPARATED BY 12,152.23 FEET. THE SURFACE IS ANGLED AT A 40:1 SLOPE.
- 5. OBSTRUCTION AREAS MAY CONTAIN MORE OBSTRUCTIONS THAN THE POINTS SHOWN. FURTHER SURVEY WILL BE REQUIRED TO DETERMINE THE EXTENT OF THE REMOVAL IN THESE AREAS.
- 6. OBSTRUCTIONS DATA WAS EXTRACTED FROM 2016 AGIS SURVEY.



## Chapter 3 – Affected Environment and Environmental Consequences

This chapter analyzes the environmental impacts of the Preferred Alternative and the No Action Alternative. Each of the resource categories were analyzed by the affected environment, environmental consequence, and mitigation measure, if applicable, to determine if the No Action Alternative or Preferred Alternative have any impacts.

## 3.1 Air Quality

Information on Air Quality was provided by Environmental Science Associates (ESA) in their *Aurora State Airport Air Quality and Greenhouse Gas Emissions (Task 4.1)* technical memorandum dated June 13, 2018. The document can be found in **Appendix A**.

## 3.1.1 Affected Environment

The project area for air quality is defined as the air basin that includes the City of Aurora. The Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) regulates air quality in Aurora. The EPA has established the National Ambient Air Quality Standards (NAAQS) for six common air pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), particulate matter, lead (Pb), sulfur dioxide (SO<sub>2</sub>), and nitrogen dioxide (NO<sub>2</sub>), and regulates permissible levels of the pollutants in the air for human health and safety. DEQ has adopted the standards set by EPA.<sup>1</sup>

For each of the six criteria pollutants, NAAQS are defined as a maximum concentration above which adverse effects on human health may occur. When air quality in an area exceeds NAAQS, it is designated as a nonattainment area. Aurora State Airport area does not exceed NAAQS and in attainment for air quality analysis. Because the project is located within an attainment area for NAAQS, the No Action or Preferred Alternative are not subject to requirements addressing the State Implementation Plan or the General Conformity provisions under the Clean Air Act.

## **3.1.2** Environmental Consequences

Implementation of the Preferred Alternative would result in temporary and localized air emissions from activities that are typically associated with construction. These emissions would originate from the operation of equipment for construction of the projects found in the Preferred Alternative. The work associated with tree removal may include chainsaws, masticators, grinders, skid steer loaders, and log trucks. The work associated with the run-up apron construction may include excavators, graders, asphalt pavers, roller compactors, and haul trucks. Heavy construction equipment used at the site would emit exhaust containing carbon monoxide (CO), nitrous oxide (NOx), volatile organic compounds (VOCs), and

<sup>&</sup>lt;sup>1</sup> EPA 2018. Criteria Air Polutants. NAAQA Table. Available at <u>https://www.epa.gov/criteria-air-pollutants/naaqs-table</u>.





particulate matter. Operation of this equipment could also result in increased dispersion of dust and particulate matter during tree removal and hauling of materials. In addition, temporary odors will occur during paving operations.

Implementation of the preferred alternative will not increase the operational capacity of the airfield in such a way as to increase air emission above *de minimis* thresholds, therefore the potentially affected environment will be limited to the immediate vicinity and the effects will only be temporary during construction and are not expected to significantly impact or alter air quality.

## 3.1.3 Mitigation Measures

With the No Action Alternative, the construction of the proposed improvements at the airport would not occur, and no impacts to air quality over existing conditions would occur.

For construction of the Preferred Alternative projects, Best Management Practices (BMPs) would be used during construction to minimize any air quality impacts. The BMPs would include seeding disturbed soils, maintaining construction vehicles appropriately, using reduced speeds on unpaved roads, providing a construction access area, using water trucks to control dust, suspending certain construction activities during high wind conditions, and covering disturbed areas with stabilizing materials as needed, dependent on ambient meteorological conditions. These BMPs would help ensure the Preferred Alternative would not cause significant, construction-related air quality effects.

No significant impacts to air quality as a result of operations would occur with the Preferred Alternative. Therefore, no mitigation measures are necessary.

## **3.2 Biological Resources**

Information on Biological Resources is from the technical memorandum, *Environmental Inventory and No Effect Letter: Aurora State Airport*, dated April 23, 2019, *Aurora State Airport Run-up Apron: Biological Assessment*, dated June 2019. Both papers were performed by ESA. The full memo and the biological assessment can be found in **Appendix B**.

## **3.2.1** Affected Environment

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. 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. The obstruction removal areas are a mix of rural residential lots, agricultural areas, commercial areas and rights-of-way.

**Table 3-1** below shows species listed under the Endangered Species Act (ESA) that do occur, or may occur, within the area surrounding the project site.

Species Common Name	Federal /State	Critical Habitat Present in	
(Scientific Name)	Status	Vicinity?	
Upper Willamette River (UWR) Chinook	FT/CH	Yes - Mill Creek-Pudding	
(Oncorhynchus tshawytscha)	1 <sup>-17</sup> C11	River	
UWR Steelhead	FT/CH	Yes - Mill Creek-Pudding	
(Oncorhynchus mykiss)	1 <sup>-17</sup> C11	River	
Northern Spotted Owl	FT/CH	No	
(Strix occidentalis caurina)	г і/Сп	140	
Streaked horned lark	FT/CH	No	
(Eremophila alpestris strigata)	1 <sup>-17</sup> C11	110	
Fender's Blue Butterfly	FE/CH	No	
(Icaricia icarioides fender)	ГЕ/СП	140	
Bradshaw's Desert-parsley	FE/SE	N/A	
(Lomatium bradshawii)	FE/SE	IN/A	
Golden Paintbrush	ET/SE	N/A	
(Castilleja levisecta)	Г I/SE	IN/A	
Kincaid's Lupine	FT/CH ST	No	
(Lupinus oreganus)	11/011/51	INO	
Nelson's Checker-mallow	FT/ST	N/A	
(Sidalcea nelsoniana)	1 1/51	IVA	
Peacock larkspur	SE	N/A	
(Delphinium pavonaceum)	SE	IV/A	
Water howellia	FT/ST	None. No potential habitat	
(Howellia aquatilis)	11/51	None. No potential habitat	
White rock larkspur	SE	N/A	
(Delphinium leucophaeum)	SE	IV/A	
White-topped aster	ST	N/A	
(Sericocarpus rigidus)	51	11/17	
Willamette Daisy	FE/CH SE	No	
(Erigeron decumbens)		110	

#### Table 3-1: ESA-Listed Species with the Potential to Occur in Project Vicinity

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





## **3.2.2** Environmental Consequences

Under the No Action Alternative, the existing environment and operational conditions within the study are would remain unchanged. Any impacts to biological resources would be related to normal operation and maintenance of the existing airport configuration.

Under the Preferred Alternative, the construction of the north holding apron, would add 0.36 acres of impervious surface and would increase the volume of runoff. The obstruction removal portion would remove existing trees on private property and would include some ground disturbances associated with the obstruction removal work.

## 3.2.2.1 UWR 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. No streams occur within the proposed obstruction removal areas, and the two obstruction removal areas 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. The opinion of the environmental consultant was that the Run-Up Apron portion of the Preferred Alternative will not likely adversely affect the Chinook and Steelhead. Appendix B contains the Aurora State Airport Run up Apron Biological Assessment (BA), which further outlines the effects of the run up apron. Upon further consultation with the National Marine Fisheries Service (NMFS), the FAA changed their effects determination to "May Affect, Likely to Adversely Affect" and started Formal Consultation on December 10, 2019.

## 3.2.2.2 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. The proposed projects would have no effect on the northern spotted owl.

## 3.2.2.3 Streaked Horned Lark

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

## 3.2.2.4 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. 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.

## 3.2.2.5 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 area; therefore, a site-specific survey during the growing season (April-June) is recommended to confirm absence of this species to conclude that obstruction removal would have no impact on Bradshaw's desert parsley.

## 3.2.2.6 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. 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.

## 3.2.2.7 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. 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.

## 3.2.2.7 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. Nelson's checkermallow primarily occurs in open areas with little or no shade and will not tolerate encroachment of woody species. There is potential for Nelson's checkermallow to occur in two (2) of obstruction removal areas; therefore, a site-specific survey during the growing season (May – September) is recommended.





## 3.2.2.8 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. There is potential for peacock larkspur to occur in four (4) obstruction removal areas; therefore, a site-specific survey during the growing season (April-June) is recommended.

## 3.2.2.9 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. 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.

## 3.2.2.10 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. 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 four (4) obstruction removal areas, and a site-specific survey during the growing season (May-June) is recommended.

## 3.2.2.11 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 four (4) obstruction removal areas and a site-specific survey during the growing season is recommended.





## 3.2.2.11 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 mapped soil series, none of which occurs in the impact areas. The projects are anticipated to have no effect on Willamette daisy due to the lack of suitable habitat in the impact areas.

## 3.2.2.13 Essential Fish Habitat

There is no essential fish habitat on the airport property. However, stormwater from the project area collected in the vegetated swales located west of Taxiway A and then piped to a larger vegetated swale west of Runway 17-35. Runoff is discharged off airport property to a detention facility before reaching Deer Creek. Deer Creek flows into Sencal Creek then into Mill Creek, which empties into Pudding River. 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.

The run-up apron may affect UWR Chinook salmon, UWR steelhead, and critical habitat because of the addition of 0.36 acres of new impervious surface. The NMFS has started a Formal Consultation on December 10, 2019 to determine the actual effects of the project impacts. NMFS has consulted with the FAA and are going to determine that the project "May Effect, Likely to Adversely Affect" UWR Chinook salmon, UWR steelhead and critical habitat and result in small amount of new impervious surface; proposed swales would meet SLOPES V and provide infiltration prior to discharging into Deer Creek.

## **3.2.3** Mitigation Measures

The No Action Alternative would not affect any federally-listed endangered or threatened species.

The obstruction removal portion 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 and therefore there will no mitigation measures required for these species.

The obstruction removal portion Preferred Alternative will have work in areas that may provide habitat for Peacock larkspur, white rock larkspur, white-topped aster, Nelson's checkermallow, and Bradshaw's desert parsley due to the presence of associated species and/or presence of native groundcover. Site-specific surveys at these locations are recommended prior to obstruction removal to conclude no effect for listed species due to the project. If listed species are found, the obstructions shall be removed as to not disturb the found species. Species shall be protected from vehicles and falling trees. Hand tools to remove trees and directional felling may be required to avoid listed species





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. The run-up apron has been determined by the FAA, through a consultation with NMFS, that the Preferred Action "May Affect, Likely to Adversely Affect" the UWR Chinook and steelhead. The FAA has also determined that the apron project "May Affect, Likely to Adversely Affect" the Essential Fish Habitat for Pacific salmon. NMFS started a Formal Consultation on December 10, 2019.

Measures to avoid and minimize impacts to UWR Chinook, steelhead, and Pacific salmon 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. A Pollution Prevention and Spill Response Plan would be prepared for the proposed facility.
- 4. No construction would occur in streams or in riparian areas.

## 3.3 Climate/Greenhouse Gas Emissions

Information on Climate was provided by ESA in their technical memorandum dated June 13, 2018, with subject *Aurora State Airport Air Quality and Greenhouse Gas Emissions (Task 4.1)*. The document can be found in **Appendix A**.

## 3.3.1 Affected Environment

On January 12, 2012, FAA issued a memo on how to consider and evaluate greenhouse gases (GHG) and climate in a NEPA document (FAA 2012). FAA did so after the Council on Environmental Quality (CEQ) affirmed that NEPA and its implementing regulations (40 CFR 1500 et. seq.) apply to GHGs and climate. GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) NO<sub>2</sub>, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>) (EPA 2017).

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the General Accounting Office (GAO) reports that "domestic aviation contributes about 3 percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources including the remainder of the transportation sector (20 percent) and power generation (41 percent) (GAO 2009). The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly 3 percent of all anthropogenic GHG emissions globally (Melrose 2010). Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate (EPA 2009).

## **3.3.2** Environmental Consequences

Although there are no federal standards for aviation-related GHG emissions, it is well-established that GHG emissions can affect climate (Massachusetts vs EPA 2007). The CEQ has indicated that climate should be considered in NEPA analyses.





Under the No Action Alternative, the described project activities would not occur and no impacts over existing conditions would occur.

The Preferred Alternative is anticipated to have minimal changes regarding airport-related GHG emissions over what is currently forecasted under the No Action Alternative. Construction related activities would result in some GHG emissions including CO, CO<sub>2</sub> and NO<sub>2</sub>. However, these GHG emissions would be temporary and localized in nature. Under the Preferred Alternative, the projects would neither change the airport layout nor increase aircraft traffic or emissions from aircraft, ground support equipment/vehicles, or stationary sources. Therefore, the Preferred Alternative would have no significant impact related to GHG emissions.

## 3.3.3 Mitigation Measures

No mitigation associated with GHG emissions would be necessary.

## **3.4 Coastal Resources**

The Airport is not within a coastal zone management area or coastal barrier zone. As such, coastal zone management and coast barriers are not applicable to the No Action and Preferred Alternatives and were not analyzed.

## **3.5** Department of Transportation Act, Section 4(f)

## 3.5.1 Affected Environment

Section 4(f) of the Department of Transportation (DOT) Act of 1966 (49 U.S.C. Section 303) describes that lands which are publicly owned lands, used for public parks, recreational areas, wildness area, or historic site are protected from development.

An approximate two (2) mile radius surrounding the airport was defined as a study area to investigate any other potential Section 4(f) lands within the vicinity of the Airport.

There are no 4(f) lands have been identified within two (2) miles of the Airport. No parks, recreation areas, or wilderness areas are within a two-mile radius of the Airport. Potential historic and cultural resources are discussed further in section 3.8 of this report.

## **3.5.2** Environmental Consequences

Under the No Action Alternative, there would be no changes to the airport and therefore no impacts to any sites that may be afforded protection under Section 4(f) would occur.





Proposed development would not affect the use of properties afforded protection under Section 4(f). There is no anticipated direct or indirect impact to any public parks, recreation areas, wilderness areas, or historic sites.

## 3.5.3 Mitigation Measures

The No Action Alternative and the Preferred Alternative would not affect any Section 4(f) properties. No mitigation is necessary.

## 3.6 Farmlands

## **3.6.1** Affected Environment

The Farmland Protection Policy Act (FPPA) was passed under the Agriculture and Food Act of 1981 to minimize the impact that federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. According to the FPPA, farmland is classified as either "prime farmland, unique farmland, or farmland of statewide or local importance."

The study area involves ODA owned land for the run-up apron and private lands beneath the Runway approach surface of the Airport for the obstruction clearance. There are no farmlands located on Airport property. The private lands located within the runway approach surfaces are zoned Exclusive Farm Use (EFU), Residential, and Commercial.

## **3.6.2** Environmental Consequences

Under the No Action Alternative, there would be no changes to the airport and surrounding areas and therefore no impacts to any sites that may be afforded protection under Section 4(f) would occur.

Proposed development would not affect the use of the farmlands in the Approach Surface. There is no anticipated direct or indirect impacts to any farmlands.

## 3.6.3 Mitigation Measures

The No Action Alternative and the Preferred Alternative will not alter or effect the existing use of the land. No mitigation is necessary.

## **3.7** Hazardous Materials, Solid Waste, and Pollution Prevention

## **3.7.1** Affected Environment

Hazardous materials are regulated under the Resource Conservation and Recovery Act (RCRA) and various other federal and state regulations. In the state of Oregon, hazardous materials are regulated by the Oregon Department of Environmental Quality (DEQ).





According to the Oregon DEQ Environmental Cleanup Site Information, there is no clean-up areas within the airport area and the City of Aurora.

Marion County operates the landfills in the area of the Airport. Solid waste and recycling is handled at the North Marion Recycling & Transfer Station located in Woodburn. The transfer facility is located approximately 6.3 miles southwest of the airport.

## **3.7.2** Environmental Consequences

Under the No Action Alternative, the action would not produce any additional hazardous material, solid waste, and/or pollution.

All of the work associated with the construction of the run-up apron project will not be contained entirely within the existing airport property. A portion of the adjacent property will have to be purchased before the project will be constructed. As there are no identified hazardous material sites located within the run-up apron area, this portion of the Preferred Alternative will not generate any new or impact any existing hazardous materials. All of the work for the obstruction removal project will generate wood waste associated with the removal of trees. The waste may be minimized by grinding and mulching of the woody material like stumps and branches that is not a useful wood products.

Solid waste would be generated by the removal, demolition and construction activities related to the Preferred Alternative. Material unsuitable for construction that cannot be recycled, including organics, would be hauled to the North Marion County transfer facility.

## **3.7.3** Mitigation Measures

The No Action Alternative would not impact any hazardous material sites, solid waste and pollution.

The Preferred Alternative would not require any measures to mitigate impacts related to hazardous materials. If any soil contamination and/or a spill results from construction or is found during construction, remediation will occur prior to resuming construction.

The Preferred Alternative would not have any impacts on solid waste. No mitigation is necessary.

## 3.8 Historical and Archaeological Resources

Information on the original historical and archaeological resource is from the *Cultural Resource Survey for the Aurora State Airport Environmental Assessment, Marion County, Oregon* provided by Archaeological Investigations Northwest, Inc. (AINW), dated January 10, 2018 and revised May 13, 2019. The document can be found in **Appendix D**.





## 3.8.1 Affected Environment

The project Areas of Potential Effect (APE) is north of the City of Aurora in 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) (0.9mile [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.

AINW completed cultural resource study of the project's APEs. This study consisted of a systematic pedestrian survey of the north run-up area, which included approximately 4.7 acres. Background file review and windshield survey was conducted for the approximate 35 acres of obstruction removal area, where access to private property was not permitted. Including a records search of archaeological and historical resources within a 2 mile radius of the APE to identify recorded resources and likely high-probability areas. The on-site surveys were conducted in December 2017 and April 2019.

## **3.8.2** Environmental Consequences

There are 11 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.

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.

The two obstruction 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. The majority of the two obstruction clearing areas have been disturbed from residential construction, underground utilities, and roadway construction.

Seven historic resources were identified within the obstruction clearing areas, but just one historic resource identified, a 1951 Ranch house at 14094 Ehlen Road NE, is recommended eligible for listing in the National Register of Historic Places (NRHP). Most all other individual 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. 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, and the house is no longer a good example of a type, period, or method of construction.

## 3.8.3 Mitigation Measures

The No Action Alternative would not have any impact on historical or archaeological resources.





The Preferred Alternative may have impacts on historical or archaeological resources. However, there are no resources in the area of the run-up apron construction.

The Obstruction Removal Areas are known to have existing historic resources. Once specific obstructions have been identified for removal in the two clearing areas, and negotiations with the property owners has occurred, a more in depth cultural resource survey will be conducted and an Inadvertent Discovery Plan will be created to guide the contractor if unexpected resource are discovered. It is unexpected that the removal of trees will affect the historic nature of the existing resources.

## **3.9** Compatible Land Use

## 3.9.1 Affected Environment

The Airport property is zoned Public (P) and the airport lies under a Marion County Airport Overlay Zone. Within the P zone, airport and airport-related commercial and industrial uses is a Conditional Use under the Marion County Code, Title 17. The zoning also includes an Airport Overlay Zone which provides height restrictions in the 20:1 Approach Surface as described in Chapter 17.177.020 of the Marion County Code. This serves to restrict the intrusion of buildings, rooftop appurtenances, and trees within the approach surfaces and other navigable airspace.

County zoning designations surrounding the Airport include: exclusive farm use (EFU), Industrial (I), Acreage Residential (AR), and Commercial (C). The vast majority of the property surrounding the airport is zoned EFU.

## **3.9.2** Environmental Consequences

The Preferred Alternative will not impact any land use zones.

## 3.9.3 Mitigation Measures

The No Action Alternative would not have any impact and would not require mitigation.

No mitigation is anticipated for the Preferred Alternative because all proposed improvements meet existing zoning and airport overlay requirements.

## **3.10** Natural Resources and Energy Supply

## **3.10.1 Affected Environment**

The Airport uses fuel to power aircraft, natural gas for heating, and electricity to power buildings and runway and taxiway lighting. Electricity is provided to the Airport by Portland General Electric. Airport water is well water and sewer service are septic systems. Natural gas is provided by NW Natural Gas.





There are three aircraft fueling locations on the airport. Two provide avgas and jet-A and the other facility only provides av-gas.

## **3.10.2 Environmental Consequences**

The No Action Alternative would not change the consumption of fuel, natural gas, or electricity.

The short-term impacts of the Preferred Alternative will require the consumption of fuel and electricity to power construction equipment. Materials for construction: such as water, aggregate, concrete, hot mix asphalt, steel, and other related resources will be consumed by construction activities. Fuel for construction activities will be purchased off-site.

There will be no long-term impacts of the Preferred Alternative on local natural resource and energy supplies.

## 3.10.3 Mitigation Measures

The No Action Alternative would not have any impact and would not require mitigation.

The long-term increase in energy and natural resource consumption would be mitigated by installing energy efficient lighting and water fixtures in the new facilities.

## 3.11 Noise and Noise-Compatible Land Use

## **3.11.1 Affected Environment**

A noise study will not be conducted for the airport as it has an Airport Reference Code of C-II. The FAA guidance contained in Order 1050.1F says that "no noise analysis is needed for projects involving Design Group I and II airplanes (wingspan less than 79 feet) in Approach Categories A through D (landing speed less than 166 knots) operating at airports whose forecast operations in the period covered by the NEPA document do not exceed 90,000 annual propeller operations (247 average daily operations) or 700 annual jet operations (2 average daily operations)."

The current airport operations do not exceed 90,000 operations and the forecast operations according to the APO Terminal Area Forecast Detail Report – Forecast issued January 2020, Aurora State Airport had an estimated 63,113 operations for 2018.

## **3.11.2 Environmental Consequences**

The No Action Alternative would not change the noise levels or the compatibility of the local Land Use.

The Preferred Alternative will not increase aircraft traffic and therefore noise levels will not increase due to this action. There will be no long-term noise impacts of the Preferred Alternative on the local area. These actions are primarily safety actions and will not increase the number of operations.





## 3.11.3 Mitigation Measures

No mitigation associated with Noise and Noise-Compatible Land Use would be necessary. The current airport operations do not exceed 90,000 operations

# 3.12 Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risk

## **3.12.1 Socioeconomics**

## 3.12.1.1 Socioeconomic Environment

**Table 3-2** below shows the population of Marion County and the City of Aurora based on each census from 1990 to 2010. Based on this data, Marion County and the City of Aurora experienced growth over the last two decades. The population of Marion County experienced growth of nearly 37.3% and the City of Aurora experienced growth of nearly 83.2% during the 1990 to 2010 time period.

Year	Marion County	% Change	City of Aurora	% Change
2010	315,335	+10.7	918	+40.2
2000	284,834	+24.0	655	+10.6
1990	229,734		592	

**Table 3-2: Historical Population Trends** 

Source: American Fact Finder, US Census Bureau





**Table 3-3** below shows a more detailed breakdown of annual population within Marion County and City of Aurora between 2013 and 2018. The majority of growth for the City of Aurora has occurred during 2016 to 2017. The data shows a robust increase in the percentage of the population, which indicates a positive long term growth forecast.

 Table 3-3: Recent Population Trends

Year	Marion County	% Change	City of Aurora	% Change
2018	346,868	+1.7	1,042	+1.9
2017	341,217	+1.6	1,023	+1.6
2016	335,816	+2.0	1,006	+3.2
2015	329,287	+1.5	975	+2.1
2014	324,578	+0.9	955	+1.4
2013	321,575	-	942	-

Source: American Fact Finder, US Census Bureau

Based on these data, Aurora has experienced large growth since 1990, nearly doubling in population. The population in Marion County experienced approximately 10.7% growth between 2000 and 2010, and the City of Aurora's population grew nearly 40.2% over the same time-period with a continuing upward trend.

Data from the US Census Bureau were analyzed to determine other socioeconomic factors including housing supply, range of incomes, and economic activity in the City of Aurora (US Census Bureau 2010). In 2010, the City of Aurora had an estimated 349 total housing units with a 3.7% vacancy rate. Approximately 84.5% of housing units were owner-occupied, and 15.5% of housing units were rented.

According to American Community Survey, the median household income in 2010 was \$77,784, and the mean household income was \$85,073. Approximately 3.6% of the population had a total household income less than \$10,000, and approximately 3.6% of the population had a total household income greater than \$200,000. The City of Aurora's employed population 16 years and over was 546 in 2010. Of the employed population, approximately 63.1% worked in the private sector, 28.0% worked in the government sector, and 8.9% were self-employed.

Because all of the work associated with the Preferred Alternative will occur on Airport property and the removal of the obstructions will not cause significant disruption to the community, no significant impacts to socioeconomic activities are anticipated.





## 3.12.1.2 Environmental Justice

The Environmental Justice analysis is intended to consider the potential for Federal actions to have a disproportionate and adverse impact on low-income and minority populations and is required to comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR7629, February 11, 1994). The analysis requires that low-income and minority populations be identified to assess whether adverse human health or environmental impacts would result from the Preferred Alternative and are disproportionately borne by these groups. This analysis complies with Executive Order 12898 previously listed and the Department of Transportation (DOT) Order 5610.2, *Order to Address Environmental Justice in Minority Populations.* 

Order 5610.2(a) defines that a disproportionately high and adverse effect on minority and low-income populations occur when the adverse effect is predominately borne by a minority population and/or low-income population or is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. It requires Federal agencies to avoid any disproportionate impacts to achieve environmental justice to the greatest extent practicable.

An evaluation of the population and ethnic distributions in the project area and community was conducted. 2010 US Census data were analyzed to identify minority populations in the vicinity of the proposed project area. The data were broken down into two categories: Marion County and the City of Aurora. The Airport is not within the City of Aurora city limits.

The Department of Transportation Order 5610.2(a) defines minority as any individual who is:

- Black
- Hispanic or Latino
- Asian American
- American Indian and Alaskan Native (AIAN)
- Native Hawaiian and other Pacific Islander (NHPI)

Table 3-4 below shows the percentage of each race by geographic area.





	Race						Hispanic or Latino
Geographic Area	African American	Asian	AIAN	NHPI	Other	2 or More	(of any race)
Marion County	1.1%	1.9%	1.6%	0.7%	12.6%	3.9%	24.3%
City of Aurora	0.5%	0.3%	0.9%	0.0%	6.3%	2.3%	10.9%

#### Table 3-4: 2010 Minority Population Data

Source: American Fact Finder, US Census Bureau

#### **Low-Income Population**

The Department of Transportation Order 5610.2(a) defines low-income as an individual or family whose median household income is at or below the Department of Health and Human Services poverty guidelines. 2017 data was obtained from the 2013-2017 American Community Survey 5- Year Estimate from the US Census Bureau to identify the percentage of the population living in poverty in the area. As noted in **Table 3-5**, low income population in the county accounts for 15.9 percent of the overall population.

**Table 3-5: Population in Poverty** 

Geographic Area	Population Poverty Estimate
State of Oregon	14.9%
Marion County	15.9%
City of Aurora	7.3%

Source: 2013-2017 American Community Survey 5-Year Estimates, US Census Bureau

## 3.12.1.3 Children's Environmental Health and Safety Risk

According to the *Department of Transportation Order 1050.1F and Executive Order 13045*, the FAA is directed to identify and assess environmental health risks and safety risks that the agency has reason to believe could disproportionately affect children. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come into contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.





The closest schools to the airport are: North Marion Primary, Intermediate, Middle and Senior High School (2.0 miles southeast).

## **3.12.2 Environmental Consequences**

No changes in population patterns or growth, disruption of existing communities or neighborhoods, displacement of existing populations, or relocation of residents or businesses is associated with either the No Action Alternative or the Preferred Alternative. No impacts are anticipated to the income or economic activity in the greater Aurora area. As a result, no socioeconomic impacts are expected with either phase of the Preferred Alternative.

The Environmental Justice review is intended to assess if the proposed project causes impacts that are disproportionately high and adversely affect minority and low income populations. Impacts are significant if they are predominately borne by a minority population or low income population and is more severe or of greater magnitude than the adverse effect suffered by the population as a whole. Further, the analysis requires the consideration of risks to children related to environmental health and safety risks.

## 3.12.2.1 No Action Alternative

The No Action Alternative would not cause any adverse human health or environmental effects to the general population or specifically defined population segments including minority, low-income, or children.

## 3.12.2.2 Preferred Alternative

The Preferred Alternative would not result in a disproportionate impact on any minority or low-income population. The Preferred Alternative would not result in a disproportionate impact on children. The construction of the run-up apron would take place entirely within the airport property and the obstruction removal areas will be at least 1.75 miles from the nearest school.

## **3.12.3 Mitigation Measures**

The No Action Alternative would not result in a disproportionate impact to minority or low-income individuals or children.

Based on the analysis conducted, the Preferred Alternative is not anticipated to result in disproportionate impacts to minority or low-income individuals or children. Subsequently no mitigation measures related to environmental justice are needed.





## 3.13 Visual Effects

## **3.13.1 Affected Environment**

Lighting on the airfield includes a rotating beacon, medium intensity runway edge and threshold lights, Visual Guide Slope Indicators, and Omni-Directional Approach Lights. Existing buildings have exterior lighting.

## **3.13.2** Environmental Consequences

The No Action Alternative will not have any effect on light emissions or changes to views.

The improvements proposed in the Preferred Alternative will provide similar uses to current structures at the Airport. No additional lighting is proposed.

## 3.13.3 Mitigation Measures

No mitigation measures would be required with the No Action Alternative.

The Preferred Alternative will use building materials and colors which are similar to existing structures in order to provide a blending effect with the existing views of the airport.

## 3.14 Water Resources

Information regarding water resources is from the technical memorandum prepared by ESA titled *Aurora State Airport Wetland Reconnaissance (Task 3.6)* dated May 22, 2018 and *Aurora State Airport Improvements; Water Resource Delineation Report* dated May 2018. The documents are included in **Appendix E**.

## **3.14.1 Affected Environment**

According to the Federal Aviation Administration's (FAA) 1050.1F Desk Reference, Chapter 14, water resources include surface water, groundwater, floodplains, and wetlands, which are vital to society and important for providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems.

## 3.14.1.1 Surface Waters and Wetlands

Wetlands and waters of the United States are regulated by the federal government under Section 404 of the Clean Water Act (Act) of 1977. The Act requires consideration of the impacts of dredge and fill activities on wetlands, as well as on their functions and values. Other impact considerations include habitat fragmentation, drainage, the effects of runoff (erosion, flooding, sedimentation, etc.), hydrologic modifications, and temporary disturbances incurred during construction activities. The Act created a federal





regulatory plan to control the discharge of dredged or fill materials into wetlands and other waters of the United States. If the potential development projects affect waterways or wetlands the projects will require permits from the U.S. Army Corps of Engineers (USACE) as well as the Oregon Department of State Lands (DSL), under Section 404 of the Act, with the USACE handling the day-to-day activities.

In addition, Section 401 of the Act requires any applicant for a federal license or permit to conduct any activity that may result in any discharge into the navigable waters to obtain a 401 water quality certification from the Oregon Department of Environmental Quality (DEQ) prior to federal permit being issued.

The National Wetland Inventory (NWI) has no mapped wetlands within the study area.

In the run-up apron area, there were 2 wetlands found and delineated. The wetlands are the north-south man made drainage ditches found north of Taxiway A1 and between the Runway and Taxiway A. The wetlands are assumed to be non-jurisdictional and the ditches within the study area have been artificially created in upland areas, 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 the wetlands.

For the obstruction removal area, a 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. 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 as access by the private property owners was not granted.

The USACE issued a Preliminary Jurisdictional Determination (PJD) of the aquatic resources within the APE on April 16, 2020. The USACE has determined the aquatic resources within the APE "may be" waters of the US and are considered "potential jurisdictional waters."

All wetland documentation is included in Appendix E.

## 3.14.1.2 Floodplains

Based on flood insurance rate maps developed by the Federal Emergency Management Agency (FEMA), no 100-year floodplain is mapped within the run-up apron site or in the obstruction removal areas. The flood insurance rate map (FIRM) showing the flood risk of the project area is included in **Appendix F**.





## 3.14.1.3 Groundwater

Protection of groundwater in Oregon occurs at the federal, state, and local levels through various agencies. Oregon administers many federal programs, including the Clean Water Act, Safe Drinking Water Act, and Resource Conservation and Recovery Act among others. In addition to federal laws, Oregon has its own state laws and regulations relating to groundwater protection, and Marion County regulates groundwater through local ordinances.

A total of two municipal groundwater wells operate in Aurora's water system. The municipal groundwater wells are located 1.7 and 1.6 miles southeast of the Airport.

## 3.14.1.4 Wild and Scenic Rivers

No wild and scenic rivers are designated within the study area.

## **3.14.2 Environmental Consequences**

## 3.14.2.1 Surface Waters and Wetlands

The proposed project will not permanently impact any wetlands or waterbodies. Any impacts to wetlands must comply with the local, state, and federal permit regulations, implement compensatory mitigation measures, and, ultimately, meet the standard of no net loss of wetlands and waterbodies. Small areas of trees, which are within the obstruction areas may be located in potential wetland areas. No fill will be placed within the regulated wetland or below the ordinary high water mark, therefore no wetland or fill permits will be required.

There may be minor impacts to delineated wetlands in the run-up apron area. These impacts would be confined to installing stormwater outlet pipes from the project area into the wetland ditches. These impacts would be isolated and would consist of less than 50 cubic yards of fill or removal. These ditches were determined by a USACE Preliminary Jurisdictional Determination (PJD) to be "potential jurisdictional waters." The DSL and the USACE would be notified of the construction and a permit will be required to be filed with the USACE at the time of design to determine the impacts to the "potential jurisdictional waters."

## 3.14.2.2 Floodplains

There are no floodplain areas designated by FEMA within the run-up apron area and the obstruction removal areas.

## 3.14.2.3 Groundwater

The nearest groundwater well is 1.6 miles to the southeast of the Proposed Action. However, there are no construction activities that will affect the groundwater. Appropriate BMPs during construction will be in place.





## 3.14.2.4 Wild and Scenic Rivers

Because there are no wild and scenic rivers within the study site, the Preferred Alternative would have no impacts to wild and scenic rivers.

## **3.14.3 Mitigation Measures**

## 3.14.3.1 Surface Waters and Wetlands

In the obstruction removal area, trees will be removed in potential wetland areas. Prior to removal, those potential areas must be delineated to confirm the presence of wetlands. If wetlands are present, the trees are to be removed with hand tools and either cut and left fallen in place or cut and dragged out of the wetland area. No vehicular traffic is to be permitted in the delineated wetland areas. Stumps are to remain in place and no further ground disturbance is to take place. Appropriate construction BMPs will be placed to restrict sediment migration during the obstruction removal. This action does not require action or permits from DSL or USACE. The action may require grading permits and tree removal permits from Marion and/or Clackamas County.

Possible impacts due to the installation of stormwater outlet pipes will not exceed the regulatory volume of impacts that would require mitigation. Coordination with USACE will need to occur to determine the permit requirements and mitigation requirements in association with their PJD. It is anticipated that no mitigation will be required. Construction BMPs and approved erosion control measures will be installed prior to the start of construction. The erosion control measures will be included in a 1200-C permit application which will be reviewed and approved by the DEQ.

## 3.14.3.2 Floodplains

No portion of the Preferred Action will impact ant floodplains. No mitigation is necessary.

## 3.14.3.3 Groundwater

The Preferred Alternative will not result in a direct impact to groundwater.

## 3.14.3.4 Wild and Scenic Rivers

The Preferred Alternative would not impact any Wild or Scenic River. No mitigation is necessary.





## **3.15 Cumulative Impacts**

## **3.15.1 Summary of Past Projects**

Table 3-6 below lists major projects that have occurred within the last seven years at the Airport.

Table 3-6: Past Projects List

Year	Project Description	
2015	Rehabilitate Apron and Taxiway	
2016	Taxilane Reconstruction	

## **3.15.2 Summary of Concurrent Projects**

There are no Airport projects that are expected to occur concurrent with the Preferred Alternative.

## **3.15.3 Summary of Future Projects**

Table 3-7 below list projects that are planned in the reasonably foreseeable future.

#### Table 3-7: Future Project List

Year	Project Description		
2021	Easement Acquisition and Obstruction Removal		
	Project		
2022	Run-up Apron Construction		
2022	PMP/ EA for Property Purchase and Runway		
	Extension		
2025	Property Acquisition and Design for Runway		
	Extension		
2026	Phase 1 Runway Extension Construction		

In addition to the projects shown in the table above, hangars may be developed along the apron area as demand warrants. These hangars will be constructed in areas that were not investigated for this Environmental Assessment. There will be no impacts to wetlands, threatened or endangered species, or cultural resources and therefore no foreseeable cumulative impacts to the direct or indirect study areas. The 2021 and the 2022 projects are part of the Proposed Action in this Environmental Assessment.





## 3.15.4 Summary of Resource Category Impacts

Resource category impacts are only analyzed for significant impacts associated with the Preferred Alternative and its cumulative impact with past, concurrent, and reasonably foreseeable projects at the Airport. Because the Preferred Alternative has the potential for temporary impacts due to construction and air quality/green-house gases, the potential for cumulative impacts is summarized below.

#### Construction Impacts

The Preferred Alternative, when considered with other past, present, and reasonably foreseeable future projects, may have a cumulative impact if construction activities were to occur concurrently. Potential impacts caused by construction activities include impacts from dust, noise, GHG, air pollution, and water pollution. However, the impacts are assumed to be minor and temporary in nature, and will be mitigated with appropriate construction BMPs. The combination of concurrent projects and the Preferred Alternative would likely still result in minor impacts if construction BMPs are implemented.

#### Air Quality/Green House Gas

The cumulative impact of the Preferred Alternative on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately 3 percent of global carbon dioxide (CO<sub>2</sub>) emissions; this contribution may grow to 5 percent by 2050.

## Wetlands

The Preferred Alternative may have minor wetland impacts from grading and fill material. When considered with other past, present, and reasonably foreseeable future projects, there will not be potential wetland impacts resulting from future development on the airfield as well. The impacts from the preferred alternative from obstruction removal will be negligible, since the trees will be removed by hand tools and no ground disturbance will occur and there will be no net loss of wetlands.





## **Chapter 4 – Public Review Process**

The Oregon Department of Aviation (ODA) solicited written public comments on the Draft Environmental Assessment of Airport Improvements pursuant to FAA Order 1050.1F. The public review period was conducted from July 6, 2020 through August 6, 2020. Notices were published in the Canby Herald, the Wilsonville Spokesman, and the Statesman Journal requesting public comment on the Draft EA, and informing the public of the project. The published notices are included in Appendix G of this report.

The Draft EA was available for viewing through multiple outlets. Electronic copies of the Draft EA were available for viewing on the ODA website at <u>https://www.oregon.gov/AVIATION/Pages/index.aspx</u>. The Draft EA was also available on the ODA Facebook Page at facebook.com/ORAviation/ and the ODA Instagram page at instagram.com/oraviation/. The Draft EA was available for electronic viewing, download, and/or for purchase (cost of reproduction and shipping) at the PlanWell Enterprise Public Planroom at

https://order.e-arc.com/arcEOC/Secures/PWELL\_PrivateList.aspx?PrjType=pub









## **Chapter 5 – Contributors and Agencies Consulted**

## **Environmental Assessment Contributors**

## **Environmental Assessment Preparation**

Century West Engineering Corporation. 5500 Meadows Road, Suite 250 Lake Oswego, OR 97035 Peter Murphy, P.E., Project Manager

Peter Murphy has over 25 years of airport design and construction experience and was responsible for the assembly of the Environmental Assessment document, the development of the alternatives, and the stormwater analysis.

## Assisted in Environmental Assessment Preparation

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2863 NW Crossing Drive, Suite 100Bend, OR 97701Susan Cunningham, Senior BiologistSarah Hartung, MS, PWS, Wetlands and Wildlife BiologistLuke Johnson, Environmental Scientist

Susan Cunningham, Senior Biologist. B.S. Biology. Over 30 years of experience in environmental planning, with expertise in biological resources, wetlands, land use and preparation of NEPA documents. Responsible for preparing the Air Quality Technical Memo, overseeing the preparation of environmental reports, and QA/QC.

Sarah Hartung, Wetlands and Wildlife Biologist. M.S. Avian Ecology, Professional Wetland Scientist (PWS). Twenty years of experience in impact assessments and regulatory compliance for projects with water and natural resource issues and extensive experience with environmental and land use permitting. Responsible for preparing the Biological Assessment (Run-up Apron Project); Biological Inventory and the Water Resources Delineation Report.

Luke Johnson, Environmental Scientist. Seven years of experience delineating water resources, conducting fish and wildlife Service, and technical writing. Assisted with field surveys and technical reports.





Archaeological Investigations Northwest, Inc. 3510 NE 122<sup>nd</sup> Ave. Portland, OR 97230 Lucie Tisdale, M.A., R.P.A., Senior Archaeologist Andrea Blaser, M.S., Senior Architectural Historian

Lucie Tisdale, Senior Archaeologist, M.A. Archaeology, Historic Preservation, and Cartography. Twenty years of experience in preparing documents to meet Section 106 of the National Historic Preservation Act. She has prepared archaeological reports, Programmatic Agreements, Memoranda of Agreement, Inadvertent Discovery Plans, Section 4(f) reports, National Register nominations, and technical reports. Lucie Tisdale was responsible for preparing the Cultural Resource Survey and submittal of the plan to the State Historic Preservation Office.

Andrea Blaser, M.S. Senior Architectural Historian/Senior Historian. Andrea Blaser is Secretary of Interior Qualified and ODOT Qualified Architectural Historian and Fifteen years of experience in this field. Assisted with the Architectural historical evaluation of the properties within the APE and in crafting the response letter to the State Historic Preservation Office.

## Agencies Consulted

## **Oregon Department of Aviation**

Heather Peck, Planning & Projects Division Manager

## Parks and Recreation Department, State Historic Preservation Office (SHPO)

Jason Allen, M.A., Historic Preservation Specialist John Pouley, M.A., RPA, Assistant State Archaeologist Tracy Schwartz, Historic Preservation Specialist

## The Confederated Tribes of the Warm Springs Reservation of Oregon

Christian Nauer, MS, Archaeologist, Branch of Natural Resources

## The Confederated Tribes of the Grand Ronde Community of Oregon

Cheryl K. Pouley, Archaeologist

Confederated Tribes of Siletz Indians Robert Kentta, Cultural Specialist

U.S. Army Corps of Engineers, Portland District, Regulatory Branch Andrea Wagner





## NOAA, National Marine Fisheries Service

Annie Brinie

## **Oregon Department of State Lands**

Heather Howard, Support Services Specialist





