CHAPTER 1
INVENTORY

CHAPTER 1 - INVENTORY

CHAPTER OVERVIEW

This chapter provides an overview of the infrastructure, assets, services, and surrounding natural environment for the Rogue Valley International – Medford Airport (MFR). Information is based on airport records, information published by federal, state, and local agencies, and firsthand accounts from airport management, tenants, and users. The Inventory chapter serves as the basis for the assessments and recommendations described in the Master Plan (the Plan).

The Inventory Chapter includes the following sections:

- Airport Overview
- Aeronautical Facilities
- Non-Aeronautical
- Passenger Terminal
- Automobile Parking and Surface Transportation
- Airport Climate Data
- Airport Environmental Review

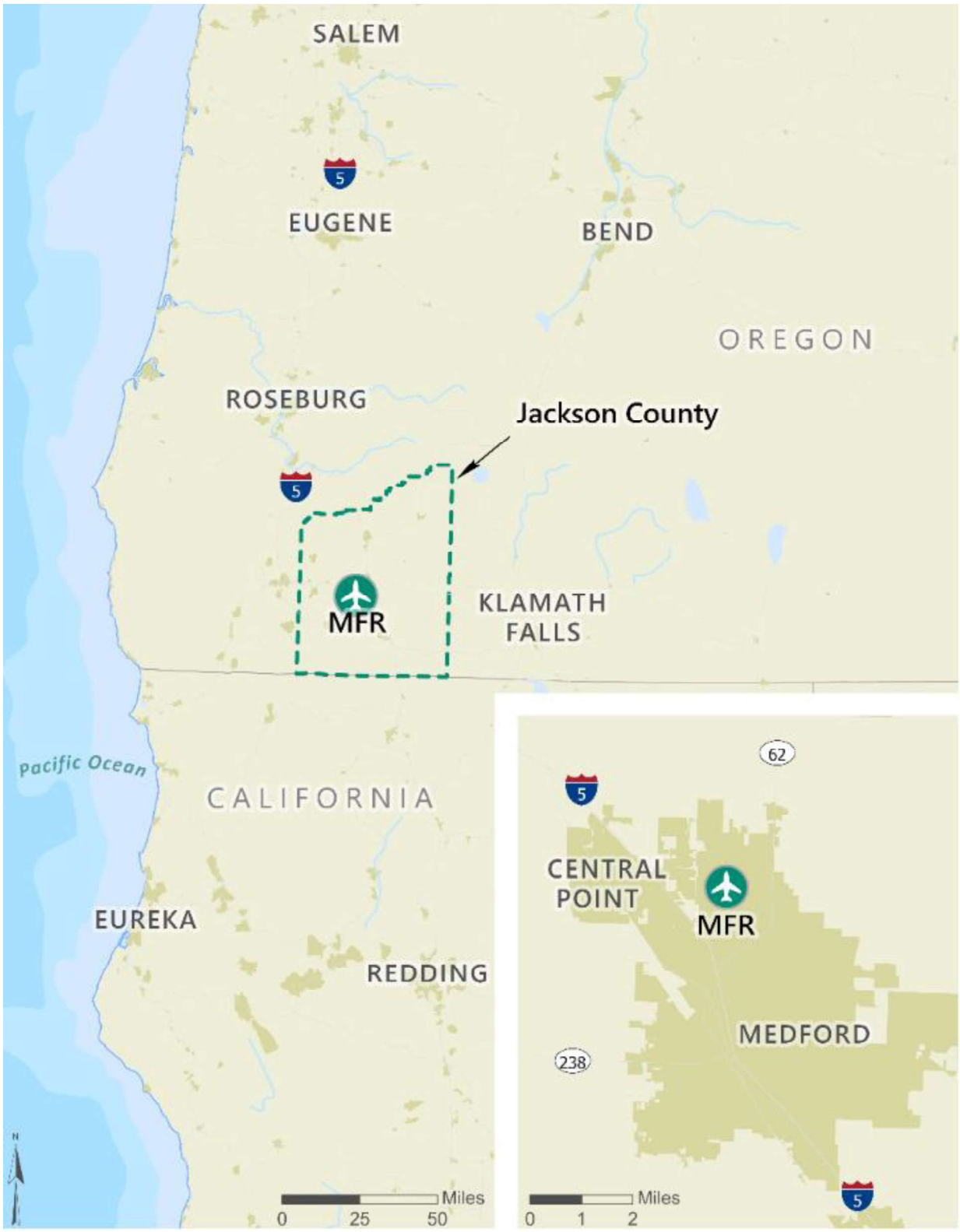
AIRPORT OVERVIEW

This section gives an overview that covers location, history, role in the community, property interests, and the components of airport operation. MFR is a public use airport owned by Jackson County and is managed by the Jackson County Aviation Authority. The airport director oversees the daily operation and maintenance activities of the airport to ensure the safety and efficiency of operations.

Airport Location

MFR is located in Southern Oregon, in the City of Medford in Jackson County **Figure 1-1**. MFR is part of the Rogue Valley region along the Rogue River. MFR's location allows highway access for travel to the California border approximately 30 miles south, to Klamath Falls 75 miles east, and to the Pacific Coast 118 miles west. MFR is located near the Pacific Highway, or Interstate 5 (I-5). The roads surrounding MFR all provide easy connectivity to I-5 **Figure 1-3**.

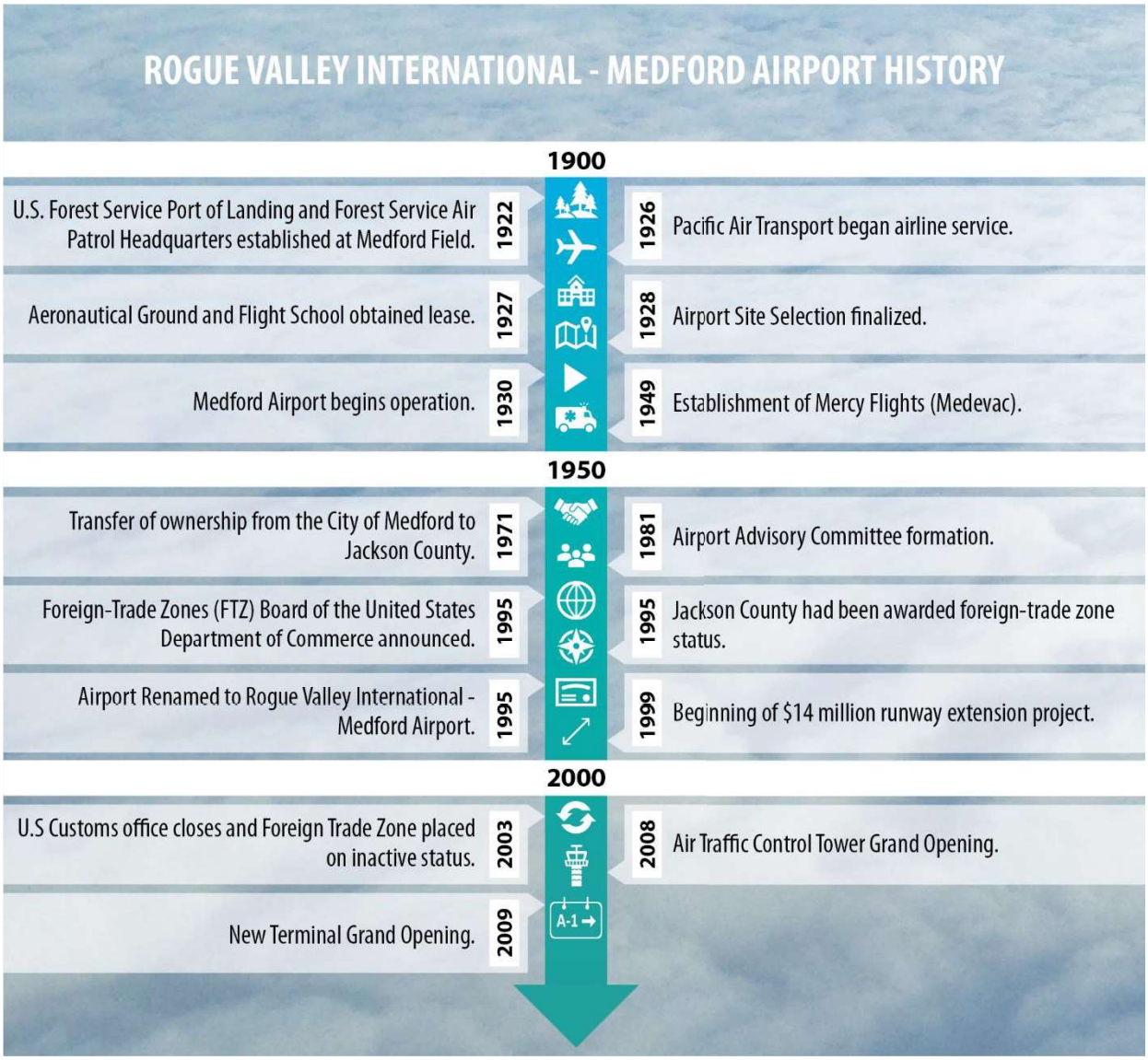
Figure 1-1: Airport Location



Airport History

Rogue Valley and MFR hold a rich history of aviation in the state of Oregon. Land for the airport was originally purchased in 1922 to provide a port of landing for the U.S. Forest Service (USFS) and headquarters for the Forest Service Air Patrol. The land purchased, former fairgrounds, was located on the south edge in the City of Medford. The property was referred to as the Medford Field or Newell Barber Field. The original airfield consisted of a gravel runway 1,500 feet long by 25 feet wide. In 1926, a mail route from Los Angeles, California, to Seattle, Washington, was established. When the mail route was mapped, the city of Ashland was identified as a center point and possible site for a future terminal. Given Medford's proximity to Ashland, the city of Medford began efforts to establish a new municipal airport at the USFS site to accommodate the mail route. In 1971, the ownership of MFR was transferred to Jackson County. The timeline below (**Figure 1-2**) provides a summary of events in MFR's history.

Figure 1-2: Airport History



MFR received approximately $49 million of AIP funds from 2010 to 2018 to support runway, taxiway, and terminal improvements and maintenance **Table 1-1**. These improvements continue to support passenger growth in the future.

Table 1-1: AIP Federal Fund Grant History 2010-2018

Year	Grant Number	AIP Federal Funds	Brief Description of Work
2010	36	$ 525,000	Update Master Plan Study
	35	$ 1,137,989	Construct Terminal Building
2011	37	$ 1,985,000	Acquire Snow Removal Equipment, Rehabilitate Taxiway
2012	38	$ 8,701,508	Acquire Safety Equipment and/or Fencing, Rehabilitate Runway 14/32, Rehabilitate Taxiway
2013	38	$ 7,458,024	Rehabilitate Runway 14/32
2014	40	$ 910,918	Conduct Miscellaneous Study, Construct Snow Removal Equipment Building
2015	41	$ 3,873,540	Construct Snow Removal Equipment Building
2016	42	$ 11,973,839	Rehabilitate Apron, Rehabilitate Taxiway
2017	43	$ 10,855,000	Construct Taxiway, Rehabilitate Taxiway
2018	44	$ 648,454	Improve Terminal Building
	45	$ 551,546	Conduct Environmental Study
Total		**$ 48,620,818**	

Source: FAA Grant History 2010-2018

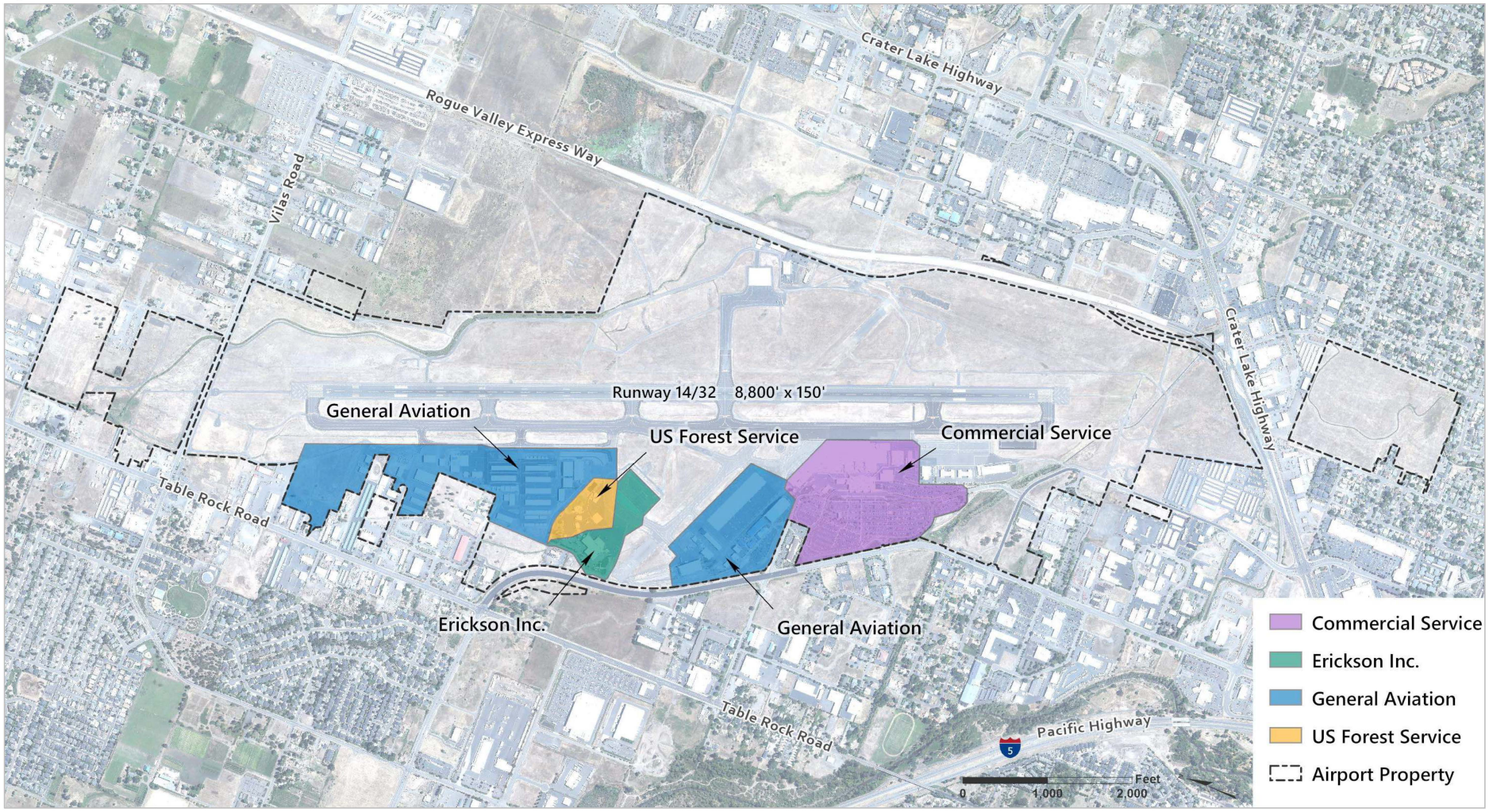
Airport Property

MFR has a total area of 900 acres. Airport property used for aviation purposes is classified as airside or landside. Airside functions facilitate aircraft movement and storage and include runways, taxiways, tie-downs, and hangars. Landside areas include the passenger terminal building, the airport traffic control tower (ATCT), and automobile access and parking facilities. The airport layout is shown in **Figure 1-3**. Surrounding non-airport land uses are discussed in **Land Use Compatibility**.

Airport Role

MFR is part of the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems (NPIAS). NPIAS is an inventory of U.S. aviation infrastructure assets. It identifies airports that are significant to the national air transportation system. Airports identified within the NPIAS can qualify to receive federal grants under the FAA's Airport Improvement Program (AIP). The FAA uses the NPIAS to estimate the amount of AIP funding needed for infrastructure development projects. The FAA classifies MFR as a Commercial Service Primary Small-Hub airport. The Primary Airport designation indicates that MFR has over 10,000 annual enplaned passengers. The Small-Hub classification means that MFR accounts for at least 0.05 percent of the national annual passenger boardings but less than 0.25 percent **Table 1-2** is a summary of the airport attributes.

Figure 1-3: Airport Layout



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Functional Classification

Commercial service airports that have at least 2,500 passengers boarding each calendar year and receive scheduled passenger service are classified by the FAA as publicly owned airports. The commercial classification is then separated further by the number of passengers boarding each year into Non-primary and Primary Commercial Service Airports. Primary designation is given to airports with more than 10,000 annual enplanements.

MFR is certified by the FAA as a commercial airport under Title 14 of the Code of Federal Regulations (CFR) Part 139 (Part 139). MFR holds a Part 139 Airport Operating Certificate (AOC). The certification permits the airport to serve scheduled and unscheduled air carrier aircraft with more than 30 seats. MFR is recognized as a Class I Airport that FAA defines as an airport serving scheduled operations of air carrier aircraft designed for at least 31 passenger seats (large air carrier aircraft) and other type of aircraft operations. Part 139 airport requirements include standards for daily inspection of runways and taxiways, aircraft rescue and firefighting (ARFF) equipment, staff training and certifications, emergency plans, airfield lighting equipment, airfield signage, fueling facilities, and administrative records.

Table 1-2: Rogue Valley International – Medford Airport Attributes

Airport Attributes	Description
Airport Owner	Jackson County
FAA NPIAS Airport Classification	Primary Commercial Service (Small-Hub) Site Number: 19514 NPIAS # 41-0037
FAA Part 139 Certification	Class 1
FAA Part 139 ARFF Index	Index B
ODOT Airport Category	Commercial Service
Airport Traffic Control Tower	Yes
Airport Property	900 Acres (Total Fee Simple)
Navigational Aids	ILS, RNAV (RNP), VOR/DME
Automated Weather Station	Automated Surface Observing System (ASOS)
Communications	Cascade Approach/Departure Control
	MFR Control Tower

Note: See Appendix F for list of acronyms.
Source: FAA Publications and Airport Records, obtained July 2019

The aviation activity at MFR is affected by other airports in the region, and a healthy aviation market offers users choice, competition, and specialty services. By identifying the mutually supportive and competitive forces in the local aviation market, MFR can focus on future development efforts to meet the needs of airport tenants and visitors. The socioeconomic and aviation activity, and surrounding airports is covered in the **Demand Forecast Chapter**.

AERONAUTICAL FACILITIES

Aeronautical facilities is a collective term for those areas of the airport that are accessible to aircraft. MFR and the FAA continue to invest in the airport's facilities to maintain utility and function of the pavement surfaces and supporting infrastructure.

Figure 1-4 shows the variety of aeronautical facilities that directly support aviation activity, including:

- Runway System
- Taxiway System
- Aircraft Aprons
- Airfield Signage
- Navigational Aids
- Airspace Classification and Types
- Air Traffic Control and Communications
- General Aviation Facilities
- Support Facilities

Runway System

Runway Length

MFR is equipped with one runway surface, Runway 14/32. Runway 14/32 is 8,800 feet long and 150 feet wide and is used by commercial, cargo, military, and general aviation aircraft. The runway is equipped with electronic and visual aids to assist the pilots using the runways.

Pavement Strength

Proper pavement strength contributes to the safe operation of aircraft. An airfield's required pavement strength is determined by the aircraft fleet mix. There are two pavement strength classifications, "Utility" and "Other than Utility." Utility pavements are capable of handling aircraft up to 12,500 pounds maximum gross weight (MGW), while pavements classified as Other than Utility can handle aircraft over 12,500 pounds MGW. When the design aircraft exceeds 12,500 pounds, as is the case at MFR, the Aircraft Classification Number (ACN)-Pavement Classification Number (PCN) method is used to calculate what the pavement is capable of accommodating. Runway 14/32 provides a weight bearing capacity that accommodates aircraft with wheel configurations of single wheel (S), dual wheel (D), and 2 wheels in tandem (2D). This runway supports aircraft operations of 75,000 (S) pounds, 200,000 (D) pounds, and 400,000 (2D) pounds. The ACN-PCN method of determining pavement strength is intended to be used to report relative pavement strength, and not to be used for pavement design. The runway is composed of grooved asphalt and is recorded to be in good condition.

Lighting

Runway 14/32 is equipped with white High Intensity Runway Lights (HIRL). Runway 14 has a four-box Precision Approach Path Indicator (PAPI) system located on the left side of the runway. Runway 32 has a four-box PAPI on the right side of the runway. Runway 32 is equipped with a Medium Intensity Approach Lighting System with Runway alignment indicators (MALSR) in conjunction with the Instrument Landing System (ILS) approach. The Runway 14 touchdown zone has in-pavement lighting. Runway 32 has Runway End Identifier Lights (REILs). The ATCT normally controls the airfield lighting, but when the tower is closed, the pilots can control the lighting brightness by clicking their radio microphones on the Common Traffic Advisory Frequency (CTAF). Pilots can also use the CTAF radio frequency to communicate with each other during the hours the tower is closed.

Markings

Runway markings are white, and their schematics depend on the approach category of the runway. The markings include the runway end designator, centerline, a threshold bar, aiming point, touchdown zone, and runway edge markings. **Table 1-3** summarizes the component systems for Runway 14/32.

Table 1-3: Runway Markings, Lighting, and Signage

Markings, Lighting and Signage	Runway 14/32	
	14	32
Runway Markings		
Aim Points	Yes	
Centerline	Yes	
Threshold Bars	Yes	
Runway Number and Edge Lines	Yes	
TDZ Distance Markers	Yes	No
Runway Lighting		
MALSR	Yes	No
Visual Approach Path Guidance	PAPI	PAPI
REIL	No	Yes
Runway and Taxiway Signage		
Distance Remaining Signs	Yes	
Runway Entry Hold Signs	Yes	
Taxiway Location Signs	Yes	
Taxiway Directional Signs	Yes	

Note: See Appendix F for list of abbreviations and acronyms.
Source: FAA Form 5010 Airport Master Record

Instrument Approach Procedures

Instrument Approach Procedures (IAPs) consist of a series of predetermined maneuvers for the orderly transfer of an aircraft under Instrument Flight Rule (IFR) conditions from the beginning of the initial approach to a landing, or to a point from which the landing can be made visually. IAPs are classified as precision instrument with both horizontal and vertical guidance; non-precision instrument with only horizontal guidance; and visual, without positional guidance. Runway 14 is a Precision Approach Runway with an ILS approach system that provides vertical guidance and minimums down to the 200-foot ceiling and ½ mile visibility. Runway 32 is a non-precision approach runway. Runway 32 has an Area Navigation (RNAV) with Required Navigation Performance (RNP) instrument approach that provides vertical guidance to the pilot on approach, but to minimums down to the 300-foot ceiling and 1-mile visibility, making it a non-precision approach. **Table 1-4** summarizes the runway approach procedures.

Table 1-4: Runway 14/32 Approach Procedures

Procedure	Procedure Type	Aircraft Categories	Minimum Descent Altitude (Feet AGL)	Visibility Minimums (Statute Mile)
Runway End 14				
S-ILS 14	Precision	A, B, C, D	200	1/2
S-LOC RWY 14	Non-Precision	A, B	400	1/2
		C, D	400	5/8
RNAV Z RWY 14	Non-Precision	A, B, C, D	400	3/4
RNAV Y RWY 14	Non-Precision	A	1300	3/4
		B	1300	1
		C, D	1300	3
VOR/DME RWY 14	Non-Precision	A, B	1400	1 1/4
		C, D	1400	2 1/2
Runway End 32				
RNAV RWY 32	Non-Precision	A, B, C, D	300	1
Circling				
VOR - A	Non-Precision	A	1400	1 1/4
		B	1400	1 1/2
		C, D	1400	3
LOC/DME BC-B	Non-Precision	A	2300	1 1/4
		B	2300	1 1/2
		C, D	2300	3
VOR/DME - C	Non-Precision	A	2300	1 1/4
		B	2300	1 1/2
		C, D	2300	3
RNAV (GPS) - D	Non-Precision	A	2300	1 1/4
		B	2300	1 1/2
		C, D	2300	3

Note: See Appendix F for list of abbreviations and acronyms.
Source: FAA Terminal Procedures Publication, February 2019

Runway Protection Zones

The Runway Protection Zone (RPZ) is a trapezoidal area off the end of the runway. This area is designated to enhance safety for aircraft operations and for people and objects on the ground. The FAA recommends that incompatible land uses, objects, and activities be located outside of the RPZ. The FAA has issued a Memo titled, “Interim Guidance on Land Uses Within a Runway Protection Zone,” to help airport sponsors identify land uses that are and are not compatible within the RPZ and comply with the guidance. The FAA recommends that an airport operator maintain full control of an RPZ, ideally through fee simple property acquisition. If this is not feasible, land use control may be achieved by means of avigation easements. **Table 1-5** summarizes the RPZ dimensions at each runway end.

Table 1-5: Runway Protection Zones

Runway Protection Zones (RPZ)	Runway 14/32 D III	
	14	32
RPZ		
Length	2,500'	1,700'
Inner Width	1,000'	500'
Outer Width	1,750’	1,010'

Runway Design Surfaces

Airfield design decisions are driven by the requirements of the critical aircraft; therefore, it is key that the Master Plan reflect the most up-to-date aircraft fleet mix information available. The critical aircraft will be reevaluated as part of the Master Plan in the **Demand Forecast Chapter**.

FAA airport design surfaces are used to improve operational safety and to prevent obstructions that are hazardous to aircraft navigation. **Table 1-6** summarizes the dimensions of the various runway design surface standards and existing conditions at MFR.

Table 1-6: Runway Design Surfaces

Runway Design	Runway 14/32 D III	
	14	32
Runway Width	150'	
Shoulder Width	25'	
Blast Pad Width	200'	
Blast Pad Length	200'	
Runway Safety Area (RSA)		
Length Beyond Departure End	1,000'	
Length Prior to Threshold	600'	
Width	500'	

Source: 2014 MFR, Airport Layout Plan

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Figure 1-4: Airport Facilities

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Taxiway System

Taxiway Design

The Taxiway Design Group (TDG) determines taxiway design standards. The TDG relates to the undercarriage dimensions of aircraft, based on the overall Main Gear Width and the Cockpit to Main Gear Distance. TDG also determines the taxiway edge safety margin and shoulder width of taxiways. The Airplane Design Group of the design aircraft determines the taxiway protection areas, taxiway separation, and required wingtip clearance for aircraft using the taxiways. Runway 14/32 is served by the TDG 5, 75-foot-wide, full-length parallel Taxiway A. Future taxiway width requirements for transition from TDG 5 to TDG 3 design group critical aircraft will be discussed in Chapter 3.

Table 1-7 summarizes the taxiway system groups and dimensions.

Table 1-7: Taxiway System

Taxiway Segment	TWY A	TWY B	TWY C
Type	Primary Parallel	Apron Connector	Apron Connector
Taxiway Design Group (TDG)	5	3	2
Dimension (Width)	75'	50'	35'
Paved Shoulder Width	25'	20'	0'
Pavement Surface Course	Asphalt	Asphalt	Asphalt
Edge Lighting	MITL	MITL	MITL
Pavement Strength in pounds (Gear Type)	75,000 (S) / 200,000(D) / 400,000(DT)	63,000 (S) / 70,000(D) / 105,000(DT)	63,000 (S) / 70,000 (D)
Runway-Taxiway CL Separation	400'	NA	NA
Hold Short Separation	260'	NA	NA
Taxiway Signs	Yes	Yes	Yes

Note: See Appendix F for list of abbreviations and acronyms.

Taxiway Lighting and Marking

The taxiways are equipped with blue medium-intensity taxiway edge lighting.

Taxiway markings consist of yellow centerline and enhanced centerline markings and hold position signs painted with white inscriptions on red backgrounds. MFR has six runway holding position markings located at the Taxiway A connectors intersecting the runway on its west side. One runway holding position marking is located on the Taxiway A3 connector coming from the east apron. Seven surface painted hold position marking signs also enhance the holding position lines to notify pilots of the runway environment.

Aircraft Aprons

Aprons are used for the loading and unloading of aircraft, parking of aircraft, and for short-term storage. MFR has four primary aprons, the Terminal Apron, the South Cargo Apron, the North General Aviation Apron, and the East Apron.

The Terminal Apron is west of Taxiway A3 and consists of approximately 380,000 square feet of aircraft parking and movement area. This apron has thirteen parking spaces for commercial aircraft.

The South Cargo Apron is west of the passenger terminal building along the south side of Taxiway B. This apron has 20 fixed-wing aircraft parking positions and four helicopter parking pads.

The North General Aviation Apron is north of Taxiway B. Aircraft can access the apron from Taxiway B or from Taxiway C to the north. This apron has 41 tie-down spots.

The East Apron is a heavy weight ramp with pavement strengths for 200,000 pounds with dual wheel and 400,000 pounds for dual tandem gear aircraft. The apron is located off Taxiway A. The East Apron is approximately 66,400 square feet and services the former Foreign Trade Zone area and other operations on the east side of the airport.

Airfield Signage

Airfield marking, lighting, and signage enhance pilot situational awareness and wayfinding. Because of the implications of these features for safety, MFR is inspected on an annual basis by the FAA for compliance with Part 139 standards. FAA Advisory Circular 150/5340-18G, *Standards for Airport Signs Systems* (AC 5340-18G) requires airports with frequent turbojet aircraft operation to include proper airfield signage. The most recent inspection found no deviations to FAA standards.

Navigational Aids

Navigational aids (NAVAIDs), which can be airborne or located on the ground and visual or electronic, provide guidance and positional information to aircraft. NAVAIDs include ground-based electronic and visual systems and space-based global positioning system (GPS) satellites. Electronic NAVAIDs can transmit information to aircraft systems and allow pilots to navigate and operate in weather that has reduced visibility. Visual NAVAIDS assist pilots with airport location, runway orientation, approach, and navigating in the terminal environment under visual conditions. The FAA has been implementing a new air traffic control and management system called NextGen to decrease delay and increase capacity. First announced in 2004, Nextgen is a series of modernization initiatives and is expected to continue until 2030. NextGen uses GPS satellites rather than ground-based radio-NAVAIDs.

Visual Aids

Visual NAVAIDs include visible lights and wind indicators. MFR visual NAVAIDs include a white and green rotating beacon, a segmented circle to show pattern direction, and a lighted wind direction indicator. Additional visual NAVAIDs include the MALSR, REILs, PAPIs, and Touch Down Zone (TDZ) Lights. The rotating beacon is mounted on the top of the ATCT. From sunset to sunrise, the beacon projects narrow white and green lights while rotating 360 degrees. Its chief purpose is to indicate the location of an airport to pilots flying at night or during reduced visibility.

Electronic Aids

Reliance on sight limits the utility of visual NAVAIDs when visibility is poor. Electronic NAVAIDs require instruments onboard the aircraft and help pilots navigate and land when it is not possible to do so through visual cues alone. Electronic NAVAIDs include ground-based facilities and satellites that use the GPS. NAVAIDs are not used exclusively during poor visibility; they can be used during all flight conditions and must be used when visibility and cloud ceilings are low enough to be considered instrument meteorological conditions (IMC).

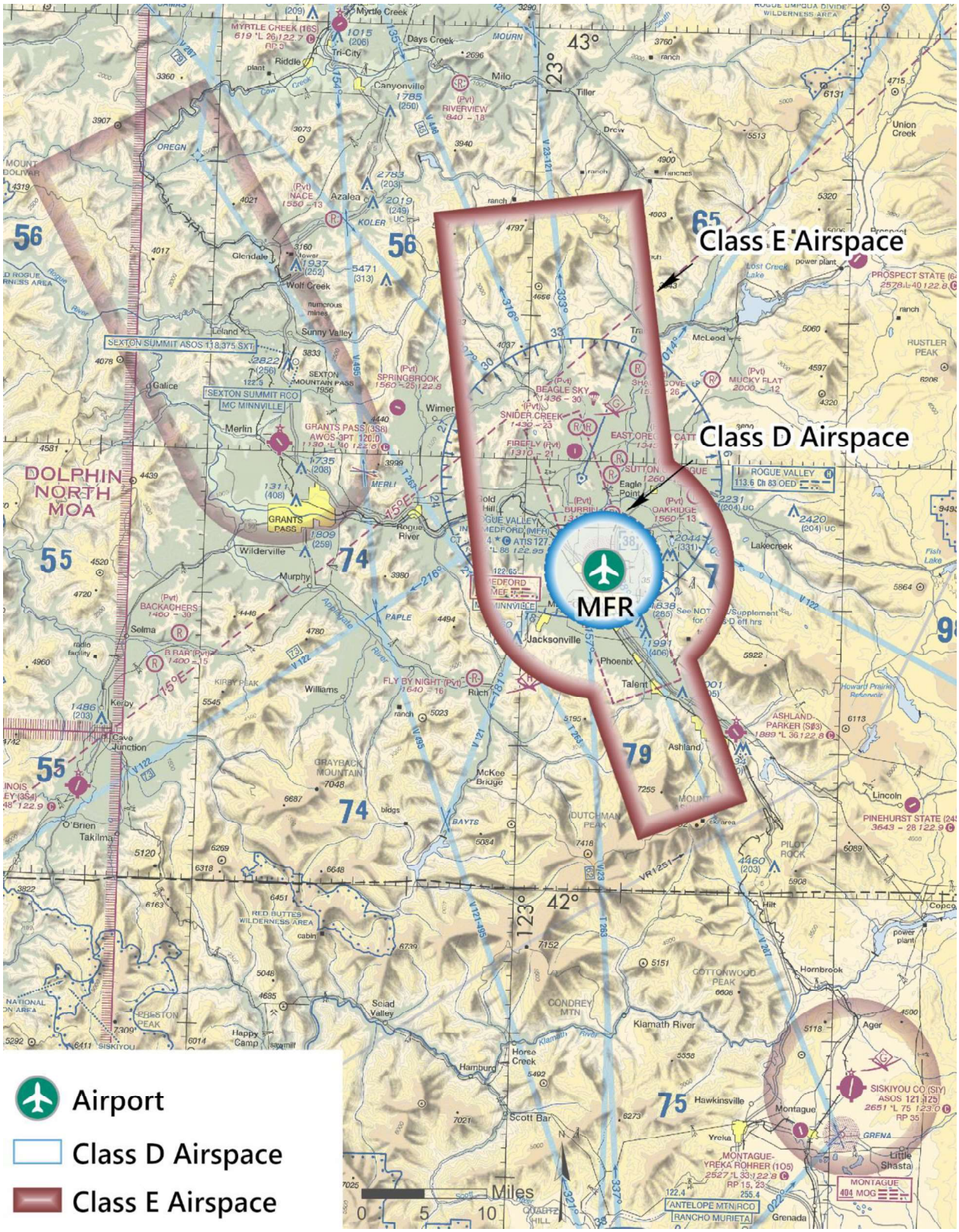
The types of electronic NAVAIDS available for aircraft flying to or from MFR include the Very-High-Frequency (VHF) Omni-directional Radio Range (VOR) Tactical Air Navigation (TACAN), which is a combined civil and military ground-based unit known as a VORTAC. There are also a Non-directional Beacon (NDB), ILS, Distance Measuring Equipment (DME) and GPS.

The Rogue Valley VORTAC is located off Airport 6.6 miles north of MFR. The NDB is a ground based, low frequency radio transmitter that transmits an omni-directional signal that is received by the Automatic Direction Finder (ADF), an instrument in the cockpit of an aircraft. The Medford NDB is 1.1 miles north from MFR and is not associated with any IAPs but can be used to guide pilots to MFR.

Airspace Classification and Types

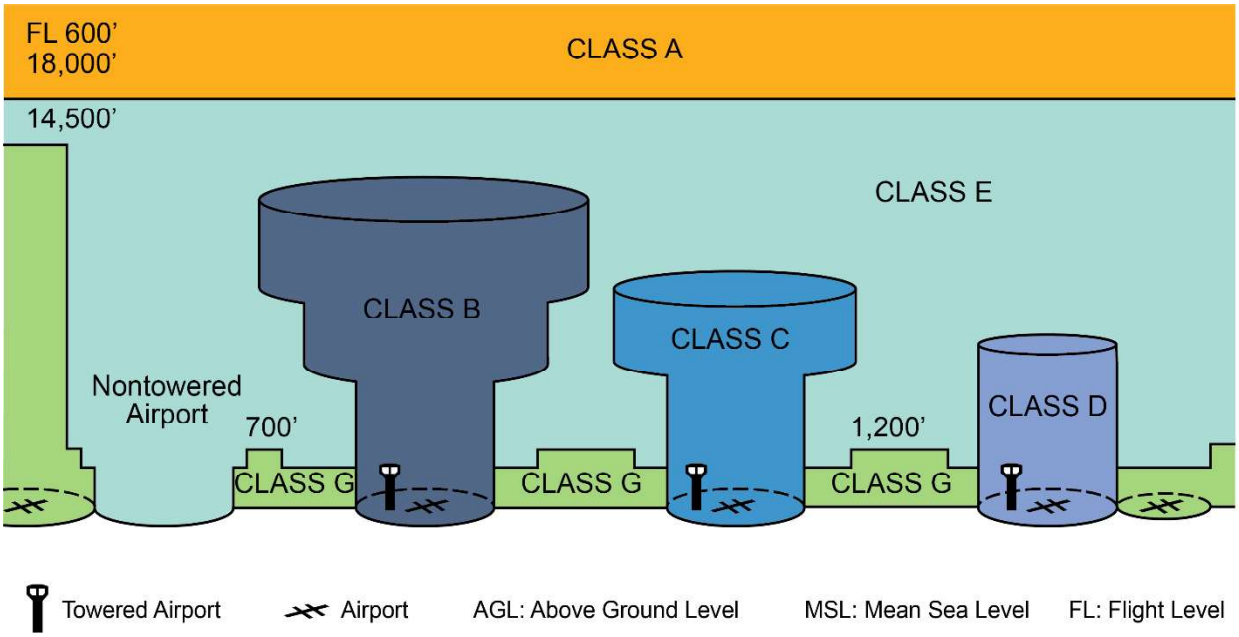
Airspace administered by the FAA is classified as either "controlled" or "uncontrolled," and defined as one of six classifications. Airspace designated as Class A, B, C, D, and E is controlled airspace, and Class G airspace is uncontrolled airspace. MFR operates as Class D Airspace when the ATCT is open. Two-way communication with ATCT must be established when entering Class D airspace. The tower operates part time from 6:00 a.m. to 9:00 p.m. Class D airspace reverts to Class E during the hours when the tower is closed (so from 9:00 p.m. to 6:00 a.m.). **Figure 1-5** shows the aeronautical chart for MFR, with the classified airspace represented as magenta rectangles that extend out from the airport, and navigational routes.

Figure 1-5: Aeronautical Chart



The control and use of navigable airspace determine the capacity and operational utility of MFR. Three main components of the airspace system pertain to MFR: En-Route, Transitional, and Terminal. Each component serves a different phase of flight and is supported by a network of NAVAIDs, Cascade Approach/Departure control, and the ATCT**.** The Cascade Approach/Departure is the air traffic communication controlled by a TRACON in Eugene, OR. **Figure 1-6** shows the airspace dimensions, the communication requirements, and weather minimums.

Figure 1-6: Airspace Classifications



Airspace Class	Communication with Air Traffic Control (ATC)	Entry Requirements	Seperation Services	Special VFR in Service Area
A	Required for All Operations	ATC Clearance	All	N/A (No Surface Area)
B	Required for All Operations	ATC Clearance	All	Yes
C	Required for All Operations	Two-way Communications Required Prior to Entry	VFR/IFR	Yes
D	Required for All Operations	Two-way Communications Required Prior to Entry	Runway Operations	Yes
E	Required for IFR Operations	Required for IFR Operations	Required for IFR Opeartions Only	Yes
G	Not Required	None	None	N/A (No Surface Area)

En Route Airspace

En route airspace is for aircraft traveling between airports, which generally follow FAA-defined low altitude "Victor" routes (below 18,000 feet Mean Sea Level (MSL)) and high altitude "jet" routes (above 18,000 MSL) that navigate between ground-based VORs and positional fixes. Victor routes extend to and from each VOR. MFR has six low altitude airways that transition through the Class D airspace that use the MFR VORTAC.

Transitional Airspace

Transitional airspace is identified by the FAA as Class E airspace, which begins 700 feet above the ground and extends to 18,000 feet MSL. Transitional airspace allows aircraft to transition between en route and terminal airspace. MFR's aeronautical chart shows a Class E, 700-foot height above ground level (AGL) Airspace segment.

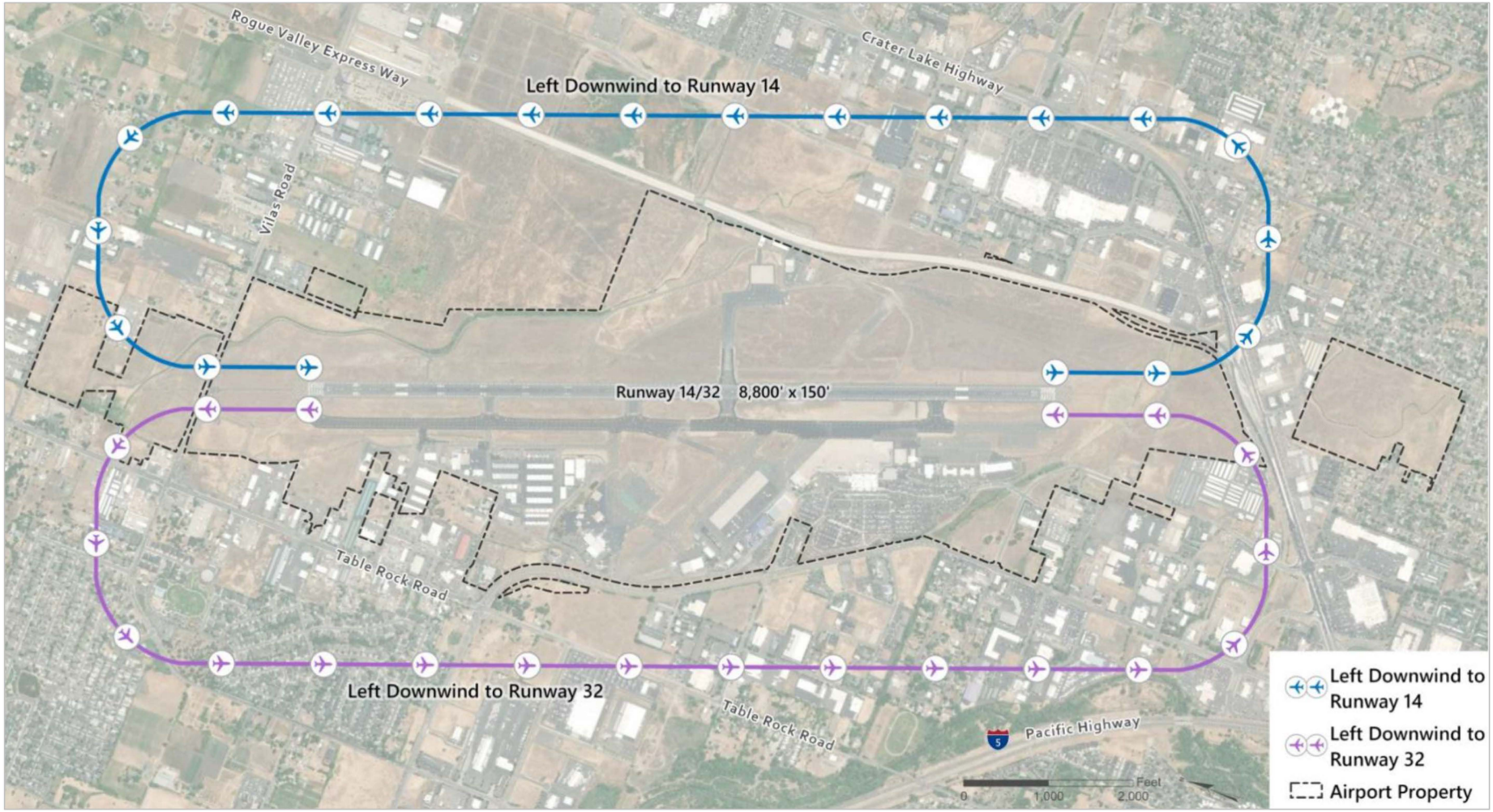
Terminal Airspace

Terminal airspace is the airspace around an airport where air traffic control or approach control services are provided. These facilities include visual and electronic NAVAIDs and ATCT personnel to assist pilots in operating to and from the airport. The MFR Terminal airspace starts at the surface and rises approximately 2,500 feet AGL. The Class D airspace radius from the center of the airport to the edge of the airspace is approximately 4 nautical miles, with extensions to the north and southeast to accommodate the IAPs. The airspace becomes Class E when the ATCT is closed.

Flight Patterns

Local patterns represent operations that occur around the airport such as training flights and touch and go operations, where aircraft land and take off again without stopping. Runway 14 and Runway 32 both have a standard left traffic pattern. When aircraft are operating on Runway 14, the pattern is to the east of the runway. When aircraft are operating on Runway 32 the pattern is to the west of the runway. The pattern altitude is 2,304 feet MSL, 969 feet AGL for propeller aircraft, and 1,469 feet AGL for turbo aircraft. **Figure 1-7** shows the standard left turn pattern for each runway end. Actual flight paths will vary due to ATCT instructions, aircraft performance, and pilot technique.

Figure 1-7: Airport Traffic Pattern



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Air Traffic Control and Communications

FAA's Air Traffic Services division manages the National Airspace System using a series of centers that have control or authority over different segments of airspace and airport movement areas.

Airport Traffic Control Tower (ATCT)

The ATCT at MFR is located north of the terminal between the terminal apron and the transient parking. The ATCT consists three crew positions which can be combined when traffic levels allow. The Local position is responsible for directing air traffic in the surrounding airspace, and on the runway. The Ground control position directs aircraft movements on the taxiways. Clearance Delivery issues clearances to aircraft with IFR and VFR flight plans. MFR communicates by means of CTAF, UNICOM, Automatic Terminal Information Service (ATIS), and Automatic Surface Observing System (ASOS). The airport emergency frequency is used for distress and urgent communications.

CTAF: a designated frequency for the purpose of carrying out airport advisory practices while operating to and from an airport that does not have a control tower, or the tower is not operational.

UNICOM: a nongovernment air/ground radio communication station which may provide airport information at public use airports.

ATIS: a recording that Airports broadcast with information such as current weather information, active runway information, notice to airman (NOTAM) and other useful information to assist pilots.

ASOS: provides observations for the National Weather Service (NWS), the FAA and the Department of Defense (DOD). The stations take weather observations and provide weather reports.

Terminal Radar Approach Control (TRACON)

The FAA defines a TRACON as an FAA facility that houses air traffic controllers who use a radar display and radio to guide approaching and departing aircraft generally within a 30- to 50-mile radius up to an altitude of 10,000 feet, as well as aircraft that may be flying over the airspace. Once an aircraft that is landing is within 5 miles of an airport and below 2,500 feet, TRACON controllers hand the aircraft off to air traffic controllers in the ATCT. When a departing aircraft leaves the TRACON's range of control, TRACON controllers hand responsibility for the aircraft off to controllers at FAA En Route Centers who guide the aircraft at higher altitudes while it is en route to the next airport. The Cascade TRACON, located in Eugene, has authority over MFR's airspace overhead not controlled by the ATCT. Air traffic controllers in Eugene work the Medford airspace sector around MFR.

Air Route Traffic Control Center (ARTCC)

The FAA defines an ARTCC as a facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace, principally during flights that are en route. MFR Airspace above Class G up to 60,000 feet and not controlled by the ATCT or Cascade TRACON is the responsibility of the Seattle ARTCC located in Auburn, Washington. When the TRACON is closed, the Seattle ARTCC acts as radar approach and departure control for MFR.

General Aviation (GA) Facilities

Air Cargo Facilities

MFR has two cargo operators. Ameriflight contracts with UPS and various banks for transporting records, and Empire Air contracts exclusively with FedEx. The FedEx cargo building, and apron are located on the south side of Taxiway A, adjacent to the ARFF building.

Fixed Base Operators (FBOs)

FBOs support a wide range of GA aeronautical activities, providing services to aircraft and to pilots, the traveling public, and the airlines. Jet Center Medford and Million Air are the two FBOs at MFR.

The Jet Center Medford facility complex is located in four buildings in the north GA hangar area west of Taxiway A6. Jet Center Medford offers aircraft management services, aircraft sales, hangar storage, avionics, aircraft maintenance, and aircraft detailing and painting.

Million Air is a full-service FBO located on the South GA Apron with hangars in the GA storage and hangar areas. Million Air provides aviation fueling, aircraft tie-down and hangar storage, aircraft maintenance, aircraft deicing, aircraft detailing, ground handling, catering, passenger concierge, shuttle van service, and rental car valet. Pilots and passengers can use the Million Air lounges, conference rooms, and flight planning rooms. The FBO's fuel facilities located north of the GA hangars, provide aircraft fuel on the airfield from seven above ground storage tanks that have capacity for 95,000 gallons of Jet-A fuel, 27,000 gallons of (AVGAS) 100 low lead (LL) fuel. One of the fueling tanks is a self-serving station providing AVGAS 100LL (6,000 gallons). There are also 9 mobile fuelers that have a combined capacity to hold 19,700 gallons of Jet-A fuel, 8,400 gallons of 100LL, and 800 gallons of Gas and Diesel.

Aircraft Storage

MFR has several hangar options. The majority of GA aircraft storage is along Taxiway A, north of Taxiway C and the North GA Apron. MFR has 106 hangar units consisting of T-hangars, conventional box hangars, and executive/corporate hangars. A mix of Airport-owned and privately-owned hangars is available, and MFR maintains a hangar wait list for future tenants.

Support Facilities

Maintenance/Snow Removal

MFR is required to prepare, maintain, and carry out a snow and ice control plan as part of its Part 139 certification. The prompt removal or control of snow and ice on movement areas must be completed as soon as practicable. The snow removal operations storage warehouse is located on the east apron, and MFR has another facility adjacent to the ARFF facility. Equipment for snow removal includes:

- 2011 International 5-yard dump truck
- 1997 Volvo 10-yard dump truck with plow
- 2013 Wausau snow blower
- MB Snow broom

ARFF

The ARFF facility is south of the terminal building. As part of MFR's commercial certification requirements under Part 139, the airport maintains an Index B capability. Index B is required at airports that accommodate on average five daily departures by commercial aircraft that are between 90 and 126 feet long. The ARFF facility is staffed with certified personnel under contract. The response vehicles are a 1991 Oshkosh ARFF truck and a 2009 Rosenbauer Panther ARFF truck.

NON-AERONAUTICAL

This section describes facilities that support aeronautical operations but are not aeronautical uses. At MFR fencing, gates, and service roads fall into the non-aeronautical airside facilities category.

Fencing and Gates

MFR has chain-link fencing with barbwire around the airfield perimeter. Security gates provide access to the FBO, GA hangars, USFS, and controlled movement areas of the airfield. There are 17 pedestrian gates equipped with either a card reader, cipher lock, or padlock to control admittance. There are 30 vehicle gates of which 11 are padlocked for use by only maintenance and authorized personnel, and of which 19 have card readers for access by tenants. Three utility gates, all padlocked, are used by Airport staff to access airport operations areas (AOA).

Service Roads

MFR has a system of service roads that extend around the interior of the AOA perimeter to provide access to the various NAVAIDs, approach lights, the weather observation system, and to transition between landside facilities. The portion of the perimeter road north of the airport and along its east side is a mix of asphalt, gravel, and dirt. The perimeter road along the west side aprons and terminal areas is paved and marked to show lane delineation where it is used by other service vehicles.

Utilities

Electrical

Electrical service is provided by Pacific Power. In addition to regular utility power service, MFR has completed three Blue Sky Solar Projects that built solar arrays into the primary parking lot. The solar panels provide 65kW of power, enough to light approximately 16 acres of parking lot with a net zero carbon footprint. **Table 1-8:** shows MFR's utilities and service providers.

Table 1-8: MFR Utilities and Service Providers

Utility	Service Provider
Electric Power	Pacific Power
Water	Medford Water
Sanitary Sewer	Rogue Valley Sewer Service
Gas	Avista
Stormwater Systems	City of Medford
Communications	Century Link, Hunter

Source: MFR Utility Records, Obtained 2019.

Storm Water Drainage

The City of Medford has jurisdiction over stormwater collection. This is done with a series of catch basins, piping, and collection swales. MFR has a Stormwater Pollution Control plan (SWPCP) as required by the National Pollutant Discharge Elimination System (NPDES) and Stormwater Discharge Permit, General Permit No. 1200-Z, Schedule "A." The SWPCP details the existing and recommended facilities, monitoring practices, and procedures to reduce the possible pollutant contribution from MFR to surface waters.

Vehicle Fuel Storage

MFR's vehicle fuel storage facility consists of two underground tanks located on the south side of the ARFF building. Unleaded gasoline and diesel are stored in separate 1,000-gallon tanks. The tanks are owned by Jackson County.

MFR has a fuel farm with two 12,000-gallon capacity above ground tanks. One tank is 12,000 gallons for gasoline. The second tank is split with 6,000 gallons for gasoline and 6,000 gallons for diesel fuel. The fuel storage site is in a commercial area at 1088 Lawnsdale Road. Operations, maintenance, rental car employees, and security staff use these facilities to fuel vehicles. These facilities are located behind the Quick Turn Around (QTA) building in which vehicles are cleaned and maintained. Due to consistent level of fueling activity, precautions are taken with a 500-gallon capacity oil-water separator that connects to a gravity drain that flows into a public sanitary sewer system and leads to a sewage treatment plant. The oil water separator is secondary containment required under 40 CFR Part 112 as part of MFR's spill prevention, control, and countermeasures (SPCC) plan.

Non- Aviation Facilities

The existing non-aviation developments owned by MFR and adjacent to airport property are detailed in the Airport Layout Plan**.** The information includes known projects in the planning and design stage that may impact the airport. Airports often own non-aviation parcels to promote development that is compatible with aircraft operations and to diversify revenue.

PASSENGER TERMINAL

Passenger Terminal Complex

MFR's passenger terminal complex occupies 16 acres on the west side of the airfield. It includes the passenger terminal building and adjacent commercial aircraft parking apron.

Passenger Terminal Building

The passenger terminal building opened in 2009 and consists of 77,000 square feet on two levels – a main level dedicated to passenger services and a mezzanine with airport offices, a restaurant with kitchen, and some passenger amenities. The terminal building floor plan is illustrated in **Figure 1-8**, **Figure 1-9**, and **Figure 1-10** and discussed in more detail below.

The main floor is 55,900 square feet. The baggage claim, non-secure concession, airline baggage office, rental car counters, and meeter/greeter area are in the northern half of the main floor of the terminal building. The check-in area and airline offices are in the southern half of the main floor. The security checkpoint, located in the center of the building, consists of two passenger screening lanes. A third screening lane is being planned and will be installed within the current footprint of the checkpoint, as illustrated in **Figure 1-11**. Past the security screening checkpoint is a linear concourse. The concourse includes space for passenger amenities such as restrooms, children's play area, vending machines, and hold room space for 12 aircraft parking positions.

The 21,100-square-foot mezzanine is split between non-secure and secure functions. The non-secure side holds the MFR administrative offices and a public observation deck. A restaurant is overlapping the secure and non-secure sides, with the main dining room and kitchen on the secure side, and a smaller dining room on the non-secure side of the mezzanine.

South of the terminal building is a one-level building dedicated to outbound baggage handling and screening. A conveyor belt moves baggage from the check-in area to the baggage screening room. The screening room is equipped with three explosive detection system (EDS) machines. The bags are then transported to the baggage make up area, where they are manually loaded on carts that transport the bags to the aircraft.

The breakdown of terminal space by functional category is shown in **Table 1-9**

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Figure 1-8: Passenger Terminal Building Floor Plan – Main Floor North

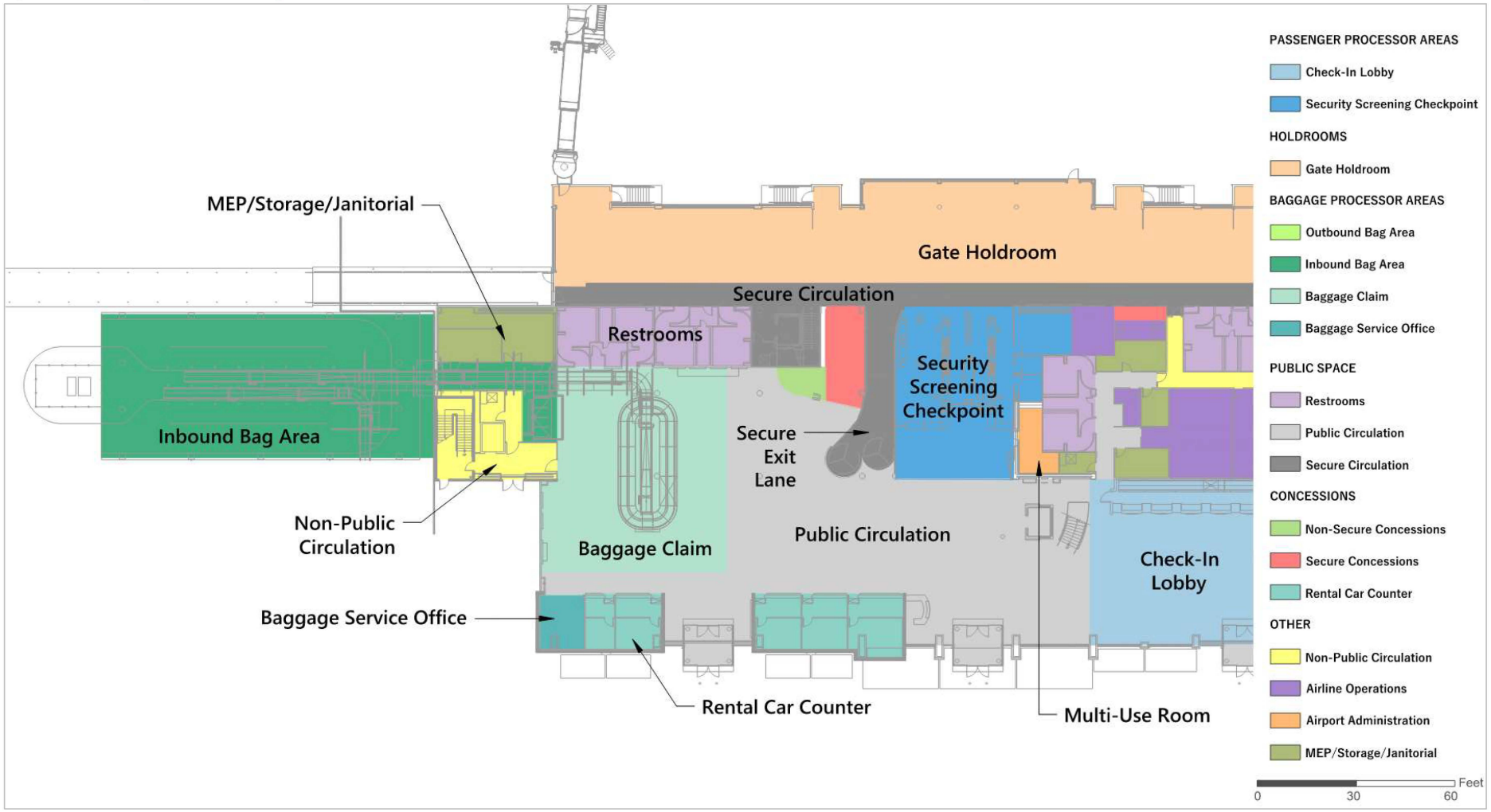

Figure 1-9: Passenger Terminal Building Floor plan – Main Floor South

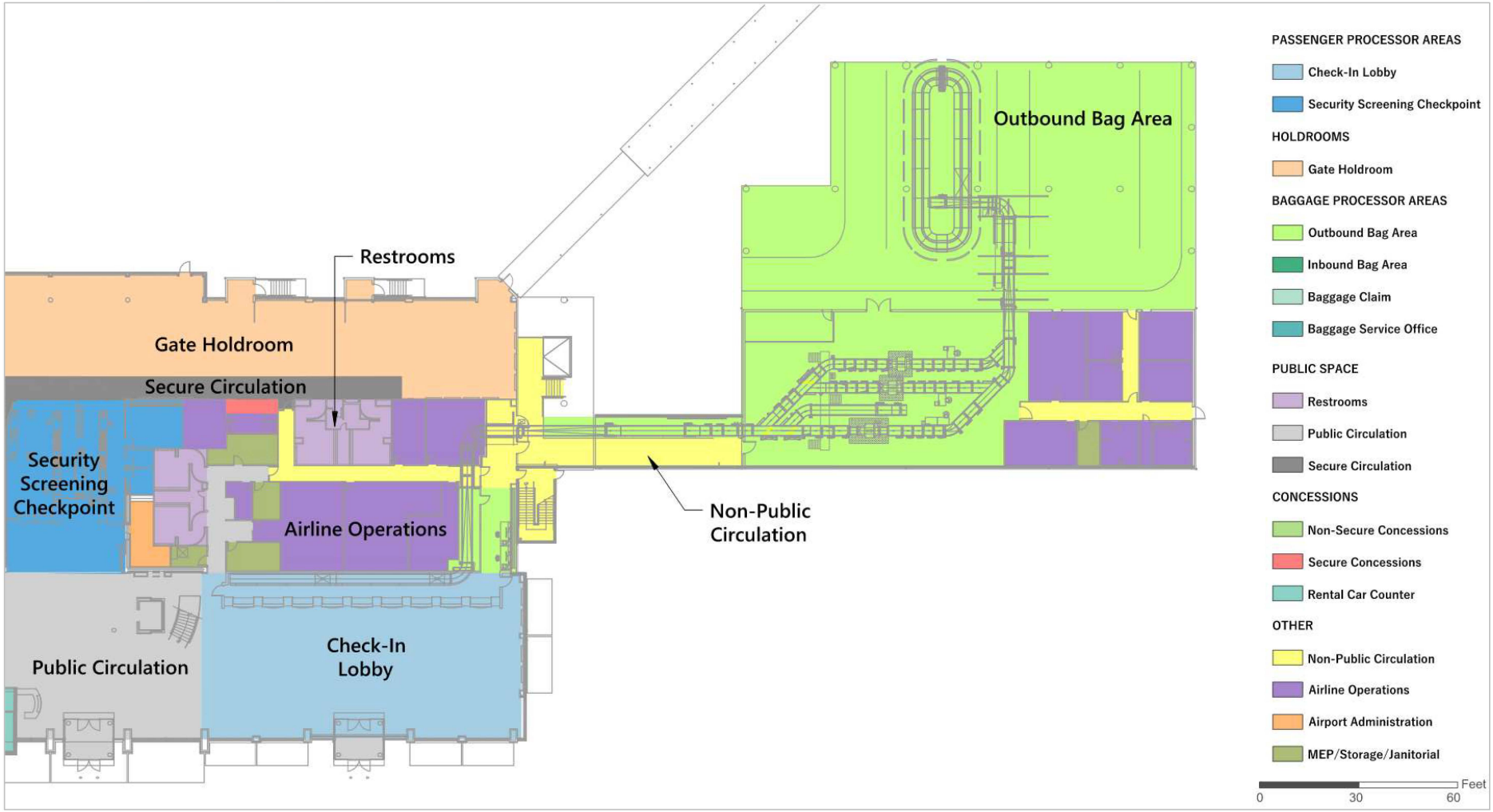

Figure 1-10: Passenger Terminal Building Floor plan – Mezzanine

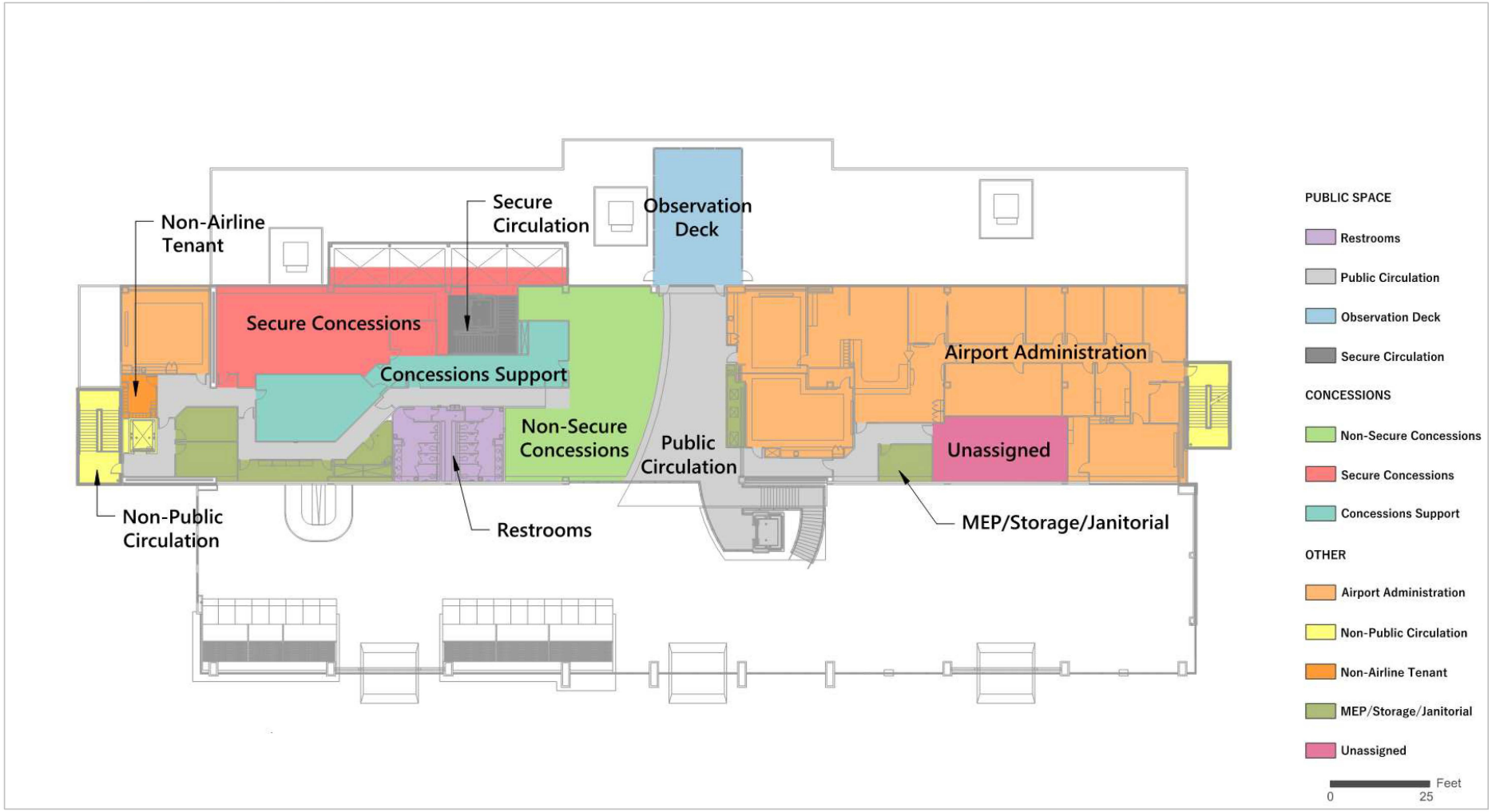

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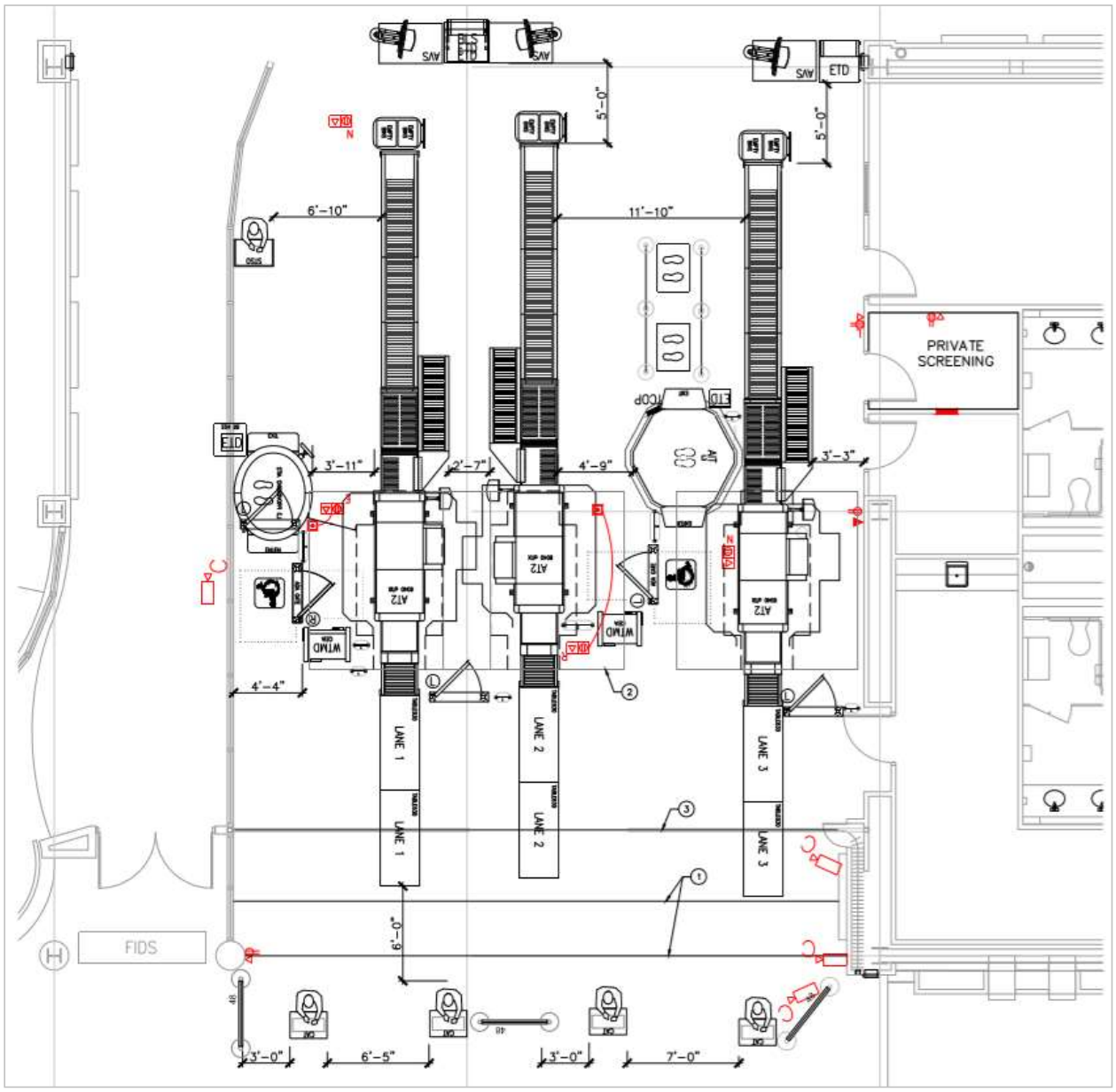
Figure 1-11: Planned Expansion of the Security Screening Checkpoint



Source: Rogue Valley International-Medford Airport, July 2019.

Table 1-9: Terminal Space Area Allocation (square feet)

Space category	First floor (Main floor)	Second floor (Mezzanine)	Total
Passenger processor areas			
Check-in lobby	6,000	-	6,000
Security screening checkpoint	2,800	-	2,800
Hold Rooms			
Gate hold room	8,900	-	8,900
Baggage processor areas			
Outbound bag area [1]	6,000	-	6,000
Inbound bag area [2]	600	-	600
Baggage claim area	4,100	-	4,100
Baggage service office	300	-	300
Public space			
Restrooms – non-secure area	1,200	700	1,900
Restrooms – secure area	1,400	-	1,400
Public circulation	8,800	3,400	12,200
Secure circulation	3,100	400	3,500
Public observation deck	-	1,100	1,100
Concessions			
Non-secure concessions	200	2,000	2,200
Secure concessions	500	2,300	2,800
Concessions support and storage	-	1,400	1,400
Rental car counters	1,500	-	1,500
Other			
Airline operations	5,100	-	5,100
Non-airline tenants	200	100	300
Airport administration	-	7,000	7,000
Building maintenance/Janitorial	300	300	600
Mechanical/Utility	1,100	800	1,900
Non-public circulation	3,800	800	4,600
Unassigned	-	800	800
TOTAL	**55,900**	**21,100**	**77,000**

Notes:

1 The bag make-up area and associated tug maneuvering area occupies an additional 11,500 square feet of covered non-enclosed space.

2 An additional 5,400 square feet of covered non-enclosed space is provided for the inbound bag belt and tug maneuvering.

Source: JMG Consulting, LLC based on terminal floor plans dated July 2009.

The passenger processing facilities are summarized in **Table 1-10**. Currently, the majority of the passenger check in at the Airport using full-service counters. Self-service kiosks are available, but most do not print bag tags and therefore passengers still have to go to a full-service counter if they want to check a bag.

Table 1-10: Existing Passenger Processing Facilities

Check in Facilities			
Airline	**Full-service counter positions**	**Kiosks [1]**	**Bag drops**
Alaska Airlines	3	4	1
American Airlines	2	2	-
United Airlines	4	2	-
Delta Air Lines	2	3	-
Allegiant Air	2	-	-
Unassigned	4	-	-
Security Screening Checkpoints			
Facility	**Location**		
Regular checkpoint lanes [2]	1		
Pre-Check lanes	1		
Baggage Handling System			
Facility	**Location**		
Bag claim device	1 inclined plate Linear frontage: 115 feet		

Notes:
1 Alaska Airlines kiosks include bag tagging services. Kiosks for other airlines only offer check-in for passengers without bags (boarding pass only).
2 A third security checkpoint is being planned and will be installed within the current checkpoint footprint.

Terminal Aircraft Parking Apron

Approximately 12 acres of apron are available for aircraft maneuvering and parking at the passenger terminal. The apron is currently configured to accommodate aircraft ranging from regional turboprop aircraft to Boeing 737. All aircraft are serviced with fuel trucks. Aircraft parking position characteristics are shown in **Table 1-11**.

The Terminal has 13 aircraft parking positions used for passenger loading. Gate 5 is equipped with a passenger boarding bridge. The other 12 parking positions use ground loading. Gate 4 is scheduled to have a passenger boarding bridge added in the Spring of 2020.

Gates 2 through 5 are located along the Terminal's eastern façade. Gates 1A through 1C can be accessed via the south passenger safety walkway. Gates 6A through 6F can be accessed via the north passenger safety walkway. It is to be noted that Gate 6F gets used only sparingly when other gates are unavailable or if there is an aircraft that goes down for maintenance due to the longer walking distances form the terminal to the position. **Figure 1-12** shows the available parking configuration.

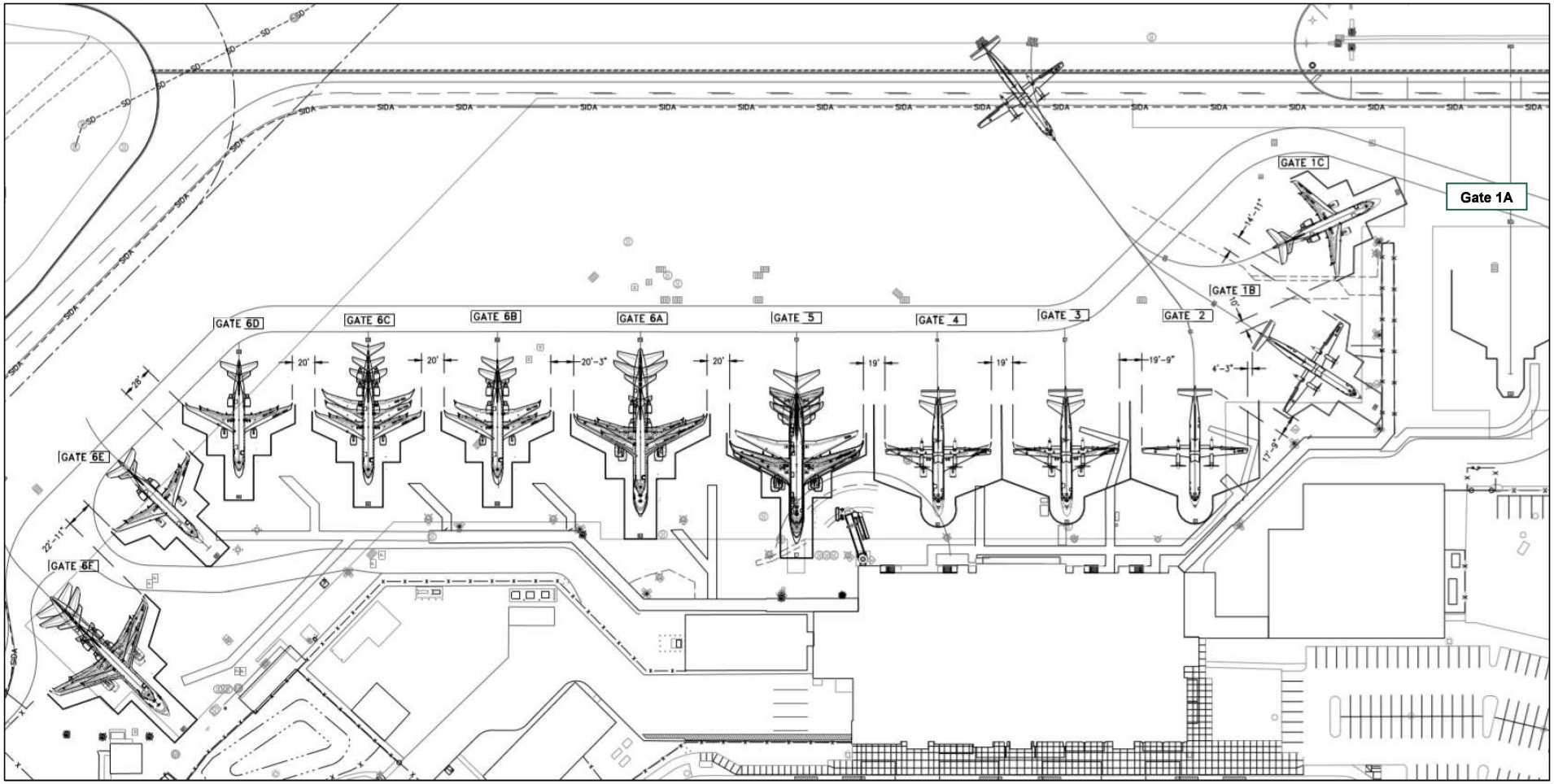
MFR is planning to install a new passenger boarding bridge at Gate 5 and will replace the existing bridge. The current bridge at Gate 5 will be relocated to Gate 4. The Gate 4 bridge does not currently meet Americans with Disabilities Act (ADA) standards. A ramp will be built at Gate 4 to make the gate compliant with ADA. The aircraft parking positions will be realigned to allow for the new bridge and for larger wingtip clearances, which will result in Position 1C being decommissioned.

Table 1-11: Aircraft Parking Positions

Gate	Position Type	Largest Aircraft	Preferential
1A	Ground Load	CRJ700	American Airlines
1B	Ground Load	Bombardier Q400	Alaska Airlines
1C	Ground Load	Embraer 175 EWT	Alaska Airlines
2	Ground Load	Q400	Alaska Airlines
3	Ground Load	Embraer 175 EWT	Alaska Airlines
4	Ground Load	Embraer 175 EWT	Delta Air Lines
5	Passenger Loading Bridge	Boeing 737-900	United Airlines/Allegiant
6A	Ground Load	Boeing 737-900	United Airlines
6B	Ground Load	Embraer 175 EWT	United Airlines
6C	Ground Load	Embraer 175 EWT	United Airlines
6D	Ground Load	Embraer 175 EWT	United Airlines
6E	Ground Load	Embraer 175 EWT	United Airlines
6F	Ground Load	Boeing 737-900	Unassigned

Source: Rogue Valley International-Medford Airport, Existing aircraft Parking Layout dated July 201

Figure 1-12: Existing Aircraft Parking Layout



Source: Rogue Valley International-Medford Airport, July 2019

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AUTOMOBILE PARKING AND SURFACE TRANSPORTATION

This chapter describes how travelers, vendors, and employees' access MFR by passenger car or other vehicular modes and where vehicles are parked while there.

Parking Supply

There are 2,115 total striped surface parking stalls at MFR. Two parking lots, a northern lot and southern lot, serve employees with a total of 343 spaces. For airport customers and visitors, both short-term (222 spaces) and long-term parking (1,245 spaces) are available. The long-term parking consists of a large surface lot within Terminal Loop Parkway and an overflow parking lot north of Airport Road. Directly to the south of the airport terminal, there is a 281-space, rental car parking lot shared by all rental operations. **Table 1-12** summarizes the current parking supply on-site. **Figure 1-13** shows the location of the parking facilities.

Table 1-12: Parking Supply and Pick-Up/Drop-Off Zone Capacity

Parking Space Type	Parking Inventory (2.27.2018)	
Employee Parking	343	
Short-Term Parking	222	
Long-Term Parking	1,245	
Rental Car Parking	281	
Cell Phone Parking	19	
ACE Parking	5	
TOTAL	**2,115**	
Notes: The parking inventory excludes the Long-Term Overflow Lot, which a gravel/dirt area located off Milligan Way with capacity for roughly 50-70 vehicles, depending on how efficiently this space is used. Inventory data provided by MFR.		
Pick Up/Drop Off Zone	**Linear Feet**	**Estimated Capacity (Vehicles)**
Passenger Loading	262	11
Rideshare Pick-Up	50	2
Rideshare Staging	230	10
Taxi Pick-Up	142	6
Taxi Staging	110	5
Shuttle Pick-Up	203	7
TOTAL	**997**	**41**
Notes: Assumes 22 feet per vehicle and 28 feet per shuttle vehicle. Assumes one lane of capacity for Passenger Loading and one lane for Taxi/Shuttle. Linear Feet Data provided by MFR.		

Source: Walker Consultants, analysis; Jackson County Airport Authority, data.

Figure 1-13: Parking Supply Map

Pick-Up/Drop-Off Facilities

The following pick-up and drop-off and staging areas are provided for passengers:

- Passenger pick-up/drop-off at the curb adjacent to the terminal on Terminal Loop Parkway.
- Rogue Valley Transportation District (RVTD) bus stop on Terminal Loop Parkway north of the passenger pick-up/drop-off zone.
- Taxi pick up area across the passenger pick-up and drop-off area to the west of Terminal Loop Parkway.
- Shuttle pick up area across the passenger pick-up and drop-off area to the west of Terminal Loop Parkway.
- Rideshare pick-up east of the Employee Lot North across Airport Road.

Figure 1-13 shows the location of the above referenced pick-up and drop-off facilities and rideshare and taxi staging areas.

Figure 1-14 shows the four-lane Terminal Loop Parkway with the passenger pick-up/drop-off areas at the curb adjacent to the terminal. The figure also shows the adjacent two-lane taxi and shuttle pick-up. The curb space is regularly patrolled by the Enforcement Officer assigned to the terminal. Long-term waiting at the curb is generally prohibited.

Table 1-12 provides a summary of the pick-up and drop-off zones and an estimate of the number of spaces or total capacity available. The remainder of this section provides a more detailed description of the pick-up/drop-off locations.

Figure 1-14: Pick-Up/Drop Off Facilities

Source: Jackson County

Passenger Pick-Up/Drop-Off

Terminal Loop Parkway is a four-lane road fronting the terminal with curb space running the length of the terminal. The road is reserved for passenger pick-up/drop-off only as designated by signage that says, "Active Loading and Unloading Only." The capacity for the passenger pick-up/drop-off area is approximately 11 vehicles, assuming a single drop-off lane along the curb. Based on striping and signage, it appears that only the first lane (closest to the terminal) is intended for pick-up and drop-off. Hatched areas along the curb near the cross-walks allow this first lane to be functionally wider, by roughly 3', than the other three lanes. Drivers can pull over within the designated zones allowing for drivers and passengers to exit safely on both sides of the vehicle (see below). The outer three lanes appear to be used for bypass.

At busy periods there should be enough capacity for stacking along the curb where the first two lanes could potentially be used for pick-up / drop-off. This would double the capacity to ~22 vehicles at a time. If the added capacity is needed, the airport might want to consider modifying the striping so that the right two lanes are widened for pick-up / drop off and the left two lanes are used for bypass. Three pedestrian crosswalks on Terminal Loop Parkway in front of the terminal offer access for safe crossing to reach other ground modes of transportation.

Transportation Network Company (TNC) Pick-Up and Staging

MFR has an area dedicated to TNC vehicle pick-up north of Terminal Loop Parkway east of the Employee Lot North. The dedicated curb space for TNC pick-up is along Airport Road. The area's capacity is approximately two vehicles.

A staging area for TNC vehicles is to the south off Milligan Way. Barriers placed adjacent to Milligan Way delineate the rideshare staging area, which has a capacity for approximately 10 TNC vehicles.

Based on data provided by the airport, MFR has averaged roughly 1,500 TNC drop-offs per month over the last year (Sept 2018 – Aug 2019), with a noticeable uptick from May through August of 2019. Pick-ups are assumed to be roughly equivalent to drop-off volumes.

RVTD Bus Stop

On Terminal Loop Parkway, just to the north of the passenger pick-up/drop-off zone, there is an RVTD bus stop. Route 61, which travels from White City to Medford, stops at the MFR Airport stop and connects with Route 40, which serves Central Point, and Route 30, which serves Jacksonville.

Taxi Pick-Up and Staging

The taxi pick-up area is across the four-lane Terminal Loop Parkway from the terminal. There is a concrete median west of Terminal Loop Parkway, with two travel lanes for taxi and shuttle pick-up/drop-off. The taxi pick-up is north of the shuttle pick-up and has capacity for approximately six vehicles. A taxi staging area exists to the south of the shuttle pick-up with capacity for approximately five vehicles. Taxi companies pay to enter the taxi pick-up zone. The taxi vehicles line up in the taxi queue in the pick-up zone. Signage directs passengers to "Please Process to First Cab in Line."

Between September 2018 and August 2019, MFR has averaged roughly 3,700 drop-offs per month for taxi and shuttle services combined. Recent data seems to indicate a slight downward trend in taxi activity, as rideshare use has increased.

Shuttle Pick-Up

A shuttle pick-up area is just to the south of the taxi pick-up, on the other side of the pedestrian crosswalk. The capacity for the shuttle pick-up area is approximately seven shuttles. As with the use of taxis, recent data seems to indicate a slight downward trend in shuttle activity as rideshare use has increased.

Rental Car Operations

Five rental car companies operate at MFR. Each rental car company is allocated a certain amount of ready return parking spaces in the 281-space rental car lot.

These are the five agencies and the number of parking spaces allocated per each lease agreement:

- Alamo – 41 parking spaces
- Avis – 65 parking spaces
- Budget – 60 parking spaces
- Enterprise – 55 parking spaces
- National – 60 parking spaces

Per the Concessions Agreement, rental car employees and agents are required to park in MFR's Employee Lot. Each rental car has concession offices located in the terminal. Each of these office spaces has a public-facing counter and office behind the counter.

Roadway Access to the Terminal

Access from I-5 is either Exit 30 northbound or Exit 33 southbound. Primary local access is from Biddle Road, and the entrance to the terminal is on Terminal Loop Parkway**. Figure 1-13** above shows these access roadways.

AIRPORT CLIMATE DATA

Weather conditions impact aircraft performance and influence airport design. Consideration is given to temperature, precipitation, winds, visibility and cloud ceiling heights. Wind patterns are an important meteorological factor in assessing runway utilization and for determining runway design requirements in accordance with FAA aircraft category standards.

Wind Patterns

The historical pattern of prevailing winds influences desirable runway orientation and runway usage. The FAA has determined that crosswinds pose a hazard to safe operations of aircraft, particularly to small and light aircraft; therefore, an airport's main runway should be aligned with the prevailing wind.

Wind coverage is the average percentage of time that a runway or grouping of runways is not subjected to crosswinds of magnitude greater than the allowable crosswind component for each runway. FAA defines the desirable minimum wind coverage of an airport's runway configuration as 95 percent of wind velocity and direction observations over the most recent 10-year period. **Table 1-13** shows the allowable crosswind component used to compute the wind coverage for a given runway is based on the Airport Reference Code (ARC) of the most demanding aircraft expected to use the runway.

Table 1-13: Crosswind Component

Runway Design Code	Allowable Crosswind Component
A-I[1] and B-I[1]	10.5 knots
A-II and B-II	13 knots
A-III, B-III, C-I through C-III, D-I through D-III	16 knots
A-IV and B-IV, C-IV through C-VI, D-IB through D-VI	20 knots
E-I through E-VI	20 knots

Note: [1] These airport design standards pertain to facilities designed for small aircraft.
Source: FAA AC 150/5300-13A, May 2012

Wind data is collected by the National Oceanic and Atmospheric Administration (NOAA) by an Automated Surface Observing System (ASOS) located at MFR. Wind data from 2008 to 2018 is grouped for three ceiling and visibility categories and presented in **Table 1-14**.

Table 1-14: Ceiling and Visibility Categories

Wind Coverage	Definition	Occurrence
All-Weather	All wind observations.	N/A (see rows below).
Instrument Flight Rules (IFR)	Cloud ceiling less than 1,000 feet and/or visibility less than 3 miles, but cloud ceiling greater or equal to 200 feet and visibility greater than or equal to 0.5 miles.	These conditions occurred approximately 4 percent of the time from 2008 to 2018.
Visual Flight Rules (VFR)	Cloud ceiling greater than or equal to 1,000 feet and visibility greater than or equal to 3 miles.	These conditions occurred approximately 96 percent of the time from 2008 to 2018

Crosswind Coverages

FAA's Airport Design software was used to determine the wind coverage for MFR's runway orientation. The results are shown in **Table 1-15**. All crosswind components for aircraft that operate at MFR exceed 95 percent coverage, so a crosswind runway is not required at MFR.

Table 1-15: Wind Coverage

Runway	10.5 Knot Component	13 Knot Component	16 Knot Component	20 Knot Component
	Piston	Small Jets & Turboprops	Large Jets & Turboprop	Large Jet Transports
ALL-WEATHER WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14/32	99.17%	99.66%	99.78%	99.99%
INSTRUMENT WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14/32	99.77%	99.89%	99.97%	100.00%
VISUAL WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14/32	99.06%	99.62%	99.78%	99.99%

Notes:
1. Crosswind component computed using runway true bearings (338.77 true)
2. Crosswind component computed using FAA windrose calculation program.
3. All weather conditions: period of record: 2009 to 2018 with 65,732 observations.
4. IFR weather conditions: period of record: 2009 to 2018 with 14,187 observations.
5. VFR weather conditions: period of record: 2009 to 2018 with 42,368 observations.

Climate

In addition to wind, temperature and precipitation affect aircraft operation. For example, high temperatures can increase required takeoff distance, which could alter takeoff power settings and require payload reduction. Precipitation can negatively impact braking during landing. The frequency and amount of snow influences the type and number of Snow Removal Equipment (SRE) necessary, which has equipment and material storage implications. Weather data comes from the ASOS at MFR and is tracked by NOAA to report local climate in the area. Key weather conditions are listed in **Table 1-16** below.

NOAA weather data collected since 1921 shows that average annual precipitation at MFR is approximately 19 inches, with most precipitation falling in the cooler months. The Maximum Mean Month Temperature (Max Mean) is in July at 90.2° Fahrenheit (F). The coldest month of the year is January, with a mean daily maximum temperature of 30.6° F.

Table 1-16: Climate

Month	Total Precipitation (inches)	Mean Maximum Temperature (°F)	Mean Minimum Temperature (°F)	Average Total Snowfall
January	2.85	46	30.6	2.9
February	2.02	53.3	32.5	1.2
March	1.81	58.5	35.3	0.7
April	1.25	64.7	38.6	0.2
May	1.27	72.9	44.2	0
June	0.8	80.6	50.2	0
July	0.24	90.2	55.4	0
August	0.34	89.6	54.5	0
September	0.63	83.2	48.2	0
October	1.53	69.3	40.4	0
November	2.82	53.2	34.6	0.4
December	3.41	45.3	31.7	1.4
Annual	18.97	67.2	41.4	6.8

Source: NOAA National Weather Service Forecast, Monthly Climate Normal for Medford Or July 2019

AIRPORT ENVIRONMENTAL REVIEW

This section identifies environmental considerations pertaining to the operation and improvements of MFR. Environmentally sensitive areas identified during the inventory will be used to screen future development. The following sections are included to provide a baseline of the existing environmental conditions on and around the airport. The information presented is a high-level overview provided for planning purposes and is not intended to satisfy the requirements of the National Environmental Policy Act (NEPA).

The Environmental Overview provides an initial review of environmental resources that are known to occur on or near an airport. The intent of the preliminary review is to assist in the avoidance and minimization of environmental effects throughout the airport master planning process. Environmental overview conditions were assessed primarily through research of existing studies and documents, agency database searches, local inquiry, and with limited field investigation and field coordination.

The overview analysis included these environmental categories:

- Air Quality
- Biological Resources
- Climate
- Coastal Resources
- Construction Impacts
- Department of Transportation Act, Section 4(f)
- Farmlands and Soils

- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archaeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Noise-Compatible Land Use
- Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks
- Light Emissions and Visual Impacts
- Water Resources

Table 1-17 describes data sources, including links, used in this Airport Environmental Review.

Table 1-17: Description of Data Sources

Source	Description
Federal	
Environmental Protection Agency (EPA): National Ambient Air Quality Standards (NAAQS)	The Clean Air Act requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment.
US Department of Agriculture: Natural Resources Conversion Service: Web Soil Survey	Web Soils Survey provides soil data and information produced by the National Cooperative Soil Survey.
National Register of Historic Places	Official list of the Nation's historic places worthy of preservation.
National Wild and Scenic Rivers System	The National Wild and Scenic Rivers systems preserves certain rivers with outstanding natural, cultural, and recreational values in free-flowing condition.
US Census Bureau: Small Area Income and Poverty Estimates (SAIPE)	The SAIPE Program produces estimates of median household incomes for states and counties, and poverty for states, counties, and school districts.
US Census Bureau: Population Estimates Program	Population Estimates Program uses current data on births, deaths, and migration to calculate population change.
US Fish and Wildlife Service (USFWS): Information Planning and Consultation (IPaC)	IPaC offers the ability to obtain an informal list of endangered species, critical habitat, migratory birds, wildlife refuges, and wetlands under the USFWS jurisdiction that are known or expected to be on or near the project area.
US Geological Survey: National Water Information System National Wetlands Inventory (NWI)	NWI produces and provides information on the characteristics, extent, and status of the Nation's wetlands and deep-water habitats and other wildlife habitats.
State	
Jackson County GIS Database	Provides GIS information for the County.
Oregon Department of Environmental Quality	Provides access to environmental information and databases to restore, maintain, and enhance the state's air, land, and water.

Air Quality

An air quality analysis generally applies to projects that, due to their size, scope, or location, have the potential to change or diminish air quality standards. These standards, governed by the Clean Air Act of 1970 (CAA) and the Environmental Protection Agency (EPA), are known as National Ambient Air Quality Standards (NAAQS).

EPA standards address six pollutants known as *criteria air pollutants:* carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), and two types of particulate matter (PM_{10} and $PM_{2.5}$). Federal regulations require states to define areas for NAAQS as *attainment, non-attainment,* or *maintenance areas*. Areas defined as attainment meet NAAQS. Non-attainment and maintenance areas have concentrations of pollutants that exceed air quality. States develop EPA-approved State Implementation Plans (SIP) to address air quality and identify a plan to bring non-attainment 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.

According to the Oregon Department of Environmental Quality, MFR is located within a Maintenance Area for both particulate matter and carbon monoxide. In 2005 the Medford-Ashland area was re-designated from "nonattainment" to "attainment with a maintenance plan for PM_{10} and carbon monoxide." As a result of this designation, projects that would increase air traffic operations or change aircraft fleet mix may require air quality modeling or detailed analyses to evaluate potential long-term air quality impacts prior to project implementation. However, most projects that involve short-term air quality impacts associated with construction activities (e.g., dust, construction equipment, etc.) would not likely be limited by the Maintenance Area designation.

Biological Resources (Threatened and Endangered Species)

Section 7(a)(2) of the Federal Endangered Species Act (ESA) requires the FAA ensure that a proposed action does not jeopardize the continued existence of any endangered or threatened species or adversely affect its habitat. Project sponsors who seek federal agency approvals or funding must coordinate with the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) concerning listed or candidate species.

USFWS mapping notes that the Airport vicinity coincides with the potential range (current or historic) of the following species listed as Threatened or Endangered under the federal ESA: fisher (*Pekania pennant*); gray wolf (*Canis lupus*); northern spotted owl (*Strix occidentalis caurina*); vernal pool fairy shrimp (*Branchinecta lynchi*); Cook's lomatium (*Lomatium cookii*); Gentner's fritillary (*Fritillaria gentneri*); and large-flowered woolly meadowfoam (*Limnanthese pumila grandiflora*) (USFWS IPaC 2018). Cook's lomatium is known from prior plant surveys to occur on MFR property (ESA, 2018; TSI 2019), and the USFWS maps designated Critical Habitat for Cook's lomatium on MFR property shown in **Figure 1-15**. The local wetland inventory (LWI) indicates the presence of several vernal pools, which is potential habitat for vernal pool fairy shrimp. There are no recorded observations of vernal pool fairy shrimp and there is no mapped designated Critical Habitat for fairy shrimp on Airport property.

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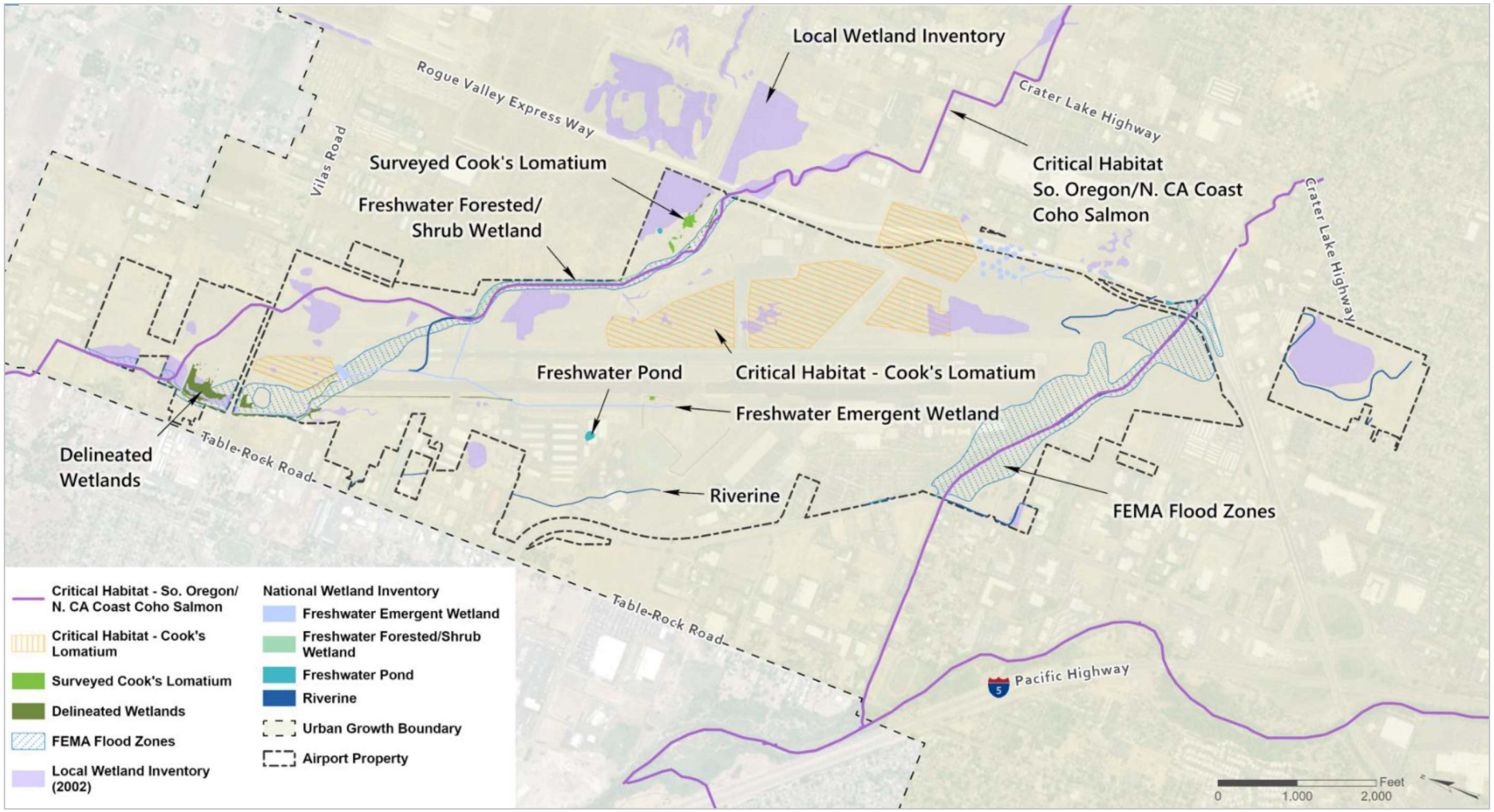
Figure 1-15: Environmental Considerations



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NMFS and StreamNet (2019) have documented occurrences of Southern Oregon/Northern California Coast Coho salmon (*Oncorhynchus kisutch*) within the airport vicinity. Lone Pine Creek and Upton Creek shown in **Figure 1-15** are designated as Critical Habitat for Southern OR/Northern CA Coast Coho salmon (NMFS 2019).

Summer-run steelhead (*Oncorhynchus mykiss*), and fall-run chinook salmon (*Oncorhynchus tshawytscha*) are documented to occur in the Rogue River and Bear Creek. Summer-run steelhead are also mapped to be present in Lone Pine Creek (ORBIC, 2018). The Rogue River, Bear Creek, and likely Lone Pine Creek will also be considered Essential Fish Habitat for Pacific Salmon under the Magnuson-Stevens Fisheries Conservation and Management Act based on the accessibility (current or historic) of these waters to Coho and chinook salmon. The existing conditions of Bear Creek, Lone Pine Creek, and Upton Creek are degraded.

Key issues to be considered during this master planning process include the potential to displace Cook's lomatium plants and impact habitat; impacts to vernal pool/fairy shrimp; and the potential for stormwater-related impacts to Southern OR/Northern CA Coast Coho salmon and Critical Habitat in Lone Pine Creek, Bear Creek, Upton Creek, and the Rogue River caused by increases in impervious surfaces.

Coordination with the Oregon Department of Environmental Quality will be necessary prior to work that may affect any of the biological resources listed in this section. Best Management Practices will be utilized to protect the water quality of the streams.

Climate Change

The Council on Environmental Quality (CEQ) has indicated that global climate change should be considered in a NEPA analysis. However, CEQ states that, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." Scientific research is ongoing to better understand climate change, but any increased concentrations of greenhouse gases (GHGs) in the atmosphere can affect global climate change. GHGs are defined as including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Air analyses performed to support NEPA compliance will identify the extent to which GHGs could be produced during construction and operation of proposed master plan projects. The air quality analyses will occur as part of formal environmental analysis undertaken to comply with NEPA.

Coastal Resources

The Coastal Zone Management Act established the Federal Coastal Zone Management Program to encourage and assist states in preparing and implementing management programs to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zones." MFR is located approximately 80 miles east of the Pacific Ocean and is not located in a coastal zone management area.

Construction Impacts

FAA Advisory Circular (AC) 150/5370-10H, *Standards for Specifying Construction of Airports*, contains provisions to minimize impacts to air quality, water quality, and soil erosion associated with projects. The AC directs that construction and demolition debris be disposed of according to applicable state and federal criteria.

The construction of proposed master plan projects can cause temporary impacts associated with construction noise, air quality, traffic impacts on local roads, and the use and storage of fuel to operate construction vehicles and equipment. Best management practices are available to avoid or reduce temporary construction impacts. Potential construction impacts will be considered in forthcoming environmental analyses performed in accordance with NEPA.

Department of Transportation Section 4(f) Properties

Section 4(f) resources include public parks, recreational areas, wildlife or waterfowl refuges, and historic sites. Under Section 4(f), the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land off a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance, only if there is no feasible and prudent alternative to using that land, and the program or project includes all possible planning to minimize harm resulting 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) property. There are three conditions under which use occurs:

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

Jackson County GIS database was reviewed for records within 1 mile of Airport boundaries. There are no Section 4(f) resources identified on the Airport or within 1 mile of the Airport boundaries.

Farmland and Soils

Pursuant to the Farmland Protection Policy Act of 1981, as amended, the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) reviews federal actions that convert undeveloped or agricultural land that is considered prime, unique, or of statewide or local importance into non-agricultural use.

The Farmland Protection Policy Act (FPPA) was enacted to minimize the extent to which federal actions and programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The FPPA classified farmland as prime farmland, unique farmland, or farmland of statewide or local importance. Prime farmland has the best combination of physical and chemical characteristics for producing

food, forage, fiber, and oilseed crops. Unique farmland is land other than prime farmland used to produce specific high-value food and fiber crops. Farmland of statewide or local importance includes soils that do not meet prime farmland criteria, but economically produce high yields of crops when treated and managed. A federal action that may result in conversion of farmland to non-agricultural use requires coordination with the U.S. Department of Agriculture NRCS.

The NRCS online web soil survey was used to identify soil types on the airport and adjacent property. Mapping and table details regarding the mapped soils within MFR are contained within the USDA/NRCS Soil Report. Airport soils are listed below in **Table 1-18**

Table 1-18: Airport Soils

Soil Type	Percentage of Area of Interest (AOI)	Farmland Classification
Agate-Winlo complex, 0 to 5 percent slopes	71.1%	Farmland of statewide importance
Coker clay, 0 to 3 percent	15.3%	Farmland of statewide importance
Cove clay, 0 to 3 percent slopes	10.2%	Farmland of statewide importance
Gregory silty clay loam, 0 to 3 percent slopes	0.1%	Prime farmland if drained
Kerby loam, 0 to 3 percent slopes	0.1%	All areas are prime farmland
Medford silty clay loam, 0 to 3 percent slopes	0.1%	All areas are prime farmland
Phoenix clay, 0 to 3 percent slopes	1.3%	Farmland of statewide importance
Provig-Agate complex, 5 to 15 percent slopes	1.1%	Farmland of statewide importance
Source: United States Department of Agriculture, National Resources Conservation Service, Web Soil Survey, accessed July 31, 2019		

According to the NRCS, the Agate-Winlo complex with 0 to 5 percent slopes is the dominant soil type accounting for approximately 71.1 percent of the airport area. This soil type is considered farmland of statewide importance. The soil locations are shown on **Figure 1-16**.

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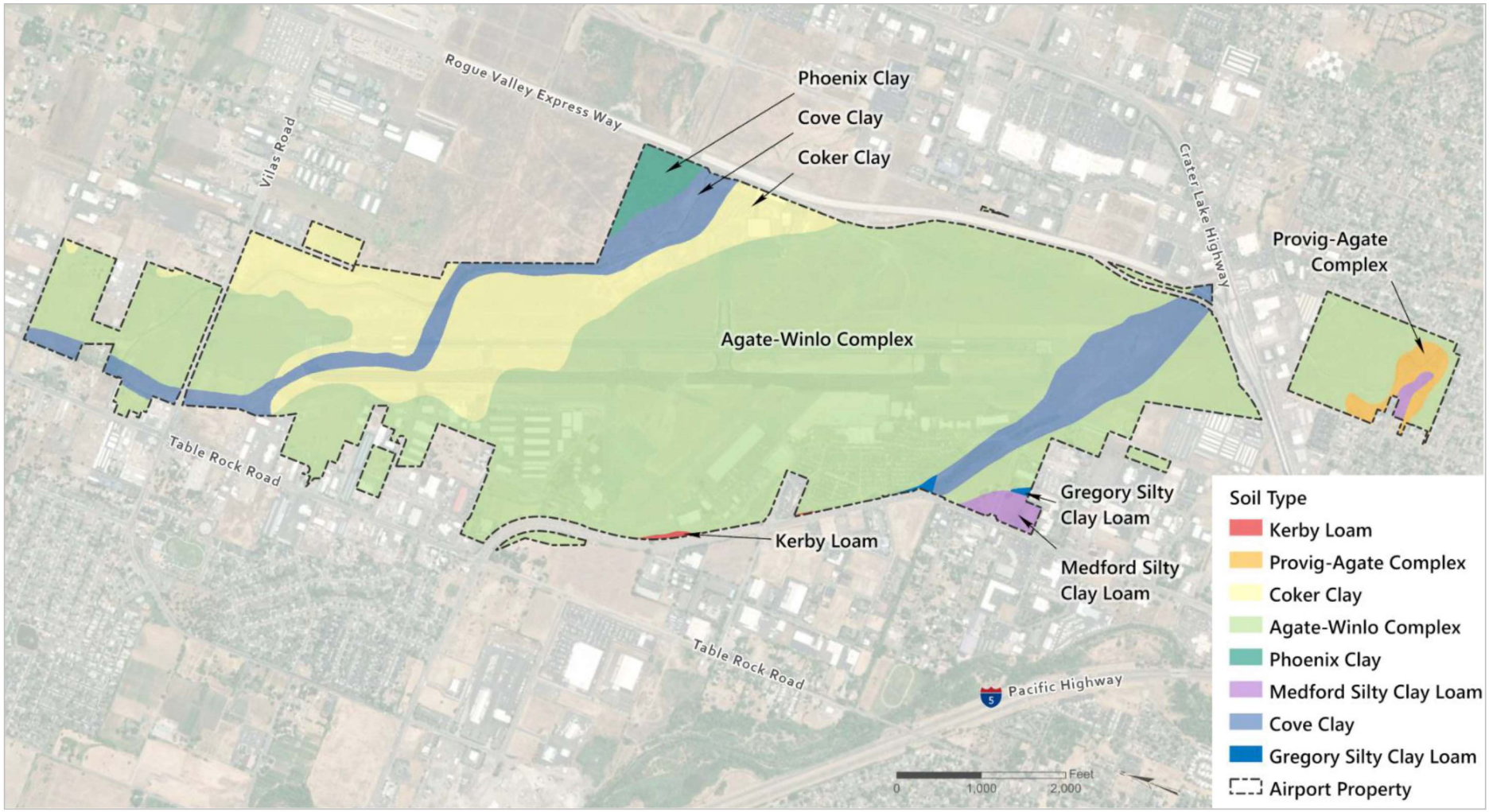
Figure 1-16: Soils



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Hazardous Materials, Pollution Prevention, and Solid Waste

Hazardous materials are defined by the Comprehensive Environmental Response, Compensation, and Liability (CERCLA) and the Solid Waste Act, as amended by the Resource Conservation and Recovery Act (RCRA) 42 United States Code (USC) 6901-6992. Hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or the environment.

The two statutes of concern to the FAA are the RCRA, as amended by the Federal Facilities Compliance Act, and the CERCLA, as amended by the Superfund Amendments Reauthorization Act (SARA) and by the Community Environmental Response Facilitation Act. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of release of a hazardous substance, excluding petroleum, into the environment.

Sites of interest are defined as state cleanup sites, federal superfund cleanup sites, hazardous waste generators, solid waste facilities, underground storage tanks, dairies, and enforcement actions. The NEPAssist database lists Hazardous Waste sites located on airport property. These sites are listed in **Table 1-19**.

Table 1-19: Hazardous Waste Sites

Site Name	Hazardous Waste Generator
Steve Green-Aircraft Painting – Jet Center	Conditionally Exempt Small Quantity Generator
Erickson Incorporated	Small Quantity Generator
Erickson, Inc.	Conditionally Exempt Small Quantity Generator
Mercy Flights	No information available
Horizon Air Industries Maintenance	Conditionally Exempt Small Quantity Generator
Jet Center MFR	No information available
Airport Tower Medford	No information available
USDOT FAA Medford SSC Office	No information available
Horizon Air Industries – Medford	Conditionally Exempt Small Quantity Generator
Federal Express Corp MFRA	Conditionally Exempt Small Quantity Generator
Source: NEPAssist Tool, August 2019	

The Oregon Department of Environmental Quality Leaking Underground Storage Tank (LUST) Cleanup Site Database identified one LUST on airport property whose status is Closed.

Historical, Architectural, Archaeological, and Cultural Resources

Historical, architectural, archaeological, and cultural resources encompass a range of sites, properties, and physical resources associated with human activities, society, and cultural institutions. Federal law requires project sponsors who require federal funds or approvals to consider how their proposed projects would affect historic properties. In accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA), the FAA is the federal lead agency for identifying the potential impacts of a proposed project on these resources and consulting with the federally recognized tribes, the State Historic Preservation Office (SHPO), and other agencies as necessary.

Section 106 of the NHPA recommends measures to coordinate federal historic preservation activities and to comment on federal actions affecting historic properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). The Archaeological and Historic Preservation Act "provides the survey, recovery, and preservation of significant scientific, prehistorical, historical, archeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project."

A search of the National Park Service's NRHP lists 150 historic properties in Jackson County, with 43 of these located within the City of Medford. There are no NRHPs located on Airport property. The nearest listed NRHP is the Dr. Charles T. and Mary Sweeney House located approximately 1.25 miles southwest of MFR.

Land Use

Compatible land use protects the health, safety, and welfare of those living and working near MFR, while protecting airspace for safe and efficient aircraft operations. Airports that receive federal funds must prevent the development of incompatible uses on land and ensure that proposed airport actions, including the adoption of zoning laws, have or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. Compatible land use will be addressed in the Land Use Chapter.

Natural Resources and Energy Supply

Energy or natural resources impacts result from implementation of projects that have a measurable effect or result in significant changes in the use or demand placed on local supplies. Energy requirements associated with an airport usually fall into two categories: demands for stationary facilities and demands for the movement of air and ground vehicles.

FAA guidance states that airport improvement projects do not increase the consumption of energy or natural resources to the point of significant impacts, unless it is found that implementation of a project would cause demand to exceed supply. Airport improvement projects may cause increased energy consumption during construction, but increases are expected to be temporary and not significant.

Noise and Noise-Compatible Land Use

According to the FAA Order 1050.1F, Desk Reference, Chapter 11, Noise and Noise-Compatible Land Use, "noise" is defined as unwanted sound that may interrupt activities such as sleep, conversation, or student learning. Aviation noise typically comes from the operation of aircraft during departures, arrivals, overflights, taxiing, and engine run-ups.

The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1986 authorizes the FAA to prescribe standards for the measurement of aircraft noise and establish regulations to abate noise. The Noise Control Act of 1972, which amends the Control and Abatement of Aircraft Noise and Sonic Boom Act of 1986, adds consideration of the protection of public health and welfare and adds the EPA to the rulemaking process for aircraft noise and sonic boom standards.

Per FAA Order 1050.1F, projects at airports that experience 90,000 annual piston-powered aircraft operations, 700 annual jet-powered aircraft operations, citing a new airport, runway relocation, runway strengthening, or a major runway expansion require a noise analysis including noise contour maps. MFR meets these criteria; therefore, further noise analysis is included in the **Land Use Chapter**.

Socioeconomic, Environmental Justice, Children's Environmental Health and Safety Risks

CEQ regulations in 40 Code of Federal Regulations (CFR), Section 1508, requires environmental documents prepared for federally funded projects to address potential social impacts.

The evaluation of a proposed project on the human environment must address the following:

- Disproportionate impacts to low-income and minority populations
- Potential relocation of homes or businesses
- Division or disruption of an established community
- Disruptions to orderly planned development
- Notable project-related changes in employment
- Impacts on health and safety risks to children.

Socioeconomic Impacts

Improvements at MFR are not expected to create significant change in population, public service, and economic activity, but are expected to have positive impacts through creation of employment opportunity, business growth, and economic activity. According to a search of the United States Census Bureau Small Area Income and Poverty Estimates database, the poverty level in Jackson County is 14.3 percent. Resource agencies should be coordinated with prior to implementation.

FAA Order 1050.1F states, "If acquisition of real property or displacement of persons is involved, 49 CFR Part 24 (implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970), as amended, must be met for federal projects and projects involving federal funding. Otherwise, the FAA, to the fullest extent possible, observes all state and local laws, regulations, and ordinances concerning zoning, transportation, economic development, housing, etc. when planning, assessing, or implementing the proposed action or alternative(s)."

Environmental Justice

FAA Order 1050.1F states, "…the FAA must provide for meaningful public involvement by minority and low-income populations. In accordance with DOT Order 5610.2(a), this public involvement must provide an opportunity for minority and low-income populations to provide input on the analysis, including demographic analysis, which identifies and addresses potential impacts on these populations that may be disproportionately high and adverse."

If an impact would affect low-income or minority populations at a disproportionately higher rate, an environmental justice impact is likely. In such cases, the environmental documents are expected to include the following:

- Demographic information about the affected populations
- Information about the population(s) that have an established use for the significantly affected resource, or to whom that resource is important (i.e. subsistence fishing)
- Results of analysis to determine if a low-income or minority population using that resource sustains more of the impact than any other population segments
- Identification of disproportionately affected low-income and minority populations
- Discussion of alternatives that would reduce the effect on those populations
- Description of possible mitigation to reduce the effect on the disproportionately affected low-income and minority populations.

The NEPA process requires environmental justice review and impact analysis for airport improvements. According to a search of the United States Census Bureau Population Estimates Program, the percentage of minority populations is 4.1 percent in Jackson County.

Children's Environmental Health and Safety Risks

FAA Order 1050.1F states "Pursuant to Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The FAA is encouraged to identify and assess environmental health risks and safety risks that the agency has reason to believe could disproportionately affect children. Environmental health risks and safety risks include risks to health or safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to."

Roots & Wings Community Preschool is located on airport property. According to a search of the United States Census Bureau Population Estimates Program database, the percentage of children under 18 is 24.3 percent in Jackson County.

Light Emissions and Visual Impacts

FAA Order 1050.1F defines light emissions as light that emanates from a light source into the surrounding environment (i.e. airfield and apron flood lighting, NAVAIDs, terminal lighting, parking lighting, roadway lighting, safety lighting). Visual resources may include structures or objects that obscure or block other landscape features (i.e. buildings, sites, traditional cultural properties, or other manmade landscape features).

Lighting for aviation security, obstruction identification, and navigation can be considered light emissions. The introduction of a new, or relocation of an existing, airport lighting facility is to be analyzed for effect on residential or other light sensitive land uses. The nearest residential area is located approximately 2,270 feet to the west of the Runway 32 end with an unobstructed line of sight. Light emissions and visual impacts should be reviewed under a NEPA analysis on a project to project basis.

Water Quality

The Airport has a Stormwater Pollution Control Plan (2017) and a 1200-Z industrial stormwater permit issued by Oregon Department of Environmental Quality (ODEQ) as required by the National Pollutant Discharge Elimination System. Both Upton Creek and Lone Pine Creeks empty into Bear Creek, north and west of MFR, respectively. Bear Creek was de-listed by ODEQ in 2010 as an impaired 303-d stream for falling under minimum Total Maximum Daily Load (TMDL) criteria for E. Coli, Fecal Coliform, and Temperature. Similarly, Lone Pine Creek was also de-listed as an impaired stream for falling under Temperature thresholds. Therefore, MFR is not required to increase monitoring as described in the 1200-Z permit 2012 update. Regular stormwater monitoring is currently performed at four locations at the airport, which include monthly visual observations and grab samples for testing four times per year.

Stormwater runoff from MFR property discharges to Upton Creek, Lone Pine Creek, or Bear Creek, depending on location (RVIMA SWPCP, 2017). Development projects that increase the amount or rate of stormwater runoff through the addition of impervious asphalt surface within these drainages will need to be further evaluated and comply with the Rogue Valley Stormwater Quality Design Manual (2018). NMFS may also be involved with development projects that would have an increase in impervious surfaces to evaluate the potential effects to listed salmonids. Similarly, projects that may locally affect precipitation infiltration and groundwater recharge through either subsurface excavation or the addition of impervious surfaces may need to be further evaluated for potential impact to local groundwater.

Wetlands

The Clean Water Act (CWA) defines wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Federal regulations require that proposed actions avoid, to the greatest extent possible, long-term and short-term impacts to wetlands, including the destruction and altering of the functions and values of wetlands.

National Wetland Inventory (NWI) and LWI mapping indicates the location of potential wetlands and water resources. Several areas on the Airport are mapped as NWI and LWI wetlands shown in **Figure 1-15**. Past water resources delineations conducted in previously proposed project areas have identified jurisdictional wetlands on airport property (TSI, 2016 and 2019). Prior to development at a specific site, a water resources delineation should be conducted in areas that have not been surveyed within the last five years.

MFR is situated in the Rogue River basin. Upton Creek flows in a northerly direction through the eastern and northern portions of the airport property, ultimately discharging to the Rogue River approximately five miles northwest of the airport shown in **Figure 1-15**. A drainage channel tributary of Upton Creek conveys storm/surface water flows northerly through the northwestern portion of the airport. Lone Pine Creek transects the southern portion of the airport, flowing into Bear Creek (a Rogue River tributary) approximately 0.5 mile west of the airport. Stormwater runoff from airport property ultimately discharges to these water bodies. Future development on MFR property has the potential to alter surface drainage channels and adjacent wetlands. Prior to development at a specific site, the effects of additional impervious surfaces and associated stormwater on surface waters should be evaluated at the site-scale.

Floodplains

A floodplain is generally a flat, low-lying area adjacent to a stream or river that is subject to inundation during high flows. The relative elevation of a floodplain determines its frequency of flooding.

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 (i.e., 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."

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) for the purpose of reducing the impact of flooding on private and public structures. Two sections of FEMA floodplain Zone A, which is an area with a 1 percent annual chance of a flood event (Federal Insurance Administration, 2011), are mapped on Airport property. These floodplains are associated with Upton Creek to the south and Lone Pine Creek to the north and east. However, the FEMA data has not been updated to reflect the relocation of Upton Creek on airport property and development adjacent to Lone Pine Creek upstream of airport property.

Jackson County and the City of Medford are in the process of updating NFIP maps for the airport property. Jackson County should consult with FEMA to conduct detailed methods per NFIP 44CFR60.3(b)(3) to estimate the 100-year discharge for all A flood zones located within Airport Property.

Surface Waters

Surface water is water that occurs above ground such as a wetland, river, stream, or lake. Aside from Upton Slough, Lone Pine Creek, and identified wetlands shown in **Figure 1-15** and the **Wetlands** section above, no surface water resources occur on airport property. The nearest major surface water is the Rogue River, which is located approximately 5 miles northwest of MFR.

Wild and Scenic Rivers

Wild and scenic rivers are protected by the 1986 Wild and Scenic Rivers Act. Wild and scenic rivers are managed by the Bureau of Land Management, the National Park Service, the USFWS, and the USFS.

Designated rivers are assigned one or more of the following classifications: wild, scenic, or recreational. These classifications are based on Outstandingly Remarkable Values of the river's surroundings. Wild rivers are the most remote and undeveloped of the classifications. Recreational rivers have many access points (including roads, railroads, bridges, and homes) within the designated corridor. Scenic rivers fall somewhere between the designation of wild and recreational rivers.

The nearest designated Wild & Scenic River segment under the National System is a section of the Rogue River west of Grants Pass, over 30 miles from the airport. There are no rivers on the Nationwide Rivers Inventory or under State jurisdiction near within MFR property (NPS 2018; OPRD 2018).

SUMMARY

MFR serves a wide variety of general and commercial aviation users. MFR and the FAA continue to invest in aviation facilities to support current and future use of MFR. The **Demand Forecast Chapter** will evaluate current activity levels and the factors that affect activity level at MFR. The Forecast Chapter evaluates aircraft fleet mix for potential changes to the designated critical aircraft category. The critical aircraft designation in turn affects runway and taxiway design criteria dimensions, which are discussed in the **Facility Requirements Chapter**.

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