CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Master Plan

February 2021

Mead&Hunt

Chapter 1

Inventory

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Inventory

INTRODUCTION

This Inventory Chapter summarizes airport facilities, services, and existing conditions at Crater Lake – Klamath Regional Airport (LMT). This information is used to establish the basis for analyses and recommendations documented throughout the Master Plan. Inventory data was collected from LMT records, FAA published data, and interviews conducted as part of on-site visits to verify the status and condition of LMT facilities.

This Inventory Chapter includes:

- Airport Overview
- Airport Profile
- Airfield and Airspace
- Landside Facilities
- Airport Support and Tenant Facilities
- Meteorological Conditions
- Community Profile
- Environmental Overview
- Inventory Chapter Summary

AIRPORT OVERVIEW

LOCATION

Figure 1-1 depicts LMT location and vicinity. The City of Klamath Falls is in south-central Oregon, 15 miles north of the Oregon/California border. The City of Klamath Falls is the Klamath County seat and the commerce center for the Klamath Basin Region of south-central Oregon and north-central California. LMT is in south-central Klamath County, five miles south of downtown Klamath Falls.

U.S. Route 97 (Dalles-California Highway), State Highway 140 (Southside Expressway) and County Highway 875A (Washburn Way) are the major thoroughfares providing access to LMT. State Highway 39 (Klamath Falls-Malin Highway) flanks LMT on the east side. LMT is bounded on the north by the Southside Expressway, on the east by Homedale Road and the Burlington Northern Santa Fe Railroad (BNSF), on the west by the Union Pacific Railroad (UP) and to the south by the Lost River Diversion Channel.

Figure 1-1 : LMT Vicinity and Location

Sources: GIS Mapping.

GOVERNANCE

The City of Klamath Falls owns the Crater Lake – Klamath Regional Airport and administers sponsorship in accordance with Federal Aviation Administration (FAA) grant obligations. The City's airport administration includes an Airport Director responsible for overall management, in addition to a Business Manager and Operations Manager, with supporting maintenance/operations personnel. The Airport Director reports to the City Manager, who in turn reports to the City Council. LMT is its own department under the City of Klamath Falls.

HISTORY

In November 1928, Klamath voters approved a measure allowing the City to sell $50,000 in bonds to fund the construction of an airport. LMT was developed in 1930 as a municipal airport with the construction of gravel runways. Services consisted of a single fixed base operator (FBO) that provided fuel to local pilots. In 1942, the U.S. Navy selected LMT as the site for a Naval Air Station. The Navy expanded the facility, including the construction of three paved runways. In 1946, at the end of World War II, the Naval base closed, and a portion of the airport facility was returned to the City of Klamath Falls under reversion as a municipal airport. The remaining land was turned over to the United States Department of the Interior, Bureau of Reclamation (USBR) for administrative offices and storage. In 1947, United Airlines became the first air carrier to provided scheduled passenger service.

In 1954, the USBR lands and a portion of the City's property interests were transferred to the United States Air Force (USAF) for a new Fighter Interceptor Complex. The USAF operated the base from 1954 to 1971. By 1956, Runway 14/32 was extended to 10,301 feet and widened to 150 feet, along with new taxiway systems and ramp areas. The airline passenger terminal building was completed in 1959.

In 1971, the Oregon Air National Guard (Oregon ANG) began its presence at LMT with the establishment of the 104th Tactical Control Squadron. The Oregon ANG assumed responsibility for Air Defense Alert from the US Air Force in 1981. The alert sovereignty ceased at LMT in 1994, with the remaining alert detachment transferred to the Oregon ANG. The Oregon ANG 173d Fighter Wing, which is a reserve component of the USAF, was activated at LMT in 1996. LMT serves as the only F-15 training facility in the United States. In 2002, the US Forest Service established the Klamath Air Tanker Base (KATB) on the northeast side of LMT to support regional aerial firefighting. The new KATB replaces the original facility constructed in the 1990s on the northwest side of LMT.

Over the years, LMT has evolved to support commercial and general aviation users, based operators, and military tactical functions under the national air defense system.

AIRPORT PROFILE

FACILITY CLASSIFICATIONS

Table 1-1 summarizes LMT service and facility classifications. LMT accommodates commercial, general aviation, and military aviation activity. LMT is classified as a primary commercial service (non-hub) facility in the most recent version of the National Plan of Integrated Airport Systems (NPIAS) by the FAA and a commercial service airport by the Oregon Department of Aviation (ODA). It is certified under FAA Part 139 to serve scheduled transport aircraft with 30-plus passenger seats although no scheduled air carrier service has been provided since 2017 and LMT is operated as general aviation airport. Although not formally a joint-use or shared-use facility, LMT operates under unique arrangements with respect to accommodating civilian and military facilities and aeronautical activities.

The City of Klamath Falls has a formal Airport Joint Use Agreement (AJUA) with the United States of America and the State of Oregon. The agreement provides for the delineation of responsibility for operation and maintenance of the flying facilities jointly used in common with others at LMT, and establishes the Air Force's reasonable share, proportional to such use, of the cost of operating and maintaining such jointly used flying facilities.

Table 1-1 : LMT Facility Services

Airport Attributes	Description
Ownership Classifications	
Airport Sponsor (Owner)	City of Klamath Falls, Oregon
Airport Property	1,251± Acres (Fee Ownership); 60-Acre Offsite Wetland Mitigation Site
FAA NPIAS Airport Classification	Primary Commercial Service (Non-Hub), Site Number: 19481
FAA Part 139 Certification / ARFF Index	Part 139 Class II (Certified May 1973) / FAA ARFF Index A
State of Oregon Airport Category	Category 1 (Commercial Service)
Facilities	
Airport Traffic Control Tower (ATCT)	Level 1 Contract Tower
On-Airport Navigational Aids	VORTAC (High Levell), ILS, RNAV (GPS), Green/White Beacon
Weather Observational Aids	Automated Surface Weather Observation Service (ASOS)
	Runway Visual Range (RVR)
Aeronautical Communications	Remote Communications Outlet (RCO – Mc Minnville Radio)
	Radar Approach Control – RAPCON (Inactive Facility Status)

Note: See Glossary for definitions and acronyms.
Sources: FAA publications and airport records, August 2018.

AERONAUTICAL ACTIVITY

LMT, based on FAA aircraft operational records, is the 9th busiest airport in the State of Oregon. In 2017/2018, LMT recorded 48,500 total annual aircraft operations (31,600 civilian and 16,900 military) and 117 total based aircraft (85 civilian and 32 military).

Approximately 90 percent of the civilian traffic is fixed-wing aircraft, and 10 percent helicopter. This 2017/2018 operational data is consistent with LMT historical activity levels recorded since 1995 and serves as the current-year activity baseline of civilian and military activity for the Master Plan. The following documents LMT activity by major civilian and military user:

Aircraft Operation: The number of aircraft takeoffs and landings, classified as *local* for aircraft operating from the same airport and *itinerant* for aircraft operating to or from a different airport.

Based Aircraft: Aircraft stored in hangars or on tie-downs as part of a rental or lease agreement; excludes temporary visiting aircraft or aircraft registered at another airport.

Historical Airline Service Schedule:
Horizon: 1979 – 2008
United: 2008 – 2014
PenAir: 2016 – 2017
*Other air carriers provided services in 1980s and 1990s.

Commercial Activity (Civilian)

Airline Activity

Scheduled airline service was most recently provided by Horizon (Q-200 aircraft), United Express (EMB-Brasilia 120 aircraft), and PenAir (Saab 340 aircraft), operating 30 to 37-seat twin turboprop aircraft, with daily service to Portland International Airport (PDX). Since 2000, annual enplanements consistently ranged between 9,000 and 30,000 passengers, and 2,500 to 3,500 annual aircraft operations. The LMT airline passenger catchment area extends from Southern Oregon to Northern California, including Klamath, Lake, and the northern portions of Siskiyou and Modoc Counties. This catchment area has 82,000 residents and generates around 153,000 annual inbound and outbound market passengers. Scheduled airline service was discontinued at LMT in 2017 due to air carrier bankruptcy; however, the City is aggressively pursuing replacement airline service to a west coast destination.

Air Cargo Activity

FedEx (operated by Empire) and UPS (operated by Ameriflight) provide scheduled air cargo flights using single and twin-turboprop aircraft. Occasionally, independent air cargo operators provide courier and freight service for specialized cargo transports. In 2017/2018, air cargo flights totaled 1,000 aircraft operations and 1.5 million total pounds of inbound and outbound cargo (freight, packages, mail).

General Aviation Activity (Civilian)

Fixed Base Operator (FBO) and Based Aircraft Pilot Tenants: The Fixed Base Operator (FBO) and aircraft pilots account for nearly 9,000 annual operations and 75 based aircraft. The FBO provides pilot and aircraft services, including fuel (Jet-A and 100LL Avgas), on-demand passenger charter, emergency air ambulance, aircraft/powerplant maintenance repair for piston and turbine aircraft, hangar storage, and aircraft tie-down parking.

US Forest Service (USFS) Activity

In 2017, the US Forest Service Klamath Air Tanker Base (KATB) supported 37 different air tanker aircraft; these tankers flew nearly 220 flights. The primary users are the USFS Regions 5 and 6 (covering Washington, Oregon, and northern California), the Oregon Department of Forestry (ODF), the Bureau of Land Management (BLM), and the California Department of Forestry and Protection (CalFire). During the fire season, which typically extends from June to October, the KATB accommodates USFS-operated and contract aircraft, along with various permanent and part-time support personnel. The KATB bases one Aero Commander (2-engine turboprop) at LMT. The largest USFS air tanker transport aircraft operating at LMT are the Lockheed C-130Q Hercules (4-engine turboprop) and the Bae Avro RJ-85 (4-engine jet). The USFS has expressed interest in accommodating the DC-10-30 transport (4-engine heavy jet) at LMT.

Agricultural Spray Activity

The agricultural spray operators use specialized single-engine turbo-prop aircraft equipped with field-spraying applicators. The ag-spray operators base two aircraft at LMT and conduct 900 annual operations.

General Aviation Flight Training

Civilian flight school training is provided by Pelican Aviation and Precision Aviation, with a combined 7 based flight training aircraft (6 fixed-wing and 1 helicopter) and 16,000 annual aircraft operations. Pelican Aviation provides fixed-wing pilot instruction and training. Precision Aviation offers helicopter and fixed-wing pilot instruction and an accredited flight training program affiliated with the Klamath Community College.

Military Activity

Oregon Air National Guard Activity

The Oregon Air National Guard (Oregon ANG) 173d Fighter Wing operates 32 based F-15 C/D tactical fighter jets that average 16,000 to 20,000 annual aircraft operations. The Oregon ANG typically schedules two daily aircraft training exercises Monday through Friday, normally between 9:00 am and 11:00 am (involving 12 aircraft) and 1:00 pm and 3:00 pm (involving 8 aircraft). Weekend exercises typically occur once to twice per month. Night training exercises are conducted once to twice a month.

Other Military Activity

Military flights also entail aircraft support and combat training exercises, including the Sentry Eagle event which generally occurs biannually involving 50 fighter and transport military aircraft. Other military activities include the Adversary Air Squadron (ADAIR), a private contract arrangement involving Alca fighter jets which conduct oppositional combat force training with the Oregon ANG F-15s and are expected to conduct 2,500 to 5,000 annual operations at LMT. Combined, the other military aircraft activity accounts for 1,350 annual fixed-wing and helicopter operations (excluding ADAIR which is counted as civilian).

AIRFIELD AND AIRSPACE

This section summarizes LMT facility assets and infrastructure conditions. The airfield facilities include the runway, taxiway, and navigational systems directly used to support aeronautical activities. **Figure 1-2** depicts the airfield facilities and runway configuration.

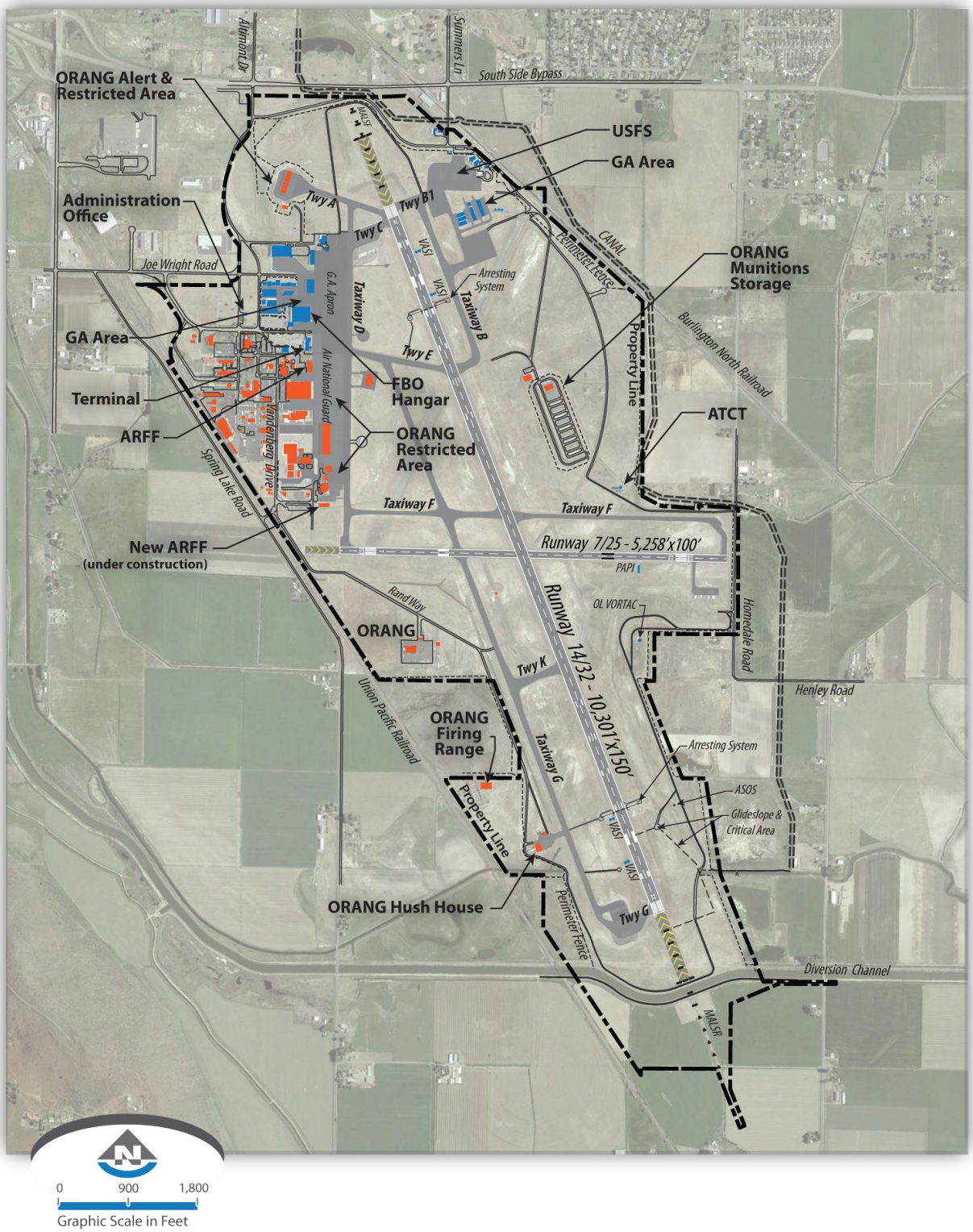
Airside: Facilities that are accessible to aircraft, such as runways and taxiways.

PROPERTY INTERESTS

The LMT property is owned in fee by the City of Klamath Falls and totals approximately 1,251 acres. The LMT property also includes an additional 60-acre offsite wetland mitigation area located along Lake Ewauna. As follows, portions of the 1,251-acre LMT property are controlled under various civilian and military joint use agreements and subordinated lease and easement arrangements.

- 325 Acres± (26 percent) = City-Airport Property (Landside Civilian Areas)
- 525 Acres± (42 percent) = Joint Use Property between City and Military (Airfield Areas)
- 400 Acres± (32 percent) = Military Use Property (313 Acres Oregon ANG Leased)

Figure 1-2 : Existing Airport Layout and Facilities



Source: GIS Mapping with LMT Airport Data and FAA Published 5010 and Airport/Facility Directory Information.

AIRFIELD

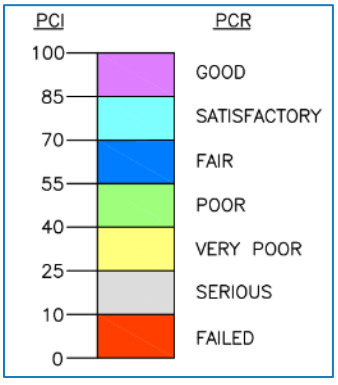
Runway System

Table 1-2 summarizes the runway infrastructure, facilities, visual navigation aids, and equipment by runway end. The airfield has two runways that intersect at midfield. The primary Runway 14/32 is 10,302' x 150' and has precision instrument capabilities, paved overruns, and arresting gear equipment for military aircraft use. Runway 14/32 is the second longest runway in Oregon. The crosswind Runway 7/25 is 5,258' x 100', with displaced landing thresholds and is FAA-programmed as a future non-precision instrument runway. Nearly 85 percent of the aircraft traffic uses runway 14/32 and 15 percent uses Runway 7/25. Runway 14 is the designated calm runway end for civilian and military traffic during light wind conditions. Runway 7/25 is not typically used by the Oregon ANG.

Taxiway System

The taxiway system consists of 12 named taxiway segments totaling 25,700 linear feet. The taxiways are named A, B, B1, B2, B3, C, D, E, F, G, H, and K. All taxiways are within the air traffic control movement area. Most of the taxiways are 75 feet wide. Taxiway F is 75 feet wide between Runway 14/32 and Taxiway G. Between Taxiway G and Taxiway D, Taxiway F is 50 feet wide. Between Runway 14/32 and Runway End 25, Taxiway F is 50 feet wide. Taxiway H is 35 feet wide. The taxiway system supports civilian and military taxiing and maneuvering, except for a 2,000-linear foot section of Taxiway D which bypasses the Oregon ANG aircraft ramp. The section of Taxiway D that is adjacent to the Oregon ANG apron is restricted to military use only and is considered a taxilane. **Table 1-3** summarizes the taxiway system infrastructure and equipment capabilities

Pavement Condition



Pavement maintenance is a significant LMT capital investment. A *Pavement Evaluation/Maintenance Management Program* was conducted in 2016 and identified the existing and project Pavement Condition Index (PCI). The PCI is a visual pavement inspection method for recording pavement surface distress types, calculating severity levels, and identifying pavement improvement methods. The PCI rates pavements in numerical and color-code indexes to correspond with the severity of pavement distresses (see PCI color scale; 100=excellent to 0=failed), and types of pavement repairs anticipated.

The following delineates PCI per pavement systems:

- Runway 14/32 and 7/25 Systems
  - 2.85 million square feet (65 acres: 52 percent of total pavement area)
  - 2016 PCI Condition: Good to Fair
- Taxiway System
  - 1.77 million square feet (41 acres: 33 percent of total pavement area)
  - 2016 PCI Condition: Fair to Very Poor

- Apron/Ramp Systems
  - 810,000 million square feet (19 acres: 15 percent of total pavement area)
  - 2016 PCI Condition: Fair

The following shows the PCI rating as a percent of the total pavement area (excluding military exclusive use pavements).

- LMT Pavement Area = 5.4 million square feet (125 acres)
  - Good = 38 percent
  - Satisfactory to Fair = 45 percent
  - Poor to Failed = 17 percent

Table 1-2 : Airfield Systems

RUNWAY SYSTEM				
Facility Component	Runway 14/32		Runway 7/25	
	Runway End 14	Runway End 32	Runway End 7	Runway End 25
Runway Type	Primary		Crosswind	
Runway Length x Width	10,302' x 150'		5,258' x 100'	
Runway Shoulder Width (Per Side)	20' (Paved)		None	
Pavement Strength (1,000 Lbs.) (Aircraft Main GearType)	175,000 (Dual Gear - DWG) 315,000 (Dual Tandem Gear - DTWG) PCN 41 F / A / X / T		17,500 (Single Gear - S) 50,000 (Dual Gear - DWG) PCN 19 F / B / Y / U	
Pavement Surface Course	Asphalt-Concrete (Grooved)		Asphalt	
Pavement Markings	Precision		Basic-Visual	
Paved Runway Blast Pad (W x L)	150' x 200'	150' x 200'	None	None
Paved Runway Stopway (W x L)	150' x 1,002	150' x 1,000'	100' x 475'	None
Arresting Gear (Military Use Only)	Yes	Yes	None	None
Runway Displaced Threshold	None		306'	512'
Land and Hold Short (LASHO)	None		None	
In-Line Taxiway	None		None	
Distance Remaining Signs	Yes		Yes	
Runway Edge Lights	High Intensity (HIRL)		Medium Intensity (MIRL)	
Runway Lighting Aids	PAPI-4L	VASI-4L	None	PAPI-4L, REIL
Runway Approcah Lighting	MALS-F	MALS-R	None	
Runway Visibility Range (RVR)	None	Yes	None	
Runway Instrument Approaches	RNAV, VOR/DME	ILS, RNAV, VOR/DME	Visual	Visual
Approach Minimums (Lowest)	3/4-Mile / 600'	1/2-Mile / 200'	None	None
	(A, B, C, D)	(A, B, C, D, E)	None	None

Note: See Glossary for Definitions and Acronyms.
Note: FAA developing feasibility for Runway 14 precision ILS procedure.
Note: Paved stopways and blast pads are not useable runway for takeoff and landing purposes.
Note: Arresting gear provides emergency aircraft stopping distance (not used for civilian purposes).
Source: Pavement strength data obtained from FAA Form 5010-1.

Table 1-3 : Taxiway System

TAXIWAY SYSTEM (DESIGNATIONS)				
Taxiway Segment	**A**	**B**	**B1**	**B2**
Type	Entrance/Connector	Partial Parallel	Entrance/Connector	Connector
Dimension (Length x Width)	530' x 75'	2,200' x75'	300' x 75'	300' x 75'
Taxiway Design Group (TDG)	5	5	5	5
Paved Shoulder Width	50' (One Side)	30'	30' (One Side)	30'
Pavement Surface Course	Asphalt	Asphalt	Asphalt	Asphalt
Edge Lighting	Medium (MITL)	Medium (MITL)	Medium (MITL)	Medium (MITL)
Pavement Classification (PCN)	39	37	37	37
Runway-Taxiway Separation	--	400'	--	--
Runway Hold Short Line	290'	Not Applicable	290'	290'
Taxiway Signs	Yes	Yes	Yes	Yes
Use: Civilian / Military	Civilian Section	Civilian and Military	Civilian and Military	Civilian and Military
Taxiway Segment	**B3**	**C**	**D (North End)**	**D (South End)**
Type	Exit/Connector	Entrance/Connector	Conector	Entrance/Conector
Dimension (Length x Width)	300' x 75'	535' x 75'	2,050' x 75'	550' x 75'
Taxiway Design Group (TDG)	5	5	5	5
Paved Shoulder Width	30'	50'	40' to 50' (One Side)	None
Pavement Surface Course	Asphalt	Asphalt/Concrete	Asphalt	Asphalt
Edge Lighting	Medium (MITL)	Medium (MITL)	Medium (MITL)	Medium (MITL)
Pavement Classification (PCN)	37	43	39	39
Runway-Taxiway Separation	--	--	--	--
Runway Hold Short Line	290'	290'	None	260'
Taxiway Signs	Yes	Yes	Yes	Yes
Use: Civilian / Military	Civilian and Military	Civilian and Military	Civilian and Military	Civilian and Military
Taxiway Segment	**E**	**F**	**G**	**K**
Type	Exit/Connector	Full Parallel	Partial Parallel	Exit
Dimension (Length x Width)	1,300' x 75'	5,450' x 50'/75'	8,870' x 75'	680' x 75'
Taxiway Design Group (TDG)	5	3 / 4 / 5	5	5
Paved Shoulder Width	20'	None	10 (Varies)	20'
Pavement Surface Course	Asphalt	Asphalt	Asphalt/Concrete	Asphalt
Edge Lighting	Medium (MITL)	Medium (MITL)	Medium (MITL)	Medium (MITL)
Pavement Classification (PCN)	39	13	39	39
Runway-Taxiway Separation	N/A	525'	785'	N/A
Runway Hold Short Line	365'	240' to 260'	285' to 290'	290'
Taxiway Signs	Yes	Yes	Yes	Yes
Use: Civilian / Military	Civilian and Military	Civilian and Military	Civilian and Military	Civilian and Military

Note: Table does not include taxiway and taxilane systems used for military exclusive-use or agricultural operators (Taxiway H).
Note: Taxiway segment lengths determined from LMT ALP drawing.
Source: Pavement strength estimated from 2016 LMT Pavement Evaluation/Maintenance Management Plan.

AIRSPACE AND AIRPORT TRAFFIC CONTROL

Airspace

Figure 1-3 shows the aeronautical chart for the surrounding LMT airspace and navigational system. The airspace surrounding LMT is Class D, Class E, and Class G, which have different pilot communication, entry, and aircraft separation requirements. Multiple Military Operating Areas (MOAs) are established east and southeast of LMT; these are designated airspace boundaries used to contain military aircraft exercises.

Navigational Aid Stations

The following are the primary navigational aids located at LMT:

- VORTAC Station
- Instrument Landing System (ILS) – Runway 32

The LMT VORTAC Station is southeast of the intersection of Runways 14/32 and 7/25; it provides multiple high and low-level airway routes for civilian and military use, Distance Measuring Equipment (DME) capabilities, and supports instrument approach and missed approach procedures. The LMT VORTAC involves a 1,000-foot and 1,200-foot buffer radius to protect encroachment from various structures. As confirmed by the FAA Minimal Operational Network (MON), the LMT VORTAC is not programmed to be phased out.

Airport Traffic Control Services

The Airport Traffic Control Tower (ATCT) controls radio communications and directs civilian and military traffic within a 5.4-mile radius of the airfield and 2,500 feet above LMT. During ATCT operating hours the airspace is Class D (tower communication) and reverts to Class E (pilot self-advisories) during non-operating ATCT hours. The Radar Approach Control (RAPCON) facility, which provides traffic advisories and sequencing services to aircraft operating within 30 miles of the airfield, is inactive; but expected by the Oregon ANG to become operational in the near future.

Figure 1-3 : Airspace Structure

Source: Vector Map, Visual Flight Rule (VFR) Aeronautical Sectional Chart, Obtained August 2018.

Airspace Traffic Patterns

The LMT traffic pattern altitude is 4,900 feet mean sea level for light piston/turbine aircraft and 5,400 feet mean sea level for heavy turbine aircraft. Nearly 80 percent of the military traffic arrivals and departures are to the east and southeast. The Oregon ANG has internal, unpublished procedures for noise mitigation over populated areas, requiring aircraft to climb steeper and turn early when departing Runway 32. Runway 14, due to proximity to the landside terminal areas, is the designated runway end for civilian and military traffic during calm wind conditions. Runway 7/25 is used predominately for flight training and agricultural-spray operations, but not typically used by the Oregon ANG.

INSTRUMENT APPROACH PROCEDURES

Table 1-4 identifies the instrument approach procedures by type, allowable FAA aircraft categories, lowest approach minimums, and civilian/military operator use.

LMT has 8 instrument approach procedures (5 civilian and 3 military exclusive use). The military aircraft are installed with ultra-high frequency navigation to support dedicated instrument approach procedures.

The Runway 32 end has a precision Instrument Landing System (ILS) which provides the lowest approach minimums. LMT has published instrument departure procedures for Runways 14 and 32 with radar services required and specific aircraft performance climb gradient requirements to maintain obstacle clearance and communications during instrument conditions.

Approach Minimums: The lowest forward visibility or descent altitude when executing an instrument procedure.

Precision: Provides horizontal and vertical instrument approach guidance.

Non-Precision: Provides only horizontal instrument approach guidance.

Visual: No published instrument approach procedure to the airport or runway end.

Table 1-4 : Instrument Approach Procedures

Runway End	Instrument Procedure	Procedure Type	FAA Aircraft Categories	Minimum Descent Altitude (Feet AGL)	Visibility Minimums (Statute Mile and RVR)	Military Use Only
14	RNAV (GPS)-LPV	Non-Precision	A,B,C,D	544'	3/4-Mile	No
	VOR/DME	Non-Precision	A,B,C,D,E	769'	3/4-Mile	No
	HI-TACAN	Non-Precision	C,D,E	769' (800')	2-Miles	Yes
	ILS	Undergoing FAA Feasibility				TBD
32	ILS	Precision	A,B,C,D	200'	2400 RVR 1800 RVR (FD/HUD)	No
	VOR/DME	Non-Precision	A,B,C,D,E	465'	2400 RVR	No
	RNAV (GPS)-LPV	Non-Precision	A,B,C,D	292'	2400 RVR	No
	HI-ILS	Precision	C,D,E	200' (200')	1/2-Mile (2400 RVR)	Yes
	HI-TACAN	Non-Precision	C,D,E	445' (500')	4500 RVR	Yes

Note: See Glossary for Definitions and Acronyms.
Note: FAA conducting Runway 14 precision ILS feasibility to determine military and civilian functionality.
Source: FAA published procedures obtained 08-2018 | FAA instrument procedure website.

LANDSIDE FACILITIES

LMT civilian landside facilities, used to support commercial and general aviation, are located on the west and east portion of the airfield. Combined, the civilian landside occupies 70 acres and contains 33 aircraft hangar buildings totaling nearly 193,000 square feet and offering 57 hangar spaces.

Landside: Facilities that support airside operations, but are not part of the aircraft movement area, such as terminal buildings, hangars, aprons, access roads, and parking facilities.

Figure 1-4 identifies the west side civilian landside area, which occupies 40 acres and includes support facilities for commercial and general aviation operators (buildings, ramps, hangars, auto parking, aircraft wash rack, rental car wash facility and fuel storage). **Figure 1-5** identifies the eastside civilian landside area, which occupies 30 acres and includes support facilities for general aviation hangar tenants and the US Forest Service (buildings, ramps, hangars, auto parking, and fuel storage).

Figure 1-4 : Westside Civilian Landside Area

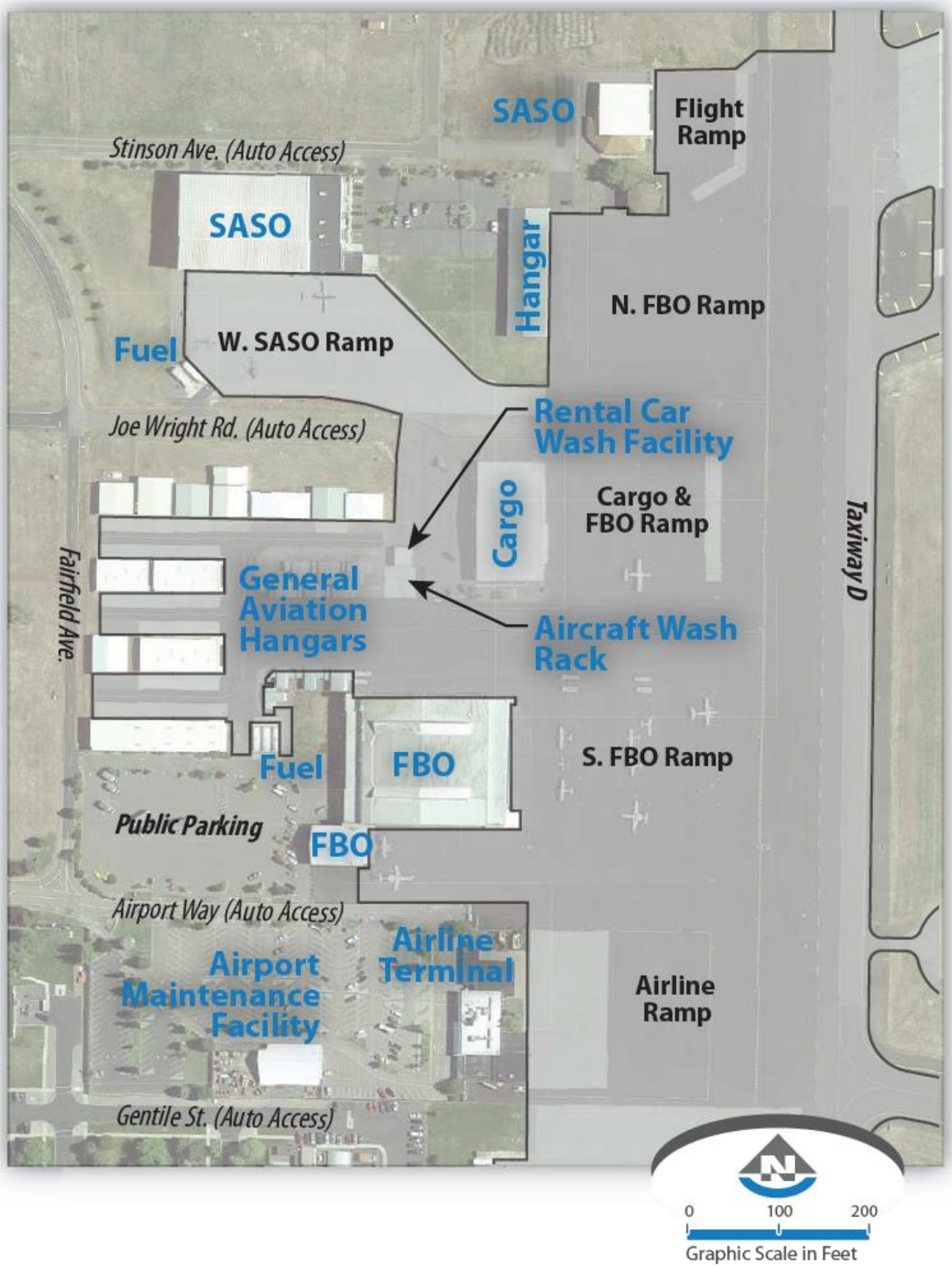
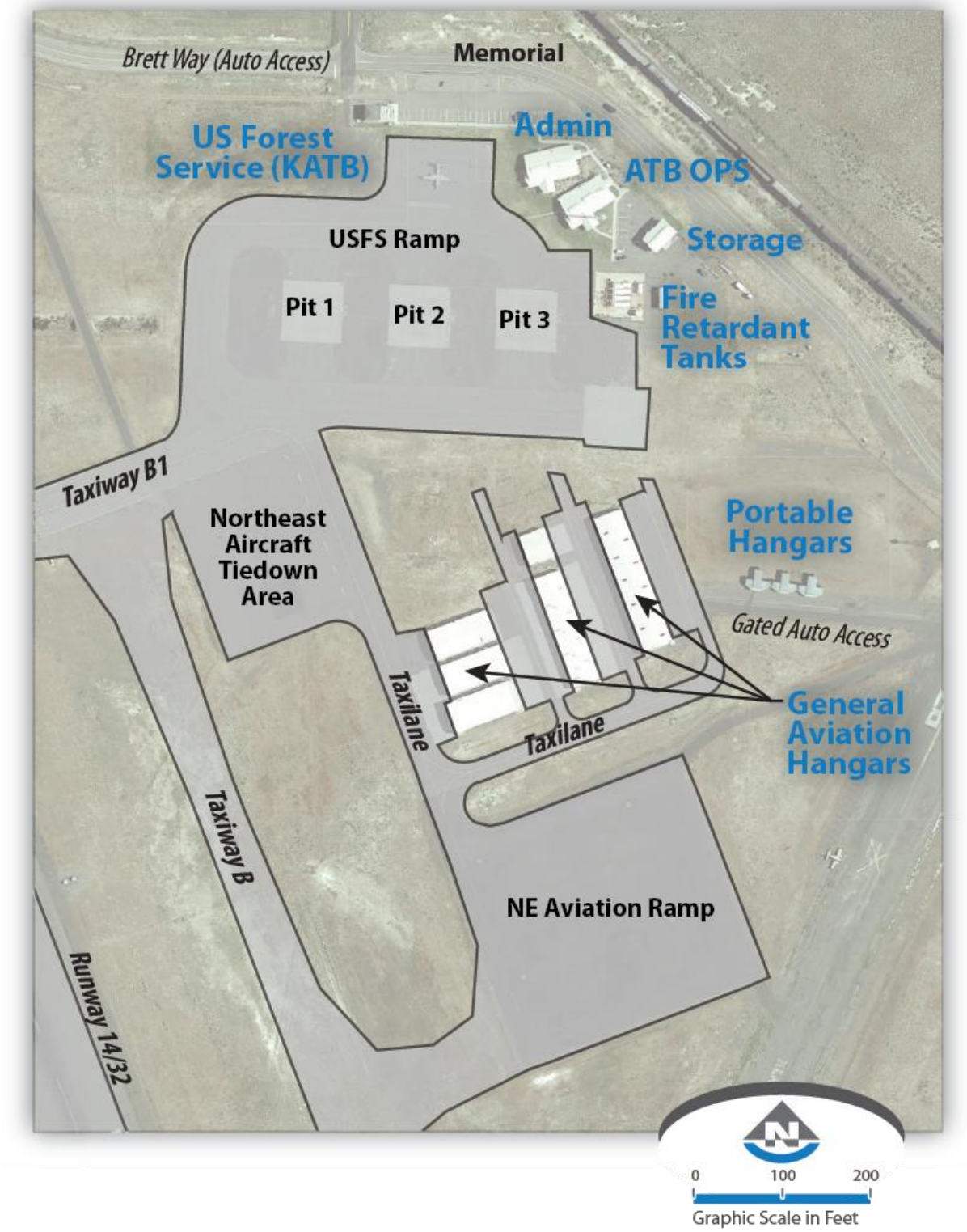


Figure 1-5 : Eastside Civilian Landside Area



AIRLINE TERMINAL AREA

The airline terminal complex (building, aircraft ramp, and auto parking/circulation) occupies six acres and is located south of the fixed base operator hangar and north of the Oregon ANG ramp.

Airline Passenger Terminal Building

Constructed in 1959, the two-story passenger terminal building is 15,107 total square feet (11,300 first floor and 3,807 second floor), built from glue laminated-timber exterior and masonry bearing walls with internal steel support columns. The lower floor includes passenger processing areas for airline, security, and leased tenant spaces. A restaurant is on the second floor and rental car facilities are downstairs. The building has one passenger departure lounge and two walk-out gates. The terminal building interior was renovated in 2002 to address security requirements resulting from the September 11, 2001 terrorist attacks. The building is in good structural and mechanical condition.

Airline Aircraft Apron

The airline ramp area is approximately 90,000 square feet with two marked aircraft parking positions to accommodate regional turboprops or small regional jets. A physical and electronic barrier separates the airline ramp from the Oregon ANG ramp. The ramp also provides parking access and maneuvering areas for airline ground support equipment.

Airline Vehicle Parking and Access Circulation

The airline terminal building is accessed from the west via Joe Wright Road and Airport Way and from the north via Summers Lane, Brett Way and Altamont Drive. The connection with Joe Wright Road was realigned in 1997. Both airport entrance routes require railroad crossings. The west access via the South Side Bypass results in crossing the Union Pacific Railroad tracks two times. The north access results in crossing the Burlington Northern Santa Fe Railroad track once.

From the 1,500-foot single-lane, one-way terminal-loop road, vehicles can access the three-lane terminal building curbside or park in the short or long-term parking lots. The rental car parking spaces are within the public parking lot. This route also provides gated vehicle access to the airline ramp and FBO hangar. The main terminal building parking lot provides 250 parking spaces; an additional parking lot was constructed in 2002 to provide 190 overflow parking spaces.

GENERAL AVIATION FACILITIES

The general aviation apron totals 781,500 square feet with 62 marked fixed-wing aircraft parking tie-down positions. Certain ramp areas are tenant leased, and not available for public parking. The marked parking positions are not distinguished for fixed wing or helicopter aircraft types.

Apron: West Side Ramp Areas

The westside general aviation ramp totals 505,000 contiguous square feet, with four separate aircraft ramp areas and 54 marked aircraft parking tie-down positions.

- South FBO = 165,000 SF | 40 parking positions (includes tenant leased area)
- Cargo/FBO = 130,000 SF | 10 parking positions (includes tenant leased area)
- North FBO = 100,000 SF | No marked (used for overflow and large aircraft parking)
- West SASO = 65,000 SF | No marked positions (tenant use)
- SASO/Flight School = 45,000 SF | 4 marked parking positions (tenant use)

Apron: East Side Ramp Areas

The eastside general aviation ramp is comprised of four parking ramp areas totaling 276,500 square feet and 8 marked parking tie-down positions.

- NE GA Tiedown Area = 45,000 SF | 3 marked parking positions
- NE Aviation Ramp = 136,500 SF | Large parking ramp with no marked positions
- US Forest Service = 60,000 SF | 3 marked parking positions (tenant use area)
- Ag Spray = 35,000 SF | 2 marked parking positions (tenant use area)

AIRPORT SUPPORT AND TENANT FACILITIES

The following section describes aeronautical facilities supporting tenant operations (FBO and SASO) and airport support. The Oregon ANG, as a significant operational tenant operating under an Airport Joint Use Agreement (AJUA) with the City of Klamath Falls, contributes in supporting both military and civilian aeronautical services, including the ATCT, Airport Rescue and Firefighting (ARFF), and airfield maintenance and snow removal.

Fixed Base Operator (FBO): Provides full-service pilot and aircraft aeronautical support and amenities.

Specialized Aviation Service Operators (SASO): Provides unique, or single-service aviation support or provisions.

ADMINISTRATION BUILDING

The single-level LMT administrative office building (1,680 square feet) is located northeast of the intersection of Arnold Avenue and Airport Way. Vehicle parking is provided in a single row of ten spaces on the east side of Arnold Avenue. The building, which was converted from a former military storage garage, is in fair to poor condition.

MAINTENANCE BUILDING

The LMT maintenance building (5,000 square feet) is located along the southern portion of the airline terminal parking lot. This building has opposing dual entry/exit doorways that do not provide direct access to the secured airfield area. The building is used to provide covered storage for airport vehicles and machinery and storage space for parts along with a workshop area. Additional exterior machinery and equipment parking is provided on the west end of the building. The building is in good condition but provides limited space for operations and personnel and no space for airfield snow removal equipment.

OREGON ANG FACILITIES

The Oregon ANG 173d Fighter Wing is located on the LMT and has significant tenant facilities and operations. The Oregon ANG occupies approximately 400 acres and includes approximately 70 Oregon ANG buildings totaling nearly 500,000 square feet. The Oregon ANG areas include: 1) Command and Support - Cantonment Area; 2) Munitions Storage; 3) Combat Arms and Training Maintenance Range (CATM)/Firing Range; and 4) Aircraft Operations/Air Traffic Control Squadron (ATCS). The AJUA specifies the conditions and amount that Oregon ANG contributes for shared use of LMT property and services. The AJUA expires on September 30, 2022 and the Oregon ANG lease expires on June 30, 2095. The military conducts planning for Oregon ANG facility and land use needs, as this LMT Master Plan is not responsible for planning within Oregon ANG leased areas.

AIRPORT TRAFFIC CONTROL TOWER (ATCT)

The ATCT is located 1,500 feet northeast of the intersection of Runways 14/32 and 7/25, within the air operations area. The ATCT facilities consist of a tower-shaft and base buildings, vehicle parking, dedicated access road, and security gate. The ATCT vehicle access connects with Homedale Road via a controlled-access gate. The ATCT cab floor height is approximately 68 feet above ground (4,154 MSL) and the radio antennas are located on top of the cab to a maximum height of 95 feet above ground level. The ATCT cab elevation provides uninterrupted controller line-of-sight to the runway ends, with some line-of-sight limitations within the Oregon ANG aircraft parking areas. The ATCT is operated by Oregon ANG and staffed by military and civilian-contract controllers. The ATCT building, constructed in 1999, is in good condition and sufficiently serves civilian and military traffic.

AIRCRAFT RESCUE AND FIREFIGHTING (ARFF)

A new Oregon ANG Aircraft Rescue and Firefighting (ARFF) station is located along the southside cantonment area. The replacement ARFF provides 24-hour emergency response, with equipment and personnel capabilities for meeting FAA ARFF Index A, which is required during civilian scheduled airline flights operating 30 or more passenger seats. The ARFF facilities provide sufficient operating capabilities for civilian traffic.

AIR CARGO FACILITIES

Air cargo facilities occupy 2.0 acres and consist of a storage building-hangar, aircraft ramp, and vehicle parking. FedEx leases a flightline building-hangar (19,000 square feet) for storage and processing. Both FedEx and UPS access the apron to process cargo directly from the aircraft to the delivery vehicles, and then sort facility. The air cargo aircraft parking area is about 35,000 square feet, with space to accommodate two to three parked aircraft, and delivery truck maneuvering space to load and unload cargo directly at the aircraft parking position.

US FOREST SERVICE FACILITIES

The US Forest Service (USFS) leases approximately 12 acres for the Klamath Airtanker Base (KATB), one of three USFS large aircraft tanker bases in Oregon. The KATB operates dedicated USFS facilities including administrative/support buildings, air tanker loading and refueling pads with three large tanker "pull through" pits, one back-in tanker pad, and retardant storage tanks.

AGRICULTURAL-SPRAY FACILITIES

The agricultural spray facilities occupy 4 acres located at a dedicated staging site south of the Runway 25 end. The spray application facilities include a ramp with two concrete aircraft loading pads, covered storage awnings, a Jet-A fuel tank, and ancillary storage tank facilities. Vehicle access is provided via secured access.

GENERAL AVIATION (GA) AIRCRAFT HANGAR FACILITIES

The aircraft hangar storage areas total nearly 193,000 square feet and comprise 33 hangar buildings and 57 separate units. Approximately 80 to 90 percent of the based aircraft are stored in hangars with the remainder on apron tie-down parking. The hangars consist of common hangars (76,300 square feet = 40 percent) and individual T-hangars/Box hangars (116,300 square feet = 60 percent). The hangar ground lease area is controlled by LMT, under lease to tenants and private users with hangar ownership and rental arrangements. The westside hangar area is 17 acres and the eastside hangar area is 3 acres.

AIRCRAFT FUEL FACILITIES

Table 1-5 summarizes the fuel services provided at LMT. The bulk fuel storage for civilian consumption includes 3 tanks totaling 36,000 gallons: 24,000 gallons for Jet-A (turbine aircraft) and 12,000 gallons for Avgas (piston aircraft). Fuel is dispensed by FBO truck, as there is no self-fueling available for public use. The FBO is considering installing self-fueling tanks and facility on the FBO ramp. Century North has privately owned and operated fuel tanks and delivery systems. The fuel is not available for public use. LMT has established operational requirements for privately owned, non-public fuel storage and delivery in the Airport minimum standards, Section 6D.

Table 1-5 : LMT Fuel Storage and Dispensing Facilities

Fuel Operator	Fuel Tank Storage (Gallons)	Fuel Type	Tank Type
FBO Century Aviation	12,000	Jet-A	Aboveground Storage – No Dispensing
	12,000	Jet-A	Aboveground Storage – No Dispensing
	12,000	100LL Avgas	Aboveground Storage – No Dispensing
	5,000	Jet-A	Fuel Dispensing Truck
	3,000	Jet-A	Fuel Dispensing Truck
	2,000	Jet-A	Fuel Dispensing Truck
	1,600	100LL Avgas	Fuel Dispensing Truck
	1,000	100LL Avgas	Fuel Dispensing Truck
Agricultural Operator (Exclusive Use)	12,000	Jet-A	Aboveground
Century North (Exclusive Use)	20,000	Jet-A	Aboveground
	20,000	100LL Avgas	Aboveground

Source: LMT Airport (Stormwater Pollution Prevention Plan (SWPPP), Obtained October, 2018.)

WASH RACK FACILITIES

Located east of the air cargo building, a 750 square foot enclosed wash rack functions as a rental car wash facility. The adjacent concrete ramp inside the secured fence is the designated aircraft wash rack.

METEORLOGICAL CONDITIONS

CLIMATE

Table 1-6 summarizes the climatic weather characteristics for the LMT region. Meteorological conditions such as winds, temperature, cloud conditions, and precipitation types affect aircraft performance and influence aeronautical activities.

Table 1-6 : Climatic Data Summary

Climate Event	Climate Description	Value
Temperature	Mean Annual	47° F
	Mean Month Maximum (Month)	83° F (July)
	Extreme High Temperature (Month)	100° F (August)
Precipitation	Mean Annual Rainfall	12.8 Inches
	Annual Rainfall Days More Than 0.10-Inch	86 Days
	Annual Mean Snowfall	40.1 Inches
	Monthly Maximum Snowfall	38.4 Inches
Sky Conditions	Visual Flight Rule (VFR) Conditions	89.5% Observations
	Instrument Flight Rule (IFR) Conditions	4.1% Observations
	Low Instrument Flight Rule (IFR) Conditions	1.6% Observations
	Annual Days with Fog	52 Days
	Annual Days with Thunderstorms	14 Days
	Prevailing Wind Direction (From)	Northwest NW
	Average Prevailing Wind Speed (Kts)	6 Knots

Source: National Weather Service (NWS), Climatic Meteorological Summary, Klamath Falls Station (2007-2016).

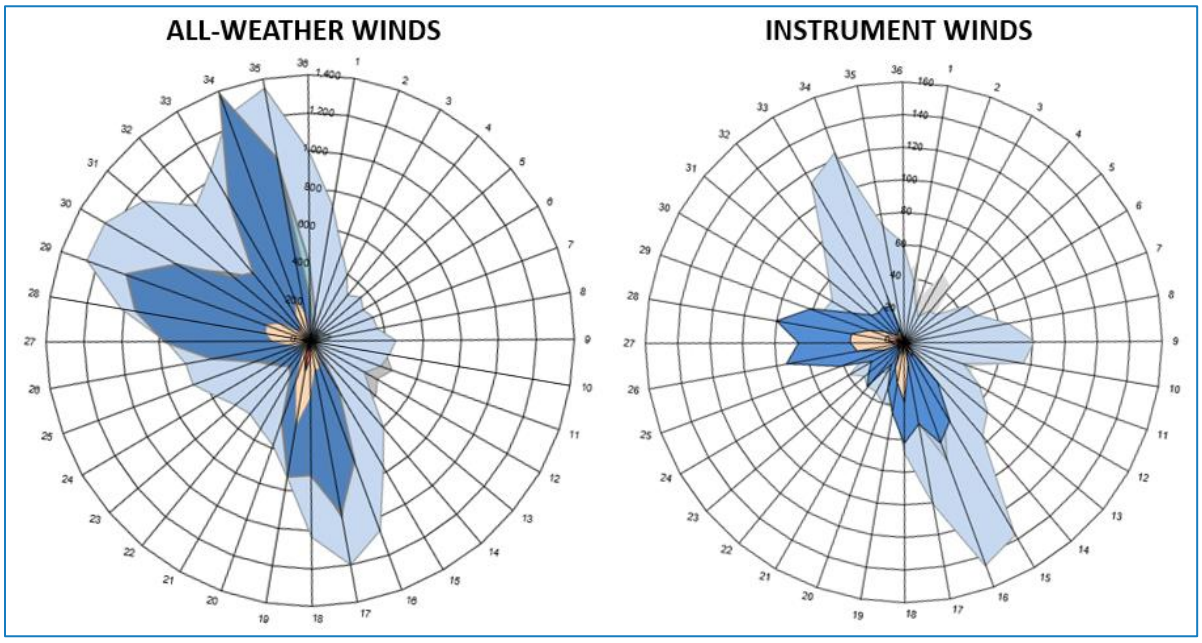
WIND PATTERNS AND CROSSWIND CONDITIONS

Figure 1-6 plots the prevailing 10-year wind pattern observations for all-weather and instrument wind conditions. Wind patterns are an important meteorological factor in assessing runway utilization and for determining runway design requirements in accordance with FAA aircraft category standards. The prevailing winds and peak-gusts are predominately from the west-northwest. Annually, calm to light winds (0-11 knots) occur 82 percent of the time, with strong winds (11-20 knots) occurring 15 percent of the time, and gusty winds (greater than 20 knots) occurring 1 percent of the time.

Table 1-7 lists the percent crosswind components for all-weather, instrument, and visual conditions for the 10.5, 13.0, 16.0, and 20.0 knot crosswind velocities.

Crosswind coverage is the component of wind speed and relative direction blowing at right angles to the runway; the FAA's desirable threshold for adequate crosswind runway coverage is 95 percent at 10.5 knots. This means that a small piston-engine aircraft should be able to land on a runway greater than 95 percent of the time without exceeding the aircraft's crosswind component as crosswinds tend to affect smaller aircraft more severely than larger aircraft. Because Runway 14/32 does not achieve 95 percent crosswind coverage at 10.5 knots for all-weather, instrument, and visual wind conditions, a crosswind runway is required for design and operational purposes.

Figure 1-6 : Wind Dispersion Charts (All-Weather and Instrument Conditions)



Source: FAA Airports GIS Wind Rose Data (https://airports-gis.faa.gov/windRose), Klamath Weather Station.

Table 1-7 : Runway Crosswind Component (Percent Coverage)

Runway (Wind Component / Aircraft Acommodated)	10.5-Knot Component	13-Knot Component	16-Knot Component	20-Knot Component
	Piston	Turboprops & Small Jets	Turboprop & Large Jets	Large Jet Transports
ALL-WEATHER WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14-32	93.8%	96.5%	98.8%	99.7%
Runway 7-25	90.1%	93.9%	97.4%	99.1%
Runway 14-32 & Runway 7-25 Combined	99.0%	99.6%	99.9%	100.0%
INSTRUMENT (IFR) WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14-32	94.6%	96.7%	98.7%	99.6%
Runway 7-25	94.7%	96.7%	98.6%	99.6%
Runway 14-32 & Runway 7-25 Combined	99.1%	99.7%	99.9%	100.0%
VISUAL (VFR) WIND DATA OBSERVATIONS (PERCENT COVERAGE)				
Runway 14-32	93.8%	96.5%	98.8%	99.7%
Runway 7-25	90.1%	94.0%	97.5%	99.1%
Runway 14-32 & Runway 7-25 Combined	99.0%	99.7%	99.9%	100.0%

Notes:
1. Red text indicates less than 95 percent FAA crosswind coverage threshold.
2. Percent crosswind component computed using FAA windrose calculator program.
3. True runway bearings (Rwy 14/32 = 158 True | Rwy 7/25 = 90 True)
4. Wind Observation Period: 2007 to 2016 (All-Weather = 102,488 | IFR =11,104 | VFR = 91,472)

Source: FAA Airports GIS Wind Rose Data (https://airports-gis.faa.gov/windRose), Klamath Weather Station.

AIRPORT UTILITIES (CIVILIAN AREAS)

Utilities and providers serving on-airport civilian areas are described below:

- **Electric Power (PacifiCorp):** Power utility lines are underground, except for a segment along Spring Lake Road. LMT eastside is supplied by Hornet Substation South of Keller Road and West of Hwy 39; via Summers Lane. LMT westside is supplied by substation North of Laverne Avenue; west of Washburn Way via Joe Wright Road.
  - *Noted Factors*: No known electrical deficiencies. LMT eastside power is the most distant circuit from the Hornet Substation; future development with high power loads may require upgrades to the transformers, conductors, or substation.

- **Water (City of Klamath Falls):** LMT westside is served by a 16-inch ductile iron main along Joe Right Road. LMT eastside is served by a 12-inch PVC main along from the Southside Expressway near Summers Lane, then along Brett Way and paralleling the railroad right of way to the air traffic control tower. An 8-inch PVC main continues east and then south along Homedale Road to the Agriculture Operations area near Homedale Road/Henley Road intersection.
  - *Noted Factors*: Future development within the LMT westside/eastside general aviation areas and business park west of LMT may require main or service extensions.

- **Sanitary Sewer (City of Klamath Falls):** LMT westside sewage gravity drains to the Oregon ANG lift station and is pumped to the KFI lift station located at Altamont Drive and Southside Expressway. LMT eastside gravity drains via a 12-inch PVC main to the Wings Way lift station then is pumped to 18-inch gravity main on the Southside Expressway, then gravity drains to the KFI lift station.
  - *Noted Factors*: Future development within the northwest and northeast general aviation areas may require gravity main extensions.

- **Gas (Avista Utilities):** LMT eastside is supplied by 2-inch main via Summers Lane. LMT westside is supplied by 6-inch main via Washburn Way and Joe Wright Road. Gas mains are high pressure (60 pounds per square inch).
  - *Noted Factors*: Gas is not available southeast along Homedale Drive. The 2-inch main may not be adequate for high demand commercial or industrial use.

- **Trans Canada (Natural Gas Pipeline):** A 16-inch gas transmission pipeline and associated easement runs east-west along the northerly airport property, crossing Summers Lane and the Burlington Northern railroad, then continuing east.
  - *Noted Factors*: The pipeline is for transmission and not intended to serve future development at LMT.

- **Stormwater Systems (City of Klamath Falls):** Storm runoff drains to Klamath Irrigation District ditches, then to the Lost River Diversion Canal.
  - *Noted Factors*: No known deficiencies.

- **Solid Waste Removal (Waste Management):** Trash service is provided by Waste Management.
  - *Noted Factors*: No known deficiencies.
- **Communications (Hunter):** LMT westside communications infrastructure is stubbed to the intersection of Altamont Drive and Joe Wright Road. No communications service deficiencies to LMT northside.
  - *Noted Factors*: Future eastside communications could be extended via an easement along the northerly airport service road; or an alternative from Summers Lane, Brett Way and along the eastern airport service road.
- **Communications (Charter):** Fiber optic service runs to the LMT northside, north of the railroad on Summers lane.
  - *Noted Factors*: Future fiber optic service extension to the LMT boundary would require crossing under the railroad along the West side of Summers Lane.
- **Communications (Centurylink):** Fiber optic and phone service runs to the LMT westside building area via Altamont Drive or Joe Wright Road. Phone service is supplied to the US Forest Service.
  - *Noted Factors*: Century Link has existing conduit to the Forest Service via Summers Lane, which could extend fiber optic service within their existing conduits.

COMMUNITY PROFILE

SOCIOECONOMIC PROFILE

Socioeconomic data provides an understanding of commerce and demographic trends influencing the LMT regional area. Profile data was collected for Klamath County to quantify community development patterns and diversity.

Community Commerce Trends

The City and County economy are growing and diversifying and continuing to transition from a resource industry economy and further expand since the 2008 recession. Historically, the timber, agriculture, and fishing industries have been the principal economic resource industries in Klamath County. At present, the top Klamath County employment sectors are: 1) health care, 2) retail, and 3) government; combined, accounting for 40 percent of the workforce. Several of the largest Klamath County employers are direct LMT users, including: the Oregon ANG, Sky Lakes Medical Center, Oregon Institute of Technology (OIT) and Klamath County Community College (KCC).

The key commerce trends influencing the regional economy include:

- Developing a thriving entrepreneurial ecosystem poised to strengthen existing businesses and support the emergence of new business.
- Building a reputation as an emerging recreational destination.
- Hosting 125,000 annual visitors with strong California and growing Portland tourism base; summer hotel occupancy nearing capacity; focus is on winter and off-season shoulder periods.

- Investing in local infrastructure ($1 billion in construction redevelopment in next five years)
- Establishing an aggressive marketing effort targeting entrepreneurial businesses and innovative industry.
- Providing competitive Business Enterprise Zone incentive packages.
- Focusing on accommodating specialized labor force and job retention.
- Focusing on college training and placement programs, including aviation.

Population Trends

Population is a key economic indicator. The following documents historical and projected population for Klamath County based on Woods & Poole Economic Data (2016).

- Klamath County Population (2018) = 66,800 residents
- Klamath County Population (2038) = 71,000 residents (+4,200, 5.8 percent Change, 0.3 percent CAGR)
- Urban Growth Boundary (2018) = 42,800 residents (64 percent of County)
- City of Klamath Population (2018) = 24,500 residents (37 percent of County)

Airport Economic Significance

On-airport business activities generate significant annual economic contributions, as measured by wages, spending, and sales. LMT employs approximately 1,180 workers (80 civilian and 1,100 military) with total economic impacts exceeding $265 million annually. Civilian economic impacts are realized from airport staff and commercial tenant outputs, including direct and secondary spending impacts resulting from air cargo, FBO general services, the US Forest Service, agricultural spray operators, and flight training.

CITY / AIRPORT LAND USE AND ZONING

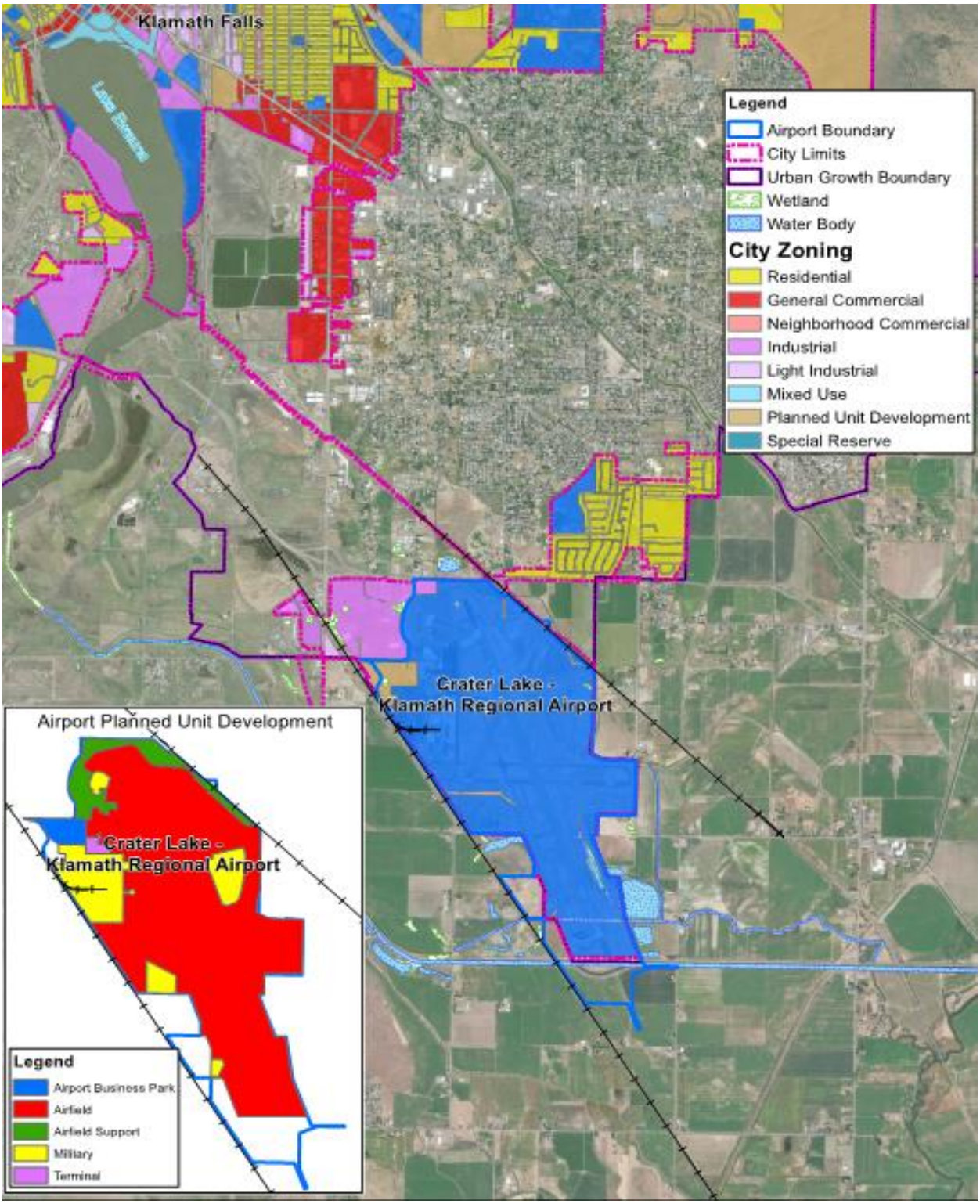
LMT is within the City of Klamath Falls' corporate boundary. LMT property is designated by the City as a Public Facility. The City of Klamath Falls has land use jurisdiction for the areas on LMT and immediately adjacent to LMT to the northwest and northeast. The City regulates land use development at LMT by way of the LMT Overlay Ordinance (Chapter 12) and the LMT Planned Use Development (PUD). **Figure 1-7** depicts the land use zoning for LMT and adjacent areas within the City's jurisdiction.

City LMT Overlay Ordinance (Civilian)

The City Land Use Development Code, Chapter 12, prescribes regulations in conformance with development standards, including LMT. The City has adopted an Airport Overlay Ordinance (Chapter 12, Sections 12.600 through 12.650), "Airport Safety and Hazard Preventions Overlay Zone" (ASHPO), which extends beyond LMT property. The ASHPO establishes and promotes standards prescribed for allowable and non-conforming uses within the following ASHPO boundaries and zones:

- LMT Noise Impact Boundary: Zones I, II, and III located within the 65 decibel and higher noise contour boundaries. The 2005 LMT Airport Master Plan land use guidelines support the ASHPO for LMT noise compatibility. ASHPO Ordinance Map, Page 53.
- Hazard Zone - LMT Imaginary Surfaces: Involves the Runway Protection Zone (RPZ) and 14 CFR Part 77 imaginary airspace surfaces (runway approach, transitional, conical, horizontal). The basis of the zones is the Airport Layout Plan (ALP) and airspace plan drawings from the 2005 Airport Master Plan. ASHPO Ordinance Map, Page 47.
- LMT Impact Area: Involves the LMT Direct Impact Area and LMT Secondary Impact Area associated with wetland areas. In addition, there are restrictions within the Runway Protection Zone (RPZ) and FAR Part 77 Approach Surface. ASHPO Ordinance Map, Page 50.
- Other: Potential future LMT land acquisition is identified for planning considerations near LMT. ASHPO Ordinance Map, Page 57.

Figure 1-7 : City LMT Land Use and Zoning



Source: City of Klamath Falls, December 2015.

Airport Planned Use Development (PUD)

An Airport Planned Unit Development (PUD) has been established for LMT, which specifies on-airport development standards within five land use designations:

- Airfield,
- Airfield Support,
- Terminal (airline complex),
- Airport Business Park, and
- Military.

The PUD is intended to provide planning and design flexibility for large site development tracts with common land uses and standards. The LMT Airport PUD specifies permitted and conditional uses for various development standards, including lot coverage, building setback/height, and auto access circulation.

County Airport Land Use Planning and Zoning

The County of Klamath has land use jurisdiction over the areas near LMT. **Figure 1-8** shows the land use zoning designations for LMT and adjacent areas. LMT is designated Public Facility. Lands to the east, west, and south are designated Exclusive Farm Use – Crop Land. Immediately north of LMT are existing residential uses. Several pockets of land north of LMT are designated for various types of commercial and industrial uses.

The Klamath County Comprehensive Plan, adopted in 2010, includes policies protecting LMT by regulating land uses within the airport environs through the County's Land Development Code. The Comprehensive Plan encourages commercial/industrial development around LMT and limiting encroachment of residential uses into the LMT critical areas. The policies of the Comprehensive Plan are based on the aeronautical data included in the 1976 LMT Airport Master Plan. The Klamath County Land Development Code includes two sections pertaining to LMT airport safety and noise areas:

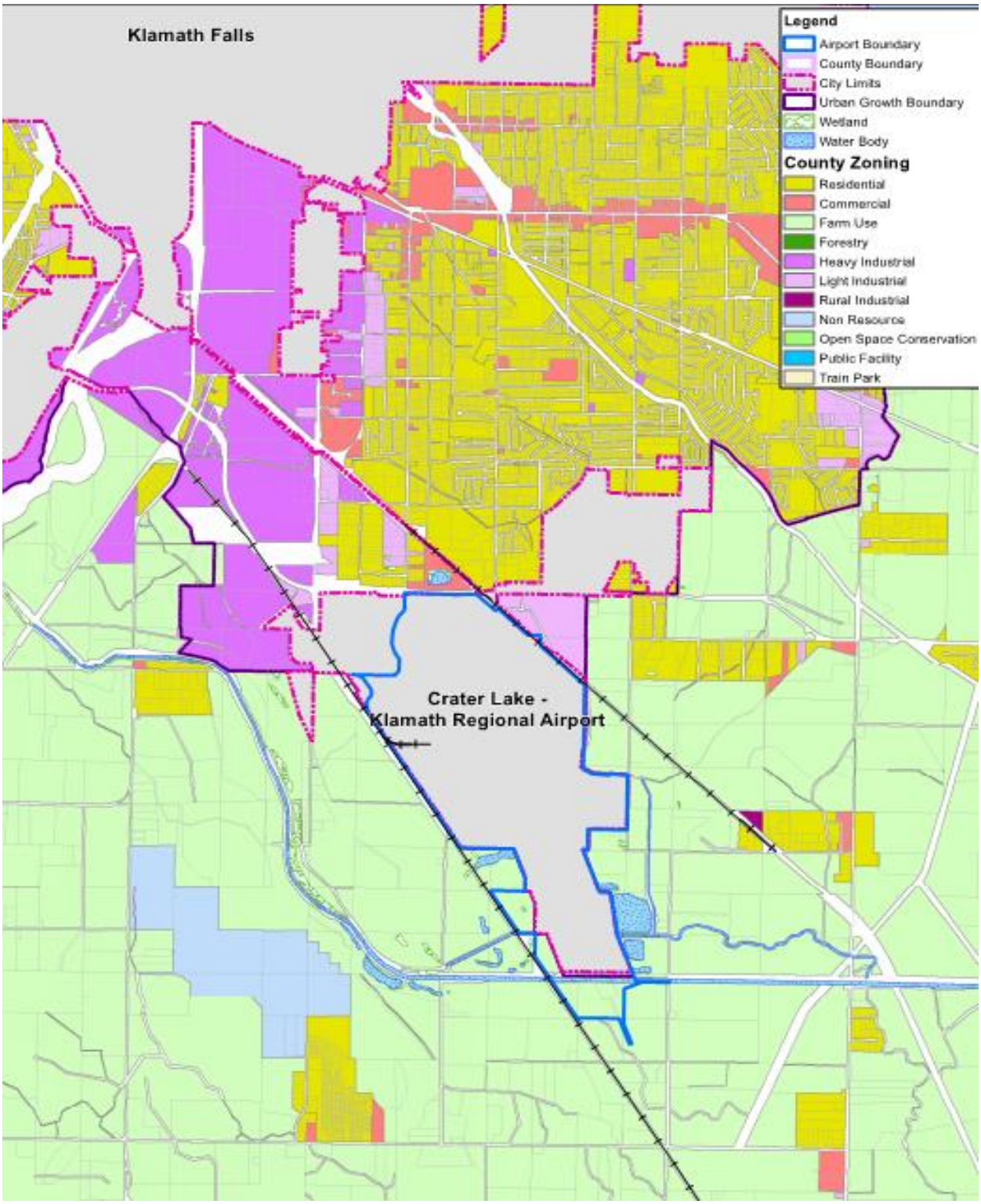
- Article 58, *Airport Safety Overlay,* defines LMT safety zones in accordance with 14 CFR Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace.* The zoning ordinance establishes height limitations as well as restrictions on certain types of land uses proposed within LMT safety zones. The safety ordinance reflects the aeronautical data provided in LMT Master Plan adopted by the City of Klamath Falls in 1988.
- Article 58.2, *Airport Noise Overlay,* establishes land use limitations and development standards for the areas within the LMT noise overlay zones. The overlay zones are based on the day/night average sound level (DNL) noise contours derived from the 1980 Noise Impact Boundary Study.

Military Airport Land Use

LMT land use standards are different for civilian and military aeronautical functions; civilian standards follow FAA guidance and the military standards follow Department of Defense standards. The military airspace surface dimensions and hazard zones generally extend further than the civilian zones. The City completed a Joint Land Use Study (JLUS) in 2016 and is in the second phase of the JLUS to assess potential compatibility issues and develop strategies in cooperation with the local jurisdictions, military, and other local partners. The JLUS will develop a Military Influence Area Overlay District (MIAOD) that will reflect the four major Military Influence Areas (MIA) areas:

- Airfield Safety,
- Vertical Obstruction Height,
- Aircraft Noise, and
- Military Safety Zones and Buffer Areas.

Figure 1-8 : Klamath County Zoning Map



Source: Klamath County Zoning Map: http://klamathmap.houstoneng.net/, Obtained August 30, 2018.

ENVIRONMENTAL OVERVIEW

The City prepared a brief environmental overview to identify and summarize the presence of known environmental resources and conditions on LMT or in its immediate vicinity, with the exception of areas leased to the Oregon ANG. Research for the environmental overview included a review of existing agency databases, previously developed environmental studies, resource management plans, and local inquiries. The environmental overview provides an initial screening of environmental resources that will be considered during the development of master plan alternatives.

While guided by the National Environmental Policy Act (NEPA) of 1969 and guidance set forth in FAA Order 1050.1F, *Policies and Procedures for Considering Environmental Impacts*, the environmental overview is not intended to serve as a substitute for a NEPA evaluation. Environmental studies necessary to achieve NEPA compliance will be conducted at a later date and as a separate project to support project engineering and necessary federal approvals.

Key resources and information identified during the preparation of the environmental overview include:

- Seven federally listed or candidate species were identified as potentially occurring on LMT, and one federally listed species, Applegate's milk vetch (*Astragalus applegatei*), was documented on site.
- Cultivated parcels adjacent to LMT likely include prime farmland and farmland of statewide importance.
- Hazardous materials are present or have been used and stored at LMT for civilian and military purposes.
- Six structures that are 50 years of age or older will require evaluation to determine their eligibility for the National Register of Historic Places (NRHP), and LMT as a whole may require evaluation to determine if it is a NRHP-eligible historic district pursuant to Section 106 of the National Historic Preservation Act.
- LMT is located above a perched aquifer, and groundwater has been encountered at depths of less than 4 feet below ground surface. (The presence of an elevated groundwater table must be considered during project engineering and design.)
- National Wetland Inventory (NWI) Maps indicate the presence of several on-site freshwater emergent wetlands and potential jurisdictional freshwater ponds immediately north and east of LMT.

Appendix B, *Environmental Overview*, summarizes known environmental resources, the associated regulatory context, and items that should be considered during the development of master plan projects and alternatives.

INVENTORY SUMMARY

The following summarizes the key inventory findings for LMT civilian services and facilities:

AIRFIELD

- Runway Systems: Runway 7/25 is classified as an FAA-eligible civilian crosswind runway.
- Taxiway System: The taxiway system provides a functional and efficient configuration. Taxiway areas require conformity with current FAA design standards and military operations.
- Pavement condition: The taxiway system is generally the most immediate need for pavement rehabilitation. Maintaining the extensive pavement infrastructure is a critical requirement.

LANDSIDE

- Terminal Building: The return of airline service would necessitate terminal building functions dedicated to accommodating the processing of air carrier passengers as the absence of airline service may provide options for other terminal building tenants and uses.

ACTIVITY

- Aircraft Operations: Civilian aircraft operations have been increasing since 2015. Flight training by fixed-wing and helicopters accounts for about 15,000 annual operations (nearly 50 percent of total civilian operations).
- Airline: Scheduled airline service is a high priority, and LMT is seeking airline and destination options. The Master Plan will be flexible, to identify airline and passenger needs based on actual conditions, perspective service, or as an opportunity condition.
- Air Cargo: Interviews with the cargo operators revealed no projected need for additional building or ramp space. Likewise, cargo operators expect to use the same aircraft types well into the future. The cargo operators project that they can accommodate increasing demand for dedicated cargo by nominally increasing the number of daily flights.

LAND USE AND PROPERTY

- Land Use: Airport land uses involve coordination between the City, County, and Oregon ANG.
- Property: The City controls approximately 240 acres of airport property for civilian development, largely within landside areas. Approximately 240 acres (20 percent) of the total LMT fee property ownership is controlled for civilian landside use. Approximately 45 percent of the 240 acres is already developed.

CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Mead&Hunt