CHAPTER 2

AVIATION FORECASTS

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AVIATION FORECAST

Aviation forecasts are time-based projections offering a reasonable expectation of future Oscoda-Wurtsmith Airport activity during the 20-year planning period (2010-2030).

Forecasts influence virtually all phases of the planning process, as the relationship between activity and projected demand indicates the type, extent, and timing of Airport improvements for various triggers of Airport infrastructure, equipment and service needs. Primarily, the forecast of aircraft activity is used to quantify the Airport's operational peaking and capacity characteristics, determine the sizing and space allocation for structures and site development, and form the basis to evaluate the feasibility of various development options.

Overall, the forecast predictions attempt to account for factors at Oscoda which could likely influence projections in some significant or substantial way; whether an occurrence of past trends or an assumption of future expectations. As indicated in Chapter 1, the FAA Terminal Area Forecasts (TAF) combined with the forecasts developed for the Maintenance, Repair, and Overhaul (MRO) operations continues to support the Boeing 747 heavy widebody aircraft as the Airport's most demanding, or critical aircraft, used for future facility planning and design purposes.

The following forecast components are assessed in this chapter:

Aircraft Operations – The number of aircraft landings and takeoffs conducted annually by local and itinerant traffic, including general aviation, commercial and military users. 'Local' operations are flights performed in the Airport traffic pattern vicinity, including proficiency training, instrument training and flights from nearby airports. 'Itinerant' operations are traffic arriving and departing from beyond the local vicinity. Civilian general aviation traffic comprises the predominant Airport operations.

Based Aircraft – The number of aircraft stored at the Airport, as typically identified by aircraft type (single-engine, multi-engine, turboprop, turbojet, and rotorcraft).

Peak Period Activity – identifies Airport usage by peak periods, as a matter of processing aircraft and pilot/passengers based on space allocation requirements; primarily for the terminal area facilities.

Critical Aircraft (Group) – Aircraft physical and performance data respective to the existing and planned FAA Airport Reference Code (ARC) classification, for determining the extent of airfield and terminal area geometric requirements.

2.1 FORECAST METHODOLOGY

Although the 20-year forecasts are developed on a year-by-year basis, the forecasts are presented in the master plan in 5, 10, and 20-year increments. The forecast planning horizons have been segmented into three planning phases: 'short-term' (2010 to 2015), 'intermediate' (2016 to 2020) and, 'long-term' (2021 to 2030), as consistent with FAA and State programming periods.

The Airport's official baseline forecasts are derived from the FAA Terminal Area Forecasts (TAF), as published annually for all airports included within the *National Plan of Integrated Airport Systems (NPIAS)*. The FAA TAF provides a record of past activity, as well as projections for annual aircraft operations and based aircraft. The FAA TAF forecasts are identified for a 20-year planning period from 2010 until 2030. The aviation forecasts attempt to reflect the most recent trends, user demands, socio-economic patterns, competing services at surrounding airports and influences occurring within the general aviation industry. Because activity levels during individual years might vary above or below the FAA TAF forecast projections, actual activity levels do not necessarily ascribe to a given forecast year. Also, forecasts are considered 'unconstrained', which assumes facilities and services are, or will be, sufficiently available to accommodate user needs as demand arises (i.e., runway and taxiway facilities, aircraft hangar occupancy, tenant buildings, etc.). Also discussed in this chapter are the Airport user patterns, industry trends, and community developments which could influence the FAA TAF.

From the baseline forecast, the aircraft mix and critical design aircraft is determined for identifying the applicable airport design standards in developing facilities to accommodate the more demanding aircraft use, as influenced by peak periods. If actual activity or aircraft circumstances occur faster than anticipated, the implementation schedule should be re-assessed as necessary. Similarly, slower than projected growth may warrant deferment of planned improvements.

2.1.1 National General Aviation Trends

The forecasts reflect the most recent user trends, user demands, socio-economic patterns, competing services at surrounding airports and influences occurring within the general aviation industry. The national economy began slowing during the latter stages of 2007. National economic conditions can have a strong and lagging effect on aviation demand, in nearly all segments of the aviation industry. Despite the short-term economic conditions, the national economy is cyclical and is trending towards grows over longer periods of time. The national FAA forecast and other national forecasts anticipate a 2 to 3 percent increase in the gross domestic product over the long term. Aviation demand is typically robust during the periods of strong economic growth and weaker during economic recessions. During production of this forecast, the national economy was experiencing an economic slowdown.

The general aviation industry, in terms of aircraft production and utilization, is growing at about 0.2 to 1.0 percent annually, with the business-class segment growing at a faster rate of 2.5 to 4.0 percent annually. These trends are supported by FAA aircraft traffic count surveys, pilot registries, aircraft production and shipment schedules, used-aircraft market trends, pilot certifications/ratings, and corporate tax legislation on aircraft depreciation schedules.

Business jet production will constitute the fastest growing segment of the general aviation fleet. Most profoundly since 1990, fractional jet ownership programs have expanded from 60 to nearly 6,500 users. In the future, these ownership arrangements will likely expand into new markets, and involve more turboprop aircraft. However, rising costs for new aircraft production, insurance and fuel are possible impediments to the growth of general aviation.

2.1.2 National Air Cargo Trends

As reported in the FAA Aerospace Forecast (March 2010), all U.S. cargo carriers flew 27.8 billion total revenue ton-miles (RTM) in 2008. Impacts of the worldwide economic recession caused the total to drop to 22.2 billion total RTM in 2009. This decrease was one of the sharpest ever recorded and was counter to the long-term growth of air cargo traffic. For the future, the FAA predicts that all-cargo revenue ton-miles (RTM), are projected to grow at an average annual rate of 2.5 percent for domestic cargo and 7.1 percent for international cargo between 2010 and 2020. The combined average annual growth rate for domestic and international all-cargo RTM is 5.3 percent. The number of all-cargo aircraft decreased between 2000 and 2009 by a 2.4 percent average annual growth rate as the size of aircraft increased. The FAA Aerospace Forecast projects the number of cargo jet aircraft to increase at an annual average growth rate of 2.8 percent between 2010 and 2030.

One factor that may lead to a greater reliance on cargo only freighters is the tightened level of security on passenger flights. In 2007, federal legislation was signed into law establishing a system requiring screening of 100 percent of all cargo carried on passenger flights originating in the U.S. Because of the screening and known shipping regulations of the Transportation Security Administration, the amount of air cargo carried in the belly of passenger airliners is anticipated to decrease dramatically.

2.1.3 National Maintenance Repair Overhaul (MRO) Trends

While not tracked or projected by the FAA, private research shows the overall trend of MRO activity to be growth. This positive growth trend is dependent on continued increase in airline fleet size based upon the larger number of passengers travelling and increased air cargo activity. While North America is the largest MRO market in terms of value, the forecast projects that Eastern Europe, China, Latin America, the Caribbean, the Middle East and Asia Pacific will have highest MRO growth rates over the next ten years. The research also suggests that commercial aviation has reached its economic low due to the recession and that business will began to experience growth throughout the near term. The following shows the anticipated annual growth in domestic MRO maintenance activity:

Table 2-1
PROJECTED MRO ACTIVITY

Year	Projected MRO Activity
2010-2015	3.4% annual average growth rate
2015-2020	5.4% annual average growth rate
2010-2020	4.4% annual average growth rate

Source: Aviation Week Article Forecasts Show MPO at a Crossroads

Private research provides analysis that shows commercial MRO revenues will remain steady at least until the airlines recover from the economic downturn. Military MRO's currently represent approximately 44 percent of the market in the United States. It is anticipated by private research that the current market for Military MRO's is expected to remain relatively constant over the next ten to twenty years. The US Air Force has recently reversed its performance based policy, which takes control of maintenance previously outsourced to Boeing and Lockheed Martin on the C-17 and the F-22 aircraft.

While the need for airlines to save cash has prevented them from growing their fleets, the need to outsource maintenance has increased in order to keep costs low. Technology is anticipated to become a commercial aircraft driver into the future as environmental regulations and fuel efficiency become a top priority. Further, the number of next-generation aircraft is expected to double in the next four to five years. However, private research also provides analysis that shows that North American MRO's are expected to be more cost competitive with Latin American and Asian MRO's in the future resulting in the return of certain work to the United States from overseas.

2.2 HISTORICAL AIRPORT ACTIVITY TRENDS

This section presents a general overview of the historical trends in aviation activity at the Airport. For planning purposes, FAA records the annual aircraft operations in the categories of air carrier, commercial, military, and general aviation. An aircraft operation is defined as either a takeoff or a landing.

2.2.1 Historical Aircraft Operations

In the last years of an Air Force Base, the 1993 Wurtsmith Air Force Base Environmental Impact Statement (EIS) reported 1990 historical Airport operations of approximately ±62,000. Since 1996, upon conversion to a civilian airport facility, the FAA began reporting annual aircraft operations as published in the FAA 5010 Form and FAA Terminal Area Forecast (TAF).

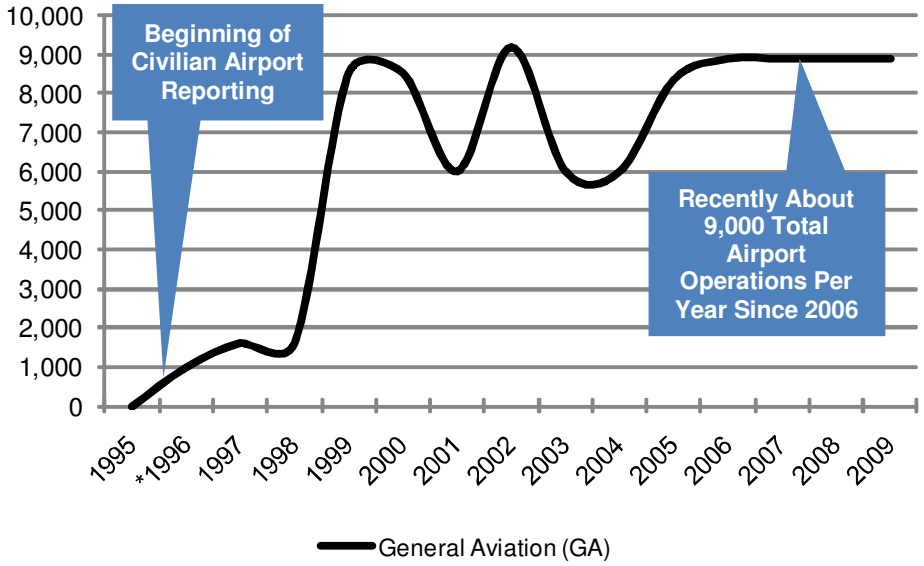
As shown in **Table 2-2**, annual Airport operations from 1996 to 2000 grew dramatically, then fluctuated from 2000 to 2005, and have largely leveled-off since. During the rising upstart period from 1996, the Airport was becoming established as a civilian facility and accommodating new aviation tenants. During the 2000 to 2005 period, the aviation industry was experiencing fluctuations caused be a weakening economy, coupled with a lagging slowdown of the general aviation industry mainly resulting from sharp increases in fuel prices and a slowing of aircraft sales.

As of 2009, the Airport experiences about 9,000 annual aircraft operations (takeoffs and landings), with nearly 92 percent conducted by small single and twin-piston engine aircraft, 3 percent by turboprop and small-cabin business jet traffic, and 5 percent by large transport aircraft affiliated with the Kalitta MRO facility. The Kalitta MRO facility generates approximately 400 to 500 transport aircraft operations per year, mostly by the Boeing 747 series. Operations by Kalitta have been increasing substantially at Oscoda, due to internal fleet acquisition and expanding contract work with other air carriers.

2.2.2 Historical Based Aircraft

As of June 2009, the Airport reported 18 based aircraft (all fixed-wing airplanes), 15 single-engine piston, 2 twin-engine piston, and 1 jet.

Table 2-2
HISTORICAL AIRCRAFT OPERATIONS



Year	Commercial Service	General Aviation (GA)		Total Airport
		Itinerant	Local	
1996*	0	500	500	1,000
2000	0	3,500	5,000	8,500
2001	0	2,400	3,590	5,990
2002	0	5,500	3,660	9,160
2003	0	2,400	3,590	5,990
2004	0	2,400	3,590	5,990
2005	0	4,999	3,333	8,332
2006	0	3,543	5,314	8,857
2007	0	3,543	5,314	8,857
2008	0	3,543	5,314	8,857
2009	0	3,543	5,314	8,857
Average (96-09)	0	3,261	4,047	7,308

* 1996 was the first year data was available in the FAA TAF
Source: Data from 2009 FAA Terminal Area Forecast (TAF)

2.3 FORECAST OF AIRCRAFT OPERATIONS

This section identifies the forecast of aviation activity at the Airport. The forecasts quantify the total annual aircraft operations, aircraft fleet mix, and based aircraft projected to operate at the Airport during the 20-year planning period. Also, as reference, the 2006 Airport Layout Plan (ALP) forecasts are presented in this section, for comparison purposes.

2.3.1 Aircraft Operations Forecast

The following comprise the major components of the Airport's operational forecast

2.3.1.1 General Aviation Activity Forecasts

General aviation activity at the Oscoda-Wurtsmith Airport is considered to be all civilian traffic not including the transport aircraft operations associated with the Airport's Maintenance Repair Overhaul (MRO) operators. The Airport's baseline general aviation forecast of operations is derived from the FAA Terminal Area Forecast (TAF), which projects general aviation traffic to remain constant at about 9,000 operations throughout the 20-year planning period.

However, it is anticipated there could be a moderate growth of general aviation activity at Oscoda as attributed through the re-introduction of flight training and rental aircraft, and indirectly as the region attracts more recreational visitors and permanent residents.

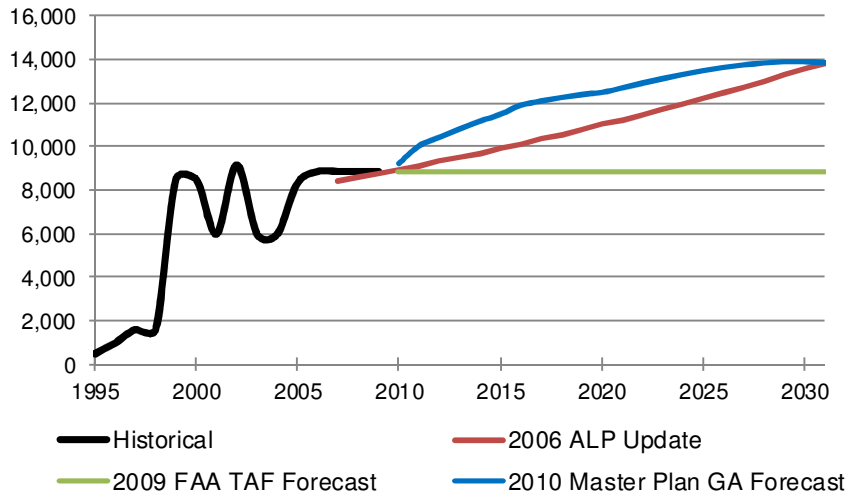
Under the enhanced Master Plan general aviation forecast, general aviation operations increase at about 1.6 percent annually, as coincident with FAA general aviation trends, from about 8,600 operations in 2009 to about 14,000 in 2030. **Table 2-3** depicts the general aviation forecasts throughout the 20-year planning period.

2.3.1.2 Maintenance, Repair, and Overhaul (MRO) Activity Forecasts

Although there are other peripheral aircraft manufacturing businesses located at Oscoda, the core of the MRO activity is expected to remain with Kalitta, or a similar type of MRO business. Kalitta Air has continued to grow and strengthen its MRO business at Oscoda, even throughout the recent economic downturn. In 2009 to 2010 Kalitta conducted about 200 aircraft flight checks at Oscoda, in which most were conducted on the Kalitta Boeing 747 widebody aircraft. Kalitta reported that their MRO aircraft flight check business at Oscoda has been growing 10 to 20 percent annually, through internal Kalitta cargo aircraft checks and outsourcing business. Continuation of this growth rate could be expected for the foreseeable future.

For forecasting and facility planning purposes, three MRO scenarios were evaluated with respect to the ranges of large transport aircraft activity associated with existing and anticipated growth expectations occurring at Oscoda. The following are the baseline assumptions considered for each of the MRO scenarios: availability of adequate labor force and housing to accommodate new MRO employees; Kalitta Air continues as a worldwide cargo delivery service, and if Kalitta ceases operations, a similar cargo company or MRO operator would assume operations at Oscoda.

Table 2-3
GENERAL AVIATION OPERATIONS FORECAST



Year	Historical (FAA Records)	2006 ALP Update	2009 FAA TAF	2010 GA Master Plan
2000	8,500	--	--	--
2005	8,332	--	--	--
2006	8,857	8,407	--	--
2007	8,857	8,584	--	--
2008	8,857	8,764	--	--
2009	8,857	8,948	--	--
2010	--	9,136	8,857	10,000
2015	--	10,136	8,857	11,900
2020	--	11,246	8,857	12,700
2030	--	13,844	8,857	13,900
Avg Annual Growth Rate 2010 - 2030	-	2.1%	0.0%	1.6%

Source: 2009 FAA Terminal Area Forecast; RS&H Forecast.

Oscoda MRO Forecast Activity Scenarios:

- **MRO Scenario 1 (Status Quo)** - Kalitta MRO flight checks continue to grow by a margin of about 10 percent during the next several years largely through higher utilization maintenance of the existing Kalitta Air Boeing-747 fleet (± 24 aircraft), and continues limited MRO outsourcing of contract work on other carriers. Under this scenario, it is assumed Kalitta would continue to operate from the existing leased hangar/building facilities. Eventually, this scenario assumes the Kalitta MRO business at Oscoda would trail to a more typical longer-term expansion rate, approximating the recent MRO industry business expansion rate of 4 to 6 percent. In addition, it assumes no significant infusion of new or expanded contract work would occur at Oscoda. At about 10 percent growth, this equates to nearly 20 to 30 additional B-747 flight checks per year at Oscoda. Over a 20-year period, Scenario 1 results in approximately 1,300 annual operations by large transport aircraft, mostly by Kalitta Air B-747 airplanes.

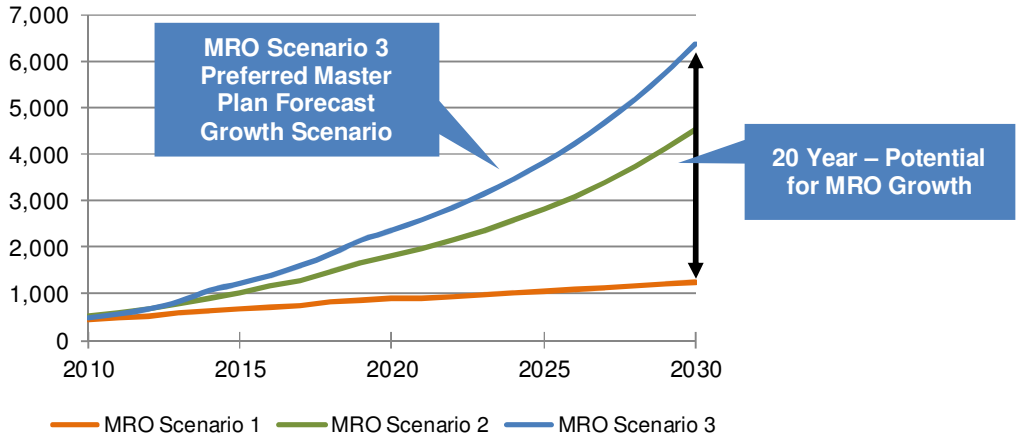
- **MRO Scenario 2** – Under this scenario, the Kalitta MRO continues a longer sustained growth period of B-747 flight checks, consistent with their recent 15 percent increase in annual activity as realized through expanding contract work with other transport aircraft carriers (includes carriers operating transports for air passenger and cargo services). In addition, it is assumed the MRO expansion would involve growth of the engine-test and overhaul program, as brought about through contract agreements with other carriers, or engine manufacturers. As part of this growth, Kalitta or an equivalent MRO business, would require new hangar/building facilities necessary to accommodate the additional contract work. Over the planning period, it is assumed that operations remain at approximately 10 to 15 percent. This translates to a moderate rate of growth over the 20-year planning period, adding approximately 4,600 annual operations by large transport aircraft.

- **MRO Scenario 3 (Preferred)** – Under this scenario, the MRO growth includes the longer sustained Kalitta expansion of 10 to 20 percent per year through maintenance of an expanding Kalitta Air B-747 fleet, aggressive growth of the engine-test and overhaul program, and aggressively obtaining new MRO transport contracts for civilian and military outsourcing work. As part of this growth, Kalitta or an equivalent MRO business would require substantial new hangar/building facilities necessary to accommodate the additional contract work. This scenario results in a 10 percent average annual rate of growth over the 20-year planning period (2010-2030), adding approximately 6,400 annual operations by large transport aircraft.

Table 2-4 illustrates the MRO growth scenarios at the Oscoda-Wurtsmith Airport. Future indicators suggest that the Kalitta MRO business will continue to grow at Oscoda, as associated with expanding Kalitta Air cargo service, through expanding outsourcing of MRO work, and/or additional MRO contracts through potential civilian and military operators.

Assuming Kalitta maintains its current growth rate of approximately 10 percent, future MRO Scenario 1 operations at Oscoda-Wurtsmith Airport are projected to increase from 400 operations in the base year (2009) to ±1,300 operations at the end of the planning period. Under the preferred forecast MRO Scenario 3, MRO operations grow to ±6,400 operations by the end of the planning period. Kalitta operations are primarily generated by Kalitta 747's undergoing flight checks at their maintenance MRO facility located at the Airport.

Table 2-4
MRO FORECAST SCENARIOS – AIRCRAFT OPERATIONS
(MRO OPERATIONS ONLY)



Forecast Year	Scenario 1 (Status Quo)	Scenario 2 (Internal Growth)	Scenario 3 (Internal & External Growth)
2010	440	520	490
2015	640	1,030	1,400
2020	900	1,800	2,400
2030	1,300	4,600	6,400
Avg Annual Growth Rate			
2010 - 2015	10%	15%	20%
2016 - 2020	6%	13%	15%
2021 - 2030	4%	10%	10%

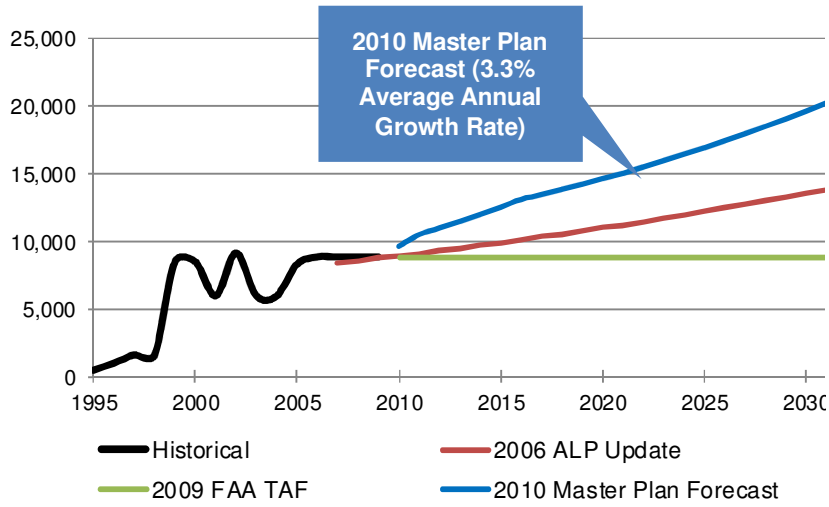
Source: Reynolds Smith and Hills, Inc., 2010

Preferred Airport Operational Forecast

Table 2-5 depicts the forecast aviation activity and compares it to the 2006 ALP Narrative Report and the 2009 FAA Terminal Area Forecast. The Federal Aviation Administration prepares the Terminal Area Forecast (TAF), which is the official aviation activity forecast for all airports in the FAA *National Plan of Integrated Airport Systems (NPIAS)*. The 2009 FAA TAF shows aircraft operations remaining steady at 8,857 operations over the 20-year planning period.

Oscoda aircraft operations are anticipated to increase from the current 9,000 level to approximately 20,000 operations within 20-years. This projection would be attributable to a sustained growth of the Airport's Maintenance, Repair and Overhaul (MRO) business, stronger general aviation activity, and growth of the community, economy and tourism industry within the region.

Table 2-5
AVIATION ACTIVITY FORECAST – ANNUAL AIRCRAFT OPERATIONS
(ALL AIRPORT OPERATIONS)



Year	Historical (FAA Records)	2006 ALP Update	2009 FAA TAF	2010 Master Plan
2000	8,500	--	--	--
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2006	8,857	8,407	--	--
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2015	--	10,136	8,857	13,000
2020	--	11,246	8,857	15,000
2030	--	13,844	8,857	20,000
Avg Annual Growth Rate 2010 - 2030	-	2.1%	0.0%	3.3%

Source: 2009 FAA Terminal Area Forecast; 2006 OSC ALP Narrative Report

2.3.2 Peak Period Operational Activity

Peak period activity has been estimated based on historical trends. **Table 2-6** shows estimated peak period activity at the Airport for 2009 and projected to the end of the planning period (2030). Projected operations are expected to reach approximately 20,000 operations end of the planning period (2030). Peak period operations are estimated by assuming an average distribution of operations over a specific time period. Peak period operations are projected at 4 aircraft operations per day by the end of the planning period, with most operations occurring between 7AM and 10PM (15 hours per day).

Table 2-3
PEAK PERIOD ACTIVITY

Activity Projection	2009	2015	2020	2030
Aircraft Operations (Annual Range)	8,857	12,200 - 13,000	13,500 - 15,000	14,900 - 20,000
Peak Operations				
Average Month	740	1,080	1,250	1,670
Average Day (31 Days)	24	35	40	54
Peak Hour (15 Hours/Day)	2	2	3	4
Total Based Aircraft	18	21	25	33

Source: RS&H, 2010.

2.3.3 Based Aircraft Forecast

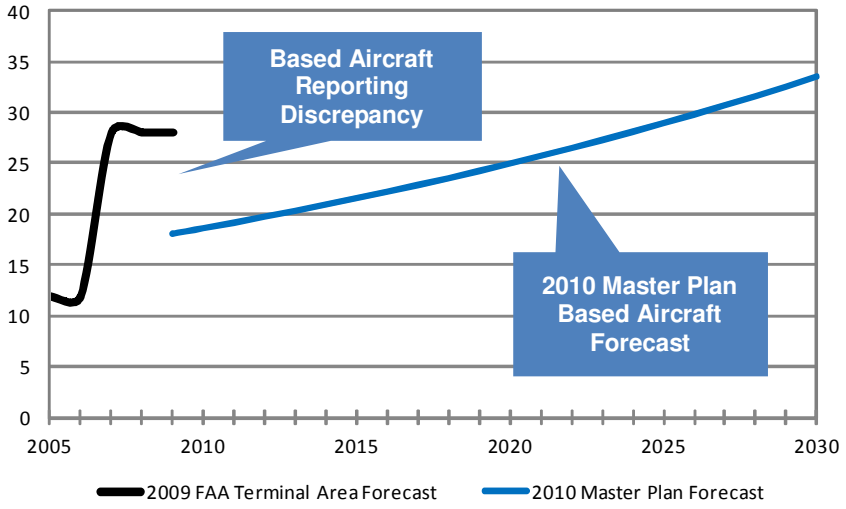
Based aircraft categories include single-engine, multi-engine, jet aircraft, and rotorcraft. The number of based aircraft is an important measure of an airport's activity and the activity of based aircraft determine revenues from landing fees, tie-down charges, and hangar rental. The number of existing and projected based aircraft is also needed for planning purposes to evaluate the size of the ramp, tie-down, and hangar areas.

Historical based aircraft is shown at 28 aircraft, however due to a discrepancy attributed to the reporting of based aircraft, the number of based aircraft for the base year (2009) is 18. **Table 2-7** illustrates the projected number of based aircraft to reach 33 aircraft by the end of the planning period. Future based aircraft will likely be representative of the current mix of single and twin-engine based aircraft, and the possibility of an additional small business jet.

2.3.1 Critical Aircraft Selection

The following provides information about the Airport's critical or most demanding aircraft using the Oscoda-Wurtsmith Airport. The critical aircraft is the largest airplane within an FAA Airport Reference Code (ARC) family of aircraft conducting at least 500 annual itinerant operations (combination of 250 takeoffs and landings) per year at the Airport. The ARC consists of two components. These two components include the aircraft approach category and the airplane design group.

Table 2-4
BASED AIRCRAFT FORECAST



Year	FAA Terminal Area Forecast (2009)				2006 ALP Update* Forecast	2010 Master Plan Forecast
	National	Region	State	Airport (OSC)*		
2005	198,401	33,057	5,691	53		
2006	198,435	32,162	5,482	12		
2007	200,965	32,632	5,369	12		
2008	176,710	29,833	4,833	28		
2009	178,161	30,062	4,868	28	56	18
2010	179,648	30,277	4,906			19
2015	187,435	31,439	5,064		60	21
2020	195,807	32,709	5,254	28	63	25
2030	214,500	35,532	5,628	28	71	33
Avg Annual Growth Rate						
2010 - 2030	0.9%	0.8%	0.7%	0.0%	1.1%	3.0%

Source: 2009 FAA Terminal Area Forecast; Airport Records
* Discrepency attributed to the reporting of based aircraft.

Table 2-5 provides a summary of Aircraft Category approach speeds and design group wingspans and tail heights. At Oscoda-Wurtsmith Airport, the most critical aircraft that regularly utilizes the airport with regard to wingspan and approach speed is the Boeing 747-400, which has a wingspan of 211 feet and an approach speed of 154 knots (ARC D-V). The Boeing 747-400 represents the critical aircraft classification at Oscoda-Wurtsmith Airport both now and in the foreseeable future. **Exhibit 2-1** illustrates the basic dimensions of the Boeing 747-400.

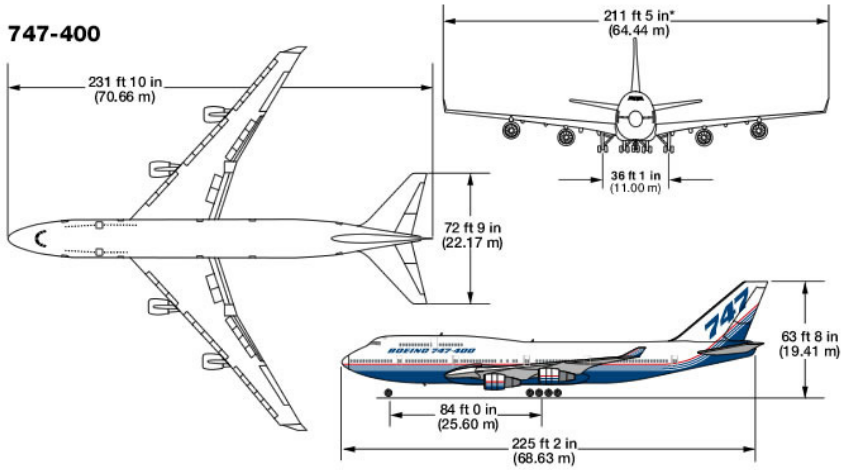
Table 2-5
AIRCRAFT APPROACH CATEGORY AND AIRPORT DESIGN GROUP

Existing / Future	ARC Approach Category	Approach Speed (knots)	
	Category A	< 91 knots	
	Category B	91 to < 121 knots	
	Category C	121 to < 141 knots	
Existing/Future ARC (B-747)	**Category D**	**141 to < 166 knots**	
	Category E	> 166 knots	
Existing / Future	**ARC Design Group**	**Wingspan (ft)**	**Tail Height (ft)**
	Group I	< 49'	< 20
	Group II	49' to < 79'	20' to < 30'
	Group III	70' to < 118'	30' to < 45'
	Group IV	118' to < 171'	45' to < 60'
Existing/Future ARC (B-747)	**Group V**	**171' to < 214'**	**60' to < 66'**
	Group VI	214' to < 262'	66' to < 80'

Combined, the 'Approach Category' and 'Design Group' yields the Airport Reference Code (ARC) which determines the type of airplane the airport is designed to accommodate for dimensional geometry, separation standards and airspace surfaces.

Source: FAA Advisory Circular 150/5300-13.

Exhibit 2-1
ARC D-V REPRESENTATIVE CRITICAL AIRCRAFT



Boeing 747 Basic Dimensions

Wing Span	211 ft 5 in (64.4 m)
Overall Length	231 ft 10 in (70.6 m)
Tail Height	63 ft 8 in (19.4 m)
Interior Cabin Width	20 ft (6.1 m)

Source: 2001 Boeing, General Technical Characteristics

The aircraft operations forecast at the Oscoda-Wurtsmith Airport identifies the projected level of activity associated with the critical aircraft group. In order to identify a reasonable expectation for the critical aircraft group, it was important to understand the potential and timing for growth of the Airport's Maintenance Repair Overhaul (MRO) facilities, since the large transport aircraft activity would likely be attributable to MRO business at the Airport.

Table 2-9 shows the approximate 2009-2010 fleet mix of cargo aircraft used by the major domestic 'air express-courier' and 'air freight' companies. The jet freighter fleet is about 40 percent narrow-body aircraft and 60 percent wide-body aircraft. As shown in the table, the most popular aircraft used by various carriers is the Boeing-747 (approximately 54 percent of the U.S. jet freighter fleet), in which Kalitta is an exclusive operator.

UPS and FedEx operate the most diverse mix of aircraft, while other carriers tend to operate more select aircraft models. This information reaffirms the ability for Oscoda to accommodate the Boeing-747, as the service provider to the Kalitta Air fleet, and other domestic and possible international prospects for maintenance and engine outsourcing of wide-body aircraft, whether cargo or commercial passenger related.

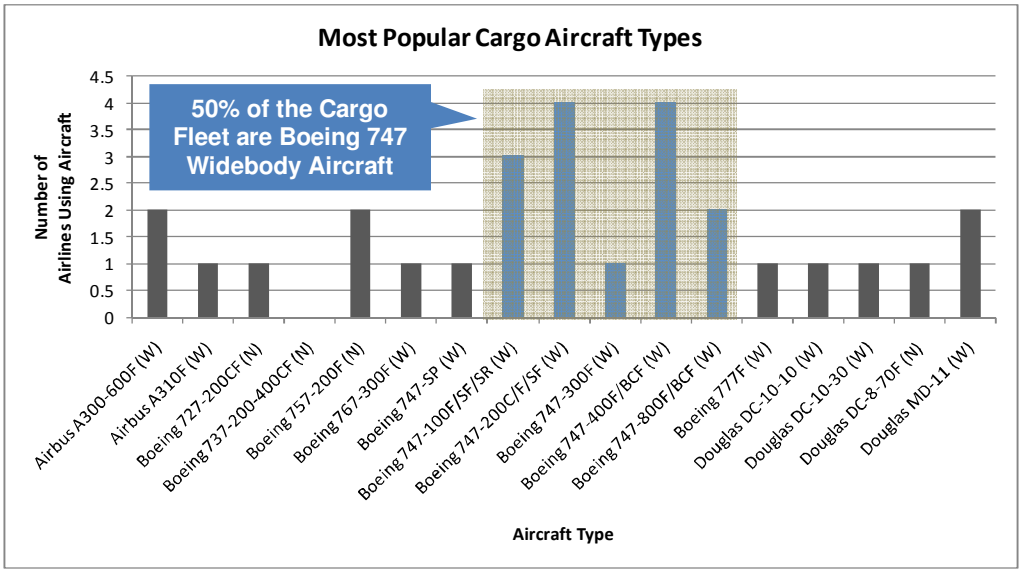
Table 2-9
DOMESTIC (UNITED STATES) CARGO AIRCRAFT FLEET

	Major Domestic Transport Air Cargo/Freight Operators									
Cargo Aircraft	**Kalitta**	**UPS**	**FedEx**	**Atlas**	**Evergreen**	**National**	**Polar**	**World**	**Aircraft Types**	**% 747**
Airbus A300-600F (W)		x	x						**2**	
Airbus A310F (W)			x						**1**	
Boeing 727-200F (N)			x						**1**	
Boeing 737-200/300/400CF (N)									**0**	
Boeing 757-200F (N)		x	x			(x)			**2**	
Boeing 767-300F (W)		x		x					**3**	
Boeing 747-SP (W)					x				**1**	**50%**
Boeing 747-100F/SF/SR (W)				x	x				**2**	
Boeing 747-200C/F/SF (W)	x			x	x				**3**	
Boeing 747-300F (W)									**0**	
Boeing 747-400F/BCF (W)	x	x		x	x	x	x	x	**7**	
Boeing 747-8F (W)				(x)			(x)		**2**	
Boeing 777F (W)			x						**1**	
Boeing|Douglas DC-10-10 (W)			x						**1**	
Boeing|Douglas DC-10-30 (W)			x						**1**	
Douglas DC-8-70F (W)		x							**1**	
McDonnell Douglas MD-11/F		x	x					x	**2**	
Total Fleet Dispersion	**2**	**6**	**8**	**5**	**4**	**2**	**2**	**2**	**30**	**15**
% Fleet Dispersion	**12%**	**35%**	**47%**	**29%**	**24%**	**12%**	**12%**	**12%**	**--**	**--**

x - Aircraft Fleet as of 2009/2010 | (x) - Aircraft on order as of 2010.
(W) - Widebody Aircraft = 1+ Passenger Isle | (N) - Narrowbody Aircraft = 1 Passenger Isle.
Note: Major domestic cargo operator means a US headquartered company operating widebody aircraft, with a fleet size greater than 10.
Note: List includes only civilian air cargo aircraft operators. Other jet aircraft not listed but commonly converted for 'on-demand' air freight charter include: Boeing 737 200/300/400 Series, Boeing 707, MD DC-9 Series, Lockheed L-10-11 Series, Antonov (Russian), Ilyshin (Russian) and Tupolev (Russian) Cargo Aircraft, Falcon 20 Series and Learjet Series business jet conversions.
Source: Cargo operator websites (obtained 2009/2010).

As seen in **Exhibit 2-2**, the Boeing 747 is one of the most popular cargo/freight aircraft. Kalitta Air is one of five national major air cargo operators that utilize the Boeing-747 aircraft. The Boeing 747 will continue to be a viable cargo aircraft well into the future, and is expected to be the key aircraft in the Kalitta fleet.

Exhibit 2-2
TRANSPORT CARGO FLEET – BOEING 747 SEGMENT



Key conclusions reached:

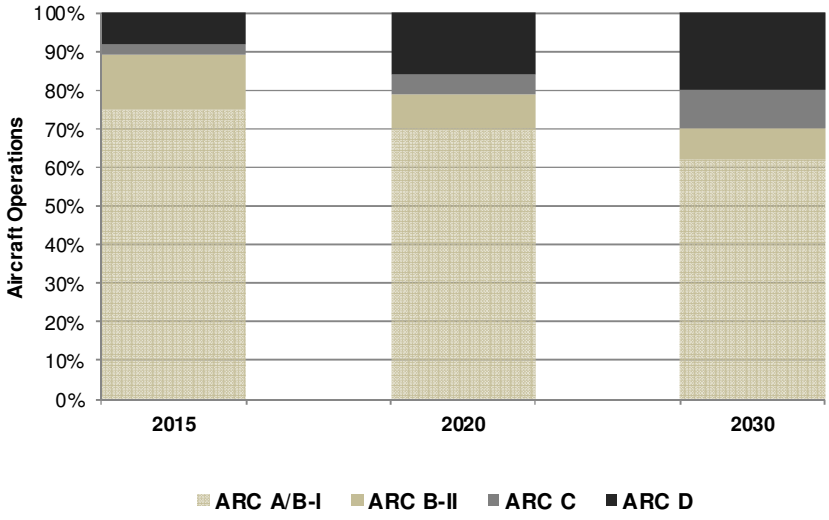
- The general cargo and MRO trends show 1) there will be a continued demand for maintenance of cargo aircraft as the economy picks up. 2) trends in MRO service facilities show a continued future demand with evidence of increased existing demand for MRO service. 3) Oscoda-Wurtsmith Airport has an existing MRO operator and the airport facilities to accommodate the most popular cargo aircraft.

- Growth in the A-I/B-I segment will be nominal and account for a decreasing share of the total operations, which mirrors the nationwide trend in the utilization of small piston powered aircraft.

- Throughout the forecast period (within approximately five years), there is projected to be well over 500 annual itinerant operations by D-V Boeing-747 aircraft.

Table 2-10 provides the forecast of aircraft operations by Airport Reference Code for the years 2015 through 2030. The current approved ALP lists the design aircraft as a D-V and **t**he critical aircraft as a 747. Predominant traffic at the airport is smaller general aviation traffic and is predominately represented by the ARC A/B-I and B-II aircraft. While it is expected that ARC C-III aircraft will have an increasing presence at the Airport as a result of increased MRO services available, the 747 (ARC D-V) is the design aircraft and is projected to assume a greater percentage of the annual operations throughout the planning period at the Oscoda-Wurtsmith Airport.

Table 2-10
AIRCRAFT ACTIVITY BY AIRPORT REFERENCE CODE (ARC)



	Aircraft Mix				
	ARC A/B-I	ARC B-II	ARC C	ARC D	Total Operations
2010	8,800	1,650	110	440	11,000
2015	9,750	1,820	390	1,040	13,000
2020	10,500	1,350	750	2,400	15,000
2030	12,400	1,600	2,000	4,000	20,000

Source: RS&H, 2010

2.4 COMMERCIAL SERVICE FORECASTS

2.4.1 Scheduled Airline Service

The prospects for 'scheduled' airline passenger service at Oscoda are very limited, given the regional airline operating trends (including Essential Air Service), the supporting market base, and proximity to surrounding commercial service airports. In order to establish airline service, the Airport would be required to operate from a dedicated airline terminal building and apron area, including meeting regulations for Transportation Security Administration (TSA) passenger/baggage screening and certification under FAA FAR Part 139 Commercial Airport compliances (aircraft fueling, fire fighting, and snow removal).

The local airline subsidy and cost of these air carrier facilities would be substantial, and difficult to recoup without FAA entitlements only obtained when reaching 10,000 annual passenger enplanements. This level of sustained passengers would be difficult with the region's base service area population of less than 25,000 persons. In addition, the airline industry has been withdrawing service from smaller communities in recent years, and redirecting their assets into higher volume markets.

As an option, non-scheduled air service provided by an on-demand charter operator could be a consideration for Oscoda, especially when combining nearby communities as a potential base of operation.

2.4.2 Scheduled Cargo Service

Similar to the scheduled airline service market, the air cargo market has been going through a significant contraction of service at smaller communities. The possibility of air cargo or express delivery service at Oscoda is a possibility, but would most likely need a connection with service to another airport/community. Otherwise, the Oscoda market would need to develop a significant volume of specialized cargo in order to overcome the typical ground delivery network often used to serve even the more remote smaller communities.

As an option, non-scheduled cargo service provided by an on-demand charter operator is a more likely scenario, given the types of specialized parts and manufacturing businesses located at Oscoda. Such service already exists for some of the based Airport tenants, such as Kalitta. Unlike passenger service, for cargo services, the Airport would not require nearly the extent of investment for facilities in order to accommodate a service provider. Such a provider would likely be an independent affiliated cargo operator, operating larger piston or smaller turboprop aircraft weighing less than 12,500 pounds.

2.5 PREFERRED FORECAST PROJECTION

Table 2-11 presents a comparison of projected aircraft operations and based aircraft prepared in this chapter. These projections are used in the next chapter of the master plan to assess the capacity of existing facilities and determine facility expansions or improvements needed to satisfy future activity levels.

Table 2-11
TERMINAL AREA FORECAST (TAF) COMPARISON

Description	Year	2009 FAA TAF	2010 Master Plan Forecast	Percent Higher / Lower
Operations				
Base Year	2009	8,857	8,857	0%
Base Year + 6 Years	2015	8,857	13,000	47%
Base Year + 11 Years	2020	8,857	15,000	69%
Base Year + 21 Years	2030	8,857	20,000	126%
Based Aircraft				
Base Year	2009	28	18	-36%
Base Year + 6 Years	2015	28	21	-23%
Base Year + 11 Years	2020	28	25	-11%
Base Year + 21 Years	2030	28	33	20%

Source: 2009 FAA Terminal Area Forecast; Reynolds Smith and Hills, Inc., 2010