

**CRATER LAKE**  
**KLAMATH**  
REGIONAL AIRPORT

# Master Plan

February 2021



Appendix D

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# Forecast Supporting Data



CRATER LAKE

KLAMATH REGIONAL  
**AIRPORT**

# Appendix D: Forecast Supporting Data

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## ATTACHMENT D1: FAA FORECAST APPROVAL LETTER



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Northwest Mountain Region  
Seattle Airports District Office 1601  
2200 South 216th Street  
Des Moines, Washington 98198

February 11, 2019

Mr. John Barsalou  
Airport Director  
City of Klamath Falls  
6775 Arnold Avenue  
Klamath Falls, OR 97603

**Crater Lake-Klamath Regional  
Airport (LMT)  
Aviation Forecast Approval**

Dear Mr. Barsalou:

The Federal Aviation Administration (FAA), Seattle Airports District Office has reviewed the aviation forecast for the Crater Lake-Klamath Regional Airport (LMT) Master Plan Update, submitted January 31, 2019. The FAA approves these forecasts for airport planning purposes, including for Airport Layout Plan (ALP) development. The FAA approval is based on the following:

1. The FAA also approves the existing critical aircraft as D-III and the future critical aircraft as D-IV.
2. The forecast is based on reasonable planning assumptions, current data, and appropriate forecasting methodologies.

The approval of the forecast and critical aircraft does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP. All future development will need to be justified by current activity levels at the time of proposed implementation. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or other planning purposes.

If you have any questions about this forecast approval, please call me at (206) 231-4137.

Sincerely,

**Mathew T Wilder** Digitally signed by Mathew T Wilder  
Date: 2019.02.11 10:41:21 -08'00'

Mathew T. Wilder, PE  
Civil Engineer, FAA Seattle Airports District Office

cc: Jeff Smith, Mead & Hunt Aviation Services



**Master Plan  
Report**

## ATTACHMENT D2: FORECAST DATA REFERENCE SOURCES

### FAA AVIATION SOURCES

FAA Aerospace Forecasts

[https://www.faa.gov/data\\_research/aviation/aerospace\\_forecasts/](https://www.faa.gov/data_research/aviation/aerospace_forecasts/)

FAA Terminal Area Forecasts

<http://taf.faa.gov/>

FAA Traffic Flow Management System Counts (TFMSC)

<http://aspmhelp.faa.gov/index.php/TFMSC>

FAA Review and Approval of FAA Forecasts (June 2008)

[https://www.faa.gov/airports/planning\\_capacity/.../approval\\_local\\_forecasts\\_2008.pdf](https://www.faa.gov/airports/planning_capacity/.../approval_local_forecasts_2008.pdf)

Airport Cooperative Research Program (ACRP) Synthesis 2: Airport Aviation Activity Forecasting

<http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=157>

FAA Asset (GA Role and Service Area Characteristics)

[https://www.faa.gov/airports/planning\\_capacity/ga\\_study/](https://www.faa.gov/airports/planning_capacity/ga_study/)

### INDUSTRY PUBLICATIONS

General Aviation Manufacturing Association (GAMA) Factbook

<https://gama.aero/facts-and-statistics/statistical-databook-and-industry-outlook/>

National Business Aviation Association (NBAA) Factbook

<https://www.nbaa.org/business-aviation/fact-book/>

### AIRPORT-LOCAL / OTHER

LMT Airport

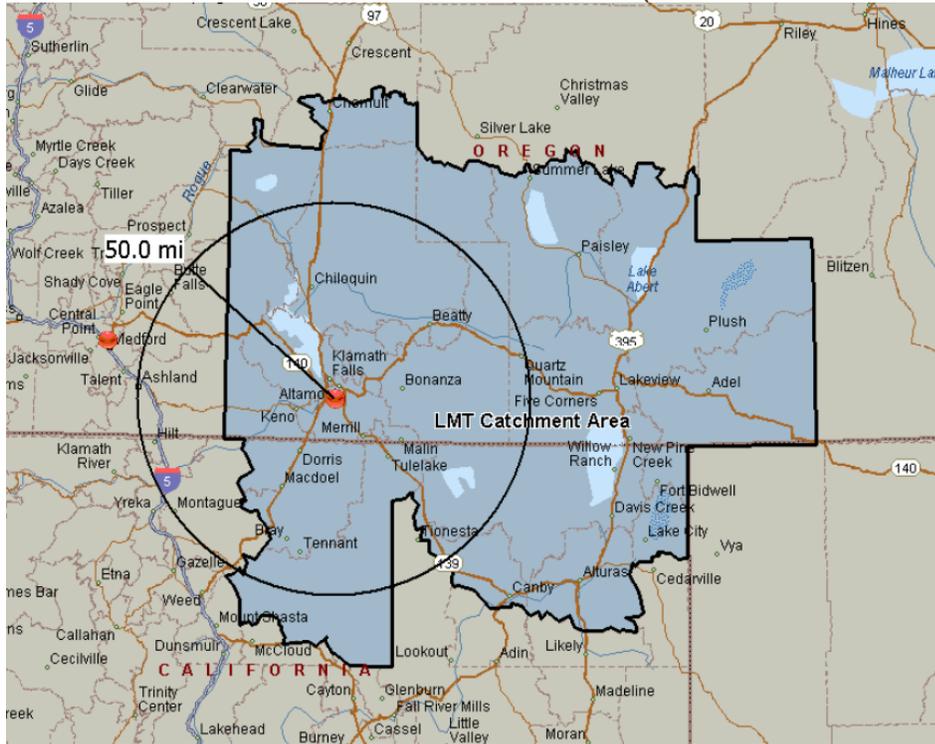
<http://www.flykfalls.com/>

US Census Data - Woods and Poole Economic, Inc.

<https://www.woodsandpoole.com>

# ATTACHMENT D3: LMT AIRLINE FORECAST BACKGROUND DATA

## LMT AIRLINE CATCHMENT AREA (2018 AIRLINE SERVICE MEMO)



### True Market Estimate

LMT's true market is estimated at 153,037 origin and destination passengers per year (209.6 passengers daily each way). **Table 1** shows the estimated split between domestic and international travel. Domestic travel was 141,309 of the total (92 percent) while international travel accounted for the remaining 11,728 passengers or 8 percent.

LMT retained 7 percent of travelers. MFR served 62 percent of catchment area travelers, and PDX served 15 percent. Other airports served the remaining 16 percent of catchment area travelers. LMT retained 8 percent of domestic travelers, while MFR served 64 percent, PDX 15 percent and other airports 13 percent of passengers. For international passengers, LMT retained less than 1 percent, while MFR garnered 42 percent, SFO 25 percent, PDX 16 percent, SMF 15 percent and other airports 2 percent.

### Top 25 Domestic Destinations

TABLE 1 TRUE MARKET SUMMARY

ORIGINATING AIRPORT	PAX	PDEW	RETENTION
<b>Domestic</b>			
MFR	90,616	124.1	64%
PDX	21,517	29.5	15%
<b>LMT</b>	<b>10,499</b>	<b>14.4</b>	<b>8%</b>
SMF	7,227	9.9	5%
SFO	4,416	6.0	3%
Other	7,034	9.6	5%
<b>Subtotal</b>	<b>141,309</b>	<b>193.6</b>	<b>100%</b>
<b>International</b>			
MFR	4,872	6.7	42%
SFO	2,937	4.0	25%
PDX	1,887	2.6	16%
SMF	1,733	2.4	15%
<b>LMT</b>	<b>10</b>	<b>0.0</b>	<b>0%</b>
Other	289	0.4	2%
<b>Subtotal</b>	<b>11,728</b>	<b>16.1</b>	<b>100%</b>
<b>Total</b>			
MFR	95,488	130.8	62%
PDX	23,404	32.1	15%
<b>LMT</b>	<b>10,509</b>	<b>14.4</b>	<b>7%</b>
SMF	8,960	12.3	6%
SFO	7,352	10.1	5%
Other	7,323	10.0	5%
<b>Total</b>	<b>153,037</b>	<b>209.6</b>	<b>100%</b>

**LMT True Passenger Market (September 15, 2017 Memo)**

## LMT True Passenger Market

(Passengers, retention rates, and passengers daily each way – PDEW)

- ▶ Crater Lake-Klamath Regional (LMT): 10,500 passengers | 7% retention | 14.4 PDEW
- ▶ Rogue Valley International-Medford (MFR): 95,500 passengers | 62% retention | 130.8 PDEW
- ▶ Portland International (PDX): 23,400 passengers | 15% retention | 31.1 PDEW
- ▶ Sacramento International (SMF): 8,900 passengers | 6% retention | 12.3 PDEW
- ▶ San Francisco International (SFO): 7,300 passengers | 5% retention | 10.1 PDEW
- ▶ Other Airports Combined: 7,300 passengers | 5% retention | 10.0 PDEW

## Potential Destinations (Airport/City-Pair Market and Aircraft Type):

- ▶ Portland (PDX): Alaska (Horizon) with Q400 | Horizon (SkyWest) with CRJ-200
- ▶ San Francisco (SFO): United (SkyWest) with CRJ-200
- ▶ Denver (DEN): United (SkyWest) with CRJ-200
- ▶ Seattle (SEA): Alaska (Horizon) with Q400 | Delta (SkyWest) with CRJ-200
- ▶ Las Vegas (LAX): Multiple Airlines with Regional Jet
- ▶ Salt Lake (SLC): Delta (SkyWest) with CRJ-200
- ▶ Phoenix (PHX): American (Regional Affiliate) with Regional Jet

Historically, PDX and SFO have served as the predominate destinations.

## Potential Airlines (Regional Affiliate):

- ▶ Alaska Airlines (Horizon/SkyWest)
- ▶ United (SkyWest)
- ▶ Delta (SkyWest)
- ▶ American (Various Regional Affiliate)

## Potential Aircraft (Type/Model):

- ▶ CRJ-200 Regional Jet (45 to 50 passenger seats)
- ▶ Q400 Regional Turboprop (72 to 76 passenger seats)

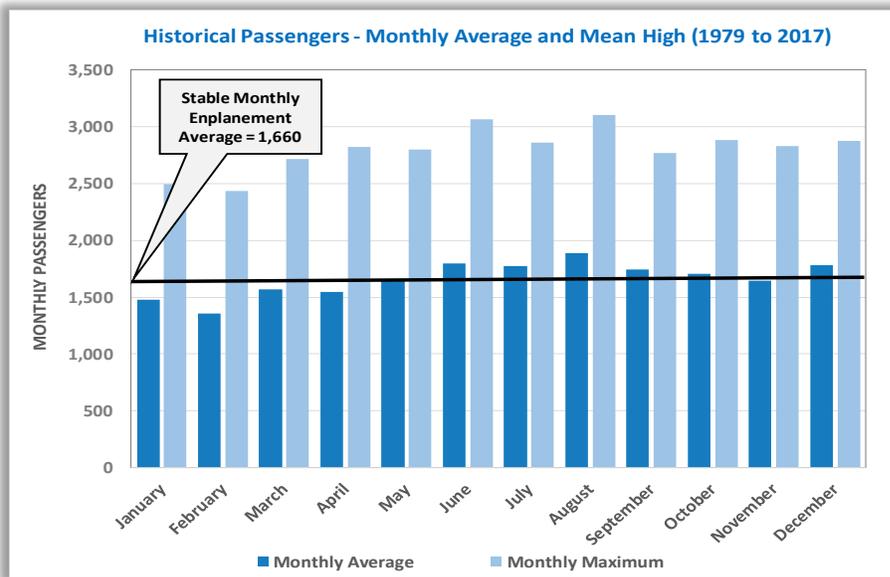
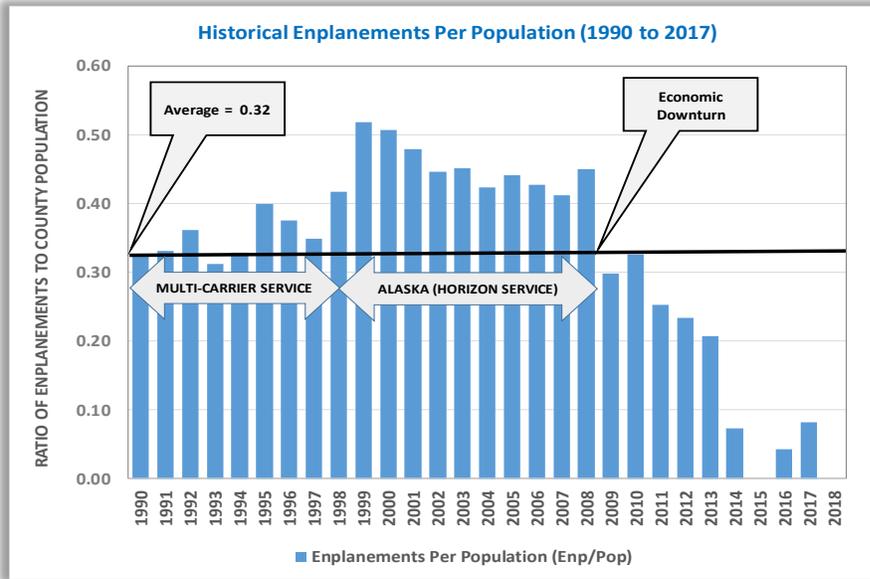
## Potential Flight Frequency:

- ▶ One to two daily flights which will yield 2 to 4 aircraft operations per day.
- ▶ Flight offered six to seven days per week which could yield 624 to 1,456 annual operations.

## Potential Load Factors (Passenger Seats to Available Seats):

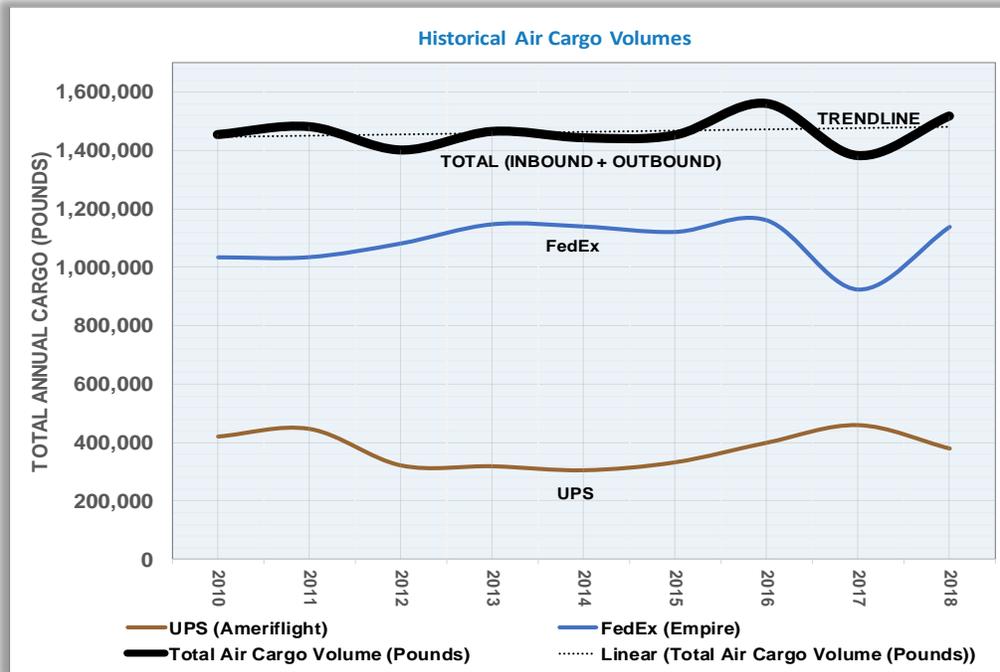
- ▶ 30 to 60 percent (typical rural regional airport load factor)
- ▶ 60 to 80 percent (regional airline industry load factor)

### LMT AIRLINE TRENDS: AIRLINE PASSENGER AVERAGES



# ATTACHMENT D4: LMT AIR CARGO FORECAST BACKGROUND DATA

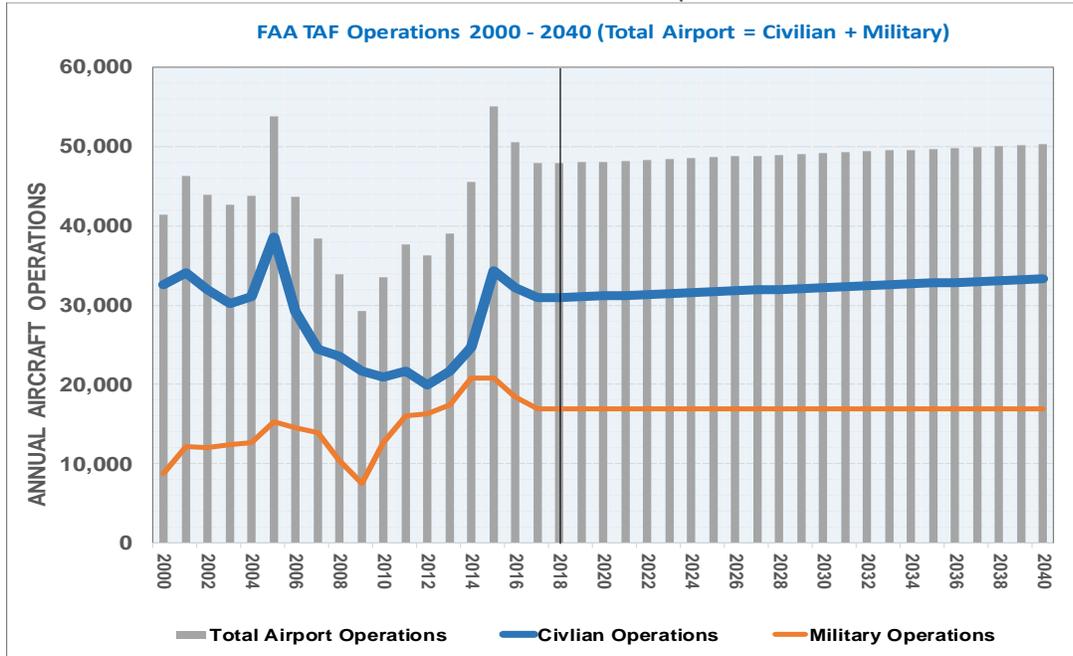
## LMT HISTORIC AIR CARGO VOLUMES



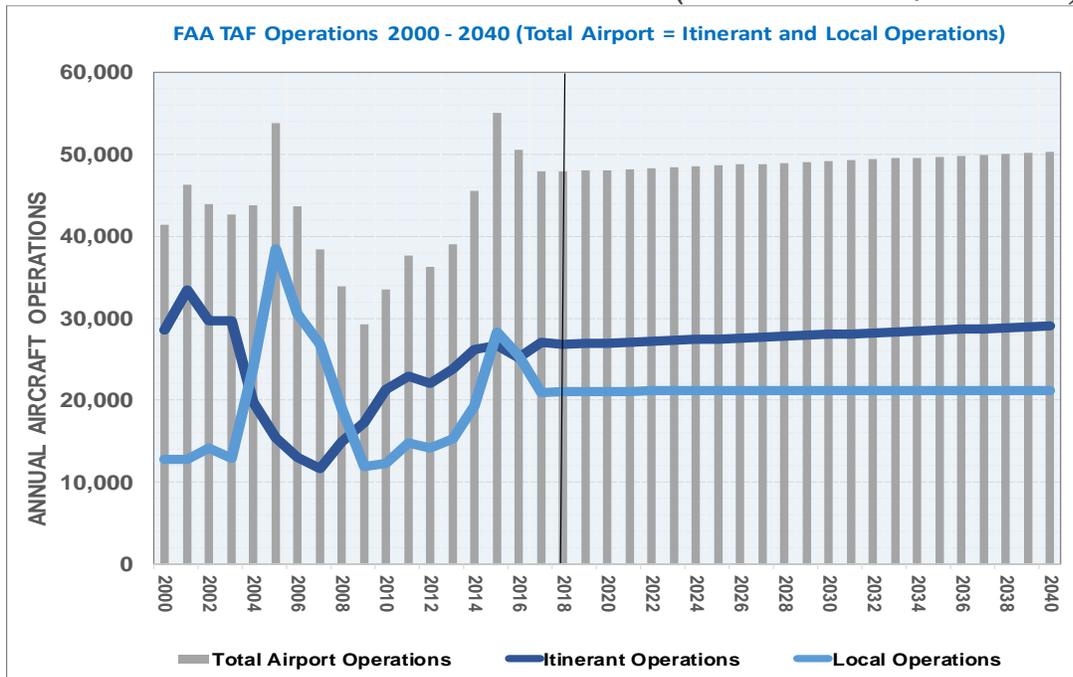
Historic Air Cargo Activity					
Year	Cargo Inbound		Cargo Outbound		Total Cargo
	UPS (Ameriflight)	FedEx (Empire)	UPS (Ameriflight)	FedEx (Empire)	
2010	302,971	556,214	116,756	479,362	1,455,303
2011	328,128	558,536	117,641	477,701	1,482,006
2012	236,412	559,907	83,946	523,059	1,403,324
2013	262,337	600,389	55,145	548,052	1,465,923
2014	257,698	601,672	46,080	539,125	1,444,575
2015	279,277	642,125	51,993	480,239	1,453,634
2016	324,708	736,827	73,743	425,020	1,560,298
2017	376,195	586,512	82,663	339,043	1,384,413
2018	311,615	745,404	66,795	394,006	1,517,821
Averaged Total	297,705	620,843	77,196	467,290	1,463,033
Percent of Total	20.3%	42.4%	5.3%	31.9%	-
Averaged Total	918,547		544,485		-
Percent of Total	63%		37%		-

## ATTACHMENT D5: LMT AIRCRAFT OPERATIONS BACKGROUND

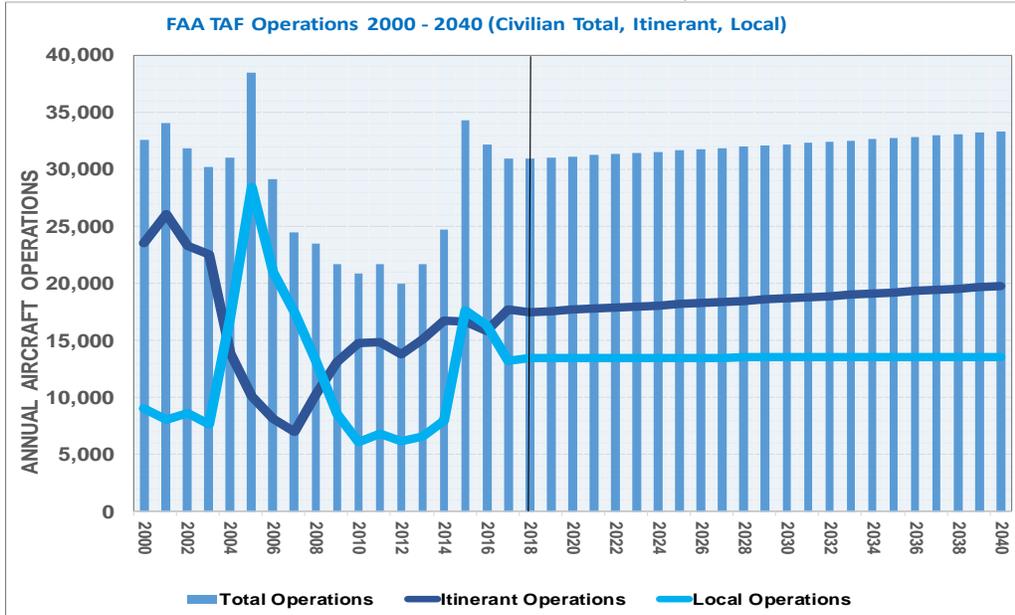
### *LMT TOTAL AIRPORT OPERATIONS (CIVILIAN / MILITARY)*



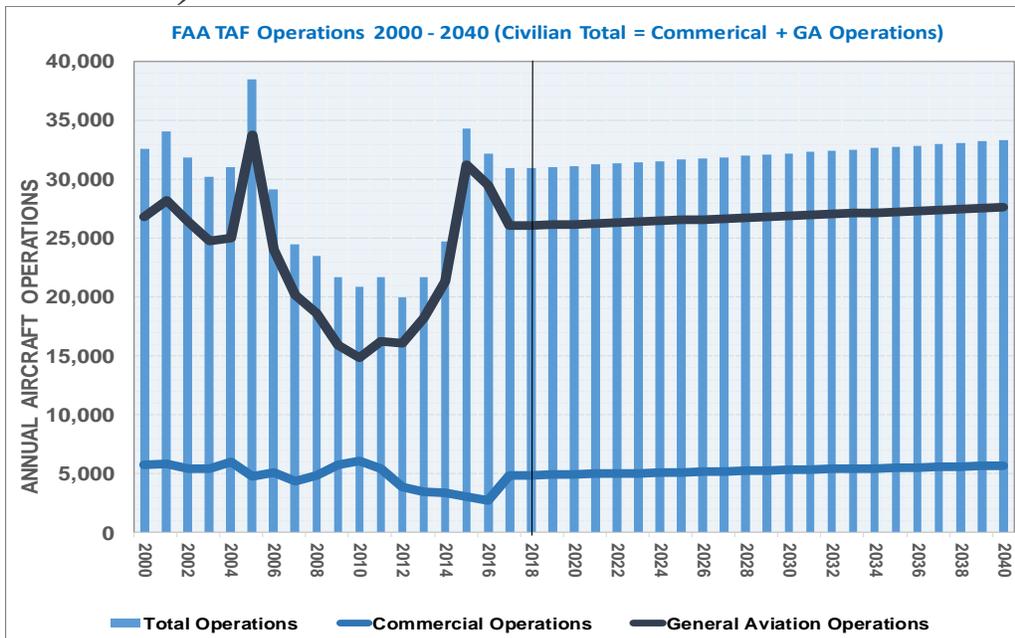
### *LMT TOTAL AIRPORT OPERATIONS (ITINERANT / LOCAL)*



**LMT TOTAL CIVILIAN OPERATIONS (ITINERANT / LOCAL)**



**LMT TOTAL CIVILIAN OPERATIONS (COMMERCIAL / GENERAL AVATION)**



*LMT 2018 OPERATIONS SUMMARY*

AIRPORT ANNUAL OPERATIONS: EXISTING CONDITIONS (2017/2018)						
Aircraft Operations	Total Airport Operations (2017/2018)	Total Airport Percent (2017/2018)	Runway 14/32 (# Operations)	Runway 14/32 (% Operations)	Runway 7/25 (# Operations)	Runway 7/25 (% Operations)
<b>TOTAL</b>	<b>48,500</b>	<b>100.0%</b>	<b>42,424</b>	<b>87.5%</b>	<b>6,076</b>	<b>12.5%</b>
<b>Operations by Type</b>						
<b>Itinerant Operations</b>	<b>27,500</b>	<b>56.7%</b>	<b>24,942</b>	<b>90.7%</b>	<b>2,558</b>	<b>9.3%</b>
Commercial	3,600	7.4%	3,498	7.2%	102	0.2%
Air Carrier	0	0.0%	0	0.0%	0	0.0%
Air Cargo - UPS	250	0.5%	238	95.0%	13	5.0%
Turboprop - Twin	250					
Air Cargo - FedEx	750	1.5%	713	95.0%	38	5.0%
Turboprop - Single	750					
GA Air Taxi / Medical	2,600	5.4%	2,548	98.0%	52	2.0%
Business Jet - Large	390					
Turboprop - Single	1,300					
Turboprop - Twin	260					
Helicopter	650					
<b>General Aviation</b>	<b>14,600</b>	<b>30.1%</b>	<b>12,144</b>	<b>25.0%</b>	<b>2,456</b>	<b>5.1%</b>
General Aviation / FBO	11,050	22.8%	9,945	90.0%	1,105	10.0%
Business Jet - Large	380					
Business Jet - Small	720					
Turboprop - Twin	803					
Turboprop - Single	876					
Piston - Twin	2,066					
Piston - Single	5,840					
Helicopter	365					
Flight Training - Pelican	1,300	2.7%	1,040	80.0%	260	20.0%
Piston - Twin	0					
Piston - Single	1,300					
Helicopter	0					
Flight Training - Precision	1,125	2.3%	956	85.0%	169	15.0%
Piston - Twin	0					
Piston - Single	506					
Helicopter	619					
US Forest Service	225	0.5%	203	90.0%	23	10.0%
Jet - Large	34					
Turboprop - Twin	79					
Turboprop - Single	113					
Agriculture	900	1.9%	0	0.0%	900	100.0%
Turboprop - Single	900					
Piston - Single	0					
Other						
<b>Military</b>	<b>9,300</b>	<b>19.2%</b>	<b>9,300</b>	<b>100.0%</b>	<b>0</b>	<b>0.0%</b>
Oregon Guard	8,835	18.2%	8,835	100.0%	0	0.0%
Other Military	465	1.0%	465	100.0%	0	0.0%

*LMT 2018 OPERATIONS SUMMARY (CONTINUED)*

Aircraft Operations	Total Airport Operations (2017/2018)	Total Airport Percent (2017/2018)	Runway 14/32 (# Operations)	Runway 14/32 (% Operations)	Runway 7/25 (# Operations)	Runway 7/25 (% Operations)
<b>Local Operations</b>	<b>21,000</b>	<b>43.3%</b>	<b>17,483</b>	<b>83.3%</b>	<b>3,518</b>	<b>16.8%</b>
General Aviation	13,400	27.6%	9,883	73.8%	3,518	26.3%
General Aviation / FBO	5,200	10.7%	4,160	80.0%	1,040	20.0%
Piston - Single	4,940					
Piston - Twin	260					
Flight Training - Pelican	3,900	8.0%	2,730	70.0%	1,170	30.0%
Piston - Twin	0					
Piston - Single	3,900					
Helicopter	0					
Flight Training - Precision	3,375	7.0%	2,700	80.0%	675	20.0%
Piston - Twin	0					
Piston - Single	1,519					
Helicopter	1,856					
US Forest Service	325	0.7%	293	90.0%	33	10.0%
Jet - Large	49					
Turboprop - Twin	114					
Turboprop - Single	163					
Agriculture	600	1.2%	0	0.0%	600	100.0%
Turboprop - Single	600					
Piston - Single	0					
Other						
<b>Military</b>	<b>7,600</b>	<b>15.7%</b>	<b>7,600</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>
Oregon Guard	6,840	14.1%	6,840	100.0%	0	0.0%
Other Military	760	1.6%	760	100.0%	0	0.0%
<b>SubTotal - Civilian Traffic</b>	<b>31,600</b>	<b>65%</b>	<b>25,524</b>	<b>81%</b>	<b>6,076</b>	<b>19%</b>
Civilian - Fixed Wing	28,440	90.0%	--	--	--	--
Civilian - Helicopter	3,160	10.0%	--	--	--	--
<b>SubTotal - Military Traffic</b>	<b>16,900</b>	<b>35%</b>	<b>16,900</b>	<b>100%</b>	<b>0</b>	<b>0%</b>

## ATTACHMENT D6: FAA CRITICAL AIRCRAFT GUIDANCE

This FAA Advisory Circular provides guidance on the use of Critical Aircraft in facility planning, and related FAA decision making, for federally obligated airports. Specifically, this AC establishes a common, uniform definition of Critical Aircraft for all deliberations of the FAA Office of Airports, inclusive of planning and environmental, design and engineering, and financial decision making regarding airport development. Clarifications regarding Section 2.4 and 2.5 are shown below.



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Advisory Circular

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**Subject:** Critical Aircraft and Regular Use  
Determination

**Date:** 6/20/2017

**AC No:** 150/5000-17

**Initiated By:** APP-400

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**2.4 Can Military Aircraft or Other Federal Agency Aircraft Be Included in Documenting Aeronautical Activity to Establish Regular Use?**

2.4.1 Yes. Prudent facility planning should include consideration of the requirements of military aircraft or other federally-owned aircraft operating at the airport. However, this determination is made for airport planning purposes only. Federal law does not allow FAA to fund projects that solely benefit another federal agency. Therefore, in some cases, the FAA will need to designate a Critical Aircraft for AIP or PFC eligibility that is separate and distinct from the Critical Aircraft used in planning the airfield.

**2.5 Can Civil Aircraft Operated Under a Federal Contract Be Included in Documenting Aeronautical Activity to Establish Regular Use?**

Yes, if these types of flights are operated under applicable FAA regulations in 14 CFR Parts 91, 121, or 135. Aircraft operated by civil operators under military or other federal government agency contracts as civil operations are counted as civil aircraft activity for the purposes of documenting aeronautical activity, and for AIP or PFC funded projects. This includes civil aircraft operating under contract with the U.S. Forest Service for aerial firefighting activities or unscheduled military aircraft charter flights.



Mead&Hunt

