

Final Environmental Assessment Southwest Oregon Regional Airport Runway Safety Area Improvements (Runway 5/23)



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**Southwest Oregon Regional Airport
Runway Safety Area Improvements (Runway 5/23)
Environmental Assessment**

This Environmental Assessment becomes a federal document when evaluated and signed by the responsible FAA official.

Responsible FAA Official

March 16, 2022

Date

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Acronyms and Abbreviations

AAC	Aircraft Approach Category
AC	Advisory Circular
ADG	Aircraft Design Group
AIP	Airport Improvement Program
ALP	Airport Layout Plan
APE	Area of Potential Effect
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Firefighting
ASDA	Accelerate Stop Distance Available
ATCT	Air Traffic Control Tower
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CAA	Clean Air Act
CBD	Central Business District
CBEMP	Coos Bay Estuary Management Plan
CCAD	Coos County Airport District
CEQ	Council of Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO2	Carbon Dioxide
CERCLA	Comprehensive Environmental Response, Compensation, And Liability Act Of 1980 Confederated Tribes of Coos, Lower Umpqua, And Siuslaw Indians
CWA	Clean Water Act
CY	Cubic Yards
CZMA	Coastal Zone Management Act
DEN	Denver International Airport
DEQ	Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DoD	Department of Defense
DOT	Department of Transportation
DSL	Department of State Lands
DSW	Division of Surface Water
EA	Environmental Assessment
EFH	Essential Fish Habitat
EO	Executive Order
EMAS	Engineered Materials Arresting System
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FBO	Fixed-Base Operator
FEMA	Federal Emergency Management Agency

FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMP	Fisheries Management Plan
FPPA	Farmland Policy Protection Act
GA	General Aviation
GHG	Greenhouse Gas
ILS	Instrument Landing Systems
IPAC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change ITS Incidental Take Statement
LDA	Landing Distance Available
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights MBTA Migratory Bird Treaty Act
MOS	Modifications of Standards
MPU	Master Plan Update
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NBCC	North Bend City Code
NEPA	National Environmental Policy Act
NFA	No Further Action
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
NHPA	National Historic Preservation Act
NO2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O3	Ozone
OBIC	Oregon Biodiversity Information Center
OCMP	Oregon Coastal Management Program
OFA	Object Free Areas
OTH	Southwest Oregon Regional Airport
OWRD	Oregon Water Resource Department
PAPI	Precision Approach Path Indicators
PM2.5	Fine Particulate Matter Less Than or Equal To 2.5 Microns
PM10	Particulate Matter Less Than or Equal To 10 Microns
RCRA	Resource Conservation and Recovery Act
REIL	Runway End Identifier Lights
RPMs	Reasonable and Prudent Measures
RPZ	Runway Protection Zone
RSA	Runway Safety Area
SARA	Superfund Amendments and Reauthorization Act Of 1986
SFHA	Special Flood Hazard Areas

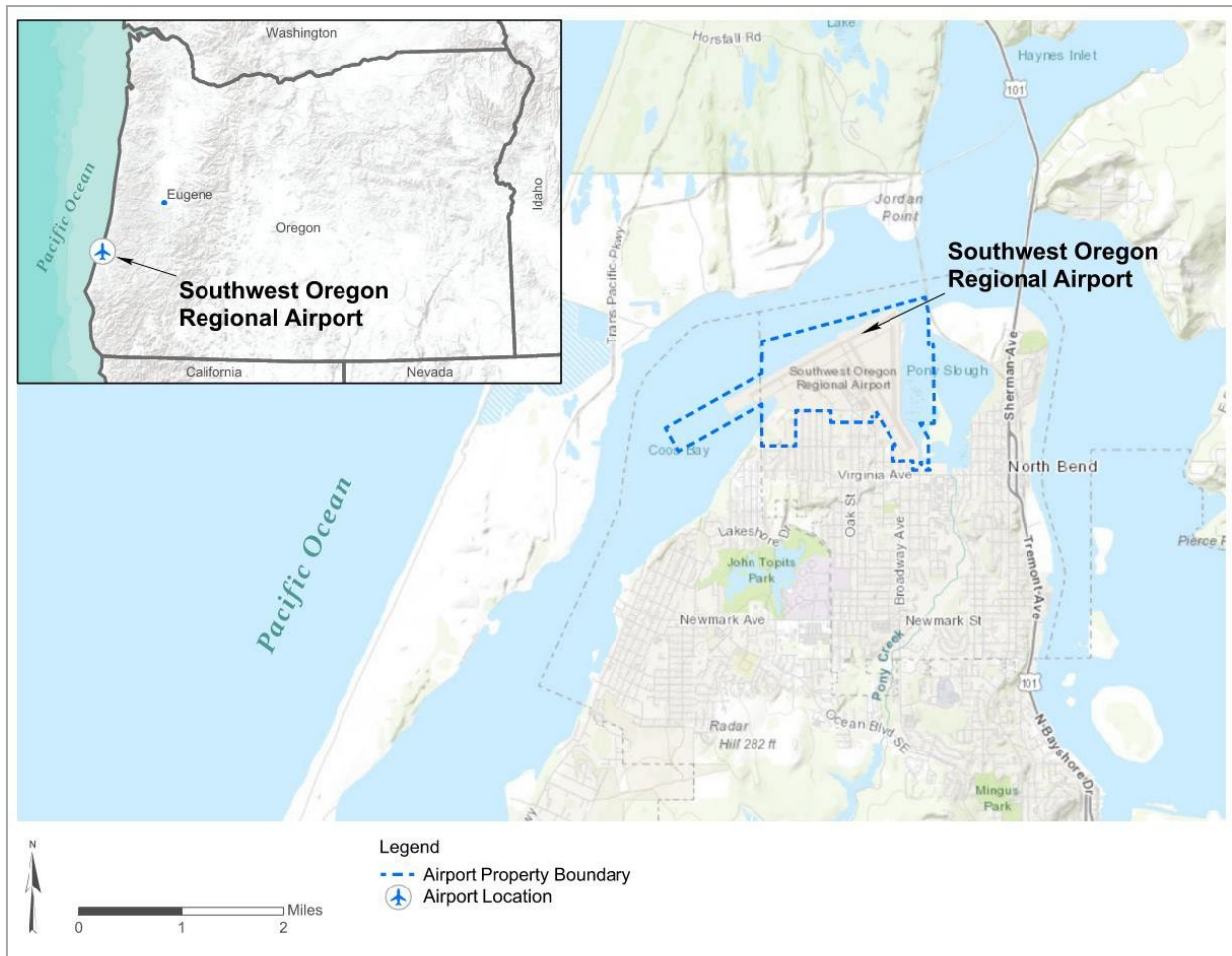
SFO	San Francisco International Airport
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SPCC	Spill Prevention, Control, And Countermeasure
SO2	Sulfur Dioxide
SWPCP	Stormwater Pollution Control Plan
TAF	Terminal Area Forecast
TCP	Traditional Cultural Property
TFMSC	Traffic Flow Management System Counts
THOZ	Tsunami Hazard Overlay Zone
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Loads
TODA	Takeoff Distance Available
TORA	Takeoff Runway Available
TSA	Transportation Security Administration
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds

Chapter 1.0 Introduction

1.1 Introduction

The Southwest Oregon Regional Airport (OTH or Airport) is located on the southern coast of Oregon within the City of North Bend (**Figure 1-1: Southwest Oregon Regional (OTH) Airport Location Map**). OTH is operated by the Coos County Airport District (CCAD) and is approximately one mile northeast of North Bend's central business district (CBD) and approximately 72 miles southwest of Eugene, Oregon. It was formerly known as the "North Bend Municipal Airport" but was renamed Southwest Oregon Regional Airport in 2006. OTH encompasses approximately 619 acres within the City of North Bend and Coos County, Oregon.

Figure 1-1: Southwest Oregon Regional (OTH) Airport Location Map



OTH is a commercial service airport that does not currently meet all design standards in accordance with Federal Aviation Administration (FAA) guidance and regulations. Specifically, the Runway Safety Area (RSA) for Runway 5/23 does not meet design standards as defined by the FAA in Advisory Circular (AC)

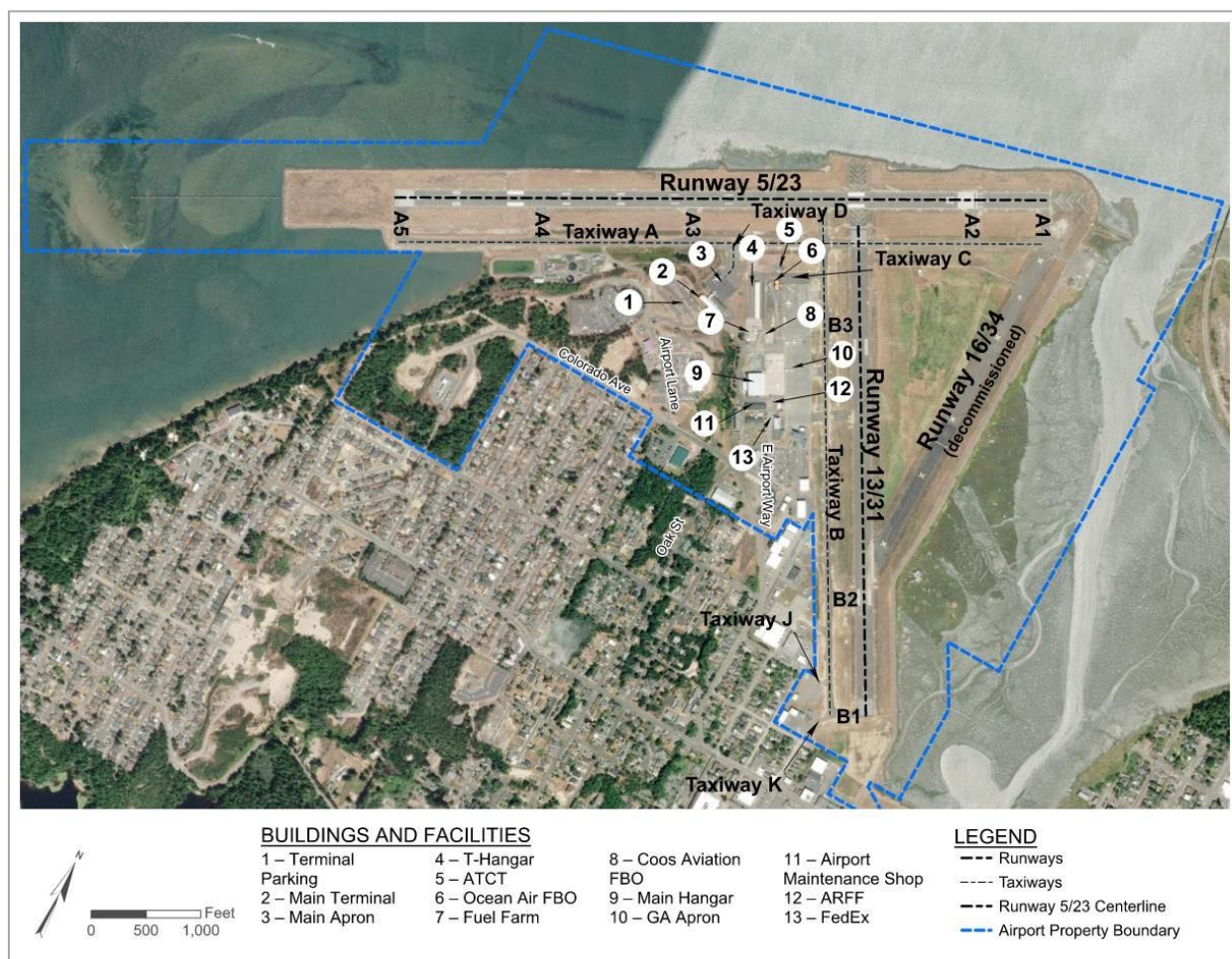
150/5300-13A, *Airport Design*. CCAD's Proposed Action to meet FAA design standards for an Airport Reference Code (ARC) C-II RSA at the Runway 23 end is to add a bulkhead in Coos Bay at the northeast end of the Runway 5/23 (ARC is discussed in **Section 1.3.1**).

This Environmental Assessment (EA) was prepared to identify the potential impacts associated with alternatives that will achieve the Proposed Action, as well as how any identified impacts can be avoided, minimized, or mitigated. The EA was prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) and the President's Council on Environmental Quality (CEQ) Regulations Title 40 Code of Federal Regulations (CFR) §§ 1500-1508, the implementing regulations for NEPA, and in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.

1.2 Background and Existing Facilities

OTH is classified as a public, non-hub, primary commercial service airport in the FAA National Plan of Integrated Airport Systems (NPIAS). OTH has two runways with parallel taxiways, a terminal building, hangars, and a general aviation (GA) apron for aircraft parking. The airport property boundary extends into the waters of Coos Bay. For a general layout of the existing airport facilities, see **Figure 1-2: Existing Airport Layout**.

Figure 1-2: Existing Airport Layout



OTH is currently (as of December 2021) served by United Airlines. United serves OTH through a partnership with SkyWest Airlines operating as United Express. United provides direct service daily to San Francisco International Airport (SFO). United resumed twice weekly flights to Denver International Airport (DEN) from June 6 to October 3 in the summer of 2021. In 2019, passenger enplanements totaled 13,393 (FAA 2019). Due to the impact of the Covid-19 pandemic on air traffic, 2020 was a non-traditional year in which enplanements were down approximately 80 percent. Oregon State Covid-19 restrictions were lifted on June 29, 2021, too recently to identify rising trends for airport traffic at OTH for this EA.

OTH has a primary runway, a crosswind runway, and a decommissioned runway. The primary runway is designated as Runway 5/23, is oriented northeast-southwest, and is 5,980 feet long and 150 feet wide. Runway 5/23 was redesignated from Runway 4/22 in 2020 due to magnetic declination and is designed to accommodate aircraft as large as the Boeing 737-900; however, the designated critical aircraft for design purposes is a regional jet, the CRJ 200. The crosswind runway, Runway 13/31, is 4,470 feet long and 150 feet wide and has the same critical (design) aircraft as the main runway. On the east side of the airport is Runway 16/34, which has been decommissioned since 2006; it is occasionally utilized by the US Coast Guard for maintenance and training.

Six taxiways (Taxiways A, B, C, D, J, and K) support aircraft operations at OTH. Four apron areas at OTH are used for air carrier and GA operations, and three apron areas are used exclusively for the military and the U.S. Coast Guard. The Air Traffic Control Tower (ATCT) is northeast of the passenger terminal building and north of the main apron.

Navigational aids at OTH include an Instrument Landing System (ILS) for Runway 5 supported by a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). The MALSR is located on a catwalk that extends into Coos Bay. Runway 5 is also equipped with a four-light precision approach path indicator (PAPI). Runway 31 is equipped with a PAPI, but it has been listed as indefinitely out of service. Runways 13, 23, and 31 are equipped with Runway End Identifier Lights (REILs) and are owned and maintained by CCAD. Weather information is provided by an Automated Weather Observing System (AWOS-3). The Airport is also served by a rotating beacon and a lighted wind indicator. A siting study is underway to relocate the glide slope ILS, which is not included in this EA and will be subject to additional NEPA analysis once an appropriate location is determined.

The passenger terminal building is south of Taxiway A and west of the GA apron. The terminal building contains administration offices, baggage claim, check-in counters, concession and retail areas, freight storage, a holding room area, a passenger waiting area, rental car counters, restrooms, security screening for baggage and passengers, and Transportation Security Administration (TSA) offices.

OTH has two fixed base operators (FBOs), Coos Aviation and Ocean Air Aviation. Other airport facilities include air cargo operators (FedEx), Aircraft Rescue and Fire Fighting (ARFF), aircraft storage hangars, a fuel farm, and maintenance buildings (deicing and snow removal facilities) (**Figure 1-2: Existing Airport Layout**). The ARFF facility was demolished and construction of a new facility at the same location began in 2020; this is not yet reflected in the Airport Layout Plan (ALP).

The physical location of OTH is geographically constrained. Coos Bay and Pony Slough border the Airport to the north and east, and the city of North Bend lies immediately to the south and southwest (**Figure 1-2: Existing Airport Layout**). The Airport property boundary extends into Coos Bay and includes the submerged lands west, north, and east of the terrestrial boundary, including the MALSR unit on a catwalk

west of Runway 5/23. A shipping channel to the east of Runway End 23 also adds to the constraints of the location (Figure 1-3 A: Displaced Threshold and Clearance Over Shipping Lane).

Figure 1-3 A: Displaced Threshold and Clearance Over Shipping Lane

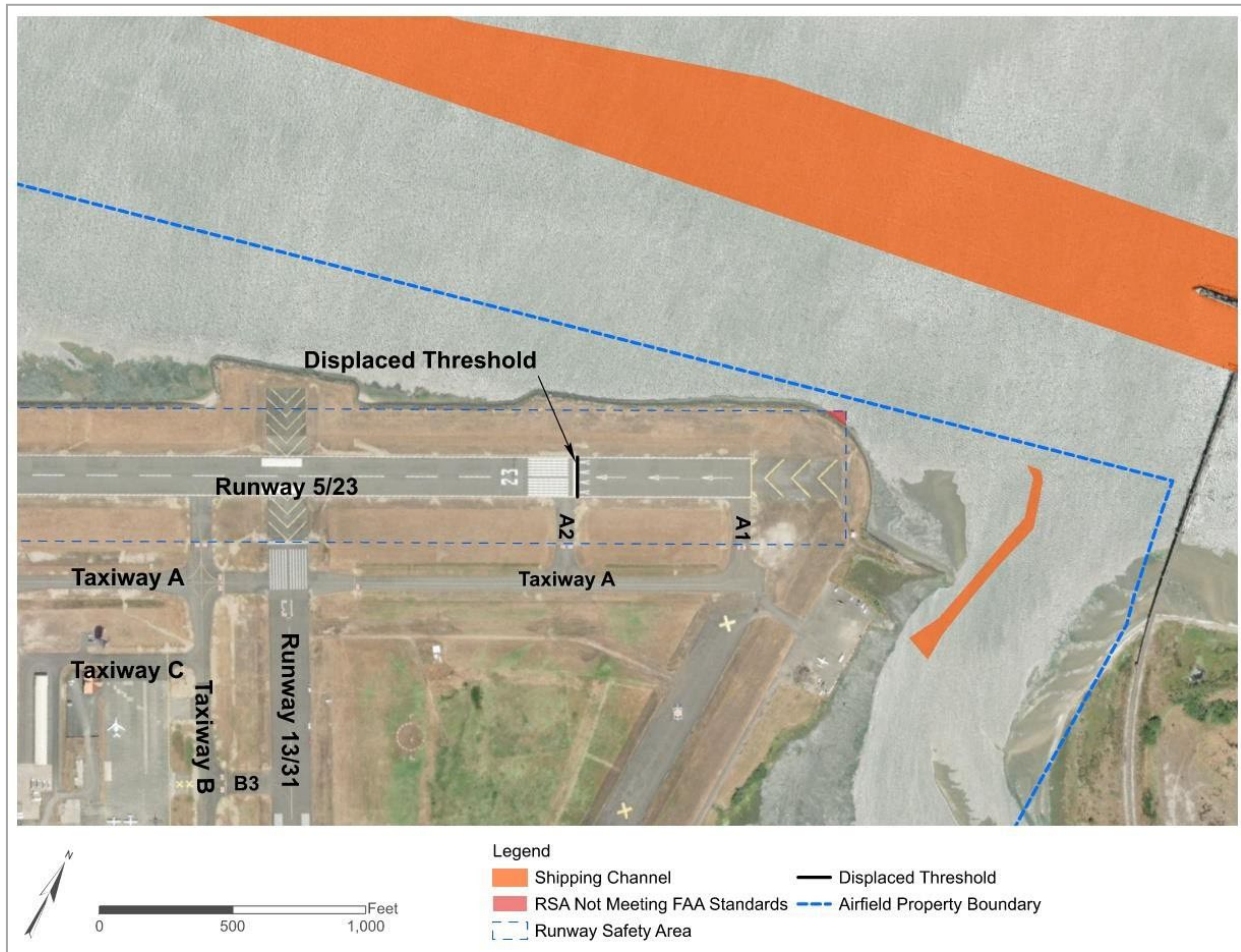
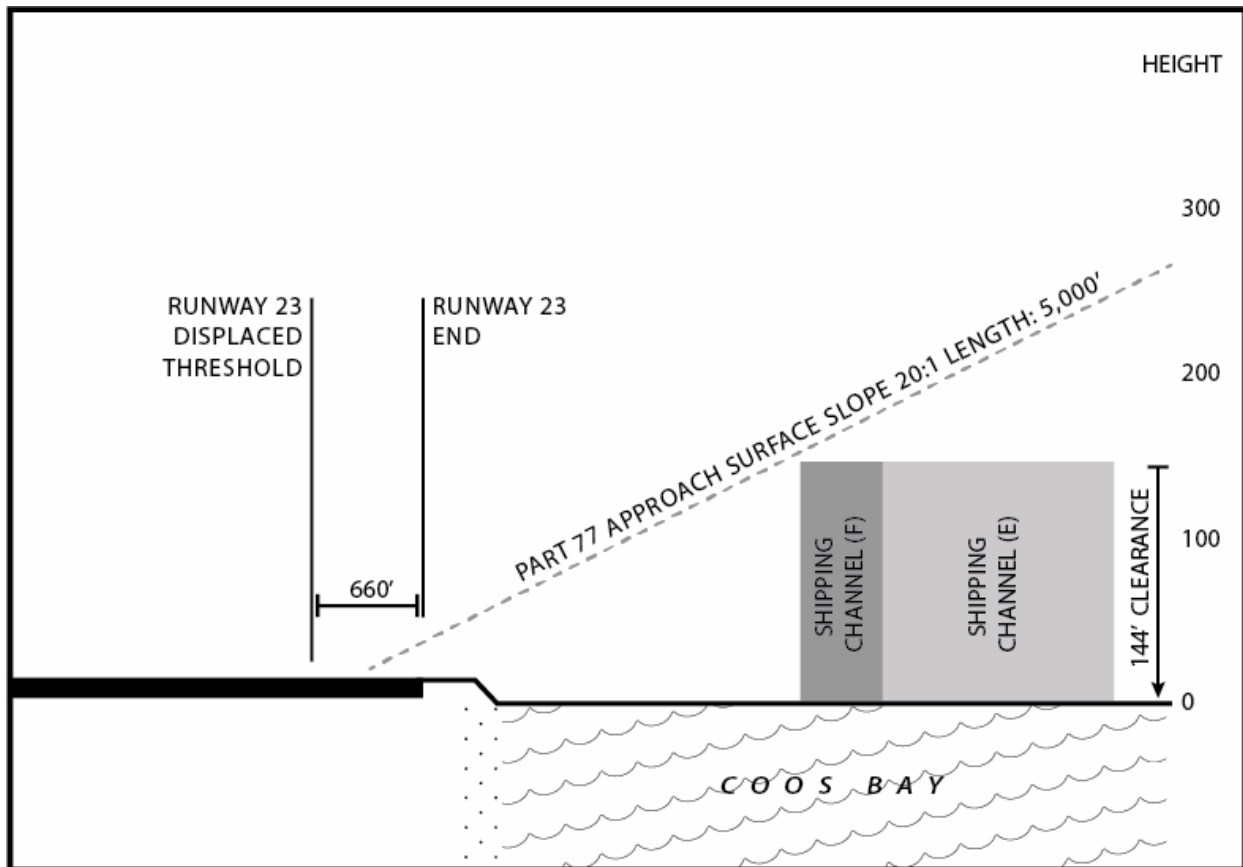


Figure 1-3 B: Displaced Threshold and Clearance Over Shipping Lane



According to FAA guidance, a minimum airspace clearance over the shipping channel is required. Therefore, a 660-foot threshold displacement is necessary at the Runway 23 end to provide airspace clearance over the shipping channel for aircraft arriving on Runway 23 and departing on Runway 5. Aircraft departing to the west (departing on Runway 23), can use the full length of Runway 5/23; aircraft arriving from the west can also use the full length (arriving on Runway 5).

1.3 Airport Layout Plan and Airport Planning

The ALP is a set of drawings and an associated report that the FAA, State of Oregon, and Sponsor use to plan for future improvements. In coordination with the Sponsor, the ALP for the Airport was most recently conditionally approved by the FAA in 2013 as part of the Master Plan Update (2013 MPU). Together, the 2013 MPU and the ALP provide the framework to guide future airport development based on forecasted aviation demand.

A critical step in the airport planning process is to identify the type of aircraft using the airport and number of associated operations. This is necessary to plan and design the facility and to safely accommodate the aircraft that are using the Airport, both now and in the future. For the 2013 MPU, the existing traffic utilizing the Airport was evaluated, and aviation activity forecasts were developed for both the number of based aircraft and total annual aircraft operations at the Airport through the 2024 planning horizon.

Despite the conditional approval of the ALP based on the 2013 MPU, operations at OTH have changed since those forecasts were developed. Therefore, updated aviation forecasts, an evaluation of the critical aircraft operating at OTH, and an evaluation of runway length requirements were developed for this EA (**Appendix A – Southwest Oregon Regional Airport (OTH) Critical Aircraft Runway Needs Assessment**, referred to as “2021 Critical Aircraft Assessment” in this EA).

1.3.1 Design Aircraft and Airport Reference Code

FAA airport design parameters are driven by the size and approach speed of aircraft using the airport. According to FAA guidance (see FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*), the most demanding aircraft based on regular use at the airport is considered the design aircraft (also referred to as the critical aircraft). Regular use means 500 or more annual operations (an operation being a take-off or landing) by a specific aircraft type, or a family of aircraft with similar characteristics. Designation of a design aircraft drives airport design and planning decisions, including what airport dimensional standards (such as runway width, separation standards, surface gradients, etc.) are appropriate for the airport. Based on the dimensions and specifications of the design aircraft, the FAA uses an airport coding system, the ARC, that establishes the specific design criteria for facility development.

The ARC has two components. The first component, designated by a letter (A through E), is the Aircraft Approach Category (AAC) and relates to aircraft approach speed. The second component, designated by roman numerals (I through VI), is the Aircraft Design Group (ADG) and relates to aircraft wingspan and tail height, whichever is most restrictive.

The 2013 MPU identified the existing critical (design) aircraft for OTH as the De Havilland Dash 8-200. This aircraft is classified as AAC B, ADG III, for an ARC of B-III. The 2013 MPU indicated that, based on current and projected use, the Airport’s ARC will eventually be upgraded from B-III to C-III, which is reflected on the conditionally approved 2013 ALP. The 2013 MPU also notes that there were some flights by the Bombardier CRJ-200 regional jet (a C-II aircraft). The 2013 ALP identified the current critical aircraft as C-II due to aircraft operations that had changed shortly after completion of the 2013 MPU.

To document and validate the critical aircraft for this EA, the 2021 Critical Aircraft Assessment analyzed flight records at OTH from 2016-2020 and found that the Bombardier CRJ-200 now averages over 500 operations per year. In an e-mail dated November 13, 2020, the FAA concurred that the existing critical aircraft at OTH is the CRJ-200 (ARC C-II).

United Airlines, the sole scheduled passenger airline at OTH in 2021, is replacing the CRJ-200 with the Embraer E-175 (a C-III aircraft) on many routes. Service from OTH to Denver, which began in 2021, uses the E-175 aircraft. In the summer of 2021, the E-175 was used in lieu of the CRJ-200 on some scheduled passenger flights between OTH and San Francisco. It is expected that the E-175 will ultimately replace the CRJ-200 as the critical aircraft when it exceeds the threshold of 500 operations.

As a result, the existing critical aircraft at OTH is ARC C-II and the future critical aircraft is ARC C-III (**Table 1-1: OTH ARC from Planning Documents**).

Table 1-1: OTH ARC from Planning Documents

Planning Document	Existing	Future
2013 Master Plan	B-II	C-III
2013 Airport Layout Plan	C-II	C-III
2021 Critical Aircraft Assessment	C-II	C-III

1.3.2 Runway 5/23

Runway 5/23 (**Table 1-2: Runway 5/23**) is the primary runway and is on the north side of the Airport. It is 5,980 feet long by 150 feet wide and meets or exceeds most FAA standards to accommodate C-II aircraft (**Table 2-1: Runway 5/23 Safety Area, FAA Design Standards vs Existing Conditions**). The runway is constructed of asphalt concrete and is served by a full-length parallel taxiway (Taxiway A) south of the runway and several connecting taxiways.

Table 1-2: Runway 5/23

Item	Runway	
	5	23
Runway Length	5,980'	
Runway Width	150'	
Runway Displaced Threshold	-	660'
Takeoff Run Available (TORA)	5,320'	5,980'
Takeoff Distance Available (TODA)	5,320'	5,980'
Accelerate Stop Distance Available (ASDA)	5,320'	5,980'
Landing Distance Available (LDA)	5,320'	5,320'
Runway Gradient	0.0%	
Pavement Type	Asphalt Concrete	
Surface Treatment	Grooved	
Pavement Conditions	Good	
Pavement Strength (lbs.)		
Single Wheel Gear	120,000 lbs.	
Dual Wheel Gear	215,000 lbs.	
Dual Wheel Tandem Gear	340,000 lbs.	
Runway Markings	Precision Instrument	
Runway Edge Lighting	HIRL	HIRL
Visual & Precision Approach Indicator Lighting	4-box PAPI	-
Approach Lighting System	1400' MALSR	-
Instrument Approach	Precision-ILS	Visual
Approach Slope Ratio	50:1	20:1
Unobstructed Approach Slope	25:1	8:1
Airport Reference Code	C-II	
Runway Protection Zone	1000' x 2500' x 1750'	500' x 1000' x 700'
Notes: HIRL – High intensity runway lights; PAPI = precision approach path indicators; MALSR = Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights Source: FAA Airport Data and Information Portal, July 2021		

The 2021 Critical Aircraft Assessment included a runway length analysis that considered fuel load and payload to reach likely commercial destinations from OTH using the critical aircraft, the CRJ-200. The runway length requirements for two CRJ-200 weight variants using OTH field elevation (17.4 feet above mean sea level) and OTH mean maximum temperature of the hottest month (66.7° Fahrenheit) are shown in **Table 1-3: Runway Length Requirements for CRJ-200 Weight Variants**.

Table 1-3: Runway Length Requirements for CRJ-200 Weight Variants

Variant	MTOW (pounds)	MLW (pounds)	Takeoff (feet)	Landing (feet)
Extended Range	51,000	47,000	5,900	4,900
Long Range	53,000	47,000	6,400	4,900
MTOW: Maximum Takeoff Weight, MLW Maximum Landing Weight *Takeoff length is at MTOW. Landing Length assumes dry runway, full flaps. Scenarios assume sea level, ISA +8C conditions (Bombardier, Inc, 2016)				

Based on existing use of the CRJ-200 as the critical aircraft at OTH and the existing runway length of 5,980 feet, the resulting recommendation from the 2021 Critical Aircraft Assessment was that the existing runway length of Runway 5/23 be maintained, at a minimum.

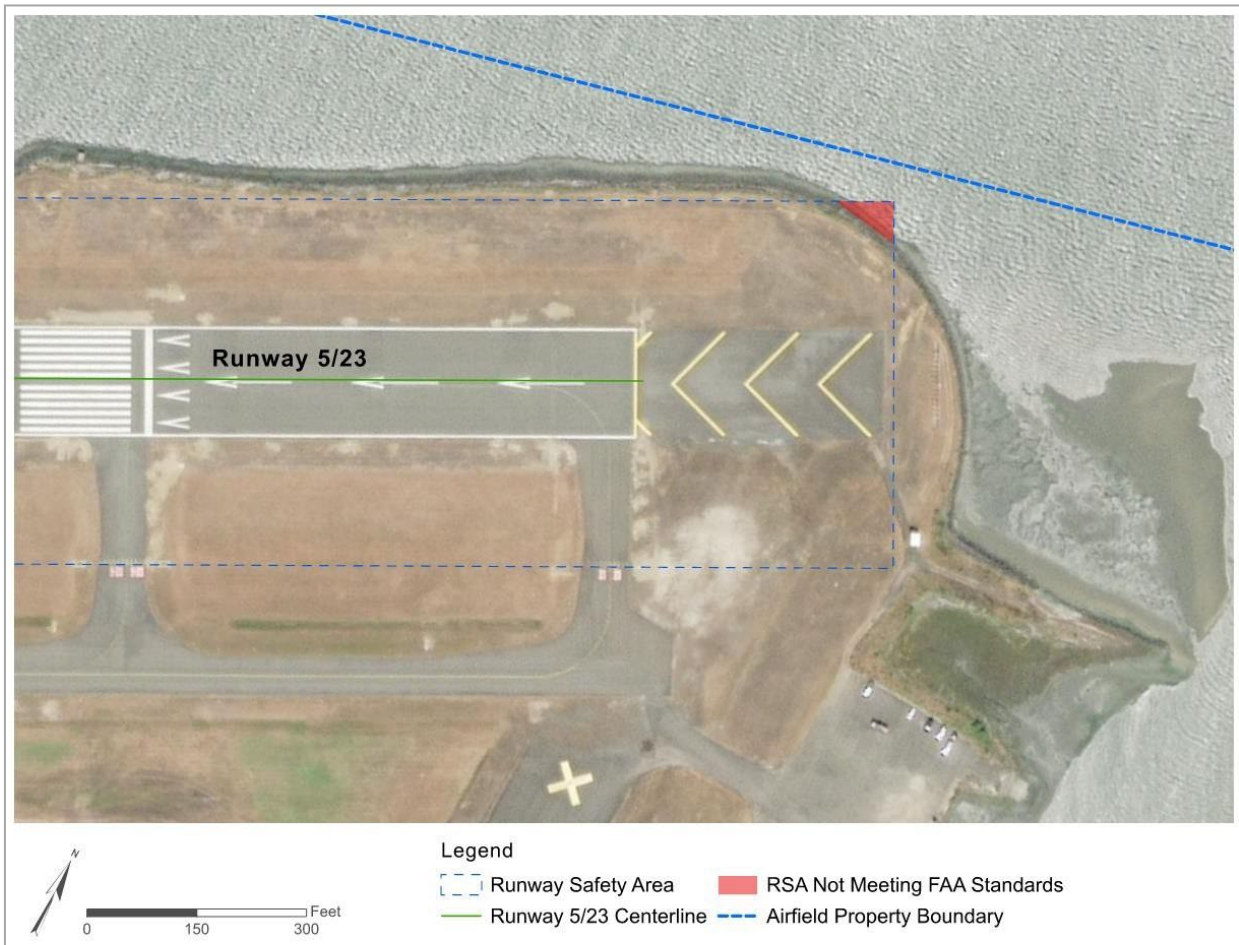
1.3.3 Runway Safety Area (RSA) of Runway 5/23

The RSA is a surface surrounding the runway that is prepared or suitable for reducing the risk of damage to aircraft and injury to occupants in the event of an undershoot, overrun, or excursion from the runway.

As previously stated, the 2021 Critical Aircraft Assessment established the appropriate ARC for OTH as ARC C-II. Runway 5/23 does not meet the ARC C-II design standards for the RSA (further discussed in **Chapter 2**). The RSA extends into Coos Bay and is approximately 79 feet short for length compliance and 57 feet short of width compliance (**Figure 1-4: Non-Standard RSA at Runway 23 End**). Therefore, the Runway 23 end has a non-standard RSA. The 660-foot displaced threshold at the Runway 23 end does not affect the requirement for the Runway 5/23 RSA because aircraft departing to, or arriving from, the west can still use the full length of Runway 5/23 (departures on Runway 23 and arrivals on Runway 5). RSA dimensions are therefore calculated without consideration of the displaced threshold at the Runway 23 end.

Design standards for a C-III RSA for Runway 5/23 are the same as C-II standards. If the likely future critical aircraft for OTH, the E-175 (ARC C-III), surpasses 500 annual operations, the RSA will continue to be non-standard by the same dimensions if no action is taken to correct the current RSA and FAA design standards do not change.

Figure 1-4: Non-Standard RSA at Runway 23 End

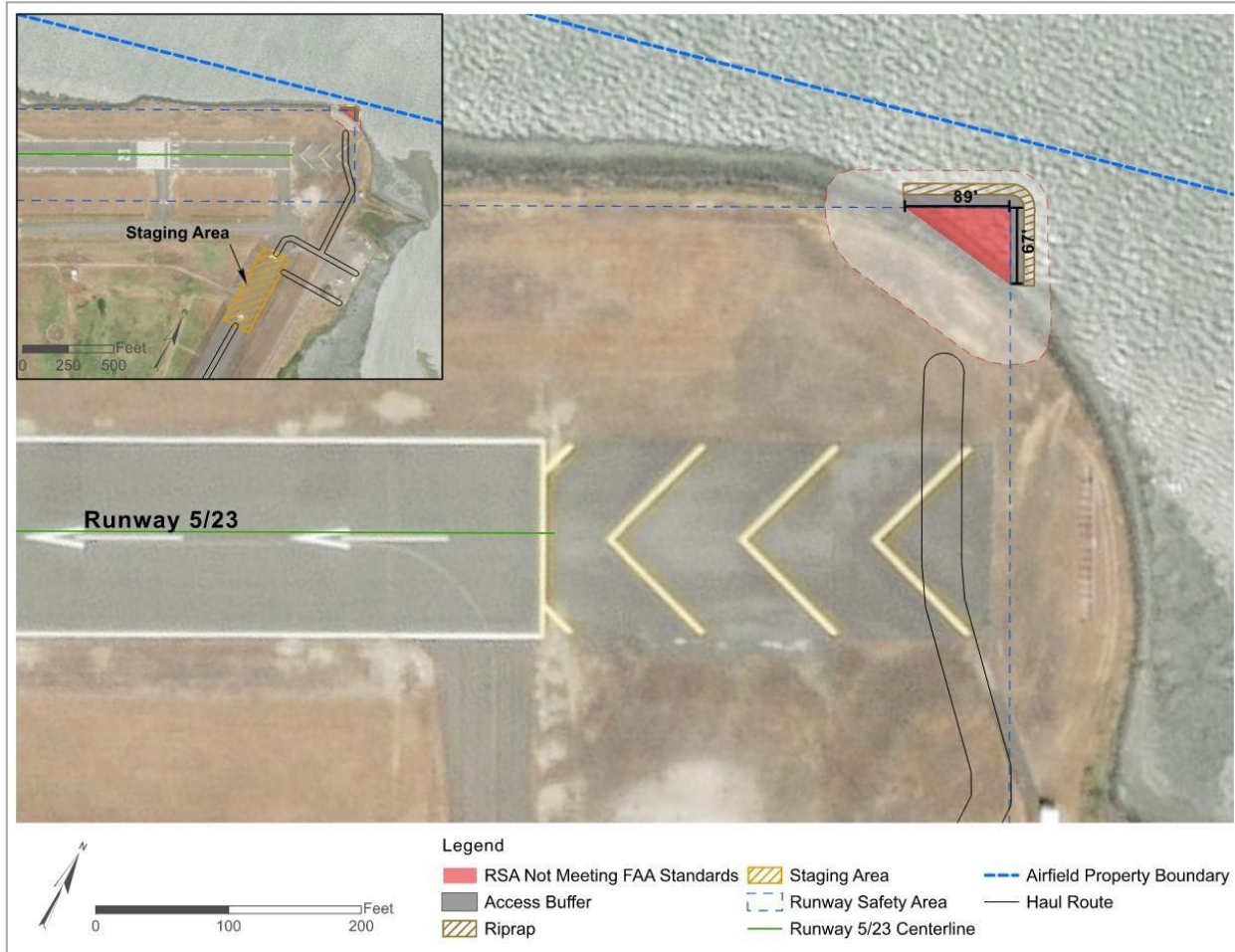


1.4 Proposed Action

The Proposed Action is endorsed by CCAD to meet FAA design standards for ARC C-II aircraft at the Runway 23 end by providing a 500-foot-wide RSA that extends 1,000 feet beyond the existing runway length.

The proposed action at Southwest Regional Airport (OTH) involves the placement of an 89-foot x 67-foot triangular bulkhead into Coos Bay at the end of Runway 5/23. Work will take place at the northeastern corner of the airport property adjacent to and within Coos Bay (**Figure 1-5: Proposed Action**). The project area includes the area required for RSA compliance, plus a 10-foot road buffer for emergency vehicle access and rip-rap toe armoring, and a 100-foot in-water construction buffer. An additional 60-foot staging area on land will provide for vehicle support and construction staging. Haul routes to the project site will utilize existing airport roadways and paved or disturbed areas.

Figure 1-5: Proposed Action



A 3,150 square-foot (0.07-acre) bulkhead will form an 89-foot by 67-foot triangular surface area at the northeastern corner of Runway 5/23. The bulkhead will be created by using pre-cast concrete blocks bulkhead, which was determined to have a fill volume of 2,215 cubic yards into Coos Bay. Construction activities will be detailed in the following section **3.4.2 Proposed Action – Alternative 6 - Runway 5/23 Safety Area Bulkhead.**

Chapter 2.0 Purpose and Need

2.1 Purpose

The purpose of the project is to improve safety by addressing the non-standard RSA at the Runway 23 end to bring the RSA at the northeast end of Runway 5/23 into compliance with FAA RSA design standards for C-II aircraft.

2.2 Need

The Proposed Action is needed because, as described in **Section 1.3.1**, the conditionally approved ALP reflected the ARC for OTH as ARC C-II, and the RSA at the Runway 23 end does not meet FAA design standards for C-II in accordance with FAA Advisory Circular 150/5300-13A, *Airport Design* (FAA AC 150/5300-13A). During the Airport's 2017 FAA Part 139 Certification Inspection, the FAA inspector noted in a letter dated April 27, 2017, that the safety area of Runway 4/22 (the Runway has since been re-designated Runway 5/23 due to magnetic declination) does not meet standards (see **Appendix B – Part 139 Compliance Letter**). The letter stated that the RSA dimensions are required to be 500 feet wide, centered on the runway centerline, and extend to 1,000 feet beyond the runway ends. The letter further stated that the airport operator must provide a plan for correcting the deficiency by December 2017. The Proposed Action is a result of this identified non-standard condition. The 2021 Critical Aircraft Assessment conclusions confirmed that ARC C-II remains the appropriate designation for OTH, and therefore, the non-standard condition identified in 2017 remains to be addressed.

Standards for an RSA remain in effect regardless of the presence of natural or man-made objects or surface conditions that preclude meeting full RSA standards. Currently, the RSA extends into Coos Bay and is approximately short of design standards by 79 feet for length and 57 feet for width. According to FAA AC 150/5300-13A, modifications to standards for an RSA are not allowed; therefore, to meet standards, the RSA for Runway 5/23 at OTH must meet the design standard for C-II. Table 2-1: Runway 5/23 Safety Area, FAA Design Standards vs Existing Conditions shows both the FAA design standard and the existing conditions of Runway 5/23 at OTH.

Table 2-1: Runway 5/23 Safety Area, FAA Design Standards vs Existing Conditions

Design Element	FAA Standards for C-II	Existing Condition
Runway Width	100 ft	150 ft
Runway Safety Area		
Width	500 ft	443 ft*
Length Beyond Runway 5 End	1,000 ft	1,000 ft
Length Beyond Runway 23 End	1,000 ft	921 ft**
Source: Runway Geometric and Separation Standards for C-II aircraft (FAA AC 150/5300-13A) *57 feet too narrow at 23 End **79 feet too short at 23 End The dimensional standards for the Runway 5/23 RSA are the same for C-II and C-III. Therefore, the Proposed Action will also serve OTH to meet design standards at the Runway 23 end to accommodate the future critical aircraft at OTH (C-III) as established by the 2021 Critical Aircraft Assessment.		

2.3 Requested Federal Actions

The following actions are required prior to actual construction of the proposed project:

- Unconditional approval of the ALP to depict those portions of the Proposed Action subject to FAA review and approval pursuant to 49 USC § 47107(a)(16)(B).
- Determination that Environmental Analysis Prerequisites associated with any future Airport Improvement Program (AIP) funding application have been fulfilled pursuant to 49 United States Code § 47101.

2.4 Proposed Timeline

The proposed project timeframe for construction, pending approval of the EA, is anticipated to begin Fall 2022.

Chapter 3.0 Alternatives

Chapter 3 summarizes the alternatives analyzed to bring the runway safety area at the northeast end of Runway 5/23 into compliance with FAA design standards. Based in part on the 2013 Master Plan Update (2013 MPU), CCAD identified six potential build alternatives. A screening analysis was performed to determine which alternatives: 1) address the purpose and need, and 2) are considered feasible and prudent. Alternatives that did meet these two screening criteria were eliminated from further consideration. The analysis concluded with the identification of the two alternatives retained for further analysis in the EA – the No Action Alternative and the Proposed Action.

3.1 Overview of Alternatives Development

The FAA and CCAD identified six preliminary alternatives that would achieve RSA compliance for the Runway 23 End Alternatives that would achieve the project purpose and need are those alternatives that would resolve the deviation from FAA design standards for RSA. The six preliminary alternatives are described in Table 3-1: **Description of Preliminary Alternatives Identified** and illustrated on **Figures 3-1** through **3-5**. As required by NEPA, the No Action Alternative is also studied in the EA, although it would not resolve the deviation from FAA design standards.

Table 3-1: Description of Preliminary Alternatives Identified

Alternative	Description
1: No Action	<ul style="list-style-type: none"> No improvements to the RSA.
2: Reduce Runway 5/23 Length	<ul style="list-style-type: none"> Reduces available landing distance by 80 feet on Runway 23 End (from 5,980 feet to 5,900).
3: Shift Runway 5/23 and Taxiway C to the South	<ul style="list-style-type: none"> Shifts Runway 5/23 and Taxiway C 70 feet to the south into Coos Bay Maintains 5,980-foot runway length. Relocates Runway 5/23 taxiway connectors, RPZ, MALSR, glide slope, and other NAVAIDs. Relocates water treatment facility South of Taxiway C.
4: Extend Runway 5/23 and Taxiway C to the West	<ul style="list-style-type: none"> Constructs 100 feet of new runway on the west end of Runway 5/23 into Coos Bay. Lengthens Runway 5/23 to 6,080 feet. Relocates taxiway connectors, MALSR, REIL's, and other NAVAIDs. Utilizes declared distances and a displaced threshold to meet RSA standards at Runway 23 end
5: Install Engineered Material Arresting System (EMAS) ¹	<ul style="list-style-type: none"> Installs 340-foot long EMAS arrester bed at Runway 23 End. Maintains existing 5,980-foot runway length.
6: Runway 5/23 Safety Area Bulkhead	<ul style="list-style-type: none"> Installs a 0.07-acre concrete block bulkhead at the Runway 23 End in Coos Bay. Maintains 5,980-foot runway length. Constructs 2,215 cubic yards (CY) of fill into Coos Bay.

Notes: An EMAS is an FAA approved aircraft arresting system that uses porous cellular materials and is intended to stop aircraft that have overshot a runway.

Four of the five preliminary action alternatives (Alternatives 1-4, and 6) were developed during the 2013 MPU, and the screening criteria for these alternatives were discussed at a CCAD Board meeting in August of 2016. One additional alternative, relocating the airport or rerouting existing traffic to another airport, was rejected because it did not serve the needs of the community. Following the review of the alternatives proposed by CCAD, the FAA updated its guidance for Engineered Materials Arresting Systems (EMAS), which resulted in the addition of Alternative 5.

In 2017, prior to initiating the EA, a resource agency scoping meeting was held to solicit feedback on the environmental impacts of construction of the alternatives (**Appendix C – Agency Scoping Comments**). In July 2019, an Oregon Joint Permit Application meeting was held with the US Army Corps of Engineers and other stakeholders to identify permit-related concerns that would need to be addressed for any alternative that involved work in Coos Bay (**Appendix D – Oregon Joint Permit Application Kaizen Meeting Documentation**). To further alternative developments, a formal public meeting was held on August 8, 2019, in North Bend, Oregon at OTH. Stakeholders, invitees, sign-in sheets, and the information presented at the meeting are included in **Appendix E – Stakeholder Outreach**.

3.2 Screening Process

To evaluate the potential build alternatives and identify the Proposed Action, the FAA and CCAD performed a two-step evaluation (“screening”) process:

- **Screening Level 1:** This screening level evaluated whether each alternative would correct the non-standard RSA deficiency at the Runway 23 end, as described in Chapter 2 as the Purpose and Need. Only development alternatives that meet the purpose and need will be carried forward to Screening Level 2.
 - Additionally, alternatives which reduce the usable length of Runway 5-23 are not prudent alternatives. The 2013 MPU determined that the existing 5,980-foot length of Runway 5-23 is usable by the critical aircraft under most conditions and would suffice for the foreseeable future. A 2021 supplementary Runway Needs Assessment confirmed the current critical aircraft and 5,980-foot length and any, alternative would have to maintain this runway length to be compatible with current and future critical aircraft (**Appendix A – Southwest Oregon Regional Airport (OTH) Critical Aircraft Runway Needs Assessment**). Build alternatives that would reduce the runway length or would not achieve the RSA dimensions of 1,000 feet in length and 500 feet in width for a 5,980-foot runway would not achieve the project’s purpose and need and were not advanced to Screening Level 2.
- **Screening Level 2:** This evaluation determined the extent to which the alternatives are feasible and prudent. The term “feasible” refers to sound engineering principals (per FAA Order 5050.4B Page 10-10), while the term “prudent” refers to rational judgement. According to FAA Order 5050.4B, a project may be possible (feasible), but not prudent when one considers safety, policy, environmental, social, or economic consequences. Alternatives may not completely meet all the criteria of Screening Level 2, so this level of screening identifies and compares alternatives that meet most of the requirements and that do not have unique problems, costs, or an accumulation

of impacts. Alternatives that passed Screening Level 2 were retained for detailed analysis in the EA; other alternatives were eliminated from further analysis in this EA.

3.1.1 Alternative 1: No Action Alternative

Under the No Action Alternative, no improvements to the RSA would be constructed. The RSA would deviate from FAA design standards and this alternative would not meet the Purpose and Need. Although this alternative does not meet the Purpose and Need, CEQ and NEPA regulations require consideration of a No Action Alternative (40 CFR 1502.14). When compared to the Proposed Action, the No Action Alternative serves as a reference point to evaluate impacts of the Proposed Action.

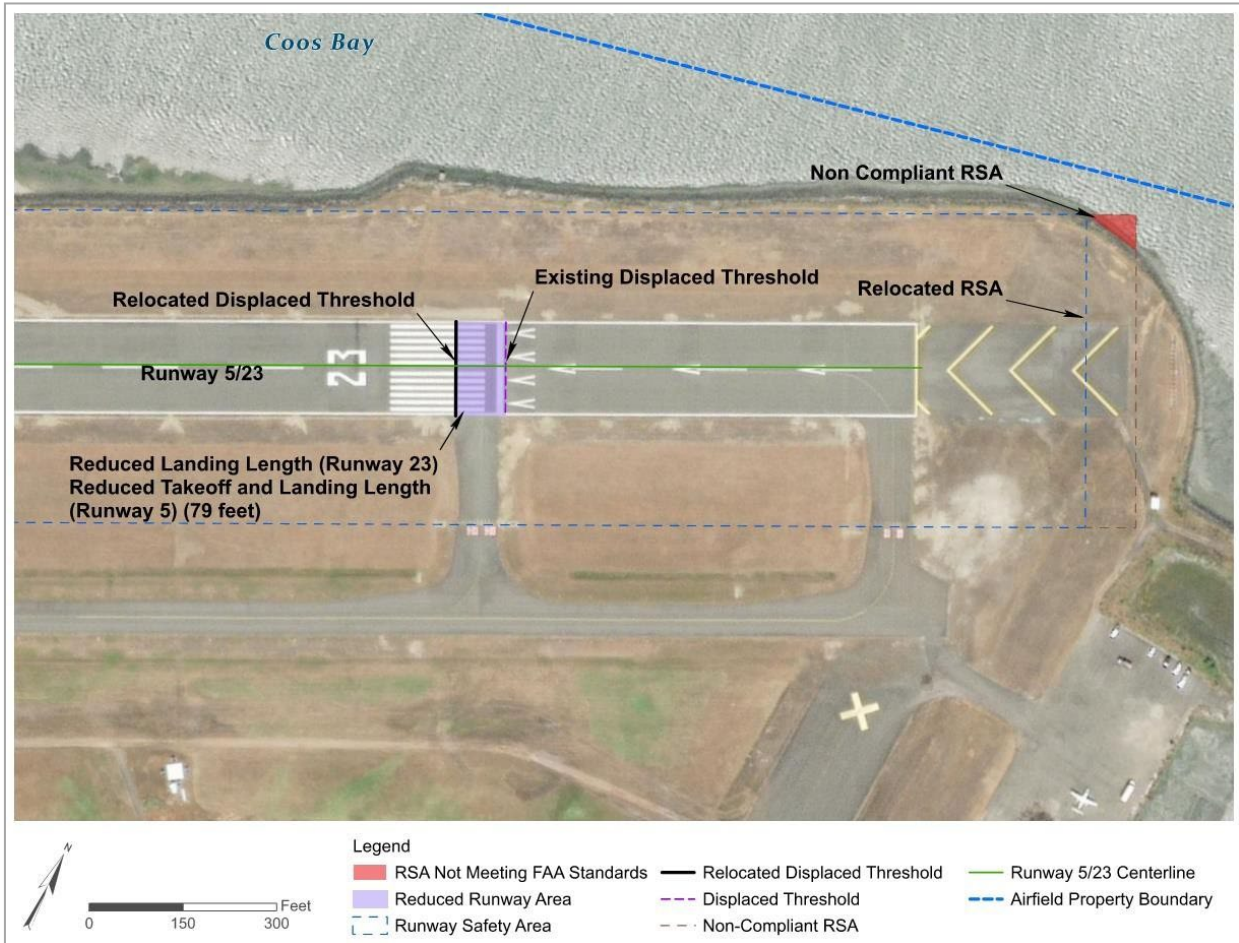
3.1.2 Alternative 2: Reduce Runway 5/23 Length

Alternative 2 would include reducing the length of Runway 5/23 through declared distances and a displaced threshold to bring the RSA into compliance (**Figure 3-1: Alternative 2 - Reduce Runway 5/23 Length**). Declared distances are used when the full length of the paved runway is not available for landings or takeoffs. A displaced threshold is a set of runway markings that define the beginning of a runway for landings when the full length of the runway is not usable.

As mentioned in **Section 1.3.1 Design Aircraft and Airport Reference Code**, the Bombardier CRJ-200 runway length requirements are based on the 2021 Runway Needs Assessment that considered fuel load and payload to reach likely commercial destinations from OTH (**Appendix A – Southwest Oregon Regional Airport (OTH) Critical Aircraft Runway Needs Assessment**). Using declared distances for Runway 5/23 will reduce the runway length by 79 feet to obtain a standard RSA. This runway reduction is not in alignment with the recommendations of the 2013 MPU and 2021 Runway Needs Assessment because existing critical aircraft will need to operate with weight penalties that may affect the economic viability of the flight.

While Alternative 2 addresses the deficiency at in the RSA at the Runway 23 end, it reduces the usable length of Runway 5/23. Therefore, Alternative 2 did not pass Screening Criteria 1 and is not carried forward for analysis in this EA.

Figure 3-1: Alternative 2 - Reduce Runway 5/23 Length



3.2.1 Alternative 3: Shift Runway 5/23 and Taxiway A to the South

Alternative 3 would shift Runway 5/23 and Taxiway A 60 feet to the south to bring the RSA at the Runway 23 end within airport property boundaries (**Figure 3-2: Alternative 3 - Shift Runway 5/23 and Taxiway A to the South**).

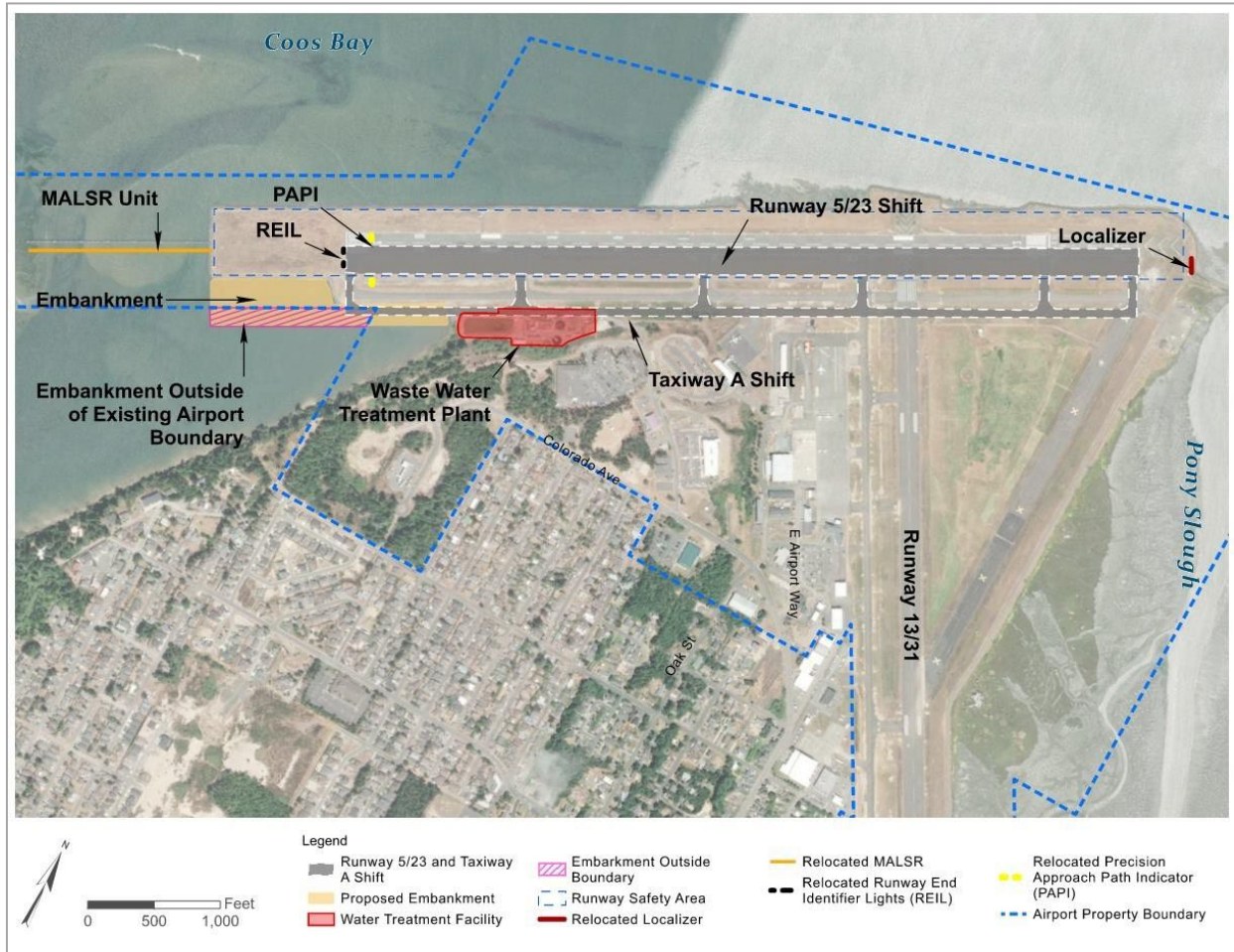
Shifting the runway and Taxiway A would require extensive grading, the installation of new pavement, modification of the drainage system, new signage, and airfield marking modifications. In addition, the Runway End Identifier Lights (REILs), Precision Approach Path Indicators (PAPI), Localizer, Medium Intensity Approach Lighting System (MALSR), and threshold lights also would need to be relocated. The relocation of Taxiway A would also necessitate the closure and relocation of an adjacent water treatment facility. Shifting the runway and taxiway would require the addition of extensive fill material into Coos Bay, which would adversely modify critical habitat for ESA-listed fish, impact designated Essential Fish Habitat (EFH), and displace recreational clam beds. Submerged land acquisition from Oregon DSL would be required because a portion of the fill is outside the airport property boundary.

Although Alternative 3 meets the purpose and need and does not reduce the usable length of Runway 5-23 (Screening Criteria 1), it is not considered feasible or prudent because it would: 1) require the relocation

of a stormwater treatment facility, 2) necessitate submerged property acquisition to construct a bulkhead outside of existing airport property, and 3) require extensive fill material (approximately 98,000 cubic yards) into federally designated critical habitat for fish.

Even though Alternative 3 meets Screening Criteria 1, the project complexity surpassed what was considered feasible and prudent for Screening Criteria 2 and was dismissed for detailed evaluation in the EA.

Figure 3-2: Alternative 3 - Shift Runway 5/23 and Taxiway A to the South

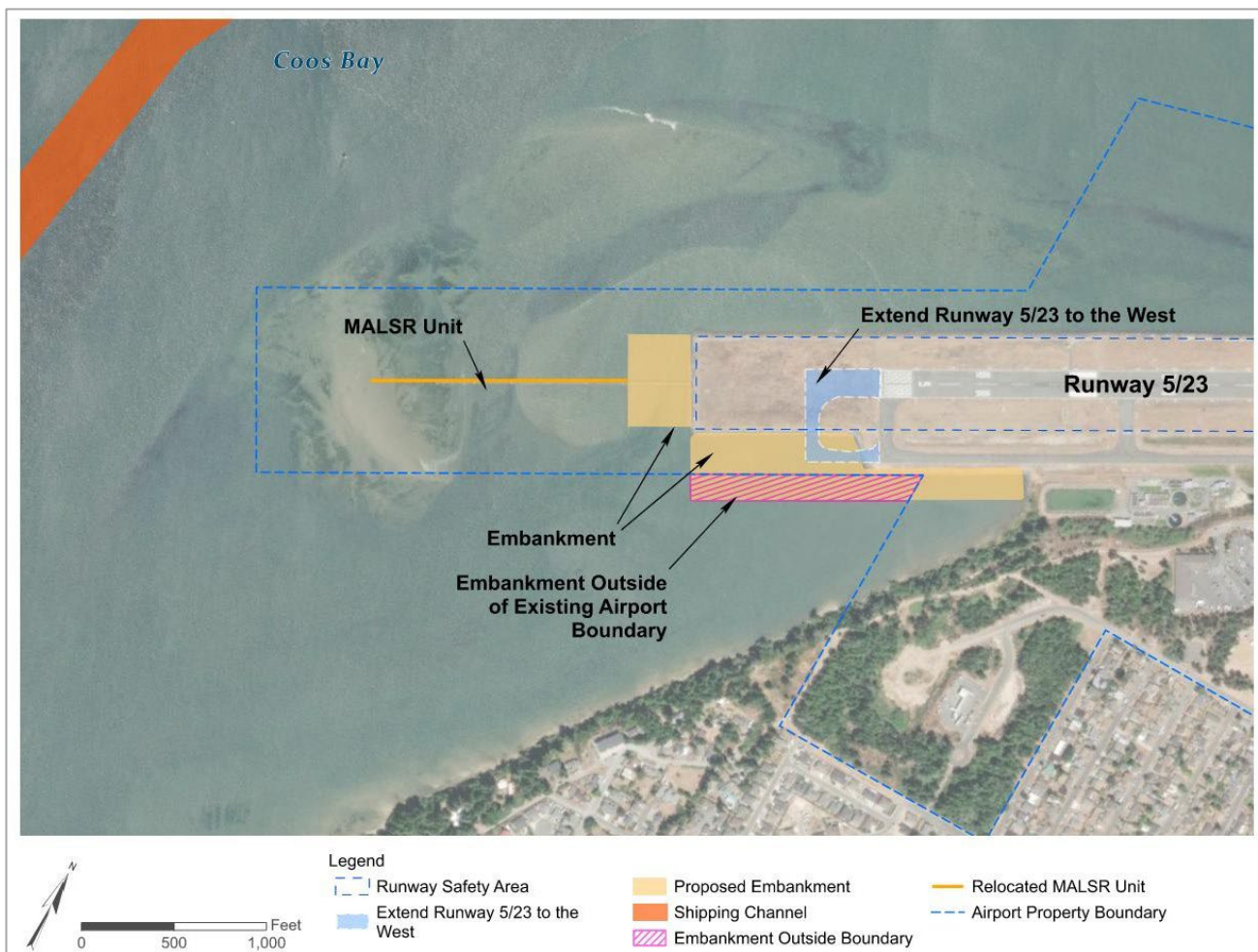


3.2.2 Alternative 4: Extend Runway 5/23 and Taxiway A to the West

Alternative 4 would extend Runway 5/23 and Taxiway A 100 feet to the west. This would lengthen Runway 5/23 to 6,380 feet, a desirable length for future planning to accommodate larger aircraft (see **Figure 3-3: Alternative 4 - Extend Runway 5/23 to the West**). Extension of the runway and taxiway would require construction of a bulkhead and the addition of approximately 138,000 cubic yards of fill material in Coos Bay, which would adversely modify critical habitat for ESA-listed fish, designated EFH, and damage nearby recreational clam beds.

To resolve the non-standard RSA at the Runway 23 end, Alternative 4 would reduce the Runway 23 End by 79 feet through declared distances and a displaced threshold (see Alternative 2), while extending the Runway 5 End by approximately the same distance (100 feet). This would benefit OTH by increasing takeoff distance available (TODA), takeoff runway available (TORA), accelerated stop distance available (ASDA), and landing distance available (LDA). It also addresses the goal of expanding the future aircraft fleet to include many GA business jets. Extension of the runway and taxiway would require extensive grading, the installation of new pavement, modification of the drainage system, new signage, and marking modifications. In addition, the Runway End Identifier Lights (REILs), Precision Approach Path Indicators (PAPI), Localizer, Medium Intensity Approach Lighting System (MALSR), and threshold lights also would need to be relocated.

Figure 3-3: Alternative 4 - Extend Runway 5/23 to the West



Submerged land acquisition would be required due to a portion of the proposed bulkhead being located outside of the current airport property line. It would also increase impervious surface on the site, increasing stormwater runoff into ESA-listed fish habitat, which would require SLOPES V compliance and mitigation per the National Marine Fisheries Service (NMFS). This alternative includes complex environmental factors relating to impacts to ESA listed species, EFH, adjacent recreational clam beds, and mitigation site selection. Alternative 4 could be controversial based on the project area and potential conflicts between

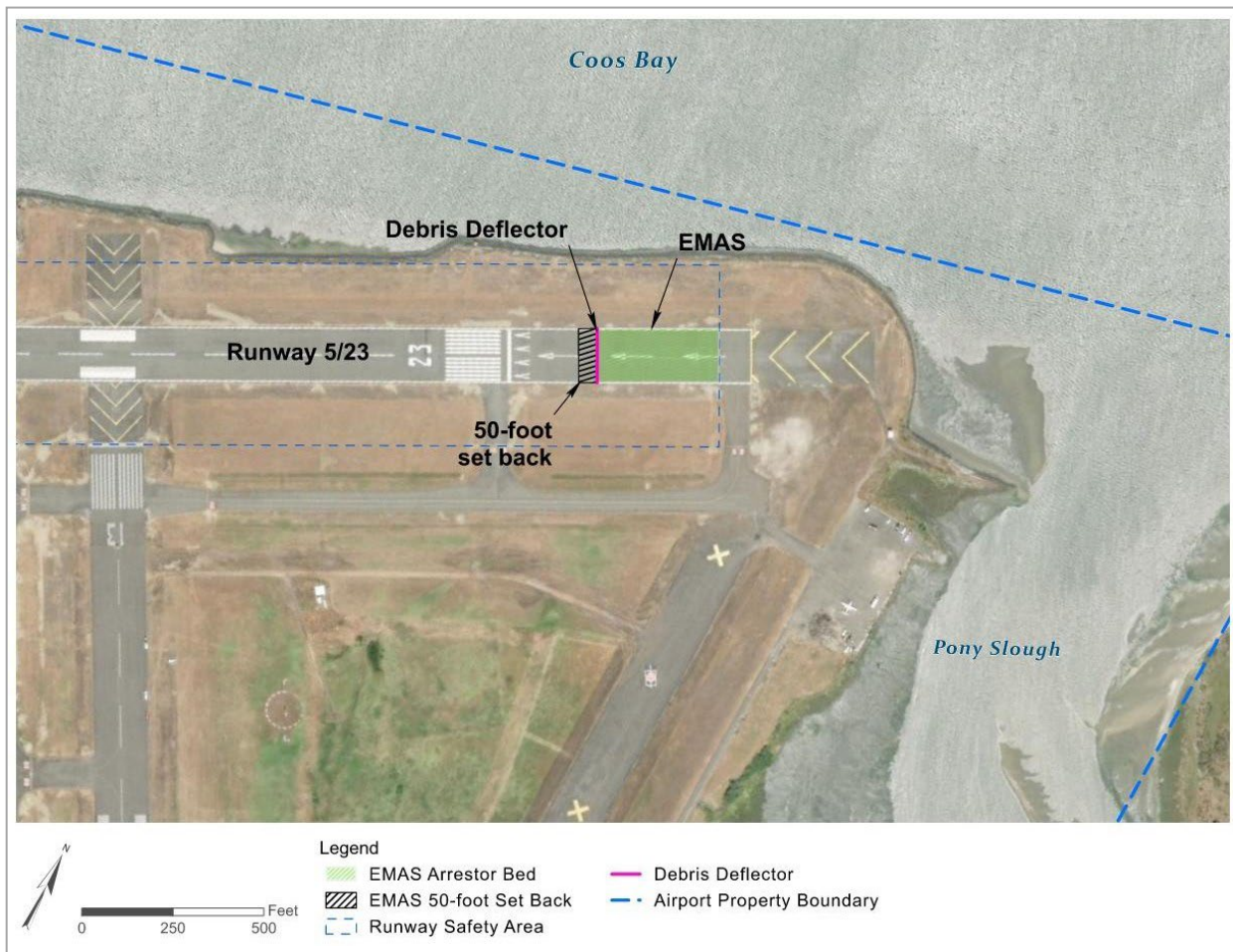
shipping vessels and aircraft since the bulkhead extends towards the Coos Bay Shipping Channel. The RPZ may be in close proximity to the shipping channel, which could require Air Traffic Control Tower (ATCT) coordination with the operators of the Port of Coos Bay.

Alternative 4 meets the Purpose and Need and Screening Criteria 1, however the project complexity surpassed what was considered feasible and prudent as Screening Criteria 2 and was dismissed for detailed evaluation in the EA.

3.1.3 Alternative 5: Install Engineered Materials Arresting System (EMAS) on Runway 5 Departure End

Alternative 5 involves the installation of an EMAS at the departure end of Runway 5 (see **Figure 3-4: Alternative 5 – Install Engineered Materials Arresting System (EMAS) on Runway 5 Departure End**). EMAS uses crushable lightweight concrete to decelerate aircraft if an aircraft overruns, undershoots, or veers off the side of the runway.

Figure 3-4: Alternative 5 – Install Engineered Materials Arresting System (EMAS) on Runway 5 Departure End



EMAS is an alternative that should be considered to mitigate overruns at airports when a full-dimension RSA is not practicable due to natural obstacles, local development, and/or environmental constraints (FAA, 2021). According to FAA Order 5200.9, *Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems*, OTH meets the requirements for possessing environmental constraints that may hamper RSA expansion, and the analysis of EMAS is appropriate.

The sole manufacturer of EMAS in the USA, Runway Safe, provided a preliminary design and cost estimate for an EMAS in the approach to Runway 23 in on December 12, 2020. The EMAS arrestor bed would be approximately 300 feet long by 170 feet wide. The EMAS would be set back 50 feet from the departure end of Runway 23 to minimize potential damage from jet blast. Currently the displaced threshold is set 660 feet from the runway end and could accommodate EMAS. The EMAS installation reduces the RSA length by 400 feet, which also brings the width onto land, and meets FAA design standards for RSA.

FAA Order 5200.9 requires a life cycle cost comparison with any other non-EMAS alternative being used to meet RSA standards. EMAS site preparation costs are anticipated to be \$725,000, EMAS materials & contracted installation are estimated at \$2.5 million, annual maintenance costs are estimated assuming \$0.64 per square foot per year, assuming \$0.33 per square foot per year adjusted for 7% inflation rate for 2021 (FAA, 2004). Based upon the size of the EMAS bed estimated by Runway Safe, the annual maintenance cost would be \$33,075. A 20-year system life cycle cost results in a \$8.692 million EMAS system (**Appendix F – Cost Estimate**), which meets the maximum feasible cost for RSA improvement based on FAA guidance.

The long-term viability of an EMAS system replacement may be uncertain. In February 2018, the previous FAA-approved EMAS manufacturer (Zodiac, a French aerospace firm) announced that it would no longer manufacture EMAS units. Existing EMAS owners had no way to replace or repair their systems. Runway Safe recently reopened for business in 2020 and is currently the sole US supplier of EMAS installations eligible for FAA grants.

Alternative 5 would require the Airport to budget for EMAS maintenance, replacement if damaged, and for EMAS replacement when required in 20 years. If manufacturing remains uncertain, the airport could find itself unable to replace or maintain EMAS materials if damaged and then again be at risk of a non-compliant RSA.

Alternative 5 meets the Purpose and Need and Screening Criteria 1. The project is considered feasible, but when costs are compared to the RSA bulkhead alternative, when added to maintenance responsibility and uncertainty of the long-term viability of EMAS, this alternative was not found to be prudent under Screening Criteria 2 and not retained for more detailed evaluation in the EA.

3.1.4 Alternative 6: Runway 5/23 Safety Area Bulkhead

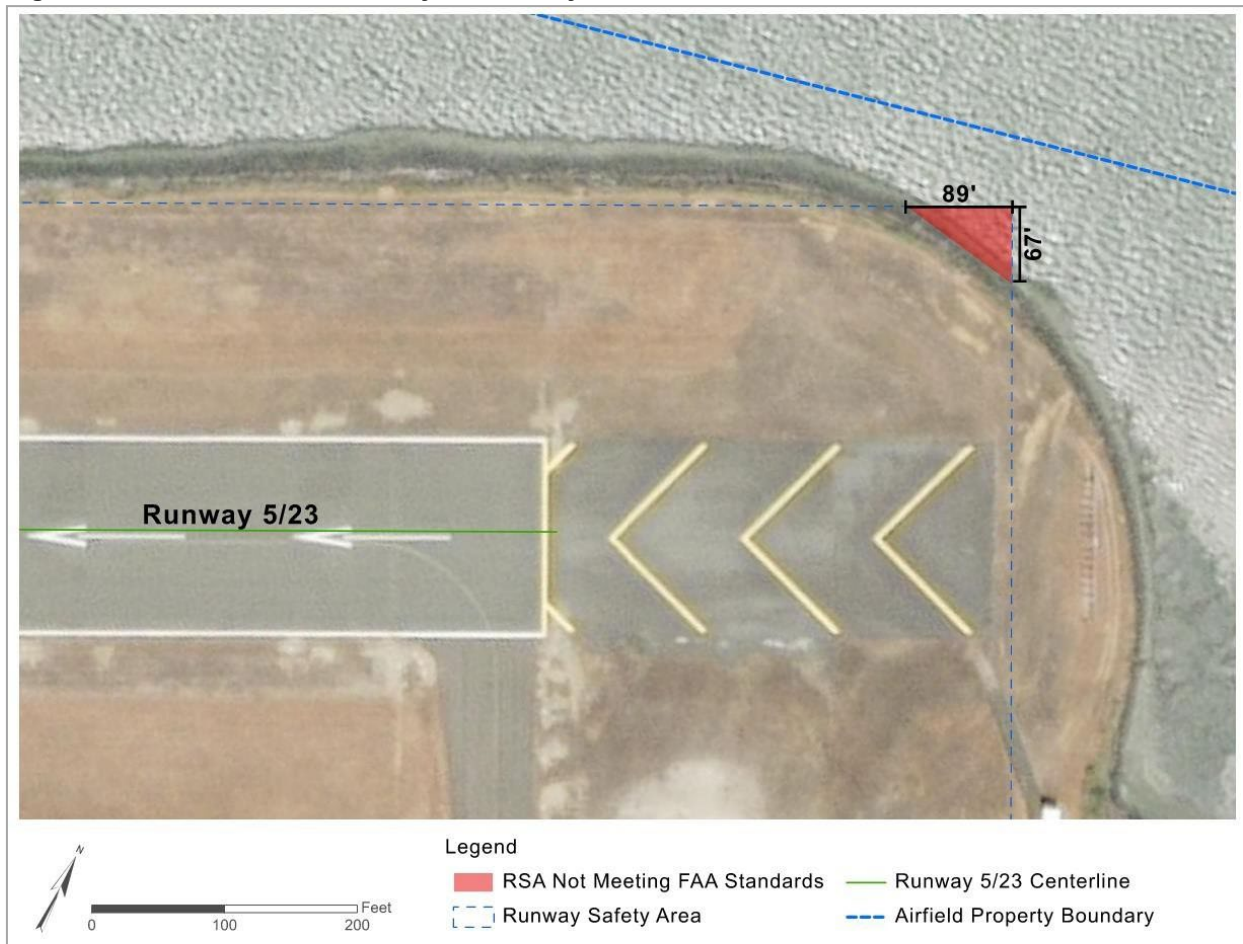
Alternative 6 would achieve FAA RSA design standards by creating a 1,000-foot by 500-foot RSA for Runway 5/23 to accommodate the existing GA and commercial fleets at OTH (**Figure 3-5: Alternative 6 - Runway 5/23 Safety Area Bulkhead**). Alternative 6 would permanently fill 2,215 cubic yards (CY) into Coos Bay to install a pre-cast concrete block bulkhead that would provide a 0.07-acre (89-foot by 67-foot)

surface at the northeastern corner of the airport property. A 10-foot-wide emergency vehicle access road would surround the edge of the bulkhead, and rip-rap toe armoring would be replaced at the toe of the bulkhead for stabilization and wave attenuation.

This alternative avoids submerged land acquisition from OR DSL due to the submerged property ownership by CCAD. Alternative 6 will permanently adversely modify 0.07 acres of critical habitat for ESA-listed fish (Coho salmon and Green sturgeon), which will be mitigated in accordance with the Biological Opinion on July 29, 2020 (**Appendix G – Biological Opinion**) which involves the removal of two remnant creosote dock structures south of the proposed bulkhead. The RSA bulkhead alternative has the fewest environmental impacts, lowest cost, and is the most reasonable and feasible way to meet FAA design criteria requirements for Runway 5/23 safety (see **Appendix F – Cost Estimate**).

Alternative 6 meets the Purpose and Need under Screening Criteria 1. The project is also considered reasonable and feasible under Screening Criteria 2 and was retained for more detailed evaluation in the EA.

Figure 3-5: Alternative 6 - Runway 5/23 Safety Area Bulkhead



3.3 Screening Results

Based on the screening criteria discussed in Section 3.2, two alternatives were retained for detailed analysis in the EA: No Action and the Alternative 6 Runway 5/23 Safety Area Bulkhead construction. Five alternatives were eliminated from further analysis, as summarized in **Table 3-2: Summary Results of Alternatives Screening**.

Alternative 2 was eliminated at Screening Level 1 because it would not maintain the current runway length, potentially inhibiting commercial viability of the airport. Alternatives 3 and 4 were eliminated at Screening Level 2 due to an accumulation of impacts of extraordinary magnitude, without any additional benefit or advantage over other alternatives. Alternative 5 (EMAS) would meet the purpose and need, but after a lengthy analysis of the cost and maintenance requirements necessary, as well as recent non-availability of replacement EMAS, this alternative was dismissed from further evaluation.

Table 3-2: Summary Results of Alternatives Screening

Alternative	Screening Result	Reason For Result
1: No Action	Retained for detailed analysis	Requires evaluation of environmental consequences under NEPA
2: Reduce Runway 5/23 Length	Not retained for detailed analysis	Does not meet Purpose and Need, and is incompatible with airport planning needs
3: Shift Runway 5/23 and Taxiway C to the South	Not retained for detailed analysis	Likely accumulation of impacts that collectively reaches extraordinary magnitudes
4: Extend Runway 5/23 and Taxiway C to the West	Not retained for detailed analysis	Likely accumulation of impacts that collectively reaches extraordinary magnitudes
5: Install Engineered Material Arresting System (EMAS)	Not retained for detailed analysis	Long-term costs and maintenance exceed costs for other alternatives
6: Runway 5/23 Safety Area Bulkhead	Retained for detailed analysis	Passes all screening criteria

3.4 Alternatives Assessed in the Environmental Assessment

This section summarizes the two alternatives studied in detail in the EA.

3.4.1 No Action Alternative

Under the No Action Alternative, no improvements to the RSA would be constructed. The existing RSA would not comply with FAA design standards and would not fulfill the project purpose and need.

3.4.2 Proposed Action – Alternative 6 - Runway 5/23 Safety Area Bulkhead

This section summarizes the Sponsor’s Proposed Action (identified as Alternative 6, Runway 5/23 Safety Area Bulkhead during the alternatives screening process), which would bring Runway 5/23 into compliance with current FAA design standards. A full description of the Proposed Action is shown on **Figure 1-5: Proposed Action** and provided below in **Section 1.4**.

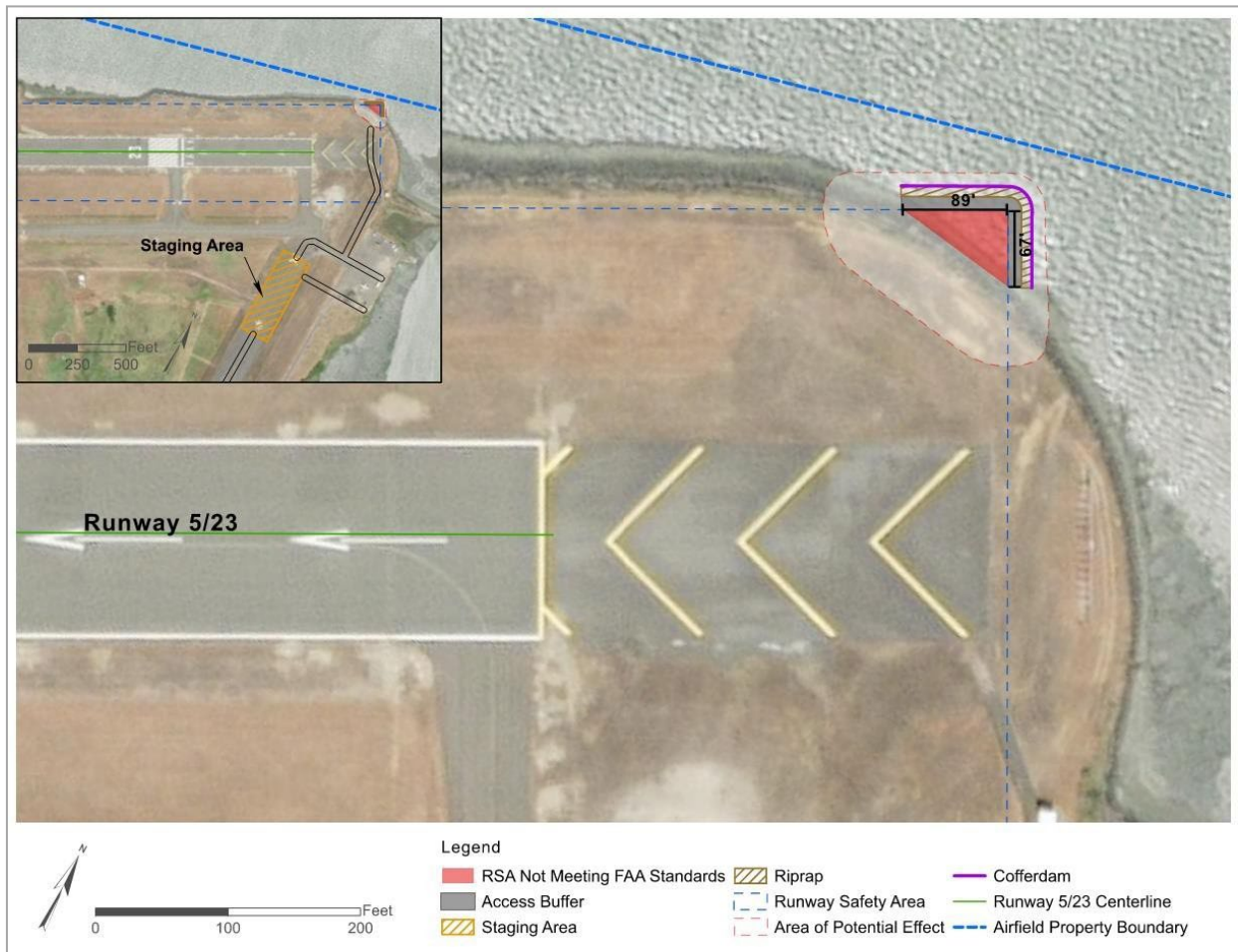
Work will take place at the northeastern corner of the Airport property adjacent to and within Coos Bay. The Project Area includes areas of OTH and the Coos Bay estuary directly or indirectly affected by the proposed project which include: 1) a 60-foot buffer on land for vehicle support and construction staging, 2) an in-water

construction buffer of 100 feet for proposed fill activities, 3) the RSA, 4) a 10-foot road buffer for emergency vehicles, and 5) a 10-foot perimeter of rip-rap toe armoring at the base of the bulkhead.

Construction crews and equipment will utilize haul routes to the project site via existing Airport roadways and paved areas. These temporary project elements are illustrated in **Figure 3-6: Proposed Action - Runway 5/23 Safety Area Bulkhead:**

- Staging area: One construction staging area will be established on the paved firefighter training grounds south of the project site.
- Haul routes: The contractor would transport materials from the staging area to the project area via public roadways and paved areas at the Airport.
- Site access: The contractor would access the project area from Maple Street via Virginia Avenue. Construction of bulkhead will occur outside of commercial flight times during the Oct 1 – Feb 15 Oregon Department of Fish and Wildlife (ODFW) in-water work window. No permanent runway closures will occur, and operations can utilize existing infrastructure to manage airport traffic.

Figure 3-6: Proposed Action - Runway 5/23 Safety Area Bulkhead



This project proposes to construct a triangular concrete bulkhead near the confluence of Pony Slough. The bulkhead will be a 3,150 square-foot pre-cast concrete block structure that will create 0.07-acre (89-foot by 67-foot) of triangular surface area within the RSA. Existing riprap cobbles within the construction area will be salvaged and reused for the final structure as armoring stone along the toe of the bulkhead.

The armoring would extend slough-ward by approximately 8 feet to dissipate wave energy erosion, decrease scouring and undercutting of the bulkhead structure, and increase structural stability of the bulkhead. To prepare for construction, a temporary single-face sheet pile cofferdam will be installed 12 feet from the exposed slough-ward bulkhead wall for dewatering and excavation of the foundation.

The subgrade of the bulkhead will require stabilization by excavating approximately 2 feet below the wall and 2 feet into Pony Slough and backfilling the area with sand and 3 inches of rock. The prepared subgrade will then be lined with non-woven geotextile fabric and backfilled with structural drainrock. The bulkhead foundation system will then be constructed followed by the installation of slough-ward toe armoring stone. Upon completion of the bulkhead foundation, pre-cast blocks will be vertically placed, and the associated bulkhead area will be infilled. At completion, the subgrade stabilization will be buried beneath 12-inches of native slough soils in order to restore existing grades and slough bottom conditions (**Appendix H – Joint Permit Application, Figure 6 – Conceptual Seawall/Bulkhead Detail**). The bulkhead wall will be constructed from large, pre-cast concrete blocks which can be installed from shore without the use of a tall crane, significantly reducing Airport closures during construction. The fill material would be trucked onto the project site and placed around the foundation from shore.

The existing runway surface is at 12.0 feet elevation using the North American Vertical Datum of 1988 (NAVD88). Fill was based on the existing runway surface being extended, level with the runway, to the edge of the proposed fill. The triangular bulkhead includes eco-block or sheet pile with the interior edge of fill being nearly vertical. Including the 10-foot waterward access buffer, the length of the north side of the fill from the shoreline is approximately 89 feet and the east side fill from the shoreline is approximately 67 feet. At the deepest point, the fill is approximately 23 feet high. The total fill volume is approximately 2,215 cubic yards.

Construction will proceed during the in-water work period (October 1 – February 15) as follows (**Appendix H – Joint Permit Application, Appendix A, Figure 6 – Conceptual Seawall/Bulkhead Detail**):

1. Remove a portion of the existing riprap bulkhead – Sections of the existing riprap armoring will need to be removed for sheet pile placement. Riprap will be removed carefully to minimize disturbance of the substrate. Water quality monitoring will be in place to track any increase in turbidity and sedimentation that could impact nearby eelgrass beds.
2. Construct temporary cofferdam – Erosion control will be installed, and a temporary cofferdam will be constructed 12 feet outside of the bulkhead wall.
3. Dewater the construction area – Dewatering will be done through sediment outflow filters. The water will drain into Coos Bay on the west side of the coffer dam/RSA fill area during tidal outflows to reduce turbidity and sedimentation near the eelgrass to the greatest extent possible.

4. Salvage existing riprap – Once the construction area has been dewatered, the remainder of the existing riprap armoring will be removed from the construction area for reuse in the foundation.
5. Subgrade excavation – A foundation trench will be excavated approximately 4 to 6 feet below the wall toe extending a maximum of 4 feet outside of the wall line. Excavation will be performed from an access road behind the wall line within the permitted construction limits. Excavated soils will be re-utilized as bulkhead fill (see Step 10).
6. Subgrade preparation – The bulkhead foundation subgrade will be prepared by lining the exposed substrate with geotextile and backfilling the area with structural drainrock.
7. Bulkhead foundation – The bulkhead foundation will be created on compacted structural drainrock.
8. Toe armoring stone – An 8-foot-wide roll of geotextile will be placed on the prepared toe armoring stone subgrade. The toe of the grid will extend 8 feet past the slough-ward bulkhead wall line with the depth of the armoring stone being approximately 3 feet. Cover the geotextile with salvaged riprap stone and additional imported armoring stone along the toe of the bulkhead, shape, and grade to match the existing slough grade line.
9. Bulkhead structure – As the bulkhead concrete blocks are installed vertically, the structural drainrock and geotextile will extend upward to the final design grade of the retained bulkhead. The bulkhead fill shall support the geotextile and drainrock as the site is infilled (see Step 10).
10. Bulkhead Fill – Infill the bulkhead area with salvaged slough soils, in even layers not to exceed 8 inches in loose uncompacted earth, until the final grade is established.

The in-water extent of the project area is based on the potential for a temporary increase in turbidity and sedimentation. Dewatering of the construction site will be conducted through outflow sediment filters on the west side of the cofferdam to further reduce sedimentation within Pony Slough and avoid impacts to adjacent eelgrass. Installation and removal of the cofferdam would result in the highest level of turbidity during the course of the project. In-water work associated with both will be timed with the outflow of tides to reduce sedimentation on eelgrass beds 100-feet away.

Chapter 4.0 Affected Environment and Environmental Consequences

Chapter 4 describes the affected environment and considers the potential environmental consequences associated with the Proposed Action and No Action alternatives. Each environmental impact category identified by FAA Order 1050.1F and 5050.4B is analyzed regarding:

- Affected Environment
- Environmental Consequences
- Mitigation
- Findings and Conclusions

Affected Environment describes the existing natural, ecological, cultural, social, and economic conditions that could be affected by the Proposed Action and No Action Alternative. Baseline data used to determine the affected environment were collected by reviewing existing documentation and resource agency databases, consultation with resource agency personnel, and conducting field investigations.

The discussion of environmental consequences evaluates the potential impacts of the Proposed Action and No Action Alternative on each environmental impact category, if any. The FAA uses thresholds that serve as specific indicators of significant impact for some environmental impact categories. These thresholds of significance are provided in FAA Order 1050.1F, Exhibit 4-1 Significance Determination for FAA Actions. The analysis of the impacts linked to the Proposed Action is a comparison of the impacts with the No Action Alternative and is based on the best-known information at the time of development of this EA.

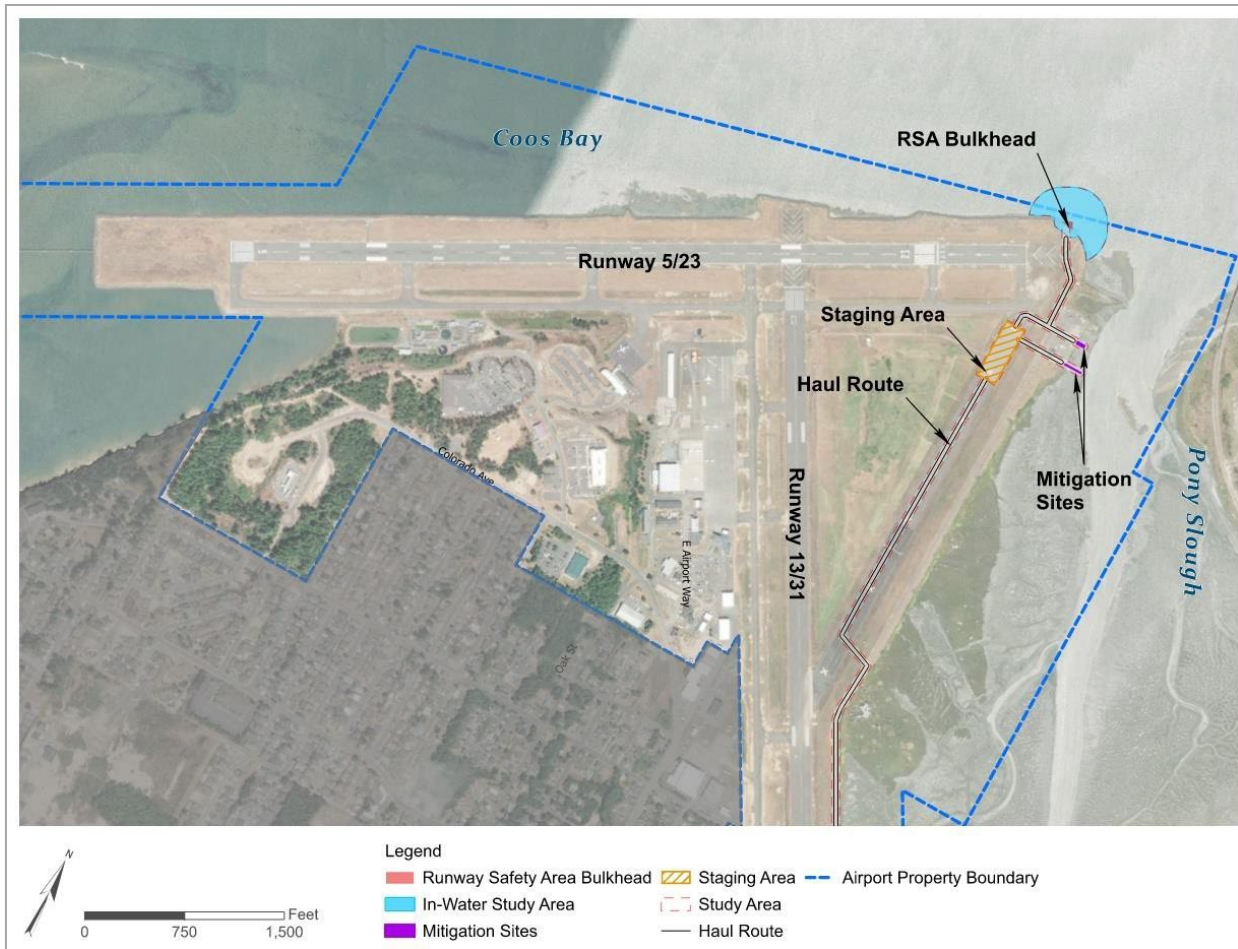
If significant impacts are identified, mitigation measures are then discussed to avoid or minimize the potential impacts of the Proposed Action.

The findings and conclusions discussion associated with each environmental impact category summarizes the effect of the No Action Alternative and the Proposed Action.

Although the No Action Alternative does not meet the Purpose and Need as explained in **Chapter 2**, CEQ and NEPA regulations require evaluation of a No Action Alternative. For purposes of comparison, the No Action Alternative is evaluated alongside the Proposed Action. When compared with the Proposed Action, the No Action Alternative serves as a reference point or baseline to consider the situation in which the Proposed Action is not implemented.

The study area for the Proposed Action is generally defined as the 0.07-acre RSA fill area under the Proposed Action and the 0.14-acre mitigation sites, as well as the haul routes and staging areas (Error! Reference source not found.). One environmental impact category (Biological Resources) requires a 200-foot expanded project area to encompass in-water resources indirectly affected by the Proposed Action.

Figure 4-1: Study Area Overview



4.1 Joint Permitting Application (JPA)

The Joint Permitting Application (JPA) process in Oregon coordinates the regulatory consultation and permitting process for local, state, and federal agencies for in-water projects that would typically be coordinated individually. As part of JPA process, a pre-application meeting is held that invites all agencies to comment on proposed in-water projects and formal comments are submitted at the time of application. For the proposed project at the Airport, the JPA process guided the necessary agency consultation, planning and analysis of potential impacts for multiple environmental impact categories as evaluated in this chapter and as summarized in Table 4.1 **Environmental Impact Category and JPA Coordination**.

Table 4-1: Environmental Impact Category and JPA Coordination

Section of Environmental Impact Category		Agency Consulted and Requirement
4.3	Biological Resources (Including Fish, Wildlife, and Plants)	Oregon Dept. of Fish and Wildlife (ODFW) – State-listed species
4.5	Coastal Resources	City of North Bend – Tsunami Ordinance, Floodplains Development, Land Use Compatibility, Estuary Management Plan Cons. And Land Development (DCLD) – CZMA Determination
4.9	Historical, Architectural, Archeological, and Cultural Resources	Oregon SHPO and Tribal Coordination – Cultural Report No Effect Determination
4.10	Land Use	Oregon Dept of State Lands (OR DSL)- Submerged Lands Determination
4.15	Water Resources (Wetlands, Floodplains, Surface Waters, Groundwaters, and Wild and Scenic rivers)	US Army Corps of Engineers (USACE) – NWP, 401/404 Water Quality Certification Oregon Dept. Of Env. Quality (OR DEQ) – 401/404 Water Quality Certification, OR Fill/Removal

As part of the JPA process, permit applicants are recommended to meet with the agencies as part of regularly scheduled interagency pre-application meetings, known as “Kaizen.” The Kaizen pre-application process is intended for non-routine permit evaluations that may be large, complex, or controversial in nature. The intent of the meetings is to provide meaningful comment and feedback to prospective applicants early in the permitting process to help them effectively prepare permit applications and address agency concerns. OTH held a Kaizen for this project on July 17, 2019, with the following agencies in attendance: USACE, OR DSL, OR DEQ, ODFW, and FAA (See **Appendix D – Oregon Joint Permit Application Kaizen Meeting Documentation**). Agency comments were received and incorporated into the planning and design of the project.

The JPA was submitted in September of 2020 to Oregon DSL. The application received formal comments from the agencies, but the application was not finalized after receipt of formal comments due to reevaluation of this EA by FAA in 2020. The airport requested a waiver to finalize later and the waiver by OR DSL was approved in November of 2020.

In 2021, the JPA was revised in response to the formal comments and a final JPA was submitted in February 2022. The JPA will be resubmitted for approval in March of 2022 (**Appendix H – Joint Permit Application**).

While the applicant for the JPA is the Airport, some mitigation is through the federal-to-federal agency consultation process of which the FAA is the lead agency. In these cases (i.e., NMFS Conservation Measures, **Section 4.3.3 Biological Resources - Mitigation**), the FAA is listed as the responsible agency, signs the mitigation agreement, and directs the Airport to comply. All other state agency mitigation requirements are the responsibility of the Airport.

4.2 Air Quality

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for pollutants considered harmful to public health and the environment: carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃),

particulate matter (PM10), fine particulate matter (PM2.5), and lead (Pb) (EPA 2021a). Nitrogen oxides (NOx) and volatile organic compound (VOC) emissions are precursors to ozone formation.

Geographic areas found to be in violation of standards for one or more NAAQS are designated as “nonattainment” areas. Nonattainment designations can be marginal, moderate, serious, severe, and extreme depending on the degree to which they exceed the NAAQS. States with nonattainment areas must develop a State Implementation Plan (SIP) to demonstrate how the area will achieve attainment within a designated timeframe.¹ Under the General Conformity Rule, project-related emissions of the applicable pollutants are compared to *de minimis* level thresholds, the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas. The General Conformity Rule is only considered when a federal action is proposed to occur in an EPA-designated nonattainment or maintenance area; thus, in “attainment” areas that meet air quality standards, the General Conformity Rule does not apply.

4.2.1 Affected Environment

Coos County is in attainment for all NAAQS. The General Conformity Rule for federal actions occurring within the county does not apply, and no *de minimis* thresholds exist for NAAQS for attainment areas that meet air quality standards.

4.2.2 Environmental Consequences

The Proposed Action will meet FAA design standards for runway safety areas. The proposed project would not enhance airfield capacity to increase aircraft operations or increase emissions associated with mobile sources such as increasing taxi times for aircraft. Temporary air quality impacts may occur during construction activities. Temporary increases in emissions, including CO, VOC, NO₂, SO₂, PM₁₀ and PM_{2.5}, are expected from construction during the approximately 80-day construction period. Each day of construction would consist of one, 10-hour shift.

To estimate construction-related air quality impacts, the analysis assumes that a construction fleet of approximately five pieces of equipment would be running continuously (to capture the perceived extreme construction equipment usage) throughout the entire 10-hour shift. Emission levels were estimated for CO, VOCs, NO₂, SO₂, PM₁₀, PM_{2.5}, and Pb (lead). VOCs were included because they are a precursor to ozone, which is caused by chemical reactions between nitrogen oxides and VOCs. Lead emissions are no longer a factor because of EPA requirements regarding the use of unleaded fuel.

Table 4-2: Emissions Levels Associated with Primary Construction Equipment and **Table 4-3: Estimated Net Emissions Levels For 80 Construction Days** highlight emission levels for primary construction equipment likely associated with the Proposed Action.

¹ The General Conformity Rule of the CAA establishes procedures to ensure that federally funded, permitted, or supported actions occurring in EPA-designated nonattainment and maintenance areas do not interfere with the EPA-approved State Implementation Plans (SIPs).

Table 4-2: Emissions Levels Associated with Primary Construction Equipment

Pollutant Type	Loader/ Backhoe (g/hr.)**	Skid Steer (g/hr.)	Bucket Truck (g/hr.)	Crane (g/hr.)	Power Tools (g/hr.)
CO	399	311	751	141	152
VOCs	75	60	154	29	21
NO2	426	289	1,945	333	270
SO2	0	0	0	0	0
PM10	63	47	84	26	21
PM2.5	61	46	82	25	21
Pb*	N/A	N/A	N/A	N/A	N/A

*Lead (Pb) is no longer a factor because of EPA requirements to use unleaded fuels. Emissions levels presented above in Table 4-1 are estimates based upon the EPA AP42 database.²

** g/hr. = grams per hour

Table 4-3: Estimated Net Emissions Levels For 80 Construction Days represents a combined total of 4,000 equipment operating hours, with pieces of equipment used for a maximum of 800 hours. For the duration of the construction the highest predicted emissions were NO2 and CO at 2.61 and 1.4 metric tons. The project is not expected to result in an exceedance in the NAAQS standards set in the Oregon State Implementation Plan or the nearest non-attainment area in Grants Pass, Oregon (EPA 2021b).

Table 4-3: Estimated Net Emissions Levels For 80 Construction Days

Vehicle	Estimated Running Hours	Net Emissions Per Criteria Pollutant for 80 Construction Days (Metric Tons)					
		CO	VOCs	NO2	SO2	PM-10	PM-2.5
Loader/Backhoe	800	0.320	0.06	0.34	0	0.056	0.048
Skid Steer	800	0.242	0.048	0.232	0	0.036	0.032
Bucket Truck	800	0.600	0.124	1.53	0	0.064	0.064
Power Tool	800	0.112	0.024	0.261	0	0.02	0.02
Vehicle	800	0.12	0.026	0.28	0	0.016	0.16
Totals:	4,000	1.40	0.272	2.61	0	0.192	0.184

The No Action Alternative would not result in changes to air quality, and Airport operations would continue at existing operational levels. Generally, the FAA uses the number of passengers and number of general aviation operations as an indicator of potential air quality concerns.

² <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>, 2021

4.2.3 Mitigation

The Proposed Action would not exceed federal or state regulatory thresholds for air quality; therefore, no mitigation is required. However, the Port will incorporate the following measures of FAA AC 150/5370–10G, *Standards for Specifying Construction of Airports* to reduce construction emissions. These measures may include, but are not limited to:

- Limit unnecessary idling times on diesel-powered engines.
- Project specifications will include temporary erosion control measures to minimize the impacts to air quality during construction. If needed, spray water for dust suppression and prevent fugitive dust from becoming airborne.
- Suspend or adjust intensity of project activities during periods of sustained high wind speeds (e.g., 30 miles per hour and over), as defined by the Occupational Safety and Health Administration.
- Maintain vehicles and equipment in good working condition.
- Decrease vehicle speed limits while at project site to reduce fugitive dust generation and obey posted vehicle speed limits while off-site.
- Load trucks with debris below their maximum hauling capacity.
- Use tarp covers on trucks transporting construction materials and construction debris to and from the site.

4.2.4 Findings and Conclusions

Under the No Action Alternative, the proposed project would not be constructed, and no additional criteria pollutants would be emitted. The No Action Alternative will have **no effect** on air quality.

The Proposed Action will not enhance capacity to create a permanent increase in operations or generate additional continuous emissions. Temporary increases in criteria pollutants will result from the use of construction equipment, but the temporary increases will not exceed regulatory thresholds. To reduce construction related air quality effects, the County will incorporate Best Management Practices (BMPs). The Proposed Action will have **no significant effect** on air quality.

4.3 Biological Resources (Including Fish, Wildlife, and Plants)

To satisfy the Endangered Species Act of 1973 (ESA) [16 U.S.C. 1531-1543], the FAA must determine whether the Proposed Action would affect a federally listed species or habitat critical to that species. Additional legislation that offers protections to these species are the Migratory Bird Treaty Act of 1918 (MBTA) [16 U.S.C. 703-712], the Bald Eagle and Golden Eagle Protection Act of 1940 (BGEPA), and the Magnuson-Stevens Act of 1976 (MSA) (16 U.S.C 1801). The MBTA protects migratory bird species. Certain species, such as the Bald Eagle (*Haliaeetus leucocephalus*), have been removed from the endangered species list, but are still protected under the MBTA as well as the BGEPA. The FAA must also assess impacts of the Proposed Action on Oregon State-listed endangered, threatened, and sensitive species.

The Sustainable Fisheries Act of 1996 (Public Law 104-267) amended the MSA to establish new requirements designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal Fisheries Management Plan (FMP). The MSA requires federal agencies to consult

with National Marine Fisheries Service (NMFS) on all actions or proposed actions that are authorized, funded, or undertaken by the agency that may adversely affect EFH (MSA §305(b)(2)).

Through the JPA process (**4.1 Joint Permitting Application**), the Airport coordinated state and federal agency consultation for potential impacts to biological resources and compliance with the laws and regulations previously mentioned. This process involved consultation with ODFW for state listed and sensitive species (**Table 4-1: Environmental Impact Category and JPA Coordination**). Consultation with NMFS and USFWS for potential impacts federally listed species and critical habitat occurred separately from the JPA process, however a mitigation plan was required as part of the JPA and this plan was developed with input from NMFS and required their approval.

4.3.1 Affected Environment

The biological resources study area includes the project area to be affected directly (i.e., loss of habitat within the RSA embankment area) and indirectly (i.e., changes to water quality) by the Proposed Action. It is expanded to 250 feet for indirect in-water impacts to EFH (eelgrass). Analysis of protected terrestrial species, migratory birds, and aquatic species included review of existing database information, site visits, biological surveys, and discussions with resource agency staff. The USFWS Information for Planning and Consultation (IPaC) database for endangered, threatened, proposed, and candidate species with associated proposed and critical habitats was reviewed for potential occurrence in Coos County.

Relevant biological information was obtained from the NMFS Northwest Regional Office (NMFS 2016), USFWS Regional Office (USFWS 2016), Oregon Biodiversity Information Center (OBIC) and StreamNet (2019). Initiation of early coordination with federal and state regulatory agencies with jurisdiction over terrestrial and aquatic biological resources in the project area was conducted through scoping meetings in 2017, and JPA pre-application meetings in 2019. A Biological Assessment (**Appendix I – Biological Assessment**) for the project area included terrestrial and aquatic surveys completed in September 2018, February 2019, and June 2019. The results of the research and surveys concluded that:

- Four terrestrial federally listed species (Marbled Murrelet, Northern Spotted Owl, Western Snowy Plover, and Western Lily) have the potential to occur at the airport or in the adjacent waters of Coos Bay;
- Three federally listed fish species (Coho Salmon, Green Sturgeon, Eulachon) have the potential to be present in the RSA fill project area, two of which (Coho Salmon, Green Sturgeon) have designated critical habitat in Coos Bay within the project area;
- Six migratory birds protected under the MBTA, and 194 bird species listed as rare, threatened, and endangered in Oregon, have the potential to occur within the region;
- Dense eelgrass beds designated as EFH, which are protected under the MSA, are present approximately 100 feet from the RSA fill study area.

Threatened and Endangered Species

Under Section 7 of the ESA, species may be listed as either endangered or threatened. Federally threatened species are defined as any native species likely to be classified as endangered within the foreseeable future throughout all or a significant portion of its range. Endangered species are defined as any native species in danger of extinction throughout all or a significant portion of its range. Federally protected

species identified during the review of existing database information, site visits, biological surveys, and discussions with resource agency staff are listed in **Table 4-4: Federally Protected Species That May Occur Within the Region**. No additional species are currently proposed for ESA listing in this region.

Table 4-4: Federally Protected Species That May Occur Within the Region

Species	Population	Federal Status	Closest Designated Critical Habitat*	Potential Site Use
Bird Species				
Marbled Murrelet <i>Brachyramphus marmoratus</i>	Pacific Northwest (CA, OR, WA)	Threatened	Coos Bay	Migration and rearing
Northern Spotted Owl <i>Strix occidentalis caurina</i>	Coastal Ranges (CA, OR, WA)	Threatened	Coos Bay	Foraging and migrating
Western Snowy Plover <i>Charadrius nivosus nivosus</i>	Pacific Coast population DPS- U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific Coast)	Threatened	Coos Bay	Foraging and migrating
Plant Species				
Western Lily <i>Lilium occidentale</i>	Coos Bay	Endangered	Coos Bay	None
Fish Species				
Coho Salmon (Oregon Coast)* <i>Oncorhynchus kisutch</i>	Oregon Coast ESU	Threatened	Coos Bay	Migration and rearing
Eulachon* <i>Thaleichthys pacificus</i>	Southern DPS	Threatened	Umpqua River	Spawning
Green sturgeon* <i>Acipenser medirostris</i>	Southern DPS	Threatened	Coos Bay	Spawning

* Species is under the jurisdiction of the National Marine Fisheries Service (NMFS). Distinct Population Segment (DPS); Evolutionary Significant Unit (ESU). Sources: NMFS 2019; USFWS IPaC 2019

Terrestrial Species

The USFWS IPaC list identified three ESA listed birds and one ESA listed plant that may be found near the project area: Marbled Murrelet (*Brachyramphus marmoratus*), Northern Spotted Owl (*Strix occidentalis caurina*), Western Snowy Plover (*Charadrius nivosus*), and Western lily (*Lilium columbianum*). No other ESA-listed birds or plants occur in the region. For these terrestrial species, there are no records of species presence or habitats on Airport property as noted in the Biological Assessment (**Appendix I**).

Marbled murrelet (*Brachyramphus marmoratus*) – Federally Threatened

The marbled murrelet forages inland up to 50 miles to nest in large unfragmented stands of old growth Douglas fir or redwoods. This species range includes Alaska, California, Oregon, and Washington within the US.

Critical habitat determination was finalized in August 2016 and confirmed on the effective and revised date of November 4, 2021. Suitable nesting habitat for this marine bird includes inland mature coniferous forests with trees that have specific branch structure, trunk diameter, and height.

Marbled murrelets typically forage within 3 miles of the ocean shore and in estuarine areas at the mouths of rivers and creeks. Marbled murrelets are known to forage at the mouth of the Coos River; however, known densities are fairly low (less than one bird per 0.5 square miles). Given the project location (15 river miles inland) and proposed timing of construction activities (outside the nesting season for marbled murrelets [April 1 – September 15]), it is unlikely that marbled murrelets will be foraging within the study area during proposed in-water work activities. In addition, based on an initial desktop assessment of potential nesting habitat within the vicinity of the proposed project, it was determined that marbled murrelet nesting habitat does not occur within 0.25 miles of proposed construction activities (the farthest distance at which construction activities could potentially disturb nesting murrelets). The nearest marbled murrelet Critical Habitat is approximately 9 miles away.

Northern spotted owl (*Strix occidentalis caurina*) – Federally Threatened

The northern spotted owl inhabits structurally complex forests from southwestern British Columbia through Washington and Oregon to northern California. The owl was listed as threatened in June 1990, and critical habitat determination was updated in December 2012. The nearest northern spotted owl critical habitat is located approximately 10 miles away.

A recovery plan for the owl was issued in 2008 and revised in 2011. Current forest management practices on federal lands stress limited harvesting in old-growth forests and suggest alternate locations for harvest that are not preferred by the northern spotted owl.

Western Snowy Plover (*Charadrius nivosus*) – Federally Threatened

Habitat for the plover includes coastal areas along the west coast from Washington to Mexico on sandy or salty areas without much vegetation. The Pacific coast population is defined as those individuals that nest within 50 miles of the Pacific Ocean on the mainland coast, peninsulas, offshore islands, bays, estuaries, or rivers of the United States and Baja California, Mexico (58 FR 12864, USFWS 1993).

On March 5, 1993, the Pacific coast population of the western snowy plover (*Charadrius nivosus*) was listed as threatened under provisions of the ESA of 1973, as amended (16 U.S. Code 1531 et seq.). The western snowy plover's threatened status was reaffirmed in 1989 under the Oregon ESA and again in 1993 and 1998 by the Oregon Fish and Wildlife Commission as part of its periodic review process. Critical habitat for this shorebird was designated in June 2012 and includes areas of coastline in California, Oregon, and Washington (77 FR 36728, FWS 2012).

The Pacific coast population of the western snowy plover breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. On the Oregon coast, nesting may begin as early as mid-March, but most nests are initiated from mid-April through mid-July (Wilson-Jacobs and Meslow 1984); peak nest initiation occurs from mid-May to early July (Stern et al. 1990).

The project area includes portions of tidal mudflats and areas of rip-rap on slopes and lacks appropriate beach habitat suitable for nesting for this species. There is no proposed modification of beach habitat within

the Study areas, and the nearest possible beach is 0.25 miles away to the East, on the opposite bank of the Pony Slough entrance.

While foraging habitat may be present in Pony Slough and throughout Coos Bay, no nests are known to occur in or near the project area. No sightings of snowy plovers were documented in Fall and Spring surveys at OTH. The nearest western snowy plover critical habitat is approximately 3.5 miles west of the Airport at the Coos Bay North Spit unit.

Western lily (*Lilium columbianum*) – Federally Endangered

The western lily grows at the edges of sphagnum bogs and in forest or thicket openings along the margins of ephemeral ponds and small channels and is federally listed (September 1994) as Endangered in California and Oregon. No critical habitat has been designated for this species.

The Recovery Plan for the western lily was approved in March 1998. The primary long-term natural threat to western lily is competitive exclusion by shrubs and trees. Human activities such as clearing and draining of wetlands, development of cranberry agriculture, urban development pressure, and alteration of natural hydrological processes are also major factors.

Fish

Three federally listed anadromous fish species spend a portion of their life cycle within the estuarine environment of Coos Bay. Oregon Coast Coho salmon (*Oncorhynchus kisutch*), southern Distinct Population Segment (DPS) Pacific eulachon (*Thaleichthys pacificus*), and DPS green sturgeon (*Acipenser medirostris*) are each federally listed as threatened under the ESA.

Coho salmon (*Oncorhynchus kisutch*) – Federally Threatened

The Coho salmon spends juvenile development stages (approximately 18 months) in freshwater rivers and streams, spends most of its adult life in the ocean, and then returns to freshwater rivers and streams to spawn. In February 2008, the naturally spawning populations within the evolutionary significant unit (ESU) of Oregon Coast Coho salmon was listed as a federal threatened species under the ESA (73 FR 35755). Critical habitat for Coho salmon encompasses 13 subbasins in Oregon and includes all coastal river and stream reaches accessible to Coho salmon, including adjacent riparian zones. Coos Bay and Pony Slough is included as Critical Habitat as part of the Coos Bay watershed. The primary constituent elements associated with Oregon Coast Coho salmon Critical Habitat within the study area include freshwater riverine systems and estuarine areas. The physical and biological features identified by NMFS as essential for Oregon Coast Coho salmon include available food resources, migratory corridors, sediment quality, substrate type, water depth, water flow, and water quality (NOAA Fisheries 2008).

Southern Eulachon – Federal Threatened, Southern DPS

Eulachon (*Thaleichthys pacificus*) is a small, anadromous fish from the eastern Pacific Ocean. In North America they range from northern California into the southeastern Bering Sea. On March 18, 2010, NMFS listed the southern DPS of eulachon as threatened under the ESA, followed by designating Critical Habitat for the southern DPS on October 20, 2011.

Eulachon presence within the Coos River is generally limited to the duration of the yearly spawning run (December – June). Adult eulachon typically begin their spawning migration into the Coos River in December and have emigrated by late March. Adult and larval eulachon may be present within the study

area during proposed in- water activities. The nearest Critical Habitat for eulachon is the Umpqua River, located 17 miles north of OTH.

NMFS is currently in the process of evaluating protective regulations for the Southern DPS of eulachon pursuant to Section 4(d) of the ESA. As such, “take” allocations for Southern eulachon have not yet been issued.

Green Sturgeon – Federal Threatened, Southern DPS

Green sturgeon (*Acipenser medirostris*) northern Distinct Population Segment (nDPS) include coastal watersheds and spawning habitat in the Rogue, Klamath, and historically in the Eel and Umpqua rivers. The northern green sturgeon DPS was listed as threatened on April 7, 2006 (71 FR 17757).

Critical habitat for the Southern green sturgeon DPS was designated on October 9, 2009 and includes the Coos River and Pony Slough within the study area (NOAA Fisheries 2018). The primary constituent elements associated with Southern green sturgeon Critical Habitat within the study area include freshwater riverine systems and estuarine areas. The physical and biological features identified by NMFS as essential for Southern green sturgeon include available food resources, migratory corridors, sediment quality, substrate type, water depth, water flow, and water quality (NOAA Fisheries 2018).

Green sturgeon are present in the Coos River from June through October; however, they mainly concentrate in the lower reaches of the estuary below river mile 37 (NOAA Fisheries 2018). As such, given the proposed timing of in-water work (October 1 – February 15), the presence of adult and juvenile northern green sturgeon may overlap within the study area during the early stages of proposed in-water activities.

More detailed information about these species and their habitats is provided in the Biological Assessment (**Appendix I**).

Migratory Birds

Federal agencies must comply with the MBTA of 1918 that prohibits the “take” of any migratory bird, their eggs, or nests without a permit pursuant to 50 CFR 21. “Take” is defined by the MBTA as “pursue, hunt, shoot, wound, kill, trap, capture, or collect.” The coastal areas adjacent to OTH provide potential foraging and nesting habitat for many bird species that are protected by the MBTA. According to the USFWS IPaC database, potential migratory birds that may breed within region are listed below in **Table 4-5: Migratory Birds Breeding in the Region**.

Table 4-5: Migratory Birds Breeding in the Region

Common Name	Scientific Name	Breeding Season
Allen’s hummingbird	<i>Selasphorus sasin</i>	February 1 to July 15
Black oystercatcher	<i>Haematopus bachmani</i>	April 15 to October 31
Clark’s grebe	<i>Aechmophorus clarkii</i>	January 1 to December 31
Great blue heron	<i>Ardea herodias fannini</i>	March 15 to August 15
Olive-sided flycatcher	<i>Contopus cooperi</i>	May 20 to August 31
Rufous hummingbird	<i>Selasphorus rufus</i>	April 15 to July 15

Source: IPaC Resource List, December 13, 2021.

Oregon Biodiversity Database (2021) identified a range of migratory and resident avian species within a 3-mile buffer of the project area that included 194 species. The following birds were documented on-site during the 2019 field survey: red-tailed hawk (*Buteo jamaicensis*), Willow flycatcher (*Empidonax traillii*), great blue heron (*Ardea herodias*), Semipalmated plover (*Charadrius semipalmatus*), Northern harrier (*Circus cyaneus*), Rock wren (*Salpinctes obsoletus*), and Calliope hummingbird (*Stellula calliope*). Numerous other migratory birds may occur near the project area and are listed in the species list for Coos County³ (**Appendix I – Biological Assessment**).

State Sensitive Species

According to Order 1051.F, the FAA must also assess impacts of the Proposed Action on Oregon State-listed endangered, threatened, and sensitive species (FAA 2020b). A review of potential State sensitive species within Coos County found 299 species potentially occurring in the area (**Appendix J – Oregon Biodiversity Database**), of which 194 are avian, 18 reptile, 16 amphibian, and 71 mammals. While some of these species may pass through the project area to forage, no terrestrial or aquatic protected habitat exists on airport property and there was no recorded presence of these species during biological surveys (**Appendix I – Biological Assessment**). Agency consultation with ODFW through the JPA process did not indicate impacts to State-listed species but did identify the likelihood of recreational oyster beds 0.5 miles to the west of the Proposed Action. Underwater surveys did not detect oyster beds in the project area.

Aquatic Species - Essential Fish Habitat (EFH)

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (Section 3) defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Native seagrass beds known as eelgrass (*Zostera marina*) have been designated EFH because they are used by fish to spawn, breed, feed, and grow to maturity. Vegetated shallows that support eelgrass are also considered special aquatic sites under the 404(b)(1) guidelines of the Clean Water Act (CWA) (40 CFR § 230.43).

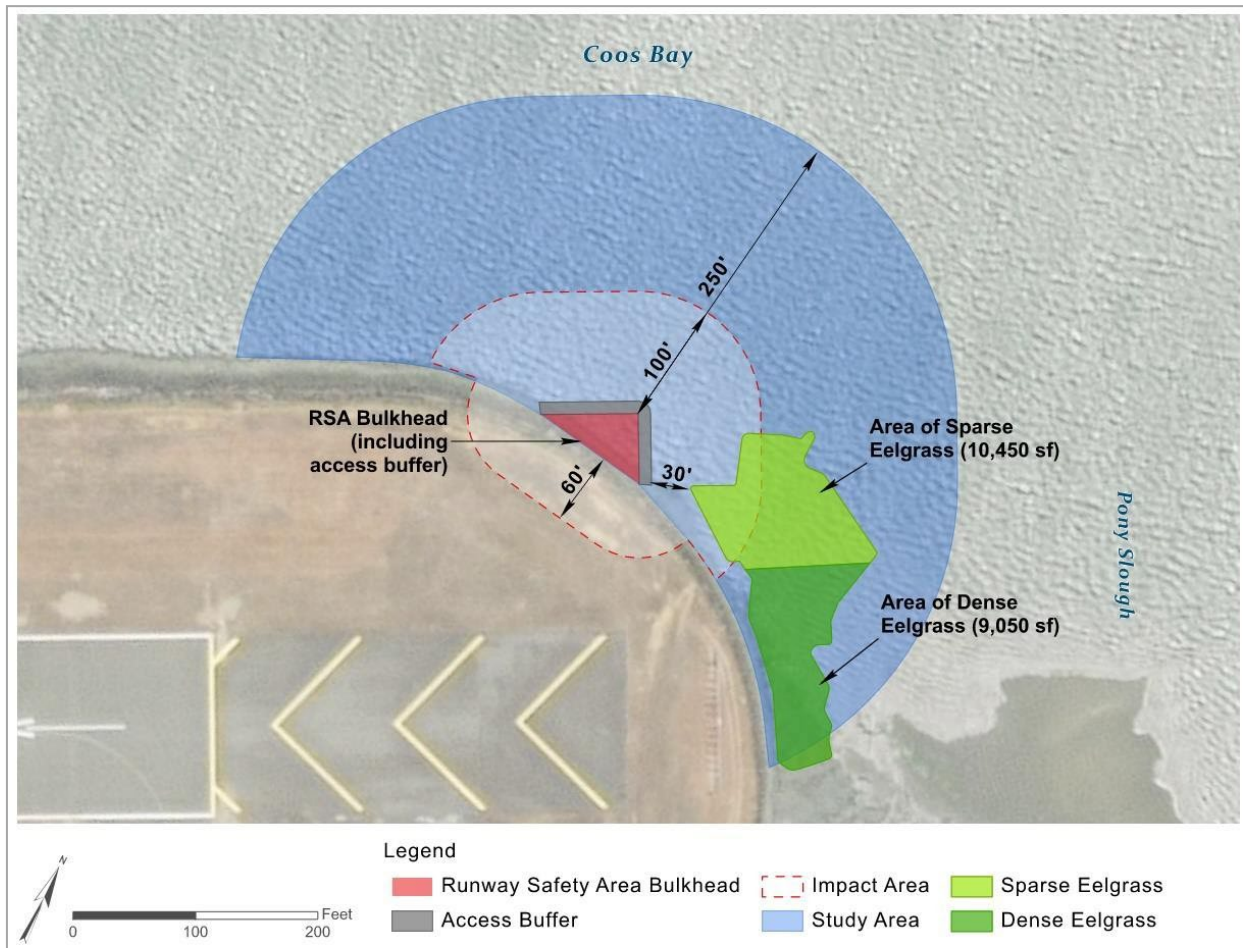
The study area is also designated by the Pacific Fishery Management Council (PFMC) as EFH for coastal pelagic species, Pacific Coast groundfish, and Pacific salmon. The study area is an estuarine area; estuaries are designated by the PFMC as habitat areas of particular concern (HAPC) for groundfish species. While the HAPC designation does not add any specific regulatory process, it does highlight certain habitat types that are of high ecological importance.

Based on USACE/NOAA survey protocols, density of eelgrass determines “sparse” eelgrass presence not protected as EFH, as opposed to “dense” eelgrass beds that must be protected. In June 2019, underwater biological surveys indicated that approximately 19,500 square feet of eelgrass comes within approximately 250 feet of the proposed bulkhead (Figure 4-2: Eelgrass Adjacent to RSA Bulkhead). Of this eelgrass, 10,450 square feet of sparse eelgrass comes within 30 feet of the bulkhead and is not considered EFH. Based on personal communications with former USACE Eelgrass Biologist, Dr. Deborah Nelson (retired), a 100-foot radius from the project site is the best estimate for potential impact on the dense EFH eelgrass

³ Avibase, 2021. <https://avibase.bsc-eoc.org/checklist.jsp>

beds. Approximately 9,050 square feet of eelgrass beds are within the 250-foot survey radius, but none lie within the 100-foot radius potential impact area.

Figure 4-2: Eelgrass Adjacent to RSA Bulkhead



4.3.2 Environmental Consequences

The potential impacts of the Proposed Action to fish, wildlife, and plant resources, including federally listed species and Oregon State sensitive species are evaluated in this section. As required by section 7(a)(2) of the ESA and FAA Order 1050.1F, the FAA must ensure that a proposed action is not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Adverse effects may include:

- Fragmentation or permanent loss of native species' habitats or populations,
- Impacts on species' reproductive success rates, or mortality rates, and
- Loss in the ability to sustain the minimum population levels.

A Biological Assessment was completed to satisfy the NMFS, Oregon Department of Fish and Wildlife (ODFW) and USFWS section 7 regulatory consultation and to determine the Proposed Action's potential impacts to fish, wildlife, aquatic resources, and plants (**Appendix G – Biological Opinion**). The Biological Assessment determined that the Proposed Action would have **no effect** on terrestrial wildlife or plants, but is **likely to adversely affect** coho salmon, green sturgeon, and eulachon and **likely to adversely affect**

coho salmon and green sturgeon critical habitat due to permanent modification of 0.07-acres for the proposed bulkhead installation. Additionally, EFH in the form of native eelgrass beds would not be impacted due to the 100-foot distance from the project and use of a coffer dam to prevent sedimentation. Detailed results from formal and informal consultation follows.

Threatened and Endangered Species

Terrestrial Species

Biological field surveys did not detect the presence of marbled murrelet, Northern spotted owl, Western snowy plover, or Western lily in the project area, and the proposed project activities will not occur on potential habitat.

For federally listed *terrestrial* species, informal consultation with USFWS indicated that no federally listed or proposed *terrestrial* species or designated critical habitat are present within the project area, which was confirmed by a USFWS Technical Assistance letter (USFWS 2019, **Appendix K**). The Proposed Action and No Action Alternative will have **no effect** to marbled murrelet, Northern spotted owl, Western snowy plover, or Western lily.

Fish

Three federally listed fish species spend a portion of their lifecycle within the estuarine environment of Coos Bay: Oregon Coast coho salmon (*Oncorhynchus kisutch*), Southern DPS eulachon (*Thaleichthys pacificus*), and Southern DPS green sturgeon (*Acipenser medirostris*). For coho salmon, NMFS completed its most recent 5- year Status Review in 2016 and concluded the Oregon Coast coho salmon ESU should remain listed under the ESA as threatened. ODFW worked closely with NMFS on the development of their Oregon Coast Coho Salmon Recovery Plan, which was finalized in December 2016 (ODFW 2007). For Southern DPS eulachon the effects of this action would occur outside the geographic range of designated critical habitat for eulachon. The Southern green sturgeon recovery plan was updated April 14, 2014 and continues to identify Coos Bay as critical habitat (NMFS 2018).

On October 15, 2019, the FAA initiated consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Southwest Oregon Regional Airport Runway Safety Area improvements. Kim W. Kratz, Assistant Regional Administrator of NOAA's *West Coast Regional* Office, provided the Biological Opinion, dated July 29, 2020 (**Appendix G**). Potential habitat effects from the proposed action are reasonably certain to include:

- 1) Temporary and localized reductions in water quality from construction-related suspended sediment;
- 2) Permanent, localized reductions in natural cover and forage/food resources from bulkhead construction;
- 3) Permanent, localized improvements in natural cover and forage/food resources from mitigation actions;
- 4) Episodic and permanent effects on water quality from pollutants in stormwater runoff.

Incidental take from suspended sediment plumes may occur in an area extending 100 feet from the cofferdam area and 300 feet downstream into Coos River. Incidental take from stormwater discharge will occur within 10 feet of the outfall, located 300 feet west of the Project Area.

The Biological Opinion concurred that the proposed action is **likely to adversely affect** the continued existence of Oregon Coast Coho salmon, Southern DPS eulachon or southern DPS green sturgeon (**Table 4-6: Affected ESA Species and NMFS’ Determinations**). However, in the subsequent jeopardy determination NMFS concluded that the proposed action is **not likely to jeopardize** the survival of these species.

Table 4-6: Affected ESA Species and NMFS’ Determinations

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely to Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely to Destroy or Adversely Modify Critical Habitat?
Oregon Coast Coho Salmon	Threatened	Yes	No	Yes	No
Southern DPS Pacific Eulachon	Threatened	Yes	No	No	No
Southern DPS Green Sturgeon	Threatened	Yes	No	Yes	No

**More information can be found in recovery plans, status reviews, and limiting factors for these species on the NMFS West Coast Region website (<http://www.westcoast.fisheries.noaa.gov/>).*

The Proposed Action will result in the loss of 3,150 square feet (0.07 acre) of designated critical habitat for Oregon Coast Coho salmon and Southern DPS green sturgeon (but not Southern DPS Pacific eulachon) due to bulkhead installation. NMFS concluded that the project is **likely to adversely affect designated critical habitat** for ESA- listed species. However, NMFS also concluded that the proposed action is **not likely result in the destruction or adverse modification of designated critical habitat** for ESA-listed species. The 2020 Biological Opinion notes that the “bulkhead installation will result in a permanent, but small and localized negative effect on the natural cover and forage/food resources Physical and Biological Features (PBFs). Mitigation activities will result in a permanent, but small and localized positive effect on the natural cover and forage/food resources PBFs” (**Appendix G – Biological Opinion, Section 2.5.1; Mitigation Section 4.2.3**).

As required by Section 9 of the ESA, NMFS provided an Incidental Take Statement (ITS) that describes reasonable and prudent measures considered necessary to minimize the impact of incidental take associated with the Proposed Action. The ITS nondiscretionary terms and conditions includes reporting requirements that the Airport, under the FAA’s direction, must comply with to fully implement the reasonable and prudent measures. Incidental take from actions that meet these terms and conditions will be exempt from the ESA’s prohibition against the take of listed species. Exceeding the specified level of take in the ITS will trigger reinitiation of Section 7 consultation with NMFS.

State Sensitive Species

There is no known protected habitat for state listed or candidate species in the project area and biological surveys did not detect the presence of any state sensitive species within project area.. Additionally, agency consultation during scoping and public comment periods did not identify any state protected species that

could be impacted by project activities. As part of the JPA consultation process with ODFW (See **Section 4.1 Joint Permitting Application**), recreational oyster beds were identified over 0.5 miles away. ODFW reported that no effects to state-listed species were expected as a result of project activities. However, as part of the CZMA determination, all rip-rap armoring will be seeded with whole oyster shells after construction as a conservation measure (**Section 4 Coastal Resources 4.4.3 Mitigation**).

Migratory Birds

Seasonal surveys did not identify any active or inactive bird nests, or the presence of species protected under the MBTA within the airfield or project area. For the Proposed Action, there will be no removal of nesting habitat for bird species.

As previously stated, no habitat for migratory species or nests will be affected by the proposed project, and **no effects** to state special status or bird species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats will occur. No comments have been received from state or federal agencies to indicate any bird species will be impacted by the Proposed Action.

Aquatic Species – Essential Fish Habitat (EFH)

NMFS’s Biological Opinion was based, in part, on the EFH assessment provided by the Biological Assessment, the mitigation plan and descriptions of EFH for Pacific Coast groundfish (green sturgeon), coastal pelagic species (eulachon), and Pacific Coast salmon. Each of these are contained in the fishery management plans developed by the PFMC and approved by the Secretary of Commerce. Native eelgrass was also identified adjacent to the Airport property, and beds were identified just over 100 feet from the RSA Fill Project Area.

Based on information provided, NMFS concluded that the Proposed Action **will adversely affect** designated EFH for coastal pelagic species, Pacific Coast groundfish, and Pacific salmon. These adverse effects occur from suspended sediment plumes and delivery of contaminants in stormwater (**Table 4-7: EFH NMFS Determinations**). NMFS recommended mitigation for the adverse effects on EFH as described in Section 4.2.3.

Table 4-7: EFH NMFS Determinations

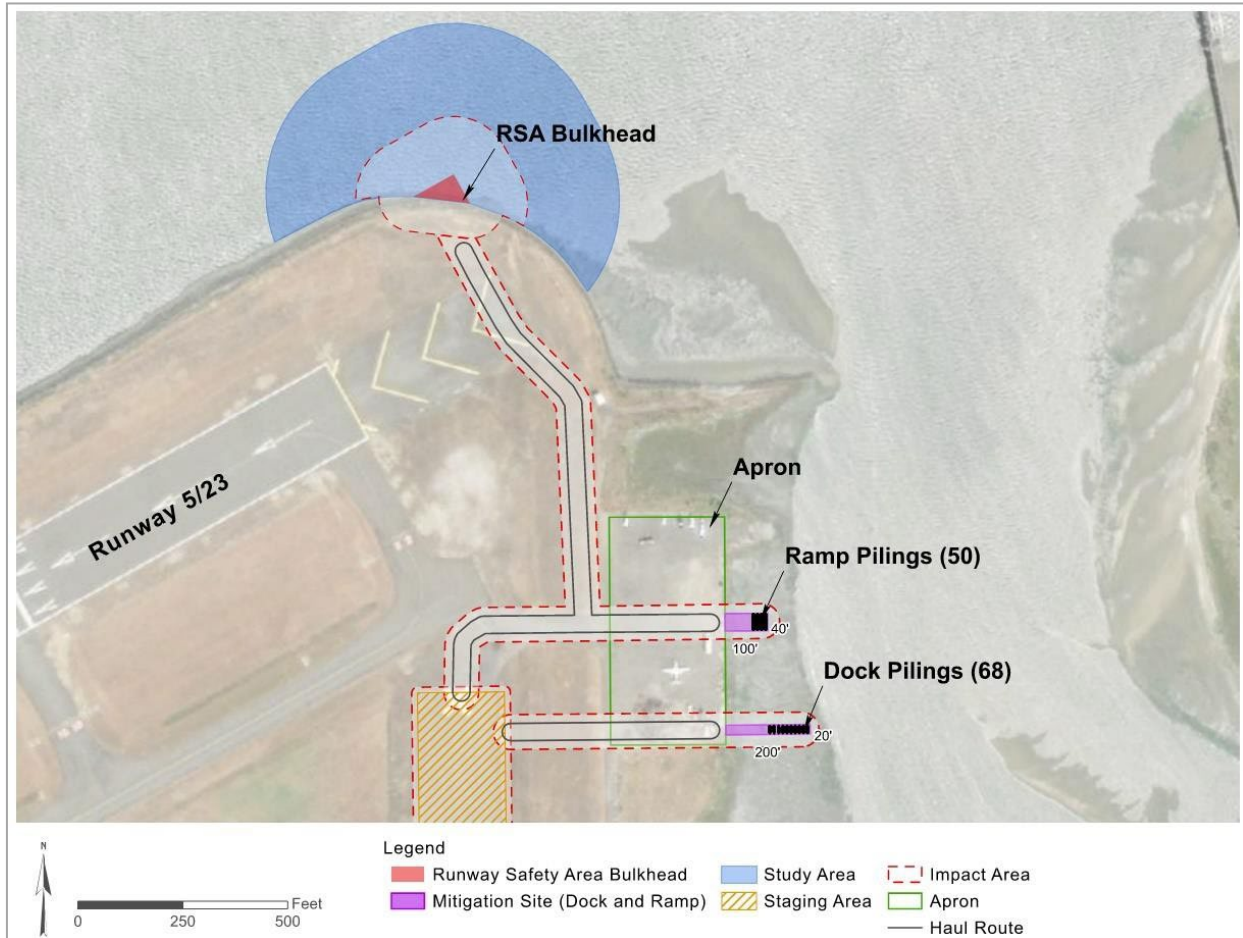
Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes
Pacific Coast Groundfish	Yes	Yes
Coastal Pelagic Species	Yes	Yes

4.3.3 Mitigation

The JPA (**4.1 Joint Permitting Application**) ongoing agency coordination resulted in a Permittee Responsible Mitigation Plan that includes: 1) NMFS Terms and Conditions 2) EFH Conservation Recommendations 3) CZMA conservation measures, and 4) BMPs for mitigation sites. The Mitigation Plan was submitted to NMFS in October 2019 to mitigate effects on EFH, coho salmon, and green sturgeon critical habitat and EFH (**Appendix L – Permittee Responsible Mitigation Plan**). This Mitigation Plan was approved by NMFS through the Section 7 ESA consultation process with FAA resulting in a signed NMFS

Terms and Conditions. The Mitigation Plan details the removal of two adjacent remnant docks (0.14-acre mitigation site) in Pony Slough to create ESA critical habitat and EFH at a 2:1 ratio (**Figure 4-3: Mitigation Site**).

Figure 4-3: Mitigation Site



As the Lead Agency, the FAA will be directing the Airport to implement the approved permittee-responsible Mitigation Plan which includes:

1) NMFS Terms and Conditions:

- a. To implement reasonable and prudent measure #1 (suspended sediment), FAA, the US Army Corps of Engineers (USACE), and the Airport shall ensure:
 - Suspended sediment monitoring occurs hourly during installation and removal of the cofferdam.
 - Suspended sediment monitoring occurs daily for the duration of time the cofferdam is in place.

- b. To implement reasonable and prudent measure #2 (stormwater), FAA, USACE, and the Airport shall ensure the Airport drafts and implements a stormwater facility inspection and maintenance plan that includes:
 - Inspection.
 - Maintenance.
- c. To implement reasonable and prudent measure #3 (monitoring and reporting), FAA, USACE, and the Airport shall ensure the Airport completes the following monitoring and reporting:
 - A project completion report within 60-days of completing construction.
 - Annual reports of the stormwater facility inspection and maintenance plan after the first three full years following construction.
 - Each of the above reports and/or plans must be submitted annually to NMFS no later than September 30.

2) NMFS EFH Conservation Recommendations:

- a. FAA, USACE, and the Airport should minimize adverse effects from suspended sediment by implementing ESA Term and Condition #1.
- b. FAA, USACE, and the Airport should minimize adverse effects from stormwater contaminants by implementing ESA Term and Condition #2.
- c. FAA, USACE, and the Airport should ensure completion of a monitoring and reporting program to confirm the program is meeting the objective of limiting adverse effects by implementing ESA Term and Condition #3.
- d. The FAA should consider initiating and completing a programmatic consultation with NMFS that addresses FAA airport improvement projects where they coincide with EFH.

3) CZMA conservation measure:

- a. The FAA should seed all rip-rap armoring within the project areas with whole oyster shells post-construction.

4) Pony Slough Dock removal:

- a. FAA will remove the two remnant structures in Pony slough during the ODFW in-water work window October 15 - February 1 utilizing NOAA BMPs for creosote pile removal (**Appendix L – Permittee- Responsible Mitigation Plan**).

The FAA accepted the Terms and Conditions and Conservation Recommendations provided in the Biological Opinion on August 18, 2020 (see **Appendix L – Permittee-Responsible Mitigation Plan**).

As part of the two-year monitoring plan outlined in the NMFS Biological Opinion, OTH will assess the indirect effects to EFH from project construction sediment plumes. NMFS reporting requirements for sedimentation review and monitoring plan will recommend adaptive actions, if necessary.

4.3.4 Findings and Conclusions

The No Action Alternative will have **no effect** on terrestrial threatened and endangered species, State sensitive species, or migratory birds. The project area will continue to provide habitat for avian and fish species.

Consultation with NMFS identified that the Proposed Action is **likely to adversely affect but not likely to jeopardize** the continued existence of Oregon Coast Coho salmon, Southern DPS eulachon, or southern DPS green sturgeon. NMFS also concluded that the project is **likely to adversely affect but will not likely result in the destruction or adverse modification of designated critical habitat** for ESA-listed species. The proposed action **will adversely affect designated** EFH for coastal pelagic species, Pacific Coast groundfish, and Pacific salmon. These adverse effects occur from suspended sediment plumes and delivery of contaminants in stormwater and will be mitigated to less than significant levels by: 1) NMFS terms and conditions, 2) EFH Conservation Recommendations, 3) CZMA conservation recommendation and 4) the Permittee-Responsible Mitigation Plan. The Proposed Action will have **no effect** on terrestrial ESA species, state protected species, or migratory birds.

4.4 Climate

Research indicates that an increase in atmospheric greenhouse gas (GHG) emissions is significantly altering the Earth's climate. The scientific record is clear from the United States Global Change Research Program (USGCRP) that "Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities" (USGCRP 2021). Over a decade ago in 2009, based on the scientific assessments of the USGCRP, as well as the National Research Council (NRC) and the Intergovernmental Panel on Climate Change (IPCC), the EPA issued a finding that it was reasonable to assume that changes in our climate caused by elevated concentrations of greenhouse gasses (GHG) in the atmosphere endanger the public health and public welfare of current and future generations (EPA 2009). In 2015, EPA acknowledged more recent scientific assessments that "highlight the urgency of addressing the rising concentration of carbon dioxide (CO₂) in the atmosphere" (EPA 2015).

4.4.1 Affected Environment

Research has shown there is a direct correlation between fuel combustion and GHG emissions. GHGs are gases that trap heat in the atmosphere and are primarily a result of burning fossil fuels, such as CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate.

FAA Order 1050.1F states that GHGs and climate change should be considered and evaluated as an impact category in FAA environmental documents, including both Environmental Assessments and Environmental Impact Statements. However, there are currently no federal standards for aviation related GHG emissions and, as noted by the CEQ, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand."

4.4.2 Environmental Consequences

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

As noted by the CEQ, however, “it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand.” Under the No Action Alternative, there would not be impacts associated with greenhouse gas emissions or climate. The main source of emissions related to the Proposed Action would be combustion connected with construction equipment and vehicles. No significant or sustained increase in construction or vehicular traffic is anticipated as a result of the Proposed Action and the associated construction and vehicular emissions; and therefore, are expected to be negligible. Emissions resulting from the Proposed Action would be temporary and not result in the significant or sustained increase of emissions of CO₂. The Proposed Action would not include actions that will likely cause or create a reasonably foreseeable increase in CO₂ emissions or have a reasonably foreseeable impact on the local, regional, or global climate.

Statewide planning documents⁴ for Oregon utilize a 0.75-foot estimate for sea-level rise by 2030, and a 1.5-foot estimate by 2050, with the Coos Estuary being an identified coastal area with impacts. The proposed bulkhead will rise at least 8 feet from mean sea level, which should endure sea level rise decades into the future.

4.4.3 Mitigation

The Proposed Action would not result in a change to GHG emissions associated with aircraft operations or construction of the Proposed Action. Thus, no mitigation is required.

4.4.4 Findings and Conclusions

Under the No Action Alternative, there will not be an increase in GHG emissions. Therefore, the No Action Alternative will have **no effect** on climate.

The Proposed Action will not result in any operational changes at the Airport that would result in additional GHG emissions, although due to construction activities, will result in a temporary increase in greenhouse gas emissions during construction activities. Therefore, the Proposed Action would have **no significant effect** on climate.

4.5 Coastal Resources

Coastal resources include all natural resources occurring within coastal waters and their adjacent shorelands. The federal Coastal Zone Management Act (CZMA) of 1972 includes requirements for ensuring that activities authorized by federal agencies are consistent with the Oregon Coastal Management Program (OCMP). The Oregon Department of Land Conservation and Development (DLCD) is the state's designated coastal management agency and is responsible for reviewing federal projects. The Proposed Action must be consistent with three program components: the statewide planning goals, applicable acknowledged local comprehensive plans and land use regulations, and specific state agency authorities (e.g., those governing the Oregon Territorial Sea Plan, the Removal-Fill Law, water quality standards, and other applicable plans and regulations).

⁴ <https://www.coastalatlant.net/>

Through the JPA process (**4.1 Joint Permitting Application**), the Airport initiated state and federal agency consultation to ensure consistency with the OCMP. This process involved consultation with the City of North Bend, OR DSL and DEQ, EPA, USACE and DCLD (**Table 4-1: Environmental Impact Category and JPA Coordination**). The CZMA review is conducted by the Oregon State CZMA Coordinator at the end of the JPA process, after all other agencies have finalized their compliance determinations.

4.5.1 Affected Environment

Oregon’s federally approved Coastal Zone encompasses almost all watersheds that drain to the Pacific Ocean including all of Coos County and North Bend (USFWS 2018). As a result, any development at OTH is required to demonstrate consistency with statewide planning goals, local land use plans and ordinances, and other applicable regulatory programs and permitting requirements. There is no direct regulatory authority of DLCD or the OCMP, rather, local governments and other networked agencies administer Oregon’s coastal program laws.

Estuary Management Plan

North Bend participates through their Estuary Management Plan (EMP), as well as city, county, and state land use ordinances⁵. The Coos Bay Estuary Management Plan outlines boundaries, management objectives, uses, activities and special conditions for each Estuary Management Unit (EMU). The Proposed Action is within the Lower Bay – North Bend Shoreline EMU segment 51-UD/CA. The boundary for this segment consists of the rip-rapped bank along the northwest and west edges of the airport from the mouth of Pony Slough to the end of the altered shoreline south of the west end of Runway 5/23, The management objective is to maintain the shoreline as necessary to protect the continued upland airport use and to allow its expansion. This meets use, general conditions and activities outlined in the EMP and no special conditions for EMU 51-UD/CA will apply to this project.

Tsunami Hazard Zone

The City of North Bend has implemented North Bend City Code (NBCC) Ordinance 2028, Chapter 18.50 NBCC, Tsunami Hazard Overlay Zone. The ordinance establishes standards and requirements that apply to land use and development, as directed by the Tsunami Inundation Map Coos-05, for projects located in the “SM” earthquake seismic zone. Section 6.7 (Article 6.8.100) mandates that the city use the most recent North Bend Municipal Airport Master Plan and Commercial Airport Siting Element to guide improvements and further development of the North Bend Municipal Airport as they relate to the Tsunami Hazard Overlay Zone. CCAD coordinates this compliance through the JPA process, details of which are found on the Oregon Department of State Lands website.⁶

4.5.2 Environmental Consequences

The proposed project is consistent with state CZMA enforceable policies contained within three CZMA program components:

1. Applicable local government comprehensive plan and land use regulations (e.g., Floodplain, LUCS, Coos Bay Estuary Management Plan),

⁵ northbend_cbemp_searchable_amd.ord_1994.pdf (municipal.oregon.gov)

⁶ <https://www.oregon.gov/dsl/WW/Pages/Permits.aspx>

2. Statewide planning goals (OCMP), and
3. Specific state agency authorities (e.g., those governing removal-fill, water quality, and fish and wildlife protections).

As detailed in Sections 4.9, Land Use, and 4.11, Noise and Noise-Compatible Land Use, of this EA, the Proposed Action would be consistent with existing land use plans and designations and is noise compatible with surrounding land uses.

On July 21, 2020, the City of North Bend signed a land use compatibility affidavit stating that the Proposed Action Land Use Compatibility Statement complies with the Comprehensive Plan and Estuary Management Plan in September 2020. (**Appendix H – Joint Permit Application, Case number LUCS 58-20**). As part of the JPA process began in 2019, a CZMA consistency analysis by the DLCDC on August 14, 2020, concluded that general conditions apply and determined that whole oyster shell seeding on rip-rap throughout the project area is necessary to reduce potential impacts on nearby oyster beds (**Appendix H – Joint Permit Application**). On September 17, 2021, CCAD received a verification letter from the USACE that the proposed project is authorized by Nationwide Permit (NWP) 14 and NWP 27 (**Appendix V – USACE Nationwide Permit**). A Zoning Compliance Determination, Floodplain Development Permit and Coos Bay Estuary Permit was issued in January 2022.

4.5.3 Mitigation

The following mitigation measures are required for compliance with the CZMA, as previously described in **Biological Resources Section 4.2.3 Mitigation**:

- Oyster bed seeding will occur post removal of the cofferdam and rip-rap installation.
- The site must also have a minimum water depth of 1 foot, even during extreme low-tide conditions. Oysters will die if they become smothered in silt or freeze out of the water, but they will not die if they freeze in the water.
- Whole oyster shells will be used.

The mitigation plan can be found in **Appendix L – Permittee-Responsible Mitigation Plan**.

4.5.4 Findings and Conclusions

The No Action Alternative is a non-development alternative and will have **no effect** on coastal resources.

The FAA has not established a significance threshold for coastal resources in FAA Order 1050.1F; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts on coastal resources (see Exhibit 4-1 of FAA Order 1050.1F). The Proposed Action meets all factors for coastal resources:

- Is consistent with the relevant state coastal zone management plan(s);
- Does not impact a coastal barrier resources system unit;
- Does not pose an impact to coral reef ecosystems;
- Does not cause an unacceptable risk to human safety or property; or

- Does not cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated.

The Proposed Action complies with the North Bend Comprehensive Plan, Floodplain Development, Tsunami Ordinance, Estuary Management Plan, and is consistent with the enforceable policies of the OCMP. The CZMA consistency analysis conducted by DLCD as part of the JPA process requires oyster bed seeding of rip-rap as a mitigation measure and for CZMA compliance. The Proposed Action would have **no significant adverse effect** on coastal resources.

4.6 Department of Transportation Act: Section 4(f)

Department of Transportation Section 4(f) (Section 4(f)) lands are defined as “any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance.” Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of a 4(f) land if there is no feasible and prudent alternative to the use of such land. Historic or archaeological properties are typically only protected under Section 4(f) if the properties are listed, or eligible for listing, in the National Register of Historic Places (NRHP).

Traditional Cultural Properties (TCPs) are also considered Section 4(f) resources. TCPs recognize the cultural significance and identity of a living community. For a TCP to be designated, it must first be nominated as a historic district through the State Historic Preservation Office (SHPO), then be considered by the National Park Service (NPS) for eligibility. If a TCP is fully nominated, it is considered a Section 4(f) resource.

4.6.1 Affected Environment

The City of North Bend, Coos County, tribal entities, and SHPO were contacted to identify land use, recreational, and historic resources. There are no public parks, recreation areas, wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance within the project area. The nearest Section 4(f) recreational resource, Airport Heights Park, is located 0.85 miles from the project area.

To identify potential historic sites, a Cultural Resources Survey (**Appendix M – Cultural Resources Survey**) according to Section 106 of the National Historic Preservation Act (NHPA) was conducted in the spring of 2019 to identify and evaluate resources within the Airport property. The Cultural Report initially did not include the remnant docks to be removed as mitigation for ESA-fish loss in critical habitat. Subsequently, in response to the mitigation agreement through Section 7 consultation with NMFS, the Cultural Report was amended in 2021 to include the proposed remnant dock mitigation sites to determine if they were considered eligible to be included in NRHP, and therefore considered a Section 4(f) property (**Section 4.8 – Historical, Architectural, Archeological, and Cultural Resources**). The Cultural Report, including the 2021 amendment, found no existing or new historic resources on the Airport that are eligible to be included in NRHP. No comments on NRHP resources were received from SHPO or tribal governments.

On November 1, 2018, the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) submitted a draft nomination for a proposed district to the SHPO to designate boundaries for a TCP. The proposed *Q'alya ta Kukwis shichdii me* Traditional Cultural Property Historic District is a 20-square mile area that follows the general horseshoe shape of the Coos Bay Estuary. The proposed district included

portions of the cities of Coos Bay and North Bend and Coos County. The eastern portion of the airport, including the project site, is within the proposed TCP boundary. However, the NPS halted the nomination process on July 11, 2019, due to insufficient data upon which to base its determination. The previously proposed TCP cannot be considered a 4(f) resource without full designation.

4.6.2 Environmental Consequences

Tribal activities are known to have occurred in the past along the historic Coos Bay coastline, but no historic or 4(f) resources are within the project area or will be impacted by project activities. Government to government consultation with the CTCLUSI tribe (as well as other tribal governments) occurred on multiple occasions throughout the NEPA process for this project and is ongoing as other projects develop at OTH (See **Section 4.9 Historical, Architectural, Archeological, and Cultural Resources**).

4.6.3 Mitigation

No Section 4(f) resources are located in the project area; therefore, no mitigation is required.

4.6.4 Findings and Conclusions

Under the No Action Alternative, no use of Section 4(f) properties is proposed. Section 4(f) resources will remain as they presently exist. The No Action Alternative will have **no effect** on Section 4(f) properties.

There are no federal, state, or local parks, recreation areas, or wildlife refuges adjacent to the Southwest Oregon Regional Airport property. The Proposed Action will have **no effect** on Section 4(f) properties. Future projects on the airport should consider the potential for a future TCP and potential impacts to NRHP eligible 4(f) resources if the area is fully nominated.

4.7 Farmlands

The Farmland Protection Policy Act (FPPA, 7 U.S.C. § 4201-4209) regulates federal actions with the potential to convert farmland to non-agricultural uses. Specifically, the FPPA regulates farmland identified as prime, unique, or of statewide or local importance by the USDA Natural Resources Conservation Service (NRCS).

4.7.1 Affected Environment

The USDA NRCS Web Soil Survey classifies the majority of the airport as udorthents, which are not prime farmland (NRCS 2018). An area of Bullards sandy loam, a “Farmland of Statewide Importance,” is identified on Airport property, but not in the project area (**Appendix N – USDA NRCS Web Soil Survey**). These areas are not in active agricultural use and are not protected under FPPA.

4.7.2 Environmental Consequences

The Proposed Action involves in-water work and will have no effect on farmland resources under the FPPA. No prime, unique, or farmland of statewide or local importance is found in the project area.

4.7.3 Mitigation

No mitigation for farmlands is required.

4.7.4 Findings and Conclusions

The No Action Alternative will have **no effect** on farmland resources under the FPPA because it is a non-development alternative.

The Proposed Action will have **no effect** on “Important Farmland” resources under the FPPA because no prime, unique, or farmland of statewide or local importance is found in the project area, and the Proposed Action will be implemented in the surface waters of Coos Bay.

4.8 Hazardous Materials, Solid Waste, and Pollution Prevention

Hazardous materials are products or waste regulated by the EPA and IDEQ. These include substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and regulations for solid waste management, above ground storage tanks and underground storage tanks (USTs).

This section discusses hazardous materials, solid waste, and pollution prevention based on the following criteria:

- Potential waste that would be generated by an action and the potential impact that waste could have on environmental resources.
- The potential impact that waste would have on waste handling and disposal facilities.
- Potential hazardous materials that would be used during construction and operation of an action and any applicable pollution prevention procedures.
- If the work site has been previously contaminated by hazardous materials and the potential for encountering those materials during construction and operation of the Proposed Action or Alternative 2.
- If an action would interfere with any ongoing remediation of any existing contaminated sites in the Project Study Area or in its immediate vicinity.

Quite often, the terms hazardous material, solid waste, and pollution are used interchangeably to refer to contaminants, industrial waste, or dangerous products. However, each of these terms has a specific technical meaning based on the relevant regulations. Hazardous materials, solid waste, and pollution prevention is federally regulated by the EPA. In Oregon, the EPA authorizes the Oregon DEQ to operate the federal RCRA Hazardous Waste Program. Oregon is required by the EPA to periodically review and adopt new or amended federal rules to maintain this authorization.

4.8.1 Affected Environment

A search of the Oregon DEQ Facility Profiler identified multiple hazardous waste generator sites and one contaminated site (Site ID 1700) on Airport property. The contaminated site was added to the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) in 1995. In 1996, a review of EPA preliminary assessment was completed and did not identify any contamination, and a No Further Action determination was issued. In 2007, the DEQ Cleanup Program rescinded the 1996 No Further Action determination in response to USACE plans to conduct an ordnance investigation at the airport based on the site's past use as a Department of Defense facility. According to the DEQ Environmental Cleanup Site Information Database, the airport is currently listed as a “Suspect site

requiring further investigation “but is not considered a brownfield or National Priorities List site.⁷ This site is over 0.5 miles from the proposed project area and will not be impacted by project activities.

Based on research on EPA’s Underground Storage Tanks (UST) Finder, three USTs are on OTH property:

- Coos Aviation Inc 10,000-gallon closed UST
- Coast Distributors 3000-gallon closed UST
- UPS 10,000-gallon closed UST

No above ground storage tanks are on OTH property. All USTs are at least 0.5 miles from the Proposed Action and will not be affected by project activities.

4.8.2 Environmental Consequences

Construction activities associated with the Proposed Action have the potential to create solid waste material (excavated soil, remnant concrete). The contractor is required to have a Spill Prevention, Control, and Countermeasure (SPCC) plan in place if a spill occurs during construction operations. An approved erosion control plan is required to provide a collection area for non-recyclable waste. Any waste generated through proposed project improvements will be disposed of in compliance with all federal, state, and local regulations.

Following construction, the proposed project will not increase solid waste disposal at OTH. The existing solid waste facility (Beaver Hill Disposal Site), located approximately 15 miles southwest of the Airport in the City of Bandon, can accommodate the disposal of solid waste and construction-related debris. Fill and creosote pile removal due to remnant docks in Pony Slough proposed to be removed as mitigation for ESA fish impacts will comply with Oregon Clean Fill laws (OAR 340-093-0030). Best practices for debris capture in water and creosote disposal are found in the mitigation plan (**Appendix L – Permittee-Responsible Mitigation Plan, Derelict Creosote Piling Removal Best Management Practices for Pile Removal & Disposal**), which identifies shipment to an approved Subtitle D Landfill.

4.8.3 Mitigation

While no specific mitigation is required, the following BMPs may be employed to prevent, minimize, and control the potential release of petroleum materials:

- Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 100 feet from waterbodies.
- Inspect vehicles and equipment for leaks and repair immediately.
- Use of approved spill response kit, as necessary.
- Clean up leaks, drips, and other spills immediately to avoid soil or groundwater contamination.
- Conduct major vehicle maintenance and washing off site.
- Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste off site.

⁷ OR DEQ Environmental Cleanup Site Information (ECSI) Database Site Summary Report - Details for Site ID 1700, North Bend Airport: <https://www.deq.state.or.us/lq/ECSI/ecsidesdetail.asp?seqnbr=1700>

- Ensure that all construction debris is taken to appropriate landfills (as necessary) and all sediment disposed of in approved upland areas or off-site.
- If necessary for dust control, use only a minimal amount of water.

Dredged material must be disposed of in compliance with Oregon DEQ Rules governing Hazardous Waste⁸ or Solid Waste.⁹

4.8.4 Findings and Conclusions

The No Action Alternative will have **no effect** on hazardous materials, solid waste, or pollution prevention activities because it is a non-development alternative. Any hazardous materials, solid waste, or pollution prevention activities would remain as they presently exist.

While there is no known hazardous waste contamination within the Proposed Action area, the Proposed Action has the potential to cause short-term, temporary impacts in relation to hazardous materials and solid waste. Requirements for the contractor's SPCC plan to address an on-site spill, and a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and coordinated with local authorities as well as the Oregon DEQ to reduce the overall potential for impacts. Creosote piles removed as part of the mitigation plan will be deposited at the Beaver Hill Disposal Site, which accepts hazardous waste. The Proposed Action is expected to have **no significant effect** on hazardous materials, solid waste, or pollution prevention activities.

4.9 Historical, Architectural, Archeological, and Cultural Resources

NEPA requires agencies to consider the effects of a planned federal undertaking upon the cultural environment including historical, archaeological, and paleontological resources. Section 106 of the NHPA of 1966, as amended (16 U.S.C. 470 et seq.), requires federal agencies to consider the effects of their actions on historic properties that are determined eligible for or are currently listed in the NRHP. Section 106 also requires consultation with the Advisory Council on Historic Preservation, the SHPO, and/or the Tribal Historic Preservation Officer if there is a potential adverse effect to historic properties listed in or eligible for listing in the NRHP.

Government-to-government consultation must be conducted in accordance with the requirements of FAA Order 1210.20, *American Indian and Alaska Native Tribal Consultation Policy and Procedures*, Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, and 65 CFR 67249. As the lead Federal agency, the FAA continues to work with tribes on a government-to-government basis to address issues concerning tribal self-government, trust resources, and tribal treaty and other rights.

4.9.1 Affected Environment

A search of the Oregon Historic Sites Database maintained by the Oregon State Historic Preservation Office was performed to identify all previously recorded cultural resources located within the project area and to develop a general cultural and historical context to evaluate resources identified (**Appendix M – Cultural**

⁸ <http://www.oregon.gov/deq/Hazards-and-Cleanup/hw/Pages/default.aspx>

⁹ <http://www.oregon.gov/deq/mm/swpermits/Pages/Solid-Waste-Disposal-Sites-and-Landfill.aspx>

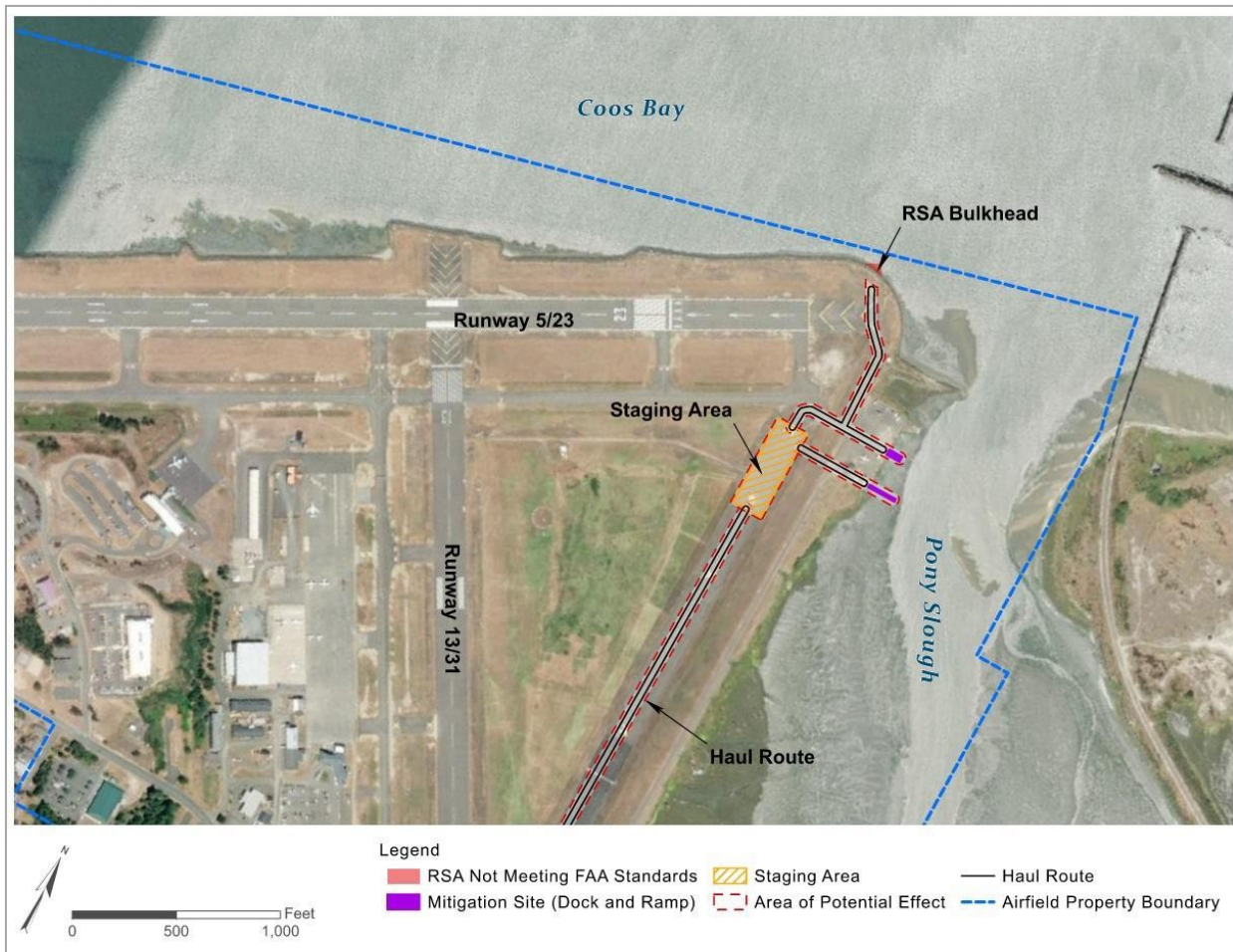
Resources Survey). The Area of Potential Effect (APE) for historic and cultural resources was defined in 2019 as the existing Airport boundary and in-water bulkhead.

The FAA contacted Native American Tribes who have prior history with, or claims to, the project area on December 28, 2018. The Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians (CTCLUSI) agreed that tribal coordination should continue, and that the airfield could contain sites of interest, email correspondence of the project description, the APE, was sent to the Cow Creek Band of Umpqua Tribe of Indians, the Confederated Tribes of the Grande Ronde, The Confederated Tribes of Siletz Indians of Oregon, and the CTCLUSI in November and December of 2019 (**Appendix O-2 – Tribal Coordination**).

CTCLUSI responded with interest in having a tribal monitor present to observe the archaeological shovel tests for the 2019 Cultural Report. In March 2019, a field survey with shovel testing was conducted by a qualified archeology team to determine whether any cultural resources exist within the APE. The Cultural Resources Survey indicated that there are no properties eligible for, or listed in, the NRHP within the APE. The shovel tests revealed some limited evidence of lithic scatter throughout the fill material utilized to construct the airfield in the 1940s, but none within the Proposed Action project area.

Following Section 7 ESA consultation and the approval of the mitigation sites (see **Section 4.3 Biological Resources**) the APE was expanded to include the remnant docks in Pony Slough proposed to be removed (Figure 4-4: Area of Potential Effect). A 2021 Cultural Resources Survey Update for NHRP eligibility amended the 2019 Cultural Report finding that the mitigation site is not eligible for listing in the NHRP and consultation was re-initiated in May 2021 to the four tribal governments and SHPO in May of 2021.

Figure 4-4: Area of Potential Effect



4.9.2 Environmental Consequences

Response to the email was received from the Confederated Tribes of the Grand Ronde Community on January 23, 2019, deferring further comment on the project to the primacy tribes of the area and thus, concluding their consultation. The FAA delivered the Cultural Report to the CTCLUSI and the Coquille Indian Tribe on May 1, 2019. No responses were received from the Cow Creek Band of Umpqua Tribe of Indians, The Confederated Tribes of Siletz Indians of Oregon, or the Coquille Indian Tribe.

The FAA proceeded to make the determination of no effect to cultural resources from the Proposed Action on May 1, 2019, due to the following:

- The absence of historic, archaeological, or cultural resources identified by the 2019 Cultural Resources Survey
- SHPO concurrence regarding the non-eligibility of properties on the airfield for NRHP
- The lack of SHPO and tribal response to the Cultural Report determination of no impacts to below ground cultural resources.

In a follow-up email, the CTCLUSI tribe submitted questions (**Appendix O-2 – Tribal Coordination**) that were addressed during a government-to-government consultation meeting on May 13, 2020. A response

was received from the CTCLUSI on May 30, 2019, stating that the project area was part of the proposed TCP known as “*Q’alya ta Kukwis shichdii me*” that had been deemed locally significant by the Oregon SHPO and was currently under review by the NPS. The CTCLUSI filed an application to designate land surrounding the Coos Bay on the NRHP as a TCP¹⁰ on November 1, 2018. The NPS returned the TCP nomination on July 11, 2019, not ruling on the district’s eligibility and citing process and a lack of documentation in determining the district boundaries. The TCP application has since been withdrawn and no current information exists on the NPS website.

This ongoing tribal consultation also resulted in an updated Inadvertent Discovery Plan (**Appendix P – Inadvertent Discovery Plan**) that was reviewed and approved by CTCLUSI on June 3, 2020. Cultural resource training was provided by CTCLUSI staff to OTH construction teams prior to the initiation of excavations for other projects on the airfield not included in this EA in 2020, with the expectations that OTH will maintain coordination with CTCLUSI on future projects with proposed excavations so that a tribal monitor may be provided.

The 2021 Cultural Resources Report Update found that the mitigation sites were not eligible to the NRHP and proposed a finding of no historic properties affected. On May 1, 2021, SHPO concurred with this determination that the Proposed Action will have “no adverse effect” to historic resources (**Appendix Q – SHPO Concurrence Letter**). On July 8, 2021, CTCLUSI responded that the mitigation sites have no effects to tribal interests.

4.9.3 Mitigation

No impacts to historic or cultural resources will occur as a result of the Proposed Action, and no mitigation is required. An Inadvertent Discovery Plan (IDP) is part of all excavation activities at OTH. If construction activities uncover any materials such as stone tools, shell, bone, fire-cracked rock, charcoal, pottery, glass, brick, metal, or human remains, work in the immediate vicinity will stop at once, and the FAA, Oregon SHPO and Native American tribal cultural resource staff will be notified. Any inadvertent discoveries will be left in place pending further evaluation and consultation with the SHPO and interested Native American tribes. On July 8, 2021 response letter to the 2021 Cultural Report Update for SHPO non-eligibility of the mitigation sites, CTCLUSI recommended that an educational exhibit or kiosk within the terminal that discusses the importance of the historic military base operations.

4.9.4 Findings and Conclusions

As the non-development alternative, the No Action Alternative will have **no effect** on historical, architectural, archeological, or cultural resources. Based on research, fieldwork, and ongoing tribal consultation, the Proposed Action will have **no effect** on historical, architectural, archeological, or cultural resources. Coordination and project schedule updates with tribal cultural staff will continue throughout ground disturbing construction activities and which will be monitored at Tribal government discretion.

4.10 Land Use

Compatible land use around an airport increases safety and minimizes the effects of aircraft noise and environmental impacts. Section 1502.16(c) of the CEQ Regulations requires the discussion of

¹⁰ <https://ctclusi.org/tcp>

environmental impacts including “possible conflicts between the proposed action and the objectives of Federal, regional, State, and local...land use plans, policies and controls for the area concerned.” The FAA requires airport operators to ensure that actions are taken to establish and maintain compatible land uses around airports.

In accordance with OAR 340-048-0020(2) (i), a Land Use Compatibility Statement prepared by the local land use jurisdiction should demonstrate the Proposed Actions’ compliance with the local comprehensive plan. The State of Oregon typically owns submerged and submersible land (“beds and banks”) underlying most navigable and tidally influenced waterways pursuant to the Equal Footing Doctrine (ORS 274.025 and ORS 274.710). The Oregon Department of State Lands (OR DSL) is responsible for management of publicly owned submerged and submersible land.

4.10.1 Affected Environment

The Airport is within the limits of the incorporated City of North Bend (**Figure 4-1: Study Area Overview**). The 2003 City of North Bend *Official Zoning Map* shows the Airport is zoned as Industrial within an Airport Overlay Zone (A-Z), which is also established in Chapter 18.52 of the current City of North Bend Municipal Code (Ord. 1952 § 1(4), 2006). Surrounding land uses include residential and commercial zoning, a park, several schools, churches and community centers within a 1-mile radius of the Proposed Action.

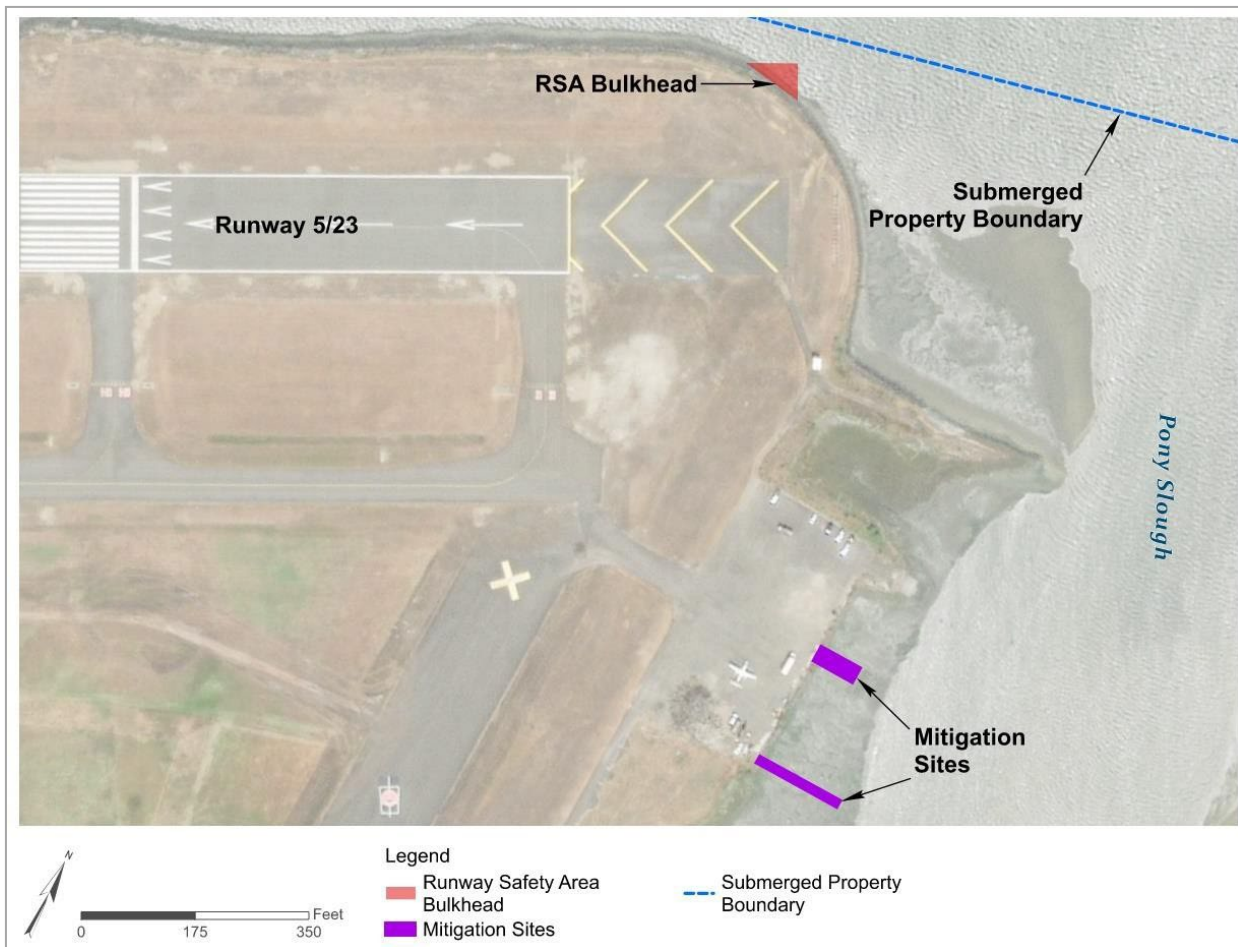
Table 4-8: Airport Layout Plan Property Table

PROPERTY TABLE					
PARCEL	INSTRUMENT	INTEREST	OWNER	ACREAGE	DATE
1	WAA-32-RPD-171 "Instrument of Transfer"	Fee Simple	United States of America	730	9/17/1947
2	FAA -9-35-045-703 "Air Aviation Easement"	Air Aviation Easement	Unknown	52.41	8/18/1956
3	FAA -9-35-045-705 "Air Aviation Easement"	Air Aviation Easement	Unknown	34.70	6/27/1966
4	Conveyance to U.S.C.G.	Aviation Use	City of North Bend	10.84±	1/5/1967

SOURCE:
PROPERTY INFORMATION OBTAINED FROM PREVIOUSLY APPROVED EXHIBIT "A" BY JAMES M. COX, CHIEF AIRPORTS ENGINEERING BRANCH, NW-620 FEDERAL AVIATION ADMINISTRATION ON MAY 18, 1973, WHICH SUPERSEDED EXHIBIT "A" - SK-AP-07, DATED MARCH 20TH, 1968.

The Airport owns the submerged land of the Proposed Action and is associated with deed number WAA-32-PRD- 171 obtained in September of 1947 (as documented in the ALP of June 2013) by the City of North Bend and later deeded to the Coos County Airport District (**Table 4-8: Airport Layout Plan Property Table**). This parcel covers the 730 acres that surround the airport, including the RSA bulkhead and mitigation sites (**Figure 4-5: RSA Fill Area and Mitigation Sites Submerged Property**).

Figure 4-5: RSA Fill Area and Mitigation Sites Submerged Property



4.10.2 Environmental Consequences

The proposed bulkhead and mitigation will take place on existing submerged Airport property and no easements are needed. On July 21, 2020, the City of North Bend signed a land use compatibility affidavit stating that the Proposed Action is compatible with the comprehensive plan and land use regulations and that a Floodplain Development Permit and Coos Bay Estuary Permit is required (**Appendix H – Joint Permit Application, Case number LUCS 58-20**). On September 22, 2020, Oregon DSL submerged lands office confirmed in a Preliminary Ownership Report that the Proposed Action will not affect Oregon-owned submerged lands (**Appendix R – Oregon DSL Submerged Lands Preliminary Ownership Report**). Shipping lanes in Coos Bay are within 300 feet of the project area, however, no impacts to shipping will occur as a result of this project.

The Proposed Action and No Action Alternatives will have no adverse impacts to land use and no further analysis is required. The proposed project will not permanently increase congestion, cause degradation of the level of service on roads, or permanently close any roads within or adjacent to the project area during construction.

4.10.3 Mitigation

The Proposed Action aligns with current land use planning and zoning requirements; therefore, no mitigation is required.

4.10.4 Findings and Conclusions

As the non-development alternative, the No Action Alternative will have **no effect** on land use. Current obstructions would not be removed, which does not comply with FAA standards and land use ordinances. Land use would remain as it presently exists.

Under the Proposed Action, the Airport will develop land currently owned by the CCAD consistent with land use regulations. Under the Joint Permit Application, OTH will submit a Zoning Compliance Determination for approval by the City of North Bend. The Proposed Action will have **no effect** on land use within the vicinity of the Airport.

4.11 Natural Resources and Energy Supply

Sections 1502.16(e) and (f) of the CEQ Regulations require that federal agencies consider energy requirements, natural depletable resource requirements, and the conservation potential of alternatives and mitigation measures listed in NEPA documents. Executive Order 13123, Greening the Government through Efficient Energy Management, supports the expansion and use of renewable energy within facilities and activities. It also requires federal agencies to reduce petroleum use, total energy use, associated air emissions, and water consumption in facilities. Though specific significance thresholds for natural resource consumption and energy supply have not been established by the FAA, the proposed action should be examined for the potential to cause demand to exceed available or future supplies of these resources.

4.11.1 Affected Environment

The area around the Airport is a suburban area with adequate access to natural resources for aircraft operations, and construction projects, so energy sources are not in short supply in Coos Bay. The facilities at the Airport require electricity and propane gas for lighting, cooling, and heating. These energy supplies are provided by Pacific Power and local propane providers.

4.11.2 Environmental Consequences

The proposed project will not enhance capacity or result in operational changes that require the use of additional energy or natural resources.

Project-related construction activities will require the use of petroleum-based fuels to operate equipment. Construction equipment, such as power tools and tracked vehicles will be used. These types of two-stroke engines typically require gasoline, which is readily available within Coos Bay. Construction of the 67-foot-by-89-foot bulkhead will require the use of natural resources, such as aggregate and concrete, which are readily available in this area.

4.11.3 Mitigation

The Proposed Action will not require the consumption of petroleum-based fuels or other natural resources in quantities that would surpass available supply. BMPs to reduce energy consumption during construction will be employed, where applicable. To reduce already insignificant energy consumption associated with

the temporary use of excavators and vehicles for the Proposed Action, construction equipment should be in good working order to ensure the most efficient use of fuel. All vehicles and equipment should be checked for leaks and repaired immediately.

4.11.4 Findings and Conclusions

The No Action Alternative will result in no additional natural resource or energy supply requirements and will have **no effect** on natural resources and energy supplies.

The Proposed Action will not increase aircraft operations at the Airport. Construction materials for the bulkhead are readily available. Temporary fuel needs for construction of the RSA bulkhead will be required over a period of approximately 80 days. These fuel sources are readily available in the region. BMPs will be carried out to reduce energy consumption. The Proposed Action does not cause demand to exceed available or future supplies of natural resources and energy supplies, it will have **no significant effect** on natural resources and energy supplies.

4.12 Noise and Noise-Compatible Land Use

Noise associated with airport activity is of specific importance to the FAA in examining the potential for a proposed Federal action to impact to noise-sensitive land uses. Airport development projects that have the potential to change an airport's runway configuration; operations or construction, aircraft movements and types; or aircraft flight characteristics can change the future airport-related noise levels. Airport noise is measured by the Day- Night Sound Level (DNL), which provides a means of measuring and mapping the potential impacts from airport noise relative to the land uses surrounding an airport.

Noise is a pressure wave that decreases in intensity over distance from the source. Construction noise is usually measured in decibels (dB). In-air noise when frequency-weighted to approximate human hearing is measured on an A-weighted scale, denoted as dBA.

4.12.1 Affected Environment

The FAA defines a noise-sensitive area as an area where noise interferes with normal activities associated with its use. These can be located indoors or outdoors and may include residences, educational and healthcare facilities, places of worship, parks and recreational areas, and cultural and historical sites. The 65 DNL noise contour was not analyzed in the 2013 MPU at OTH but would extend over Coos Bay at both ends of Runway 5/23.

Noise-sensitive land uses (residential, community centers) exist South of OTH, which could be occasionally impacted by atypical use of the crosswind Runway 13/31. These areas OTH are comprised of mostly residential land use as well as parks (Airport Heights Park and Simpson Park), community centers (North Bend Community

Center, and North Bend Senior Center), and the Church of Jesus Christ of Latter-day Saints. Southeast of OTH includes scattered residences, North Bend Library, Quality Inn and two educational facilities (North Bend High School and Hillcrest Elementary School).

Other land uses adjacent to the Airport (commercial, manufacturing, and agricultural facilities) are not considered noise-sensitive and were not considered for noise impacts.

4.12.2 Environmental Consequences

Heavy equipment as earth-moving equipment, such as excavating machinery like excavators, backhoes, and front loaders, as well as materials handling equipment like graders, pavers, rollers, and dump trucks. Average maximum noise levels from heavy equipment range from about 73 to 101 dBA.

The Proposed Action will not increase aircraft operations or change flight patterns and will not change the existing noise levels at OTH. Temporary construction-related increases in noise are expected from equipment used to build the RSA bulkhead and mitigation sites (dock removal) over 0.5 miles away. Construction of the Proposed Action would result in temporary elevated noise levels from on-site construction equipment, personal vehicles used by construction employees to access parking areas, and delivery/haul trucks used for equipment and material delivery and haul trips. Sound levels have been estimated from the construction location to the airport boundary 0.5 miles away. (**Table 4-9: Construction Equipment and Noise Levels at Airport Boundary**). The results indicate that the greatest sound source (power tool) would reach the airport boundary at 35.5 dBA, which is roughly the noise generated by a library (30dBA) or a quiet office (40dBA).

Table 4-9: Construction Equipment and Noise Levels at Airport Boundary

Construction Source	dBA	dBA at 0.5 miles
Backhoe	78	23.5
Skid Steer	79	24.5
Bucket Truck	79	24.5
Power Tool	90	35.5

4.12.3 Mitigation

There will be no significant noise impacts from construction of the Proposed Action, and mitigation is not required. Construction will occur during daytime working hours according to the City of North Bend noise ordinance.

4.12.4 Findings and Conclusions

The No Action Alternative will have **no effect** on noise levels or noise-compatible land use, as it is the non-development alternative. Current noise levels would remain as they presently exist.

No change in airport traffic or operations will occur as a result of the Proposed Action. The Proposed Action will have **no effect** on noise-compatible land uses due to construction at the Airport.

4.13 Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks

Title VI of the US Civil Rights Act of 1964, as amended, EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and Order DOT 5610.2, Environmental Justice require that no minority, or, by extension, low-income person shall be disproportionately adversely impacted by any project receiving federal funds. FAA Order 1050.1F requires evaluation of potential environmental health and safety risks that could disproportionately affect children. These could include harmful products and substances, such as air, food, drinking water, recreational waters, soil, or products to which children could be exposed.

4.13.1 Affected Environment

US Census data and EPA EJ SCREEN, an environmental justice screening and mapping tool, was reviewed to determine the characteristics of people living in proximity to the Airport. The County’s economy is primarily driven by forest products, tourism, fishing, and agriculture¹¹. According to the US Census Bureau American Fact Finder, as of 2021 the leading industries in Coos County, Oregon are: retail trade; healthcare and social assistance; accommodation and food services; and professional, scientific, and technical services. The median household income for Coos County is \$40,848 and for the City of North Bend is \$47,574, lower than the State median household income of \$56,199 (**Table 4-10: Demographic Indicators**). All other demographic indicators show a rough approximation with US averages, except a lower population of People of Color by 20 percent. There are no known schools, daycare facilities, playgrounds, or other places where children are concentrated within the immediate vicinity of the Airport. The nearest park, Airport Heights Park, is 1 mile away and the nearest public school, North Bend High School is 1.4 miles away.

Table 4-10: Demographic Indicators

Demographic Indicators	City of North Bend	United States
Median Household Income	\$47,574	\$57,652
Persons in Poverty	13.4%	12.3%
People of Color	18%	39%
Low Income	40%	33%
Less than High School Education	10%	13%
Under Age of 5	6%	6%
Over Age of 64	21%	15%
Linguistically Isolated	0%	4%

Source: US Census, 2018. EPA EJSCREEN, 2021

The FAA has not established a significance threshold for impacts to children’s environmental health and safety; however, the FAA has identified the following factor for consideration when evaluating potential impacts to children’s health and safety:

- An action would have the potential to lead to a disproportionate health or safety risk to children (FAA 2020b).

Within a one-half mile radius of the proposed improvements, there are approximately no children under the age of 18 residing in the area. There are no schools or daycares within a one-half mile radius of the proposed improvements. The closest school (North Bend High School) is located 1.6 miles from the proposed improvements.

4.13.2 Environmental Consequences

According to FAA Order 1050.1F, a significance threshold for socioeconomics has not been established by the FAA; however, the FAA has identified factors to consider when evaluating the context and intensity of

¹¹ Coos County website, <http://www.co.coos.or.us/>, 2021

potential environmental impacts for socioeconomics (FAA 2020b). These factors include situations in which the action would have a potential to:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area)
- Disrupt or divide the physical arrangement of an established community
- Cause extensive relocation when sufficient replacement housing is unavailable
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities
- Produce a substantial change in the community tax base (FAA 2020b).

Because the Proposed Action is confined to the northwest portion of the airport property and surrounded by Coos Bay, the Proposed Action is confined to the existing airport property and would not displace any existing or planned residences or businesses nor cause any disproportionately high and adverse impacts to minority or low-income populations. The Proposed Action will not increase aircraft operations beyond normal projections. Residential and commercial land use will remain the same, and project activities will not have significant effects on air quality, climate, hazardous materials, noise, and cultural and water resources that could impact low-income, minority, and tribal populations. The Proposed Action will have no effect on economic activity, employment, income, housing, public services, social conditions, low income and minority populations or children's health and safety in the vicinity of the Airport.

The No Action Alternative to continue existing airport operations is not currently impacting minority or low-income populations and will have no effect on minority or low-income people or children.

4.13.3 Mitigation

The Proposed Action would have no effect on socioeconomics, environmental justice, or children's environmental health and safety. Therefore, no mitigation is required.

4.13.4 Findings and Conclusions

The No Action Alternative will have **no effect** on socioeconomics, environmental justice, or children's environmental health and safety, as it is the non-development alternative.

Likewise, the Proposed Action will have **no effect** on the individual or cumulative environmental health of low income and minority populations or children's environmental health and safety. The Proposed Action would not have impacts that would negatively impact the socioeconomics of the area.

4.14 Visual Effects and Light Emissions

The FAA considers the extent to which any lighting associated with an action would create an annoyance among people in the vicinity or interfere with their normal activities. The visual resources of an area include the features of its landforms, vegetation, water surfaces and cultural modifications (physical changes caused by human activities) that give the landscape its visually aesthetic qualities. Landscape features, natural appearing or otherwise, form the overall impression of an area. Additional laws protecting resources

that may be affected by visual effects include Section 106 of the NHPA, Section 4(f) of the DOT Act, and the CZMA.

4.14.1 Affected Environment

Visual aids are necessary components to facilitate an airport's flight operations and enhance safety during periods of inclement weather and/or darkness by providing guidance to pilots in the air and on the ground. Visual aids at Southwest Oregon Regional Airport include the following:

- Runway and taxiway lighting systems
- Runway marking
- Airfield signage
- Rotating beacon
- Main lighted windsock
- Runway 05 supplemental windsock
- Runway 31 supplemental windsock
- Segmented circle
- Airfield obstruction lighting
- MALSR Unit

Runway 05/23 lighting includes a High Intensity Runway Light (HIRL) edge lighting system, Runway End Identifier Lights (REIL) on Runway 05, a four-box Visual Approach Slope Indicator (VASI) lighting system on Runway 05, and a 1,400-foot medium-intensity approach lighting system with runway alignment indicator lights (MALSR) installed prior to the approach end of Runway 05. Runway 13/31 is equipped with a Medium Intensity Runway Light (MIRL) edge lighting system, REILs on both ends of Runway 13/31, and a four-light Precision Approach Path Indicator (PAPI) system installed on the left side of Runway 13. The rotating beacon consists of an alternating white and green light identifying the facility as a civilian land airport. The rotating beacon at Southwest Oregon Regional Airport is located on top of the Air Traffic Control Tower facility, which is directly north of the main apron, south of Taxiway C.

Airfield obstruction lighting is used to mark hazards and is meant to be visible to pilots and not a disturbance to people on ground. The following facilities located on the airfield are lighted obstructions:

- Glide slope antenna – Located on the north side of Runway 4, approximately 1,000 feet from the runway threshold.
- Localizer antenna – Located in-line with Runway 4, approximately 1,000 feet before the threshold of Runway 22.

- Automated Weather Observation System (AWOS) tower – Located on the east side of Runway 13, approximately 500 feet from the runway threshold.
- Air Traffic Control Tower – Located on the west side of Runway 13, approximately 200 feet south of the centerline of Taxiway C.
- Main lighted windsock – Located to the east of Runway 13, approximately 300 feet south of the AWOS tower.
- Runway 04 supplemental windsock – located near the Runway 04 threshold on the southwest side.
- Runway 31 supplemental windsock – located northwest of Runway 31, in between Taxiways A3 and A4.

The Coos River is not listed as an Oregon State Scenic Waterway, and there are no visual regulatory constraints in the project area that the Proposed Action would affect.

4.14.2 Environmental Consequences

The Proposed Action does not include the installation of new lighting and will not impact existing light emissions. The RSA bulkhead construction will match the adjacent ground elevation, is consistent with the existing shoreline rip-rap armoring, and will not change the existing viewshed, nor create a noticeable aesthetic effect.

4.14.3 Mitigation

No visual impacts are anticipated as part of the Proposed Action, and no mitigation is required.

4.14.4 Findings and Conclusions

The No Action Alternative does not construct an RSA bulkhead, thereby, the No Action Alternative will have **no effect** on light emissions, visual resources, or visual character.

The Proposed Action does not include the installation of new lighting facilities and will not increase in aircraft operations at the Airport beyond normal projections that may result in increased light emissions. The bulkhead will be constructed in a manner that mimics the visual character of the existing shoreline, utilizing rip-rap to replace the existing shoreline. Therefore, the Proposed Action will have **no effect** on light emissions, visual resources, or visual character.

4.15 Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic rivers)

The CWA in conjunction with the Fish and Wildlife Coordination Act, Rivers and Harbors Act, the Safe Drinking Water Act, and other local statutes establish regulations that protect the Nation’s water resources. Water resources include all surface waters and groundwaters—wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers. These resources are crucial in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems.

A water of the United States (WOTUS) is considered a jurisdictional surface water or wetland under the CWA. Any surface water not meeting this definition is considered non-jurisdictional, and therefore has no statutory protection under the CWA. It is important to note that not all surface waters are considered

jurisdictional under the CWA. This determination is made on a case-by-case basis by the USACE. Non-jurisdictional wetlands are protected under Executive Order 11990.

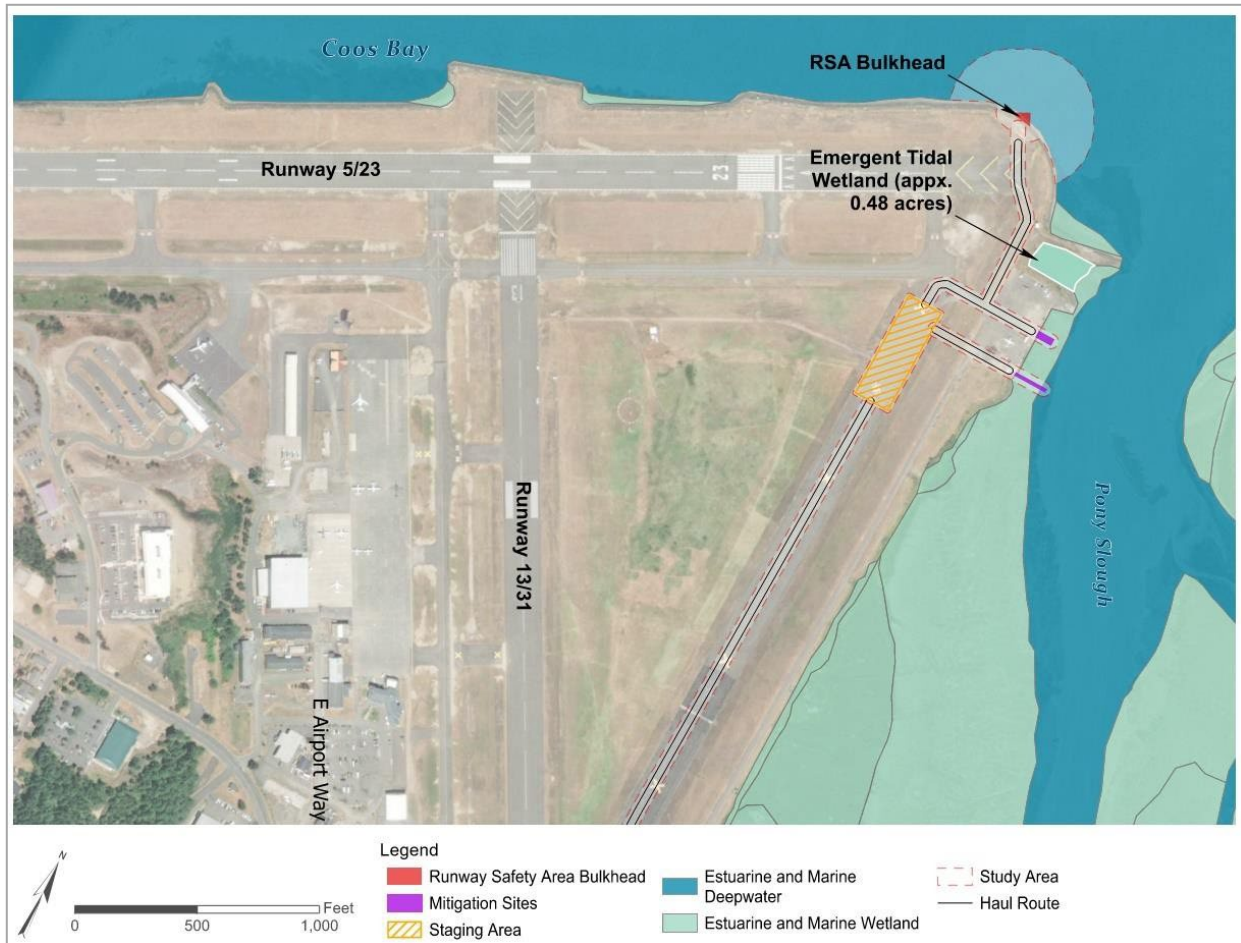
Through the JPA process (**4.1 Joint Permitting Application**), the Airport coordinated state and federal agency consultation for water resource compliance and permitting. This process involved consultation with OR DSL and USACE coordinated and commented on jurisdictional wetlands, City of North Bend for floodplains, Oregon DEQ for surface waters, Or DEQ and EPA for groundwater (**Table 4-1: Environmental Impact Category and JPA Coordination**). The following section evaluates the Proposed Action for wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers compliance.

4.15.1 Affected Environment

Wetlands

Wetlands at OTH were delineated on November 15, 2018, within five separate study areas (Study Areas A-E) totaling 63 acres (**Figure 4-6: Wetlands** and **Appendix S – Wetland Delineation Report**). Wetlands in the study area were determined using Routine On-Site Determination Method as defined in the Corps of Engineers Wetland Delineation Manual. A small tidally influenced emergent wetland (0.48 acres) was identified 475 feet south of the RSA Fill study area, 525 feet north of the mitigation site (Study Area B / 7.15 acres). No other new or existing wetlands were identified near the Proposed Action other than the marine and estuarine wetlands listed below. The wetland delineation report was approved by the Oregon Department of State Lands on October 15, 2019 (**Appendix S**). Only freshwater wetlands, not estuarine and marine deepwater and wetland habitats, are managed by OR DSL. These marine habitats will be analyzed under the section Surface Waters.

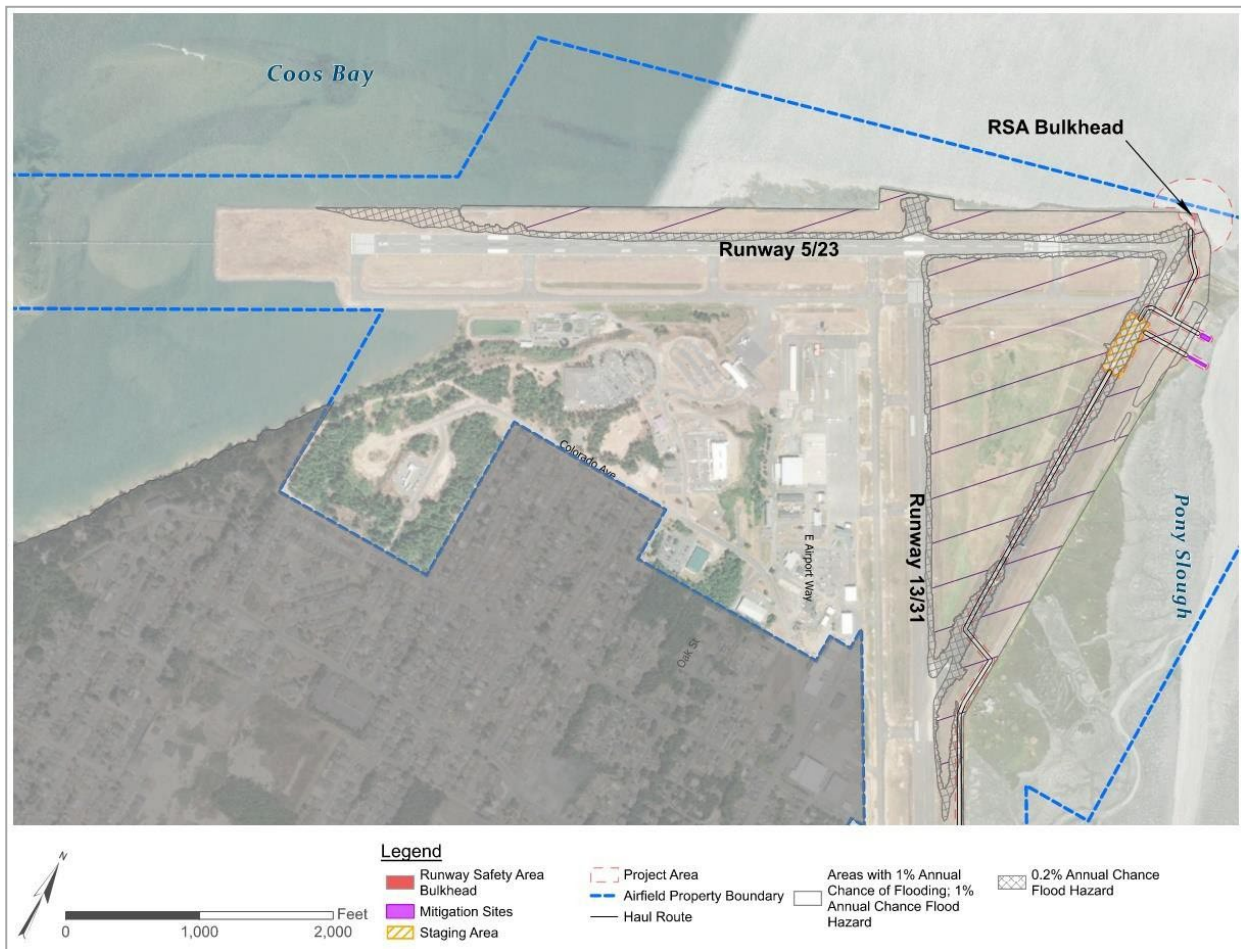
Figure 4-6: Wetlands



Floodplains

FEMA develops and maintains maps that identify areas of regulated floodplains and floodways (**Figure 4-7: Flood Hazard Areas**). The Flood Insurance Rate Map (FIRM) is the most widely referenced of those maps (FIRM No. 41011C0186E). There are Zone AE floodplains adjacent to the Airport and on Airport property. According to this map (**Appendix T – FEMA FIRM No. 41011C0186E**), much of the Airport lies within a 1 percent annual chance flood hazard area, known as the base flood or 100-year flood area. The airport runways' additional foundational material and elevation lie within a 0.2 percent annual chance flood hazard area or known as the 500-year flood area.

Figure 4-7: Flood Hazard Areas



The National Flood Insurance Program (NFIP) aims to reduce the impact of flooding on private and public structures. To ensure compliance with the NFIP, the city has a floodplain management ordinance (Coos Bay Municipal Code Chapter 17.195) to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHA). A SFHA is a high-risk area defined as any land that would be inundated by a flood having a 1 percent chance of occurring in a year, or 100-year flood zone (Zone AE).

Surface Waters

Coos Bay (USGS Cataloging Unit: 17100304) is an estuary formed at the junction of the Coos River with smaller tributaries which include Pony Slough, South Slough, Isthmus Slough, Kentuck and Willanch Sloughs, and North Slough. The estuary is primarily fed by the Coos and Millicoma Rivers, which together contribute about 60% of the fresh water entering the bay.

According to National Wetland Inventory mapping and classification, Coos Bay and Pony Slough surround the Airport and form Estuarine and Marine Deepwater wetlands (E2USN, E2USM, E1UBL, E2EM1N). The location of the proposed 0.7-acre RSA bulkhead is estuarine subtidal unconsolidated bottom habitat (E1UBL) is within the 9172-acre Estuarine and Marine Deepwater habitat of Coos Bay). Managed through

the Joint Permit Application process, OTH consulted with USACE, EPA and Oregon DEQ to determine the compliance requirements for Sections 401 and 404 of the Clean Water Act and Section 10 of the Harbors and Rivers Act.

In accordance with Section 303(d) of the 1972 CWA, the Oregon DEQ evaluates water bodies identified as impaired and not meeting water quality standards set for the state for water quality management. Section 303(d) requires that states develop Total Maximum Daily Loads (TMDL) for pollutants or other quantifiable parameters for a water body. A TMDL is the EPA's way of measuring a waters' loading capacity for pollutants from both point and non- point sources

According to the ODEQ Watershed Quality Assessment Database (2021), 303(d) water quality limited segments exist in the Coos Watershed. Water quality limited segments of the Bay and rivers within the Project Area where a Total Maximum Daily Load (TMDL) is needed are listed in **Table 4-11: Water Quality Limited Areas**.

Table 4-11: Water Quality Limited Areas

Waterbody	River Mile (RM)	Cause(s) of Impairment	Beneficial Use(s)	State TMDL Status
Coos Bay	0 to 7.8	Fecal Coliform	Shellfish growing	TMDL Needed
Coos Bay	7.8 to 12.3	Fecal Coliform	Shellfish growing	
Coos River	0 to 6.5	Fecal Coliform	Shellfish growing	
Millicoma River		DO, Fecal Coliform	Salmonid spawning and shellfish growing.	
Isthmus Slough	0 to 10.6	DO, Fecal Coliform, Manganese, Temperature, Water	Resident fish and aquatic life, anadromous fish passage, salmonid rearing, drinking water, fishing and shellfish growing.	
Coalbank Slough	0 to 0.5	Fecal Coliform	Shellfish growing	

**Oregon DEQ Watershed Quality Assessment Database 2021*

All water quality limited segments were identified as needing a TMDL. The ODEQ is currently in the “initial scoping and data collection phase” for the preparation of a TMDL for the watershed. The water quality limited segments listed above show no current change in status

Groundwaters

Water that does not evaporate, run off, or transpire filters through the soil and subsurface and becomes groundwater. The study area for groundwater includes all areas where the ground could be disturbed by construction of the Proposed Action, where impervious surfaces could change rates of groundwater infiltration, where airport operations could increase spills or leaks, and where construction vehicles and other equipment could potentially impact groundwater due to staging, machinery, storage, and spills. The following files and databases were reviewed:

- EPA Sole Source Aquifer for Drinking Water Database and Mapping Tool
- Oregon Water Resources Department Groundwater Information System Mapping Tool
- Oregon Critical Groundwater Areas Database

The EPA keeps a database of groundwater sources that serve as the sole source of drinking water for a population. The action area is also not within a Sole Source Aquifer for Drinking Water. Oregon DEQ designates Groundwater Management Areas where there are elevated levels of contaminants from a nonpoint source. The study area is not located in a Groundwater Management Area and is not classified as a critical groundwater area

OTH currently uses a variety of hazardous or potentially toxic materials that could impact groundwater, such as vehicle and aviation fuels and solvents, which could be released to the environment in the event of a spill, airplane crash, or ground support equipment accident. OTH has coverage under the National Pollutant Discharge Elimination System (NPDES) industrial stormwater permit (1200-Z) that regulates these activities. The Port implements a Stormwater Pollution Control Plan to manage stormwater as required by the 1200-Z permit. Required BMPs include proper storage and handling of hazardous materials, spill response procedures, and BMPs for maintenance activities.

Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers segments or Nationwide Rivers Inventory segments within the project area. The closest designated Wild and Scenic River, the Franklin Creek Wild and Scenic River, is located approximately 15 miles north of the project.

4.15.2 Environmental Consequences

Wetlands

The Proposed Action includes a haul route that passes within 15 feet of an identified freshwater wetland, and all construction traffic will remain on existing paved areas during hauling activities that will avoid wetlands. There are no impacts to freshwater wetlands

Floodplains

The proposed RSA fill area was analyzed using publicly available bathymetry and topography for the model geometry and FEMA Flood Insurance Study (FIS) hydrologic data for model boundary conditions. The results of the hydraulic model show that the proposed fill will cause no increase in the water surface elevation of the base flood level in Pony Slough (**Appendix U – Water Resources Report**). The Proposed Action meets the requirements of both 44 CFR Ch.1, Section 60.3, c, the Flood plain management criteria for flood-prone areas, and the City of North Bend Tsunami Ordinance No. 2027 (**Appendix U – Water Resources Report**). A Floodplain Development Permit will be required from the City of North Bend prior to the initiation of construction.

Surface Waters

There will be 0.07 acres of estuarine subtidal unconsolidated bottom habitat (E1UBL) replaced by the RSA bulkhead (**Coos Bay Figure 4-7: Wetlands**). As part of the Joint Permit Application process, consultation was initiated with USACE, EPA and Oregon DEQ. USACE determined that the Proposed Action is authorized by Nationwide Permit (NWP) No. 14, Linear Transportation Projects, and No. 27, Aquatic Habitat Restoration, Establishment and Enhancement Activities (Federal Register, January 6, 2017, Vol. 82, No. 4). Subsequently, Oregon DEQ certified that the Proposed Action complies with the Clean Water Act and state rules through the Nationwide 401 Water Quality Certification process. The USACE issued a

Nationwide Permit verification letter (NWP-2017-337) in September 2021 (**Appendix V – USACE Nationwide Permit**)

Oregon DEQ manages the water quality for the multiple stormwater drainage paths on airport property lead to nine outfall points into Coos Bay and Pony Slough (**Appendix U, Figure 3, Existing Drainage**). The RSA fill area would not create new impervious surface that could contribute to water quality non-compliance. Based on EPA guidelines, a Division of Surface Water (DSW) General NPDES permit for construction activities is not required because the impact involves less than 1 acre of land. The change in pervious surface does not require an update of the Airport's 2009 Storm Water Pollution Control Plan (SWPCP). The in-water work for the RSA bulkhead and mitigation sites have been reviewed by Oregon DEQ through the Joint Application Process and sediment monitoring mitigation measures have been agreed upon as part of the Biological Opinion Terms and Conditions (**Appendix H – Joint Permit Application**). The creosote pile removal will follow USACE's guidelines for Derelict Creosote Piling Removal Best Management Practices for Pile Removal & Disposal (**Appendix L – Permittee- Responsible Mitigation Plan**). A Floodplain Development Permit will be required from the City of North Bend prior to the initiation of construction.

Groundwater

The Proposed Action would not affect groundwater resources as it is not located in a Groundwater Management Area and is not classified as a critical groundwater area. The study area is also not within a Sole Source Aquifer for Drinking Water. Project construction would be under the 1200-Z NPDES industrial stormwater permit that includes requirements that protect groundwaters.

Wild and Scenic Rivers

There are no impacts to designated Wild and Scenic Rivers due to the Proposed Action because the nearest Wild and Scenic River is 15 miles away.

4.15.3 Mitigation

Wetlands

No impacts to freshwater wetlands will occur; therefore, and no mitigation is required.

Surface Water

The 0.7-acre estuarine subtidal unconsolidated bottom habitat that will be replaced by the RSA bulkhead and mitigation will be provided at a 2:1 ratio as agreed to in the Biological Opinion through removal of two remnant creosote dock structures in Pony Slough (**Appendix L – Permittee Responsible Mitigation Plan**).

Based on the potential for construction in-water impacts to Coos Bay water quality adjacent to Runway 5/23 the Nationwide 401 Water Quality Certification requires (**Appendix V – USACE Nationwide Permit**):

- Erosion and Sediment Control
- Spill Prevention
- Spill and Incident Reporting
- Vegetation Protection and Site Restoration
- Avoidance and Protection of Wetlands

- Oregon DEQ designated in-water work windows (October 1 – February 15)
- Aquatic life movements
- Turbidity BMPs

As part of the Section 7 ESA consultation with NOAA-NMFS, a monitoring plan will also measure marine turbidity during construction activities as part of the permittee responsible mitigation plan.

The Airport has a SWPCP that utilizes site controls to prevent or minimize exposure of pollutants to stormwater and remove any pollutants from stormwater before it is discharged to surface waters (**Appendix W**). These site controls include BMPs, Spill Prevention and Response Procedure, Preventative Maintenance, and Employee Education (**Appendix W – Stormwater Pollution Control Plan**).

Groundwater

For groundwater, no mitigation is required; however, BMPs will be employed to avoid and minimize impacts to groundwater. The following BMPs are consistent with Oregon SWPPP guidelines and FAA order 150/5320-15A, *Management of Airport Industrial Waste* (FAA 2008) to prevent and minimize impacts to surface and groundwaters:

- Schedule construction activities for dry weather periods.
- Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 100 feet from wetland areas.
- Inspect vehicles and equipment for leaks and repair immediately.
- Inspect all vehicles and equipment that may have come in contact with invasive plants, or the seeds of these plants, and carefully clean vehicles and equipment before arriving on-site.
- Conduct major vehicle maintenance and washing off site.
- Avoid or minimize disturbance to existing herbaceous vegetation to the fullest extent possible.
- Replace any herbaceous vegetation that has been disturbed to a pre-project density with herbaceous species appropriate to the site.
- Prevent construction debris from falling into Coos Bay. Any material that does fall into the irrigation canal during construction should be immediately removed in a manner that has minimal impact to the channel bed and water quality.
- Clean up leaks, drips, and other spills immediately to avoid soil or surface water contamination.
- Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste off site.
- Ensure that all construction debris is taken to appropriate landfills and all sediment disposed of in upland areas or off-site.

Floodplains

The Proposed Action does not impact floodplains; therefore, no mitigation is required.

Wild and Scenic Rivers

The Proposed Action project area does not impact Wild and Scenic Rivers; therefore, no mitigation is required.

4.15.4 Findings and Conclusions

Wetlands

The No Action Alternative will have **no effect** on freshwater or coastal wetlands as a non-development alternative. All wetlands would remain as they presently exist.

Avoidance measures during construction will prevent impacts to freshwater wetlands. The Proposed Action is in accordance with EO 11990, will result in no net loss to freshwater wetlands, and will have **no adverse effect** on freshwater wetland resources. All impacts to the estuarine subtidal unconsolidated bottom habitat is analyzed in the Surface Water subsection.

Floodplains

The No Action Alternative will have **no effect** on floodplains as a non-development alternative.

The project area is located within the AE floodplain zone, and the hydraulic model shows that the proposed fill will not increase water surface elevation of the base flood level. Both the No Action Alternative and the Proposed Action will have **no significant effect** on floodplains. A Floodplain Development Permit will be required prior to the initiation of construction.

Surface Water

The No Action Alternative will have **no effect** on surface waters. All surface water quantity and quality will remain as they presently exist.

The Proposed Action involves the permanent construction of a 67-foot-by-89-foot bulkhead with a pervious surface. No new impervious surfaces will be added to the airport. Coastal surface water impacts will be mitigated at a 2:1 ratio as agreed to in the Biological Opinion through removal of two remnant creosote dock structures in Pony Slough (**Appendix L – Permittee Responsible Mitigation Plan**) and sediment monitoring requirements. The Proposed Action will have **no significant adverse effect** on surface waters.

Groundwater

The No Action Alternative will have **no effect** on groundwaters. All groundwater quantity and quality will remain as they presently exist.

With implementation of BMPs during construction to prevent and minimize spills that could reach groundwater through infiltration, the Proposed Action will have **no significant effect** on groundwater resources.

Wild and Scenic Rivers

The No Action Alternative and the Proposed Action will have **no effect** on Wild and Scenic Rivers.

4.16 Cumulative Effects

On July 16, 2020, the CEQ announced its final rule modernizing and clarifying its procedural regulations implementing the NEPA. The final rule, "Update to the Regulations Implementing the Procedural Provisions

of the National Environmental Policy Act,” is the first major revision to CEQ’s NEPA regulations in over 40 years and is the latest in a series of efforts by the previous Administration to streamline federal agency processes for permitting infrastructure projects. Under the final rule, the NEPA review process is altered by repealing the specific requirement to consider cumulative effects. This EA has been developed consistent with the existing national environmental policies and objects of Section 101(a) of the NEPA and meets the requirements of the amended CEQ Regulations, which became effective on September 14, 2020.

Chapter 5.0 Public Outreach, Agency Coordination, and Tribal Consultation

Chapter 5 summarizes the public outreach, agency, and tribal coordination undertaken for the project during the EA process.

5.1 Public Outreach

Prior to initiating the environmental review process, OTH embarked on a master planning effort beginning in 2012. The final 2013 Master Plan included robust public and stakeholder outreach. A Master Plan outreach effort was conducted to elicit response from a variety of Airport interest groups, tenants, local government representatives, partner agencies, and community and regional stakeholder groups. Stakeholder outreach efforts for the Master Plan involved project webpages for sharing information related to the project with the public and gathering feedback through public meetings and preliminary chapter reviews before the Draft Master Plan was completed. These meetings provided information regarding the plan's purpose, process, preliminary findings, development concepts, and timeline.

On September 20, 2017, prior to the outset of the environmental review process, a scoping meeting was held to solicit initial comments from various federal, state, and local agencies via electronic mail. Agencies were asked to submit comments for consideration prior to the environmental review process and were invited to an agency and stakeholder coordination meeting held via conference call.

Agencies and stakeholders in attendance included the following:

- Federal Aviation Administration
- U.S. Army Corps of Engineers
- National Oceanic and Atmospheric Administration
- U.S. Fish & Wildlife Service
- Oregon Department of Aviation
- Oregon Department of State Lands
- Oregon Department of Environmental Quality
- Coos County Planning Department
- City of North Bend
- Port of Coos Bay
- Oregon State Historic Preservation Office

As part of the Oregon Joint Permit Application (JPA) process (see **4.1 Joint Permitting Application**), removal-fill permit applicants are recommended to meet with the agencies as part of regularly scheduled interagency pre-application meetings, known as "Kaizen." The Kaizen pre-application process is intended for non-routine permit evaluations that may be large, complex, or controversial in nature. The intent of the

meetings is to provide meaningful comment and feedback to prospective applicants early in the permitting process to help them effectively prepare permit applications and address agency concerns. OTH scheduled a Kaizen for this project on July 17, 2019, with the following agencies in attendance:

- US Army Corps of Engineers
- Oregon Department of State Lands
- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Federal Aviation Administration

The public outreach efforts for the OTH Runway 5/23 RSA improvements commenced on May 19, 2019, with an open house meeting at the OTH. The meeting served to inform the public about the project, its purpose and need, and the alternatives analysis process. CCAD staff have also provided updates at public meetings since summer 2018. In total, approximately 15 people have attended project events and meetings since the EA process began.

Due to the COVID-19 pandemic, instead of a second open house meeting, a public Self-Guided Virtual Open House was hosted on the OTH website. The comment period began February 1, 2022 and ended March 1, 2022. The website provided an update on the draft EA efforts since the first public information meeting, including information on current design for the Proposed Action, project timeline, and notification to the public about the anticipated release of the Final EA. A description of each outreach event and activity is summarized in **Table 5-1: Public Outreach Events and Activities**. No comments were received during the public comment period.

Table 5-1: Public Outreach Events and Activities

Date	Event	Location	Description
May 19, 2019	Open House Meeting	Southwest Oregon Regional Airport	This public meeting served as a kickoff to the public outreach for the project and offered a time for the public to interact with staff and ask questions.
February 1, 2022	Virtual Self-guided Open House	Online	This Virtual Self-Guided Open House provided an update of the draft Environmental Assessment and allowed for a 30-day public comment period.

5.2 Agency Coordination

Under the NEPA regulations (40 CFR 1501.5), federal agencies are required to involve environmental agencies, applicants, and the public, to the extent practicable, in preparing EAs. The FAA and CCAD have conducted early coordination meetings with several federal, state, and local agencies and will continue to work with agency partners through completion of the NEPA process. **Table 5-2: Agency Coordination** summarizes agency coordination that has occurred to-date.

The FAA and CCAD have conducted multiple meetings with the USACE, NMFS, OR DSL, and the City of North Bend to discuss potential impacts to Coos Bay and Pony Slough. As discussed in **Chapter 4**, permits from the USACE, NMFS, DSL, and DEQ would be required prior to construction through the Oregon Joint

Permit Application. The FAA and CCAD will continue to work with these regulatory agencies to obtain the appropriate permits prior to construction.

Table 5-2: Agency Coordination

Date	Agency	Coordination Topics
September 20, 2017	Agency Scoping Meeting Conference Call	This EA Agency Scoping meeting discussed the need to address the non-compliant runway at OTH. Members of several agencies attended the meeting and provided comments to allow for more accurate scoping of the NEPA process.
July 2019	USACE	Pre-application meeting held with USACE and the CCAD.
July 17, 2019	JPA Pre-Application Kaizen	At this JPA pre-application meeting, the project purpose, need, and alternatives were explained. Members of several agencies attended the meeting and provided comments to improve state agency compliance.

Section 106 of the NHPA requires that the FAA consult with Oregon SHPO on the Proposed Action. The FAA initiated consultation with Oregon SHPO on December 7, 2018. Oregon SHPO responded on December 26, 2018, January 4, 2019, and May 23, 2019, and concurred with the project’s APE for above-ground and archaeological resources, respectively. The Final Cultural Resources Survey (**Appendix M**) was provided to the Oregon SHPO by the FAA on May 1, 2019, for review and concurrence with the Section 106 findings, then amended on April 29, 2020, to include a historic evaluation and determination for the proposed mitigation sites.

5.3 Tribal Consultation

Under Section 106 of the NHPA, 36 CFR Part 800, Executive Order 13175, and FAA Order 1210.20, the lead federal agency must provide an opportunity for the Oregon SHPO, affected tribes, and other stakeholders to comment on a federal undertaking.

There were six tribes invited to participate in this project:

- Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI)
- Confederated Tribes of the Grande Ronde Community of Oregon
- Confederated Tribes of the Warm Springs Reservation of Oregon
- Cow Creek Band of Umpqua Tribe of Indians
- Confederated Tribes of Siletz Indians of Oregon
- Coquille Indian Tribe

The FAA initiated consultation with each tribe listed above on December 28, 2018. The Confederated Tribes of the Grand Ronde Community of Oregon deferred further comments on this project to primary tribes of the area on January 23, 2019, which concluded their consultation. The FAA delivered the initial Cultural Resource Survey to the identified tribes on May 1, 2019. No responses were received from the Cow Creek band of Umpqua Tribe of Indians, the Confederated Tribes of Siletz Indians of Oregon, or the Coquille Indian Tribe. The CTCLUSI responded on May 30, 2019, stating that the proposed project APE falls within a TCP area of the Tribe. In a follow-up email, the Tribe expressed concerns about the health of Coos Bay and restated its importance to Tribal members. The Confederated Tribes of the Warm Springs Reservation of Oregon requested to be included in the project’s consultation on February 18, 2020.

The FAA provided the amended Cultural Resource Survey to each tribe identified on April 29, 2020, requesting their review. The Confederated Tribes of the Warm Springs Reservation of Oregon responded on May 18, 2020, concurring with the report findings and recommendations. Ongoing tribal consultation led to an updated Inadvertent Discovery Plan, that was reviewed by CTCLUSI on June 3, 2020.

SHPO concurred with the FAA determination that the Proposed Action will have “no adverse effect” to historic resources. The comment period ended in August of 2021 with no comments from SHPO or Tribal governments.

The FAA also provided the Draft EA to tribal governments for comment when it was published in February 2022.

Chapter 6.0 List of Preparers

Chapter 6 provides a list of the names and the qualifications of individuals who contributed to the preparation of the EA and supporting documentation. **Table 6-1: List of Preparers** includes FAA, CCAD, and consultant staff.

Table 6-1: List of Preparers

Name	Years of Experience	Education	Area of Responsibility
Agency Staff			
FAA			
Ilon Logan	21	MMA, Environmental Policy	NEPA
Coos County Airport District			
Theresa Cook	10	MCRP; BA, Community Development	Executive Director
Consultant Team			
Mead & Hunt, Inc.			
Kevin Mulcaster	15	BS, Urban and Regional Planning	Project Principal / Quality Control
Aaron Killgore	10	MS, Fisheries and Wildlife Sciences, BA, Biology	Project Manager
Jennifer Satterthwaite	20	MA, Fine Arts / Historic Preservation, BA, Art History	Environmental Planning
Daniil Repchenko	5	MS, Cartography and GIS, BS Urban and Regional Planning	Planner, GIS Analyst
Cheyenne Engelstad	3	AS, Natural Sciences	Planning Technician
Byron Henicle	9	BS, Civil Engineering	Project Engineer
Kari Nichols	17	BS, Civil and Environmental Engineering	Water Resources
Adam Farnsworth	14	CAD	CAD Designer
Kerry Seifert	15	BASc, Engineering	Project Engineer
Jesse Piotrowski	3	Master's, Civil and Environmental Engineering, BS, Civil Engineering	Project Engineer
Deborah Nelson	18	MCRP; BA, Biology and Environmental Studies	Eelgrass Ecologist
Liz Boyer	6	Master's, Historic Preservation, Bachelor's Liberal Studies-Historic Preservation	Historian, Cultural
Chad Moffett	22	MA, Cultural Resource Preservation, BA, American History	Cultural Resource Specialist
Donny Mathews	15	BS, Civil (Structural) Engineering, AS, Architectural Engineering Technology	Structural Engineer

Marieke Armstrong	17	MS, Environmental Science, BS, Ecology, Behavior, and Evolution	Environmental Planner
Krista Robertson	2	BA, English, AA, English	Administrative Assistant
Dave Dietz	37	Master's, City and Regional Planning, BA, Environmental Politics	Senior Project Planner
PBS Engineering & Environmental			
Brian Kelly	35	BS, Environmental Science	Wetland Delineation, Geotechnical Report
Brian Bieger	3		Wetland Delineation, Geotechnical Report
Pacific Habitat Services, Inc.			
John van Staveren	23	Marine Biology and Limnology, Biochemistry, Freshwater Biology	Eelgrass
Transect Archaeology			
Lyle Nakonechny	14	MA, Cultural Geography; BA, Anthropology	SHPO/Cultural

Chapter 7.0 References

Chapter 7 identifies the reference materials utilized to write the EA and correspond with the in-text reference citations throughout the document.

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Chapter 8.0 Glossary

Chapter 8 provides a glossary of important terms used throughout the EA that help describe NEPA and FAA regulations and standards, environmental features, and components of the Proposed Action and mitigation strategies.

Term	Definition
Alternatives analysis	The process that evaluates potential alternatives to be studied in the subsequent environmental review process. Alternatives that do not meet a project's Purpose and Need and/or are infeasible (cannot realistically be built) are not retained and analyzed in the Environmental Assessment (EA) or Environmental Impact Statement (EIS).
Aircraft Approach Category (AAC)	A system for differentiating aircraft based on the speed at which the aircraft is flown during the approach phase of flight. Fixed wing aircraft are assigned to one of five categories.
Advisory Circular (AC)	A type of publication offered by the Federal Aviation Administration (FAA) to provide guidance for compliance with airworthiness regulations, pilot certification, operation standards, training standards, and any other rules within CFR Aeronautics and Space Title.
Aircraft Design Group (ADG)	An FAA-defined grouping of aircraft types which has six groups based on wingspan and tail height.
Airport Improvement Program (AIP)	A United States federal grant program that provides funds to public airports to help improve safety and efficiency.
Airport Layout Plan (ALP)	The plan of an airport showing the layout of existing and proposed airport facilities.
Air Operations Area (AOA)	The area of the airport bounded by a fence or to which access is otherwise restricted and which is primarily used or intended to be used for landing, takeoff, or surface maneuvering of aircraft, and related activities.
Airport operations	The total number of movements in landings (arrivals) and take-offs (departures) from an airport.
Area of Potential Effect (APE)	The geographic area within which the project may directly or indirectly cause alterations in the character or use of historic properties and cultural and archaeological resources. This is a term that specifically applies to Section 106 of the National Historic Preservation Act (NHPA).
Airport Reference Code (ARC)	A coding system developed by the FAA to relate airport design criteria to the operational and physical characteristics of the airplane types that will operate at a particular airport.
Aircraft Rescue and Firefighting (ARFF)	A type of firefighting that involves the emergency response, mitigation, evacuation, and rescue of passengers and crew of aircraft involved in aviation accidents and incidents.
Airport sponsor	The entity that is legally, financially, and otherwise able to assume and carry out the certifications, representations, warranties, assurances, covenants, and other obligations required of sponsors.
Accelerate Stop Distance Available (ASDA)	The runway length required for an aircraft to accelerate to a specified speed, and then, in case of an engine failure, be able to stop safely on the runway. It is equal to the length of the takeoff run available plus the length of the stop-way, if provided.
Air Traffic Control Tower (ATCT)	A service provided by ground-based air traffic controllers who direct aircraft on the ground and through controlled airspace and can provide advisory services to aircraft in non-controlled airspace.

Bald and Golden Eagle Protection Act (BGEPA)	Provides of the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transportation, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit.
Best management practices (BMPs)	Physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollutant discharge.
Clean Air Act (CCA)	Defines Environmental Protection Agency's (EPA) responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer.
Central Business District (CBD)	The commercial and business center of a city. It contains commercial and office spaces.
Compensatory flood storage	During the placement of fill within a floodplain, compensatory flood storage preserves the ability of a floodplain to store water by providing an equal volume of flood storage in the floodplain to replace what was lost.
Coos Bay Estuary Management Plan (CBEMP)	Serves as the basis of land and water use and community development regulations for lands lying within the Coos Bay Estuary and its shorelands, as designated in the CBEMP.
Coos County Airport District (CCAD)	Owns and operates the Southwest Oregon Regional Airport (OTH).
Council of Environmental Quality (CEQ)	Coordinates the federal government's efforts to improve, preserve, and protect America's public health and environment.
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	Maintained by the US Environmental Protection Agency and contains information on hazardous waste sites, site inspections, preliminary assessments, and remedial status.
Code of Federal Regulations (CFR)	The codification of the general and permanent regulations published in the Federal Register by the executive departments and agencies of the federal government of the United States. The CFR is divided into 50 titles that represent broad areas subject to federal regulation.
Carbon Monoxide (CO)	A colorless, odorless toxic flammable gas formed by the incomplete combustion of carbon.
Carbon Dioxide (CO ₂)	A colorless, odorless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air (about 0.03 percent) and is absorbed by plants in photosynthesis.
Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)	The CERCLA or Superfund provides a Federal "Superfund" to cleanup uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, EPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup.

Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI)	<p>The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) of Oregon are a federally recognized Native American tribe of Hanis Coos, Miluk Coos, Lower Umpqua, and Siuslaw people in Oregon. They are indigenous peoples of the Plateau.</p> <p>The Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians are the original inhabitants of the central and south-central coast of Oregon. Their homeland includes the estuaries of the Coos Bay, and the Umpqua and Siuslaw Rivers. The Tribes have been operating under a confederated government since the signing of the Treaty of August 1855.</p>
Clean Water Act (CWA)	Establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.
Criteria pollutants	A group of six common air pollutants for which the Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS): ozone (O ₃), with a diameter less than 10 micrometers and fine particles with a diameter of less than 2.5 micrometers (PM ₁₀ and PM _{2.5}), carbon monoxide (CO), nitrogen oxides (NO _x), sulfur dioxide (SO ₂), and lead (Pb).
Critical aircraft	The most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use (500 or more annual operations) of a runway.
Cubic Yards (CU)	An Imperial / US customary unit of volume. It is defined as the volume of a cube with sides of 1 yard in length.
Cumulative effect (impact)	The effect on the environment, which results from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or entity undertakes such other actions. Cumulative effects result from individually minor but collectively significant actions taking place over a period of time.
Coastal Zone Management Act (CZMA)	Provides for the management of the nation's coastal resources, including the Great Lakes. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."
Day-night average sound level (DNL)	The 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of 10 decibels to sound levels for the periods between midnight and 7:00 am and between 10:00 pm and midnight, local time, as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.
Denver International Airport (DEN)	An international airport in the Western United States, primarily serving metropolitan Denver, Colorado, as well as the greater Range Urban Corridor.
Department of Environmental Quality (DEQ)	The state regulatory agency charged with implementing and enforcing state and federal environmental rules and regulations.
Department of Land Conservation and Development (DLCD)	The chief land-use planning and regulatory agency of the government of the state. Administers the statewide land use planning program.
Department of Defense (DoD)	An executive branch department of the federal government charged with coordinating and supervising all agencies and functions of the government directly related to national security and the US Armed Forces.

Department of Transportation (DOT)	Responsible for planning and coordinating federal transportation projects. It also sets safety regulations for all major modes of transportation.
Department of State Lands (DSL)	Responsible for the management of lands under state ownership.
Division of Surface Water (DSW)	To protect, enhance, and restore all waters of the state for the health, safety, and welfare of present and future generations.
Endangered Species Act (ESA)	To protect at-risk species from extinction. The law requires protection for critical habitat areas and development and implementation of recovery plans for listed species.
Engineered Material Arresting System (EMAS)	An FAA-approved aircraft arresting system that uses porous cellular materials and is intended to stop aircraft that have overshot a runway. It is primarily feasible when there is insufficient distance for the standard 1,000-foot runway safety area (RSA) dimension.
Environmental Assessment (EA)	The assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action. It is a tool of environmental management forming a part of project approval and decision making.
Environmental justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from governmental or private operations or policies. Meaningful involvement means that people have an opportunity to participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; community concerns will be considered in the decision-making process; and decision makers will seek out and facilitate the involvement of those potentially affected.
Environmental Protection Agency (EPA)	An executive agency of the United States federal government tasked with environmental protection matters.
Essential Fish Habitat (EFH)	Waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. EFH includes all types of aquatic habitat, and, in practice, specifies where a certain fish species lives and reproduces.
Executive Order (EO)	A signed, written, and published directive from the President of the United States that manages operations of the federal government.
Farmland Policy Protection Act (FPPA)	Intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.
Federal Aviation Administration (FAA)	Regulates all aspects of civil aviation in the country as well as over surrounding international waters.
Fisheries Management Plan (FMP)	Documents the ways to reach management goals in the future and how to manage the fishery in the present.
Fixed-Base Operator (FBO)	An organization granted the right by an airport to operate at the airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, and similar services.

Federal Emergency Management Agency (FEMA)	An agency of the United States Department of Homeland Security. The primary purpose of FEMA is to coordinate the response to a disaster that has occurred in the United States and that overwhelms the resources of local and state authorities.
Floodplain (100-year)	An area with a 1.0 percent chance of being flooded in any given year.
Floodplain (500-year)	An area with a 0.2 percent chance of being flooded in any given year.
Flood Insurance Rate Map (FIRM)	Official map of a community on which FEMA has delineated the Special Flood Hazard Areas, the Base Flood Elevations, and the risk premium zones applicable to the community.
Flood Insurance Study (FIS)	A compilation and presentation of flood risk data for specified watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables.
General Aviation (GA)	Includes all civilian flying, except scheduled passenger airlines.
Greenhouse gases (GHG)	Gases that trap heat in the atmosphere. These include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF ₆).
Instrument Landing Systems (ILS)	Operates as a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals, and in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions, such as low ceilings or reduced visibility due to fog, rain, or blowing snow.
Information for Planning and Consultation (IPaC)	A project planning tool which streamlines the environmental review process by providing information on the location of listed species and other USFWS trust resources which could potentially be affected by a project.
Intergovernmental Panel on Climate Change (IPCC)	An intergovernmental body of the United Nations mandated to provide objective scientific information relevant to understanding human-induced climate change, its natural, political, and economic impacts and risks, and possible response options.
Incidental Take Statement (ITS)	An estimate by the USFWS and NOAA NMFS (Services) of the “take” of a threatened or endangered species that is likely to result from an action by a federal agency. “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. ITSs are produced by the Services as part of a biological opinion resulting from consultations with federal agencies under section 7 of the ESA.
Impervious surface area	A hard surface area that either prevents or retards the entry of water into the soil mantle as occurs under natural conditions (prior to development) and from which water runs off at an increased rate of flow or in increased volumes.
Indirect effect (impact)	Indirect effects are caused by the Proposed Action or other alternative and are later in time or farther removed in distance, but still reasonably foreseeable.
Jurisdictional waters	Waters under the jurisdiction of the U.S. Army Corps of Engineers (USACE), as granted under the Clean Water Act. These waters typically include waterways and their associated wetlands.
Landing Distance Available (LDA)	The length of runway which is declared available and suitable for the ground run of an aero plane landing.

Land use compatibility	The coexistence of land uses surrounding the airport with airport-related activities.
Longitudinal gradient	The grade or slope along the length of the runway and the portion of the RSA that extends beyond the runway.
Magnuson-Stevens Fishery Conservation and Management Act (MSA)	The primary law that governs marine fisheries management in U.S. federal waters. First passed in 1976, the MSA fosters the long-term biological and economic sustainability of marine fisheries.
Master Plan Update (MPU)	Guides future development at an airport. Master plans are typically updated every 7 to 10 years.
Medium approach light system with runway alignment indicator lights (MALSR)	Lighting provided along a runway that is used by pilots during instrument landing approach to align the aircraft with the centerline of the runway.
Migratory Bird Treaty Act (MBTA)	The Migratory Bird Treaty Act prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service.
Mitigation	Measures that could be taken to lessen the negative effects predicted for each resource. These measures may include reducing or minimizing a specific negative effect, avoiding it completely, or rectifying or compensating for the negative effect.
Modification of Airport Design Standards (MOS)	Any deviation from, or addition to standards, applicable to airport design, material, and construction standards, or equipment projects resulting in an acceptable level of safety, useful life, lower costs, greater efficiency, or the need to accommodate an unusual local condition on a specific project through approval on a case-by-case basis.
National Ambient Air Quality Standards (NAAQS)	National ambient air quality standards (NAAQS) have been established for six "criteria" or major outdoor air pollutants: lead, carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, and particulate matter.
National Environmental Policy Act (NEPA)	NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. The range of actions covered by NEPA is broad and includes making decisions on permit applications.
National Flood Insurance Program (NFIP)	The National Flood Insurance Program (NFIP) is a program created by the Congress of the United States in 1968 through the National Flood Insurance Act of 1968 (P.L. 90-448). U.S. Congress has the twofold purposes of the NFIP to share the risk of flood losses through flood insurance and to reduce flood damages by restricting floodplain development.
National Marine Fisheries Service (NMFS)	The United States federal agency responsible for the stewardship of national marine resources. The agency conserves and manages fisheries to promote sustainability and prevent lost economic potential associated with overfishing, declining species, and degraded habitats.
National Historic Preservation Act (NHPA)	The National Historic Preservation Act is legislation intended to preserve historic and archaeological sites in the United States of America. The act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation Offices.
National Pollutant Discharge Elimination System (NPDES)	The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States.

National Plan of Integrated Airport Systems (NPIAS)	<p>NPIAS) identifies nearly 3,310 existing and proposed airports that are included in the national airport system, the roles they currently serve, and the amounts and types of airport development eligible for Federal funding under the Airport Improvement Program (AIP) over the next 5 years. The FAA is required to publish a 5-year estimate of AIP eligible development every two years.</p> <p>The NPIAS contains all commercial service airports, all reliever airports, and selected public-owned general aviation airports.</p>
National Park Service (NPS)	The National Park Service (NPS) is an agency of the federal government of the United States that manages all national parks, many national monuments, and other conservation and historical properties with various title designations.
National Resource Conservation Service (NRCS)	The Natural Resources Conservation Service works with landowners for conservation planning and assistance to foster healthy ecosystems.
National Register of Historic Places (NRHP)	The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.
Navigational aids (NAVAIDs)	Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.
Nitrogen Dioxide (NO ₂)	A highly poisonous gas. Exposure produces inflammation of lungs that may only cause slight pain or pass unnoticed but resulting edema several days later may cause death. (From Merck, 11th ed) It is a major atmospheric pollutant that is able to absorb UV light that does not reach the earth's surface.
No Action Alternative	The alternative under which the proposed project would not be built. The No Action Alternative is carried through the National Environmental Policy Act (NEPA) process and analyzed for effects as a way to formally compare the effects of the Proposed Action with what is likely to happen if the Proposed Action is not constructed.
No Further Action (NFA)	
Noise contours	Lines drawn on a map that connect points of equal noise exposure values.
Non-attainment area	Areas that exceeded National Ambient Air Quality Standards (NAAQS) for any of the six criteria pollutants.
North Bend City Code (NBCC)	A codification of the General Ordinances of the City of North Bend, WA.
Ozone (O ₃)	Ozone (O ₃) is a highly reactive gas composed of three oxygen atoms. It is both a natural and a man-made product that occurs in the Earth's upper atmosphere (the stratosphere) and lower atmosphere (the troposphere). Depending on where it is in the atmosphere, ozone affects life on Earth in either good or bad ways.
Oregon Biodiversity Information Center (OBIC)	The Oregon Biodiversity Information Center (ORBIC) is part of the Institute for Natural Resources and is based at Portland State University. ORBIC leads INR's biodiversity and conservation work; and, its key function is to maintain, develop and distribute biodiversity information in Oregon.

Oregon Coastal Management Program (OCMP)	The Oregon Coastal Management Program (OCMP) was approved by the National Oceanic and Atmospheric Administration (NOAA) in 1977. The OCMP is the state of Oregon's implementation of the national program. The program covers the Oregon coastal zone. This watershed-based coastal zone was first expressed in 1971 by the Oregon Legislature. Within this zone, the OCMP applies to the land and water areas, except on lands owned by the federal government or held in trust under Indian tribal jurisdiction.
Oregon Water Resource Department (OWRD)	The Oregon Water Resources Department is the chief regulatory agency of the government of the U.S. state of Oregon responsible for management of all surface and ground water in the state, which by statute belongs to the public. The department's primary activities include protection of existing water rights, facilitation of voluntary streamflow restoration, public education about the state's water resources, collection and dissemination of water resource data, and facilitation of water supply solutions.
Particulate Matter Less Than or Equal to 2.5 Microns (PM2.5)	PM2.5 describes fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.
Particulate Matter Less than or Equal to 10 Microns (PM10)	PM10 describes inhalable particles, with diameters that are generally 10 micrometers and smaller.
Precision Approach Path Indicators (PAPI)	A precision approach path indicator is a visual aid that provides guidance information to help a pilot acquire and maintain the correct approach to an airport or an aerodrome. It is generally located on the left-hand side of the runway approximately 300 meters beyond the landing threshold of the runway.
Primary surface	A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway.
Proposed Action	The alternative proposed for construction. The Proposed Action for this Environmental Assessment (EA) would adjust the longitudinal grade of Runway 13R and the Runway 13R RSA to meet current FAA standards while conveying a portion of Glencoe Swale that traverses Runway 13R RSA under the RSA in a concrete box culvert.
Purpose and Need	A formal statement of the objective(s) of the proposed project (Purpose) and the problem(s) that construction of the project is intended to solve (Need). The Purpose and Need statement is developed early in the project planning stage and serves as a guideline for future project efforts. For example, in evaluating alternatives, any alternative that does not meet the project's purpose and need will be dropped from consideration.
Reasonable and Prudent Measures (RPMs)	Reasonable and prudent measures are actions necessary to minimize the impacts of incidental take that is anticipated to result from implementing a project that the Service regarded as not likely to jeopardize the species or adversely modify designated critical habitat.
Resource Conservation Recovery Act (RCRA)	The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from cradle to grave. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems

	that could result from underground tanks storing petroleum and other hazardous substances.
Runway End Identifier Lights (REIL)	The Runway End Identifier Lights (REIL) system provides rapid and positive identification of the end of the runway. The system consists of two synchronized, unidirectional flashing lights. The lights are positioned on each corner of the runway landing threshold, facing the approach area, and aimed at an angle of 10 to 15 degrees.
Runway protection zone (RPZ)	A trapezoidal-shaped area at the end of a runway, the function of which is to enhance the protection of people and property on the ground through airport owner control of the land. The RPZ usually begins at the end of each primary surface and is centered upon the extended runway centerline.
Runway safety area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overrun, or excursion from the runway. The RSA dimensional requirements for OTH is 500 feet in width for the entire length of the RSA, and 1,000 feet in length beyond the departure ends of the runway.
San Francisco International Airport (SFO)	SFO is an international airport in San Mateo County, 13 miles south of Downtown San Francisco, CA. It has flights to points throughout North America and is a major gateway to Europe and Asia.
Section 106 of the National Historic Preservation Act (NHPA) of 1966	Section 106 of the NHPA applies to undertakings by any federal agency, undertakings receiving federal assistance, and undertakings requiring the issuance of a license from any federal agency. In the event of any of the above undertakings, the head of the acting, assisting, or licensing federal agency must “take into account” the possible effects the undertaking will have on any district, site, building, structure, or object that is included in or is eligible for inclusion in the National Register of Historic Places (NRHP) prior to the approval of expenditure of federal funds or issuance of a license.
Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966	Section 4(f) states that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly-owned land of a public park, recreation area, wildlife and waterfowl refuge of national, State, or local significance, land of an historic site of national, State, or local significance only if there is no “prudent and feasible alternative” to the use of that land, and the program or project includes all possible planning to minimize harm to the public land involved.
Section 404 of the Clean Water Act of 1972	Section 404 of the Clean Water Act established a program to regulate and require permits for development activities in waters of the U.S., including wetlands.
Special Flood Hazard Areas (SFHA)	An area having special flood, mudflow or flood-related erosion hazards and shown on a Flood Hazard Boundary Map (FHBM) or a Flood Insurance Rate Map (FIRM) Zone A, AO, A1-A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V1-V30, VE or V. The SFHA is the area where the National Flood Insurance Program’s (NFIP’s) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. For the purpose of determining Community Rating System (CRS) premium discounts, all AR and A99 zones are treated as non-SFHAs.

Spill Prevention, Control, and Countermeasure (SPCC)	The purpose of the Spill Prevention, Control, and Countermeasure (SPCC) rule is to help facilities prevent a discharge of oil into navigable waters or adjoining shorelines. The SPCC rule requires facilities to develop, maintain, and implement an oil spill prevention plan, called an SPCC Plan.
State Historic Preservation Office (SHPO)	State Historic Preservation Officers (SHPO) play a critical role carrying out many responsibilities in historic preservation. Surveying, evaluating, and nominating significant historic buildings, sites, structures, districts, and objects to the National Register is one such key activity. To help find out if a historic place meets the National Register criteria and how the nomination process works in your state, contact the appropriate SHPO below for assistance.
State Implementation Plan (SIP)	A State Implementation Plan (SIP) is a United States state plan for complying with the federal Clean Air Act, administered by the Environmental Protection Agency (EPA). The SIP, developed by a state agency and approved by EPA, consists of narrative, rules, technical documentation, and agreements that an individual state will use to control and clean up polluted areas.
Stormwater	The portion of precipitation (rainwater or snowmelt) that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body or a constructed infiltration facility.
Stormwater Pollution Control Plan (SWPCP)	Stormwater Pollution Control Plan is required to ensure that Best Management Practices are used during construction and over the life of a project to minimize soil erosion and sedimentation that could result in storm water pollution.
Sulfur Dioxide (SO ₂)	Sulfur dioxide (SO ₂) is a colorless gas with a characteristic, irritating, pungent odor. Exposure to sulfur dioxide may cause irritation to the eyes, nose, and throat. Workers may be harmed from exposure to sulfur dioxide. The level of exposure depends upon the dose, duration, and work being done.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	<p>The Superfund Amendments and Reauthorization Act amended the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) on October 17, 1986. The Superfund Amendments and Reauthorization Act of 1986 (SARA) reflected EPA's experience in administering the complex Superfund program during its first six years and made several important changes and additions to the program. SARA:</p> <ul style="list-style-type: none"> • stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; • required Superfund actions to consider the standards and requirements found in other State and Federal environmental laws and regulations; • provided new enforcement authorities and settlement tools; • increased State involvement in every phase of the Superfund program; • increased the focus on human health problems posed by hazardous waste sites; • encouraged greater citizen participation in making decisions on how sites should be cleaned up; and • increased the size of the trust fund to \$8.5 billion. <p>SARA also required EPA to revise the Hazard Ranking System to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List (NPL).</p>

Takeoff Distance Available (TODA)	<p>The takeoff run available plus the length of any remaining runway or clearway beyond the far end of the takeoff run available.</p> <p>The TODA is the distance declared available for satisfying takeoff distance requirements for airplanes where the certification and operating rules and available performance data allow for the consideration of a clearway in takeoff performance computations.</p>
Takeoff Runway Available (TORA)	<p>The runway length declared available and suitable for the ground run of an airplane taking off.</p> <p>The TORA is typically the physical length of the runway, but it may be shorter than the runway length if necessary to satisfy runway design standards.</p>
Taxiway	<p>A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft.</p>
Terminal Area Forecast (TAF)	<p>The Terminal Area Forecast (TAF) is the official FAA forecast of aviation activity for U.S. airports. It contains active airports in the National Plan of Integrated Airport Systems (NPIAS) including FAA-towered airports, Federal contract-towered airports, non-federal towered airports, and non-towered airports.</p> <p>Forecasts are prepared for major users of the National Airspace System including air carrier, air taxi/commuter, general aviation, and military. The forecasts are prepared to meet the budget and planning needs of the FAA and provide information for use by state and local authorities, the aviation industry, and the public.</p>
Total Maximum Daily Loads (TMDL)	<p>A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.</p>
Traditional Cultural Property (TCP)	<p>A Traditional Cultural Property (TCP) is a property that is eligible for inclusion in the National Register of Historic Places (NRHP) based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community. The cultural practices or beliefs that give a TCP its significance are, in many cases, still observed at the time a TCP is considered for inclusion in the NRHP. Because of this, it is sometimes perceived that the practices or beliefs themselves, not the property, make up the TCP. While the beliefs or practices associated with a TCP are of central importance, the NRHP does not include intangible resources. The TCP must be a physical property or place--that is, a district, site, building, structure, or object.</p>
Traffic Flow Management System Counts (TFMSC)	<p>Traffic Flow Management System Counts (TFMSC) is designed to provide information on traffic counts by airport or by city pair for various data groupings such as aircraft type or by hour of the day. It includes data for flights that fly under Instrument Flight Rules (IFR) and are captured by the FAA's enroute computers.</p>
Transportation Security Administration (TSA)	<p>The Transportation Security Administration was created to strengthen the security of the nation's transportation systems while ensuring the freedom of movement for people and commerce.</p>
Tribal Historic Preservation Officer (THPO)	<p>A Tribal Historic Preservation Officer or THPO is an officer in the United States "designated by a federally-recognized Indian tribe to direct a program approved</p>

	by the National Park Service and the THPO must have assumed some or all of the functions of State Historic Preservation Officers on Tribal lands."
Tsunami Hazard Overlay Zone (THOZ)	The purpose of the Tsunami Hazard Overlay Zone is to increase the resilience of the community to a local source tsunami by establishing standards, requirements, incentives, and other measures to be applied in the review and authorization of land use and development activities in areas subject to tsunami hazards.
Underground conveyance	The channeling of surface water into a pipe or culvert below ground.
US Army Corps of Engineers (USACE)	The United States Army Corps of Engineers (USACE) works with both engineering and environmental matters. The Corps' responsibilities include designing and constructing flood control systems, such as navigation locks and dams, beach nourishment projects, environmental regulation, ecosystem restoration, and engineering services.
US Fish and Wildlife Service (USFWS)	The United States Fish and Wildlife Service (USFWS or FWS) is an agency of the United States Government within the United States Department of the Interior dedicated to the management of fish, wildlife, and natural habitats. The mission of the agency is "working with others to conserve, protect, and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people."
Vegetated corridor	A buffer adjacent to a wetland or waterway that is preserved and maintained to protect the water quality functions of the wetland or waterway. Vegetated corridors are regulated by Clean Water Services (CWS).
Volatile Organic Compounds (VOC)	Volatile organic compounds are organic chemicals that have a high vapor pressure at room temperature. High vapor pressure correlates with a low boiling point, which relates to the number of the sample's molecules in the surrounding air, a trait known as volatility.
Water quality filter strips	Gently sloped vegetative areas adjacent to impervious surfaces that are designed to filter and reduce the velocity of stormwater runoff.
Wetland	Land on which water covers the soil or is present either at or near the surface of the soil or within the root zone, all year or for varying periods of time during the year. Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to various types of wildlife, many of which are hazardous to aircraft.
Wetland mitigation banking	The creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning.