OLYMPIA REGIONAL AIRPORT
PORT OF OLYMPIA

Olympia Regional Airport

CHAPTER 2 AVIATION FORECAST

2. Aviation Demand Forecasts

2.1. INTRODUCTION TO FORECASTS

The aviation demand forecast for the Olympia Regional Airport (OLM) presented in this chapter examines the planning activity levels over the 20-year planning period (2020-2025-2030-2040) and is an important element of the master planning process. Triggering events, such as airport development of hangars, are factors that must be taken into consideration when planning for future activity levels at the Airport. A Master Plan Update forecast study defines the steps that need to occur to accommodate that demand, conversely, if an airport forecasts a reduction of activity, future steps to mitigate the effects of that reduction are important as well. Forecasting serves as the basis for the future recommendations for development, and collecting the appropriate information and applying reasonable judgement with approved methodologies are at the core of the forecast process.

This forecast was prepared during the beginning of the second year of the Coronavirus Disease 2019 (COVID-19) pandemic. The forecast approval is based in reference to the data and methodologies used and the conclusions at the time the document was prepared. However, consideration must still be given to the significant impacts of COVID-19 on aviation activity; as a result, there is lower than normal confidence in future growth projections. FAA approval of the forecast does not provide justification to begin airport development. Justification for future projects will be made based on activity levels at the time the project is requested for development, rather than the approval of these forecasts. Further documentation of actual activity levels reaching the planning activity levels will be needed prior to FAA participation in funding for eligible projects.

FAA guidance for aviation forecasting includes both required specific items in the forecast as well as appropriate methodologies of how they project into the future. Developing forecasts for General Aviation (GA) airports without 24-hour Air Traffic Control (ATC) tower operations, such as OLM, is challenging because limited published data is available regarding total aircraft operations and equipment utilizing the Airport during non-tower hours of operation. The OLM ATC tower is operational from 8am to 8pm, and the airfield is uncontrolled from 8pm to 8am. To understand the usage during non-ATC hours of operation, interviews with the Fixed Base Operators (FBOs) and aviation businesses were conducted. This forecast is consistent with FAA Advisory Circular (AC) 150/5070-6B, and the July 2001 FAA guidance paper "Forecasting Aviation Activity by Airport." Historic air traffic data, prior forecasts, an examination of local, county, and applicable U.S. Census data reflecting past and future demographic trends formed an understandable base to augment the final planning activity level forecast. Interviews and input with Airport management, ATC tower management, based aircraft owners, and other stakeholders were especially important in determining current trends and types of operations at the Airport with the absence of some measurable or quantifiable data. The forecast relies heavily upon information and data obtained from interviews and incorporates that knowledge and judgment, as well as the professional experience of the forecaster.

The FAA allows several specific methodologies for aviation forecasting. The forecast for the OLM Master Plan Update utilizes trend analyses coupled with exponential smoothing before results of this analysis are compared to relevant market share and regression analysis. Comparisons of specific local, regional,

and national aviation data along with previous and current forecasts are extremely helpful in the study process. The data establishes a baseline and forecasts for specific operations and based aircraft at the Airport, including itinerant and local GA aircraft operations, military operations, and instrument operations.

In addition, identification of the critical aircraft and its design group will be a result from this forecast. The critical aircraft designation helps facility planners and the FAA determine the appropriate design criteria for development at the Airport.

2.2. NATIONAL TRENDS AND FORECASTS

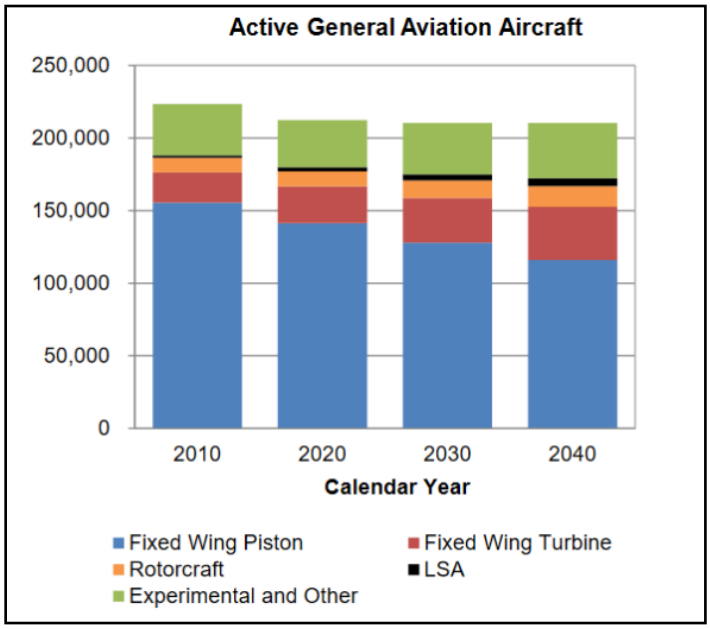
2.2.1. FAA Aerospace Forecast

An important part of developing trends for statistical purposes is analyzing relevant issues from a national perspective, and then applying them, as warranted, to the regional and local perspective. The year 2020 began with the worldwide COVID-19 pandemic. Although it is reasonable to expect that the current crisis will have a short-term impact on future economic and industry trends, ultimately, it is likely that once the current situation subsides, trends will most likely return to normal. The FAA will undoubtedly review and revise their base forecasts in the next few years as a result, and as such this forecast has sided with more conservative methodologies and growth forecasts.

One of the most reliable and important tools in forecasting is the information collected and analyzed by the FAA as part of its FAA Aerospace Forecast (2020–2040), and the NPIAS-driven FAA Terminal Area Forecasts (TAF) reports. The FAA TAF that will be used available from the FAA is that of the 2019 TAF. This forecasting year has been used at the direction by the FAA. The latest FAA Aerospace Forecast report states that the U.S. is continuing its recovery from a significant recession that affected the industry tremendously nearly a decade ago. The sharp decline in oil prices in 2015 and 2016 was a boost for the overall growth of the industry, which is still in effect. Starting in 2017 crude oil prices increased, and again in 2018 with a 28 percent increase to around $65 per barrel. 2019's average for crude oil hovered around $60 per barrel, and in early 2020 showed a significant decrease in crude oil prices as low as $25 per barrel with a sharp rebound back to $60 per barrel in the first quarter of 2021. The FAA is forecasting oil prices to increase over several years, and surpass the $100 per barrel mark by the end of the forecast horizon of 2040.

Although there are some significant changes occurring, the FAA report states that the long-term outlook for GA is stable and has room for optimism. The FAA estimates that the U.S. GA aircraft fleet will decrease slightly from an estimated 212,335 aircraft in 2019 to 210,380 aircraft in 2040. This is equal to an average annual rate of decline of -0.9 percent. The decline in the piston fleet (single-engine and multi-engine aircraft) will continue through the forecast period. Jet, rotorcraft, and sport aircraft forecasts depict the greatest percentage growth over the planning period. See **Figure 2-1.**

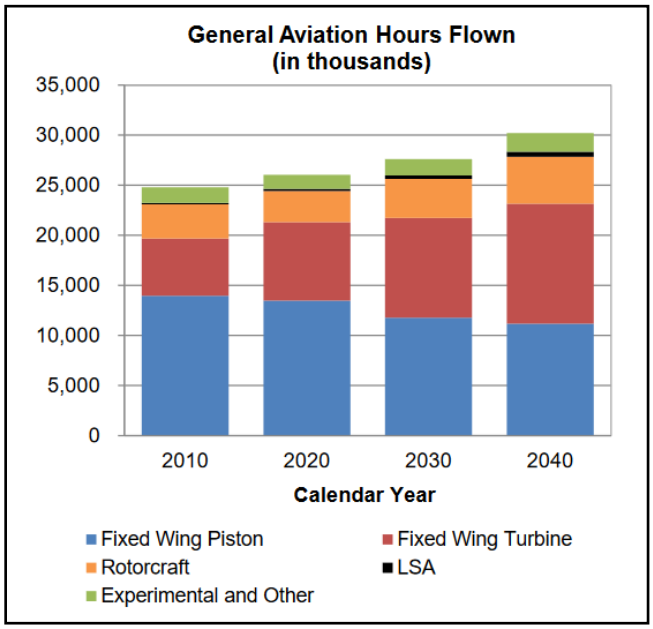
Figure 2-1: FAA Forecast of GA Fleet



Source: FAA Aerospace Forecast FY2020-2040 2021.

The number of GA hours flown anticipates an average increase of 0.7 percent per year over the 20-year forecast period. This higher average annual rate of growth is tied to FAA's belief that those GA aircraft that remain active in the national fleet will be flown more frequently or at higher rates of utilization, especially hours flown by turbine aircraft (turboprops and jets), which are anticipated to grow at an average annual growth rate (AAGR) of 2.2 percent. See **Figure 2-2.**

Figure 2-2: FAA Forecast for GA Hours Flown



Source: FAA Aerospace Forecast FY2020-2040 2021.

2.2.2. National Terminal Area Forecast Summary

The FAA's official forecast for OLM, as well as other airports, provides an overall planning forecast through the annual FAA TAF. The FAA has directed OLM to utilize the 2019 TAF for this planning period. Current based aircraft and operational data for OLM exists for 2020, which observed a small increase in operational traffic even with the pandemic underway, and therefore this planning forecast will use the current actual figures as the base year (2020) and compare them to the FAA's forecast in the 2019 TAF. The FAA TAF information is integral throughout this forecast chapter. In conjunction with the FAA's National Plan of Integrated Airport Systems (NPIAS), the TAF determines an airport's forecasted number of aircraft operations, based aircraft, enplanements and other information, especially if no other data is available. The FAA TAF and the associated annual summary report provide forecasts for multiple levels including national, regional, and individual airports. The types of operations that the TAF forecasts for individual airports depends upon the complexity of the airport. Larger commercial service airports have considerably more TAF data that smaller GA airports. For OLM, the TAF includes forecasts of enplanements, aircraft operations and based aircraft, with each broken down into standard subset categories. The forecasts for individual airports are high level and indicate a national rather than a local perspective. **Appendix 2-1** provides the entire current FAA TAF for OLM, Washington, the Northwest Mountain Region, and the nation.

The latest FAA TAF (2019) forecasts include interesting data for the U.S. For the near-term, national itinerant operations anticipate an annual average growth rate (AAGR) of 0.63 percent and local operations are forecasted to have an AAGR of 0.36 percent. For the longer term, an AAGR in itinerant operations of 0.94 percent and growth of local operations at 0.40 percent. There is also a 0.8 percent AAGR forecasted for based aircraft nationally over the same period. **Table 2-1** shows a summary of selected national statistics provided within the latest FAA TAF over selected 5-year periods.

Table 2-1: FAA TAF Report - National Trends and Forecasts for Selected Years, 1990-2045

Year	Air Carrier and Air Taxi Itinerant Operations	GA Itinerant Operations	GA Location Operations	Based Aircraft
1990	23,219,738	37,792,490	39,413,432	161,673
1995	27,004,288	38,631,258	38,255,140	157,304
2000	29,509,163	43,766,970	43,039,601	179,339
2005	29,218,680	40,193,990	40,729,255	196,789
2010	25,103,615	34,348,373	36,679,982	165,183
2015	24,570,394	32,338,529	35,780,200	163,872
2020*	27,087,824	32,402,170	37,271,448	167,865
2025*	27,765,557	32,940,155	37,944,714	174,967
2030*	30,075,635	33,515,286	38,664,119	181,888
2035*	32,666,518	34,132,783	39,437,815	189,082
2040*	35,383,949	34,800,068	40,274,653	196,734
2045*	38,271,847	35,521,850	41,181,481	204,808

Source: FAA TAF 2019.

2.3. CURRENT AIRPORT DATA

2.3.1. Current Fleet Mix Information

With two runways, Runway 17/35 (5,500 feet) and Runway 8/26 (4,175 feet), and an elevation of 207.8 feet, OLM can handle most commonly used GA aircraft ranging from small single-engine piston-type

aircraft up to large corporate jet aircraft. The Airport pavement is capable of routine use from aircraft weighing less than 75,000 pounds for single wheel axles, and up to 142,000 pounds for double tandem wheeled aircraft. GA traffic constitutes the majority of the total operations at OLM. GA operations as well as the proximity of OLM to the Seattle-Tacoma Metropolitan Area and the State capital heavily influence facility design needs.

Aircraft size and speed are the greatest determinants of airport design. The aircraft approach category (AAC) is designated as A through E and is based on the approach speed (in knots) of an aircraft. The airplane design group (ADG) is designated as I through VI and is based on wingspan. Together, the AAC and ADG determine an airport's airport reference code (ARC), which determines airfield design and many other aspects of airport geometry and construction. The most demanding aircraft (or combination of aircraft) with at least 500 annual operations at an airport is that facility's critical aircraft. AAC and ADG parameters are detailed on **Table 2-1**.

Table 2-2: AAC and ADG Parameters for Determining Critical Aircraft

AAC	Aircraft Approach Speed	Example Aircraft
A	< 91 knots	Cessna 150/Pilatus PC-6
B	91 knots to < 121 knots	Cessna Citation I/Bombardier Q400
C	121 knots to < 141 knots	Gulfstream III
D	141 knots to < 166 knots	Boeing 777 Series/B787/Gulfstream IV
E	166 knots or more	Certain military aircraft
ADG	**Aircraft Wingspan**	**Example Aircraft**
I	< 49 feet	Cessna 421 Golden Eagle/Piper PA-31
II	49 to < 79 feet	CRJ/Saab 340
III	79 to < 118 feet	Boing 737-700/Airbus A-320/Embraer ERJ 190-100
IV	118 to < 171 feet	B767 Series/Airbus A-310
V	171 to < 214 feet	B777 Series/B787/A330 Family
VI	214 feet to < 262 feet	Boeing 747-8/Airbus A-380-800

Source: FAA 2021.

The largest aircraft commonly utilizing OLM is the Gulfstream G-V/VI/VII, which is a D-III aircraft. Additionally, aircraft such as the Gulfstream IV (D-II), Learjet 35 (D-I), Bombardier 100/600/700 (C-II), Citation 650 (C-II), Embraer 135 (C-II), and the Hawker 900XP (C-II) utilize the Airport. Other common aircraft that use the facility include typical GA aircraft such as the Cessna 172, 182, 206 and 210s; Piper single-engine variants; Beech Bonanza; Mooney; TBM-700, as well as the Beechcraft King Air and Pilatus PC-12. Various sized light twin engine aircraft that commonly operate at the facility include Piper Navajo and Seneca; Beech Baron; various models of the Beech King Air; and some jets, including smaller variants of the Cessna Citation, Embraer and Learjet's. Several types of helicopters are based at OLM and operate frequently.

Determining the fleet mix at the Airport utilizes strong data collected by the OLM Air Traffic Control (ATC) tower. A combination of available official data coupled with sponsor interviews, FBO landing fee data, and local knowledge of the facility compiled with ATC information provides the necessary information for the fleet mix. **Appendix 2-2** contains a summary of the instrument flight rules (IFR) flight plan operations by month over the last 20 years and a detailed IFR summary of aircraft for 2020.

The majority of aircraft that use OLM fall within or below the FAA Airport Design Group (ADG) C-II category (See **Table 2-2**). This information is important in determining the critical aircraft for OLM. To determine the appropriate critical aircraft and what the Airport might expect from future operations, it is important to analyze the different FAA categories for aircraft and their design groups as explained in the facility requirements chapter. A more complete discussion of the critical aircraft design category for OLM follows in section 2.5.3.

2.3.2. Current Aircraft Operations

2.3.2.1. Tower Operations

OLM has an operational ATC tower from 8am-8pm. The ATC tower staff has provided accurate operations data for the majority of the primary flying hours, and total GA aircraft operations counts are heavily reliant upon information that they provided. The definition of an aircraft operation is either a takeoff or a landing by an aircraft. Information about the Airport updates on average every three years for GA airports in the 5010 Master Record. The total number of aircraft operations within FAA 5010 Master Record does not match the information for operations as reported by ATC. This type of anomaly is not uncommon; however, it will need updates to reflect the current observations. The discrepancy is due to the lag of filing FAA Master Reporting data with up-to-date OLM ATC data and accounting for operations when the tower is not open. The FAA generally contracts with state agencies to perform 5010 Master Record inspections at all public use airports, usually once every three years, as a way of updating and maintaining critical information about airports. In the State of Washington personnel from WSDOT conduct regular inspections for each airport. Airport management, ATC, as well as sponsor and tenant information about the operations at the Airport help in establishing the number of aircraft operations. **Table 2-3** lists the operations at OLM between 2011 and 2020, by month, as reported by ATC.

Table 2-3: OLM Tower Operations Reported, 2011-2020

Month	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Jan	2,725	4,134	4,046	4,143	3,383	2,697	2,966	3,098	5,036	3,370
Feb	2,888	4,002	4,771	4,600	4,796	3,233	2,083	3,487	3,200	5,012
Mar	3,123	4,060	5,955	5,024	4,661	3,673	2,888	4,801	5,844	4,808
Apr	3,425	5,157	5,639	5,183	5,833	3,835	3,378	4,376	5,600	4,512
May	3,769	6,629	6,813	5,490	5,995	3,892	3,412	5,550	5,929	5,075
Jun	5,591	7,740	7,446	8,647	6,976	4,311	4,905	5,568	6,427	7,250
Jul	4,670	5,848	6,660	5,246	5,735	4,704	4,487	5,874	6,308	8,172
Aug	5,624	6,817	8,465	4,921	5,826	5,111	4,802	4,722	6,554	7,841
Sep	4,298	6,066	4,300	5,541	5,162	3,558	3,562	4,658	5,030	3,790
Oct	4,392	4,004	4,452	4,406	3,466	2,651	3,447	4,161	5,719	5,516
Nov	3,888	4,190	4,213	4,838	2,699	3,183	2,314	4,209	4,617	4,732
Dec	3,394	2,787	2,813	4,095	1,993	2,223	2,808	3,604	2,930	4,738
Total	**47,787**	**61,434**	**65,573**	**62,134**	**56,525**	**43,071**	**41,052**	**54,108**	**63,194**	**64,816**

Source: OLM ATC 2021.
Note: Base year of the forecast is 2020.

2.3.2.2. FAA 5010 Operations

Table 2-4 depicts the latest FAA 5010 Master Record information for all operations at OLM completed in 2019. The 5010 data reflects the 2019 ATC reported operations. The operations that occurred when the tower was not open were not factored into the 5010 estimates. Since ATC records every operation while the tower is in operation, consideration must be given for the afterhours operations in this forecast.

Table 2-4: FAA 5010 Master Record Operations for OLM, 2019

Type of Operation	Count
Air Carrier	0
Air Taxi	940
GA Local	33,272
GA Itinerant	27,884
Military	1,098
Total	**63,194**

Source: FAA 5010 Master Record period ending December 31, 2019.

2.3.2.3. GA Operations

GA operations at OLM include both IFR and visual flight rules (VFR) flights. Normally, GA airports have a much larger number of VFR operations than IFR. OLM had 3,493 IFR operations in 2020, down slightly from 2019 (3,918 operations). Due to common weather in the area, the two flight schools, and a significant number of low ceiling and rainy days at OLM, aircraft often fly in Instrument Meteorological Conditions (IMC), and under an IFR flight plan. GA flight operations also encompass some commercial activity in the form of personal business, corporate, and medical transport. One critical component of GA activity is aerial medivac transportation. These types of flights are frequent with the based aeromedical helicopter on the airfield, and their impact is significant to the region.

Due to the abundant scenic beauty of the area, proximity to the Seattle-Tacoma Metropolitan Area, and serving as the state capital there is a large number of tourism and business-related travel accessing the area. OLM has a higher number of transient and local operations due to the need for GA access in the area. There were 64,816 annual GA operations recorded by the air traffic control (ATC) tower in 2020, and it is rising year after year, as noted in **Table 2-4**. The ATC tower is operational from 8 am to 8 pm daily, therefore operations that occur outside of those hours are not accounted for in their totals. It is estimated that there are 5,650 operations that occur during hours when the tower is not operational. **Table 2-4** provides the estimates of the afterhours operations by organization based on the airfield that was obtained through user interviews.

Table 2-5: After Hours Operations at OLM (8 PM-8 AM), 2020

Organization	Hours
Glacier Aviation Flight School	2,500
Safety in Motion Flight School	780
Department of Natural Resources	225
Northwest Aeromed	250
Washington State Patrol Aviation	800
All Other GA Users	1,095
Total	**5,650**

Source: Stakeholder interviews 2021.

2.3.3. Current Instrument Operations

IFR activity is an important component of operations at OLM. There are five Instrument Approach Procedures (IAPs) available to allow instrument flights in and out of the Airport. Student pilots also use the IAPs heavily for training purposes. Under most circumstances, having an IAP at a GA airport can greatly expand its utility and allow for the provision of services. In the case of OLM, IAPs are especially critical. This is due to frequent low ceilings and the limited availability of similar alternate airports in relation to the metropolitan area. Flights during IMC are particularly important for potentially lifesaving medivac flights. Although forecasting of IFR operations is not usually a mandatory component of an airport master plan, IFR data can be a great tool in better understanding the airport's importance to a community and can provide clear examples of aircraft operations that would not have been possible without an instrument approach. Tracking IFR data can also provide other valuable supplementary information and trends at OLM over time, and can help to understand potential future operations.

The FAA's Traffic Flow Management System Counts (TFMSC) record information about IFR operations at an airport. TFMSCs provide information on traffic counts by airport and include various data about the types of aircraft, point of departure or arrival, aircraft identification, types of operations, owners and various other data. The TFMSC record captures data for IFR flights by the FAA's ATC enroute computers. VFR traffic is not generally incorporated in this data. TFMSC source data is created when pilots file IFR flight plans and when flights are detected by the National Airspace System (NAS) radar and controllers issue an IFR clearance during the flight. The relevant IFR data for OLM for calendar years 2019 and 2020 as recorded by the FAA TFMSC are listed on **Table 2-6**.

Table 2-6: IFR Operations at OLM, 2019-2020

Month	Arrivals	Departures	Total IFR Operations During Month
FAA TFMSC Data 2019			
Jan	133	166	299
Feb	66	87	153
Mar	117	162	279
Apr	147	208	355
May	175	235	410
Jun	159	215	374
Jul	184	259	443
Aug	170	212	382
Sep	168	198	366
Oct	135	192	327
Nov	132	169	301
Dec	109	120	229
Annual Total IFR Operations	**1,695**	**2,223**	**3,918**
FAA TFMSC Data 2020			
Jan	114	118	232
Feb	145	180	325
Mar	113	156	269
Apr	67	73	140

Month	Arrivals	Departures	Total IFR Operations During Month
May	83	137	220
Jun	166	219	385
Jul	161	233	394
Aug	152	207	359
Sep	165	182	347
Oct	155	181	336
Nov	116	153	269
Dec	89	128	217
Annual Total IFR Operations	**1,526**	**1,967**	**3,493**

Source: FAA TFMSC 2021.

The majority of IFR flights conducted at OLM are by small single- or multi-engine aircraft, jets, and helicopters. There is significant B-II and C-II traffic, which is noteworthy, as it represents larger sized aircraft utilizing the Airport, to include aircraft up to C-IV and D-III (**Table 2-7**).

Table 2-7: IFR Activity by AAC and ADG, 2019 & 2020

AAC	ADG	2019	2020
A	I	2,211	2,211
B	I	313	164
C	I	91	58
D	I	27	63
A	II	100	85
B	II	746	607
C	II	59	81
D	II	10	8
B	III	3	0
C	III	5	10
D	III	25	6
B	IV	1	0
C	IV	1	1
Helicopter		325	199
Total		**3,918**	**3,493**

Source: FAA TFMSC 2021.

The breadth and depth of recorded IFR activity in and out of OLM substantiates the importance of instrument approach capabilities for the Airport. **Appendix 2-2** provides a complete list of all FAA TFMSC IFR records for OLM**.**

2.3.4. Current Based Aircraft Information

OLM has a relatively large number of based aircraft for a GA airport. This is primarily due to its proximity to the Seattle-Tacoma Metropolitan Area. Olympia is a large, metropolitan area, with a stable economic base and is a multimodal transportation hub due to its location on south of the Seattle-Tacoma

Metropolitan Area and being the state capital of Washington. Olympia is similar to many other coastal access communities in this regard.

The latest FAA 5010 Master Record (**Table 2-8**) indicates that there are 125 based aircraft at OLM. The latest FAA National Based Aircraft Inventory (NBAI) data (**Table 2-9**) lists the Airport as having 124 based aircraft validated as well. For these reasons, the based aircraft numbers for 2020 in **Table 2-8** established the base year.

Table 2-8: FAA 5010 Master Record Based Aircraft at OLM

Aircraft Type	Count
Fixed-Wing Aircraft	
Single-engine	96
Multi-engine	8
Jet	3
Fixed-wing total	**107**
Other Aircraft	
Helicopters	18
Gliders	0
Military	0
Ultra-Light	0
Other Total	**18**
Airport Total	**125**

Source: FAA 5010 Master Record accessed April 16, 2021.

Table 2-9: National Based Aircraft Inventory Program at OLM

Aircraft Type	In Inventory[1]	Currently Validated[2]
Single-engine	111	95
Multi-engine	8	8
Jet	3	3
Helicopter	20	18
Total	**142**	**124**

Source: FAA National Based Aircraft Inventory Program accessed at Basedaircraft.com on February 25, 2021.
[1]Type derived from FAA Aircraft Registration data.
[2]Total verified aircraft counts, excluding duplicates and aircraft not found in the FAA Aircraft Registration data.

The need for hangars at OLM is significant. Buildable land at OLM for additional hangar leases is currently unavailable due to environmental constraints. Once the environmental factors are fully studied through the Habitat Conservation Plan (HCP) some land may be able to be used for additional development. Hangar construction is a triggering event for the Airport and will allow the based aircraft and operations to grow with each hangar built. The hangar waitlist at OLM continues to grow and will not see a significant decrease in those waiting until more hangars can be constructed. Hangars within the state and nationwide are in great demand. Construction of hangars will allow for additional based aircraft to locate at OLM, but until hangars are constructed very little growth will occur. Therefore, the triggering event for based GA aircraft growth and additional operations hinges on the construction of additional hangars and overcoming or mitigating environmental constraints.

2.4. RELEVANT HISTORIC TREND ANALYSIS AND EXISTING FORECASTS

2.4.1. Local Trends and Forecasts

2.4.1.1. Historic Based Aircraft Numbers

The number of based aircraft at OLM grew somewhat steadily and significantly from the mid-1980s (153 based aircraft in 1985) to its peak in the early 2000s (176 based aircraft in 2000), but since then has been on a decline as reported in the 5010 Master Records. The reliability of these historic based aircraft numbers is uncertain. Numbers of based aircraft for many years relied primarily on updates to the FAA's 5010 Master Record program. In the early 2000s, the FAA needed a more reliable and accurate way of reporting-based aircraft. There were several reasons for this, not the least of which was the sheer lack of reliability of the traditional reporting methods, as well as the need for FAA to be able to, when necessary, determine with more accuracy the location of specific aircraft.

The FAA now uses a more secure and reliable National Based Aircraft Inventory Program (NBAIP) and provides reports at Basedaircraft.com. This site mandates that airport sponsors and their representatives enter more detailed information regarding the number, types, and registration information of specific aircraft at airports. For these non-primary NPIAS airports, based aircraft counts for single-engine, multi-engine, jets, and helicopters for the FAA's Form 5010-1 (Items 90-93) must come from the data on this site, and the program is now a component of each airport's annual inspections.

Table 2-10 reflects the estimated based aircraft at OLM since 1985, as reported to the FAA through the 5010 Master Record program and the NBAIP. The number dropped significantly after 2005, most likely due to no longer reporting seasonal aircraft as based aircraft. The Airport is utilizing 100 percent of its existing hangar capacity for based and seasonal aircraft and is in need of additional hangars as the hangar waitlist continues to grow. It is very likely that the overall based aircraft rate will continue to grow as demand for the Airport in its location is significant, therefore expanded areas for developments at the Airport will likely need to occur.

Table 2-10: Reported Based Aircraft at Various Intervals, 1985-2020

Reported Year	Reported Based Aircraft
1985	153
1990	142
1995	150
2000	176
2005	170
2010	147
2015	140
2019	129
2020[1]	124

Source: FAA TAF 2019 and 5010 Airport Master Records 2021.
[1]National Based Aircraft Inventory validated based aircraft numbers for 2020.
Note: Decreases since 2005 have been due to a combination of the Great Recession, as well as the implementation of the FAA's National Based Inventory Program database for tracking based aircraft.

2.4.1.2. Hangar Availability / Sponsor Input

The lack of available hangar space or imminent plans for additional hangar development can indicate the health of an airport and its potential for short-term growth. It is not always a good marker for long-term growth however. The data can quite effectively show near-term trends, indicating where GA aircraft operations might be heading, and can heavily influence what near-term future infrastructure development might be necessary at the airport. OLM representatives and stakeholders have expressed that recent demand for new or used hangars at OLM exists based on both a current waitlist and continued request for hangar development. Development of additional hangars most certainly will entice more individual operators to base their aircraft at the Airport. Current development is hindered by environmental issues and the current HCP, which is underway at the time of this forecast. Once completed it is anticipated that near-term development may be able to occur, creating a boost to the operations and based aircraft numbers.

2.4.1.3. Previous OLM Master Plan Update Based Aircraft Forecast

The most recent Master Plan Update conducted at OLM was in 2013 and developed forecasts primarily based upon the population growth model. This growth model predicted average annual growth rates of 1.2 percent. The 2013 study reported 165 based aircraft at OLM in 2010. That master plan predicted that there would be approximately 196 aircraft at OLM in 2020. This forecast was ambitious because the recession was underway, NBAIP through Basedaircraft.com was in the early stages of being utilized more for identifying aircraft being counted at multiple airports, and the master plan was relying on the available data at the time. Based aircraft numbers have decreased somewhat since the 2013 master plan, primarily due to the current amount of seasonal aircraft that operate at the Airport that are also being counted at other airports, along with the need for additional storage areas for new based aircraft.

2.4.1.4. Current FAA TAF Based Aircraft Forecasts

Current FAA TAF forecasts for based aircraft at GA airports like OLM are generally based on previous master plan forecasts and will be updated with the current forecast data when published. Selected 5-year intervals within the TAF, as seen in **Table 2-11**, represent a forecast average annual increase of 0.8 percent, as compared to the 2013 master plan forecast's AAGR of 1.2 percent. Analysis of recent trends and activity at OLM, as well as input by Airport representatives and stakeholders, indicates that the Airport will increase in based aircraft only when new hangars are built. The Airport will continue to grow as fast as hangar construction will allow with current environmental factors on the Airport under review.

Table 2-11: FAA TAF of OLM Based Aircraft, 5-Year Intervals, 2020-2040

Forecast Year	TAF Forecast Based Aircraft	2013 Master Plan Forecast (1.2% AAGR)
2020	130	196
2025	138	202
2030	143	210
2035	148	217
2040	153	224
2045	158	231

Source: FAA TAF 2019.

2.4.1.5. Aircraft Operations Versus Based Aircraft

Hangars and outside storage of aircraft at OLM account for both full-time and part-time tenants. When a reliable forecast of aircraft operations needs supplementation or testing, an FAA formula to estimate the number of annual operations per unit of based aircraft can be used to help determine forecasts or assist with their validity. This FAA formula is as follow:

- 250 operations per based aircraft for rural general aviation airports with little itinerant traffic
- 350 operations per based aircraft for busier general aviation airports with more itinerant operations
- 450 operations per based aircraft for busy reliever airports
- 750 operations for busy airports with unusual circumstances or high itinerant operations

Dividing the current estimated operations of the Airport: 64,816, by the current number of reported based aircraft: 124, results in a ratio of approximately 522 operations per based aircraft. This number seems reasonable given the number and types of operations at OLM. With operations forecasted to continue to grow, the number of operations per based aircraft will likely increase in the future.

2.4.1.6. Historic General Aviation Operations

Table 2-12 represents the total annual reported itinerant and local operations at OLM from 2010-2020. As previously mentioned, without a 24-hour ATC tower, the total operations counts occur from ATC data obtained from 8am to 8pm daily.

Table 2-12: OLM Annual GA Operations Reported, 2010-2020

Year	Itinerant	Local	Totals
2010	31,060	23,984	55,044
2011	24,195	22,125	46,320
2012	28,862	33,275	62,137
2013	29,693	35,559	65,252
2014	29,487	30,468	59,955
2015	28,866	32,859	61,725
2016	21,942	21,192	43,134
2017	21,288	18,641	39,929
2018	24,898	25,559	50,457
2019	28,385	32,875	61,260
2020[1]	28,762	36,054	64,816

Source: FAA 5010 Airport Master Record 2020 and FAA TAF 2019.
[1]OLM ATC Tower Reported Operations.

The current data reflects an average annual growth rate of 10.28 percent from 2016 to 2020. The data also reflects large fluctuations in the estimated operations over the last decade and represent a large dip in operations at the time of the recession, with a gradual climb back to operational norms. Local stakeholders have expressed that this data indicates that GA activity is growing significantly and the demand for transient service areas of large aircraft and additional storage for based aircraft is substantial.

The previous OLM master plan forecast, published in 2013, estimated AAGR over the forecast period of 1.3 percent. While this estimated growth rate reflected trends at the time, actual data since that time suggests that the growth rates were high for the itinerant operations and low for the local operations previously forecasted.

2.4.1.7. Historic Instrument Operations

Instrument approach capabilities across the nation for nearly all airports are increasing at a very fast rate. An acknowledgement of critical need coupled with rapidly developing technology has led to an ambitious program by the FAA to upgrade and equip the federal airspace system and individual airports to support a substantial increase in instrument flight capability. OLM is a prime example of an airport that is heavily dependent upon instrument approach procedures (IAPs) and has the data to reflect this. The most reliable method of determining trends of instrument operations over time at a facility is by examining the historic TFMSC data available. **Table 2-13** depicts total instrument operations recorded by the FAA TFMSC at OLM since the year 2000. The data clearly shows a decline occurred with the recession, and the Airport has since seen a slight decline over the last decade. The rates of decline for IFR flights at OLM were -3.32 percent, -5.13 percent and -1.16 percent over the last 20, 10 and 5 years, respectively.

Table 2-13: TFMSC Instrument Operations at OLM, 2000-2020

Year	Total IFR Operations
2000	7,795
2001	8,064
2002	7,825
2003	9,099
2004	8,380
2005	6,543
2006	6,421
2007	6,029
2008	6,385
2009	6,102
2010	6,374
2011	4,871
2012	4,632
2013	4,199
2014	3,388
2015	3,782
2016	3,658
2017	3,434
2018	4,004
2019	3,918
2020	3,493

Source: FAA TFMSC 2021.

2.4.2. Regional Trends and Forecasts

2.4.2.1. FAA Northwest Mountain Region TAF

As a requirement of the FAA's NPIAS program, FAA TAF statistics for all NPIAS airports in the U.S. forecast into the future over a specific planning period, not only at a local airport level, but regionally and nationally as well. **Table 2-14** provides the historic data and current FAA TAF forecasts for operations and based aircraft within the Northwest Mountain Region for selected 5-year intervals. The FAA is forecasting an AAGR in the region of 1.05 percent for total aircraft operations and 0.91 percent for based aircraft over the next 25 years. These statistics will of course vary from airport to airport given local factors, such as flight schools or charter operations, however, as a gross estimate, it is useful to consider these forecasts in relation to local factors at OLM.

Table 2-14: Historic and TAF Operations and Based Aircraft for Northwest Mountain Region, 1990-2020

Year	Total Operations	Based Aircraft
Historic Data		
1990	9,590,829	17,404
1995	10,471,194	17,754
2000	11,671,218	20,842
2005	11,577,022	23,962
2010	10,781,607	22,420
2015	10,190,992	22,256
Forecasts		
2020	10,779,829	23,422
2025	11,195,885	24,612
2030	11,794,527	25,718
2035	12,466,003	26,859
2040	13,197,943	28,069
2045	14,002,489	29,362
AAGR 2020-2045	**1.05%**	**0.91%**

Source: FAA TAF 2019.

2.4.2.2. FAA Washington State TAF

The FAA TAF presents the same categories of forecast data for each of the individual states (see **Table 2-15**). The FAA TAF predicts for the State of Washington an AAGR of 1.15 percent for total operations and 1.12 percent for based aircraft over the next 25 years. As previously mentioned, these statistics help identify trends and augment individual forecasts.

Table 2-15: Historic and TAF Operations and Based Aircraft for Washington State, 1990-2020

Year	Total Operations	Based Aircraft
Historic Data		
1990	2,820,613	4,563
1995	3,208,215	4,790
2000	3,610,414	5,872
2005	3,427,252	6,631
2010	3,178,399	5,963
2015	2,911,283	5,554
Forecasts		
2020	3,096,706	5,788
2025	3,264,502	6,139
2030	3,447,419	6,471
2035	3,652,702	6,818
2040	3,875,293	7,201
2045	4,121,372	7,644
AAGR	**1.15%**	**1.12%**

Source: FAA TAF 2019.

2.4.2.3. Washington State Aviation System Plan

Washington State completed its latest aviation system plan update in 2017 (WASASP). This update is the latest iteration of the continuing 20-year plan to assist the State, FAA, and individual airports in understanding the influences affecting aviation within the state and to help individual airports and the State make appropriate plans for the future. The WASASP report is characteristic of other FAA funded state system planning studies and organization of the report is similar to individual airport master plans. These similarities are due to state system plans using the same FAA Master Planning guidance as individual airport master plans, found in FAA AC 150/5070-6B. The WASASP defines the three pillars of the Washington Aviation System as air cargo, commercial uses, and general aviation.

As part of the new WASASP, the State of Washington has developed its own airport classification system to better describe an individual airport's contribution to the state airport system. **Figure 2-3** depicts the WASASP airport classifications.

Figure 2-3: Washington State Aviation System Plan Airport Classification System

CLASSIFICATION	PRIMARY ACTIVITIES	FACTORS TO CLASSIFY AIRPORTS
Major	▪ Commercial service ▪ Aircraft or aerospace manufacturing	▪ ARC C-III or greater ▪ Primary Activity: commercial service and/or aerospace manufacturing/MRO ▪ Population over 40,000
Regional	▪ Corporate GA and travel business	▪ ARC B-II or greater ▪ Primary Activity: corporate GA and travel business ▪ Population over 30,000
Community	▪ GA-personal transportation/business and recreational ▪ Pilot training	▪ Not metro or regional ▪ Paved primary runway surface ▪ 15 or more based aircraft
Local	▪ GA-personal transportation/recreational ▪ Pilot training ▪ Agriculture	▪ Not metro or regional ▪ Paved primary runway surface ▪ Less than 15 based aircraft
General Use	▪ GA-personal transportation/recreational, including backcountry	▪ Unpaved primary runway surface (including all seaplane bases)

Source: WASASP 2017.

As part of the classification system, OLM holds the designation of a "Regional" Airport. A full description of this new classification is:

> *"A Regional Airport primarily serves as a base for corporate and business travel via general aviation aircraft and commuter passenger service through the airlines. These trips are typically in smaller aircraft, with an ARC of B-II or greater, and may or may not include scheduled commercial airline service. The population must be a minimum of 30,000 but is more likely between 34,000 and 2.1 million."*

OLM fits with the WSDOT definition of "Regional" Airport very appropriately and continues to have room for growth and expansion.

The forecasts developed as part of the latest WASASP are of importance to the OLM forecast. The overall average annual growth rates forecast by the WASASP for the 20-year period and relevant to OLM are as follows:

- GA aircraft operations statewide 0.7 percent
    - Regional Classified Airports 1.1 percent
- Air Carrier / Air Taxi Commuter aircraft operations statewide 2.0 percent
- Enplanements statewide 3.1 percent
- Based Aircraft statewide 1.1 percent

- Regional Classified Airports 0.8 percent

These numbers also resemble most FAA TAF based forecasts and provide further credence to the projected activity of the aviation industry in Washington as a whole. It is not uncommon for information acquisition of this type in a statewide plan to be from consolidated databases rather than being specific to an individual airport. The information is not meant to be entirely conclusive for each individual airport, rather to identify trends for the entire state.

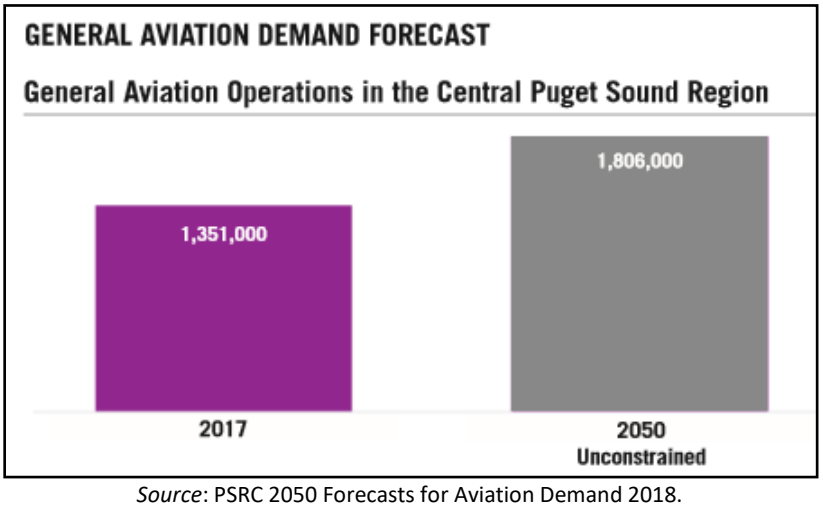
2.4.3. Other Relevant Influences on Trends and Forecasts

When forecasting future operations and based aircraft at GA airports, it is important to examine other potential influences and impacts that could affect overall development. Some of the items to consider may have quantifiable metrics, while others are vague. It is incumbent upon the forecaster to not only use professional judgement when considering these variables, but to also understand the importance of stakeholder input and to meaningfully integrate that information into the forecasts. Forecasting operations at larger, commercial airports can certainly be challenging due to their complexity and the sheer amount of data available, however, GA airport forecasts can be equally as challenging due to the limited amount of reliable published data and because some variables can potentially have a large influence on the whole. This makes forecasting for GA airports much more dependent upon local input and forecaster discretion.

2.4.3.1. Regional Studies

The Puget Sound Regional Council (PSRC) Aviation Demand Study has forecasted a 34 percent increase of GA operations by 2050 (**Figure 2-4**). The study also states that GA demand in the Puget Sound Region, which encompasses the water regions immediately to the north of Olympia, Thurston County, and OLM, to continue with a steady increase, even with the decline seen in recreational flights nationally. The region accounted for 1,351,000 operations in 2017 and estimates 1,806,000 operations annually by 2050. This study indicates that airports like OLM, due to their significant business and "for profit" activity, will experience significant growth in operations over the next few decades.

Figure 2-4: PSRC 2050 Forecasts for Aviation Demand

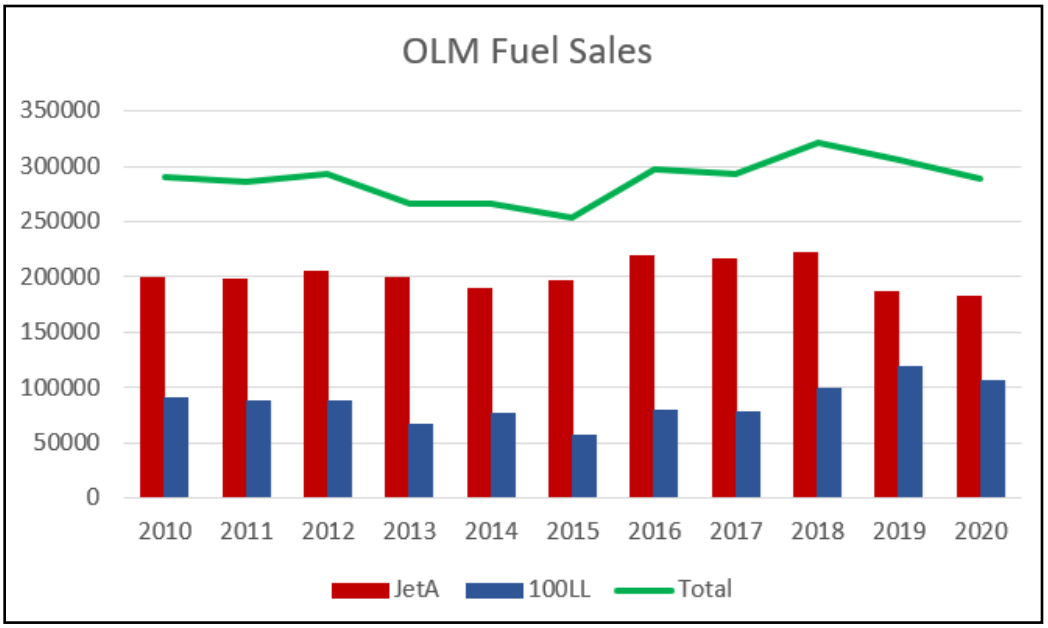


Source: PSRC 2050 Forecasts for Aviation Demand 2018.

2.4.3.2. Fuel Sales

Fuel sales are another metric that can help to determine trends in activity at an airport. Although sales obviously fluctuate over the course of a year, annual consumption of fuel can be an indicator of activity at an airport, especially for GA. Fuel sales records over the time period available corroborate the observations by local users of steady GA activity levels. **Figure 2-5** depicts the recorded fuel sales at OLM over several years. The trending rise of fuel sales over the last few years highlights the increasing activity at OLM, though a decline in 2019 and 2020 can partly be due to the Pandemic that enveloped 2020 in general.

Figure 2-5: Fuel Sales Records for OLM, 2010-2020



Source: OLM Airport Management Records 2021.

2.4.3.3. Airport Users and Survey Responses

OLM is home to a multitude of tenants and serves a broad range of transient operators. Early in the master plan update process, an online airport user survey was distributed to numerous tenants and transient users. Of the 28 respondents, 100 percent base one or more aircraft at OLM. The majority of those who participated in the survey fly smaller single-engine and multi-engine aircraft. The GA pilot community at OLM is very active and involved.

Respondents identified one or more issues impacting their use of OLM. While facility needs discussions take place in the next chapter, some users identified deficiencies and limitation affecting their ability to operate at OLM today. This information indicates aviation demand needs at OLM. The survey reported 39.29 percent (11 out of the 28) of the respondents desired to build additional hangars at OLM.

Also noteworthy is that many survey respondents use their aircraft for both personal and business purposes. Personal use occurred in 78.57 percent of responses and nearly 35.71 percent of the respondents reported also using their aircraft for business purposes. Further, 36.67 percent own and operate local area businesses.

2.4.3.4. Demographics

Regional demographics and socioeconomics often influence aviation demand. Increasing population, higher income, and growing employment can positively impact aviation demand. Declining economic indicators can have a similar negative impact. **Table 2-16** provides medium population indicators for Thurston County from the Washington Office of Financial Management (OFM) Growth Management Act (GMA) county projections.

Table 2-16: Thurston County Recorded Populations with Medium Projections

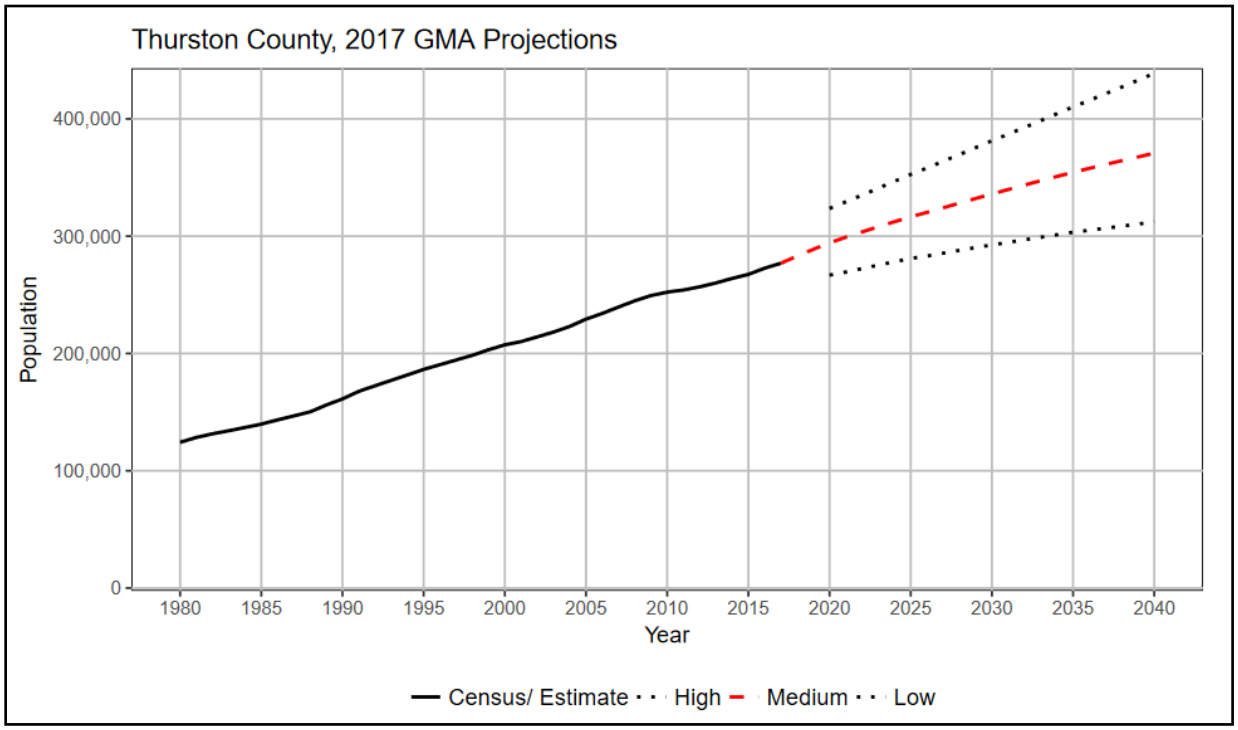
Year	Total Population
2010	252,264
2015	267,410
2017	276,900
2020	294,333
2025	316,508
2030	335,965
2035	354,414
2040	370,699
AAGR	
2010-2020	16.67%
2020-2030	14.14%
2030-2040	10.33%

Source: OFM GMA 2017.

The U.S. census information relative to OLM, Thurston County, and the State of Washington collectively provides established forecast information for the area. The 2017 20-year comprehensive population projections developed by the Washington Office of Financial Management provide valuable information regarding the population trends.

From 2000 to 2020, Thurston County grew at a compound annual growth rate of nearly 1.709 percent. The most reliable medium series of estimates for population growth for Thurston County show a stable increase in population over time through 2040. (See **Figure 2-6**). The total estimated Thurston County population as of 2020 was 291,000. Under medium prediction estimates, an increase to approximately 370,699 by 2040 is anticipated.

Figure 2-6: Thurston County 20-Year Population Estimates



Source: OFM GMA 2017.

2.5. OLM FORECASTS

2.5.1. Forecasting Methodology

FAA AC 150/5070-6B gives wide latitude in both the types and application of the methods used when forecasting data in an airport master plan. The reason for this flexibility is to account for the large variances in the types and complexities of airports and the large number of variables that can influence the forecasts. Professional judgement must be employed in determining the best methodology for the application of forecasts. There are several types of methodologies that the FAA recognizes, including:

1) **Regression analysis** – This is a statistical technique that ties aviation demand (dependent variables), such as enplanements, to economic measures (independent variables), such as population and income. This type of analysis should use relatively simple models with independent variables for which reliable forecasts are available.
2) **Trend analysis and extrapolation** – This type of method relies on projecting historic trends into the future. In trend analysis, a simple equation uses time as the independent variable. It is one of the fundamental techniques used to analyze and forecast aviation activity. While it is frequently identified as a back-up or expedient technique, it is highly valuable because it is relatively simple to apply. Trend analysis can assist as a reasonable method of projecting variables that would be overly complicated (and costly) to project by other means. This is especially true for smaller, GA airports.
3) **Market share analysis or ratio analysis** – This technique assumes a top-down relationship between national, regional, and local forecasts. Local forecasts are a market share (percentage)

of regional forecasts, which are a market share (percentage) of national forecasts. Historical market shares provide a basis for projecting future market shares. This type of forecast is useful when the activity has a constant share of a larger aggregate forecast.

4) **Smoothing** – A statistical technique applied to historical data, giving greater weight to the latest trend and conditions at the airport; it can be effective in generating short-term forecasts.

Two forecasts were developed each for based aircraft and aircraft operations at OLM. Each methodology uses regression analysis as a foundation and some are adjusted using trend analysis, applied smoothing, and market share analysis. Many of the forecasts and historic data resources already discussed in this chapter were employed as independent variables in the forecasts. Specific resources include the following:

- FAA 5010 Airport Master Record
- FAA TAF
- OLM 2013 Master Plan
- 2017 GMA Projections
- WASASP
- FAA TFMSC
  FAA Aerospace Forecasts

2.5.2. Based Aircraft Forecasts

The following sections present forecasting methodologies and results for based aircraft at OLM through the forecast period of 2020 to 2040. Both based aircraft forecasts use regression and trends analyses as the foundation, with the second also employing market area analysis. The forecast tables in the following sections depict the current baseline levels as well as the required forecasts for the short-term (+5-years), mid-term (+10-years), and long-term (+20-years) as required by the FAA. Reference **Appendix 2-3** for the complete year by year forecasts for all data elements.

2.5.2.1. Based Aircraft Forecast #1 – Regression and Trends Analysis

The first of two methodologies employed to forecast based aircraft at OLM is a hybrid regression analysis using several historic and forecasted growth rates from local, regional, and national indicators, as well as input from OLM representatives and interested stakeholders. A triggering event for the Airport will be the culmination and reporting of the findings for the HCP which could potentially allow for future development, resulting in an increase in based aircraft when new hangars are built. The growth rates and sources used for this methodology are detailed in **Table 2-17.**

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Table 2-17: Indicators and Growth Rates Employed in OLM Based Aircraft Forecast #1

Level of Indicator	Specific Indicator	Source	Average Annual Rates
Local	FAA OLM Based Aircraft Stats (1990-2020)	FAA 5010 / TAF	-0.29%
Local	FAA OLM Based Aircraft Stats (2010-2020)	FAA 5010 / TAF	-1.22%
Local	2013 Master Plan Based Aircraft Forecast	OLM MP 2013	1.20%
Local	FAA OLM Based Aircraft Forecasts (2020-2040)	FAA TAF	0.82%
Regional	FAA NWMR Forecasts (2020-2040)	FAA TAF	0.91%
Regional	FAA Washington State Forecasts (2020-2040)	FAA TAF	1.10%
Regional	2016 WASASP Forecasts (all classes)	WASASP	1.10%
Regional	2016 WASASP Forecasts (Regional class)	WASASP	0.80%
National	FAA National Forecasts (2020-2040)	FAA TAF	0.80%

Source: FAA Airport Master Record 5010 2021, FAA TAF 2019, OLM Master Plan 2013, and WASASP 2017.

Taking an average of these growth rates provides an average annual growth rate of 0.58 percent. When applied to OLM's current based fleet, it results in the forecasts detailed in **Table 2-18**. This forecast results in a fleet of 139 based aircraft by 2040, up from 124 in 2020. All aircraft types forecasted as part of the master plan are forecasted using the same rate of 0.573 percent annual growth.

Table 2-18: Results of OLM Based Aircraft Forecast #1

Aircraft Type	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Single-engine	95	98	101	107
Twin-engine	8	8	8	8
Jet	3	3	3	3
Helicopter	18	19	20	21
Total Based Aircraft Forecast	**124**	**128**	**132**	**139**

Source: The Aviation Planning Group 2021, FAA Airport Master Record 5010 2021, FAA TAF 2019, OLM Master Plan 2013, and WASASP 2017.

2.5.2.2. Based Aircraft Forecast #2 – Regression, Trends, and Market Share Hybrid

The second based aircraft forecast uses the first as a foundation but applies a form of a market share analysis within the based fleet itself. This methodology assumes that not all aircraft types at OLM will grow at the same rate across the forecast period, with changes to the fleet somewhat reflecting national forecasts in the FAA's Aerospace Forecast.

Table 2-19 detailed forecasted changes to the national fleet according to the FAA's latest Aerospace Forecast. Single-engine aircraft are projected to drop nearly 10 percent in terms of their percentage of the total fleet, while jets are projected to grow significantly.

Table 2-19: Forecasted Changes to National Fleet, 2020-2040

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total
2020	128,495	22,745	15,495	10,340	**177,075**
2025	122,245	22,715	17,760	11,225	**173,945**
2030	115,710	22,990	19,970	12,205	**170,875**
2040	104,335	24,230	24,000	14,295	**166,860**
Percentage of Total Fleet					
2020	72.6%	12.8%	8.8%	5.8%	**100.0%**
2025	70.3%	13.1%	10.2%	6.5%	**100.0%**
2030	67.7%	13.5%	11.7%	7.1%	**100.0%**
2040	62.5%	14.5%	14.4%	8.6%	**100.0%**

Source: FAA Aerospace Forecast FY2020-2040 2021.

This methodology assumes that the findings of the HCP will allow for further hangar development at the Airport, providing additional room for larger based aircraft such as jets. As hangars are built and business aviation demand increases with the growth of the county and regional population, based jets and turboprops (included in the twin engine category) are forecasted to see a somewhat dramatic growth at the Airport. However, because these aircraft have historically not accounted for a large percentage of the OLM fleet – and because the exact timing of hangar construction is unknown – this growth is capped at a combined 20 percent of the Airport's total fleet by 2040 in the forecasts. This is less than the 28.9 percent of the nationwide GA fleet forecasted by the FAA Aerospace Forecasts for 2040. It is also assumed that helicopters will grow in proportion to the rest of the OLM fleet due to the importance of medivac operations and helicopter training at the Airport.

The results of this methodology are detailed in **Table 2-20**. The final number of 139 is nearly identical to that of the first methodology, but this forecast envisions far greater changes to the Airport's fleet mix. Single-engine aircraft see a slight decline over the forecast period, while twin-engines, jets, and helicopters all experience growth. This methodology makes use of both the Airport's history, several local, regional, and national forecasts, and the FAA's most extensive forecasts of national based aircraft.

Table 2-20: Results of OLM Based Aircraft Forecast #2

Aircraft Type	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Single-engine	95	94	93	91
Twin-engine	8	9	10	13
Jet	3	4	6	13
Helicopter	18	19	20	22
Total Based Aircraft Forecast	**124**	**126**	**129**	**139**

Source: The Aviation Planning Group 2021, FAA Aerospace Forecasts FY2020-2040 2021, FAA Airport Master Record 5010 2021, FAA TAF 2019, OLM Master Plan 2013, and WASASP 2017.

2.5.2.3. Preferred Based Aircraft Forecast

Both OLM based aircraft forecasts offer rather conservative estimates of growth in the Airport's based fleet, with both forecasting a total growth of just over 12 percent through from 2020 to 2040. However,

the second methodology provides a more detailed estimate of the Airport's future while also assuming that the Airport will experience the types of shifts in fleet mix happening at the national level.

For these reasons, Based Aircraft Forecast #2 is the preferred based aircraft forecast of the master plan.

2.5.3. GA and Scheduled Commuter Operations

The following sections discuss two methodologies for forecasting aircraft operations at OLM. The first forecast is a simple regression analysis using a population forecast as the independent variable, while the second combines several historic trends and forecasts in a hybrid of regression and trends analyses. The forecast tables in the following sections depict the current baseline levels as well as the required forecasts for the short-term (+5-years), mid-term (+10-years), and long-term (+20-years) as required by the FAA. Reference **Appendix 2-3** for the complete year by year forecasts for all data elements.

2.5.3.1. Operations Forecast #1 – Population Forecast Regression Analysis

The first methodology for forecasting aircraft operations at OLM through 2040 uses the Washington OFM GMA population projections for Thurston County. Overall, these forecasts expect population in the county to grow at an average rate of 1.2 percent annually. When applied to all forecasts at OLM, including all types of itinerant and local operations, it results in the projections seen in **Table 2-21**. This forecast predicts that operations at the Airport will grow steadily to over 86,000 total by 2040, with both itinerant and local operations growing at the same rate.

Table 2-21: Results of OLM Operations Forecast #1

Type of Operation	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Itinerant Operations (+1.02% annually)				
Air Taxi / Commuter	980	1,031	1,085	1,201
GA	29,541	31,079	32,696	36,189
Military	749	788	829	918
Itinerant Operations Total	**31,270**	**32,898**	**34,610**	**38,307**
Local Operations (+1.02% annually)				
GA	38,381	40,379	42,481	47,018
Military	815	857	902	998
Local Operations Total	**39,196**	**41,236**	**43,383**	**48,016**
Total Aircraft Operations Forecast	**70,466**	**74,134**	**77,993**	**86,323**

Source: The Aviation Planning Group 2021, OFM GMA 2017.

2.5.3.2. Based Aircraft Forecast #2 – Aviation & Population Regression & Trends Hybrid

The second methodology developed to forecast operational activity at OLM is far more complex than the first and uses a combination of regression analysis, trends analysis, and smoothing. While it also uses the OFM GMA projections, these are only one of many inputs for this forecast. Furthermore, this forecast assumes that local and itinerant operations will change at different rates throughout the forecast period. The indicators and growth rates used in this forecast are detailed on **Table 2-22**. This shows the source, the applicable growth rate, and if these growth rates were applied to local operations, itinerant operations, or both.

Table 2-22: Indicators and Growth Rates Employed in OLM Operations Forecast #2

Level of Indicator	Specific Indicator	Source	Average Annual Rates	Growth Rate Applied To
Local	FAA OLM GA Local Operations Stats (1990-2020)	FAA 5010/TAF	3.13%	Local
Local	FAA OLM GA Itinerant Operations Stats (1990-2020)	FAA 5010/TAF	0.24%	Itinerant
Local	2013 Master Plan GA Operations Forecast	OLM MP 2013	1.30%	Both
Local	FAA OLM Local GA Operations Forecasts (2020-2045)	FAA TAF	0.01%	Local
Local	FAA OLM Itinerant GA Operations Forecasts (2020-2045)	FAA TAF	0.33%	Itinerant
Local	Population growth estimate 2020-2045	2017 GMA Projections	1.02%	Both
Regional	FAA NWMR Local Forecasts (2020-2040)	FAA TAF	0.77%	Local
Regional	FAA NWMR Itinerant Forecasts (2020-2040 all operations)	FAA TAF	1.16%	Itinerant
Regional	FAA Washington State Local Forecasts (2020-2040)	FAA TAF	0.83%	Local
Regional	FAA Washington State Itinerant Forecasts (2020-2040)	FAA TAF	1.30%	Itinerant
Regional	WASASP Forecasts (all classes)	WASASP	0.70%	Both
Regional	WASASP Forecasts (Regional class)	WASASP	1.10%	Both
National	FAA National Forecasts (near term local GA operations)	FAA TAF	0.36%	Local
National	FAA National Forecasts (near term itinerant operations)	FAA TAF	0.63%	Itinerant
National	FAA National Forecasts (long term local GA operations)	FAA TAF	0.40%	Local
National	FAA National Forecasts (long term itinerant operations)	FAA TAF	0.94%	Itinerant

Source: FAA Airport Master Record 5010 2021, FAA TAF 2019, OFM GMA 2017, OLM Master Plan 2013, and WASASP 2017.

Using these growth rates as inputs and developing averages for both local and itinerant operations, this forecast sees local operations growing at a rate of 0.96 percent annually and itinerant operations at a rate of 0.87 percent annually, as seen in. As a result, the 2040 operation total under this forecast is slightly lower than that of the first operations forecast, projecting to just under 85,000 by 2040. In addition, the local-itinerant split changes with itinerant operations only accounting a slightly lower percentage of the total (43.9 percent) than in 2020 (44.3 percent).

Table 2-23: Results of OLM Operations Forecast #2

Type of Operation	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Itinerant Operations (+0.87% annually)				
Air Taxi / Commuter	980	1,024	1,069	1,166
GA	29,541	30,853	32,223	35,148
Military	749	782	817	891
Itinerant Operations Total	**31,270**	**32,659**	**34,109**	**37,205**
Local Operations (+0.92% annually)				
GA	38,381	40,261	42,234	46,473
Military	815	855	897	987
Local Operations Total	**39,196**	**41,116**	**43,131**	**47,460**
Total Aircraft Operations Forecast	**70,466**	**73,775**	**77,239**	**84,665**

Source: The Aviation Planning Group 2021, FAA Airport Master Record 5010 2021, FAA TAF 2019, OFM GMA 2017, OLM Master Plan 2013, and WASASP 2017.

2.5.3.3. Preferred Operations Forecast

The two methodologies used to forecast operations at OLM provide incredibly similar results despite the first using only one independent variable and the second using many. The second methodology also makes a point to approach local and itinerant operations somewhat differently, using different sets of independent variables and resulting in a slight change to the local-itinerant split. Despite the results being quite similar, Operations Forecast #2 is far more defensible due to the far greater number of inputs.

For these reasons, Operations Forecast #2 is the preferred based aircraft forecast of the master plan.

2.5.3.4. Instrument Approach Procedure Forecasts

An FAA TAF for an individual airport does not include any baseline, predictive data or forecast analysis regarding total instrument operations. For the purposes of this study, total IFR operations forecasts established an understanding of future transient and itinerant operations. As described earlier in the chapter, there has been a significant decrease over the previous two decades in IFR operations at OLM, evident by the TFMSC data. The recent trend analysis for IFR operations at OLM reveals an average decrease of 1.16 annually percent from 2015 to 2020.

IFR operations are critical to OLM, and the best data set available to extrapolate historical trends into the future is the historical trend analysis of the FAA TFMSC data, coupled with other direct influences. In developing the predicted trend for the forecast IFR operations, similar influences were used as those used to determine trend analysis for based aircraft and aircraft operations. It is reasonable to suggest that based aircraft and aircraft activity directly relate to IFR operations. Furthermore, forecasted increases in activity by twin-engine and jet aircraft, both of which are projected to increase in the based fleet, should lead to an increase in IFR operations at OLM.

To tie this to the forecasted growth for the Airport, recent trends are tempered by the projected growth for based aircraft and the forecasted growth rates for local and itinerant operations to determine a forecasted IFR growth rate. Other factors that might cause forecast IFR activity trends to diverge from operations and based aircraft data would be singular impacts to local operations or national IFR operations, such as the addition of a flight school or substantial changes to IFR procedures at OLM. No singular impacts of these types have been determined to be factors in the foreseeable future at OLM other than continued growth of the existing two flight schools currently based at the Airport. **Table 2-24** details IFR forecasts at OLM assuming an average annual increase of 1.25 percent.

Table 2-24: OLM Instrument Operations Forecasts

Type of Operation	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Instrument Operations (+1.25% annually)	3,493	3,716	3,954	4,475

Source: The Aviation Planning Group 2021, FAA TAF 2019 and FAA TFMSC 2021.

2.5.4. Comparison to TAF

To augment individual airport TAF forecasts, the FAA relies upon forecasts developed as part of the master planning process. To ensure reasonableness, and to create a baseline for planning forecasts, the guidance provided for airport master planning in the FAA AC 150/5070-6B states that all airport master

plan forecasts must include a comparison against the FAA's existing TAF for the airport. Forecasts are compatible and consistent with the FAA TAF for all classes of airports if the forecasts for based aircraft and total operations meet the following criteria:

- Forecasts differ by less than 10 percent in the five-year forecast period.
- Forecasts differ by less than 15 percent in the ten-year forecast period.

If comparisons are not consistent with the FAA TAF and fall outside of these established parameters, explanation of the reasons for the differences must occur. It is not at all uncommon for there to be differences between the current FAA TAF forecasts and airport master plan forecasts for individual airports. This is especially true for smaller non-commercial service GA airports with limited current and historic data. **Table 2-2525**: Master Planning Forecast Comparison to FAA TAF: Based Aircraft

Forecast and Year	Master Plan Preferred Forecast	TAF	Percent Difference
Based Aircraft			
Base Year: 2020	124	130	-4.62%
Short-Term Forecast: 2025	128	138	-7.25%
Intermediate-Term Forecast: 2030	132	143	-7.69%
Long-Term Forecast: 2040	139	153	-9.15%

Source: The Aviation Planning Group 2021 and FAA TAF 2019.

Table 2-26 & **2-26** present a comparison of the master planning forecasts to the FAA TAF.

Table 2-2525: Master Planning Forecast Comparison to FAA TAF: Based Aircraft

Forecast and Year	Master Plan Preferred Forecast	TAF	Percent Difference
Based Aircraft			
Base Year: 2020	124	130	-4.62%
Short-Term Forecast: 2025	128	138	-7.25%
Intermediate-Term Forecast: 2030	132	143	-7.69%
Long-Term Forecast: 2040	139	153	-9.15%

Source: The Aviation Planning Group 2021 and FAA TAF 2019.

Table 2-26: Master Planning Forecast Comparison to FAA TAF: Aircraft Operations

Forecast and Year	Base Year: 2020	Short-Term Forecast: 2025	Intermediate-Term Forecast: 2030	Long-Term Forecast: 2040
Local Aircraft Operations				
Master Plan Preferred Forecast	39,196	41,116	43,131	47,460
TAF	34,515	34,525	34,535	34,555
TAF Difference	13.56%	19.09%	24.89%	37.35%
Itinerant Aircraft Operations				
Master Plan Preferred Forecast	31,270	32,659	34,109	37,205
TAF	29,290	29,769	30,265	31,298
TAF Difference	6.76%	9.71%	12.70%	18.87%
Total Aircraft Operations				
Master Plan Preferred Forecast	70,466	73,775	77,239	84,665
TAF	63,805	64,294	64,800	65,853
TAF Difference	10.44%	14.75%	19.20%	28.57%

Source: The Aviation Planning Group 2021 and FAA TAF 2019.

The based aircraft forecasts are lower than the FAA TAF but within the parameters described above, differing by only 7.25 percent in the 5-year forecast period and 7.69 percent in the 10-year forecast period. The current FAA TAF for OLM for based aircraft begins higher than what is currently being reported by the Airport. The FAA relies upon these type of planning studies to augment the FAA TAF data, and the much more accurate data obtained from local sources aids in generating a more accurate forecast. More recent trends and available data suggest that based aircraft numbers are being accurately reported now, with seasonal aircraft not being counted as they had been historically.

There is far greater variation between the master planning forecasts and the TAF for operations, largely due to the FAA TAF having not held the non-tower operations in consideration with the total operations reported. In contrast to the data reflected in the FAA TAF, operations outside of the ATC tower operational hours (8 AM to 8 PM) do occur regularly and should be considered in the overall forecast. The tower reported operations are in line with the TAF, and addition of the estimated non-tower reported operations that occur from 8pm-8am clearly show the reason for the divergence between the FAA TAF and the determined forecast.

2.5.5. Critical Aircraft

The combination of data provided by ATC during operational hours, TFMSC data, FBO landing fee data, and Airport stakeholder input provides a reliable amount of information regarding type of aircraft utilizing OLM. In addition, IFR flight information was very helpful in assisting with the critical aircraft determination as well.

As described earlier in this chapter, the “Critical Aircraft” or “Design Aircraft” determination is crucial to future planning efforts regarding all aspects of OLM, from airfield design to hangar development and landside planning. An airport’s critical or design aircraft is the most demanding aircraft (or group of aircraft) that flies at least 500 operations a year at the facility. As detailed earlier on **Table 2-2**, the FAA groups aircraft into categories based on aircraft performance and dimensions, and these categories

form the basis of the critical aircraft. An airport's critical aircraft is representative of all aircraft in the same aircraft classification operating at an airport.

The Bombardier Challenger 100/300/600/700, C-II category aircraft, which has an approach speed of less than 140 knots, alone accounted for 59 flight plans at OLM in 2020. In addition, FBO landing fee data has indicated that aircraft that fall within AAC B accounted for 424 operations and AAC C and greater accounted for 116 operations at the Airport. Group II aircraft accounted for 506 operations in 2020. Also regularly observed at OLM were Gulfstream G-V/VI/VII (D-III aircraft), Gulfstream IV (D-II), Learjet 35 (D-I), Bombardier 100/300/600/700 (C-II), Citation 650 (C-II), Embraer 135 (C-II), and the Hawker 900XP (C-II).

In line with the findings of the 2013 master plan, B-II aircraft represent the existing critical aircraft, with the future critical aircraft forecasted as C-II. The latter is justified by the forecasted growth in based jets, and with them, an anticipated increase in jet operations at the Airport. As stated, the number of based jets at the Airport is expected to increase to approximately 10 percent of the Airport's fleet by 2040. Assuming that jets will account for a similar percentage of total Airport operations by 2040, this will give the Airport over 8,500 jet operations by the end of the forecast period. Currently, aircraft C-II or higher account for 23 percent of jet operations at OLM per the FAA's TFMSC reports for 2020. Again, assuming this percentage stays the same, OLM would have nearly 2,000 operations of aircraft C-II or higher by 2040. While a single aircraft model in this group may not reach 500 operations by 2040, the total more than justifies the increase to a C-II critical aircraft and ARC at OLM.

Current Critical Aircraft: B-II – Cessna Citation 560
Ultimate Critical Aircraft: C-II – Bombardier Challenger 700

2.6. FORECAST SUMMARY

Table 2-27 summarizes the planning activity levels for the OLM forecast for total operations and total b ased aircraft over the next 20 years. Based aircraft are forecasted to grow from 124 in 2020 to 139 by 2 020, a total change of 12.1 percent and average annual increase of 0.57 percent. Operations are expected to grow from 70,466 in 2020 to 84,665 by 2040, a total change of 20.2 percent and average annual increase of 0.92 percent. The Airport's current critical aircraft is B-II, but is expected to be C-II in the future due to an increase in jet activity.

Table 2-27: Master Planning Forecast Summary for OLM, 2020-2040

Type of Operation	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast
	2020	2025	2030	2040
Total Based Aircraft	124	126	129	139
Total Operations	70,466	73,775	77,239	84,665
Critical Aircraft				
Current (2020) Critical Aircraft	Cessna Citation 560		B-II	
Ultimate (2040) Critical Aircraft	Bombardier Challenger 700		C-II	

Source: The Aviation Planning Group 2021, FAA Airport Master Record 5010 2021, FAA TAF 2019, OFM GMA 2017, OLM Master Plan 2013, and WASASP 2017.

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

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Seattle Airports District Office
2200 S. 216th Street, Room 1W-420
Des Moines, WA 98198

October 15, 2021

Mr. Rudy Rudolph
Port of Olympia
606 Columbia Street N.W., Suite 300
Olympia, WA 98501

Olympia Regional Airport (OLM)
Master Plan and Airport Layout Plan Update:
Grant 3-53-0041-029-2021
Aviation Forecast Approval

Dear Mr. Rudolph:

The Federal Aviation Administration (FAA), Seattle Airports District Office has received and reviewed the aviation forecast for Olympia Regional Airport (OLM) Master Plan Update, dated June 14, 2021. The FAA approves these forecasts for airport planning purposes, including Airport Layout Plan (ALP) development. The forecast approval is based on the following:

1. The difference between the FAA Terminal Area Forecast (TAF) and Olympia Regional Airport's forecast for total operations is not within the 10 percent and 15 percent allowance for both the 5-year and 10-year planning horizons.
2. The difference between the TAF and Olympia Regional Airport's forecast for based aircraft is within the 10 percent allowance for the 5-year plans, and within the 15 percent allowance for the 10-year planning horizon.
3. The forecast is based on reasonable planning assumptions, current data and appropriate forecasting methodologies. [Master Plan Forecast Tables A, B and C shown below.]

Based on the approved forecast, the FAA approves the current critical aircraft of B-II typified by the Cessna Citation 560. The FAA also approves your forecast for ultimate critical aircraft of C-II typified by the Bombardier Challenger 700, which must be justified with adequate operations numbers by 2040.

A. OLM Forecast Levels and Growth Rates

Specify base year: 2020

	Base Yr. Level	Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr	Average Annual Compound Growth Rates: Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr
Passenger Enplanements									
Air carrier	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Commuter	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
TOTAL	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Operations									
Itinerant									
Air carrier	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Commuter/air taxi	980	989	1,024	1,069	1,166	0.87%	0.87%	0.87%	0.87%
Total Commerial Operations	980	989	1,024	1,069	1,166	0.87%	0.87%	0.87%	0.87%
General aviation	29,541	29,799	30,853	32,223	35,148	0.87%	0.87%	0.87%	0.87%
Military	749	756	782	817	891	0.87%	0.87%	0.87%	0.87%
Local									
General aviation	38,381	38,750	40,261	42,234	46,473	0.96%	0.96%	0.96%	0.96%
Military	815	823	855	897	987	0.96%	0.96%	0.96%	0.96%
TOTAL OPERATIONS	70,466	71,117	73,775	77,240	84,665	0.92%	0.92%	0.92%	0.92%
Instrument Operations	3,493	3,537	3,716	3,954	4,475	1.25%	1.25%	1.25%	1.25%
Peak Hour Operations	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Cargo/mail (enplaned + deplaned tons)	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Based Aircraft									
Single Engine (Nonjet)	95	95	94	93	91	-0.21%	-0.21%	-0.21%	-0.21%
Multi Engine (Nonjet)	8	8	9	10	13	2.46%	2.46%	2.46%	2.46%
Jet Engine	3	3	4	6	13	7.61%	7.61%	7.61%	7.61%
Helicopter	18	18	19	20	22	1.01%	1.01%	1.01%	1.01%
Other	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
TOTAL	124	124	126	129	139	0.57%	0.57%	0.57%	0.57%

B. Operational Factors

	Base Yr. Level	Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr
Average aircraft (seats)					
Air carrier	-	-	-	-	-
Commuter	-	-	-	-	-
Average enplaning load factor					
Air carrier	-	-	-	-	-
Commuter	-	-	-	-	-
GA operations per based aircraft	568	574	586	599	609

Note: 2019 TAF data was used for this Forecast per the FAA due to COVID-19 impacts for 2020.

C: OLM Master Plan Forecast Comparison to FAA TAF: Based Aircraft

Forecast and Year	MP Preferred Forecast	TAF	% Difference
Based Aircraft			
Base Year: 2020	124	130	-4.62%
Short-Term Forecast: 2025	128	138	-7.25%
Intermediate-Term Forecast: 2030	132	143	-7.69%
Long-Term Forecast: 2040	139	153	-9.15%

Source: The Aviation Planning Group 2021 and FAA TAF 2019

OLM Airport Planning and TAF Forecast Comparison

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Total Operations				
Base Yr.	2020	70,466	63,805	10.44%
Base Yr. + 5yrs.	2025	73,755	64,294	14.72%
Base Yr. + 10yrs.	2030	77,239	64,800	19.20%
Base Yr. + 120yrs.	2040	84,665	65,853	28.57%

Note: TAF data is on a U.S. government fiscal years basis (October through September)
Note: 2019 TAF data was used for this Forecast per the FAA due to COVID-19 impacts for 2020.

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 forecast may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

The Airport District Office will initiate the process to request that the FAA Office of Aviation Policy and Plans (APO) modify the TAF to reflect any updates to current forecast. It may take some time before such changes are officially reflected in the TAF.

If you have any questions about this forecast approval, please email agnes.fisher@faa.gov or call Agnes Fisher at (206) 231-3894.

Sincerely,

Agnes Fisher – Community Planner, x637

Seattle ADO

OLM Forecast Levels and Growth Rates

Specify base year: 2020

	Base Yr. Level	Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr	Average Annual Compound Growth Rates: Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr
Passenger Enplanements									
Air carrier	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Commuter	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
TOTAL	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Operations									
Itinerant									
Air carrier	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Commuter/air taxi	980	989	1,024	1,069	1,166	0.87%	0.87%	0.87%	0.87%
Total Commerial Operations	980	989	1,024	1,069	1,166	0.87%	0.87%	0.87%	0.87%
General aviation	29,541	29,799	30,853	32,223	35,148	0.87%	0.87%	0.87%	0.87%
Military	749	756	782	817	891	0.87%	0.87%	0.87%	0.87%
Local									
General aviation	38,381	38,750	40,261	42,234	46,473	0.96%	0.96%	0.96%	0.96%
Military	815	823	855	897	987	0.96%	0.96%	0.96%	0.96%
TOTAL OPERATIONS	70,466	71,117	73,775	77,240	84,665	0.92%	0.92%	0.92%	0.92%
Instrument Operations	3,493	3,537	3,716	3,954	4,475	1.25%	1.25%	1.25%	1.25%
Peak Hour Operations	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Cargo/mail (enplaned + deplaned tons)	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
Based Aircraft									
Single Engine (Nonjet)	95	95	94	93	91	-0.21%	-0.21%	-0.21%	-0.21%
Multi Engine (Nonjet)	8	8	9	10	13	2.46%	2.46%	2.46%	2.46%
Jet Engine	3	3	4	6	13	7.61%	7.61%	7.61%	7.61%
Helicopter	18	18	19	20	22	1.01%	1.01%	1.01%	1.01%
Other	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%
TOTAL	124	124	126	129	139	0.57%	0.57%	0.57%	0.57%

B. Operational Factors

	Base Yr. Level	Base Yr. +1yr	Base Yr. +5yr	Base Yr. +10yr	Base Yr. +20yr
Average aircraft (seats)					
Air carrier	-	-	-	-	-
Commuter	-	-	-	-	-
Average enplaning load factor					
Air carrier	-	-	-	-	-
Commuter	-	-	-	-	-
GA operations per based aircraft	568	574	586	599	609

Note: 2019 TAF data was used for this Forecast per the FAA due to COVID-19 impacts for 2020.

OLM Airport Planning and TAF Forecast Comparison

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base Yr.	2020	0	0	0%
Base Yr. + 5yrs.	2025	0	0	0%
Base Yr. + 10yrs.	2030	0	0	0%
Base Yr. + 120yrs.	2040	0	0	0%
Commercial Operations				
Base Yr.	2020	0	0	0%
Base Yr. + 5yrs.	2025	0	0	0%
Base Yr. + 10yrs.	2030	0	0	0%
Base Yr. + 120yrs.	2040	0	0	0%
Total Operations				
Base Yr.	2020	70,466	63,805	10.44%
Base Yr. + 5yrs.	2025	73,755	64,294	14.72%
Base Yr. + 10yrs.	2030	77,239	64,800	19.20%
Base Yr. + 120yrs.	2040	84,665	65,853	28.57%

Note: TAF data is on a U.S. government fiscal years basis (October through September)
Note: 2019 TAF data was used for this Forecast per the FAA due to COVID-19 impacts for 2020.


N310KD
R22
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