AVIATION DEMAND FORECASTS

The purpose of this Chapter is to develop forecasts that define future aviation demand for the Blosser Municipal Airport (Airport). These forecasts serve as the basis for planning new or expanded facilities that are required to meet the aviation needs of the Concordia service area for the next 20 years. The forecasts will be used to analyze the future needs of the airfield and landside facilities.

In general, forecasts should be 1) realistic, 2) based on the latest available data, 3) supported by information in the study, 4) providing adequate justification for airport planning and development. Forecasting any type of future activity is as much an art as it is a science. Regardless of the methodology used, assumptions must be made regarding how aviation activity may change in the future. The objective of the forecast process is to develop estimates of the degree of these changes, in order that their impacts may be determined. Plans and preparations may then be made to accommodate them smoothly and cost-effectively. The primary point to remember about forecasts is that they serve as guidelines only for facility planning.

The following forecast analyzes recent developments, historical information and current aviation trends to provide an updated set of aviation projections for the Airport. The intent is to permit the City of Concordia to make planning adjustments necessary to make sure the Airport facilities meet projected demands in a cost effective and efficient manner.

NATIONAL AVIATION TRENDS

National aviation forecasts are published each year by the Federal Aviation Administration (FAA). Included in these projections are categories for air carriers, air taxi and commuters, General Aviation and the military. These forecasts are prepared to meet the budget and planning needs of the various FAA agencies and to provide information that can be used by the aviation industry, as well as state and local authorities and the general public. The latest edition of this publication is *FAA Aerospace Forecasts – Fiscal Years 2008-2025*. The forecast uses the economic performance of the United States (U.S.) as an indicator of future aviation industry growth.

The General Aviation forecasts discussed in the following paragraphs and graphs are based on a set of economic assumptions prior to the recent economic recession symptoms the economy is experiencing. The steep rise in the price of aviation fuels and the general weakness of the U.S. economic recovery has combined to reduce the demand for the General Aviation products and services. General Aviation activity is expected to continue to experience slow growth in the following years until the U.S. economy reaches its peak of recovery. The aviation industry has proven to be strong and like through previous experiences of times of economic recession the aviation industry will show its strength and should experience the growth shown in the following tables. The anticipated growths of the following paragraphs and graphs/charts may be delayed by a few years, but upon economic recovery the aviation industry should experience the overall anticipated growth.

For the U.S. aviation industry, the outlook through 2025 is for sustaining, moderate economic growth. According to IHS Global Insight http://globalinsight.com (FAA's provider for economic projection), the U.S. long-term economic annual forecasted growth, with respect to the U.S. Gross Domestic Product (GDP), is anticipated to remain moderate with rates ranging between 2.7 and 3.0 percent through 2018 and then slowing to around 2.5 percent for the balance of the

forecast through the year 2025. From 2007 to 2008 the GDP inclined slightly from 2.2 percent annual growth to 2.7 percent annual growth, but the remainder of the forecast period, through 2025, is expect to remain steady near 2.7 percent annual growth.

The inflation rate, as measured by the Consumer Price Index (CPI), was 3.1 percent in 2008, up from 2.3 percent in 2007. But for the remainder of the forecast period the inflation rate is expected to level off to 2.3 percent, through year 2025. The price of oil, as measured by the Refiner's Acquisition Cost, increased over 40 percent in 2008 after more than doubling in the previous three (3) years and then in the matter of a few months declined approximately the same amount. The continuing rise and fall of oil prices is forcing the U.S. economy, as well as the aviation industry, to continually change how it operates. But as history has illustrated, time and time again, the U.S. economy and the aviation industry are resilient.

As shown in Exhibit 2A, on page 2-3, and based on these assumptions, the total General Aviation fleet is forecasted to increase from 225,007 aircraft in 2007 to 286,500 aircraft in 2025, growing at a rate of 1.4 percent per year. The combined fixed wing turboprop and turbojet fleet is forecasted to increase, on average, 4.2 percent annually over the forecasted period. As shown in Exhibit 2D, on page 2-6, General Aviation hours flown is forecasted to increase by 3% over the forecast period. The hours flown by the turboprop/turbojet fleet are forecasted to increase from close to 6.6 million hours in 2007 to over 19.4 million hours in 2025, an average annual growth rate of 6.2 percent. Much of the increases are supplied by the increase in business and corporate aircraft being utilized as an efficient transportation method.

Following more than a decade of decline, the General Aviation industry was revitalized with the passage of the *General Aviation Revitalization Act of 1994* (GARA). That act is Federal legislation which limits the manufacturer's liability on General Aviation aircraft to 18 years from the date of manufacture of an aircraft or replacement part placed on a used aircraft. Before GARA, manufacturers were held liable for General Aviation aircraft until the aircraft was decommissioned. The high cost of product liability insurance was a major factor in the decisions by many aircraft manufactures to slow or discontinue the production of General Aviation aircraft.

In 2005, a new aircraft category, not included in FAA's registry, was created. This aircraft was designated as a Light Sport, and by the end of 2006 an estimated 1,273 of those aircraft were flying. According to the FAA Aerospace Forecast, Fiscal Years 2008-2025, an estimated number of Light Sport aircraft of 14,700 will be registered and part of the aviation fleet. Light Sport aircrafts are defined as aircraft with a maximum takeoff weight of 1,320 pounds.

A steady trend in the General Aviation industry has been the continued strong use of General Aviation aircraft for business and corporate uses. Promise is evident in the future of the General Aviation industry by the development, production and introduction of new General Aviation products and services. The General Aviation industry is expected to receive a boost from new

products like relatively inexpensive ($1-2 million) microjets called Very Light Jets (VLJs), which may redefine "on-demand" air taxi service. This current aerospace forecast assumes that VLJs have begun to enter into the active fleet in 2006 (100 aircraft) and grow to 500 aircraft a year by the year 2010. It is predicted that by the year 2025, VLJs should account for 8,145 aircraft in the fleet.

The most striking trend is the continued growth of fractional ownership programs. Fractional ownership programs allow business and individuals to purchase an interest in an aircraft and pay for only the time that they use that aircraft. Fractional ownership providers offer customers a more efficient use of time by providing faster point-to-point travel and the ability to conduct business while in transit. Shareholders find the minimum startup concerns and easier exiting options are of great benefit.

The number of amateur-built experimental aircraft in the General Aviation fleet has increased consistently for more than a quarter of a century, and in 2008, includes almost 24,000 aircraft. It is estimated that experimental aircraft will continue to increase to over 35,000 aircraft by the year 2025.

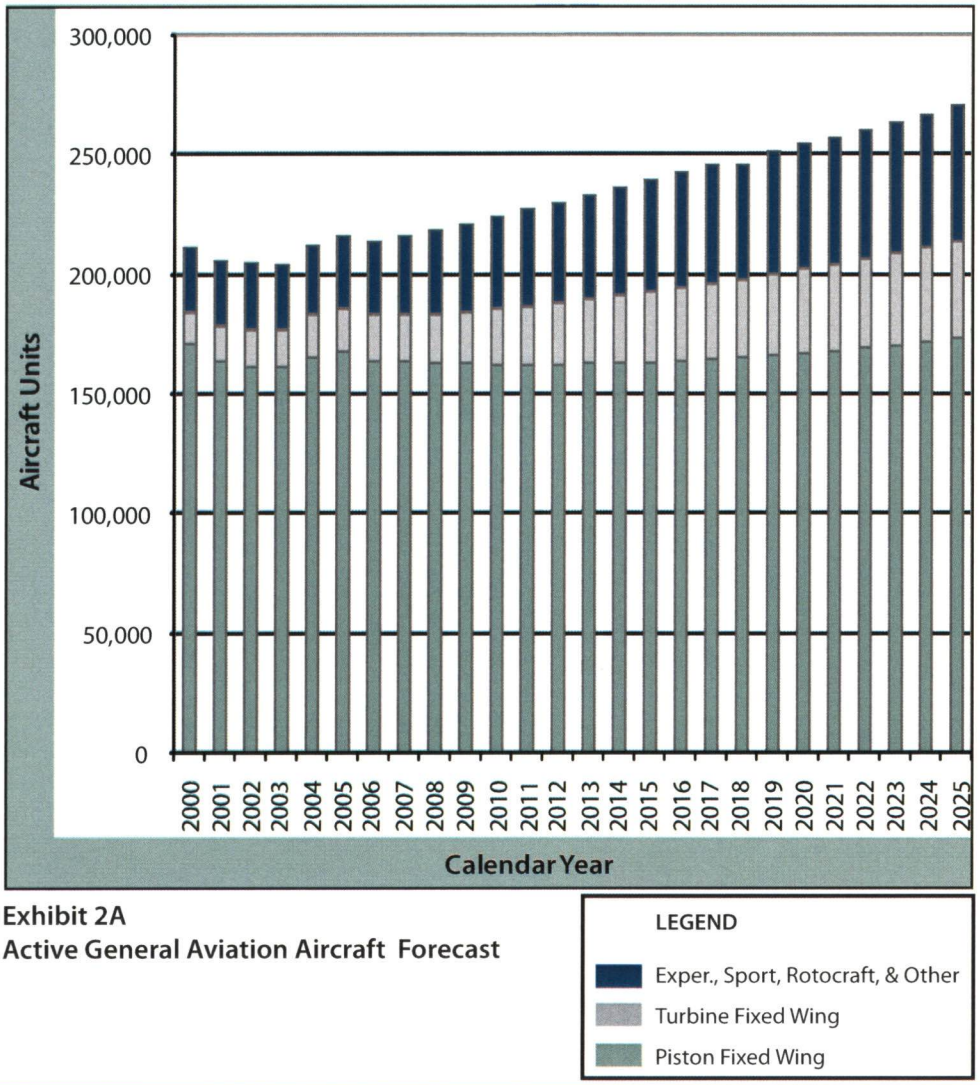


Exhibit 2A
Active General Aviation Aircraft Forecast

Exhibit 2B, shown below, depicts the forecast for the active General Aviation (GA) fleet by percent of aircraft type. The exhibit helps to illustrate how the GA industry continues to change and evolve in different areas of aircrafts, such as the new microjets or VLJs. Single engine piston aircraft are projected to decrease the most (9.3%) in the total percentage they make up in the GA fleet. As discussed earlier, this reflects the introduction of the VLJ and new Light Sport aircraft which are expected to dilute the replacement market for piston aircraft. The second largest gain, in percentage of the total active GA fleet, is the new sport aircraft. Sport aircraft currently account for 1.2% of the total GA fleet, but in 2025 are estimated to make up 5.1%.

Turbojet aircraft are forecast to increase on average by 5.6 percent annually, from 10,997 in 2007 to 29,515 in 2025. Several factors are responsible for the projected increase including future economic recovery in the United States and global economy, the success and continued growth in the fractional ownership market, new product offerings and the shift from commercial air travel to corporate business air travel.

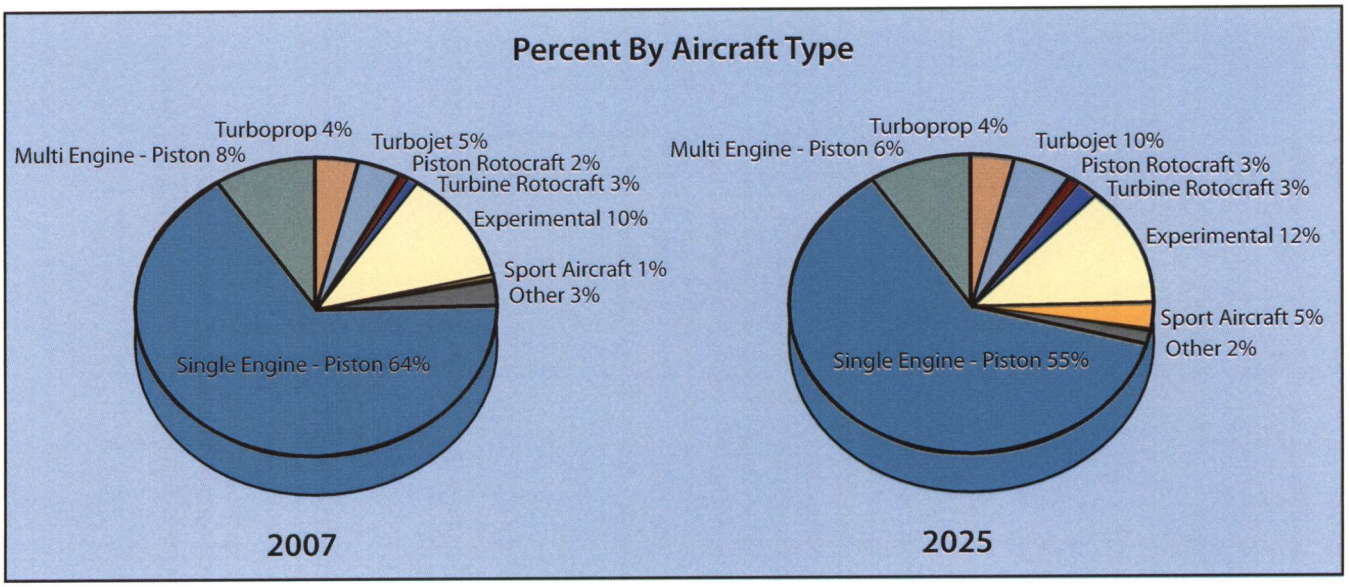


Exhibit 2B
Active General Aviation Aircraft Forecast by Percentage of Aircraft Type

VERY LIGHT JETS

At the 2008 FAA Forecast Conference, Jens C. Hennig, Vice President of Operations reported that Very Light Jets (VLJ) accounted for only 8.9% of 2007 General Aviation (GA) turbine aircraft deliveries. Air Taxi Association reported this number to be approximately 143 VLJs in 2007. At this conference, the U.S. Government Accountability Office (GAO) stated that; *"Overall, it is too soon to predict with any certainty the effect that the introduction of VLJs will have on the National Airspace System (NAS). Much depends on the level of success of the air taxi market."* As for determining what the effects these VLJs will have on GA airports, specifically Blosser Municipal Airport (Airport), it may be still too early to determine.

Exhibit 2C, shown below, illustrates the projected aircraft utilization in average hours per aircraft for the fleet. A recovery in the U.S. economy should lead to increased utilization rates for most categories of General Aviation aircraft.

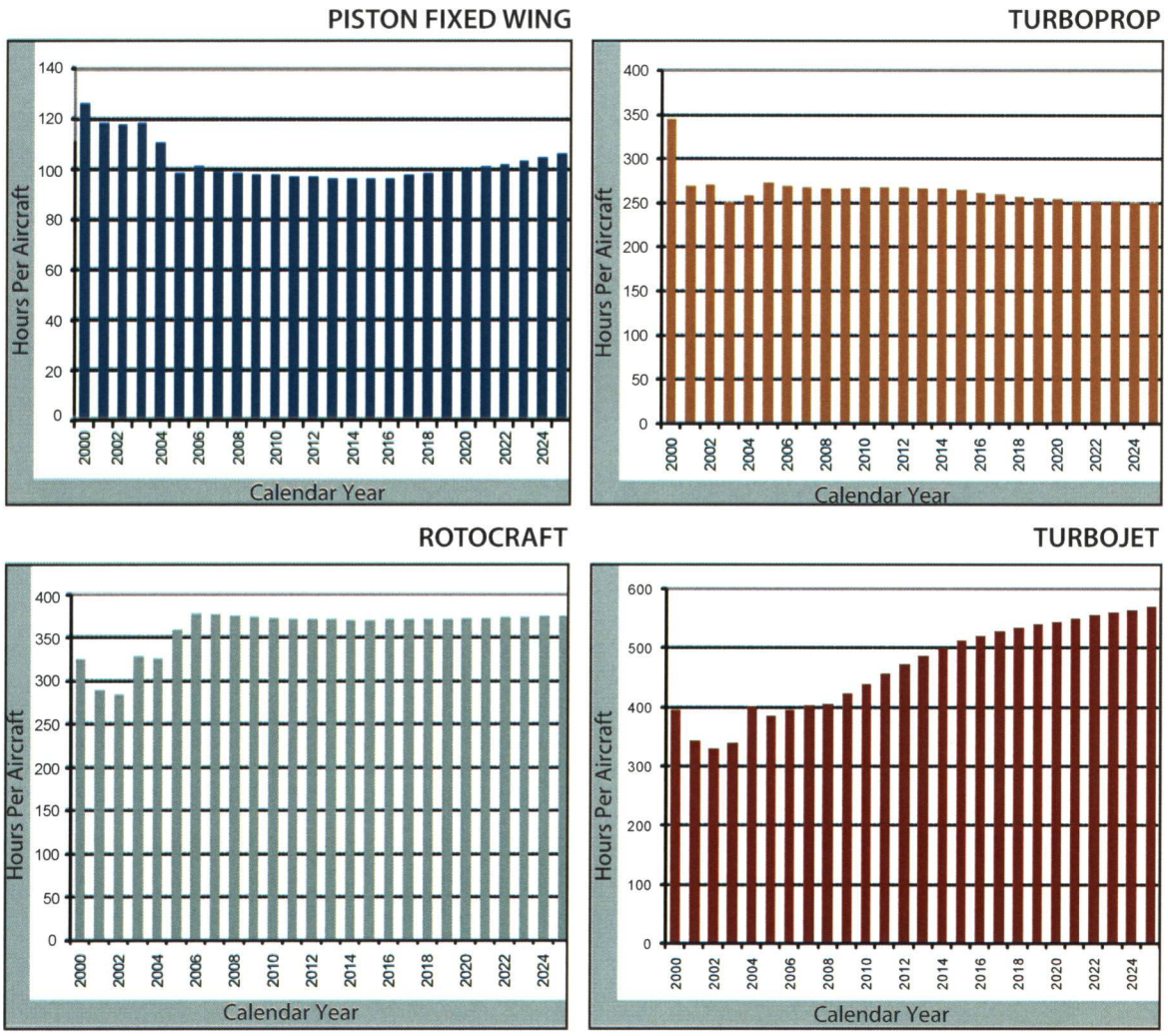


Exhibit 2C
Projected General Aviation Aircraft Utilization In Average Hours Per Aircraft

Exhibit 2D, shown below, illustrates the forecast for active General Aviation hours flown. General Aviation hours flown is forecast to increase by 3.0 percent annually over the 18 year period – from 27,866 million in 2007 to 47,311 million in 2025.

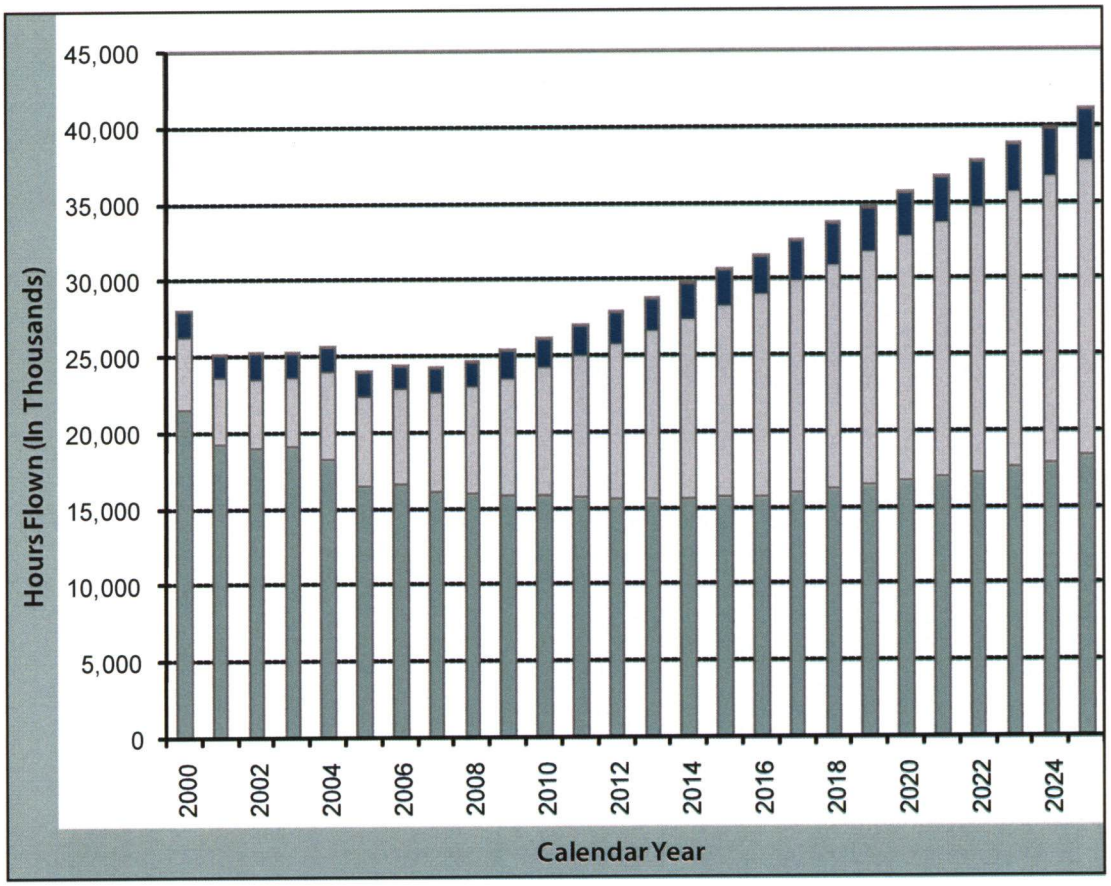


Exhibit 2D
Active General Aviation and Air Taxi Hours Flown

Exhibit 2E, shown below, shows the projected active pilot trends for student, private and commercial pilots. The total pilot population is expected to increase from an estimated 631,629 in 2007 to 663,130 by 2025, an average annual increase of 0.3 percent over the 18 year forecast period.

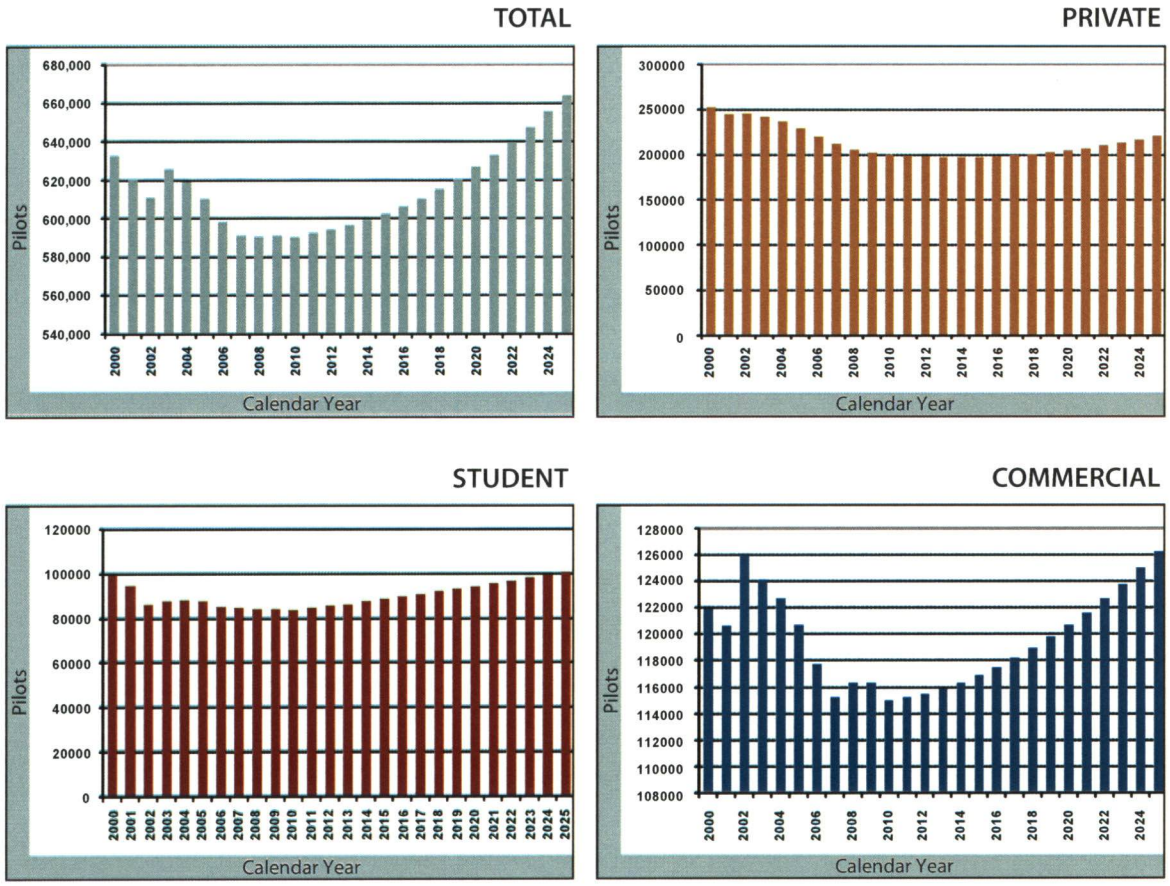


Exhibit 2E
Active Pilot Trends

AIRPORT SERVICE AREA

One of the initial steps in determining future aviation demand at the Blosser Municipal Airport (Airport) is to define the generalized service area for the various types of aviation activity the Airport can accommodate. The primary service area for the the Airport, as shown in Exhibit 2F, shown below, was determined by considering other air facility choices available for users in the geographical region centered in Concordia. With information on competing airports, their capabilities and services and their relative attraction of convenience, a determination can be established regarding the Airport's share of the market.

In determining the aviation demand for the Airport, it was also necessary to identify the Airport's role and intended services. The primary role of the Airport has been that of a General Aviation airport serving primarily recreational and business aircraft with minimal military use. Important to note is that the *Kansas Airport System Plan 2009* (KASP) identified the Airport as a *Business Airport.*

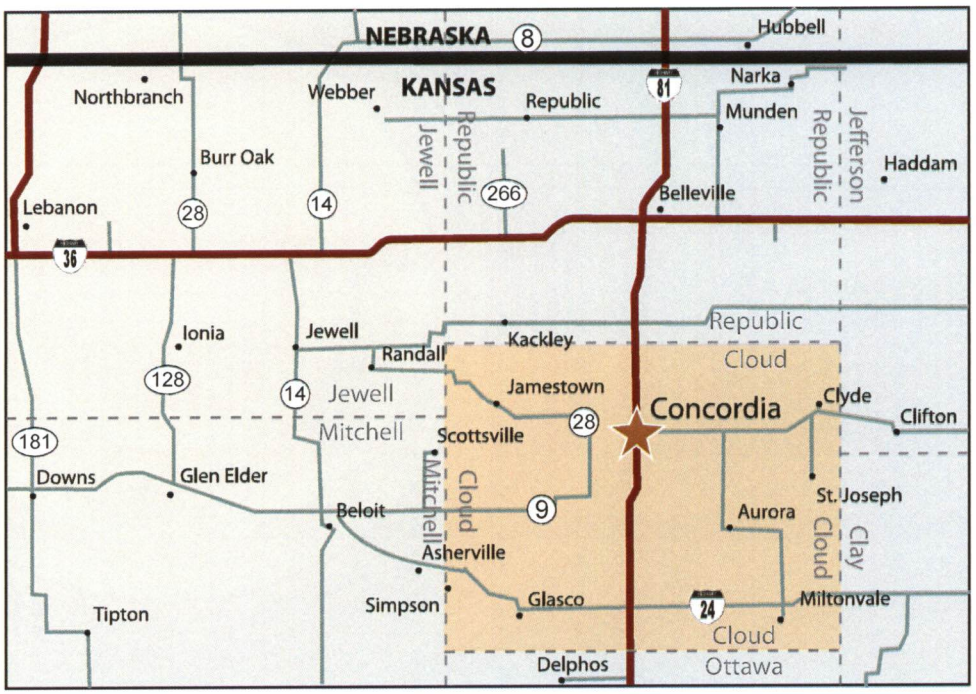


Exhibit 2F
Primary Service Area

The location of the Airport relative to the region's larger population centers (Salina and Manhattan) and other area airports indicates that the primary General Aviation service area for Concordia includes Cloud County and the community of Concordia.

FORECAST METHODOLOGY

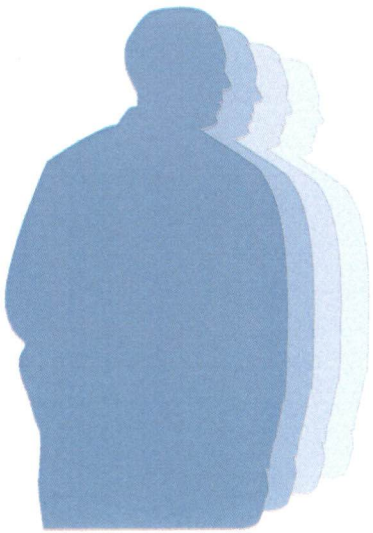
The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include: trend line projection, correlation and regression analysis, and market share analysis.

Trend line projection is probably the simplest and most familiar of forecasting techniques. By fitting classical growth curves to historical demand data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of the direct relationship between two separate sets of historic data. Should there be a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis uses the values for the aviation demand element in question, that being the dependent variables, projected on the basis of one (1) or more other indicators, the independent variables. Historical values for all variables are analyzed to determine the relationship between the independent and dependent variables. These relationships may then be used, with projected values of the independent variable(s), to project corresponding values of the dependent variable.

Market share analysis involves a historical review of the activity at an airport or airport system as a percentage share of a larger statewide or national aviation market. Trend analysis of this historical share of the market is followed by projection of the share into the future. These shares are then multiplied by forecasts of the activity within the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections and similarly can provide a useful check on the validity of other forecasting techniques.



POPULATION PROJECTIONS

Population growth in the Airport service area provides an indication of the potential for sustaining growth in aviation activity over the planning period. As shown previously, Table 1P on page 1-129 presents the historic and forecast population figures for Cloud County.

The historic population figures show a decline in population from 1977 to the present. Forecasted population estimates for Cloud County show little to no growth through the next 20 years. Even though the total population is not anticipated to grow much over the 20 year planning horizon all other employment and income projections are anticipated to increase; Total Employment (increase 6.55%), Personal Income (increase 30.49%), Per Capita Personal Income (increase 37.43%), and Mean Household Income (increase 34.06%).

BASED AIRCRAFT PROJECTIONS

At a General Aviation (GA) airport the most important factor in the development of the aviation activity forecast is the number of based aircraft. The number of based aircraft is a direct correlation to airport facility needs such as hangars and fuel supply. In addition, based aircraft trends help to establish an airport's role within the regional and state air transportation system.

Past listings of aircraft based at Blosser Municipal Airport (Airport) were obtained from the estimates on the Federal Aviation Administration's (FAA) Airport Master Record Form 5010. Historical figures for based aircraft are shown on Exhibit 1H on page 1-39.

Table 2A on this page shows the based aircraft totals at the Airport since 1998 and compares them with active GA aircraft in the Nation. As indicated in Table 2A, the Airport's historical based historical aircraft totals have remained close to 14 based aircraft, but then have declined to nine (9) based aircraft in 2008, which has been consistent for the last two (2) years. The FAA Aerospace Forecasts, Fiscal Year (FY) 2008-2025, were used to obtain the U.S. active GA aircraft projections out to 2025. The FAA Aerospace Forecasts predicts that the total GA fleet is anticipated to have an average annual growth of 1.4% through the forecasts horizon, 2008-2025. Therefore in order to obtain projections for year 2027, the FY 2025 total aircraft number was projected out at a average annual growth rate of 1.4% to the desired year.

Table 2A

Based Aircraft and National Active Market Share Analysis

Year	Based Aircraft	U.S. Active Aircraft	% of U.S. Active Aircraft
1998	14	204,711	0.006839%
1999	12	219,464	0.005468%
2000	12	217,533	0.005516%
2001	14	211,446	0.006621%
2002	15	211,244	0.007101%
2003	15	209,606	0.007156%
2004	10	219,319	0.004560%
2005	10	224,262	0.004459%
2006	9	221,942	0.004055%
2007	9	221,942	0.004055%
Forecasts			
Constant Share			
2012	12	241,625	0.005000%
2017	13	259,160	0.005000%
2022	14	275,650	0.005000%
2025	14	286,500	0.005000%
2027	15	294,578	0.005000%
Increasing Share			
2012	11	234,030	0.004500%
2017	12	248,120	0.005000%
2022	14	252,775	0.005500%
2025	16	263,541	0.006000%
2027	18	282,513	0.006500%

Sources for Historical and Forecast Data:
FAA Office of Aviation Policy and Plans Terminal Area Forecast (TAF) System, 2007
FAA Office of Aviation Policy and Plans Aerospace Forecasts, FY 2008-2025

Assuming that the Airport's share of active aircraft would remain constant at 0.0050 percent, this projection would yield 15 aircraft by the year 2027. Based on the economic projections and the Estimated positive outcome for Cloud County's future economic base, there is potential for the Airport's share of U.S. active aircraft to increase over the planning period. Cloud County and the surrounding airports (Salina Municipal Airport, Belleville Municipal Airport, Moritz Memorial Airport at Beloit, Clay Center Municipal Airport, Washington County Memorial Airport, Minneapolis City County Airport and Mankato Airport) adjacent to Cloud County have a total of 189 based aircraft. A few of the closest airports to the Airport do not have a Fixed Based Operator (FBO) or General Aviation services. Should the Airport get a precision approach with lower minimums and a longer runway length, other aircraft in the vicinity could possibly relocate to the Airport. With that considered, an increased market share of U.S. active aircraft could yield up to 18 based aircraft by the year 2027.

Another forecasting methodology examined historic per capita based aircraft totals for the population of Cloud County. Projections have been developed assuming a continuation of an existing ratio of aircraft per 1,000 residents as well as an increasing ratio. The population projections, as determined by Woods & Poole Economics, Inc., are to have a slight decline of population for Cloud County through the planning horizon, year 2027. Therefore a constant share ratio method shows an overall increase in based aircraft, but has a declination of one (1) based aircraft over the forecasted period. With the projected economic and employment increases for Cloud County, an increasing ratio was assumed to be a more realistic trend. With the increasing ratio method, the number of based aircraft could grow to 19 by the year 2027. Table 2B on this page shows the projections based on per capita ratios.

Table 2B

Growth Projections - Aircraft Per 1,000 Residents

Year	Based Aircraft	Cloud County Population	Aircraft Per 1,000 Residents
1998	14	10,400	1.35
1999	12	10,380	1.16
2000	12	10,220	1.17
2001	14	10,800	1.30
2002	15	9,950	1.51
2003	15	9,860	1.52
2004	10	9,730	1.03
2005	10	9,730	1.03
2006	9	9,590	0.94
2007	9	9,550	0.94
Forecasts			
Constant Share			
2012	12	9,240	1.25
2017	11	8,970	1.25
2022	11	8,720	1.25
2025	11	8,590	1.25
2027	11	8,510	1.25
Increasing Share			
2012	12	9,240	1.25
2017	13	8,970	1.50
2022	15	8,720	1.75
2025	17	8,590	2.00
2027	19	8,510	2.25

Population Forecasts:
Woods & Poole Economics, Inc. (Cloud County, Kansas 2006
FAA Office of Aviation Policy and Plans Terminal Area Forecast (TAF) System, 2005

A summary showing the comparison of both forecasting methods is shown in Table 2C below. The planning forecast assumes Blosser Municipal Airport (Airport) re-capturing a moderate market share over the planning horizon. Projected economic growth along with Airport improvements support the potential for an increase in the based aircraft at the Airport.

Table 2C

Comparison of Two Forecast Methods

	Historic			Forecast				
	2000	2005	2007	2012	2017	2022	2025	2027
National Market Share of Registered Aircraft								
Constant Market Share	12	10	9	12	13	14	14	15
Increasing Market Share	12	10	9	11	12	14	16	18
Aircraft Per 1,000 Residents								
Constant Market Share	12	10	9	12	11	11	11	11
Increasing Market Share	12	10	9	12	13	15	17	19
Select Planning Forecast	12	10	9	11	13	15	17	19

The selected planning forecast for based aircraft that will be utilized in the remainder of the Master Plan are 11 based aircraft for the short term, 13 based aircraft for the intermediate term and 19 based aircraft for the long range.

Exhibit 2G below shows the based aircraft forecasts for the Airport. Since these are forecasts based on assumptions of anticipated growth, it is virtually impossible to predict actual activity and year-to-year functions. Actual growth could fluctuate above or below the selected line.

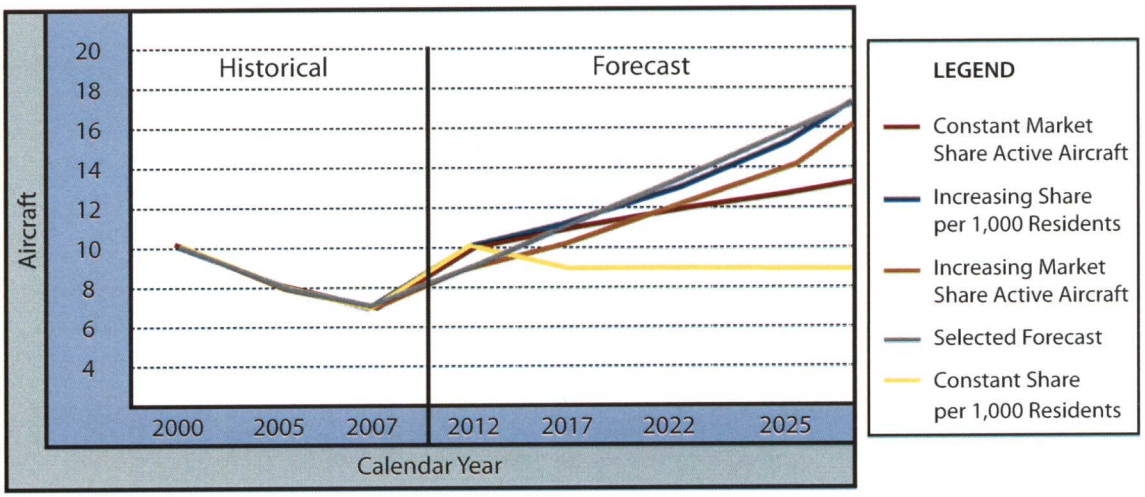


Exhibit 2G

Based Aircraft Forecast Summary - Blosser Municipal Airport

FLEET MIX PROJECTION

The based aircraft fleet mix expected to use Blosser Municipal Airport (Airport) must be known in order to properly plan the facilities for the types of aviation activities expected at the Airport. Table 1E on page 1-39 lists the current based aircraft by registration number (N-number). There currently are nine (9) based aircraft based at the Airport. Out of the nine (9) based aircraft, the fleet is comprised of seven (7) single engine aircraft and two (2) ultra-light aircraft.

The forecast mix of aircraft for the Airport was determined by examining existing and forecast U.S. General Aviation fleet trends. The Federal Aviation Administration (FAA) Aerospace Forecasts Fiscal Years 2008-2025 was reviewed. The fleet mix of based aircraft at the Airport is anticipated to remain dominantly in single-engine aircraft. If additional runway length and improved non-precision or precision approaches with lower visibility minimums can be provided, growth in the multi-engine aircraft and small to large turbine-powered aircraft could be expected. Table 2D below summarizes the based aircraft fleet mix projections for the Airport.

Table 2D

Based Aircraft Fleet Mix Forecast Projections

			Piston		Turbine		Other
Year	Total	Single	Multi	Turboprop	Jet	Rotorcraft	Ultra Light
2007	9	7	0	0	0	0	2
Planning Horizon							
Short Term	11	10	0	0	0	0	1
Intermediate Term	13	11	1	0	0	0	1
Long Range	19	12	2	2	1	0	2

GENERAL AVIATION OPERATIONS

Generally, local operations are characterized by training operations or agricultural spray operations.

The aircraft operations forecast is another key factor in planning airport development. The distribution of Federal funding grant programs by the Federal Aviation Administration (FAA) are often based upon the levels of activities realized throughout the planning horizon. Furthermore, the aircraft operations forecast drive what improvements are required and when.

Generally, local operations are characterized by training or agricultural spray operations. There are two types of operations at an airport: local operations and itinerant operations.

Local operation is a takeoff and landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go training operations at the airport.

Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport that includes a flight of at least 20 miles. Itinerant operations are typically operations for business, air ambulance services or industrial uses.

The forecasts for operations have been based on the number of operations per based aircraft. Two (2) forecasts of operations have been developed; one (1) assuming a constant market share and one (1) assuming an increasing market share.

Due to the absence of an Air Traffic Control (ATC) tower at the Airport, operations have not been regularly monitored. For our analysis, current aircraft operations have been estimated based on the National average of 450 operations per based aircraft. Table 2E below shows the current operations per based aircraft along with the two (2) forecasts.

The first forecast utilizes a constant market share of 382 operations per based aircraft. This figure was applied to the forecasted number of aircraft to arrive at 4,202, 5,730 and 7,258 operations for the short term, intermediate term and long term, respectively. The second forecast uses an increasing number of operations per based aircraft over the planning horizons. Forecasted operations from the increasing ratios resulted in operations of 4,510, 6,525 and 8,740 operations respectively.

Table 2E

Annual Operations Per Based Aircraft Projections

Year	Local Operations	Itinerant Operations	Total General Aviation Operations	Based Aircraft	Operations Per Based Aircraft
2007	2,576	859	3,435	9	382
Forecasts					
	Constant Ratio			Increasing Ratio	
Year	Based Aircraft	Operations	Ratio	Operations	Ratio
2012	11	4,202	382	4,510	410
2017	13	5,730	382	6,525	435
2027	19	7,258	382	8,740	460

Source for Historical and Forecast Data: Alfred Benesch & Company

The FAA projects the number of General Aviation (GA) hours flown to increase at an average growth rate of 3.0% per year. Currently at the Airport, due to the lower number of based aircraft compared to the high number of annual operations, the ratio of operations to based aircraft is significantly higher than the National average. It is reasonable to believe that given some improvements to the Airport such as lower visibility minimums, longer runway length and additional General Aviation services at the Airport, operations will continue to increase at the Airport.

Therefore, for planning purposes, the increasing number of operations per based aircraft forecast was selected as the most indicative of future growth potential. Annual operations forecasts are shown on Table 2E.

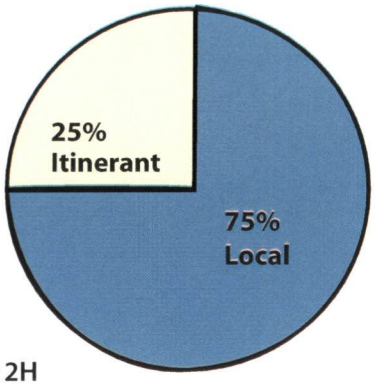


Exhibit 2H
Percentage of Total Annual Operations
Blosser Municipal Airport

The FAA Office of Aviation Policy and Plans (APO) Terminal Area Forecast data has historically indicated that itinerant operations account for a lower percentage of the total annual operations than the local operations at Blosser Municipal Airport (Airport). As discussed earlier, the National trend projects increased use of General Aviation (GA) aircraft for business and corporate uses. This will result in continued use of the Airport by itinerant aircraft. Therefore, it is anticipated, based on historic and forecasted data, the split will be 75 percent (75%) local to 25 percent (25%) itinerant throughout the planning horizon as shown in Exhibit 2H on this page.

ANNUAL INSTRUMENT APPROACHES

Forecasts of Annual Instrument Approaches (AIA) provide guidance in determining an airport's requirements for navigational aid facilities. An instrument approach is defined by the Federal Aviation Administraion (FAA) as *"an approach to an airport, with intent to land by an aircraft in accordance with an Instrument Flight Rule (IFR) flight plan, when visibility is less than three (3) miles and/or when the ceiling is at or below the minimum initial approach altitude."*

Historical data on instrument approaches were obtained from FAA's APO Terminal Area Forecast data. At the Airport, there have been no recorded instrument approaches and according to the same report no instrument approaches are forecast through the planning period. It is assumed that in actual fact instrument approaches do occur even though they are not recorded. Currently the Airport has a published Global Positioning System (GPS) approach to both Runway 17 and Runway 35. The Airport also has a published Non-Directional Beacon (NDB) approach.

With the new technology, such as Global Positioning System with Localizer Performance with Vertical Guidance (GPS-LPV) instrument approaches, lower visibility minimums for instrument approaches are now becoming a reality for airports without the installation of expensive ground navigational aids. Many airports today experience itinerant operations that commonly use instrument approaches. Air taxi, charter and business flights commonly use instrument approaches. Air taxi operators, for example, if operating under Federal Aviation Regulation (FAR)Part 121 *Operating Requirements: Domestic, Flag, and Supplemental Operations* are required to use instrument approaches.

Typically, small GA airports have no means to accurately measure the number of instrument approaches. Since it is assumed that the Airport may have instrument approaches, most likely non-precision GPS, in the future, annual instrument approaches have been forecasted for the

planning horizon. It is estimated that 25% of the forecasted itinerant operations use the instrument approaches. Local pilots also utilize the instrument approaches, therefore it is assumed that 10% of forecasted local operations are under Instrument Flight Rules (IFR). These figures are shown in Table 2F on this page.

Table 2F

Annual Instrument Approach Forecast

	Short Term	Intermediate Term	Long Term
Itinerant Operations (25% of Operations)	282	408	546
Forecast			
Local Operations (10% of Operations)	338	489	656
Total Annual Instrument Approaches (AIA)	**620**	**897**	**1,202**

CRITICAL DESIGN AIRCRAFT

The selection of the appropriate Federal Aviation Administration (FAA) design standards for the development of the airfield facilities is based primarily upon the aircraft characteristics that are expected to use Blosser Municipal Airport (Airport). The most critical characteristics are the approach speed and the size of the critical design aircraft anticipated to use the Airport now or in the future. The critical design aircraft is the most demanding category of aircraft that accounts for 500 or more operations per year. Planning for future aircraft use is of particular importance because design standards are used to plan separation distances between facilities. It is important that these standards are determined now because facility relocations will likely be extremely expensive at a later date.

The FAA established criteria for the size and design of airfield facilities. Those airfield standards are based on aircraft size and performance criteria. According to FAA Advisory Circular (AC) 150/5300-13, *Airport Design*, an aircraft's approach category is based upon 1.3 times its stall speed in landing configuration at that aircraft's maximum certificated weight.

The five (5) Aircraft Approach Categories (AAC) used in airport design are as follows:

AIRCRAFT APPROACH CATEGORIES (AAC)	
Category A:	Speed less then 91 knots.
Category B:	Speed 91 knots or more, but less than 121 knots.
Category C:	Speed 121 knots or more but less than 141 knots.
Category D:	Speed 141 knots or more but less than 166 knots.
Category E:	Speed 166 knots or more.

The second basic design criteria is related to aircraft size. The Airplane Design Group (ADG) is based on wingspan or tail height. The six (6) Airplane Design Groups are as follows:

AIRPLANE DESIGN GROUPS (ADG)	
Group I:	Up to but not including 49 feet wingspan or tail height up to but not including 20 feet.
Group II:	49 feet up to but not including 79 feet wingspan or tail height from 20 feet up to but not including 30 feet.
Group III:	79 feet up to but not including 118 feet wingspan or tail height from 30 feet up to but not including 65 feet.
Group IV:	118 feet up to but not including 171 feet wingspan or tail height from 45 feet up to but not including 60 feet.
Group V:	171 feet up to but not including 214 feet wingspan or tail height from 60 feet up to but not including 66 feet.
Group VI:	214 feet up to but not including 262 feet wingspan or tail height from 66 feet up to but not including 80 feet.

Together, Aircraft Approach Category (AAC) and Airplane Design Group (ADG) identify a coding system whereby airport design criteria are related to the operational and physical characteristics of the aircraft intended to operate at the airport. The Airport Reference Code (ARC) has two components: the first which is depicted by a letter, is the Aircraft Approach Category and relates to aircraft approach speed (operational characteristic); the second component, which is depicted by a Roman numeral, is the Airplane Design Group and relates to aircraft wingspan or tail height (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while airplane wingspan primarily relates to separation criteria involving taxiways and taxilanes. Table 2G on page 2-18 provides a depiction of typical aircraft and their associated ARC.

FAA advises designing all airfield elements to meet the requirements of the most demanding or critical aircraft utilizing Blosser Municipal Airport (Airport). As discussed previously, this is the aircraft, or group of aircraft accounting for at least 500 itinerant operations per year. In order to determine the Airport's facility requirements, the Airport Reference Code (ARC) of the Airport critical aircraft should first be determined, which enables the application of appropriate design criteria.

Based aircraft currently located at the Airport consist of small single engines and ultra light aircraft. These aircraft primarily fit into Design Group "I" and have an Approach Category of "A". The largest critical based aircraft is the Piper PA-23, an ARC A-I aircraft.

Currently, three (3) categories of aircraft extensively utilize the Airport – light single-engine and twin-engine aircraft and a limited number of turboprop aircraft and jets (ARC A-I, B-I and B-II). As can be seen in Table 1F on page 1-41 small business turboprop aircraft similar to the Beech King Air C90 and Beech King Air B200 utilize the Airport. With the expected increase in fixed wing air ambulance service and other corporate activity in the future, and near the Concordia area, it is anticipated that the Airport will have adequate operations by aircraft in the ARC B-II category over the long term to qualify as the ultimate critical aircraft for the Airport. The ultimate critical aircraft is projected to be the Beech King Air B200 which is an ARC B-II category aircraft.

Table 2G

Typical Aircraft and Their Associated Airport Reference Code (ARC)

ARC	Typical Aircraft	ARC	Typical Aircraft
A-I	Beech Baron 55 Beech Bonanza Cessna 150 Cessna 172 Piper Archer Piper Seneca	C-I D-I	Lear 25, 35, 55 Israeli Westwind HS 125
B-I Less Than 12,500 lbs.	Beech Baron 58 Beech King Air 100 Cessna 402 Cessna 421 Piper Navajo Piper Cheyenne Swearingen Metroliner Cessna Citation I	C-II D-II	Gulfstream II, III, IV Canadair 600 Canadair Regional Jet Lockheed Jetstar
B-II Less Than 12,500 lbs.	Beech King Air C90 Super King Air B200 Cessna 441 DHC Twin Otter	C-III D-III	B 727 – 200 B 737 – 200 B 737 – 300, 400, 500 DC 9 Fokker 70, 100 MD – 80 A320
B-I, II Over 12,500 lbs.	Super King Air 300 Beech 1900 Jetstream 31 Falcon 10, 20, 50 Falcon 200, 900 Citation II, III, IV, V Saab 340 Embraer 120	C-IV D-IV	B – 757 B – 767 DC – 8 – 70 DC – 10 MD – 11 L1011
A-III B-III	DHC Dash 7 DHC Dash 8 DC – 3 Convair 580 Fairchild F – 27 ATR 72 ATP	D-V	B – 747 Series B- 777

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