CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Master Plan

February 2021

Mead&Hunt

Appendix B

Environmental Overview

Appendix B: Environmental Overview

This Environmental Overview provides a preliminary review and initial screening of environmental resources located on or near the Crater Lake-Klamath Regional Airport (LMT or the Airport), which is owned and operated by the City of Klamath Falls (the City/Airport). Research for the environmental overview included a review of existing agency information, such as databases, previously developed airport environmental studies, resource management plans, and record documents.

PURPOSE OF THE ENVIRONMENTAL OVERVIEW

The Master Plan identifies the orderly development of airport facilities recommended over the 20-year planning period; excluding the areas leased by the Oregon Air National Guard (Oregon ANG). The recommended Master Plan facilities will be documented in the Capital Improvement Plan (CIP) and depicted on the Airport Layout Plan (ALP) drawings, which will be submitted for Federal Aviation Administration (FAA) review and approval.

The purpose of this Environmental Overview is to identify known resources/environmental issues for Master Plan facility planning and alternatives analysis purposes. This information supports possible measures to avoid or minimize potential environmental effects, including requirements for permitting and subsequent evaluation pursuant to the National Environmental Policy Act (NEPA) of 1969. This Environmental Overview is not intended to fulfil NEPA requirements. The environmental analyses required for NEPA compliance will be undertaken subsequent to Master Plan completion but prior to necessary FAA approvals, funding, or facility construction.

ENVIRONMENTAL RESOURCES CONSIDERED

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, serves as the FAA's policy and procedures for complying with NEPA. FAA guidance for the preparation of NEPA documents identifies sixteen environmental resources/issue areas that should be considered, fourteen of which are discussed in this Environmental Overview:

1. Air Quality
2. Biological Resources (Threatened and Endangered Species)
3. Climate
4. Coastal Resources
5. U.S. Department of Transportation Act, Section 4(f)
6. Farmlands
7. Hazardous Materials, Solid Waste, and Pollution Prevention
8. Historical, Architectural, Archaeological, and Cultural Resources
9. Land Use
10. Natural Resources and Energy Supply
11. Noise and Noise-Compatible Land Use
12. Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
13. Visual Effects (Light Emissions / Visual Resources)
14. Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater, Wild and Scenic Rivers)

Two environmental items, cumulative impacts and the irreversible and irretrievable commitment of resources, are not addressed until specific projects are proposed for NEPA review. Subsequent NEPA analyses will comply with FAA Order1050.1F and address these issues.

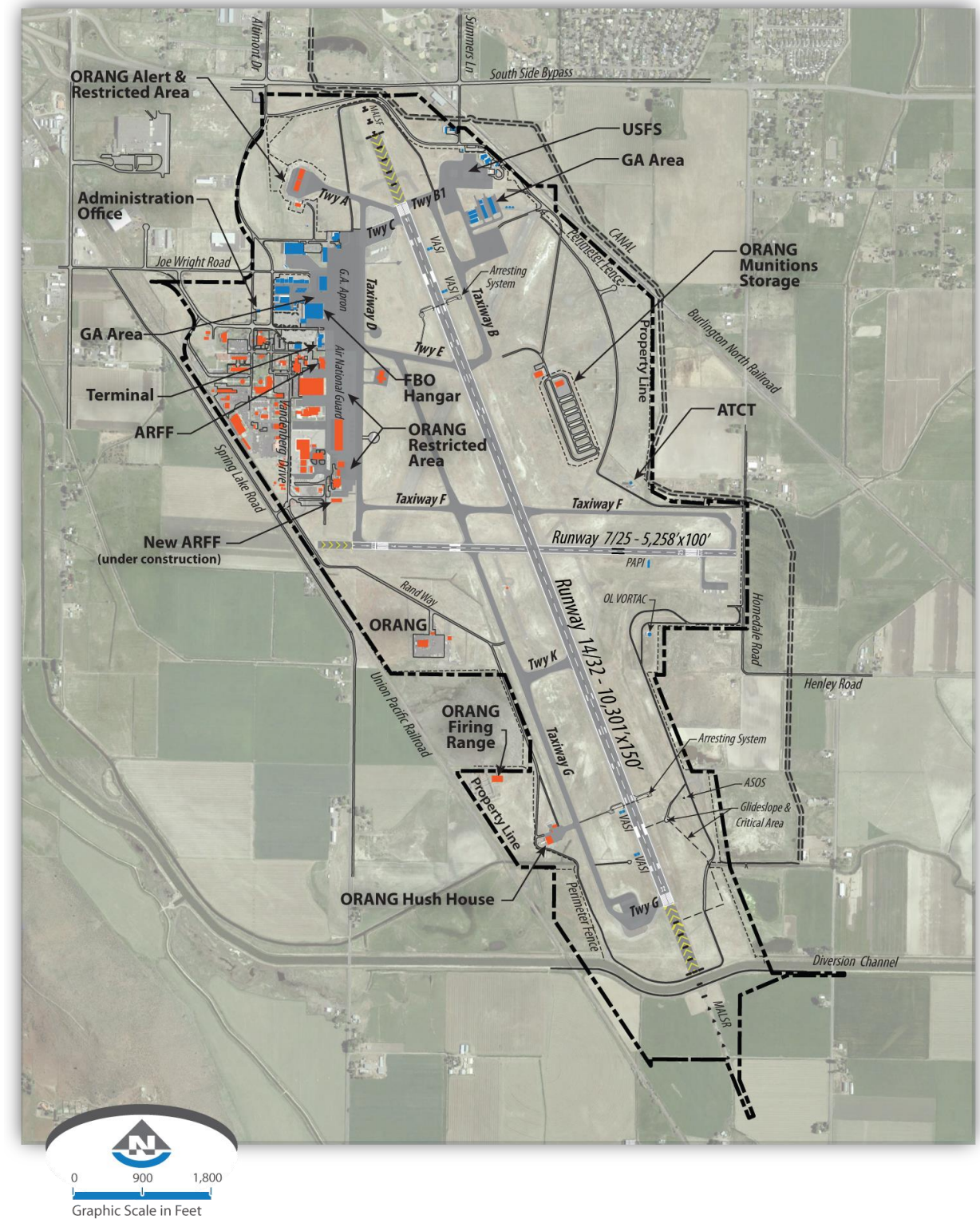
Resource documents were referenced to support preparation of this Environmental Overview. Specific resources are identified numerically throughout this document and summarized in the **Reference Section** located at the end of this Environmental Overview report.

AIRPORT BACKGROUND

LMT is owned by the City of Klamath Falls and is located approximately 4 miles southeast of the downtown center. LMT serves commercial, corporate/business, and recreational aircraft and is the base for the Oregon Air National Guard 173rd Fighter Wing (Oregon ANG) and U.S. Forest Service Klamath Falls Air Tanker Base (KATB).

The Airport contains approximately 1,166 acres and is situated on gently sloping terrain at an elevation of 4,095 feet above mean sea level (MSL). The surrounding land uses adjacent to the Airport are predominantly agricultural and rural residential (**Figure EO-1, *Airport Location***).

Figure EO-1 : Airport Location



Source: Mead & Hunt 2020.

1. AIR QUALITY

The United States Environmental Protection Agency (EPA) is charged with implementing the Clean Air Act (CAA). The EPA's Office of Air Quality Planning and Standards established the National Ambient Air Quality Standards (NAAQS) for specific outdoor pollutants known as priority pollutants (ozone, particulate matter, sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide). States develop EPA-approved State Implementation Plans (SIP) to address air quality and identify a plan to bring non-attainment areas (i.e., geographic areas where air pollution levels persistently exceed NAAQS) and maintenance areas into compliance. Compliance with NAAQS means that ambient outdoor levels of defined air pollutants are safe for human health and the environment. An attainment area is one in which air pollution levels do not exceed the established NAAQS. Federal actions within non-attainment and maintenance areas usually require an air quality analysis.

The EPA and State of Oregon Department of Environmental Quality (Oregon DEQ) designate Klamath Falls as a non-attainment area for particulate matter known as $PM_{2.5}$ and as a maintenance area for particulate matter known as $PM_{10.}$ Particulate matter consists of fine metal, smoke, soot, and dust particles that are suspended in the air. $PM_{2.5}$ includes fine particles measuring less than 2.5 microns in diameter; and PM_{10} includes coarse particles measuring 2.5 to 10 microns in diameter. The EPA designates Klamath Falls as in attainment for all other criteria pollutants under the NAAQS (1).

The LMT annual traffic is approximately 48,000 total aircraft operations, including 30,000 civilian operations. The FAA Terminal Area Forecast (TAF) projects approximately 50,000 total operations by 2040, including 33,400 civilian operations.

CONSIDERATIONS

Project construction and operations have the potential to increase air quality emissions and produce criterial pollutants. FAA Order 1050.1F requires project sponsors to consider the potential air quality effects associated with increases in the number of annual aircraft operations or changes in fleet mix as well as the temporary and permanent air quality effects of project-related construction and operation. The use of alternative power sources, cleaner-burning fuels, and other measures will be considered during the design of proposed projects to avoid or minimize project-related air quality emissions and Best Management Practices (BMPs) are available to avoid or reduce temporary construction-related air quality effects. An air quality analysis will be conducted prior to federal project approvals to achieve NEPA compliance.

2. BIOLOGICAL RESOURCES

Biological resources include federal and state-listed species of plants and animals and their habitats, including wetlands and migratory corridors that contribute to the overall health and productivity of an ecosystem.

2.1 THREATENED AND ENDANGERED SPECIES (FISH, WILDLIFE, AND PLANTS)

Section 7 of the Endangered Species Act (ESA), as amended, requires federal agencies to ensure that a proposed action does not jeopardize the continued existence of any endangered or threatened species or adversely affect its habitat. Project sponsors seeking federal agency approvals or funding must coordinate with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) concerning the presence of listed or candidate species.

The USFWS maintains a list of threatened and endangered species and critical habitat by state and county. USFWS species lists for the project area were reviewed on August 20, 2018, using the USFWS Information for Planning and Conservation (IPaC) website tool. Seven special status species and one candidate species were identified as potentially occurring within the Airport boundaries (see **Table EO-1, *Special-status Species that May Occur at LMT***). No critical habitat was identified (3).

The City/Airport identified Applegate's milk-vetch (*Astragalus applegatei*), a federal and state-listed endangered plant species, during on-site surveys conducted in 2007. The species was isolated in the northeast portion of the Airport where several hundred plants were observed. The City/Airport conducted surveys of the entire Airport in 2008 and 2013 and found milk-vetch throughout the Airport. The City/Airport conducted another survey in 2018 to determine whether milk-vetch was present near Taxiway G. **Figure EO-2, *Summary of Applegate's Milk-vetch Survey Results at LMT***, presents the areas in which Applegate's milk-vetch was identified during each survey.

The USFWS developed the *Applegate's Milk-Vetch Recovery Plan* in 1998 to increase the stability of the species to the point where it would no longer be in danger of extinction. The 1998 Plan did not identify LMT as a site where milk-vetch was present (4). The USFWS published a five-year review of the recovery plan in 2003 and 2008 to evaluate changes in the species' status following implementation of its 1998 *Recovery Plan.* LMT was identified as a site that included milk-vetch in the 2008 five-year review. The five-year review identified more than 21,000 plants on site and stated that "The Airport, Oregon Department of Agriculture, and the Service are working together to identify measures to minimize and compensate for any future impacts to Applegate's milk-vetch" (5).

The 2013 five-year review concluded that the number of plants present at LMT was sufficient to meet the definition of a self-sustaining population, but USFWS could not down-list the plant's status because LMT was neither secured nor managed specifically to benefit the species, which are requirements for down-listing an endangered species (5). In 2019, another survey was completed which found fewer plant populations.

Table EO-1 : Special-status Species That May Occur at LMT

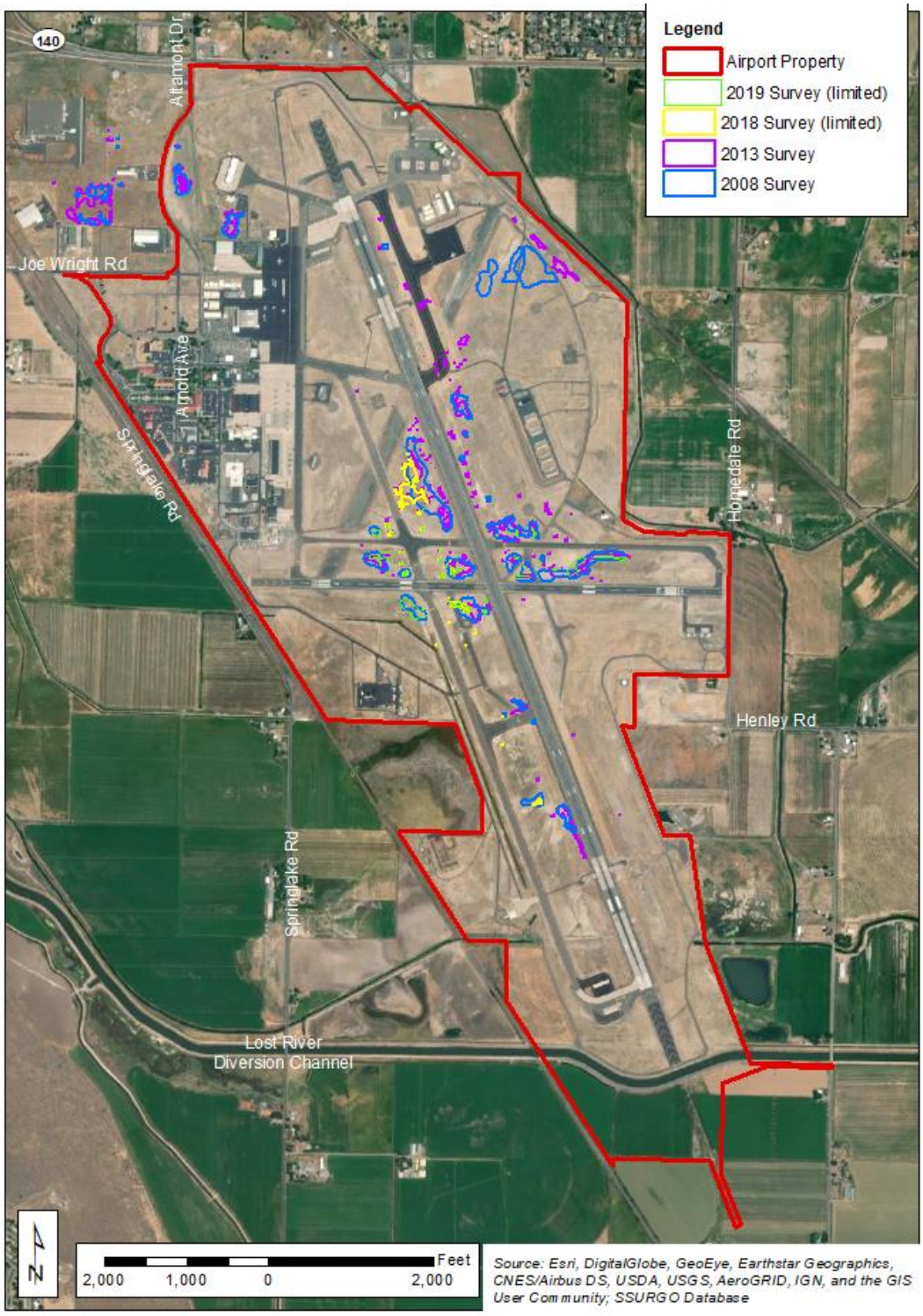
Common Name	Scientific Name	Federal Status	State Status
Mammal			
Gray wolf	*Canis lupus*	Endangered	Endangered under the authority of the federal Endangered Species Act in Oregon west of highways 395, 78, and 95.
North American wolverine	*Gulo gulo luscus*	Proposed Threatened	Threatened
Birds			
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	None
Fish			
Lost river sucker	*Deltistes luxatus*	Endangered	Endangered
Shortnose sucker	*Chasmistes brevirostris*	Endangered	Endangered
Flowering Plants			
Applegate's milk-vetch	*Astragalus applegatei*	Endangered	Endangered
Slender Orcutt grass	*Orcuttia tenuis*	Threatened	None
Peck's milkvetch	*Astragalus peckii*	None	Threatened
Pumice grape-fern	*Botrychium pumicola*	None	Threatened
Whitebark pine	*Pinus albicaulis*	Candidate	None

Key:

Candidate Species: a plant or animal species for which the U.S. Fish and Wildlife Service (FWS) has sufficient information on its biological status and threats to propose it as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
Endangered: a plant or animal species that is in danger of extinction throughout all or a significant portion of its range.
Threatened: a plant or animal species that is likely to become endangered within the foreseeable future.

Sources:
USFWS, iPAC database. Accessed August 2018. Available at: https://ecos.fws.gov/ipac/.
State of Oregon Department of Fish and Wildlife, 2018
Oregon Department of Agriculture, 2018.

Figure EO-2 : Summary of Applegate's Milk-vetch Survey Results at LMT



Source: Esri, DigitalGlobe, GeoEye, Earstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community; SSURG O Database

Considerations

Applegate's milk-vetch occurs throughout LMT. Biological surveys will be required to identify the presence and extent of milk-vetch. The survey results will be used to avoid and minimize potential effects to the milk-vetch and serve as the basis of federal agency consultation. Pursuant to NEPA and the Endangered Species Act, the FAA is responsible for determining whether a proposed project could adversely affect a listed species or its critical habitat when it occurs on federally obligated airports, and the FAA is responsible for coordination with the USFWS. Following the completion of the master plan, additional milk-vetch surveys will likely be required, and the FAA will undertake consultation with the USFWS and the Oregon Department of Agriculture to make sure that a proposed project or federal action would not be likely to adversely affect Applegate's milk-vetch or other Federally listed species. The results of the consultation will be considered prior to project approvals or construction.

2.2 WILDLIFE HAZARDS TO AIRCRAFT

LMT is located along the Pacific Flyway, a major seasonal migration route for numerous avian species. The FAA Wildlife Strike Database includes records for 168 wildlife strikes at LMT since January 1, 1990, involving passerines, raptors (owls and hawks), waterfowl, doves, gulls, blackbirds, and other species. Two strikes involving waterfowl have resulted in substantial aircraft damage.

The City/Airport completed its most recent Wildlife Hazard Assessment (WHA) in 2012 and revised its Wildlife Hazard Management Plan (WHMP) in 2014. The WHMP identified specific measures to manage airport property and structures to reduce or discourage the presence of potentially hazardous wildlife, including measures to maintain specific vegetation heights, developing a site-specific plant palette for airport projects, reviewing proposed construction plans for appropriate designs and landscaping, and preventing the accumulation of open water on site.

The WHA identified several off-site ponds that were observed to attract hazardous wildlife, some of which were located within approach and departure airspace. The WHMP recommended property acquisition to facilitate the removal of an off-site pond located immediately north of the airport and within the approach to Runway 14 which was observed to pose risk to aircraft operations (see **Figure EO-3**, ***Pond within Runway 14 Approach***). In addition, multiple detention basins are located adjacent to the airport property near Runway 32, which were also observed to attract hazardous wildlife. The WHMP also recommended the acquisition of this property and pond removal.

Figure EO-3 : Pond within Runway 14 Approach

Source: Mead & Hunt, 2013, Wildlife Hazard Management Plan for LMT

CONSIDERATIONS

The FAA provides guidance for preventing the creation of new wildlife attractants in Advisory Circular 150/5200-33B, "Wildlife Hazard Attractants On and Near Airports" (6). To prevent the creation of potential wildlife attractants, designs for proposed structures, landscaping, and stormwater management facilities will be designed to consider their potential to attract potentially hazardous wildlife and proposed project designs will undergo review by an FAA-qualified Airport Wildlife Hazard Damage Biologist, as necessary, to prevent the development of potential wildlife hazards. Subsequent NEPA analyses conducted following master plan completion, but prior to project approvals, will evaluate whether proposed projects have the potential to attract potentially hazardous wildlife.

3. CLIMATE

The Council on Environmental Quality (CEQ) indicates that global climate change should be considered during a NEPA analysis because increased concentrations of greenhouse gases (GHGs) in the atmosphere can affect global climate change. (GHGs are defined as including carbon [CO_2], methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]).

CEQ specifically asks agencies to consider:

- The potential effects of a proposed action on climate change as indicated by its GHG emissions; and
- The implications of climate change for the environmental effects of a proposed project.

Considering GHG emissions for an FAA NEPA review should follow the basic procedure of considering the potential incremental change in CO2 emissions that would result from the proposed action and alternative(s) compared to the no action alternative for the same timeframe, and discussing the context for interpreting and understanding the potential changes.

Considerations

As stated in **Section 1.0, *Air Quality***, an air quality analysis will be performed to identify the potential temporary and permanent air quality effects of proposed master plan projects. That data obtained during the air quality analysis will be used to support a separate and distinct discussion of the proposed projects to produce greenhouse gases and their potential effect on the global climate. The evaluation will focus on the potential incremental change in CO2 emissions that would result from the proposed projects and the implications of climate change. The analysis would also identify the potential effects of the proposed action on climate change as indicated by its GHG emissions and the implications of global climate for the environmental effects of a proposed project.

4. COASTAL RESOURCES

Coastal resources include all-natural resources occurring within coastal waters and their adjacent shorelands. The Coastal Zone Management Act provides for the management of the nation's coastal resources. The Oregon Department of Land Conservation and Development (DLCD) administers the Oregon Coastal Management Program (OCMP). LMT is located outside of Oregon's coastal zone. The proposed master plan will not affect coastal resources (31).

5. U.S. DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F)

Section 4(f) of the U.S. DOT Act of 1966 (49 U.S.C. § 303) protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of a Section 4(f) resource, only if there is no feasible and prudent alternative and the program or project includes all possible planning to minimize harm from the use.

The term use—as it relates to Section 4(f)—denotes an adverse impact to, or occupancy of, a Section 4(f) impact. There are three conditions under which use occurs:

- Permanent Incorporation, which occurs when a Section 4(f) property is acquired outright for a transportation project;
- Temporary Occupancy, which occurs when the temporary use of a property is adverse in terms of Section 4(f)'s preservationist purpose; and
- Constructive Use, which occurs when the proximity of impacts of a transportation project on a Section 49f) property are so great, even without acquisition of the property, that the activities, features, and attributes of the property are substantially impaired.

CONSIDERATIONS

No Section4(f) resources are located within LMT boundaries. The nearest park, Klamath Falls Little League Fields, lies northwest of the intersection of State Highway 140 and Summers Lane. The nearest wildlife refuges include the Lower Klamath National Wildlife Refuge, located approximately 7 miles south of LMT. No Section 4(f) resources are known to be present on the airport, and proposed projects would not likely affect or require the use of a Section 4(f) resource.

6. FARMLANDS

The Farmland Protection Policy Act (FPPA) regulates federal actions with the potential to convert important farmland to nonagricultural use. Federal agencies and project sponsors must consider the potential direct and indirect impacts of their proposed projects on farmlands. Direct impacts to farmland typically involve the conversion of farmland to non-agricultural use. Indirect impacts affect farming or livestock operations, such as actions that could limit or prevent access to farmable land, produce noise that is significant and that could potentially affect livestock operations, or create restrictions on the use of adjacent lands. The CEQ urges federal agencies to consider the effects of a proposed Federal action on prime or unique agricultural lands as part of the NEPA review process.

The Natural Resource Conservation Service (NRCS) maintains an inventory of the prime and unique farmland in the United States based on soil type and other factors. Prime farmland is defined as the best combination of physical and chemical characteristics, with minimal pesticides and fertilizer. Unique farmland is typically used for high value food and fiber crops. According to the NRCS Soil Map for Klamath County, Oregon, most of the soil types on the airport property are classified as farmland of statewide importance, while a few areas, mostly along the southeastern and northern ends of the airport, are classified as prime farmland if irrigated (7). **Table EO-2, *LMT Soils, Classification, and Farmland Ratings***, identifies the soil types within airport boundaries and their associated farmland ratings. **Figure EO-4, *LMT Soils and Farmland Ratings***, identifies the location of each soil type within airport boundaries.

Table EO-2 : LMT Soils, Classification, and Farmland Rating

Soil Classification	Soil Name	Farmland Rating
6A	Calimus fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated
9A	Capona loam, 0 to 2 percent slopes	Prime farmland if irrigated
19A	Fordney loamy fine sand, 0 to 2 percent slopes	Prime farmland if irrigated
25	Henley loamy fine sand	Farmland of statewide importance
26	Henley loam	Farmland of statewide importance
27	Henley-Laki complex	Farmland of statewide importance
28	Henley-Laki loams	Farmland of statewide importance
29	Henley variant loam	Farmland of statewide importance
31	Hosley loam	Farmland of statewide importance
38	Laki loam	Farmland of statewide importance
40	Laki-Henley loams	Farmland of statewide importance
53	Malin clay loam	Farmland of statewide importance
58A	Modoc fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated
58B	Modoc fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated
62	Poe loamy fine sand	Prime farmland if irrigated
63	Poe fine sandy loam	Prime farmland if irrigated
70	Scherrard clay loam	Farmland of statewide importance
90	Zuman loamy fine sand	Farmland of statewide importance

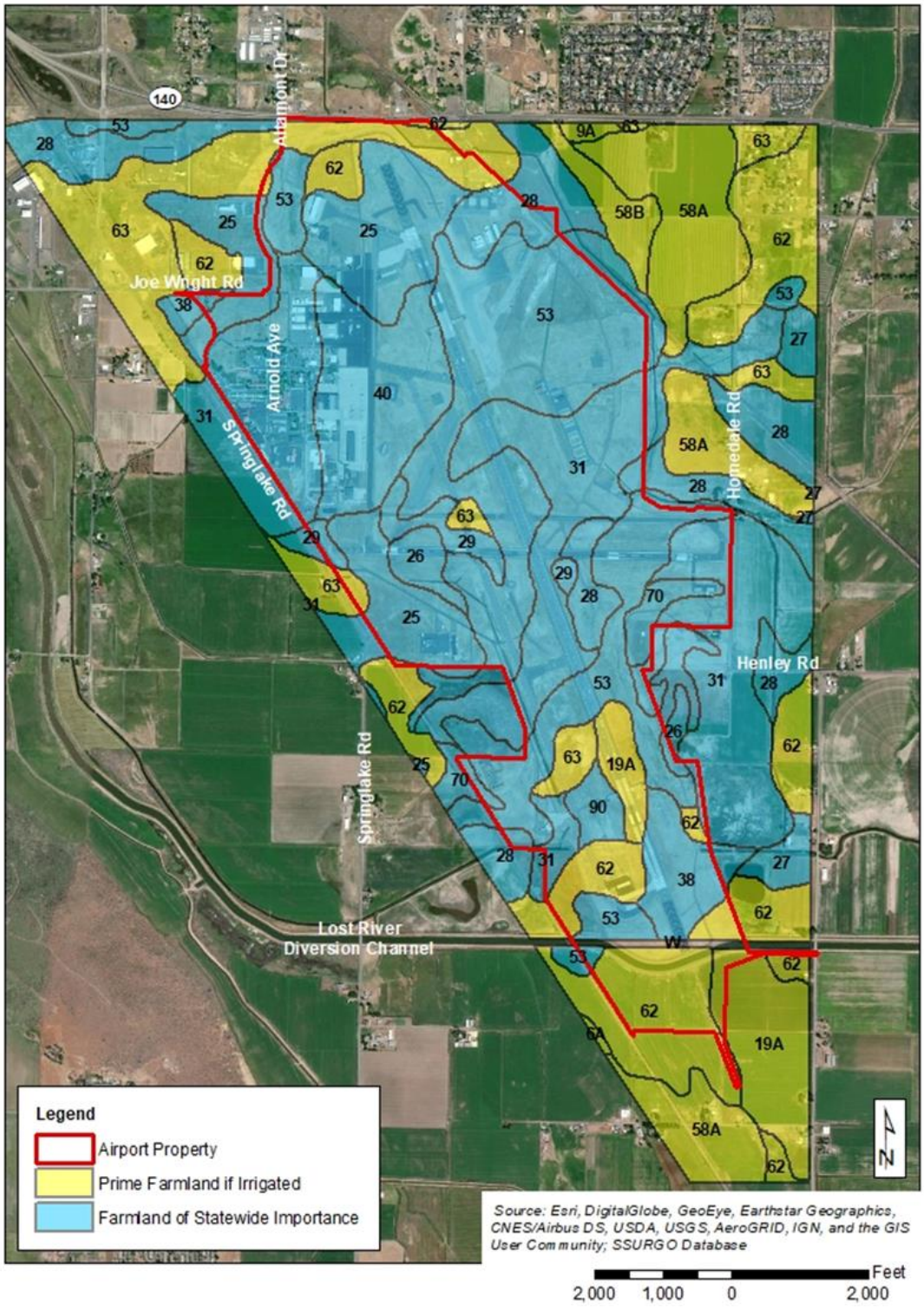
Key:

Farmland of Statewide Importance – In some areas, land that does not meet the criteria for prime or unique farmland is considered to be "farmland of statewide importance" for the production of food, feed, fiber, forage, and oilseed crops. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Prime Farmland: Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses.

Source: Published Soil Surveys for Washington, USDA Natural Resources Conservation Service. Available at https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=WA.

Figure EO-4 : LMT Soils and Farmland Ratings



Source: Esri, DigitalGlobe, GeoEye, Earstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community; SSURG O Database

CONSIDERATIONS

Nearly all airport property is designated as prime farmland or farmland of statewide importance. Since airport property is neither irrigated nor in cultivation, no direct or indirect impact to prime farmland is anticipated. However, the City/Airport holds easements on some adjacent, off-site parcels east and south of the airport that are cultivated. If the acquisition and use of parcels designated as prime and unique farmland or farmland of statewide significance becomes necessary to accommodate a proposed project and results in the conversion of cultivated areas to another use, the impact would require evaluation in accordance with the FPPA. The potential significance of the conversion would be evaluated based on type of soil affected, acreage requiring conversion, and other factors. Coordination with NRCS and other regulatory agencies would be necessary to identify compensatory mitigation and comply with NEPA.

7. HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

According to FAA guidance set forth in Order 1050.1F, an evaluation of hazardous materials, solid waste, and pollution prevention must consider:

- Existing hazardous waste/contamination at a proposed project site and its immediate vicinity; and
- The local disposal capacity for solid and hazardous wastes that would be generated from a proposed action.

7.1 HAZARDOUS MATERIALS

The National Priorities List (NPL) is the list of hazardous waste sites in the United States that are eligible for long-term remedial action to be financed under the federal Superfund program. The U.S. Environmental Protection Agency established the NPL in compliance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The nearest NPL site is North Ridge Estates, a former World War II medical facility located approximately 6 miles north of LMT. Cleanup and restoration are scheduled to be completed by the end of 2018 (8).

The Oregon DEQ maintains the Environmental Cleanup Site Information (ECSI) database to track sites in Oregon with known or potential contamination from hazardous substances and to document whether further action is required. As shown on **Table EO-3, *Oregon DEQ Environmental Cleanup Site Information On or Near LMT***, 17 sites containing hazardous substances were identified in the same Public Land Survey System (PLSS) sections as LMT (Township 39S, Range 9E, Sections 14-15, 22-23, 26-27, and 35 [DEQ 2018b]).

Eleven of the 17 sites identified are within Airport boundaries, 10 or which are designated as "No further state action required." The remaining site (Site No. 2933, Super Spray Service) is now leased and operated by Macy's Flying Service, and is an active aerial applicator service tenant that uses and stores hazardous materials as part of its operations. The location and use of hazardous materials at Site No. 2033 should be considered during the design and construction of proposed projects to avoid the inadvertent exposure of hazardous materials to construction workers or airport staff during site grading, excavation, or other activities that could cause inadvertent exposure.

Table EO-3 : Oregon DEQ Environmental Cleanup Site Information On and Near LMT

#	Site ID	Site Name	Site Location	Status
1	4537	Kingsley Field - Former Base Landfill - Site #3	Joe Wright Rd.	Record of decision
2	1296	Kingsley Field - Klamath Falls (City of)	Joe Wright Rd.	No further state action required.
3	4549	Kingsley Field - USAF - PLO16	Joe Wright Rd.	No further state action required.
4	4550	Kingsley Field - USAF - Site #1	Joe Wright Rd.	No further state action required
5	4551	Kingsley Field - USAF - Site #11	Joe Wright Rd.	No further state action required
6	4547	Kingsley Field - USAF - Site #5	Joe Wright Rd.	No further state action required
7	4538	Kingsley Field - USAF - Site #6	Joe Wright Rd.	No further state action required
8	4548	Kingsley Field - USAF - Site #9	Joe Wright Rd.	No further state action required
9	4552	Kingsley Field - USAF - TUO15	Joe Wright Rd.	No further state action required
10	4667	Kingsley Field Gas Station (Former)	Joe Wright Rd. / Arnold Ave.	No further state action required
11	816	Kingsley Field Study Area	Joe Wright Rd.	Site investigation required.
12	4399	Wright Road Industrial Park	Joe Wright Rd. / Swan Ct.	No further state action required
13	2933	Super Spray Service	Klamath Falls Airport	Site Screening recommended (EV)
14	2410	Benny Garcia Residence	4804 Bisbee St.	No further state action required
15	2705	Henderson Millwork	3007 Anderson Ave.	Site Screening recommended (EV)
16	3797	Klamath Falls Bus Shop	5338 Summers Ln.	Site Screening recommended (EV)
17	3118	XL Dry Cleaners (Plant)	2995 Anderson Ave.	Site Screening recommended (EV)

Source: United States Environmental Protection Agency.

The Oregon DEQ maintains information about leaking underground storage tanks (LUSTs) (8). **Table EO-4, *Leaking Underground Storage Tanks at LMT***, presents the records for seven LUST sites identified within Airport boundaries. Six of the sites are identified as "closed", indicating that no further action is required, and one site is listed as "unassigned."

Jet fuel, waste oil, diesel fuel, deicing chemicals, and fertilizers are used or stored at LMT. The City/Airport prepared a Stormwater Pollution and Spill Prevention Plan (SWPSPP) that includes an inventory of hazardous materials used and stored at LMT as well as their locations (10). The data contained in the SWPSPP is used to prevent the release of hazardous materials and their constituents to stormwater.

Table EO-4 : Table EO-4: Leaking Underground Storage Tanks at LMT

#	Site	Facility ID	Site Name	Address	Contaminant	Status
1	18-97-0001	11675	Klamath Falls Airport	6801 Rand Way	Miscellaneous, Gas	Closed
2	18-98-0005	1437	Klamath Aircraft Inc.	6701 Rand Way - Municipal Airport	Diesel	Closed
3	18-92-0062	1437	Klamath Aircraft Inc.	6701 Rand Way - Municipal Airport	Unknown	Unassigned
4	18-89-0010	Unknown	Kingsley Field, Air Nat'l Guard	Kingsley Field IRP Site 14	Miscellaneous, Gas	Closed
5	18-93-6097	Unknown	Oregon Air Guard (Kingsley AFB)	IRP Site 14	Unknown	Closed
6	18-95-0028	4314	Or Air Nat'l Guard - Kingsley Field AFB	IRP Site 10: Former Pol Area	Miscesllaneous Gas,Diesel, Other Petro	Closed
7	18-99-0013	4314	Or Air Nat'l Guard - Kingsley Field AFB	IRP Site 10: Former Pol Area	Other Petro	Closed

Source: Oregon Department of Environmental Quality, 2018.

Considerations

Proposed projects have the potential to use, store, or transport hazardous materials, such as fuel, paints, and solvents, during construction and operation. Increased aircraft operations during the planning period may require increased fuel use, transport, and storage. In addition, hazardous materials, such as lead paint and asbestos-containing material, could be encountered during project-related demolition or construction. FAA Order 1050.1F requires project sponsors to conduct a hazardous waste analysis prior to the approval and construction of a proposed project. Further information/clarification regarding site 1437, which Oregon DEQ identified as both closed and unassigned, would be obtained during that analysis. The analysis also will identify and document the types and quantities of any hazardous substances that would be generated during the construction and operation of proposed projects; describe how those materials would be managed, stored, and transported; and necessary measures or precautions. The results of the hazardous waste investigation would also identify and document the presence and extent of hazardous materials that could be encountered during construction or demolition (e.g., lead-based paint, asbestos-containing material) and applicable on-site treatment, engineering, or administrative controls that would be necessary. The Airport would also use the results of the study to amend its SWPSPP to include the new facilities.

7.2 SOLID WASTE

The FAA Modernization and Reform Act of 2012 requires the preparation of an Airport Recycling, Reuse, and Waste Reduction Plan as part of an airport master plan, and such a plan will be included as an appendix to the Master Plan. Klamath County Solid Waste operates several disposal facilities including the Klamath Falls Landfill and eight transfer stations. No near-term capacity limitations or unresolved waste disposal issues were identified.

Considerations

The construction of proposed projects could generate construction debris and produce new or increased solid waste streams such as refuse, scrap metal, spent materials, and chemical by-products. As part of the NEPA analysis required prior to FAA project approval, project-related waste streams would be identified.

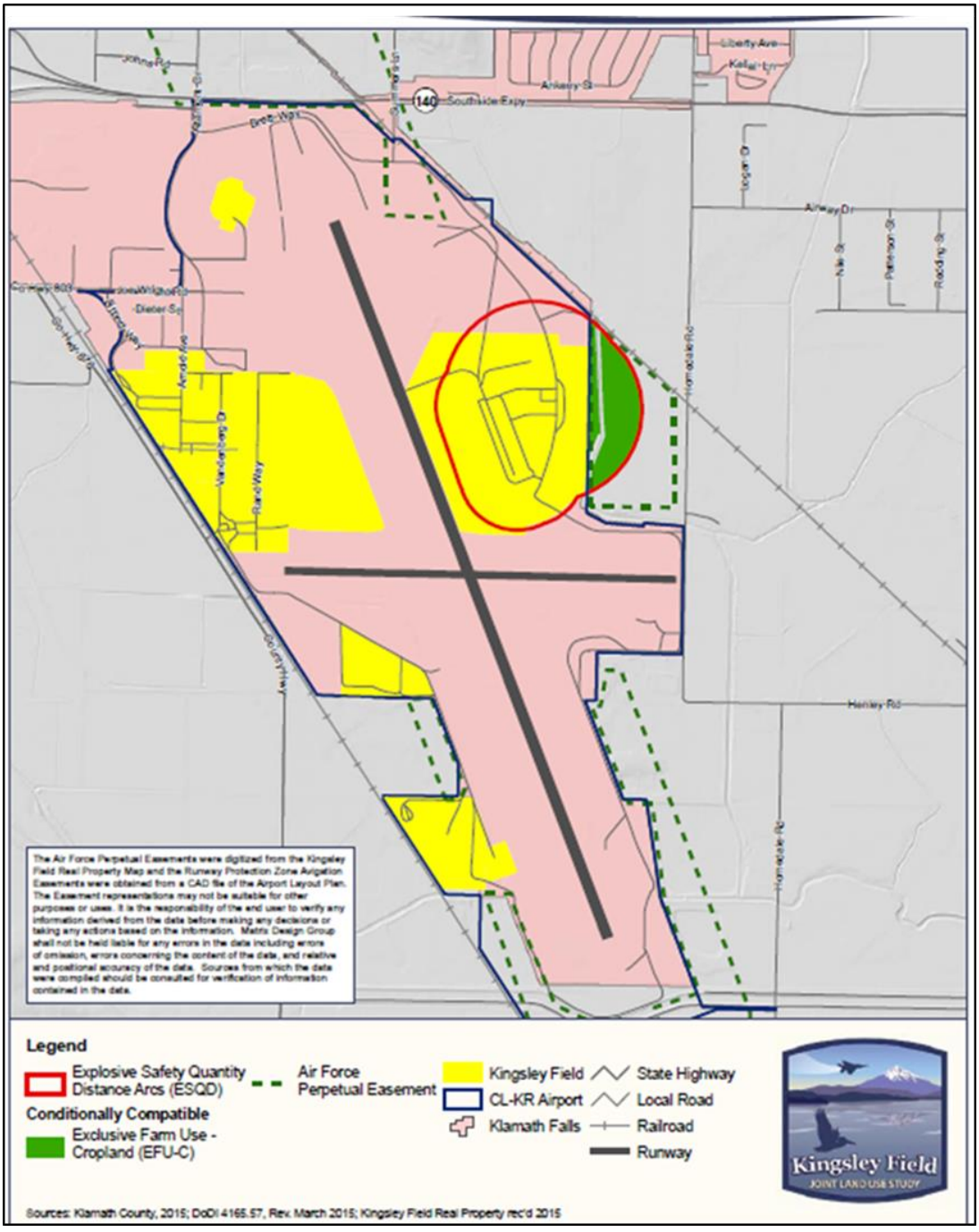
7.3 ORDNANCE AND EXPLOSIVES

A designated military munitions storage area is present near the northeastern airport boundary for the storage of hazardous material including ordnance and explosives. The Oregon ANG has identified an Explosive Safety Quantity Distance (ESQD) Arc to identify the area in which there is a potential safety risk associated with the unlikely explosion of stored munitions. The ESQD Arc extends to an area within a 1,250-foot radius of the munitions storage area and encompasses approximately 27 acres of agricultural area east of the airport boundary and west of the railroad track (see **Figure EO-5, *Explosive Safety Quantity Distance Arc***). The airport perimeter road must be closed when munitions are being moved (11). The City/Airport's lease agreement with the Oregon ANG prohibits the civil construction of habitable surface structures by the lessor within specific distances on exclusive use and joint use areas, which applies to airport property within the ESQD Arc. The ESQD Arc and its associated constraints are identified in the Airport Overlay Zone described in **Section 9.1.1**.

Considerations

The location of the ESQD Arc and its buffer area must be considered during the siting, planning, and operation of proposed projects.

Figure EO-5 : Explosive Safety Quantity Distance Arc



Source: City of Klamath Falls, *Joint Land Use Study*.

8. HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Historical, architectural, archaeological, and cultural resources encompass a range of physical resources associated with important activities in human history and prehistoric times. Federal law requires project sponsors who require federal funds or approvals to consider how their proposed projects would affect historic properties.

Historic properties are defined as architectural history, archaeological resources, or cultural resources that are listed on, or eligible for listing on, the National Register of Historic Places (NRHP). Generally, to qualify for NRHP listing a resource needs to be at least 50 years in age. In accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA), the FAA is the federal lead agency responsible for consulting with the federally recognized tribes, the State Historic Preservation Office (SHPO), and other agencies, as necessary, and identifying the potential adverse effects of a proposed project on historic properties. Historic properties are generally addressed below in three categories: archaeological (below-ground resources), cultural resources (primarily ethnographic and Native American tribal resources), and architectural history resources (built environment resources).

8.1 ARCHAEOLOGICAL AND CULTURAL RESOURCES

LMT is located within the Klamath Basin of south-central Oregon, an area that includes archaeological and ethnographic records of human use. Within a 1-mile radius of LMT, previous archaeological surveys have identified prehistoric lithic scatters as well as historic refuse scatters. The conclusions of previous archaeological and cultural resource studies for recent airport development indicate that the probability of encountering prehistoric sites within the project area is low (12).

The most recent cultural resources inventory was conducted in 2014 to support Taxiway G Improvements. The study focused on a 96-acre Area of Potential Effect (APE) associated with the taxiway, construction haul road, and staging (see **Figure EO-6, *2014 Cultural Resources Study Area for the Taxiway G Improvement Project***). No historic properties were identified within the APE (13); however, the report included a list of 18 resources studies within 1 mile of the APE and recorded or reported resources within one mile of the APE, some of which were located within the airport but outside the APE for this project (see **Table EO-5, *Previously Recorded Cultural Resources Studies within 1 Mile of the Taxiway G***). Previous archaeological and cultural resources studies indicate that airport construction and operation have resulted in significant ground disturbance, resulting in a low potential for the discovery of prehistoric archaeological resources. Isolated historic debris was found during previous surveys listed in **Table EO-6**, ***Previously Recorded or Reported Cultural Resources within 1 Mile of the Taxiway G***, but it was determined to be ineligible for listing on the National Register of Historic Places (13).

Figure EO-6 : 2014 Cultural Resources Study Area for the Taxiway G Improvement Project

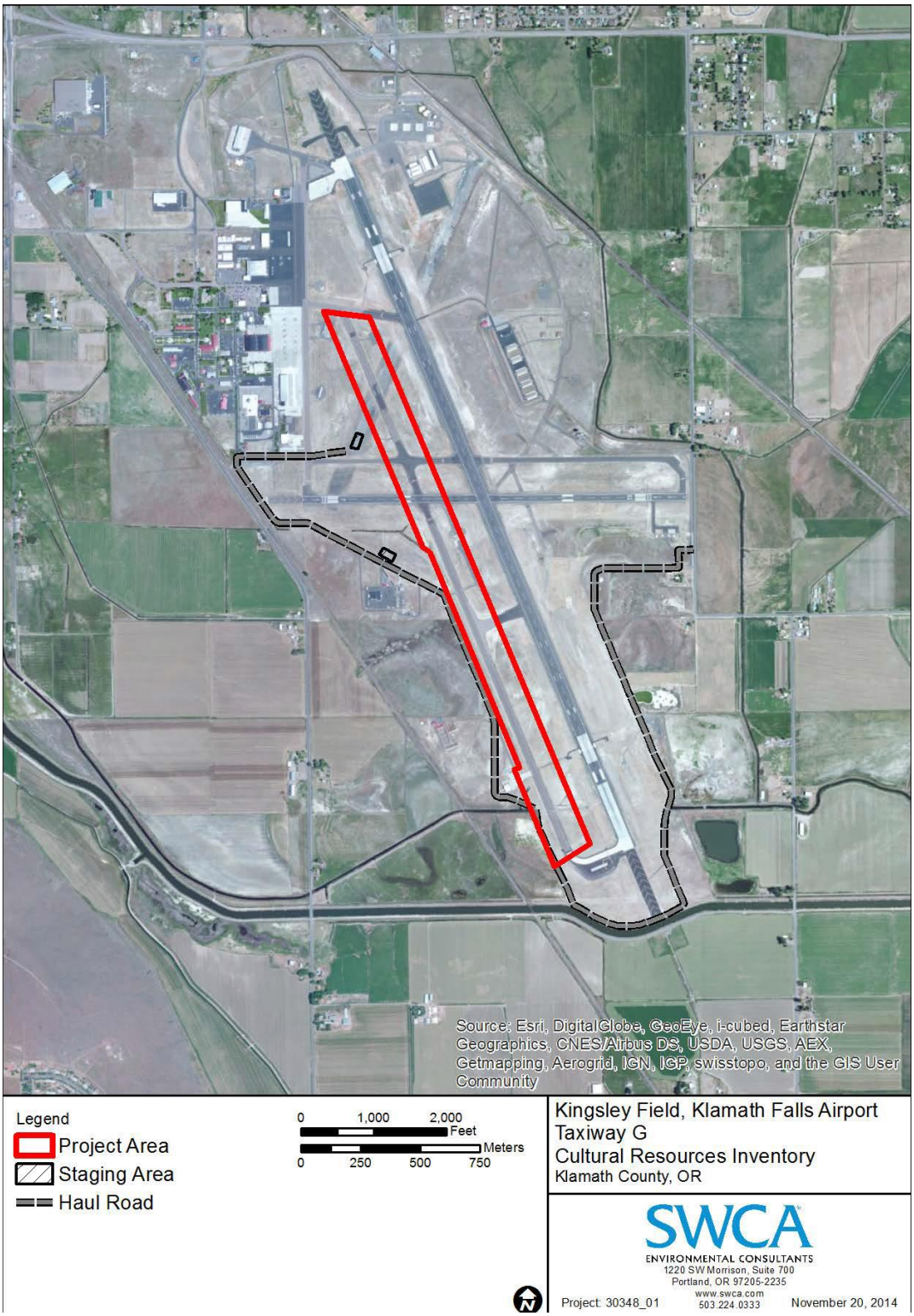


Table EO-5 : Previously Recorded Historical, Architectural, Archaeological, and Cultural Resources Studies within 1 Mile of the Taxiway G

SHPO No.	Survey Project Title (Reference)	Distance and Direction from APE	Results
1044	Report of a Cultural Resources Survey of the Pacific Power and Light Company's Proposed Malin to Medford 500KV Powerline Project through the Klamath Basin, Klamath County, Oregon (Cole 1979)	0.3 mile south	Negative, three areas designated as possible archaeological sites not confirmed
14852	Cultural Resource Survey of Selected Reroutes in Klamath County, Oregon, Along Pacific Gas Transmission Company's Medford Extension (Wilt et al. 1995)	0.3 mile north	USBR 1-C Drain; 1-C-7 Drain; Great Northern Railroad HLF-334; Summers Lane HLF-335; historical power transmission line
15549	Archaeological Survey of the South Klamath Falls Highway-Washburn Way, South Klamath Falls Highway (OR 140), Klamath County, Oregon (Tasa 1993)	0.7 mile west-northwest	Negative
16491	Archaeological Survey of the Proposed Klamath Falls Southside Bypass Modification, Klamath Falls-Lakeview Highway (OR 140), Klamath County (ODOT Key #09741) (Connolly 1998)	0.7 mile west-northwest	Negative
19170	A Cultural Resources Inventory of the New Klamath County Roads Department Shop Facility, Klamath County, Oregon (Fleming 2004a)	0.9 mile west	1948 house and outbuildings; 1 pre-contact isolate
19132	Archaeological Survey for New Perimeter Road and East Perimeter Fence at the Klamath Falls Airport, Klamath County, Oregon (Minor 2004)	0.4 mile east	Isolate: 6 obsidian chunks
19634	A Cultural Resources Inventory of the City of Klamath Falls' Proposed "Industry-Ready" "Airport" Parcel, Klamath County, Oregon (Fleming 2004b)	0.3 mile	Negative
19635	A Cultural Resources Inventory of the City of Klamath Falls' Proposed "Industry-Ready" Acquisition of the "WESGO" Parcel, Klamath County, Oregon (Fleming 2004c)	0.8 mile west	Isolates: 4 pre-contact isolates
21221	Cultural Resources Inventory for the Klamath Falls Airport/Kingsley Field, Klamath County, Oregon (Butler et al. 2007)	0.1 mile east	Historical refuse scatter 35KL2909; historical isolate IF-1
22396	Determination of Effect for Proposed Wireless Site KF43, Klamath Falls Airport, Klamath County, Oregon, T. 39S, R. 9E, Sec. 15 (Gray and Tonsfeldt n.d.)	0.8 mile north	Negative
23145	Henley School Waterline Extension Project Cultural Resources Inventory SHPO Case #10-0042 (Smith Gebauer 2010)	0.5 mile east	Negative
23423	Final Report Cultural Resources Evaluation Klamath Falls-Kingsley Field Air National Guard Base, Oregon Air National Guard (Foothills Engineering Consultants 2002)	Adjacent to APE	Buildings and Structures Inventory; historical debris scatter OR-KL-132
24194	Hosanna Christian School Cultural Resources Inventory (Smith Gebauer 2011a)	0.8 mile north	Negative
24536	Kingsley Southgate Cultural Resources Inventory (Smith Gebauer 2011b)	0.6 mile west	Negative
25809	Pacific Connector Gas Pipeline Project Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: 2013 Cultural Resources Addendum (Bowden et al. 2013)	1 mile south	Negative
25962	Cultural Resource Inventory for the Taxiway J Improvements at Kingsley Field, Klamath Falls Airport, Klamath County, Oregon (Shantry and Moret-Ferguson 2013)	0.1 mile east	Negative
26154	Cultural Resources Identification, Evaluation, and Findings Report for Land Disposal of Eight Parcels in Klamath County, Oregon (Nickels 2013)	0.1 mile east	USBR Two barns, the Parker residence, the No. 1 Drain, and Lost River Diversion Channel
26190	Pacific Connector Gas Pipeline Project Cultural Resources Survey, Coos, Douglas, Jackson, and Klamath Counties, Oregon: 2013 Cultural Resources Addendum #2 (Ragsdale et al. 2013)	0.8 mile southwest	Testing and evaluation of sites outside of the APE

Source: SWCA Environmental Consultants (SWCA), Cultural Resource Inventory for Taxiway G Improvements at Kingsley Field, Klamath Falls Airport, Klamath County, Oregon. SWCA Cultural Resources Report No. 14-648. Portland, Oregon.

Table EO-6 : Previously Recorded or Reported Historical, Architectural, Archaeological, and Cultural Resources within 1 Mile of the Taxiway G

Resource No.	Resource Type	Reference	Date/Period of Resource	Distance and Direction from APE
35-KL-2909	Historical debris scatter	De Shazo Khan 2007	1870–1917	0.1 mile northeast
N/A	Old power line	Not recorded, noted in Wilt et al. 1995 survey	1911–1912	0.2 mile northeast
HLF-334	Great Northern Railroad segment	Not recorded, noted in Wilt et al. 1995 survey	1931	0.2 mile east
IF-1	2 historical glass fragments	De Shazo Khan 2007	Pre-WWI	0.3 mile north
HLF-472	USBR 1-C Drain and 1-C-7-Drain	Not recorded, noted in Wilt et al. 1995 survey	1906–1907	0.3 mile northeast
Isolate 1	Six obsidian chunks	Minor 2004	N/A	0.4 mile east
N/A	Two structures	Not recorded, noted in Wilt et al. 1995 survey	Pre-1905	0.4 mile north
35-KL-2893	Historical debris scatter	Hoefer III 2000	1929–1950	0.5 mile west
OR-KL-132	Historical debris scatter	(Foothills Engineering Consultants 2002)	1930s or early 1940s	0.5 mile west
HLF-335	Summers Lane, wagon road to Stukel Ford	Not recorded, noted in Wilt et al. 1995 survey	1870–1889	0.7 mile north
Site One	House and outbuildings	Fleming et al. 2004	1948–1970	0.8 mile west-southwest
Isolate 1	Basalt scraper	Riddle et al. 2004	Pre-contact	0.9 mile west

Source: SWCA Environmental Consultants (SWCA), Cultural Resource Inventory for Taxiway G Improvements at Kingsley Field, Klamath Falls Airport, Klamath County, Oregon. SWCA Cultural Resources Report No. 14-648. Portland, Oregon.

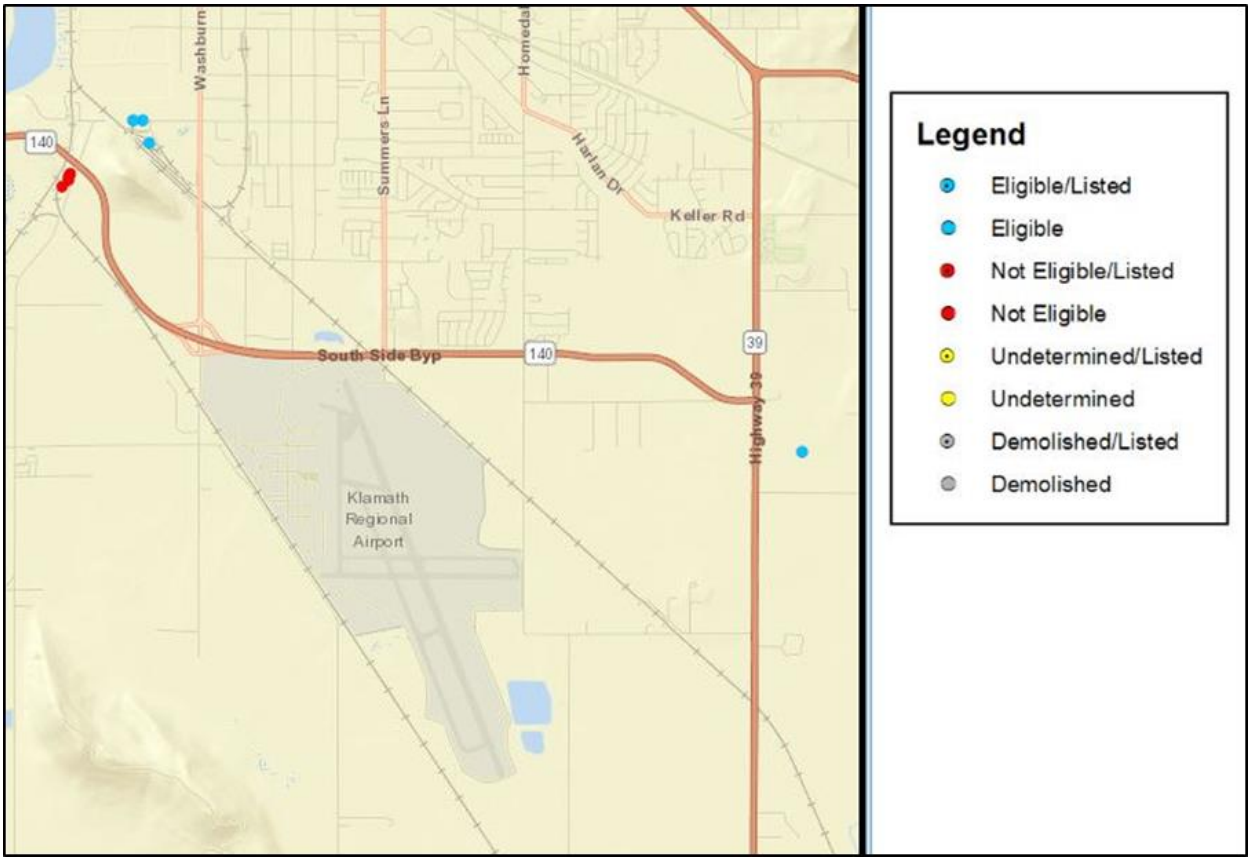
A literature review did not identify previous comprehensive archaeological or cultural resources studies of the Airport property as a whole. While the Airport conducted the studies mentioned above in support of specific projects, these investigations focused on project-specific limits of disturbance and other areas of the Airport have not been studied. The previous studies concluded that due to the extensive disturbance that occurred during previous agricultural activities and airport construction, the overall potential to encounter cultural and archaeological resources within airport boundaries is low. Typically, future Section 106 compliance will include a review of existing studies to identify the needed supplemental studies that need to be performed prior to project approvals and construction; this will be completed for archaeological and cultural resources on a project-by-project basis. Based on project activities and the size and scale of ground disturbance activities, additional archaeological and cultural studies may be required.

8.2 ARCHITECTURAL HISTORY RESOURCES

The Oregon Historic Sites Database (OHSD) identifies existing historic properties in the built environment that have already been identified, evaluated, and listed on the National Register of Historic Places (NRHP) and state register. The OHSD indicated the nearest NRHP-listed properties were more than 1.5 miles east of LMT (see **Figure EO-7, *Oregon Historic Sites near LMT***) (32). Section 106 requires additional studies to identify resources that are NRHP-eligible but have not yet been identified. Table EO-6 indicates the presence of other built environment resources that have been considered for their architectural or historical importance. These resources include various buildings (residences, barns, outbuildings) and structures (e.g., railroad bed segments, wagon roads, power lines, drainage features, and channels) on or near the Airport.

Background research indicates the airport was used as a WWII Navy Air Station; therefore, the buildings and structures at the Airport have the potential to be related to historic themes regarding the military and WWII. Below is a summary of the background research.

Figure EO-7 : Oregon Historic Sites near LMT



Source: Oregon Historic Sites Database.

In 1942, the Klamath Falls Municipal Airport was selected for the construction of a U.S. Naval Air Station. Construction was completed in early 1945, but the base operated for less than a year before the end of World War II led to base closure. Most of the facilities were given to the City for use as a general aviation airport; however, certain buildings were maintained by the United States Department of the Interior, Bureau of Reclamation as administrative offices or storage. In 1954 the remaining federally owned property and a portion of the airport previously given to the City was transferred to the United States Air Force (USAF) for use as a Fighter Interceptor complex. In 1980 the USAF transferred responsibility for training at the Airport to the Oregon ANG (14).

Commercial service began at LMT in 1947. The passenger terminal was constructed in 1959. The initial development and use of resources at the Airport for military purposes may represent an important historical theme and require further research to determine its significance at the local, state and national levels following NRHP criteria (14). A literature review and background research did not reveal previous comprehensive architectural history studies of the Airport.

The Airport contains a total of 68 structures, six of which are known to be at least 50 years in age. Research indicates facilities at LMT were constructed for military and/or civilian use during and after the WWII era. Further work is required to evaluate architectural history resources under Section 106.

CONSIDERATIONS

Proposed projects may have the potential to affect NRHP-eligible resources that have not been identified or evaluated yet. The NHPA requires that Section 106 be initiated for federal actions to identify and evaluate resources for NRHP-eligibility, which includes implementation of proposed projects identified in the master plan. Proposed projects in the master plan have the potential to result in the removal of three structures (building No. 9, 10 and 27), and the renovation two others (No. 1 and 7). Several structures at LMT are nearing 50 years of age and will require evaluation to determine their eligibility for inclusion on the NRHP. Buildings and structures that may be 50 years in age at the time of construction must be evaluated to determine whether they are eligible for the NRHP to comply with Section 106 and NEPA.

As proposed projects are identified, the FAA will initiate Section 106 review under the NHPA, which includes four general steps:

- **Step 1:** Consultation with the State Historic Preservation Office (SHPO), federally recognized tribes and Tribal Historic Preservation Officers (THPO);
- **Step 2:** Delineating an Area of Potential Effects (APE);
- **Step 3:** Identifying and evaluating historic properties within the APE (i.e. those eligible for the NRHP); and
- **Step 4:** Assessing and resolving adverse effects of the proposed project on historic properties.

Typically, Section 106 will include a review of existing cultural resource studies to identify the supplemental resource studies that need to be performed prior to project approvals and construction. The results of the studies will be used to determine, in consultation with the SHPO/THPO(s) and other consulting parties, whether proposed airport improvements would result in an adverse effect on historic properties. If so, then the FAA will continue consultation with the SHPO/THPO(s) to consider ways to avoid, minimize, or mitigate the project's adverse effects on historic properties per 36 CFR Part 800.6, Resolution of Adverse Effects.

9. LAND USE

Although LMT is located within incorporated city boundaries, it is surrounded by unincorporated land that is under the jurisdiction of Klamath County. The City and the Military are responsible for on-airport uses. The City and Guard are required to coordinate with the Klamath County. The City and County have undertaken a Joint Land Use Study (JLUS) to reduce potential conflicts between a military installation and surrounding areas while accommodating new growth and economic development, sustaining economic vitality, and protecting the general public's health and safety without compromising the operational missions of the installation.

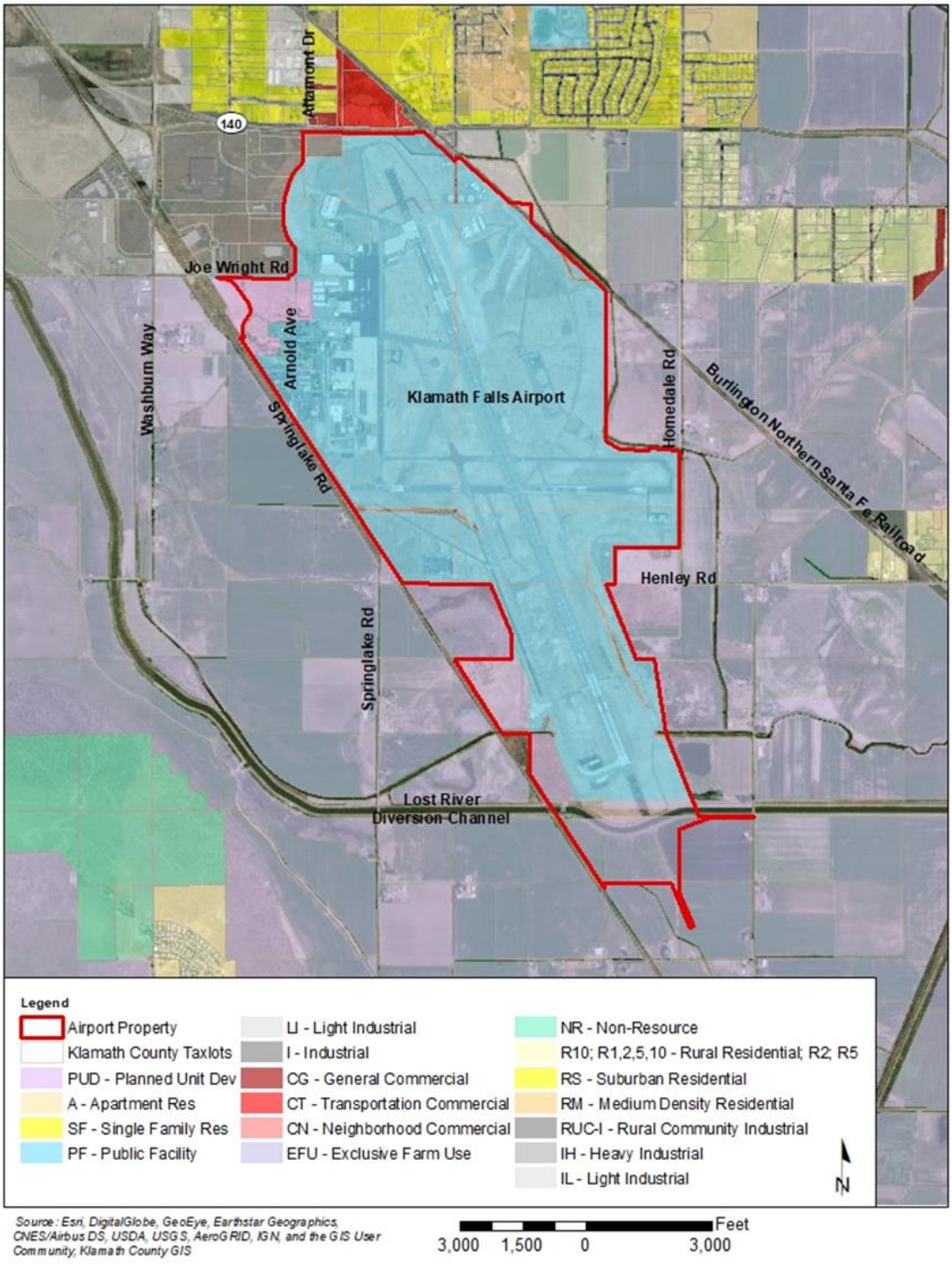
9.1 CITY OF KLAMATH FALLS

As shown on City's Land Use Map (**Figure EO-8, *City of Klamath Falls Land Use Diagram***) and in the City's 1981 Comprehensive Plan, LMT is designated for public facility use (i.e., public or quasi-public facilities generally used by government, non-profit organizations, or large numbers of persons) (15).

Although the City's zoning map also identifies LMT Public Facility development, the Airport is further designated for Planned Unit Development (PUD) (see **Figure EO-9, *City of Klamath Falls Zoning Map***). According to Zoning Ordinance No. 12.-02, "The purpose of the PUD is to provide a master plan for the layout of uses in the Klamath Falls Airport. It is intended to allow for a diversity of uses related directly to the operations of the airport and those complimentary uses that support and enhance the functioning of the airport" (see **Figure EO-10, *Planned Unit Development Diagram for LMT***).

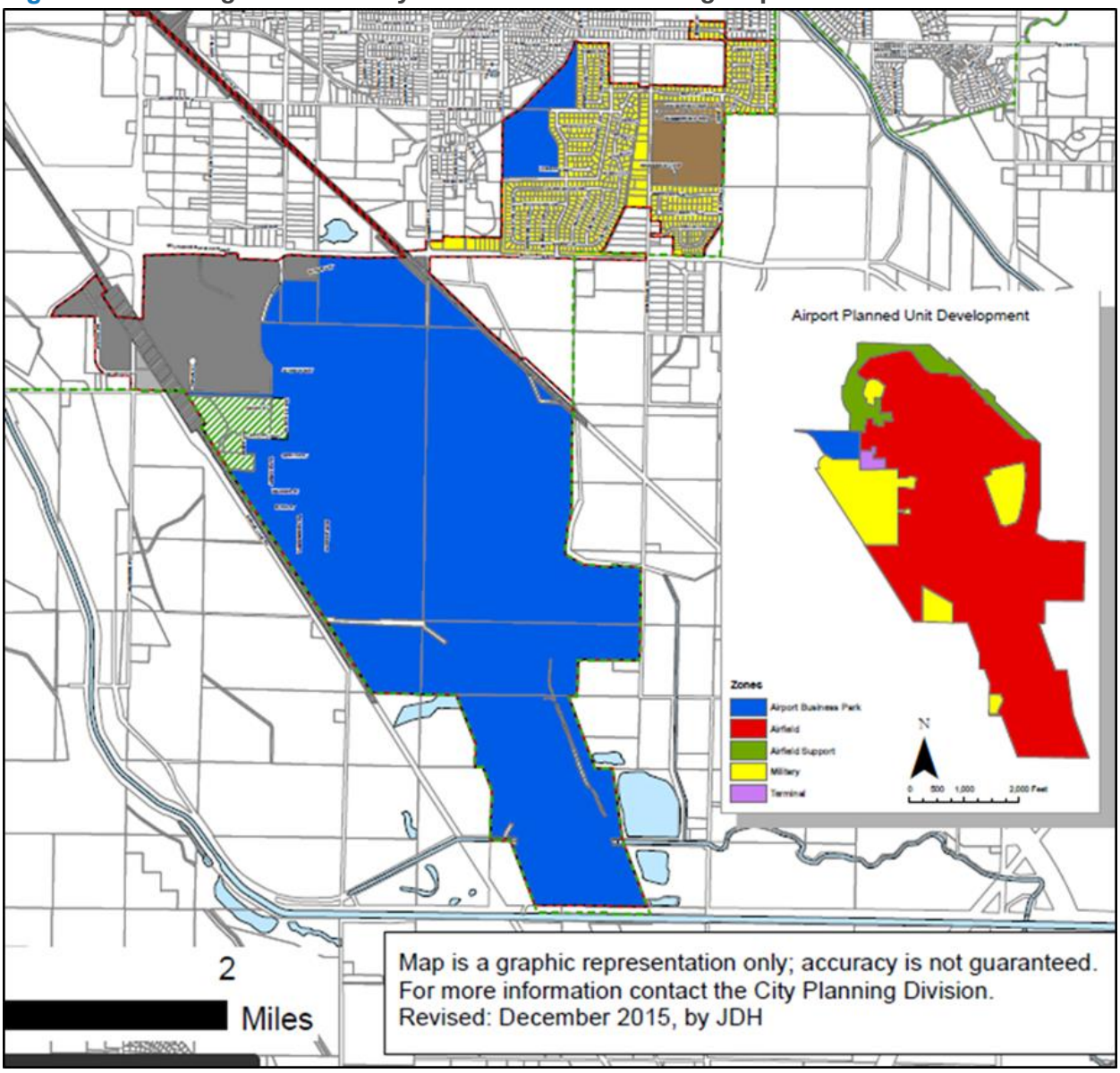
The PUD development ordinance also specifies that land uses must be developed in accordance with the PUD Diagram and in conformance with applicable sections of the City of Klamath Falls Community Development Ordinance associated with: Airfield, Airfield Support, Military, or Terminal use. The ordinance identifies a specific set of permitted uses and requirements for PUD campuses including, but not limited to, such items as building size, heights and lot coverage, parking, signage and circulation.

Figure EO-8 : City of Klamath Falls Land Use Diagram



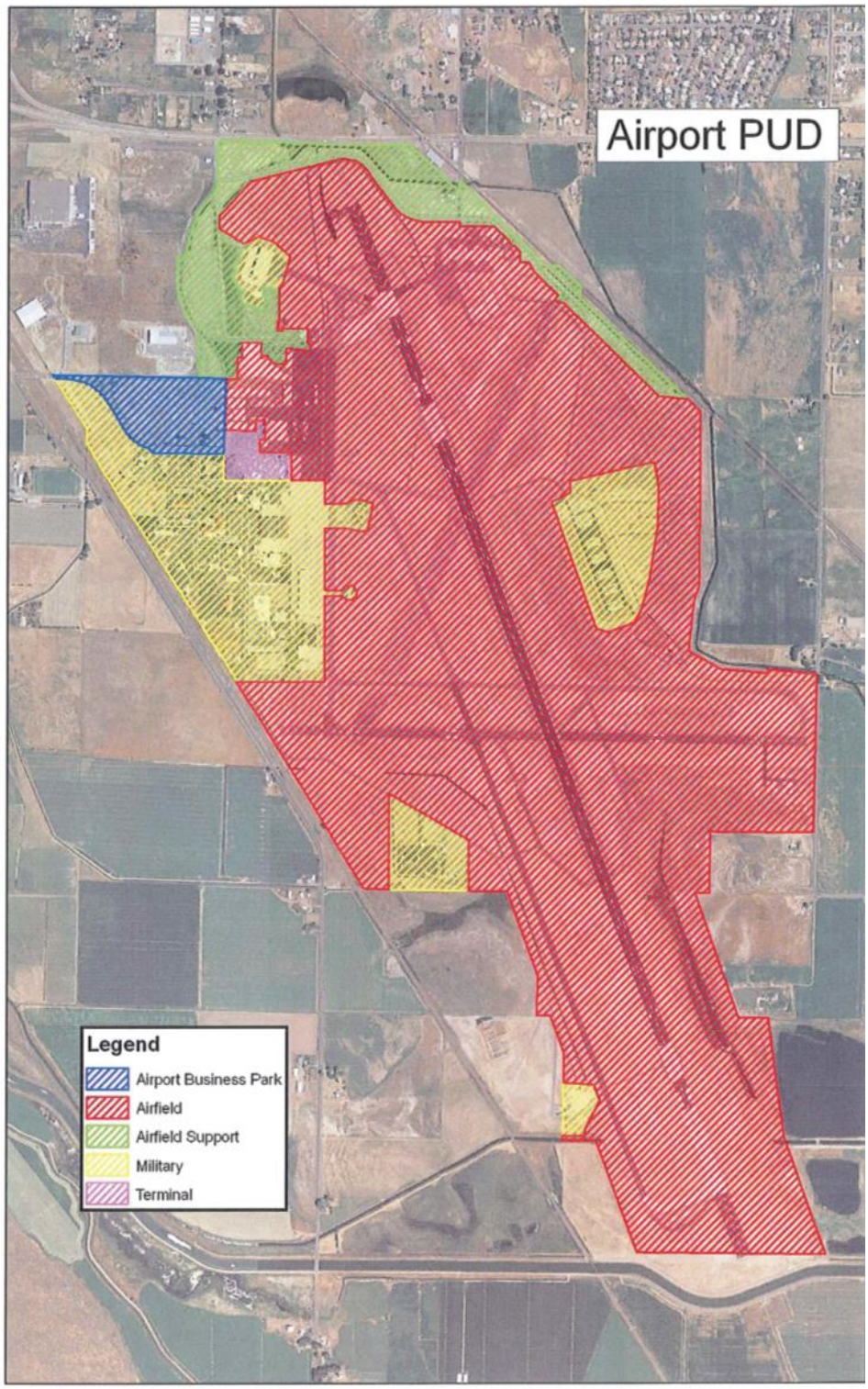
Source: Esri, DitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Klamath County GIS

Figure EO-9 : Figure EO-9: City of Klamath Falls Zoning Map



Source: Mead & Hunt 2018

Figure EO-10 : City of Klamath Falls Planned Unit Development Diagram for LMT



Source: City of Klamath Falls, Ordinance 12-02.

9.1.1 Airport Overlay Zone

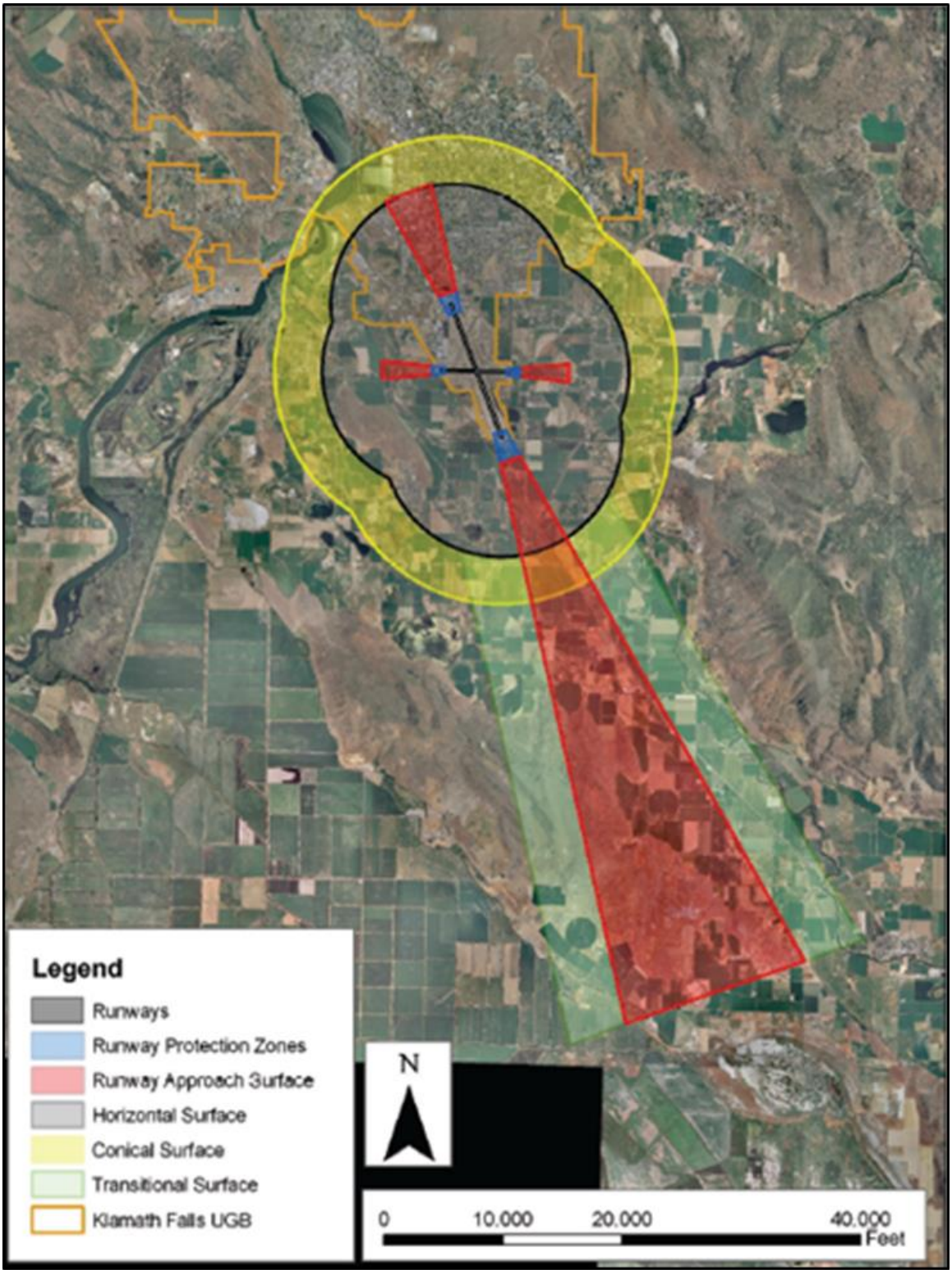
The State of Oregon acknowledges the importance of the aviation industry and the concerns posed to airport operators as a result of incompatible land uses. The State of Oregon Department of Aviation prepared an *Airport Land Use Compatibility Guidebook* (Guidebook), which provides tools, techniques, and recommendations to enhance safety through compatible land use (16).

The City of Klamath Falls adopted an Airport Safety Hazard Prevention and Overlay Zone (ASHPO) in 2009 in accordance with the Department of Aviation's Zoning Ordinance 12.600. The goal of the ordinance is to promote land use compatibility in accordance with federal and state statutes. The ASHPO identifies specific geographic areas that can be affected by aviation and provides specific guidance when considering proposed land use within these geographic areas. The areas identified in the guidance include:

- Airport Hazard Zone. The Airport Hazard Zone identifies the geographic area associated with airspace protection as defined by Federal Aviation Regulation (FAR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (Figure EO-11, Hazard Zone Map). To comply with FAR Part 77, areas included in the Airport Hazard Zone may be subject to additional height limitations.
- Airport Impact Area. The Airport Impact Area Map identifies the geographic area that may be subject to land use restrictions or other limitations based on the presence of runway protection zones, FAR Part 77 surfaces, or safety risks to persons living or working near LMT. Paragraph 12.615 of the zoning ordinance includes a list of allowable land uses and limitations and restrictions on allowed uses based on guidance set forth in the Department of Aviation's Guidebook (Figure EO-12, Airport Impact Area).
- Airport Needs Map. The City recognizes that additional property may be necessary to avoid the development of incompatible land uses in the future and to support a logical pattern of airport growth. Paragraph 12.650 of the zoning ordinance includes a map that identifies adjacent property that may be needed to meet these goals and recommends that property be identified in subsequent airport master plans (Figure EO-13, Airport Needs Map).
- Airport Noise Impact Boundary. The overlay zone recognizes that exposure to aircraft noise is a primary concern when considering the compatibility of proposed land use near the airport. Noise and land use compatibility are discussed in Section 11, Noise.

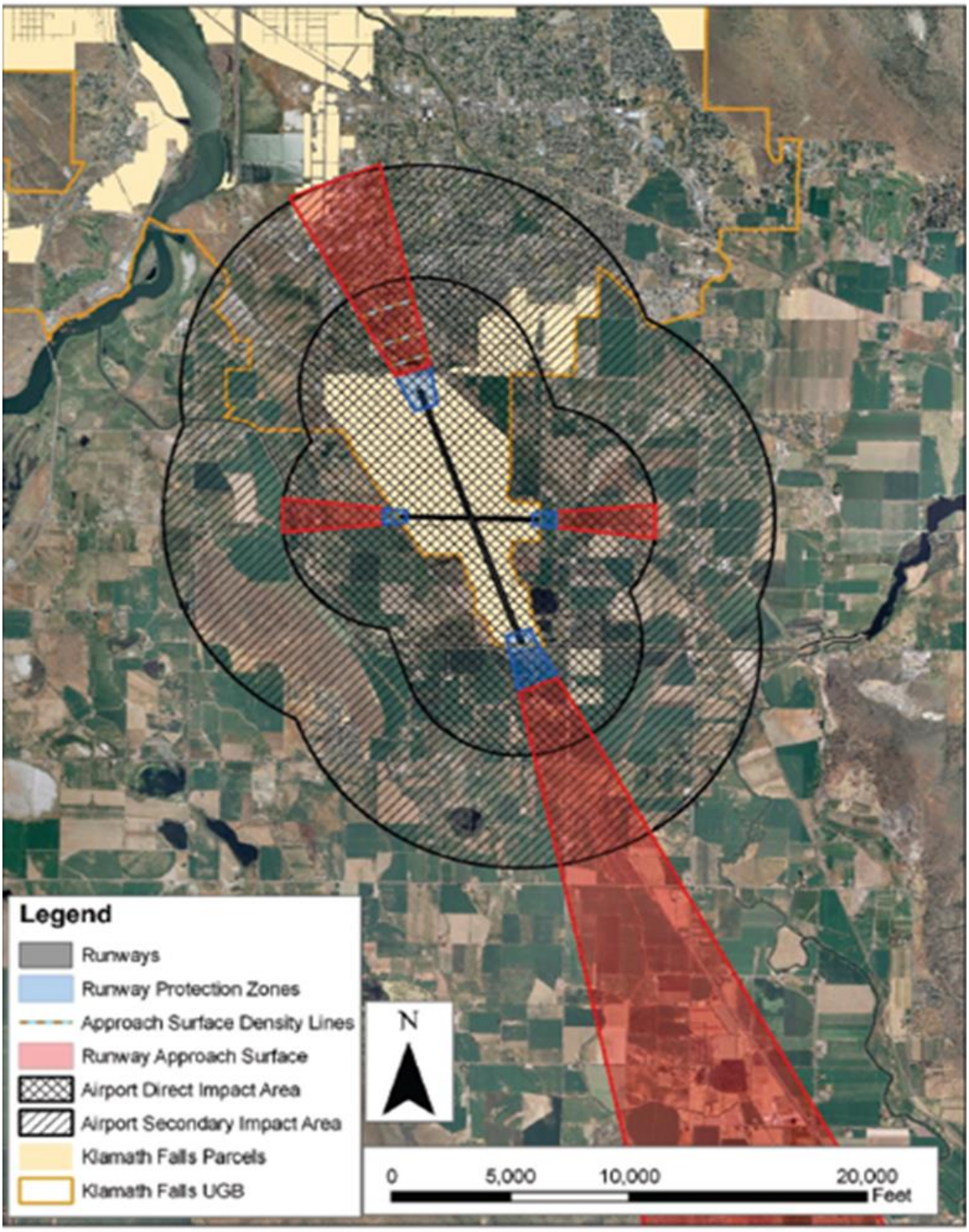
The City intends to update the ASHPO to reflect the future development and land acquisition proposals of this Master Plan update.

Figure EO-11 : Hazard Zone Map (Imaginary Surfaces)



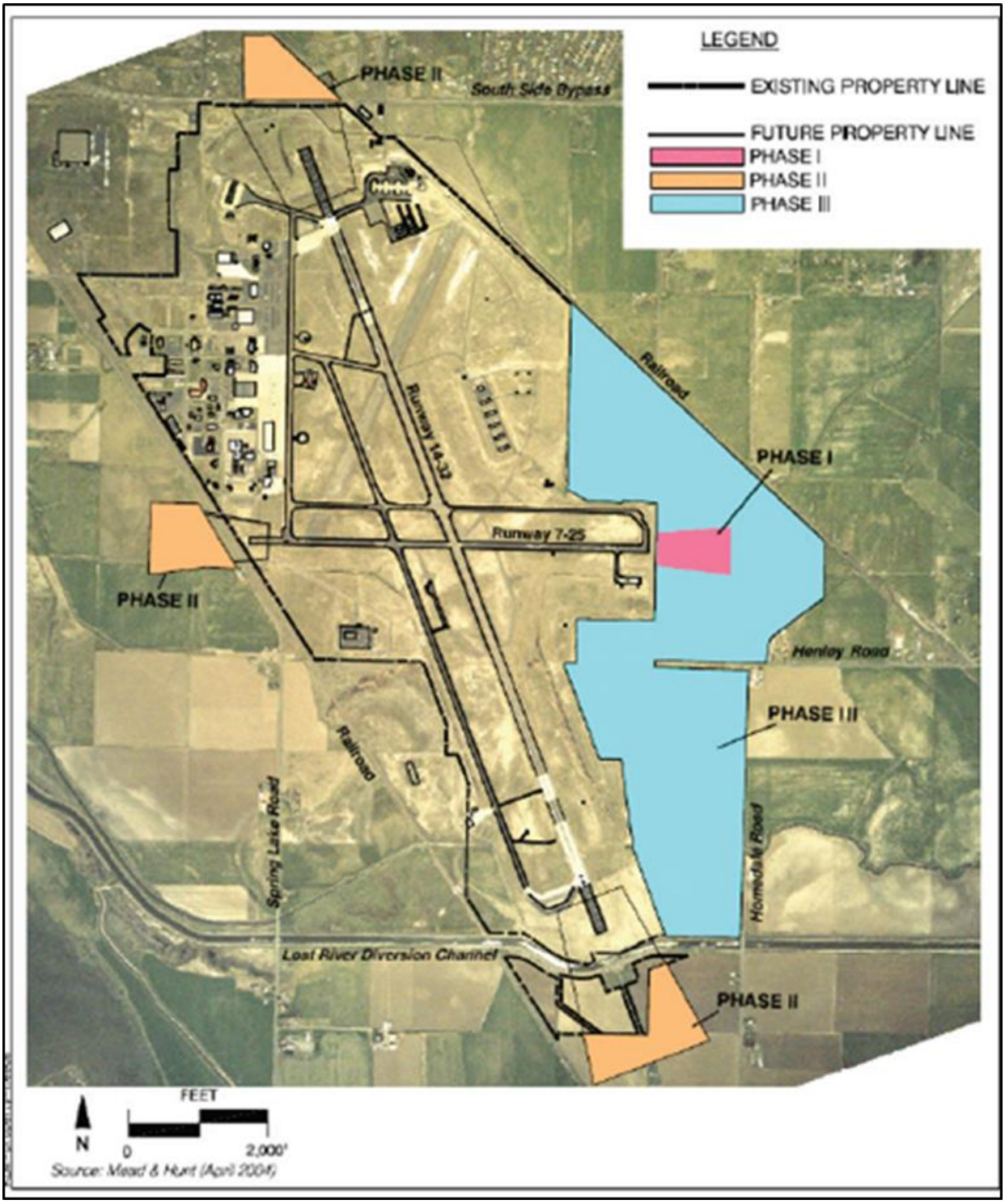
Source: City of Klamath Falls Ordinance 12.600

Figure EO-12 : Airport Impact Area (Areas Subject to Land Use Restrictions and Limitations)



Source: City of Klamath Falls Ordinance 12.600

Figure EO-13 : Airport Needs Map



Source: City of Klamath Falls Ordinance 12.600

9.1.2 Klamath County

Goal 2, Land Use Planning, of the *Comprehensive Plan for Klamath County, Oregon,* states that "City, county, and special district plans and actions related to land use shall be consistent with the Comprehensive Plans of cities and counties and regional plans adopted under Oregon Revised Statutes (ORS) l97.705 through l97.795." As such, the County's Comprehensive Plan also designates LMT for Public Facility uses (see **Figure EO-14, *Klamath County Zoning Map***).

Land Use Goal 2, Policy 6 states that "Zoning shall be consistent with the land use map." As shown on **Figure EO-14**, ***Klamath County Zoning Map***, the agricultural uses adjacent to all but the north side of LMT have been assigned an implementing zone designation of Exclusive Farm Use-Cropland (EFU-C), which coincides with the agricultural land use designation associated with that area. Land use north of LMT also coincides with existing land use designations.

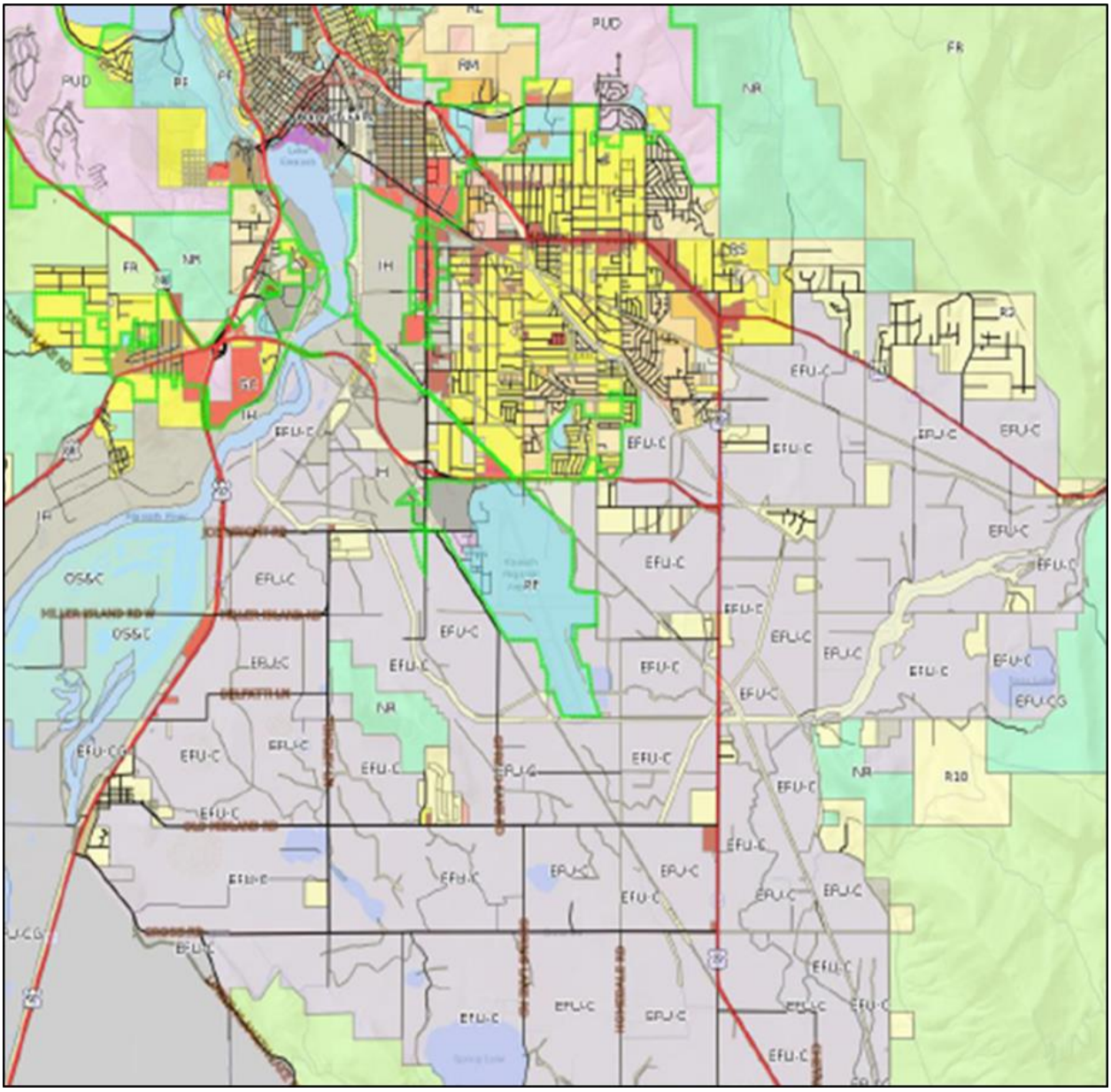
The City's Airport Overlay Zone is extraterritorial, indicating that the land use policies presented in the overlay zone also apply to unincorporated county areas. The County's Comprehensive plan is consistent with the City's airport overlay zone (18). Specific policies that promote consistency include:

- Goal 7, Areas Subject to Natural Disasters and Hazards, identifies areas subject to natural disasters and hazards and seeks to "avoid the development of incompatible hazards in these areas."
- Goal 7, Policy 5 states that "Areas of airport hazards will be kept free of development which increases the danger to human life, which poses a safety hazard to air traffic."
- Additional comprehensive plan policies related to land use, noise exposure, and transportation are also consistent with the Airport Overlay Zone.

CONSIDERATIONS

To achieve NEPA compliance, potential land use conflicts must be identified and disclosed as well as the extent to which the City would need to reconcile the proposed action with the applicable land use plan. Pursuant to state laws and guidance, the City would be required to amend its Airport Overlay Zone to address potential changes to airfield configuration. The City would also be required to consider the consistency of proposed plans with the land use compatibility recommendations and policies presented in the JLUS following adoption.

Figure EO-14 : Klamath County Zoning Map



Source: Klamath County Comprehensive Plan, 2010 Amendment

10. NATURAL RESOURCES AND ENERGY SUPPLY

Proposed airport projects have the potential to increase the amount of energy required to operate the Airport, including fuel and power consumption. CEQ Regulations require federal agencies to consider the energy requirements and natural resource requirements associated with proposed projects. To do so, project sponsors must identify:

- The suppliers of energy resources found in the area, such as power plants, water utilities, sewage disposal utilities, and suppliers of natural gas and petroleum.
- The amount of other resources such as water, asphalt, aggregate, and wood used in the construction, operation, and maintenance of a project and where the suppliers are located.

Table EO-7, *Airport Utilities*, summarizes existing available utilities near the Airport (19).

Considerations

Pursuant to FAA guidance, proposed master plan projects will consider the highest standards, including principles of sustainability. Each project will identify connections to existing utilities, infrastructure, and energy supplies; will be evaluated for its potential to use energy requirements and depletable natural resources; and will identify whether adequate materials are available for construction.

Table EO-7 : Airport Utilities

Utility	Provider	System / Capacities / Remarks	Condition / Deficiencies
Electric Power	PacifiCorp	All lines are underground, except for the portion running along the west boundary (Spring Lake Road). The east side is supplied from the Hornet Substation south of Keller Road and west of Hwy 39 from Summers Lane. The west side is supplied from the substation north of Laverne Avenue and west of Washburn Way via Joe Wright Road.	No known deficiencies. The existing power on the East side of the airport is the most distant circuit from the Hornet Substation. Future development with high power loads may require upgrades to transformers, the substation, or conductors.
Water	City of Klamath Falls	The west side of the airport is served by a 16-inch ductile iron main running along Joe Wright Road. The east side is served by a 12-inch PVC main running along the Southside Expressway near Summers Lane, then along Brett Way and paralleling the railroad right of way to the air traffic control tower. An 8-inch PVC main continues east and then south along Homedale Road to the Agriculture Operations area near Homedale Road/Henley Road intersection.	Future airport development may require main or service extensions.
Sanitary Sewer	City of Klamath Falls	Sewage gravity drains from the west portion of the airport to the Oregon ANG lift station and then pumped to the KFI lift station located at the intersection of Altamont Drive and the Southside Expressway. The east side of the airport gravity drains via a 12-inch PVC main to the Wings Way lift station and is pumped to an 18-inch gravity main on the Southside Expressway, which then gravity drains to the KFI lift station.	Future airport development may require gravity main extensions.
Gas	Avista Utilities	The east side is supplied by a 2-inch main via Summers Lane. The west side of Airport is supplied by a 6-inch main extending from Washburn Way and Joe Wright Road to supply buildings on the west side of the airport.	The south east side of the airport along Homedale Drive is not equipped gas service. Both gas mains are high pressure (60 psi) and should be adequate for future development. The 2-inch main may not be adequate for high demand industrial use.
Stormwater Systems	City of Klamath Falls	Storm runoff drains to Klamath Irrigation District (KID) ditches, and eventually to the Lost River Diversion Canal.	No known deficiencies.
Solid Waste Removal	Waste Management	Trash service is provided by Waste Management.	No known deficiencies.
Communications	Hunter Communications	The west side of the airport has existing communications infrastructure stubbed to the intersection of Altamont Drive and Joe Wright Road. Future communications could be extended via an easement from that intersection northerly to the east side of the airport. An alternative would be extending from Summers Lane south to Brett Way and then easterly.	There is limited or no communications service to the north or east sides of the airport.
	Charter	Charter has fiber optic service to the north side of the railroad on Summers lane.	Extension to the airport boundary would require crossing under the railroad along the west side of Summers lane.
	Century Link	Century Link has fiber optic and phone service to the west side of the airport via Altamont Drive or Joe Wright Road. Phone service is supplied to the Forest Service air tanker base in the northeast corner of the airport.	Century Link has existing conduit to the Forest Service via Summers Lane and could extend fiber optic service to that location within their existing conduits.

Source: Adkins Consulting, 2018.

11. NOISE AND NOISE-COMPATIBLE LAND USE

Noise is often the predominant aviation environmental concern of the public. The FAA provides compatible land use guidelines for a variety of land uses in 14 CFR part 150, *Land Use Noise and Noise-Compatible Land Use*.

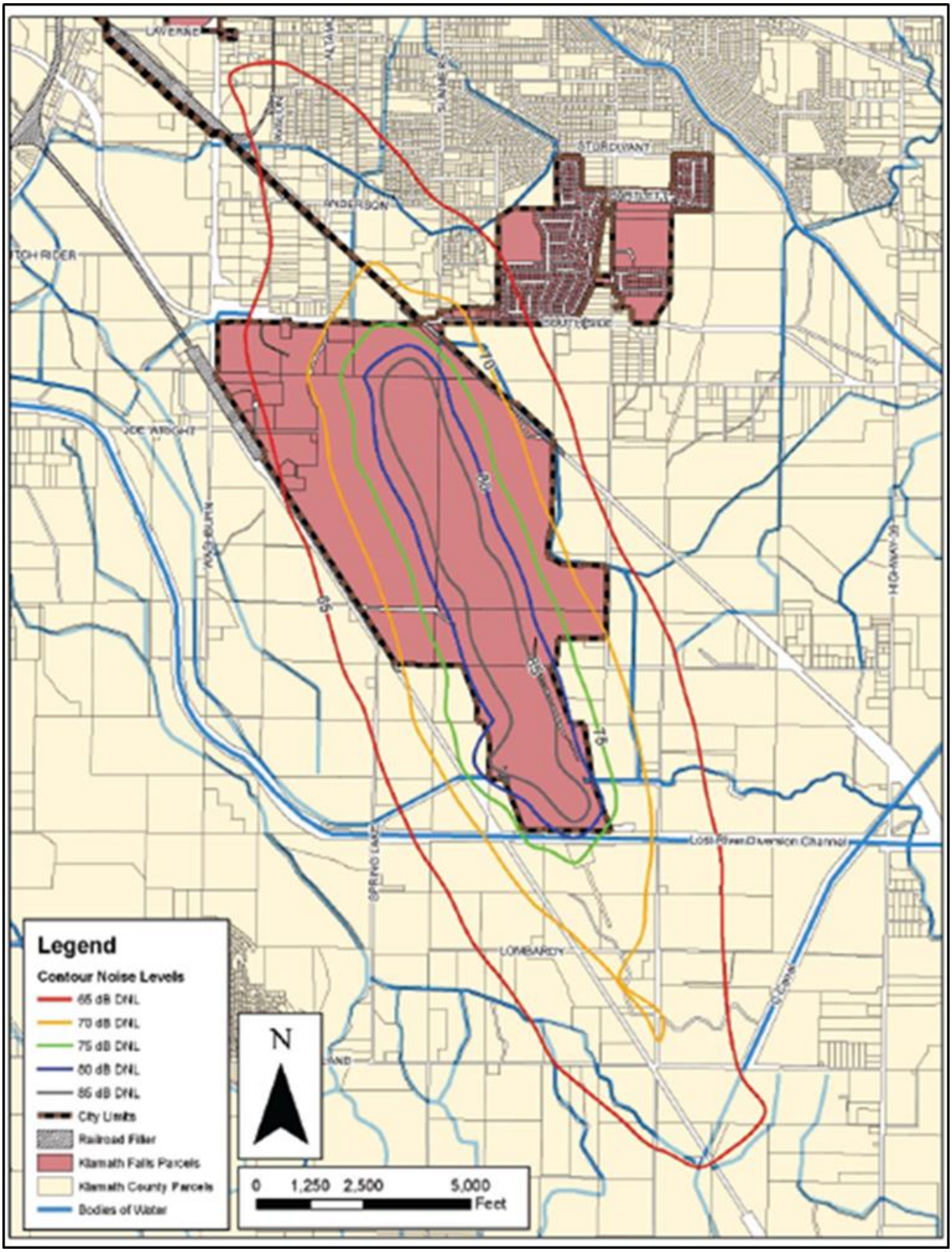
Aircraft Noise Exposure is addressed in the City of Klamath Falls' Airport Overlay Zone (see **Figure EO-15, *Aircraft Noise Exposure***), and this map will be reflected in the forthcoming *Kingsley Field Joint Airport Land Use Study (JLUS)* (11). As previously mentioned, the JLUS is a planning process that focuses on identifying compatible land uses and growth management guidelines within, and adjacent to, active military installations (11). The JLUS identifies the relationship between the City's Zoning Map and the areas exposed to aircraft noise (see **Figure EO-16**, ***City of Klamath Falls Zoning and Noise Contours***).

CONSIDERATIONS

A proposed action that affects the configuration of an airfield, such as a change in runway length, taxiway location or configuration, or engine run-up areas, can affect the extent and location of areas subject to aircraft noise exposure. Proposed projects can cause temporary increases in ambient noise during construction.
The FAA identifies a significance threshold for noise in Order 1050.1F, *Environmental Desk Reference (2)*. According to FAA Order 1050.1F, a significant noise impact would occur if:

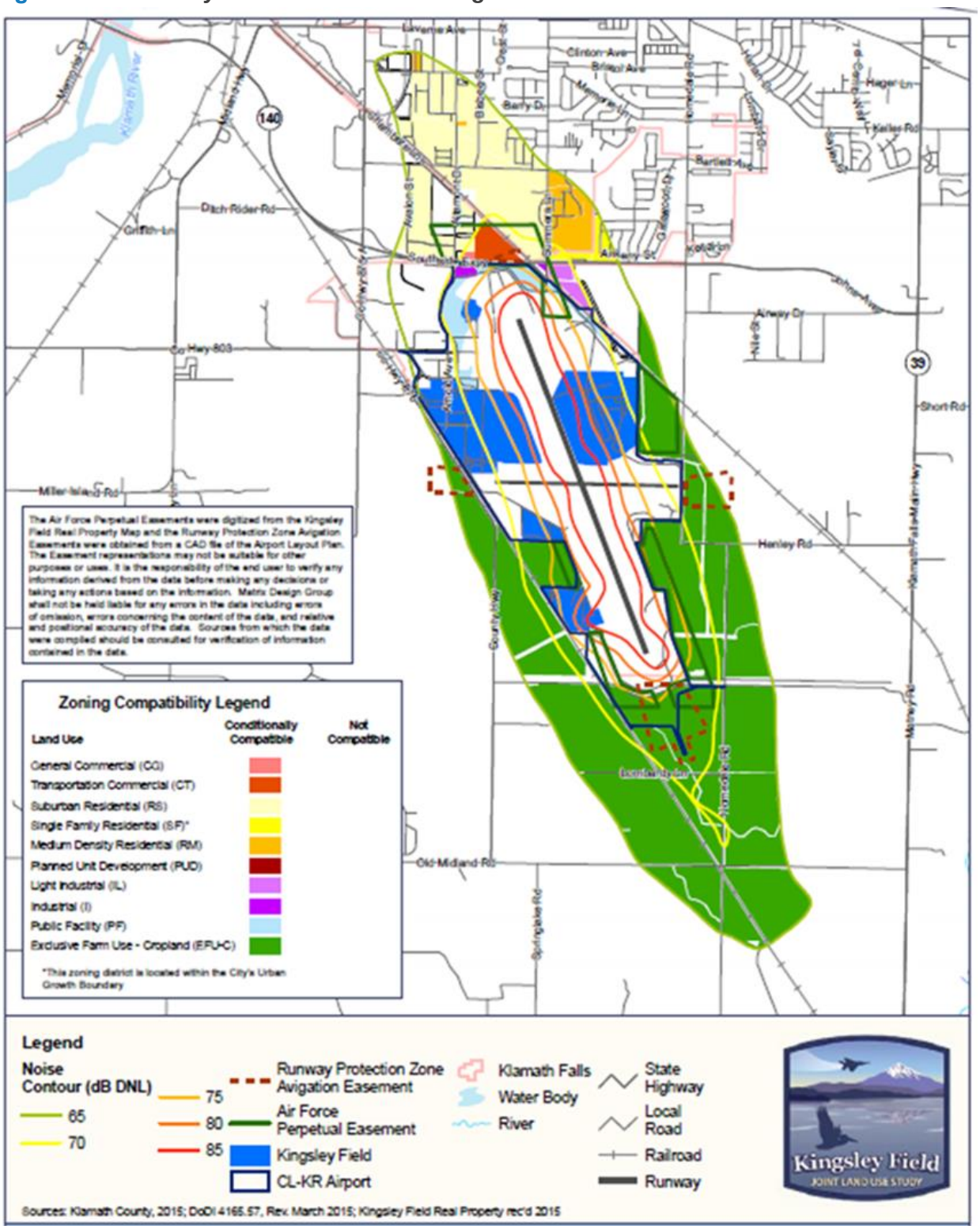
- A proposed action would increase noise by 1.5 dB Day-Night Average Sound Level (DNL) or more for a noise-sensitive area that is exposed to noise at or above the 65 dB DNL. For example, an increase from 65.5 dB to 67 dB DNL would be considered a significant impact.
- A proposed action will increase noise exposure above the DNL 65 dB level due to a DNL 1.5 dB or greater increase when compared to the noise exposure that would occur for no action alternative during the same timeframe. For example, an increase from DNL 63.5 dB to 65 dB would be considered a significant impact.
- Future Oregon ANG operations at LMT, could increase the area affected by exposure to noise from military aircraft, such as the potential beddown of an Adversary Air squadron or changes in the fleet mix. The 2018 Installation Complex Encroachment Management Plan Action Plan (ICEMAP) prepared for the Oregon ANG recommends that the 173rd Fighter Wing complete noise modeling as part of the Adversary Air squadron beddown to address the change in operations. The noise modeling could be included in a future Air Installation Compatible Use Study (AICUZ) (35). The revised data would be available to the City of Klamath Falls for future revision of its ASHPO and for use by both the City and County during future land use planning activities.

Figure EO-15 : Aircraft Noise Exposure



Source: City of Klamath Falls Airport Overlay Zone.

Figure EO-16 : City of Klamath Falls Zoning and Noise Contours



Source: Draft JLUS for Kingsley Field, Figure 5.10-2.

12. SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

12.1 SOCIOECONOMICS

The potential effects of proposed airport projects can extend to nearby neighborhoods and communities to cause direct or indirect socioeconomic impacts. The principal social impacts that should be considered during project analyses include those associated with relocation or other community disruption, transportation, planned development, and employment. Proposed master plan projects, especially projects that would extend beyond current airport boundaries, could cause the relocation of residents or businesses, disrupt an established community, affect transportation patterns, or conflict with off-site development plans or land uses. Project implementation may also affect employment by creating temporary or permanent jobs associated with airport development or by relocating jobs to another location.

Considerations

To achieve NEPA compliance, proposed master plan projects must be evaluated for their potential to create temporary or permanent socioeconomic effects. Although socioeconomic impacts are unlikely, the NEPA analyses performed prior to FAA approvals will address the potential for proposed projects to cause temporary or permanent direct and indirect effects to off-site businesses, residents and neighborhoods, and employment.

12.2 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

NEPA requires project sponsors and federal agencies to consider environmental health risks and safety risks that may disproportionately affect children and to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Children's Health and Safety Risks are generally risks that would be attributable to products or substances children are likely to encounter or ingest through air, food, drinking water, recreational waters, soil, or other products that children might use or to which they might be exposed. The Hosanna Christian Academy is located 0.6 miles northwest of the airport, and Brixner Junior High School is located about 1 mile northwest of the airport. In addition, Little League baseball fields are located approximately 200 feet from the airport's northern boundary

Considerations

Proposed master plan projects have the potential to create temporary and permanent impacts to air quality, soil, and water. Environmental studies will be performed to identify potential project-related effects to air quality, water quality, and other resources in accordance with NEPA, and the results of these analyses will be used to determine whether any project-related environmental impacts have the to cause direct and indirect effects to children.

12.3 ENVIRONMENTAL JUSTICE

Environmental justice is 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 that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial 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.

Pursuant to Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and the FAA's implementing guidance, project sponsors must consider whether a proposed action could cause disproportionately high and adverse effects on low-income or minority populations. Demographic information for Klamath County is presented in **Table EO-8, *Summary of Demographic Data for Klamath County, Oregon***.

Table EO-8 : Summary of Demographic Data for Klamath County, Oregon

Demographic	Data
Total County Population	66,935
White	88.60%
Black or African American	1.00%
American Indian and Alaska Native	4.90%
Asian	1.20%
Native Hawaiian and Other Pacific Islander	0.20%
Two or More Races	4.20%
Hispanic or Latino	13.10%
White (Non-Hispanic)	77.80%
Total number of Households	27,084
Persons per household	2.39
Percent persons in poverty	19.00%

Source: U.S. Census Bureau, Klamath Falls, Oregon (Population estimates, July 1, 2017)

CONSIDERATIONS

If potential impacts are identified in association with the preferred alternative, further analysis will be performed to determine whether those impacts could disproportionately affect minority or low-income populations.

- If environmental justice communities are identified that could be affected by proposed master plan projects, the City will make a concerted effort to reach out those communities to provide meaningful involvement early in the NEPA analysis.
- If potential environmental impacts would occur in association with proposed master plan projects, the City will perform further analysis to determine whether project-related impacts have the potential to disproportionately affect minority or low-income populations.

13. VISUAL EFFECTS (LIGHT EMISSIONS/VISUAL RESOURCES)

Visual effects refer to the extent to which a project would emit light that creates annoyance or interferes with other activities, contrasts with or detracts from visual resources, or affects the visual character of the existing environment.

13.1 LIGHT EMISSIONS

Light emissions include any light that originates from a light source into the surrounding environment. Airport light emissions include airfield and apron floodlighting, navigational aids, airport structures, parking facilities, and roadway lighting. Proposed master plan projects could introduce new light sources associated with new structures, roadways, and aviation facilities.

Considerations

New or relocated light sources have the potential to affect nearby visual receptors. Sensitive visual receptors include nearby residents on adjacent agricultural parcels and residents north of Highway 140. Potential light emissions associated with proposed airport projects have the potential to increase light exposure to nearby residents. Prior to approval of the ALP or near-term project approvals, the City will consider the potential impact of temporary construction lighting and permanent project-related lighting on adjacent properties, specifically nearby residences. To avoid and reduce potential effects, project designs will incorporate mitigation measures, such as light shields and downward facing lights to avoid impacts to off-site visual receptors.

13.2 VISUAL RESOURCES AND CHARACTER

Visual resources include buildings, cultural properties, and other natural or constructed landscape features that are visually important or have unique characteristics. LMT is situated near the eastern slopes of the Cascade Mountains and South of Upper Klamath Lake. Landmarks in the region include Mount Shasta and Crater Lake. The Airport and the City of Klamath Falls are surrounded by a pristine landscape of national

forests, mountains, marshes, and lakes that is well known for its abundance of diverse wildlife and its role as an important staging area for migratory birds. The areas immediately adjacent to the east, south, and west of the airport are characterized by farmland with open water ponds and basins. Although some open space is present north of the airport (south of the railroad line), the area north Highway 140 is characterized by suburban residential development.

Considerations

The Klamath County Comprehensive plan designates the airport as a Public Facility (PF). The implementation of master plan projects is unlikely to create visual contrast with existing facilities as they would remain within the visual context of an airport and other industrial uses. The implementation of proposed master plan projects will not obstruct views of nearby terrain or landforms.

14. WATER RESOURCES

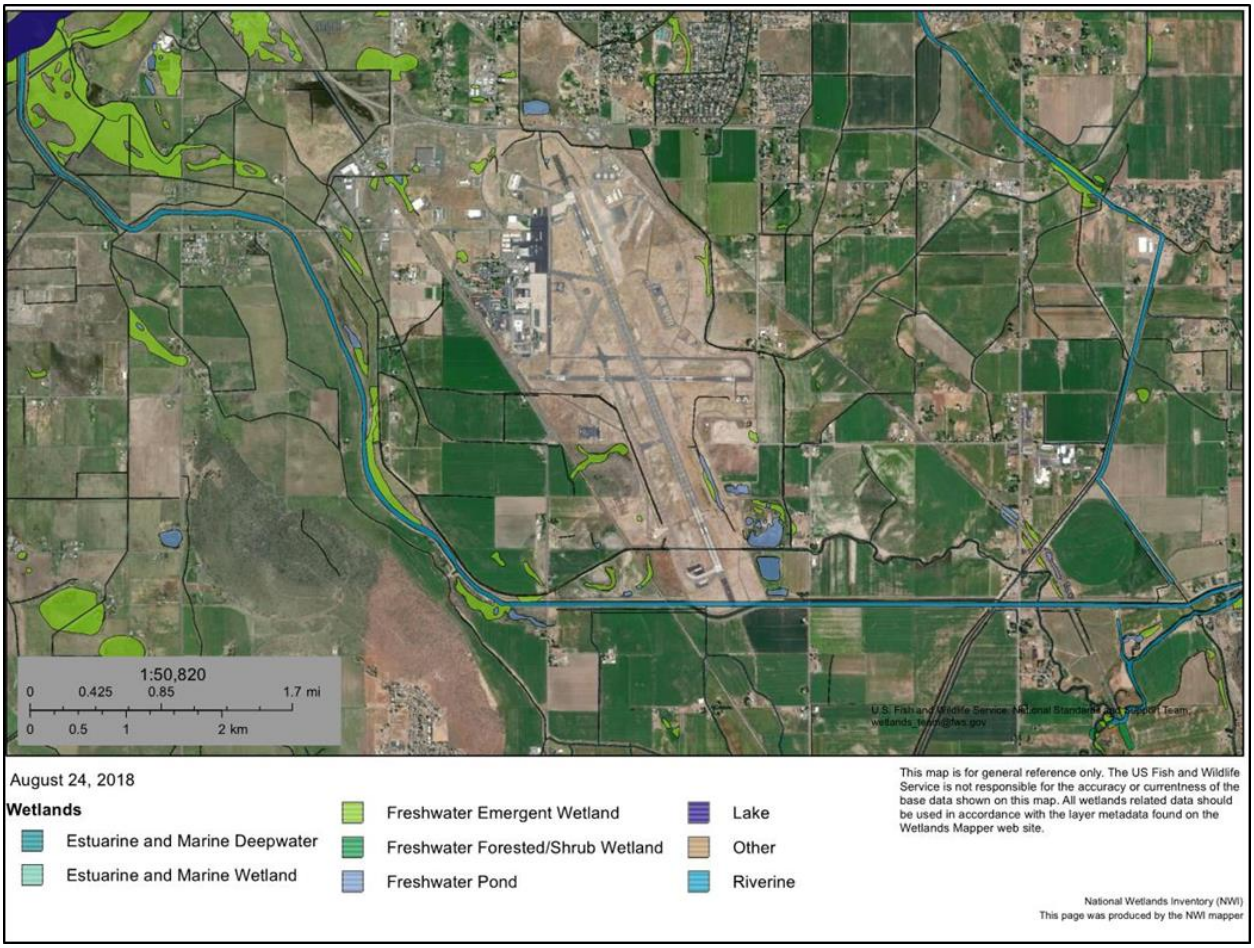
14.1 WETLANDS

Wetlands are protected under the Clean Water Act, Section 404, which requires a project applicant to obtain a permit from the U.S. Army Corp of Engineers (Corps) or authorized state for the discharge of dredged or fill material into waters of the United States. Executive Order 11990 directs Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Oregon's Removal-Fill Law (ORS 196.795-990), enacted in 1967, was created to ensure protection and the best use of Oregon's water resources for home, commercial, wildlife habitat, public navigation, fishing, and recreational uses. The Oregon Department of State Lands (DSL) is responsible for developing and maintaining the Statewide Wetlands Inventory (SWI). The inventory consists of the Local Wetlands Inventory (LWI), the National Wetlands Inventory (NWI), and DSL-approved wetland delineation mapping (22, 23).

The NWI map identifies freshwater emergent wetlands in the southern portion of the airport and adjacent to the eastern airport boundary (see **Figure EO-17, *National Wetlands Inventory Map***). Freshwater ponds are identified adjacent to the airport's eastern and northern boundaries (22). No additional wetlands at LMT were listed on the LWI (23). (NWI maps provide an overview of potential resources for planning purposes. The presence and extent of these resources require confirmation through the performance of a wetland delineation.)

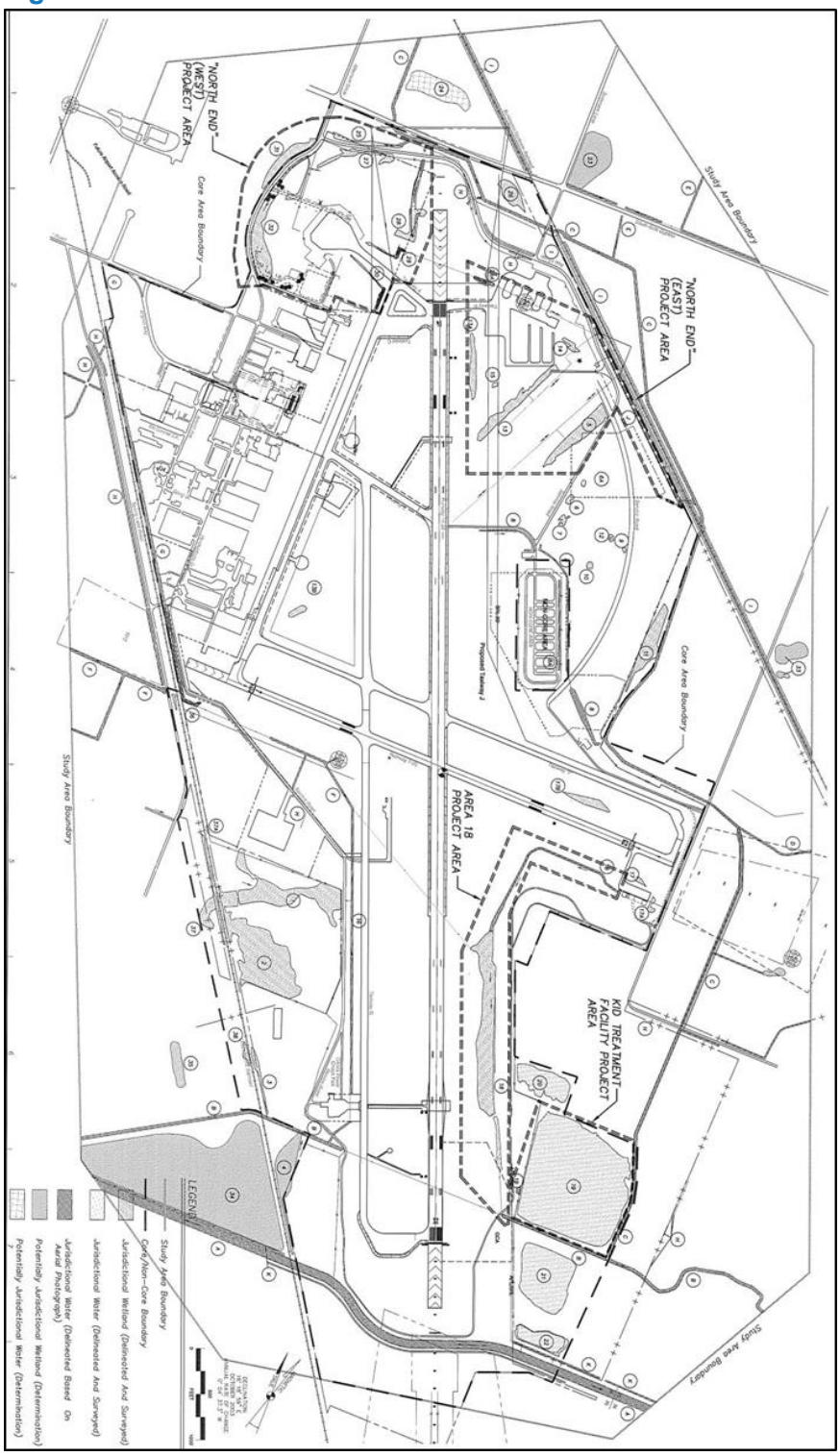
The City/Airport undertook a wetland delineation at the airport in 2006, in accordance with protocols set forth by the Corps (25), which includes several jurisdictional wetlands in the southern portion of the airport (see **Figure EO-18, *2006 LMT Wetland Delineation***).

Figure EO-17 : LMT Wetlands Inventory



Source: U.S. Fish and Wildlife Service

Figure EO-18 : 2006 LMT Wetland Delineation



Source: W & H Pacific, 2006.

Considerations

The FAA is the lead Federal agency under NEPA and is the lead for actions under its jurisdiction, including those that have the potential to affect jurisdictional wetlands and waters of the U.S. Otherwise, the Corps serves as the lead Federal agency when a proposed action has the potential to affect jurisdictional wetlands and waters of the U.S.

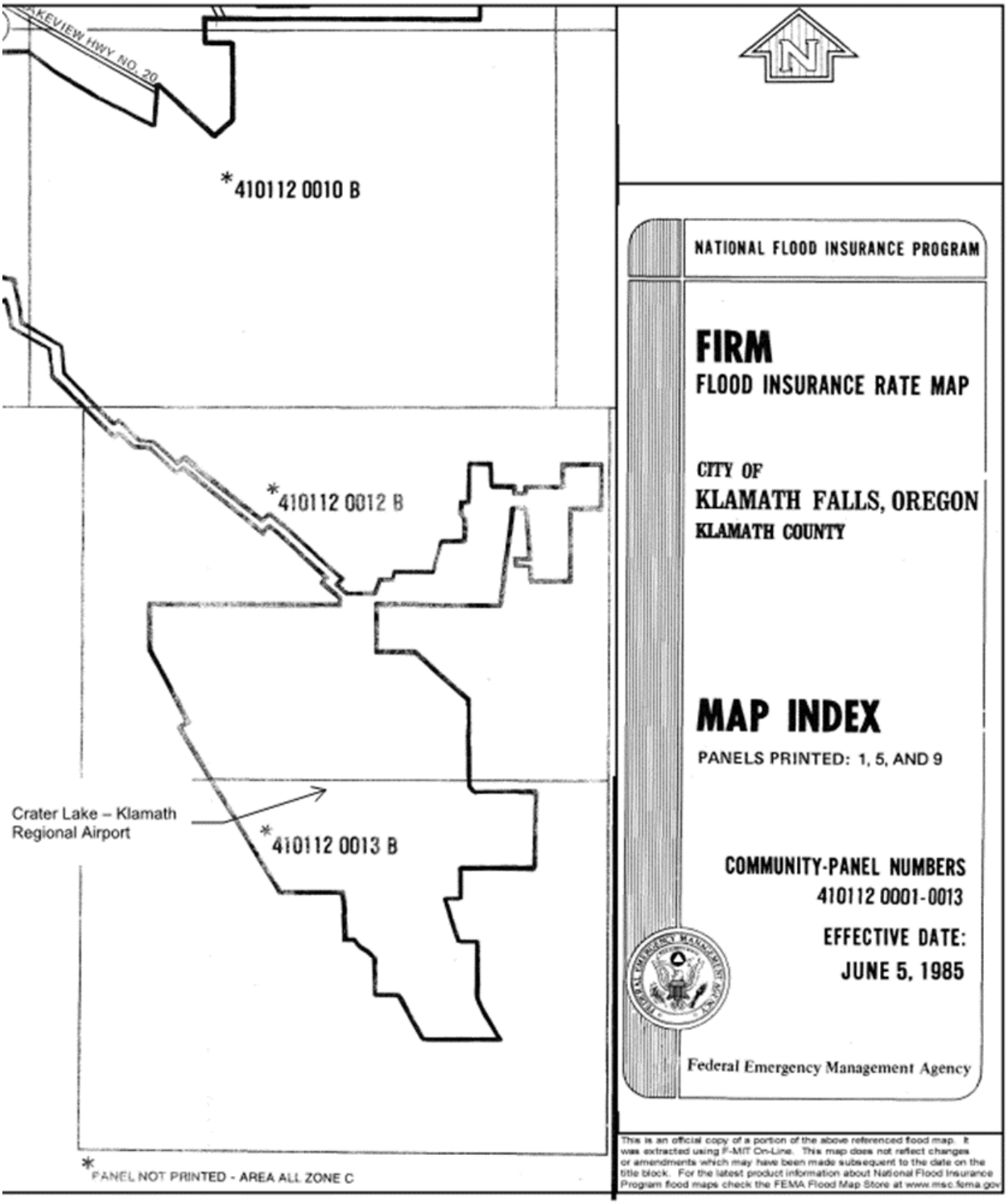
Wetland areas were identified at LMT during a 2006 delineation and NWI mapping. Based on the age of the current wetland delineation, it is likely that new delineation may be necessary using Corps methods to identify or verify the location of jurisdictional wetlands and waters of the U.S. The supplemental data will be used to determine the potential effect of proposed master plan projects on wetlands and waters of the U.S.

14.2 FLOODPLAINS

Executive Order 11988 requires federal agencies "to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of 100-year floodplains (areas subject to inundation by a 1 percent annual chance of flood) and to avoid direct or indirect support of floodplain development whenever there is a practical alternative." Any proposed project taking place in a Federal Emergency Management Agency (FEMA)-mapped floodplain must comply with the community's FEMA-approved floodplain management plan, if such a plan exists. Klamath County Article 59, Flood Hazard Overlay, identifies potential flood hazard areas as those areas identified by FEMA Flood Insurance Rate Maps (FIRM) as land within the 100-year flood level (20).

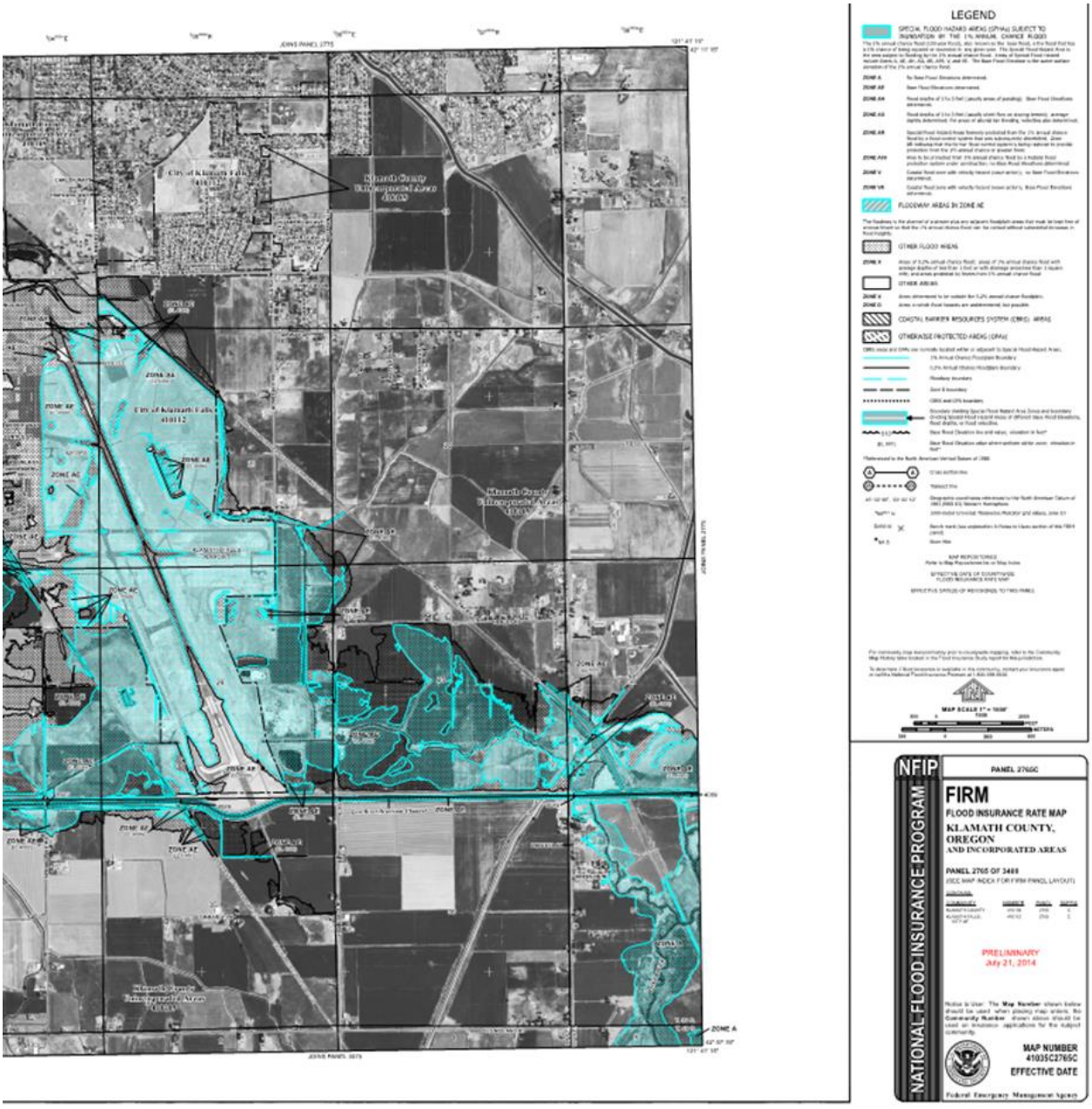
The effective map index for the City of Klamath Falls, Oregon, shows that LMT is included within the bounds of FEMA's FIRM Nos. 4101120012B and 4101120013B (see **Figure EO-19, *Flood Insurance Rate Map for the City of Klamath Falls, Oregon***) (26). As shown, the entire airport is classified as Zone C, area of minimal flood hazard (25). However, in 2014, FEMA issued a Preliminary FIRM that shows LMT within the 100-year floodplain (see **Figure EO-20, *Preliminary Flood Insurance Rate Map***). FEMA is in the process of revising the Preliminary FIRM which is scheduled for release in Summer 2019. The City and County are working with FEMA to identify appropriate flood protection measures that would enable LMT to remain outside of the 100-year floodplain (34).

Figure EO-19 : Flood Insurance Rate Map for the City of Klamath Falls, Oregon



Source: FEMA Map Panel, 2018.

Figure EO-20 : Preliminary Flood Insurance Rate Map



Source: FEMA, 2018.

Considerations

Under the current effective FIRM map, LMT is outside of the 100-year floodplain. If FEMA finalizes the preliminary map, LMT would be within the Klamath County Flood Hazard Overlay and subject to flood zone building restrictions. Proposed master plan projects would be designed in accordance with those restrictions. Section 12.55 of the City of Klamath Falls Comprehensive Plan includes a Flood Overlay Zone, which designates "Areas of Special Flood Hazard" as illustrated in the current FIRM (20). If FEMA revises its floodplain maps to identify airport property within the 100-year floodplain, LMT would be within the Klamath County Flood Hazard Overlay and subject to flood zone building restrictions. Pursuant to Order 11988, the FAA would require the City to prepare all proposed project designs to minimize adverse impacts to the floodplain. If FEMA finalizes its preliminary FIRM for the Klamath Falls area (26), the City would revise the Overlay Zone to include the airport property. Proposed master plan projects would be subject to applicable zoning ordinances and building codes for projects located within a floodplain.

14.3 SURFACE WATER

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans. Pursuant to FAA Order 1050.1F, project sponsors must identify the extent to which the construction and operation of proposed facilities may affect surface waters.

The Oregon Bureau of Reclamation constructed the Klamath Project, which provides irrigation water to the Klamath basin during the dry summer months. Stormwater runoff at LMT is collected in drainage channels that were constructed as part of the Klamath Project and ultimately discharge to the Lost River through the No. 1 Drain at the south end of the airport, which is regulated by the Klamath Irrigation District (KID).

The Lost River, which flows south and eventually discharges into Tule Lake located in northern California, is located approximately 3 miles east of LMT. The Klamath River, which flows to the southwest, is located approximately 3 miles west of LMT. The Klamath Project regulates the flow from the Lost River during the irrigation cycles. The Lost River Diversion Canal (LRDC) is an east-west flowing corridor located immediately south of the end of Runway 14-32 that connects the Lost River to the Klamath River at the Lost River Diversion Dam. During the non-irrigation season, flow is diverted from the Lost River westward through the LRDC to the Klamath River. During the irrigation season, flow is reversed, and water is diverted eastward from the Klamath River to the Lost River. However, the No. 1 Drain discharges to the Lost River downstream of the Lost River Diversion Dam. Therefore, the flow from LMT is not diverted to the Klamath River (10). The Lost River is classified under the Clean Water Act as a 303(d) Impaired Waterbody. The waterbody is specifically impaired for ammonia, chlorophyll, dissolved oxygen, and temperature. A Total Maximum Daily Loads for Lost River was issued in 2010.

Considerations

Proposed master plan projects have the potential to affect water quality and hydrology in nearby surface waters through increased run-off from new impermeable surfaces or changes in hydrologic patterns. Pursuant to FAA Order 1050.1f, the City must consider the extent to which proposed master plan projects may affect nearby surface water by exceeding federal, state, or local water quality standards or contaminating a public drinking water supply to adversely affect public health. Although runoff from LMT

eventually drains to an impaired water body, the runoff first discharges the No. 1 Drain, eliminating the need for surface water sampling (10). Surface water is not used as a source of drinking water. To comply with FAA Order 10501.F, water quality management will be considered during the design of proposed master plan projects. Examples of design-related mitigation measures include but are not limited to: reducing the amount of area disturbed construction, incorporating erosion and sediment control measures, and preparing plans in accordance with the City's SWPSPP.

14.4 GROUNDWATER

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The Safe Water Drinking Act applies to projects proposed by federal agencies. The Act prohibits federal agencies from funding actions that would contaminate an EPA-designated sole source aquifer or its recharge area.

The City of Klamath Falls obtains water from deep groundwater wells ranging from 300 feet to more than 1,000 feet deep (27). The City's 2017 Water Quality Report indicates that water quality is excellent, exceeding federal and state drinking water standards (28). Based on the presence of a perched water table and shallow depth to groundwater, proposed projects are unlikely to affect the City's drinking water supply. LMT is located on a perched aquifer with a shallow depth to groundwater that averages 4 feet below the ground surface. Soil borings performed in support of Taxiway B improvements encountered groundwater at depths ranging from 3 to 11 feet below the ground surface. Groundwater has been encountered at depths as shallow as 18 inches during periods of heavy precipitation (29). In addition, the soils at LMT are porous soils but they are underlain by an impervious clay layer.

Considerations

Pursuant to FAA Order 1050.1F, the City will consider potential effects of the proposed project on shallow groundwater resources as well as the effect of elevated groundwater table on project design and construction.

14.5 WILD AND SCENIC RIVERS

Wild and scenic rivers are those rivers having remarkable scenic, recreational, geologic, fish, wildlife, historic, or cultural values as defined by the Wild and Scenic Rivers Act. The primary federal law governing Wild and Scenic Rivers is the Wild and Scenic Rivers Act. Four federal agencies administer the act: the Bureau of Land Management, the National Park Service, the USFWS, and the U.S. Forest Service. If the FAA or another federal agency proposes or authorizes an action that would affect resources covered by the Wild and Scenic Rivers Act, consultation with the appropriate federal agency is required.

The nearest designated Wild and Scenic River identified on the National Wild and Scenic Rivers map is a portion of the Klamath River, which is located 17.5 miles southwest of the project site (30). As identified in **Section 14.3, *Surface Water***, flow from LMT is not diverted to the Klamath River but to the Lost River following conveyance to Klamath Irrigation District Drain No. 1.

REFERENCES

State of Oregon Department of Environmental Quality (Oregon DEQ). 2018. Air Quality Division. Maintenance Areas in Oregon and Nonattainment Areas. Accessed August 16, 2018. Available online at https://www.oregon.gov/deq/aq/pages/default.aspx.

Federal Aviation Administration (FAA). 2015. Order 1050.1F, *Environmental Impacts: Policies and Procedures.* Federal Aviation Administration, Washington, D.C. Available at: *https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf.*

United States Fish and Wildlife Service (USFWS). 2018. Information for Planning and Consultation (IPaC). Accessed August 20, 2018. Available at: https://ecos.fws.gov/ipac/. Accessed August 15, 2018. Available at: https://www.fws.gov/oregonfwo/documents/RecoveryPlans/Applegates_Milk_Vetch_RP.pdf/.

United States Fish and Wildlife Service (USFWS).1998. *Applegate's milk-vetch (Astragalus applegatei) Recovery Plan.* U.S. Fish and Wildlife Service, Portland, Oregon. Accessed August 2018. Available at: https://www.fws.gov/oregonfwo/documents/RecoveryPlans/Applegates_Milk_Vetch_RP.pdf.

U.S. Fish and Wildlife Service. 2008. *Atragalus applegatei (Applegate's Milk-vetch) 5-Year Review Summary and Evaluation*. Klamath Falls Fish and Wildlife Office, Klamath Falls, Oregon. Accessed August 2016. Available at: https://esadocs.cci-dev.org/ESAdocs/five_year_review/doc2380.pdf.

Federal. Aviation Administration. 2007. Advisory Circular 150/5200-33B, "Wildlife Hazard Attractants On and Near Airports. Accessed 2016. Available at: https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5200-33B.pdf.

Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey. Accessed August 22, 2018. Available at https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

U.S. Environmental Protection Agency (EPA). 2018. National Priorities List. Accessed August 21, 2018. Available at: https://www.epa.gov/superfund/superfund-national-priorities-list-npl.

Oregon Department of Environmental Quality. 2018. Hazards and Cleanup. Environmental Cleanup Site Information Database. Accessed August 21, 2018. Available at https://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/ecsi.aspx.

City of Klamath Falls. 2017. *Stormwater Pollution and Spill Prevention Plan (SWPSPP), Crater Lake Klamath Regional Airport.* NPDES File No. 106838. December 27, 2017.

City of Klamath Falls, 2016. 2016. *Kingsley Field Joint Land Use Study.* Prepared by Matrix Design Group.

SWCA Environmental Consultants (SWCA). April 3, 2007. Cultural Resource Inventory for The Klamath Falls Airport/Kingsley Field, Klamath County, Oregon. SWCA Cultural Resources Report No. 12459-227. Portland, Oregon.

SWCA Environmental Consultants (SWCA). November 21, 2014. Cultural Resource Inventory for Taxiway G Improvements at Kingsley Field, Klamath Falls Airport, Klamath County, Oregon. SWCA Cultural Resources Report No. 14-648. Portland, Oregon.

City of Klamath Falls. January 2005. *Klamath Falls Airport Master Plan Report.* Prepared by Mead & Hunt, Inc. Accessed August 2018. Available at; http://www.flykfalls.com/airport-information/airport-master-plan.

City of Klamath Falls. 1981. *City of Klamath Falls Comprehensive Plan.* Klamath Falls, Oregon. Accessed August 2018. Available at: https://www.klamathfalls.city/sites/www.klamathfalls.city/assets/files/WholeCompPlan.1.pdf

Oregon Department of Aviation. 2003. *Airport Land Use Compatibility Guidebook.* Salem, Oregon. Available at: https://www.oregon.gov/aviation/docs/resources/cover.pdf.

Klamath County. 2018. County Zoning Map. Accessed August 2018. Available at: http://klamathmap.houstoneng.net/

Klamath County Comprehensive Plan, 2010 Audit. 2010. Klamath County, Oregon. Accessed August 2018. Available at: https://www.klamathcounty.org/DocumentCenter/View/2682/Complete-Plan-PDF?bidId.

Moritz. Jon. September 20, 2018. Email communication from Adkins Consulting, to J. Smith, Mead & Hunt.

City of Klamath Falls, 2017. Zoning Ordinance, Chapter 12. Accessed August 2018. Available at: https://www.klamathfalls.city/sites/www.klamathfalls.city/assets/files/CDO_Chapter_12_Second_reading_.pdf.

U.S. Census Bureau. 2017. U.S. Census Quick Facts: Klamath Falls, Oregon (Population estimates, July 1, 2017). Accessed September 2018. Available at: https://www.census.gov/quickfacts/fact/table/klamathcountyoregon,US/PST045217 9/21/2018

USFWS. 2018. National Wetlands Inventory. “Wetlands Mapper.” Accessed August 24, 2018. Available at: https://www.fws.gov/wetlands/Data/Mapper.html.

State of Oregon Department of State Lands (DSL). 2018. Waterways and Wetlands Local Wetlands Inventories. Accessed August 24, 2018.Available at https://www.oregon.gov/dsl/WW/Pages/Inventories.aspx.

W&H Pacific. 2006. Wildlife Hazard Management Implementation Plan – Jurisdictional Wetlands and Waters Map. October 25, 2006.

Federal Emergency Management Agency (FEMA). 2018. FEMA Flood Map Service Center. Flood Insurance Rate Map for the City of Klamath Falls, Oregon. Accessed August 2, 2018. Available at: https://msc.fema.gov/portal.

Federal Emergency Management Agency (FEMA). 2018b. Preliminary FEMA Map Products. Accessed August 28, 2018. Available at : https://hazards.fema.gov/femaportal/prelimdownload/.

City of Klamath Falls. 2010. City of Klamath Falls Water Master Plan, March 2010. Prepared by CDM. Available at: https://www.klamathfalls.city/sites/www.klamathfalls.city/files/FINAL_Klamath%20Falls_WaterMasterPlan_March2010.pdf

City of Klamath Falls . 2017. City of Klamath Falls Water Quality Report. Water Division. Klamath Falls, Oregon. Available at: https://www.klamathfalls.city/sites/www.klamathfalls.city/assets/files/WQR-KlamathFalls_2017-Web.pdf.

GGI Technical Services, Inc. 2015. Geotechnical Report, Crater Lake – Klamath Regional Airport, Taxiway "J" Project, Klamath Falls, Oregon. Redding, CA.

National Wild and Scenic Rivers System (National System). 2018. Klamath River, Oregon. Available online at https://www.rivers.gov/rivers/klamath-or.php Accessed July 17, 2018.

State of Oregon Department of Land Conservation and Development. (DLCD) 2018. Oregon Coastal Management Program. Available online at https://www.oregon.gov/LCD/OCMP/pages/cstzone_intro.aspx. Accessed August 20, 2018

State of Oregon Parks and Recreation Department (OPRD). 2018. Heritage Program. Oregon Historic Sites Map. Available online at http://maps.prd.state.or.us/histsites/historicsites.html. Accessed August 24, 2018

Barsalou, J. September 25, 2018. Personal Communication. Email from Klamath Falls Airport Manager to M. Thompson, Mead and Hunt, Inc

Barsalou, J. November 28, 2018. Personal Communication. Email from David M. Ratte, Regional Engineer, FEMA Region X forwarded by Klamath Falls Airport Manager to M. Thompson, Mead & Hunt, Inc.

United States Air Force November 2018. Kingsley Field Air National Guard Base, Installation Complex Encroachment Management Action Plan (ICEMAP), Volume III: Community Brochure.

ATTACHMENT A – ENVIRONMENTAL OVERVIEW SUPPORTING DATA

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Klamath Falls Fish And Wildlife Office
1936 California Avenue Klamath Falls, OR 97601

Phone: (541) 885-8481 Fax: (541) 885-7837

In Reply Refer To:

Consultation Code: 08EKLA00-2018-SLI-0133 Event Code: 08EKLA00-2018-E-00350
Project Name: Master Plan

August 20, 2019 Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). For anadromous fish species (i.e., salmon), please contact the National Marine Fisheries Service at http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html.

Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. These provisions apply to non-Federal lands when there is a Federal nexus (e.g., funding or permits).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally threatened, endangered, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular

intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.;* http://www.fws.gov/midwest/eagle/protect/laws.html). The Service developed the National Bald Eagle Management Guidelines (http://www.fws.gov/ northeast/ecological services/eaglenationalguide.html) to provide guidance on measures that may be used to avoid and minimize adverse impacts to bald eagles. Projects affecting bald or golden eagles may require development of an eagle conservation plan (http://www.fws.gov/windenergy/ eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds, including bald and golden eagles, and bats.

The Migratory Bird Treaty Act (16 U.S.C. 703-712; http://www.fws.gov/midwest/eagle/protect/ laws.html) implements protections for migratory birds. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/ CurrentBirdIssues/Hazards/ towers/towers.htm; http://www.towerkill.com; and http:// www.fws.gov/migratorybirds /CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project that you submit to our office.

For projects in California, the office shown in the letterhead may not be the lead office for your project. Table 1 below provides lead Service field offices by county and land ownership/project type for northern California. Please refer to this table when you are ready to contact the field office corresponding to your project; a map and contact information for the Pacific Southwest Region field offices is located here: http://www.fws.gov/cno/es/.

Table 1: Lead Service offices by County and Ownership/Program in Northern California

County	Ownership/Program	Office Lead*
Lassen	Modoc National Forest	KFFWO
	Lassen National Forest	SFWO
	Toiyabe National Forest	RFWO
	BLM Surprise and Eagle Lake Resource Areas	RFWO
	BLM Alturas Resource Area	KFFWO
	Lassen Volcanic National Park	SFWO
Modoc	Modoc National Forest	KFFWO
	BLM Alturas Resource Area	KFFWO
	Klamath Basin National Wildlife Refuge Complex	KFFWO

	BLM Surprise and Eagle Lake Resource Areas	RFWO
	All other ownerships	
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	YFWO
	Hat Creek Ranger District	SFWO
	Whiskeytown National Recreation Area	YFWO
	BLM Alturas Resource Area	KFFWO
	Caltrans	SFWO/AFWO
	Ahjumawi Lava Springs State Park	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	YFWO
	Six Rivers National Forest and Ukonom District of Klamath National Forest	AFWO
	Shasta Trinity National Forest	YFWO
	Lassen National Forest	SFWO
	Modoc National Forest	KFFWO
	Lava Beds National Volcanic Monument	KFFWO
	BLM Alturas Resource Area	KFFWO
	Klamath Basin National Wildlife Refuge Complex	KFFWO
	All	FERC-ESA

*Office Leads:
AFWO=Arcata Fish and Wildlife Office BDFWO=Bay Delta Fish and Wildlife Office KFFWO=Klamath Falls Fish and Wildlife Office RFWO=Reno Fish and Wildlife Office YFWO=Yreka Fish and Wildlife Office

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Klamath Falls Fish And Wildlife Office

1936 California Avenue
Klamath Falls, OR 97601
(541) 885-8481

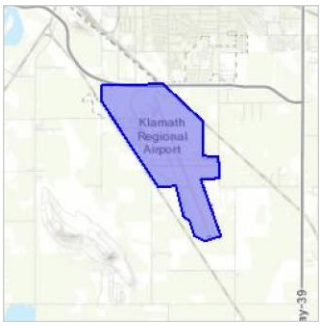
This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Oregon Fish And Wildlife Office

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
(503) 231-6179

Project Summary

Consultation Code:	08EKLA00-2018-SLI-0133
Event Code:	08EKLA00-2018-E-00350
Project Name:	Master Plan
Project Type:	** OTHER **
Project Description:	Airport Master Plan
Project Location:	Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.156816045489734N121.73404121657015W



Counties: Klamath, OR

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Flowering Plants

NAME	STATUS
Applegate's Milk-vetch *Astragalus applegatei*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5497	
Slender Orcutt Grass *Orcuttia tenuis*	Threatened
There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	

Conifers and Cycads

NAME	STATUS
Whitebark Pine *Pinus albicaulis*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	DESCRIPTION	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus*	This is not a Bird of Conservation Concern (BCC) in this area but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Clark's Grebe *Aechmophorus clarkii*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska	Breeds Jan 1 to Dec 31
Golden Eagle *Aquila chrysaetos*	This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Lesser Yellowlegs *Tringa flavipes*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Lewis's Woodpecker *Melanerpes lewis*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska	Breeds Apr 20 to Aug 5
Willet *Tringa semipalmata*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Olive-sided Flycatcher *Contopus cooperi*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Tricolored Blackbird *Agelaius tricolor*	This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10

.

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish

a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high. How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

probability of presence breeding season survey effort no data

Additional information can be found using the following links:

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

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s)that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1F
- PEM1A

FRESHWATER POND

- PABFx

RIVERINE

- R2UBHx
- R4SBCx
- R5UBFx
- R5UBH
- R2ABFx

CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Mead&Hunt