

Chapter Three - Forecasts

Forecasts of commercial and general aviation activity, presented in this chapter, estimate the level of activity expected at airports in the Twin Cities metropolitan region and the collar counties. These projections assist in verifying the roles of individual airports and bracket future levels of activity to determine whether there are any outstanding capacity issues that the regional system plan should address.

The chapter examines and projects the following components of activity:

- Annual passenger enplanements
- Based general aviation aircraft
- Aircraft operations

The forecast period is 2008-2030.

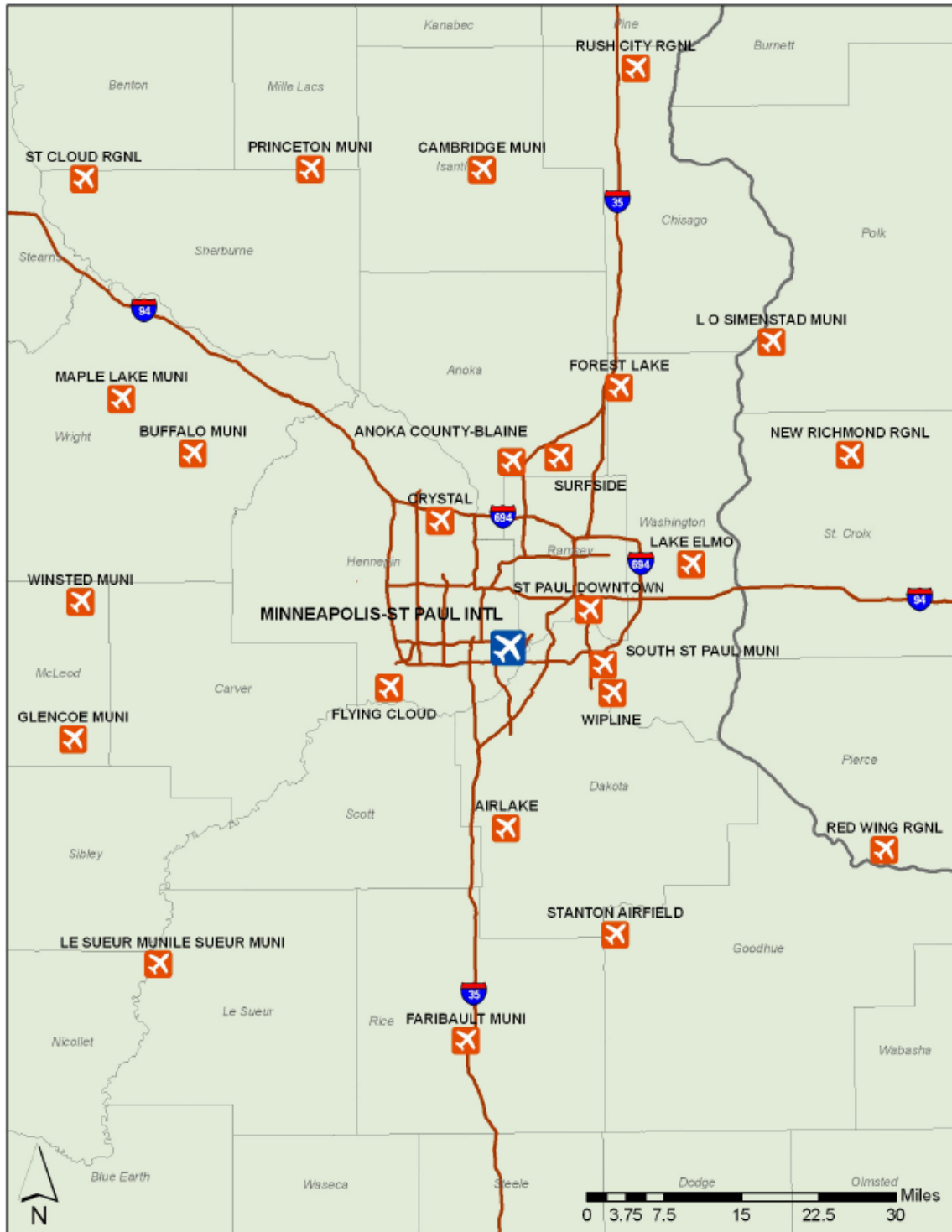
The airports considered take in a larger region than previously used for Metropolitan Council System Plan forecasts. **Exhibit 3-1** lists the Twin Cities' metropolitan region airports and the collar county airports. **Exhibit 3-2** shows the airports on a map. Altogether the region encompasses eleven airports in the metropolitan region and fourteen collar county airports for a total of 25 airports. The Metropolitan Airports Commission (MAC) owns seven of the metropolitan region airports. St. Cloud Regional Airport is included as a collar county airport and is the only other commercial service airport in the group. Two of the collar county airports are in Wisconsin, L O Simenstad Municipal and New Richmond Regional.

Exhibit 3-1: Twin City Metropolitan Region and Collar County Airports

MAC Airports	Other Metropolitan Region Airports	Collar County Airports
Minneapolis-St. Paul Int'l	Forest Lake	Buffalo Municipal
Airlake	South St. Paul Municipal	Cambridge Municipal
Anoka County-Blaine	Surfside SPB	Faribault Municipal
Crystal	Wipline SPB	Glencoe Municipal
Flying Cloud		L O Simenstad Municipal, WI
St. Paul Downtown		Le Sueur Municipal
Lake Elmo		Maple Lake Municipal
		New Richmond Regional, WI
		Princeton Municipal
		Red Wing Regional
		Rush City Regional
		St. Cloud Regional
		Stanton Airfield
		Winsted Municipal

Source: Metropolitan Council

Exhibit 3-2: Map of Airports in the Metropolitan Region and Collar Counties



Source: Metropolitan Council

The larger catchment area for system planning purposes is indicative of two observed trends. First, the metropolitan area is spreading beyond the seven counties. To the northwest, the I-94 corridor is one of the fastest growing areas. With the Northstar Commuter Rail scheduled to begin operations in the fall 2009, it will be possible to ride from Big Lake into the downtown, transfer to the Hiawatha Light Rail and go directly to Minneapolis-St. Paul International Airport (MSP). Anticipated connections either by bus or by rail between St. Cloud Regional Airport and Big Lake will enable passengers to get to St. Cloud Regional or MSP.

The second observed trend involves location patterns for based general aviation aircraft. There has been a flow of based aircraft out to the perimeter airports where the cost to hangar an aircraft is typically lower than the metropolitan region. Furthermore, the MAC does not permit the increasingly popular ultralight aircraft to operate at MAC airports. While ultralight aircraft need not be based at an airport at all, analysis of based aircraft shows growth of recreational aircraft at the perimeter and collar county airports. Consequently for purposes of planning for general aviation at non-MAC airports, it is important to look at general aviation activity in a larger geographic region around the metropolitan region.

The current economic volatility in the U.S. has injected a higher level of uncertainty into all public and private business planning. Forecasting remains a building block for system planning but it is clearly more art than science. Typically, forecasts include high and low ranges of possible futures. However, recent history confirms a high risk environment that might lead to outcomes beyond a traditional forecasting range.

For Minnesota the most critical variables for forecasting are the following:

- The timing and pace of economic recovery from the current recession
- The price of jet and 100LL fuel
- The availability of credit and whether general business and aviation in particular can maintain and/or expand activity
- Recovery in corporate aviation after recent disinvestment in the sector
- The build out of Southwest Airlines service at MSP
- The integration of Northwest's hub at MSP into the Delta system.

The level of uncertainty warrants a discussion of how these variables could influence the forecasts. The chapter is organized to first present forecasts for general aviation airports, then for MSP. As part of the discussion for MSP, 'high impact' variables are examined to see how they might affect the forecasts. To further gauge the future for MSP, Chapter 4 takes a closer look at how Southwest Airlines has recently built out service in other large cities and also compares aviation activity at MSP with activity levels at other Midwest hub airports.

Forecast Approach

As part of its Long Term Comprehensive Plans (LTCPs), MAC has recently prepared forecasts for MSP and the six reliever airports under its ownership. To integrate the MAC and Metropolitan Council planning efforts, the MAC forecasts have been adopted here and in the case of the reliever airports, interpolated so that planning years are consistent with this Regional Aviation System Plan. For other general aviation airports, a bottom up forecast for each individual airport was prepared after reviewing existing Master Plans, FAA Terminal Area Forecasts, FAA projections of national general aviation activity, and the Minnesota Statewide Aviation System Plan. FAA growth rates now reflect a significant decline of activity in 2009, followed by an extended recovery that does not attain 2008 levels of activity until 2013. The outlook for sport aircraft and micro-jet growth is also dampened to reflect current economic conditions.

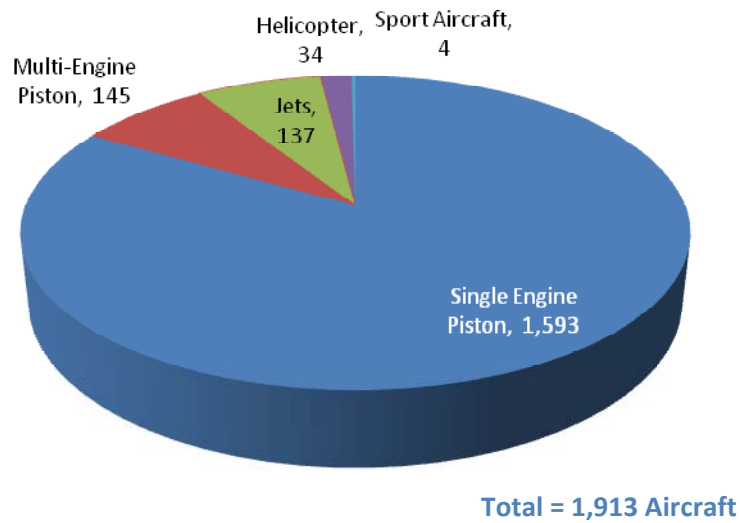
General Aviation Forecasts

Forecasts for general aviation activity estimate the number of based aircraft as well as the number of operations expected over the forecast period. Metropolitan region and collar counties are presented separately.

Current Based Aircraft

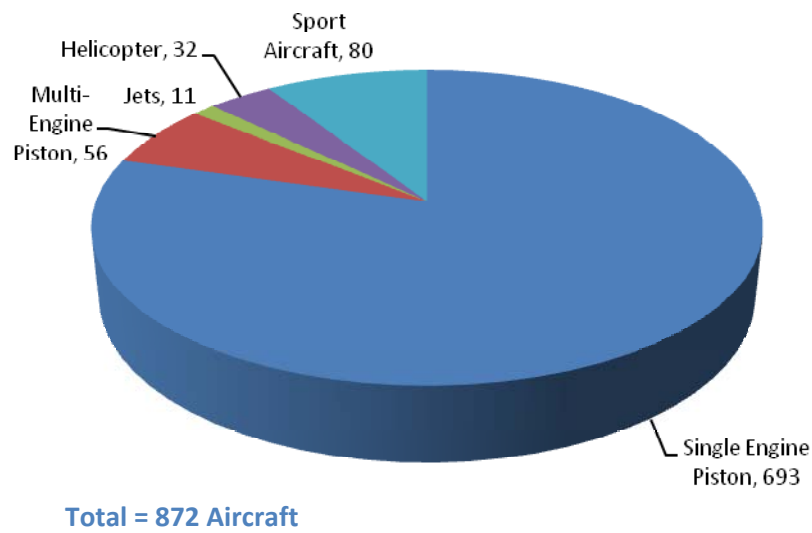
There are an estimated 1,913 aircraft based metropolitan region airports and 870 in the collar counties for a total of 2,785 aircraft based in the region. **Exhibits 3-3, 3-4 and 3-5** show the distribution of aircraft by type of aircraft. In both areas, single engine piston aircraft make up the vast majority of aircraft. Of note, the percent share of single engine aircraft in the metropolitan region and collar counties is higher than the national share of this type of aircraft where single engine piston aircraft make up only 64.3 percent of the active fleet. In the collar counties, it is 79.5 percent and in the metropolitan region it is 83.3 percent. Also there are virtually no sport aircraft in the metropolitan region and 80 or 9.2 percent based in the collar counties.

Exhibit 3-3: Based Aircraft in the Metropolitan Region, 2007



Source: Metropolitan Airports Commission 2007 Annual Report to the Legislature and FAA 5010 Form, October 2008

Exhibit 3-4: Based Aircraft in Collar Counties, 2007



Source: Metropolitan Airports Commission 2007 Annual Report to the Legislature and FAA 5010 Form, October 2008

Exhibit 3-5: Based Aircraft Mix Detail, 2007

Region	Single Engine	Multi-Engine	Jet	Helicopter	Sport Aircraft	Total
Metropolitan region	1,593	145	137	34	4	1,913
Metropolitan Region Distribution	83.3%	7.6%	7.2%	1.8%	0.2%	100.0%
Collar Counties	693	56	11	32	80	872
Collar County Distribution	79.5%	6.4%	1.3%	3.7%	9.2%	100.0%
Total Region	2,286	201	148	66	84	2,785
Regional Distribution	82.1%	7.2%	5.3%	2.4%	3.0%	100.0%
National Distribution	64.3%	8.2%	8.5%	4.3%	5.1%	100.0%

Source: Metropolitan Airports Commission 2007 Annual Report to the Legislature and FAA 5010 Form, October 2008

Based Aircraft Forecasts

MAC Airports

Various methodologies are typically employed to make based aircraft forecasts, using socio-economic correlations, trend analysis, and the application of national growth rates. The MAC uses a sophisticated approach to prepare its based aircraft forecasts. Presented below is an overview of the methodology:

- Three sets of factors served as input into the forecast:
 - Projected income in the seven county region served as a proxy for future economic conditions. (Income typically correlates with general aviation activity.)
 - The current number of based aircraft at MAC airports set the first year levels. Changes in based aircraft at each airport informed recent trends.
 - Planned capital improvement projects at MAC airports were identified that could impact airport capacity or general aviation activity over the forecast period.
- The MAC forecasts began with a top down analysis that compares the number of based aircraft at MAC airports with the total number of active aircraft in the U.S. The MAC has been tracking its share of based aircraft historically. The share analysis identifies whether based aircraft are tracking or deviating from national trends.
- Based on MNDOT Office of Aeronautics aircraft registration data, historical fleet mix at MAC airports, income projections, and FAA growth rates for each category of aircraft, a region-wide forecast was made for based aircraft.
- The regional projection of based aircraft was then distributed among MAC airports. Some registered aircraft were also assumed to be based at non-MAC airports, such as South St. Paul Municipal Airport.
- Three additional adjustments were made to the unconstrained based aircraft forecast.

- Hangar waiting lists were examined to determine whether there was unmet demand that could be accommodated during the forecast period.
- Where capacity for based aircraft was limited (such as MSP), some forecast aircraft were redistributed to other metropolitan region airports that are not constrained for based aircraft.
- Lastly, ultralight aircraft were not assigned to MAC airports as these aircraft are not permitted to operate at MSP or relievers.

Other Airports

For based aircraft not at MAC airports, adjusted FAA national growth rates were applied to the actual fleet mix at every airport. FAA growth rates were adjusted downward for 2007 to 2010 to account for the current recession. These adjusted growth rates were then applied to the 2007 fleet mix at each non-MAC airport to obtain a weighted average annual growth rate for the airport. The resulting forecasts for based aircraft are shown in **Exhibit 3-6** and **Exhibit 3-7**. MAC reliever airport forecasts were interpolated to conform to the system plan forecast years.

Results

The FAA projects that the single engine and multi-engine fleet of piston aircraft is either declining or growing very slowly. Since the general aviation fleet in the metropolitan region and collar counties is predominantly aircraft in this category, the forecasts of based aircraft indicate low growth or declining based aircraft. There is some initial growth in based aircraft at Anoka, Crystal, and Airlake from aircraft on the waiting list as well as additions to the fleet. But predominantly, piston aircraft will decline over the entire forecast period at most metropolitan region airports as the number of active pilots decline and aircraft are retired at a faster rate than they are replaced. Business aircraft and light sport aircraft are the two types of general aviation aircraft showing some growth. The growth in business aircraft is reflected in additional based aircraft at St. Paul Downtown Airport, where, although there are limits to the area available for expansion, MAC determined that the airport could accommodate modest increases in based aircraft. The slightly higher rate of growth in collar county airports is attributable to a fleet mix that contains more sport and ultralight aircraft, which are categories of aircraft expected to grow in the future.

Exhibit 3-6: Forecast of Based Aircraft in the Metropolitan Region

	2007	2015	2020	2030	Average Annual Growth
Minneapolis-St. Paul Intl.	24	27	30	30	1.0%
Airlake	162	211	203	204	1.0%
Anoka County-Blaine	437	452	433	409	-0.3%
Crystal	244	269	254	246	0.0%
Flying Cloud	421	411	406	396	-0.3%
Forest Lake	26	26	27	30	0.7%
Lake Elmo	229	261	247	248	0.3%
St. Paul Downtown	83	107	118	127	1.9%
South St. Paul Municipal	237	235	242	255	0.3%
Surfside SPB	45	42	42	43	-0.2%
Wipline SPB	5	5	5	5	0.0%
Total	1,913	2,046	2,007	1,993	0.2%

Sources: Metropolitan Airport Commission and KRAMER aerotek, inc.

Exhibit 3-7: Forecast of Based Aircraft in the Collar Counties

	2007	2015	2020	2030	Average Annual Growth
Buffalo Municipal	51	50	52	55	0.3%
Cambridge Municipal	42	42	43	45	0.3%
Faribault Municipal	64	64	65	69	0.3%
Glencoe Municipal	34	31	32	35	0.1%
L o Simenstad Municipal	73	72	74	78	0.3%
Le Sueur Municipal	43	43	45	47	0.4%
Maple Lake Municipal	54	53	55	58	0.3%
New Richmond Regional	168	158	163	178	0.2%
Princeton Municipal	33	34	35	38	0.6%
Red Wing Regional	55	56	58	66	0.8%
Rush City Regional	52	52	53	59	0.5%
St. Cloud Regional	105	106	110	122	0.7%
Stanton Airfield	47	48	50	55	0.7%
Winsted Municipal	51	51	53	57	0.5%
Total	872	861	889	962	0.4%

Source: KRAMER aerotek, inc.

General Aviation Operations

General aviation operations have declined across the country for a variety of reasons. The most important reasons are:

- The general aviation fleet is aging. Some aircraft remain active for 40 years but tend to fly fewer hours as the aircraft ages.
- The pilot population is also aging. Pilots are retiring at a faster rate than new pilots are obtaining certification.
- The volatility and rise of fuel prices has dampened recreational flying activity.
- Bad publicity about corporate aircraft and tight credit has resulted in a recent but precipitous decline in business aviation.

The forecasts for general aviation operations for the metropolitan region and collar counties are derived from based aircraft forecasts. Consequently based aircraft trends will drive forecasts of operations. That said, general aviation activity is difficult to forecast for four reasons: (1) the relationship between economic growth and pricing is harder to determine statistically than demand for commercial air service; (2) many airports in the region do not have air traffic control towers so base year operations are at best an estimate; (3) the volatility of fuel prices and its influence on general aviation activity injects a level of uncertainty; and lastly (4) the emergence of micro jets as the next generation aircraft has been slower than first anticipated.

Two different methodologies were used to estimate general aviation operations. For MAC airports, base year operations were determined by either tower records or Airport Noise and Operations Monitoring System data. For the other airports, base operations were taken from the 5010 Airport Master Records and Reports.

Forecasts of general aviation operations are derived from based aircraft forecasts, so additions or deletions from the fleet of based aircraft will carry across to the forecasts of operations.

The MAC forecasts incorporated FAA forecast assumptions about average aircraft utilization and flight hours flown per based aircraft. The forecasts assume that operations per hours flown remain constant, touch and go operations in each aircraft category also remain constant as do military operations.¹ The MAC airport operations forecasts also test sensitivity to the price of oil. The MAC forecasts address three scenarios: a high, base and low forecast. The base (moderate) forecast is presented here in this chapter.

Forecasts of general aviation operations at the other metropolitan region and collar county airports were derived using the ratio of operations to based aircraft (OPBA). Since local operations prevail at many of the collar county airports, the number of operations per based aircraft is a valid relationship

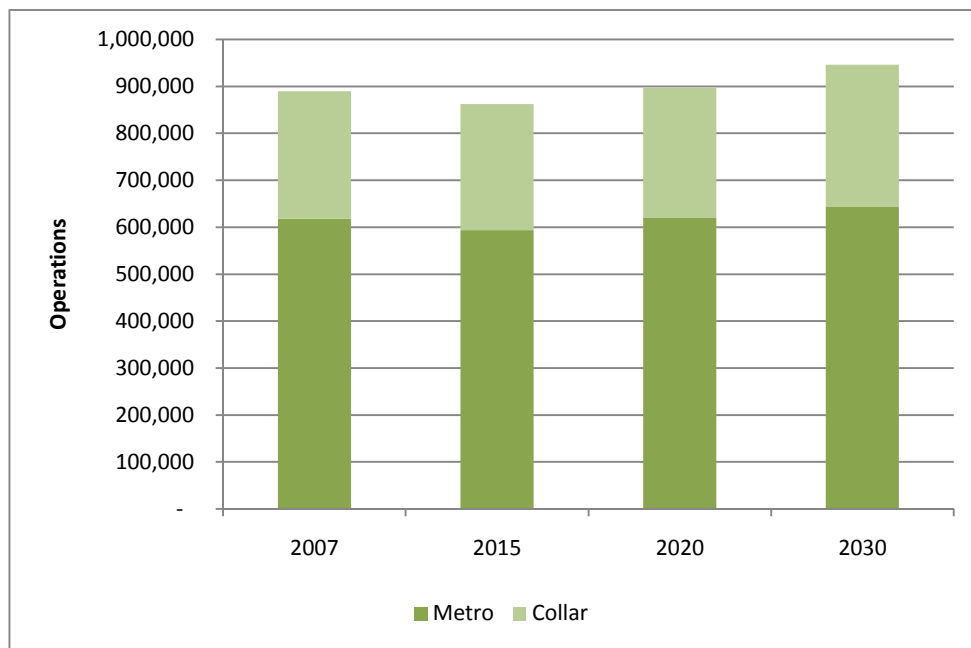
¹ HNTB Technical Report, April, 2009

and the one used to estimate future general aviation operations. The methodology involves first establishing the current level of operations per based aircraft and using the forecast of based aircraft as the driving variable for increasing or decreasing operations. In this instance where operations nationally are mostly flat or declining this conservative methodology is appropriate. **Exhibit 3-8, 3-9, and 3-10** shows the forecast for general aviation operations. **Exhibit 3-11** is a summary table of total based aircraft and operations for the region over the forecast period.

The metropolitan region generates twice the number of operations that take place in the collar counties. This makes sense as the relationship of based aircraft is similar. The collar counties are growing faster in terms of general aviation operations at an annual rate of about .5 percent per year although no single airport in the collar counties, with the exceptions of St. Cloud and New Richmond, WI have as many operations as the MAC reliever airports.

In summary, based aircraft in the region are expected to grow from 2,785 to 2,955 over the forecast period and operations are projected to grow from 913,000 to 965,000.

Exhibit 3-8: Forecast of Metropolitan Region and Collar County General Aviation Operations



Sources: Metropolitan Airport Commission and KRAMER aerotek, inc.

Exhibit 3-9: Forecast of General Aviation Operations at Metropolitan Region Airports

	2007	2015	2020	2030	Average Annual Growth
Minneapolis-St. Paul Intl.	45,850	51,590	57,320	57,320	1.0%
Airlake	65,000	84,660	81,450	81,850	1.0%
Anoka County-Blaine	86,840	73,330	75,970	77,650	-0.5%
Crystal	53,580	59,070	55,780	54,010	0.0%
Flying Cloud	124,570	97,150	106,030	111,070	-0.5%
Forest Lake	8,000	8,030	8,350	9,230	0.6%
Lake Elmo	74,230	66,810	68,560	73,940	0.0%
St. Paul Downtown	128,250	117,400	130,060	139,940	0.4%
South St. Paul Municipal	51,000	50,670	52,040	54,910	0.3%
Surfside SPB	4,100	3,850	3,860	3,900	-0.2%
Wipline SPB	130	120	120	120	-0.3%
Total	641,550	612,680	639,540	663,940	0.1%

Sources: Metropolitan Airport Commission and KRAMER aerotek, inc.

Exhibit 3-10: Forecast of General Aviation Operations at Collar County Airports

	2007	2015	2020	2030	Average Annual Growth
Buffalo Municipal	22,130	21,870	22,500	23,830	0.3%
Cambridge Municipal	16,750	16,630	17,110	18,110	0.3%
Faribault Municipal	18,500	18,380	18,900	20,000	0.3%
Glencoe Municipal	10,620	9,800	10,130	10,840	0.1%
L O Simenstad Municipal	7,650	7,550	7,760	8,200	0.3%
Le Sueur Municipal	2,500	2,530	2,590	2,740	0.4%
Maple Lake Municipal	20,000	19,760	20,350	21,650	0.3%
New Richmond Regional	44,000	41,370	42,610	46,560	0.2%
Princeton Municipal	13,000	13,320	13,780	14,790	0.6%
Red Wing Regional	13,350	13,530	14,150	15,950	0.8%
Rush City Regional	7,800	7,730	7,970	8,820	0.5%
St. Cloud Regional	66,360	67,080	69,650	77,110	0.7%
Stanton Airfield	15,000	15,330	16,000	17,680	0.7%
Winsted Municipal	13,550	13,680	14,130	15,090	0.5%
Total	271,210	268,560	277,630	301,370	0.5%

Source: KRAMER aerotek, inc.

Exhibit 3-11: Summary Table of Based Aircraft and General Aviation Forecasts

	2007	2015	2020	2030	Average Annual Growth
Total Based Aircraft	2,785	2,907	2,896	2,955	0.3%
Total Operations	912,760	881,240	917,170	965,310	0.2%

Sources: Metropolitan Airport Commission and KRAMER aerotek, inc.

Minneapolis-St. Paul International Forecasts

The Regional Aviation System Plan is incorporating the MAC forecasts for Minneapolis-St. Paul International Airport (MSP) into this document. At this draft stage, the MAC forecasts are a work in progress. Passenger forecasts are presented here. Operational forecasts are forthcoming.

Passenger Trends

Enplanements

In 2008, MSP enplaned 15.1 million passengers. This was down 5.1 percent from 2007. Many other large airports also experienced service and capacity reductions in 2008 following a spike in fuel prices that peaked in July 2008 and pushed crude oil to over \$140 a barrel. In October 2008, upheaval in the financial industry impacted every sector of the economy. The airlines reacted quickly to reduce capacity further. Demand for air service also contracted in the last quarter of 2008 and into 2009.

Connecting Traffic

Over the last 15 years, connecting traffic at MSP has represented as much as 58 percent of enplanements. However from 2004 to 2008, the share connecting passengers has fallen from 58 percent to 52 percent. **Exhibit 3-12** shows a time series of originating and connecting traffic starting in 1990 and **Exhibit 3-13** graphs the trend.

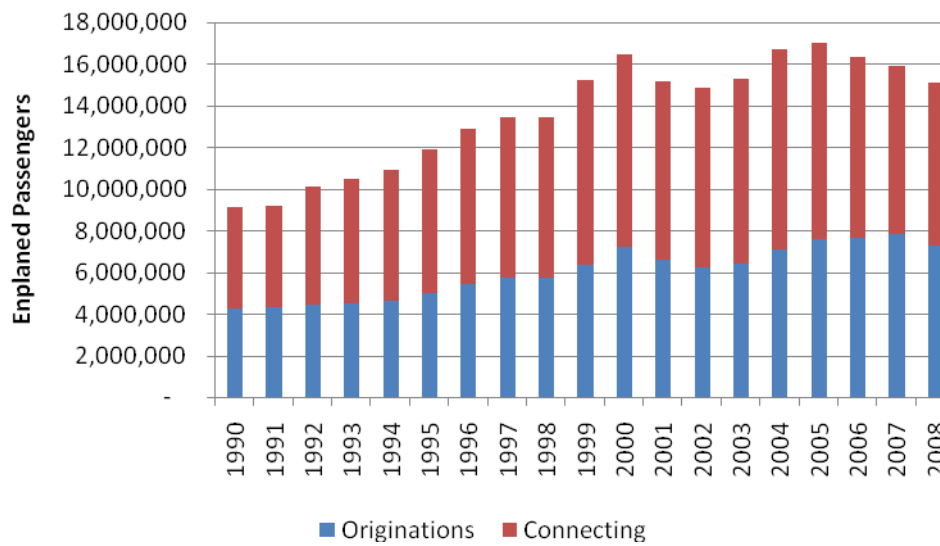
Exhibit 3-12: Originating and Connecting Enplanements at MSP, 1990-2008

Year	Originations	Connecting	Total Enplanements	Percent Connecting
1990	4,284,240	4,820,837	9,105,077	53%
1991	4,288,090	4,887,217	9,175,307	53%
1992	4,414,590	5,702,582	10,117,172	56%
1993	4,511,050	5,989,964	10,501,014	57%
1994	4,598,270	6,309,846	10,908,116	58%
1995	5,021,830	6,883,964	11,905,794	58%
1996	5,411,820	7,451,712	12,863,532	58%

Year	Originations	Connecting	Total Enplanements	Percent Connecting
1997	5,750,780	7,700,184	13,450,964	57%
1998	5,736,650	7,729,307	13,465,957	57%
1999	6,365,610	8,866,000	15,231,610	58%
2000	7,225,020	9,258,588	16,483,608	56%
2001	6,603,320	8,585,287	15,188,607	57%
2002	6,207,930	8,640,616	14,848,546	58%
2003	6,390,140	8,905,671	15,295,811	58%
2004	7,074,980	9,605,091	16,680,071	58%
2005	7,609,360	9,378,170	16,987,530	55%
2006	7,643,820	8,690,318	16,334,138	53%
2007	7,857,050	8,046,059	15,903,109	51%
2008	7,291,815	7,795,574	15,087,389	52%

Source: Metropolitan Airport Commission

Exhibit 3-13: Origination and Connecting Enplanement Trends



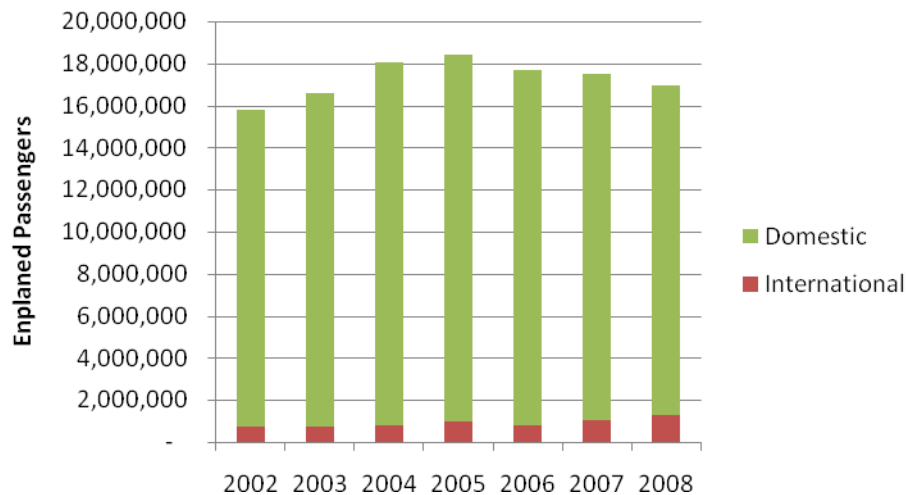
Source: Metropolitan Airport Commission

International Traffic

International passenger enplanements have grown steadily but still represent a relatively small portion of total enplanements. In 2002, international was under 5 percent of total MSP enplanements; in 2008

international enplanements had grown from 741,000 enplaned passengers to almost 1.3 million and now represents 8 percent of MSP enplanements. **Exhibit 3-14** shows the trend.

Exhibit 3-14: International and Domestic Enplanement Trends



Source: Metropolitan Airport Commission

Passenger Forecasts

Forecasting passengers and operations at MSP is complex because of the Delta-Northwest's merger in October, 2008 and the entry of Southwest Airlines into the market in March, 2009. Against this backdrop of airline changes are the deep recession that began in the fall of 2008, high volatility in fuel prices, and a global credit crisis. In other words, there are many variables that can and will impact airport activity.

To address the uncertainty, the MAC examined the outlook for passengers in four component groups:

1. Domestic enplaned passenger (originating and connecting)
2. International enplaned passenger (originating and connecting)
3. Domestic passenger originations (local passengers beginning their trip at MSP)
4. International passenger originations (local passengers beginning their trip at MSP)

For each group of passengers, MAC has tested the impact of various growth assumptions about:

- The price of fuel - high or low
- The impact of declining connections at MSP
- A build out of Southwest service
- Normal growth

- FAA Terminal Area Forecast (TAF)
- High economic growth

All of the variables and groups of passengers make for a large number of scenarios. To get a handle on the range of possible futures with respect to passengers, **Exhibit 3-15** presents forecasts for total enplanements, international enplanements, and originations. Within each group, scenarios test the range of possible outcomes. All of the forecasts are rounded to observe the variations that result from the different scenarios and assumptions. Several observations are immediately apparent:

- Despite short term declines, total enplanements grow over the forecast period at an average annual rate of between .8% and 2.5%. International passengers will grow at a faster rate, although the base is much smaller.
- High fuel prices results in the lowest number of forecast enplanements.
- Low fuel prices and high economic growth are the greatest stimulants of traffic.
- Declining connections is the second most important contributor to lower enplaned passengers.
- *The degree of uncertainty is very high and forecasts project a wide band of possible futures.* For total enplanements, by 2030, the difference between a prolonged period of high cost fuel or low cost fuel is almost 10 million passengers or a 48 percent difference.
- There is a 75 percent difference or 1.4 million passengers between the highest and lowest international passenger forecast.
- The originating passenger forecast exhibits the smallest range of possible outcomes. This scenario effectively sizes the MSP market as a local origin and destination market (no hubbing). In 2030, the local MSP market is forecast to be between 14.2 and 18 million originating enplanements.

Exhibit 3-15: Forecast of Passengers at MSP

Scenarios by Passenger Groups	2007	2015	2020	2030	Difference in Scenarios By 2030	Average Annual Growth
Total Enplanements						
High Fuel Cost	16,883,600	16,081,900	17,365,200	20,336,000		0.8%
Base Case and Declining Connections	16,883,600	17,845,100	19,582,100	23,695,700		1.5%
FAA Terminal Area Forecast	17,028,000	17,717,100	20,400,600	25,194,200		1.7%
High Economic Growth	16,883,600	20,397,300	23,359,300	26,828,000		2.0%
Base Case	16,883,600	19,079,000	21,799,000	28,419,400		2.3%
Low Fuel Cost	16,883,600	19,308,400	22,338,700	30,064,300		2.5%
			2030 High/Low Difference		48%	9,728,300
International Enplanements						
	2007	2015	2020	2030		
High Fuel	980,500	1,305,000	1,465,200	1,847,200		2.8%
Base Case and Declining Connections	980,500	1,423,500	1,699,400	2,422,100		4.0%
Base Case	980,500	1,472,500	1,836,600	2,839,500		4.7%
Low Fuel Cost	980,500	1,520,000	1,938,800	3,134,900		5.2%
High Economic Growth	980,500	1,536,500	1,974,700	3,241,600		5.3%
			2030 High/Low Difference		75%	1,394,400
Originations						
	2007	2015	2020	2030		
High Fuel Cost	8,808,200	9,586,100	10,908,100	14,179,600		2.1%
Base Case	8,808,200	10,630,400	12,314,600	16,612,500		2.8%
Low Fuel Cost	8,808,200	10,766,800	12,636,000	17,613,200		3.1%
Base Fuel Cost and High Economic Growth	8,808,200	11,354,100	13,198,000	17,966,700		3.1%
			2030 High/Low Difference		27%	3,787,100

Source: Metropolitan Airport Commission, interpreted by KRAMER aerotek, inc.

Built into the forecasts are expectations for Southwest Airlines traffic. The forecasts estimate that Southwest will attract approximately a quarter million enplaned passengers in 2010 and by 2030 will carry 1.9 million enplaned passengers. **Exhibit 3-16** shows annual and weekly passengers and extrapolates an estimate of weekly seats based on assumed load factors of 70 and 80 percent. Estimated seats allow comparison of implied MSP forecasts of Southwest capacity with levels of service offered at other Southwest cities.

Exhibit 3-16: Forecast Enplaned Passengers on Southwest Airlines at MSP

	Annual Enplanements	Weekly Enplanements	Weekly Seats @ 70% Load Factor	Weekly Seats @ 80% Load Factor
2010	224,044	4,309	6,155	5,386
2015	1,228,723	23,629	33,756	29,537
2020	1,407,229	27,062	38,660	33,828
2025	1,614,786	31,054	44,362	38,817
2030	1,850,451	35,586	50,837	44,482

Source: Metropolitan Airport Commission, interpreted by KRAMER aerotek, inc

Southwest Airlines has begun service at several large cities in the last few years, including Philadelphia in 2004, Pittsburgh in 2005, Denver in 2006 and Washington Dulles in 2006. Service at MSP began in March 2009 with three flights to Chicago Midway and has expanded service with three flights to Denver at the end of May 2009. To gauge possible expansion paths for Southwest, **Exhibit 3-17** summarizes weekly seats offered by Southwest at a sample of large cities in April 2009.

Exhibit 3-17: Southwest Airlines Scheduled Weekly Seats, April 2009

City	Weekly Seats
Minneapolis-St. Paul	7,398
Washington Dulles	10,275
Pittsburgh	20,186
Philadelphia	61,851
Denver	104,977
Baltimore	149,340
Chicago Midway	196,340

Source: Official Airline Guide

Chapter 4 analyzes in more depth the buildup of schedules and capacity at newer Southwest cities. The patterns at other cities suggest a more rapid initial development of service at MSP than is indicated by the current MAC forecasts. Whether the ultimate build out of Southwest service is typical of what has

happened at Philadelphia, Denver or Pittsburgh remains to be seen, however the MSP forecast may be conservative.

Minneapolis-St. Paul International Operations

(forthcoming when MAC provides)

Summary

The forecasts presented in this chapter have been developed during a time of economic uncertainty. Rising fuel prices, the ongoing credit crisis, the pace of the expected economic recovery, and developments at MSP all lead to unknown impacts on aviation activity. Within this environment, forecasts of aviation activity have been presented for the general aviation airports in the system and MSP. Among the general aviation airports, growth is expected in the low and high end market segments, while the more traditional middle segment – single-engine pistons – is expected to dwindle. At MSP, service by Southwest is expected to drive some growth, but two other factors – the merger between Delta and Northwest and the cost of fuel – could drastically impact future activity levels at MSP.