2006 ANNUAL REPORT TO THE LEGISLATURE

METROPOLITAN AIRPORTS COMMISSION

March 2007

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1. INTRODUCTION

In 1989, the Minnesota Legislature adopted the Metropolitan Airport Planning Act. This legislation required the Metropolitan Airports Commission (MAC) and the Metropolitan Council (MC) to complete a comprehensive and coordinated program to plan for major airport development in the Twin Cities. The planning activities were designed to compare the option of future expansion of Minneapolis-Saint Paul International Airport (MSP) with the option of building a new airport.

The analysis was completed in 1996, and the MAC and MC formally submitted their recommendations to the Legislature on March 18, 1996. On April 2, 1996, legislation was passed by both the House and Senate, and subsequently signed by Governor Arne Carlson, stopping further study of a new airport and directing the MAC to implement the MSP 2010 Long Term Comprehensive Plan.

The 1996 legislation, amended in 2006, requires the MAC to prepare an annual report to the Legislature by March 30 of each year that describes recent airport activity, current and anticipated capacity and delay for the airfield and terminal, and technological developments that could improve airport efficiency. Activity trends at MSP are compared to the 1993 MAC forecasts. The 2006 legislation requires MAC to include the reliever airports in the report to the legislature. **Figure 1-1** shows the MAC airport locations in the seven-county metropolitan area.

The 2006 Annual Report to the Legislature is divided into three main sections:

1. Introduction
2. Minneapolis-Saint Paul International Airport
3. Reliever Airports

The main sections are further subdivided into sub-sections pertinent to the various facilities.

MAC Airports in the Seven County Metropolitan Area Figure 1-1

2. MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT

2.0 OVERVIEW

This portion of the report highlights the facilities and activities at Minneapolis-Saint Paul International Airport (MSP). It includes the following topics:

1. Description of MSP facilities
2. Description of MSP activity
3. Comparison of 1993 MAC forecasts with actual activity
4. Current airfield capacity and average length of delay statistics
5. Technological developments affecting aviation and their effect on airport operations and capacity

2.1 DESCRIPTION OF AIRPORT FACILITIES

Figure 2-1 shows the general airport layout for MSP. The airfield consists of two parallel runways, one north-south runway and one crosswind runway. Runway 4-22 is 11,006 feet long (with environmental approvals for an extension to 12,000 feet); Runway 12R-30L is 10,000 feet long; Runway 12L-30R is 8,200 feet long; Runway 17-35 is 8,000 feet long. **Table 2.1** summarizes the major airport components and identifies when new facilities are expected to be in place.

A deicing pad was constructed at Runway 12L in 1998 with the capacity to accommodate six narrow-body or wide-body jets and two regional aircraft. During the reconstruction of the southeastern portion of Runway 12R-30L in 1999, a new parallel taxiway was constructed south of the runway, and a deicing pad capable of handling six narrow-body or wide-body jets was constructed at Runway 30L. A deicing pad for Runway 30R was constructed in 2001 to accommodate three narrow-body and two regional aircraft. In addition, an engineered materials arresting system (EMAS) was installed on the approach end of Runway 30L to meet FAA safety area requirements. In 2003 a deicing pad was added to Runway 12R to accommodate three wide-body, three narrow-body and two regional aircraft.

Construction of Runway 17-35 began on March 15, 1999. The runway was commissioned and opened for operation on October 27th 2005.

Two cargo aprons (50 acres total) were constructed in 2000. FedEx opened a cargo sort facility in 2002, and UPS completed construction of their facility in 2003. MAC constructed a multi-tenant cargo facility in 2004. An airline maintenance apron was constructed in 2001 and Mesaba Airlines completed construction of their facility in 2003. Sun Country Airlines and Champion Air constructed maintenance hangars in 2004.

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Minneapolis-St. Paul International Airport Layout — Figure 2-1

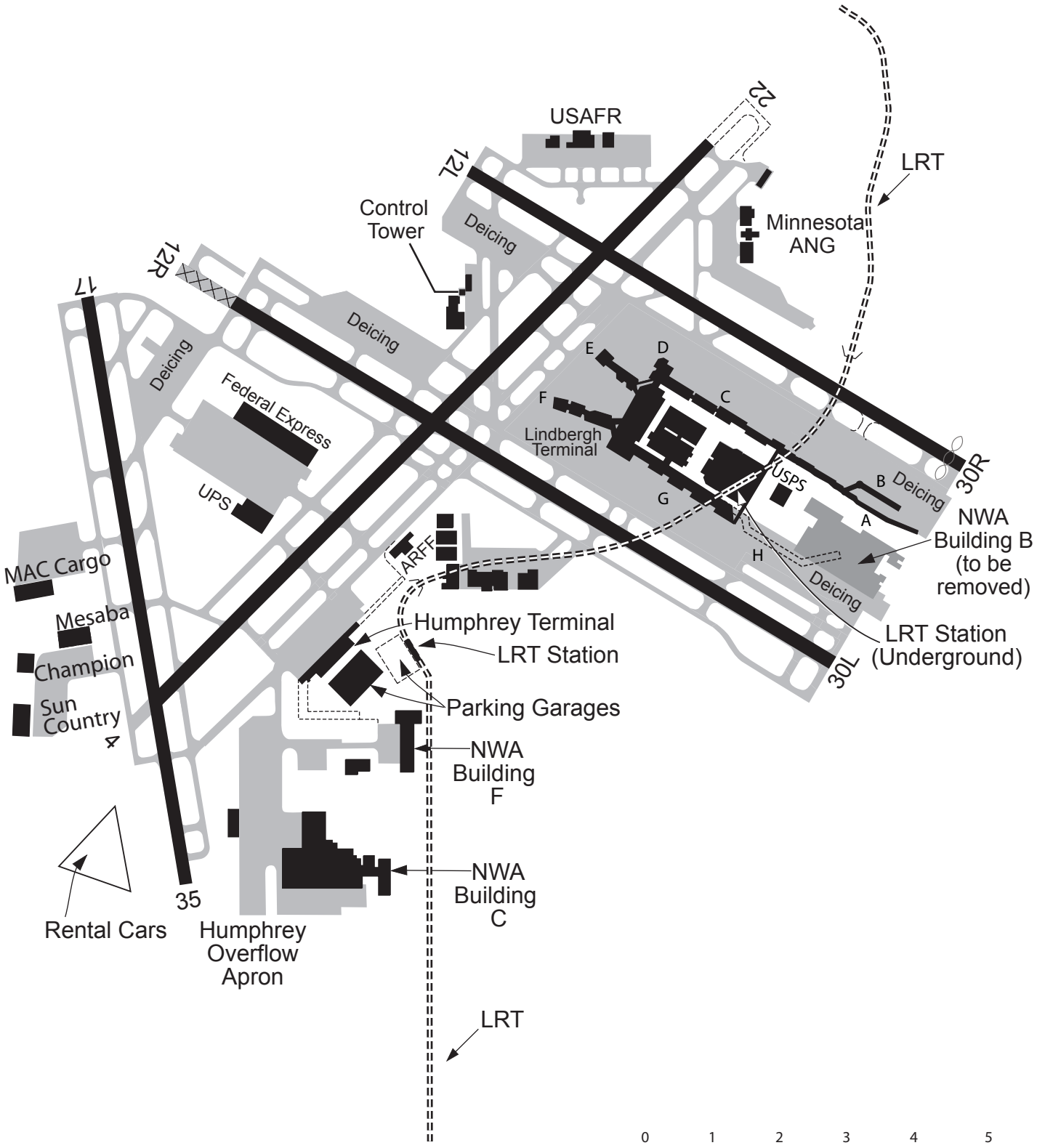


Table 2.1
Existing Airport Facilities

Airport Component			Quantity	
Runways				
	Main		2 Parallel	
	Crosswind		2 [1]	
	Total		4 [1]	
	Longest (ft.)		11,006	[2]
Terminal Facilities				
	Square Feet (millions)		2.4	
	Total Gates		127	
		Lindbergh Terminal	117	
		Humphrey Terminal	10	
	Northwest Gates		68	
	Regional Positions (50 seats or less)		30	
	Auto Parking Spaces		21,465	[3]

Notes:

(1) New Runway 17-35 opened on October 27, 2005.

(2) Runway 4-22 has environmental approval to be extended to 12,000 feet.

(3) The Humphrey garage provides 5,008 public parking spaces, an additional 4,495 spaces will be available in 2008.

Source: MAC and HNTB analysis.

A new public roadway system was opened in 2003, providing access to the west side of the airport for relocated and future airport tenants. The light rail transit (LRT) station directly east of the Humphrey Terminal was completed in 2003 and another station at the Lindbergh Terminal was completed in 2004, with passenger service initiated on December 4, 2004, providing direct access to downtown Minneapolis and the Mall of America.

In addition, construction of a new and larger Aircraft Rescue and Fire Fighting (ARFF) facility started in 2004, along with the Runway 17 deicing pad. The ARFF facility and the Runway 17 deicing pad were completed in October 2005. Also completed in 2005 were the MAC south field maintenance facility, rental car service site paving, and Runway 30R safety modifications. The Runway 30R threshold has been displaced and declared distances have been implemented. Construction of a tunnel under Runway 4-22 and associated taxiways also began in 2004, providing additional access to the midfield area. The tunnel was opened in November of 2006.

2.1.1 Lindbergh Terminal

The Lindbergh Terminal is located between the two parallel runways, east of the crosswind runway. As shown in **Figure 2-2**, the terminal is laid out with single-loaded and double-loaded concourses that provided 117 gate positions in 2006. A concourse tram along Concourse C began operation on May 5, 2004. Two Northwest Airlines (NWA) maintenance bays at Building B near Concourse G were demolished in 2004 to make room for future concourse expansion.

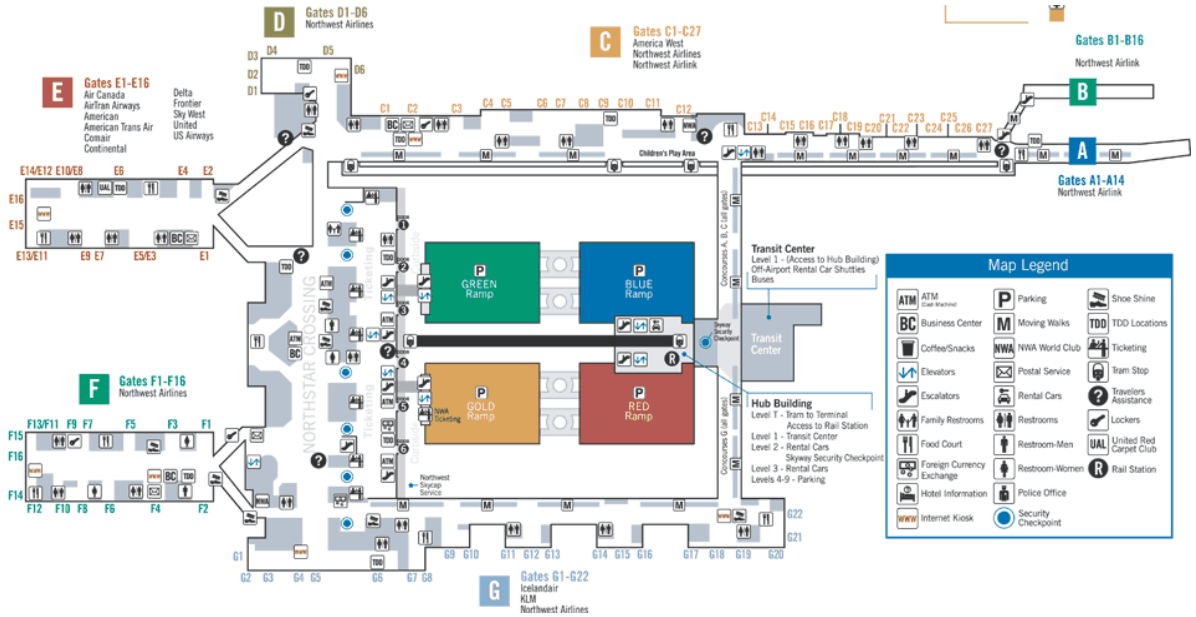


Figure 2-2: Lindbergh Terminal

2.1.2 Humphrey Terminal

The Humphrey Terminal, as shown in **Figure 2-3**, opened in 2001 as part of the MSP 2010 Airport Expansion Plan. The terminal provides 10 gates used by Sun Country, Midwest, Air Tran, IcelandAir, and several charter airlines. The Humphrey parking garage has a total of 5,008 spaces provided to employees and the public in the purple ramp. The orange ramp is currently under construction and will add 4,495 spaces. Further potential expansion could add 2,428 spaces.

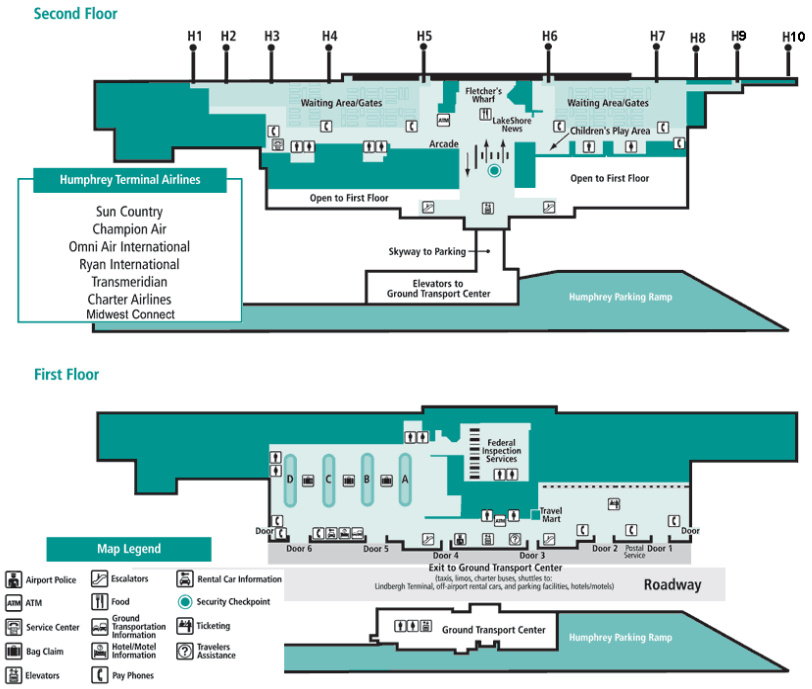


Figure 2-3: Humphrey Terminal

2.1.3 MSP 2020 Vision

On September 21, 2004, an $862 million expansion called 2020 Vision was proposed for MSP. The program includes expansion of the Humphrey and Lindbergh Terminals to add gate capacity and consolidate all Sky Team member airlines in the Lindbergh Terminal. That plan was put on hold due to Northwest Airlines' bankruptcy. The plan will be re-assessed after NWA exits bankruptcy.

2.2 AIRPORT ACTIVITY AND SERVICE TRENDS

This section presents an overview of passenger and aircraft activity at MSP. It should be noted that the Northwest Airlines (NWA) Pilots Strike, during August and September 1998, affected activity levels during 1998. If the strike had not occurred, the activity levels for 1998 would likely have exceeded 500,000 aircraft operations at MSP. NWA's schedule returned to pre-strike levels around October 1998.

Sun Country Airlines, which is based at MSP, initiated scheduled passenger service on June 1, 1999. By the end of 2000, Sun Country had flown 1,437,496 total passengers, or 4.3 percent of MSP's passenger traffic, to or from the Airport. Due to severe financial pressures, the airline ceased operations on December 7, 2001. Sun Country resumed charter operations to several destinations in mid-2002 with new investors and reinstated scheduled service on February 27, 2002 to Orlando and Pensacola. Sun Country added more destinations in March 2002, and as of December 2006 serves 32 destinations.

In 2005, Northwest Airlines dealt with the strike of the Aircraft Mechanics Fraternal Association (AMFA) as well as the impact of a bankruptcy filing. The AMFA strike caused Northwest Airlines to prematurely modify its summer schedule to a fall schedule.

This reduced scheduled operations. The bankruptcy filing occurred on September 14, 2005. In an effort to regain profitability, Northwest Airlines cut aircraft leases as part of their restructuring, resulting in fewer aircraft and fewer operations. Fuel prices also continued to rise in 2005, causing ticket prices to increase which resulted in a reduction in demand for travel services. In 2006, Northwest Airlines remained in bankruptcy and had reduced available seat miles by 7.5 percent. Northwest Airlines expects to emerge from bankruptcy and return to profitability in 2007.

2.2.1 Domestic Originations/Destinations

Figure 2-4 reviews historical passenger originations/destinations (O&D) at MSP. O&D passengers are those who begin or end their trip at the airport (versus passengers who are connecting at the airport en route to another destination). O&D passenger demand is primarily driven by local socioeconomic factors.

Following is a summary of recent O&D activity at MSP. MSP Domestic O&D data for 2006 are estimated based on passenger activity during the first three quarters of 2006.

- Between 1990 and 2006, domestic O&D passengers at MSP rose from 9.5 million to 17.5 million, an increase of 84.2 percent. This increase represents an annual compounded growth rate of 3.9 percent.

- The number of domestic O&D passengers at MSP changed little between 2005 and 2006, and was approximately 17.5 million both years.

2.2.2 Domestic Connections

The total estimated number of connecting passengers at MSP, as a percentage of total passengers, increased from 48.0 percent in 1990 to 52.3 percent in 2005, and then fell to 49.4 percent in 2006. Data includes both air carrier and regional carrier passengers.

Connecting passengers at MSP in 2006 are estimated from the first three quarters of 2006.

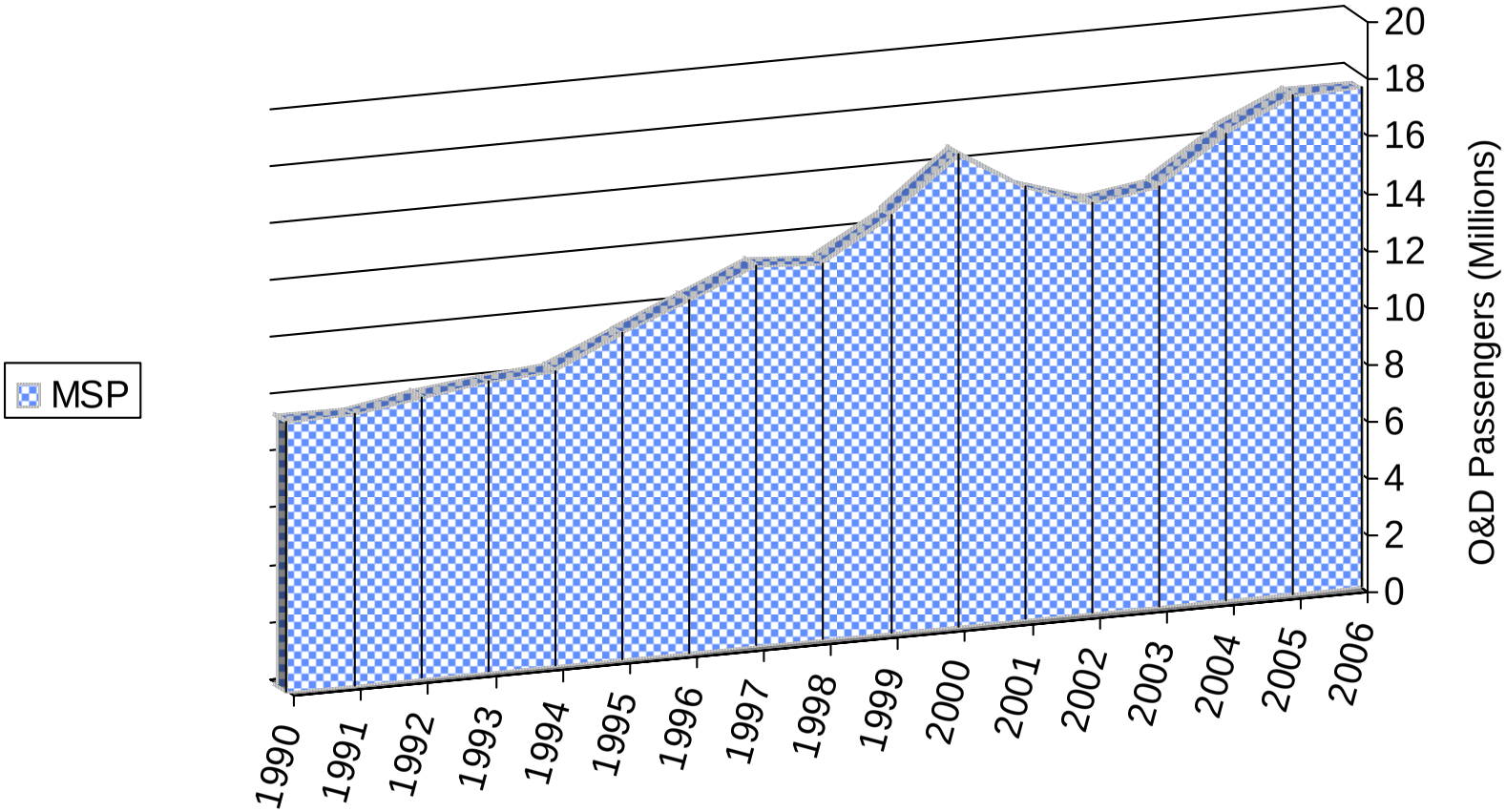
2.2.3 Total Annual Passengers

Total annual passengers are shown in **Figure 2-5**. Total passengers include O&D and connecting passengers.

- Between 1990 and 2006, total annual passengers grew by more than 15.4 million passengers at MSP, reaching 34.6 million total revenue passengers in 2006. This represents an annual compounded growth rate of 3.7 percent for MSP.

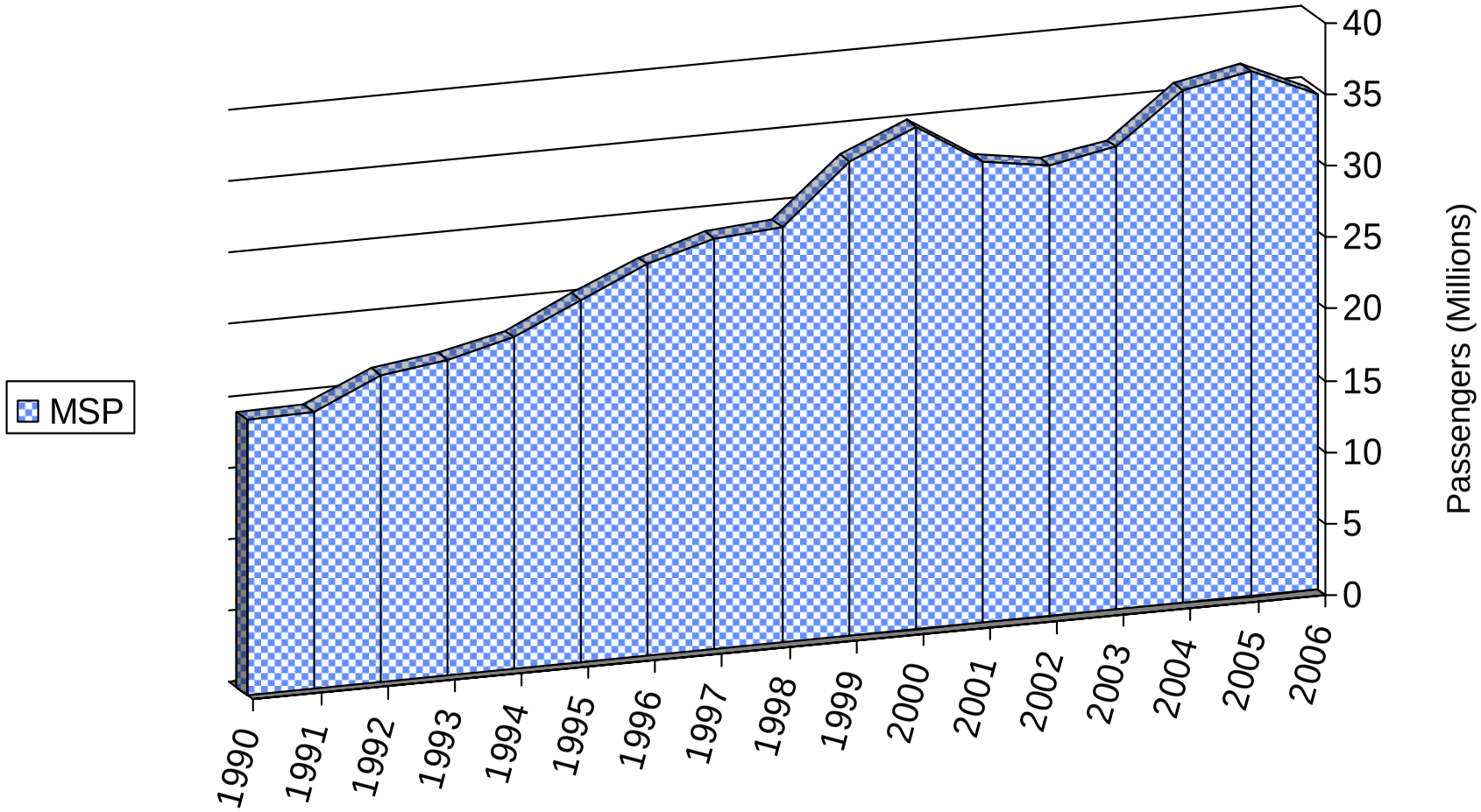
- A decline in total annual passenger numbers occurred in 2001 at MSP, due to the events of September 11. MSP numbers dropped 8.3 percent from levels reported for the year 2000.

Figure 2-4
Annual Passenger Originations/Destinations* Totals
1990-2006



*2006 O&D passengers estimated from first three quarters of 2006.
Sources: U.S. DOT; HNTB analysis.

Figure 2-5
Total Annual Revenue Passengers
1990-2006



Sources: Metropolitan Airports Commission, Airports Council International; HNTB analysis.

- In 2006, MSP experienced a decrease in total annual revenue passengers. MSP numbers decreased from 36.7 million in 2005 to 34.6 million passengers in 2006, a decrease of 5.7 percent.

2.2.4 Aircraft Operations

Annual aircraft operations are presented in **Figure 2-6**.

The following points can be ascertained from the figure.

- In 1990, MSP had 383,922 annual operations. Total annual operations at MSP generally increased through 2000, then declined after the events of September 11, 2001. During 2001, 501,522 total operations occurred at MSP—a 4.1 percent decline from the previous year.

- At MSP during 2006, operations decreased from those of 2005 by 10.6 percent to 475,668. The decrease can be attributed to the financial problems experienced by the airline industry and their subsequent system-wide decrease in operations.

- In 2006, Northwest's domestic air carrier operations decreased by 14.2 percent at MSP compared to those of 2005.

2.2.5 Nonstop Markets

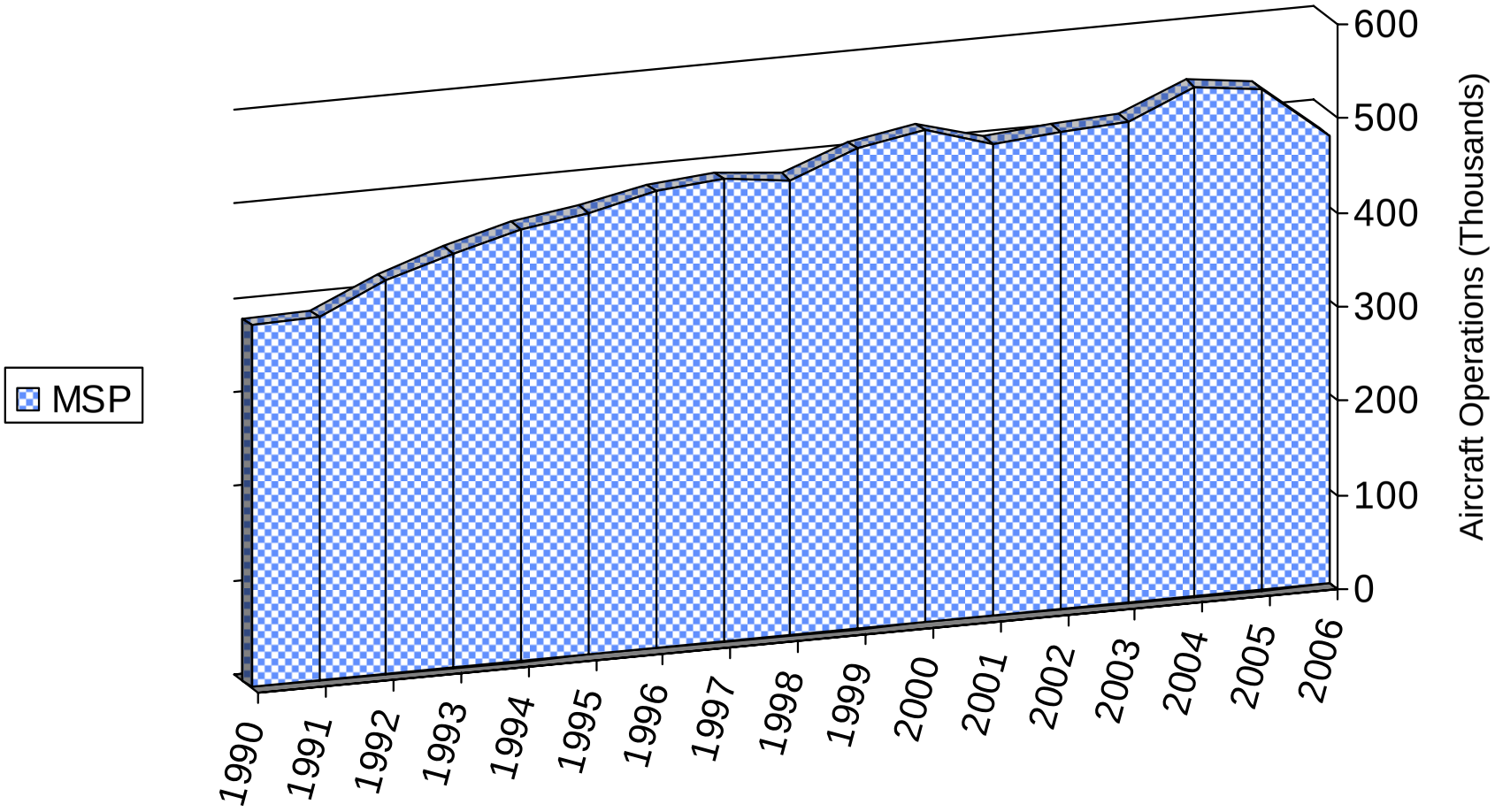
Figure 2-7 shows the number of nonstop domestic and international (including Canada) markets served from MSP in 2004, 2005, and 2006. The domestic markets include those receiving an annual average of at least five weekly nonstop flights. The international markets include those receiving an annual average of at least one weekly nonstop flight. Some of these markets are served only seasonally.

MSP offered 142 nonstop markets in 2006–122 domestic and 20 international (nine of these international markets were to Canada). This is an increase of 3.6 percent from the number of markets MSP offered in 2005.

Figure 2-8 displays how the nonstop markets to MSP are served. The categories are listed as air carrier service (jet aircraft), regional service (regional jet or turboprop aircraft), or a combination of air carrier and regional carrier service. For the purposes of this report, a "regional jet aircraft" is defined as a jet aircraft with 85 or fewer seats (i.e., Avro Regional Jet, Canadair Regional Jet, and Embraer Regional Jet).

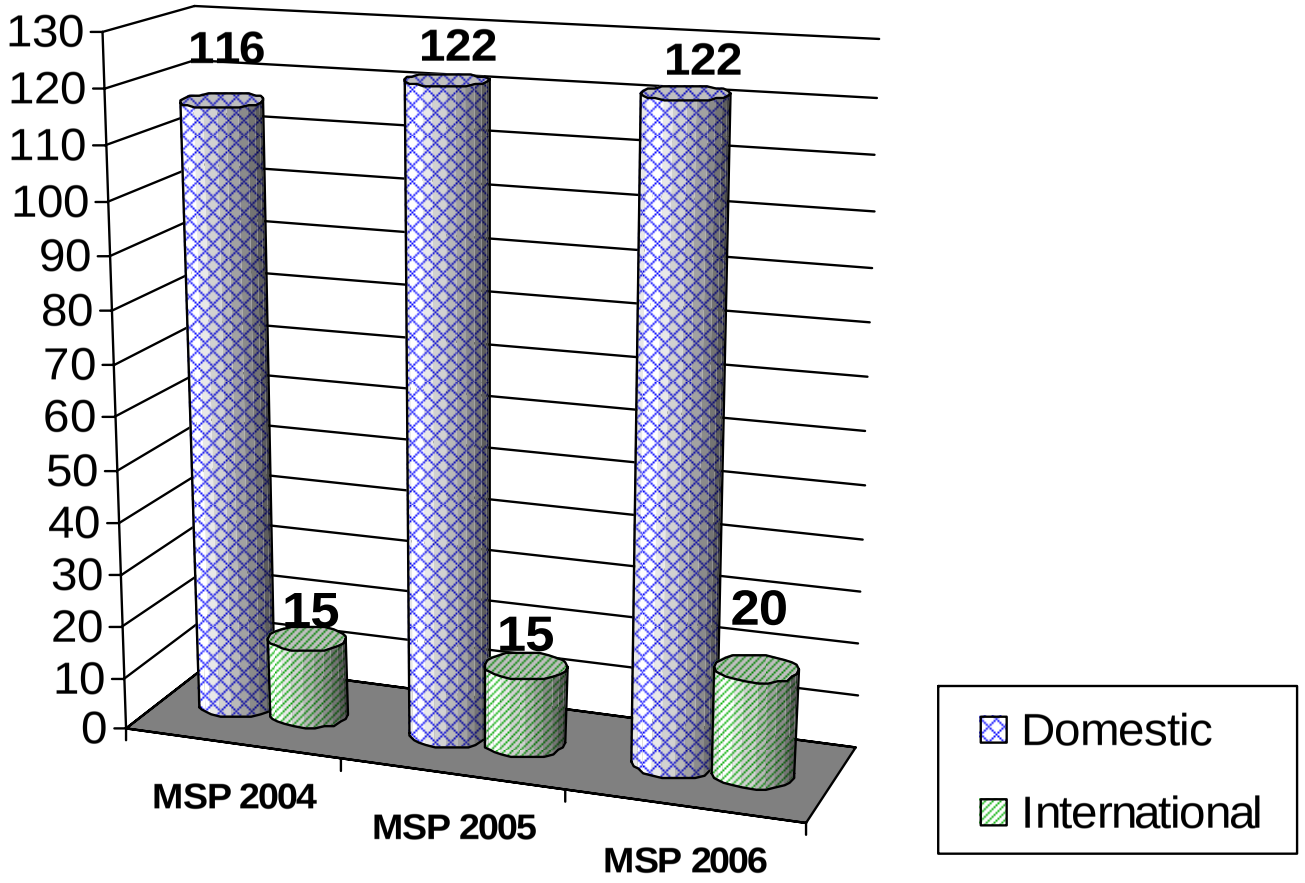
Of the MSP nonstop markets, 35.2 percent are served exclusively by air carrier jets. Regional carrier service accounts for 20.4 percent of MSP markets, with 14.1 percent being served by regional jets and 6.3 percent being served by turboprop aircraft. 44.4 percent of MSP markets are served by a combination of air carrier and regional service.

Figure 2-6
Annual Aircraft Operations
1990-2006



Sources: Metropolitan Airports Commission, Airports Council International; HNTB analysis.

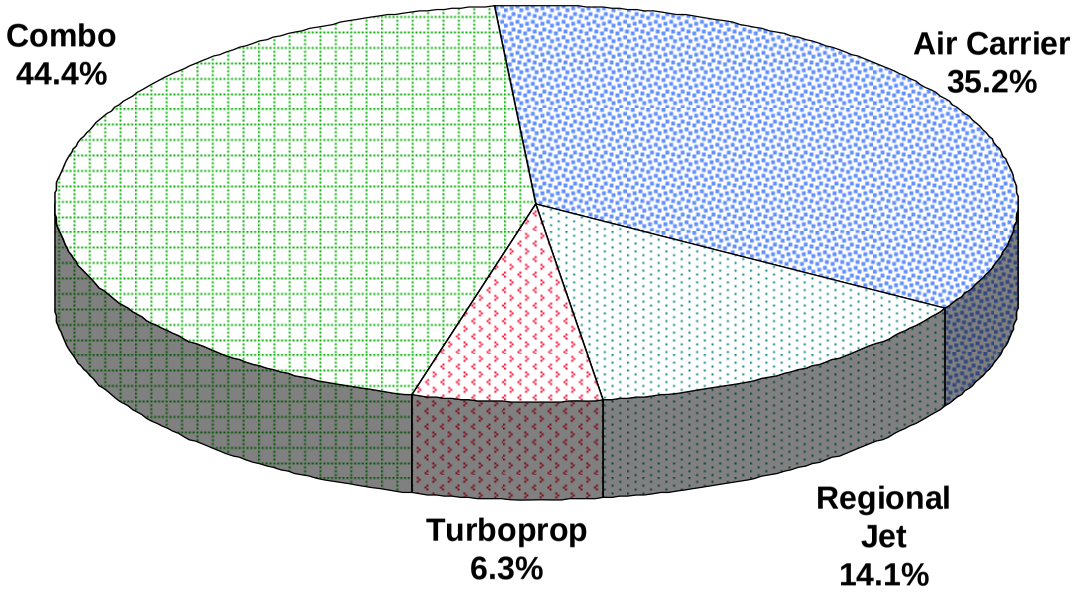
Figure 2-7
Number of Nonstop Markets
2004, 2005, 2006



Sources: Official Airline Guide via BACK Aviation Solutions, 2006; HNTB analysis.

Figure 2-8
2006 Nonstop Markets by Type of Service

Air Carrier Service = Jet Aircraft
Regional Carrier Service -
Regional Jet = Regional Jet Aircraft
Turboprop = Turboprop Aircraft
Combo = Combination of Air Carrier & Regional Carrier Service



M S P
142 Nonstop Markets

Sources: Official Airline Guide via BACK Aviation Solutions, 2006; HNTB analysis.
Note: Regional jets are defined as a jet aircraft having 85 or fewer seats.

Table 2.2 and **Figure 2-9** compare MSP to other major metropolitan areas in terms of the number of nonstop markets served by each airport per population of the Metropolitan Statistical Area. As shown, few metropolitan areas of similar size have more cities served by nonstop flights than MSP.

2.3 COMPARISON OF 1993 MAC FORECAST WITH ACTUAL ACTIVITY

As required by the Metropolitan Planning Act of 1989, the Dual Track forecasts were revised in 1993, using 1992 as a base year. To ensure that the revised forecasts were optimal from both predictive and planning standpoints, forecast workshops were convened in 1992 and 1993 by the MAC and the Metropolitan Council (MC). The Expert Panel Session on Forecast Methodologies, held on October 29, 1992, focused on the most appropriate forecasting techniques given recent aviation trends and the character of aviation demand at MSP. The Expert Panel Session on Aviation Assumptions, held on November 18, 1992, addressed ongoing trends in the aviation industry with regard to fares, aircraft equipment, and airline service practices. The Socioeconomics Expert Panel Session was convened on November 19, 1992, to assess the most likely trends in area population, employment, and income that ultimately drive demand for aviation services. The final Expert Panel Session was held on May 27, 1993, to review the work accomplished to date and to develop a consensus on the final assumptions, methodologies, and scenarios to be used in the updated forecasts.

The forecasts were developed with the understanding that the assumptions were likely to vary over the forecast period, and that the variation could be material. The likely range of possibilities resulting from these variations was tested by constructing alternative scenarios in conjunction with the expert panels. These scenarios were developed separately and in combination. In this manner, a range of possible variations from the base case forecasts was developed.

The scenarios took into account factors affecting economic growth, including fuel prices, low-cost carriers, airfares, airline hubbing ratio, regional carrier penetration into air carrier markets, and changes in the structure of air travel demand. The highest scenario was defined by the following assumptions:

- Higher than projected economic growth
- A continuation of the high level of connecting activity at MSP by Northwest Airlines
- High international travel demand resulting from an increasingly globalized economy

The most conservative scenario was defined by the following assumptions:

- Lower than projected economic growth
- A reduction in connecting activity by Northwest Airlines to the minimum level allowed by the hub covenant contained in the Northwest loan agreement
- A greater transfer of routes from air carriers to regional carriers

A comparison of the enplanement, passenger origination, and aircraft operations forecasts with actual 1993-2006 activity follows. It should be noted that activity levels

fluctuate from year to year around a long-term average. It is important to distinguish between these short-term fluctuations and long-term trends when evaluating a forecast.

Table 2.2

Nonstop Markets by Metropolitan Area

Metropolitan Area	Population [1] (Millions)	Nonstop Markets [2] [3]	Markets/Pop. (Million) Ratio
New York	21.8	200	9.2
Los Angeles	17.3	137	7.9
Chicago	9.5	187	19.6
Washington-Baltimore	7.9	123	15.5
San Francisco-Oakland	7.2	88	12.3
Philadelphia	5.9	114	19.3
Boston	5.8	99	17.0
Dallas-Fort Worth	5.8	161	29.7
Detroit	5.4	145	25.0
Houston	5.2	182	35.2
Atlanta	4.6	225	48.9
Miami-Fort Lauderdale	4.1	115	28.0
Seattle-Tacoma	3.7	84	22.7
Phoenix	3.6	107	29.7
Minneapolis-St. Paul	**3.1**	**142**	**45.8**
Cleveland	2.9	76	26.2
San Diego	2.9	42	14.6
St. Louis	2.8	79	28.2
Denver	2.6	142	54.6
Tampa-St. Petersburg	2.5	65	26.0

Notes:

[1] Bureau of Economic Analysis, MSA CA1-3-Population for 2003, Data published for May 2006. Complete table can be found at: http://bea.gov/bea/regional/reis/drill.cfm

[2] Metro. areas served by more than one airport are counted once.

[3] Markets include those receiving an average of at least five weekly nonstop domestic flights or one weekly nonstop international flight during the period from January through December 2006.

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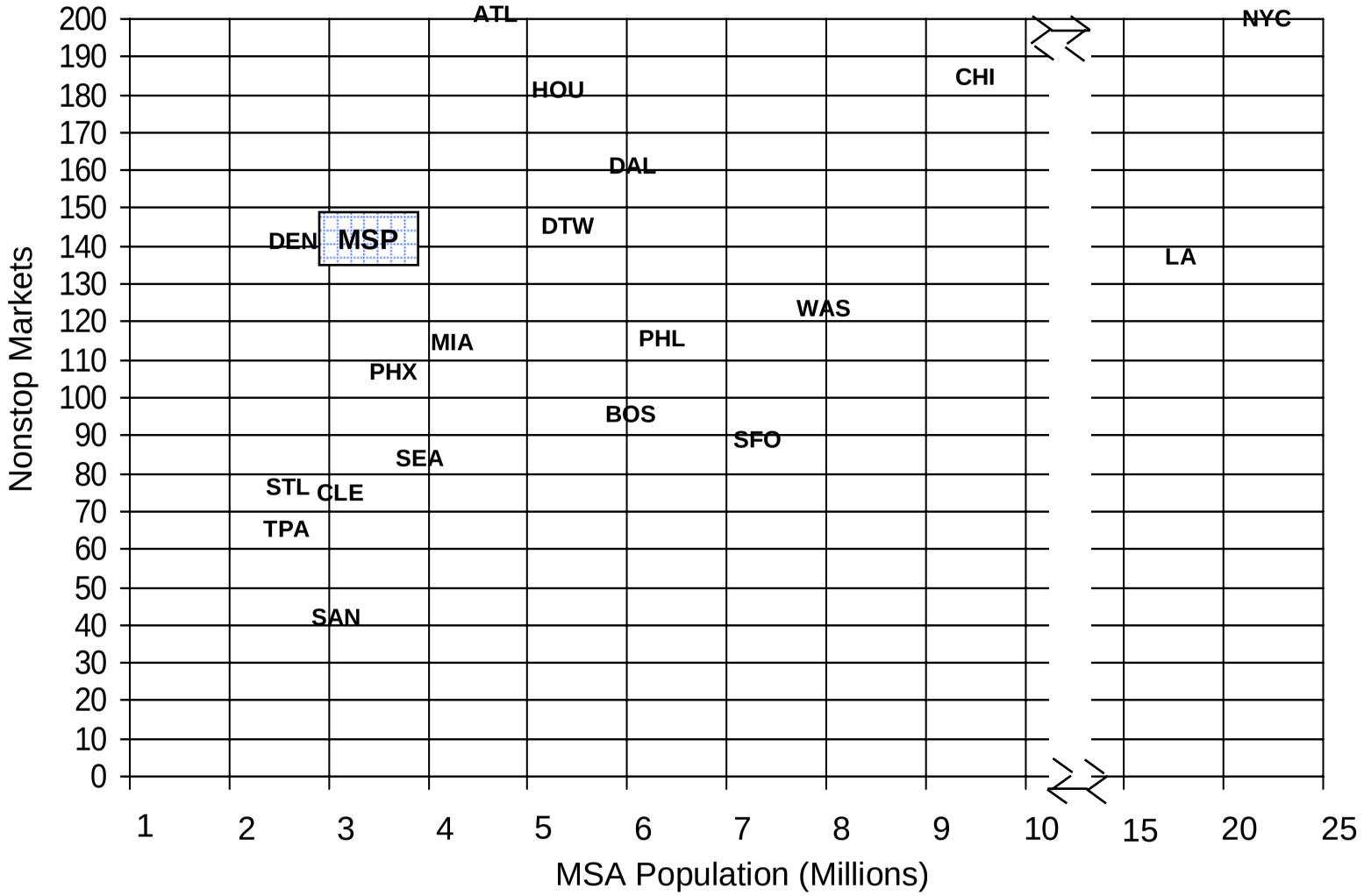
Sources: Bureau Economic Analysis, 2006 Official Airline Guide via Back Aviation Solutions

Figure 2-9
Population vs. Nonstop Service
2006



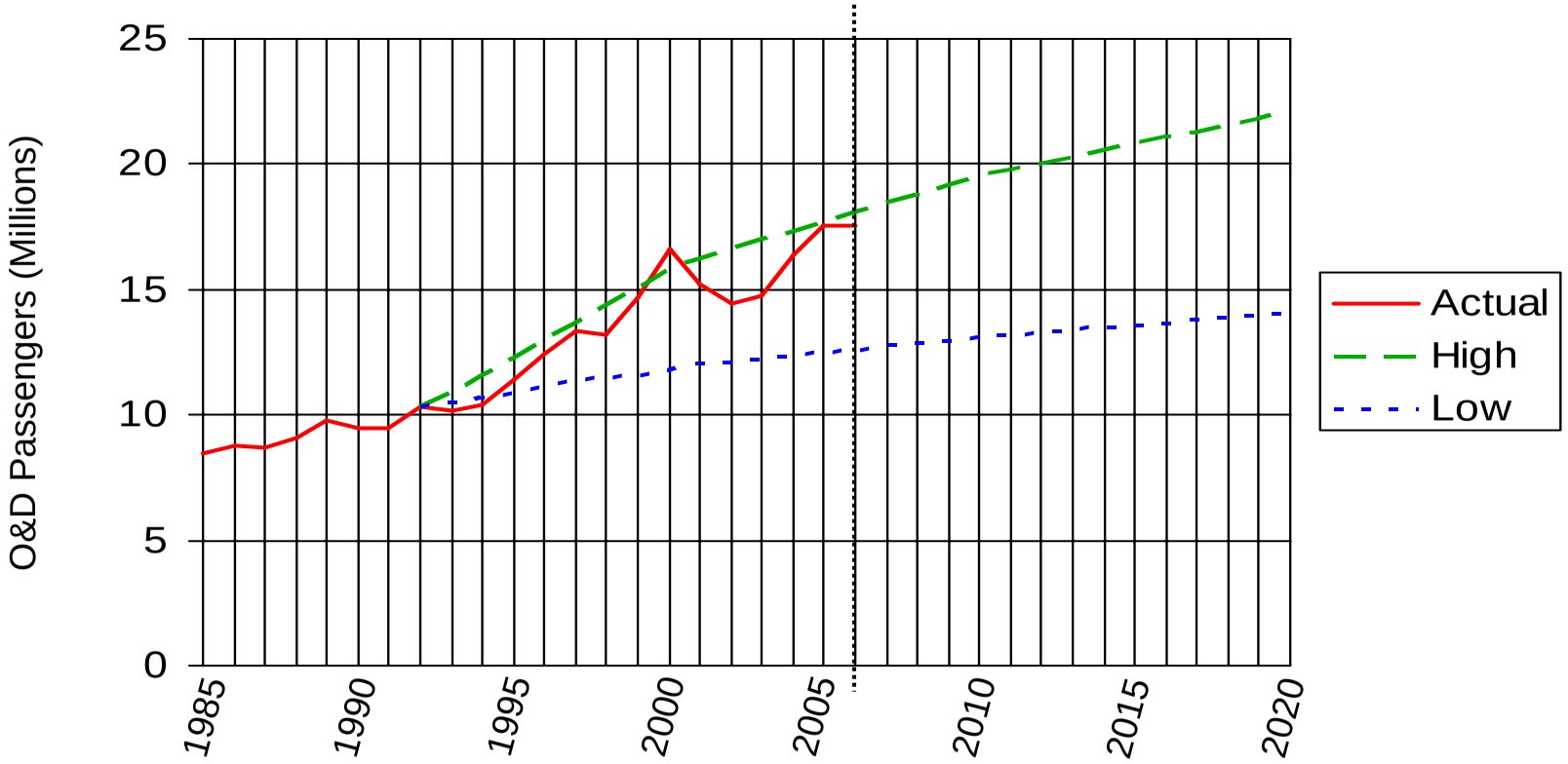
Sources: Bureau of Economic Analysis 2002, Data Published for May 2005; Official Airline Guide via BACK Aviation Solutions, 2006; HNTB analysis.

Figures 2-10–**2-12** show O&D, total passengers, and annual aircraft operations, respectively.

- Actual passenger originations were slightly below the high forecast level in 1993 through 1999, but increased to a level above the high forecast during 2000 (**Figure 2-10**). Passenger originations and destinations in 1998 were reduced because of the loss of service resulting from the Northwest Airlines strike in August and September. O&D totals were also down in 1999 due to the strike, but rebounded midway through the year to pre-strike levels. At the end of 2001, O&D numbers decreased 8.4 percent from a high of 16.6 million after passengers reduced air travel in response to the events of September 11. In 2002, due to the lingering effects of September 11, and the economic downturn, O&D passenger numbers continued their decline. By the end of the year, they were down 5.3 percent from 2001, to 14.4 million. In 2005, O&D passengers rebounded to pre-September 11, 2001 levels. O&D passenger levels changed very little in 2006, remaining at about 17.52 million. The 2006 O&D level is 3.2 percent below the high forecast of 18.1 million O&D passengers.

- As shown in **Figure 2-11**, MSP total passenger activity grew at close to historical rates in 1993, but growth accelerated between 1994 and 1995 and approached the high forecast in 1996. In 1999 and 2000, total passengers exceeded the high forecast. Much of the passenger growth at MSP between 1994 and 2000 was the result of one-time factors. These include Northwest Airlines' hub consolidation that involved reducing operations at other airports to concentrate connections at the two major hubs (MSP and DTW in 1992 and 1993); the liberalization of Canadian markets, which opened up MSP as a hub for cross-border traffic beginning in 1995; and the lapse of the passenger ticket tax during most of 1996, which reduced effective fares to travelers and thereby increased demand. Also, airlines have developed much more sophisticated reservation systems in recent years, allowing them to generate more revenue by filling otherwise empty seats with passengers flying on discount fares. The passenger growth rate in 1998 decreased from that of previous years because of the loss of service resulting from the Northwest strike in August and September. Discount fares helped Northwest regain lost passengers volumes in 1999. A decline in the number of total revenue passengers occurred after September 11, 2001, with MSP experiencing an 8.3 percent decrease from 2000 levels. In 2002, MSP experienced another decline in total revenue passengers, due to the aftereffects of September 11th coupled with the sluggish economy. Passenger levels decreased 2.2 percent from 2001. In 2006 passenger levels decreased 5.7 percent from 2005. 2006 passenger levels decreased to 34.6 million total passengers. The passenger levels decreased in comparison to the high forecast, falling to 10.4 percent below the high forecast.

Figure 2-10
Minneapolis-St. Paul International Airport
Forecast vs. Actual 2006 Passenger Originations/Destinations



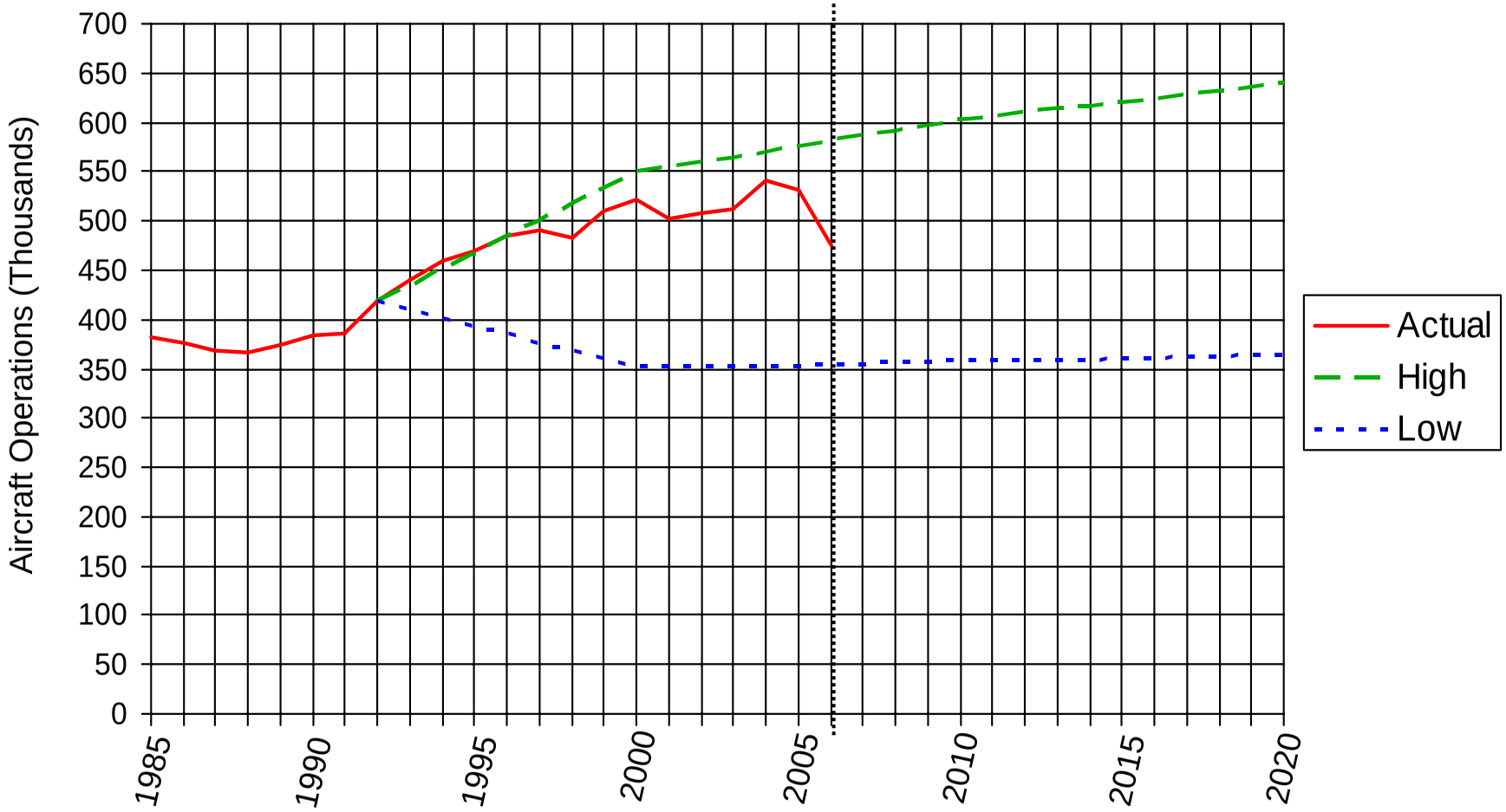
Sources: MSP Base and Combination 2 Forecasts; U.S. DOT; HNTB analysis.
Note: O&D Passenger estimates are based on the first three quarters of 2006.

Figure 2-11
Minneapolis-St. Paul International Airport
Forecast vs. Actual 2006 Total Revenue Passengers

Sources: MSP Base and Combination 2 Forecasts; Metropolitan Airports Commission; Airports Council International; HNTB analysis.

- **Figure 2-12** compares total aircraft operations (as counted by the MSP Air Traffic Control Tower) with the high and low forecasts. There was an initial burst of aircraft operations in 1993 and 1994 as a result of significant build-up of regional carrier flights by Northwest Airlink. Since that time, factors that stimulated passenger traffic, such as the strong economy, Northwest Airlines' hub consolidation, the liberalization of Canadian markets, and the lapse of the passenger ticket tax, have served to maintain a high number of aircraft operations. Numbers of total aircraft operations decreased in 1998 due to the Northwest strike in August and September. As stated previously, the Northwest schedule rebounded to pre-strike levels in October 1998. Immediately after September 11, 2001, air carriers reduced aircraft operations at MSP nearly 20 percent in response to low passenger demand. As a result, MSP aircraft operations in 2001 decreased by 3.9 percent from 2000 levels. The economic downturn and lingering effects of September 11 have also affected the growth rate of total aircraft operations at MSP in 2002. Operations in 2002 actually increased by 1.2 percent over the total number of aircraft operations in 2001. In 2004 operations increased by 5.8 percent over 2003. The operations in 2006 decreased from 2005 by 10.6 percent (total operations 475,668). This puts the 2006 operations level 18.1 percent below the high forecast.

Figure 2-12
Minneapolis-St. Paul International Airport
Forecast vs. Actual 2006 Total Aircraft Operations



Sources: MSP Base and Combination 2 Forecasts; Metropolitan Airports Commission, FAA; HNTB analysis.

2.4 AIRPORT CAPACITY AND DELAY

This section describes the airfield capacity at MSP. Aircraft delay analysis is also summarized.

2.4.1 Airfield Capacity

Airfield capacity is typically described in terms of annual capacity and hourly capacity under good weather and poor weather conditions. **Table 2.3** shows existing and future capacity for MSP.

Table 2.3

Comparison of Capacity and Delay

	MSP	
Airfield Capacity	**Existing**	**2013**
Airfield Capacity		
Hourly		
Optimum Rate	160	167
IFR Rate	125	137
Annual	580,000[(1)]	640,000[(1)]

Notes:

[(1)] Annual capacity level derived from the addition of Runway 17/35 in 2005.

Source: FAA Benchmark Report, 2004.

- As shown in **Table 2.3**, existing hourly capacity at MSP is about 160 operations in good weather and 125 operations in poor weather. Specific conditions that define poor weather include the airport's most commonly used instrument configuration, where operations are conducted below visual approach minima (i.e. instrument approaches).

- Within the next 10 years it is possible that improvements in technology could occur that will support higher capacity levels according to the FAA 2004 Benchmark study. Minneapolis-St. Paul's hourly capacity could increase by a total of 4.4 percent to 167 operations in good weather and by a total of 9.6 percent to 137 operations in adverse weather.
- According to the FAA's 1993 Capacity Enhancement Plan for MSP, with the north-south runway in place, annual capacity would be 580,000 operations assuming a 4-minute average delay level. At slightly higher levels of delay, capacity could reach

640,000 operations, as indicated in the Dual Track Airport Planning Process, Report to the Legislature.

- Flight delays of more than 15 minutes constitute less than 1 percent of Minneapolis' total operations.

2.4.2 Airfield Delay

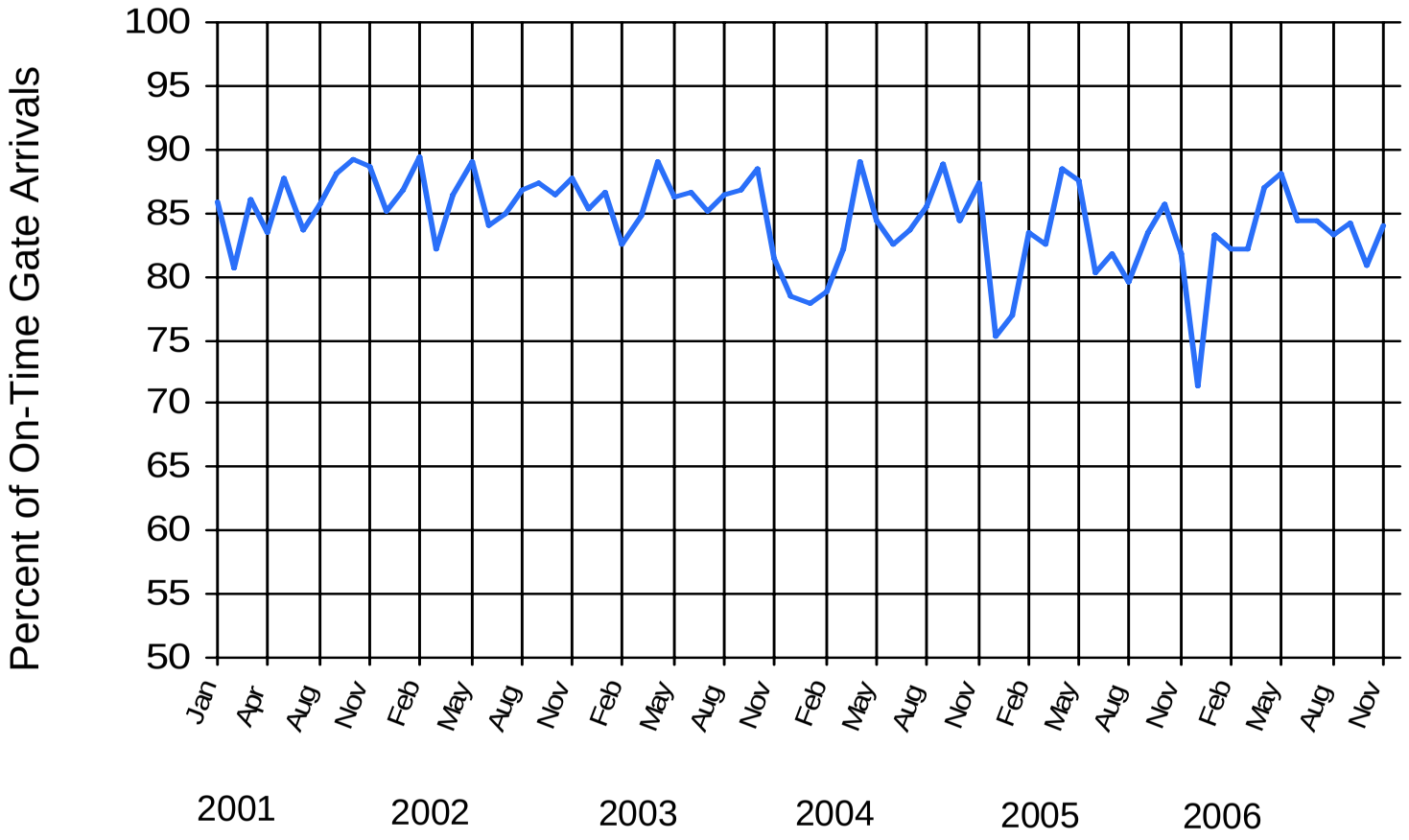
Delay can be measured in several ways. The FAA (OPSNET database) counts flights that were delayed by more than 15 minutes. In CY 2006, the FAA identified 1474 flights at MSP that were delayed at least 15 minutes, a decrease of 62 percent from 2005 (3841 delayed flights). As with FAA-reported statistics, delays can be caused by numerous factors and are not limited to capacity constraints. These delays can be caused by weather, volume, equipment, runway, and other factors.

Figure 2-13 shows the on-time gate arrival performance for domestic air carrier flights at MSP, based on the delay data extracted from the Federal Aviation Administration's Aviation System Performance Metrics (ASPM) database. The data series includes only those flights delayed 15 minutes or more from their scheduled times. Within this data set, aircraft must be airborne in order for them to be considered "delayed," therefore, cancelled and/or diverted flights are not considered "late" in this system. Scheduled times typically include some "cushion" for delay. A delayed flight can be attributed to any of these causes: mechanical problems, lack of crew, and weather below minimums, and are not limited to capacity constraints.

MSP's average monthly on-time gate arrival percentage fluctuated greatly between 1998 and 2006. It decreased from 83 percent in December 1998 to a period low of nearly 73 percent in January 1999. A noticeable decline in performance occurred again in November 2000 when on-time percentages dropped from 80 percent to 70 percent. In November 1999, the performance experienced a high of 91 percent. In 2006 monthly on-time gate arrival percentages fluctuated from a low of 81 percent to a high of 88 percent, averaging 83 percent for the year.

In editions of this report prior to 2005, delay was estimated by using the Consolidated Operations and Delay Analysis System (CODAS) and the DOT Airline Service Quality Performance (ASQP) database to compare optimal versus actual taxi and flight times, and calculate the average airport delay for MSP. Airport-attributable delay can be estimated by comparing actual air and taxi times of flights with unconstrained times. The FAA's Aviation System Performance Metrics (ASPM) database was used for this report. The ASPM uses ASQP database information and compares optimal versus actual taxi and flight times. The FAA has replaced CODAS with this new program providing delay information to industry professionals and government agencies. Creation of the ASPM database provides a more comprehensive analysis of airport delay and capacity. The FAA also uses the results to create performance benchmarks for airports, based on facility enhancements that occur each year.

Figure 2-13
On-Time Gate Arrivals
2001-2006



Sources: Aviation System Performance Metrics (ASPM) database, FAA-APO, HNTB analysis.

Each of the current delay reporting systems used by the various agencies and groups was designed for a specific and different purpose, based on an independent data source or methodology and reports delay differently. As a result, the measures of delay are difficult to compare with each other. No existing delay measurement system provides a comprehensive measure of the performance of the air traffic control (ATC) system. The ASPM has been designed to remedy this deficiency.

The Aviation System Performance Metrics program was created by the FAA's Office of Aviation Policy and Plans (APO) to provide estimates of aircraft delay by airport. APO's main objective was to develop a clear and well-supported methodology to calculate aircraft delays that will be accepted by both government and industry as valid, accurate and reliable. Because the acceptance of the ASPM delay estimates is the key to its usefulness, APO coordinated the development of ASPM with other FAA organizations and major air carriers and continues to do so.

The ASPM information shows that, for 2006, average delay was calculated to be approximately 5.55 minutes per operation at MSP. By comparison, MSP averaged 7.14 minutes of delay in 2005. ASPM also provides airport rankings by average delay. As shown in **Table 2.4**, MSP ranked 15th in the nation in 2006, in terms of highest average delay. The benefits of the new runway (opened on October 27, 2005) at MSP coupled with the decrease in operations at the airport have shown a dramatic decrease in the delay time at the airport.

Table 2.4
Top Fifteen Large Hub Airports with
Highest Average Total Delay per Operation [(1)]

Rank	Airport	2006 Total Operations	2006 Total Minutes Per Operation	*2005 Total Minutes Per Operation*	*2005 Rank*	Change from 2005 to 2006
1	JFK	396,734	12.68	10.23	2	2.45
2	EWR	448,563	12.21	10.58	1	1.63
3	LGA	406,211	10.76	9.24	3	1.52
4	PHL	515,868	10.00	9.23	4	0.77
5	ATL	976,447	8.77	7.11	6	1.66
6	IAH	603,246	7.24	6.59	8	0.65
7	CLT	510,918	7.21	6.40	9	0.81
8	ORD	958,643	7.08	6.82	7	0.26
9	DTW	482,147	6.39	6.23	12	0.16
10	BOS	415,649	6.13	6.32	11	-0.19
11	PHX	546,510	5.81	5.52	15	0.29
12	MEM	387,893	5.81	5.17	18	0.64
13	SLC	419,488	5.71	4.79	20	0.92
14	DFW	702,722	5.66	6.40	10	-0.74
15	**MSP**	**475,668**	**5.55**	**7.14**	**5**	**-1.59**

Notes: [(1)] Taxi-in, Taxi-out and Airborne delay included
[(2)] 2006 total operation data based on FAA ATADS data (except MSP)

Source: Aviation System Performance Metrics (ASPM) – FAA 2006

2.5 TECHNOLOGICAL / CAPACITY ENHANCEMENTS

The FAA continuously investigates potential capacity-enhancing development/ technology in an effort to increase airport efficiency and reduce delay. When advancement is identified, efforts are made to implement the technology at the busiest airports. This section describes these efforts as they apply to MSP.

- In 1993, the FAA published the *Minneapolis-Saint Paul International Airport Capacity Enhancement Plan*. The purpose of the plan was to identify potential cost-effective projects which would appreciably increase airport capacity. The plan was followed by the 1996 *Airport Capacity Enhancement Terminal Airspace Study*, which identified potential methods of improving airspace capacity.

- Airport Surface Detection Equipment (ASDE-3) was installed at MSP in 1996. It allows controllers to "see" aircraft movements on the ground during poor visibility, which increases safety and efficiency.

- Capacity improvements at Minneapolis-St. Paul will be aided by the use of Flight Management System/Area Navigation Routes (FMS/RNAV). The equipment will provide a more consistent flow of aircraft to the departure runway.

- A Precision Runway Monitor (PRM) was installed in 1997 and has been commissioned. The PRM permits simultaneous landings on the parallel runways in poor weather down to CAT I minimums. Due to airline and air traffic control coordination issues, the PRM was removed from service in mid-2002. It was returned to service in 2003 and helped reduced delays until 2006 after Runway 17-35 opened. The geometry of the airport after Runway 17-35 was opened reduced the amount of time the PRM could be used and provide a benefit. However, the capacity gains provided by Runway 17-35 far surpassed the gains provided by the PRM.

- MAC installed a differential Global Positioning System (GPS) unit at MSP. It has been certified as a Special CAT I installation. The GPS approach allows flight management approaches that reduce fuel consumption and controller workload. Ultimately, curved approaches and precision missed approach may be provided to reduce noise impacts and to lower landing minimums. This will result in a small increase in airport capacity.

- In an effort to increase the operational efficiency and capacity of MSP during inclement weather, MAC has implemented additional CAT II and CAT III capabilities at the airport.

- Future increases in MSP capacity levels will depend on the introduction of new aircraft avionics. An enhanced tool called Automatic Dependent Surveillance-Broadcast/Cockpit Display of Traffic Information (ADS-B/CDTI), with a Local Area Augmentation System (LAAS) identifies the location of other aircraft and displays their position in the cockpit. This technology allows pilots to maintain the desired

separation more precisely; however, it requires aircraft to be properly equipped to use this device.

- Alternative airspace improvements were studied in the *Airport Capacity Enhancement Terminal Airspace Study*. The report found that the existing airspace around MSP can be reconfigured to accommodate the proposed north-south runway. In addition, airspace efficiency can be improved either by adding a new jet arrival fix or a new parallel jet arrival stream. These improvements have now been implemented with the opening of Runway 17-35.

- Within the next decade air traffic controllers will begin using the Passive Final Approach Spacing Tool (pFAST). It assists controllers with sequencing aircraft and creates a better flow of traffic into the terminal area.

- The new north-south runway opened on October 27, 2005, and provides MSP with additional airfield capacity.

2.5.1 Precision Instrument Approaches

In addition to how an airport's runways are separated and configured, airfield capacity can be greatly affected by how the runways are equipped for inclement weather. The number and type of precision instrument approaches at MSP is summarized in **Table 2.5**.

A feasibility study was conducted in the early 2000's and determined which runways at MSP would be likely candidates for CAT II/III landings and low-visibility departures based on existing ground equipment, dimensional criteria, aircraft equipment, and operational procedures. The analysis determined that the most feasible runways at MSP for this capability are Runway 12R, Runway 12L, and Runway 35. The implementation of these upgrades was completed in 2005 with the new runway.

Table 2.5

Precision Instrument Approaches

MSP	CAT I	CAT II	CAT III B
Runways:	30R	30L	12R
			12L
			35

Notes: The term decision height is defined as the height at which a decision must be made during a precision approach to either continue the landing maneuver or execute a missed approach.

Precision approaches are categorized based on decision height and the horizontal visibility that a pilot has along the runway. Visibility values are expressed in statute miles, or in terms of runway visual range (RVR), if RVR measuring equipment is installed at an airport.

The different classes of precision instrument approaches are:

i. Category I (CAT I) – provides approaches to a decision height down to 200 feet and a basic visibility of ¾ statute miles or as low as 1,800 feet RVR.

ii. Category II (CAT II) – provides approaches to a decision height down to 100 feet and an RVR down to 1,200 feet.

iii. Category IIIA (CAT IIIA) – provides approaches without a decision height (down to the ground) and an RVR down to 700 feet.

iv. Category IIIB (CAT IIIB) – provides approaches without a decision height and an RVR down to 150 feet.

v. Category IIIC (CAT IIIC) – provides approaches without a decision height and RVR. This will permit landings in "0/0 conditions," that is, weather conditions with no ceiling and visibility as during periods of heavy fog.

Source: December 2006 U.S. Terminal Procedures, NOAA.

3. RELIEVER AIRPORTS

3.0 OVERVIEW

The Metropolitan Airports Commission (MAC) airport system is comprised of seven airports: Minneapolis/St. Paul International and six reliever airports. The reliever airports include Airlake, Anoka County-Blaine, Crystal, Flying Cloud, Lake Elmo and St. Paul Downtown.

This portion of the report highlights the facilities and activities at the six reliever airports. It is divided into three sections:

1. Description of Reliever Airport Facilities

2. Historic and Existing Activity Levels

3. Development Programs

3.1. DESCRIPTION OF AIRPORT FACILITIES

According to the Metropolitan Council Aviation Policy Plan, December 1996, all but one of the MAC reliever airports are classified as minor airports, which have primary runway lengths between 2,500 and 5,000 feet. St. Paul Downtown is classified as an intermediate airport, as its primary runway is between 5,000 feet and 8,000 feet long.

Airport users at the MAC reliever airports include air taxi, business, general aviation, flight training, personal, recreational, and military. This section outlines the existing airport facilities at each reliever airport.

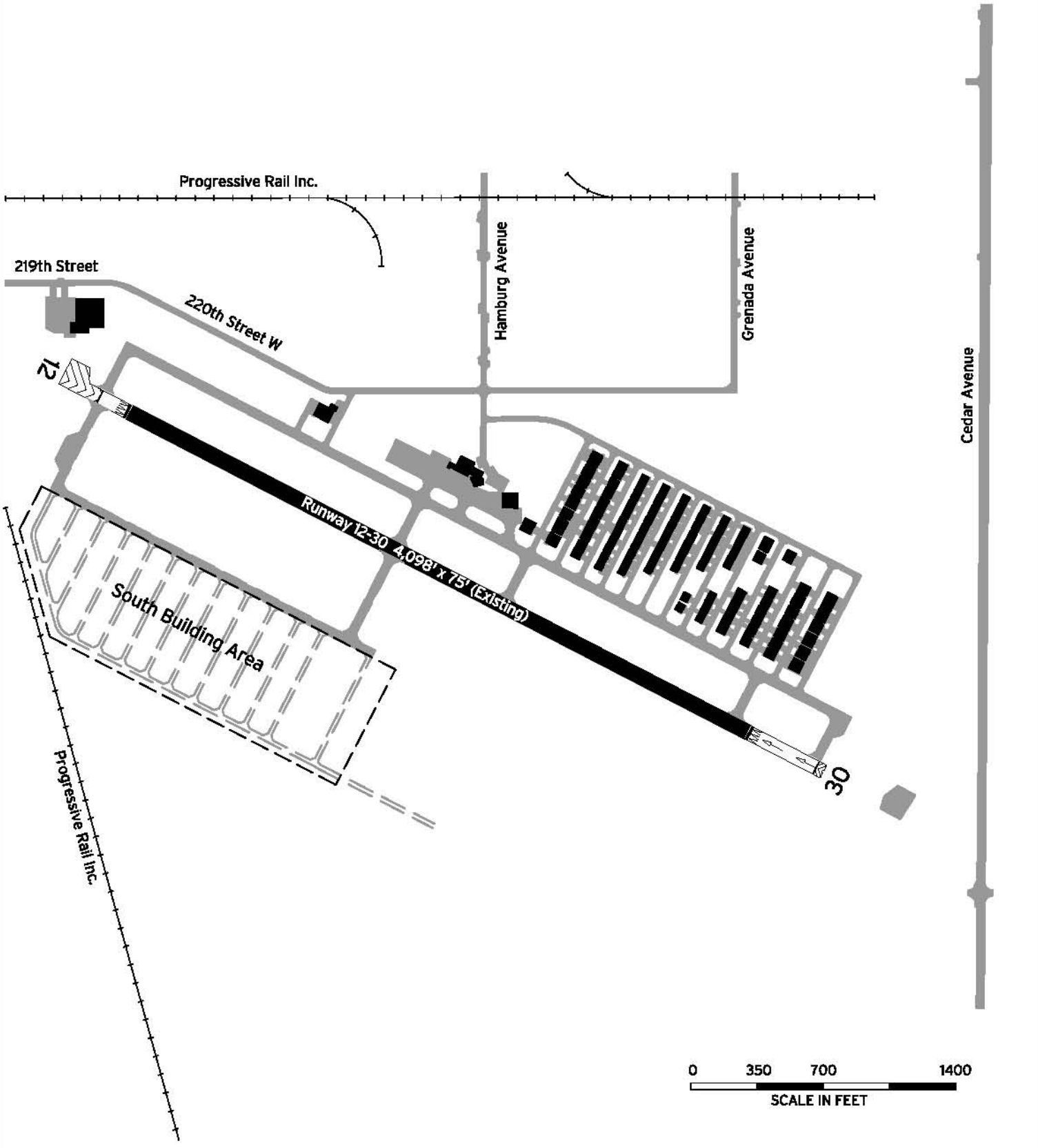
3.1.1 Airlake Airport

Figure 3-1 shows the general airport layout for Airlake Airport (LVN). The airfield at LVN consists of one northwest-southeast runway and full-length parallel taxiway. Runway 12-30 is 4,098 feet long by 75 feet wide. The airport has a precision instrument approach to Runway 30 and a non-precision approach to Runway 12. A Fixed Base Operator (FBO) at the airport provides fueling and other aircraft maintenance services. The airport had 175 based aircraft and estimates 48,000 annual aircraft operations in 2006. There is no air traffic control tower (ATCT) located at the airport.

N

Airlake Airport Layout

Figure 3-1



3.1.2 Anoka County-Blaine Airport

Figure 3-2 shows the general airport layout for the Anoka County-Blaine Airport (ANE). The airfield at ANE consists of one east-west runway and one north-south runway. Both have full-length parallel taxiways. Runway 9-27 is 5,000 feet long by 100 feet wide and Runway 18-36 is 4,855 feet long by 100 feet wide. The airport has a precision instrument approach to Runway 27 and non-precision instrument approaches to Runways 9, 18 and 27. Two FBOs at the airport provide fueling, flight training and other maintenance services for aircraft and helicopters. The airport had 459 based aircraft and approximately 93,000 annual aircraft operations in 2006. A non-federal ATCT is located at the airport.

3.1.3 Crystal Airport

Figure 3-3 shows the general airport layout for Crystal Airport (MIC). The airfield at MIC consists of two northwest-southeast runways and two southwest-northeast runways, one of which is turf and not open during the winter months. Runway 14R-32L has a full length parallel taxiway. Runway 14L-32R is 3,263 feet long by 75 feet wide, Runway 14R-32L is 3,266 feet long by 75 feet wide, Runway 6L-24R is 2,499 feet long by 75 feet wide, and the turf runway (6R-24L) is 2,122 feet long by 150 feet wide. The airport has two non-precision instrument approaches. Four FBOs at the airport provide fueling, flight training and other aircraft maintenance services. The airport had 251 based aircraft and approximately 65,500 annual aircraft operations in 2006. An FAA operated ATCT is located at the airport.

3.1.4 Flying Cloud Airport

Figure 3-4 shows the general airport layout for Flying Cloud Airport (FCM). The airfield at FCM consists of two east-west runways and one north-south runway. All runways have full-length parallel taxiways. Runway 10R-28L is 3,909 feet long by 75 feet wide, Runway 10L-28R is 3,599 feet long by 75 feet wide and Runway 18-36 is 2,691 feet long by 75 feet wide. The airport has a precision instrument approach to Runway 10R and non-precision instrument approaches to Runways 10R, 28L, 28R, and 36. It also has a published precision instrument approach procedure for helicopters. Six FBOs at the airport provide fueling, flight training and other maintenance services for aircraft and helicopters. The airport had 450 based aircraft and approximately 144,000 annual aircraft operations in 2006. An FAA operated ATCT is located at the airport.

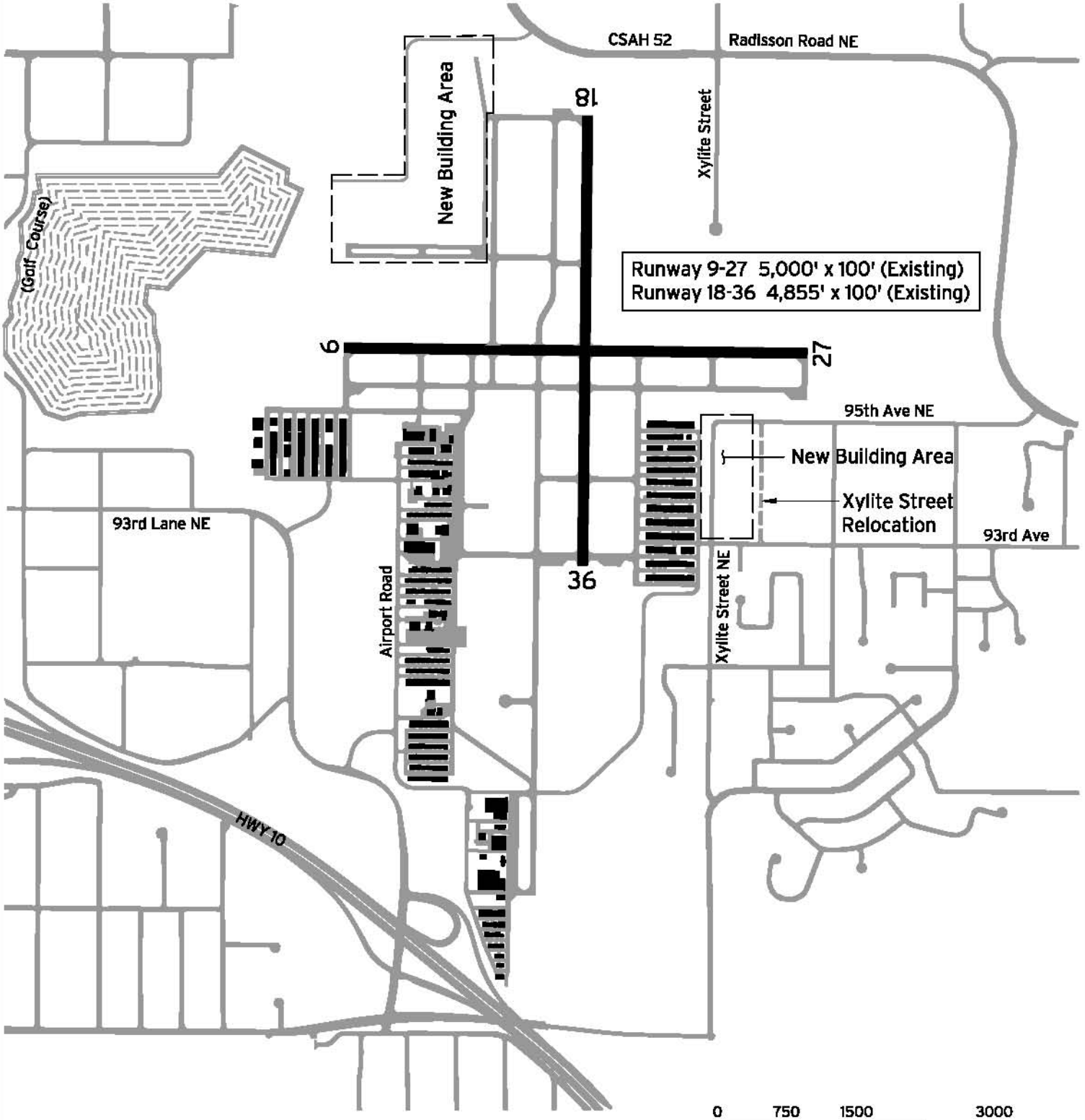
3.1.5 Lake Elmo Airport

Figure 3-5 shows the general airport layout for Lake Elmo Airport (21D). The airfield at Lake Elmo Airport consists of one northwest-southeast runway and one southwest-northeast runway. Both have full length parallel taxiways. Runway 14-32 is 2,850 feet long by 75 feet wide and Runway 4-22 is 2,497 feet long by 75 feet wide. The airport has two non-precision instrument approaches to the airport. One FBO at the airport provides fueling, flight training and other aircraft maintenance services. The airport had 227 based aircraft and estimates 45,000 annual aircraft operations in 2006. There is no ATCT located at the airport.

N

Anoka County-Blaine Airport Layout

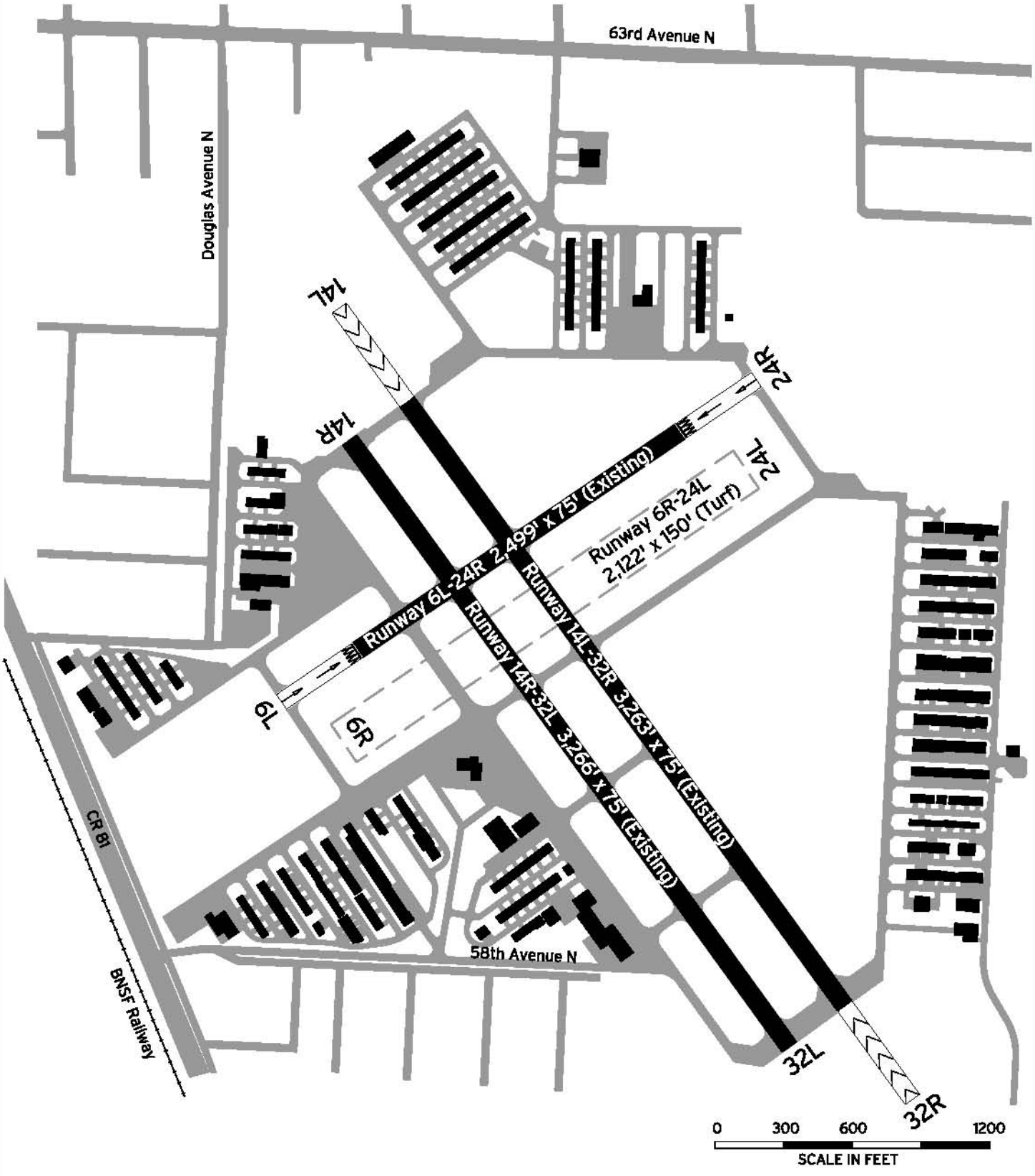
Figure 3-2



N

Crystal Airport Layout

Figure 3-3

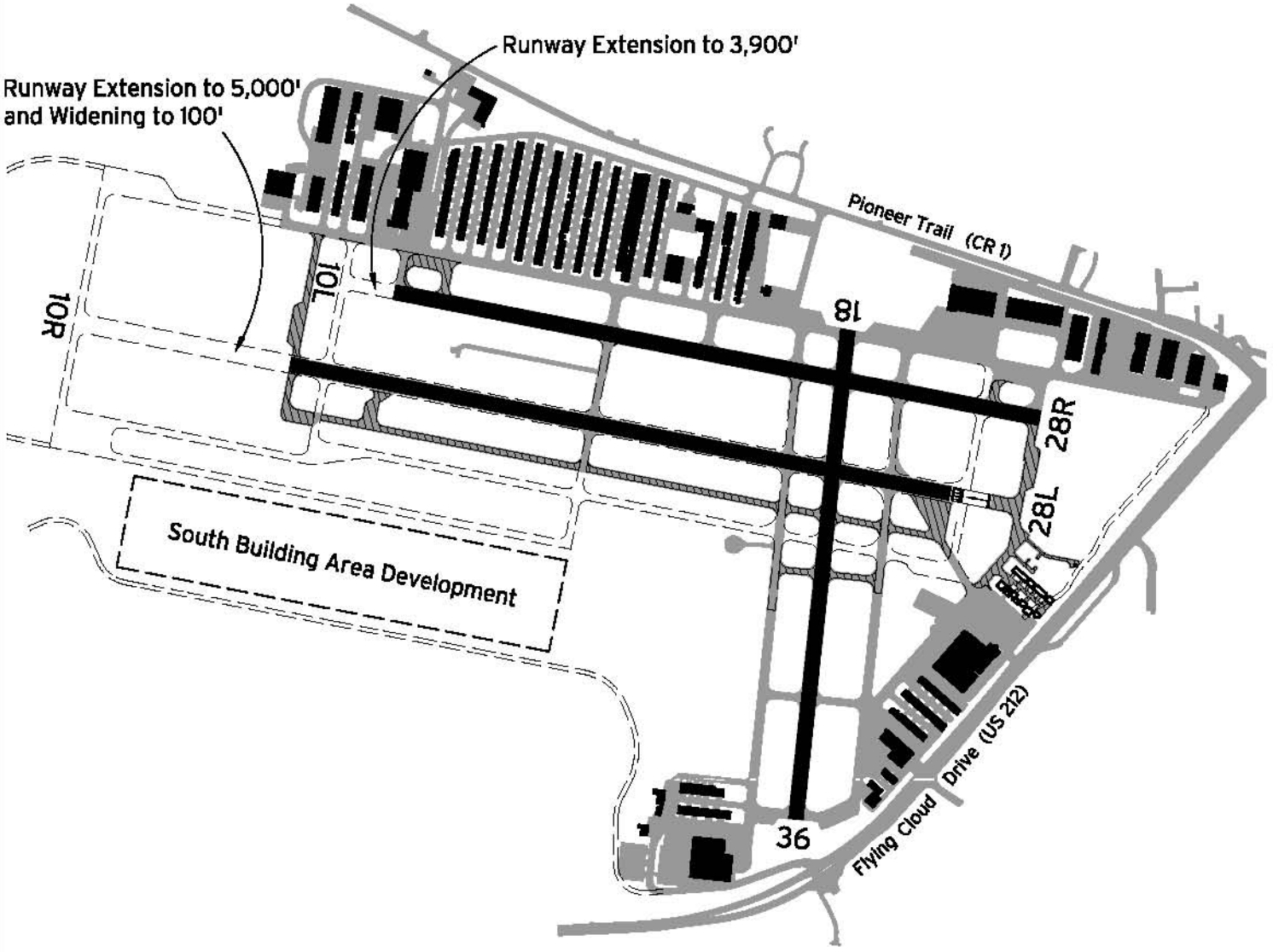


N

Flying Cloud Airport Layout

Figure 3-4

Runway 10L-28R 3,599' x 75' (Existing) 3,900' (Ultimate)
Runway 10R-28L 3,909' x 75' (Existing) 5,000' x 100' (Ultimate)
Runway 18-36 2,691' x 75' (Existing)



KEY

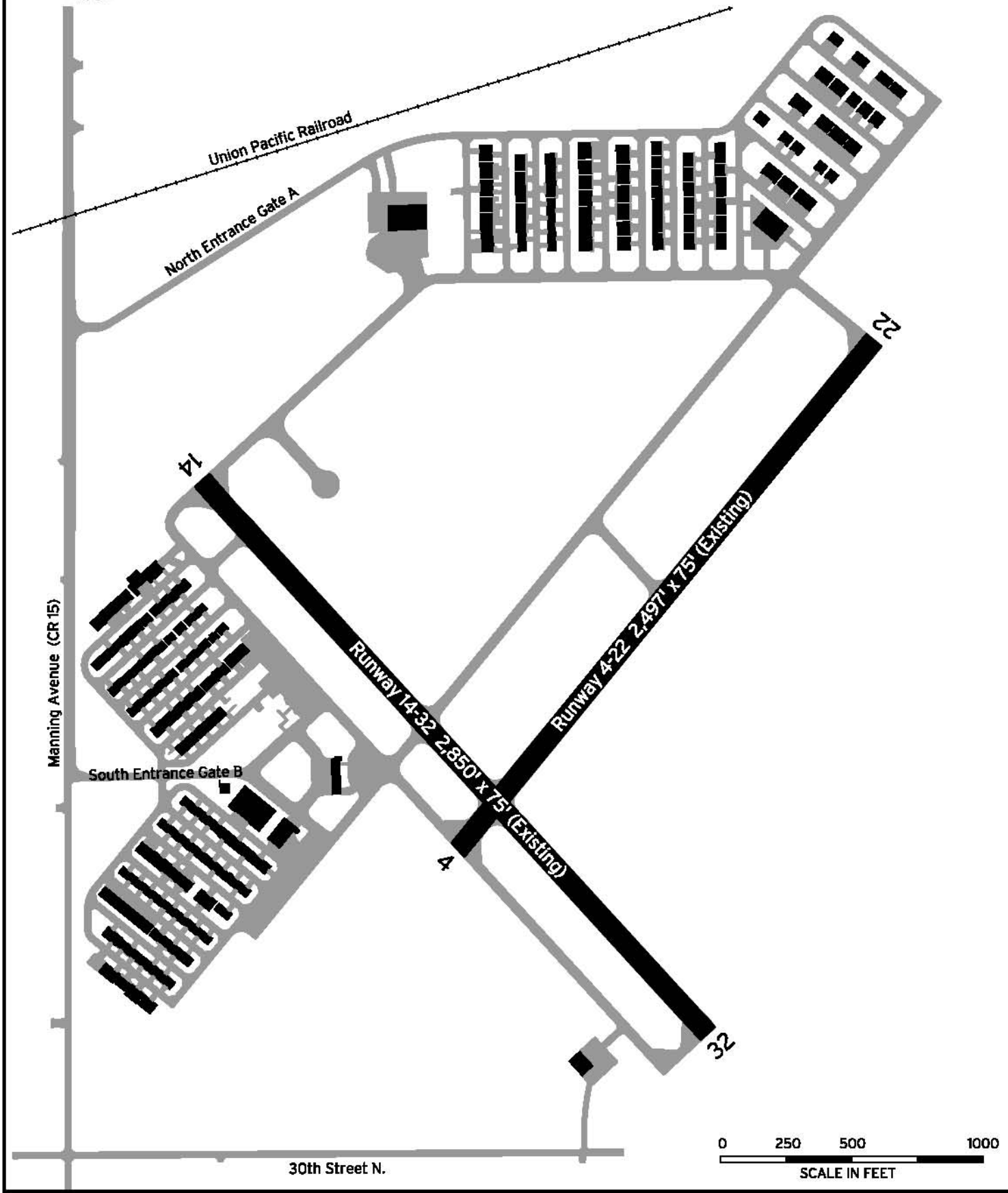
— — = **Planned Development**
▨ = **Future Pavement Removal**

0 400 800 1600
SCALE IN FEET

N

Lake Elmo Airport Layout

Figure 3-5



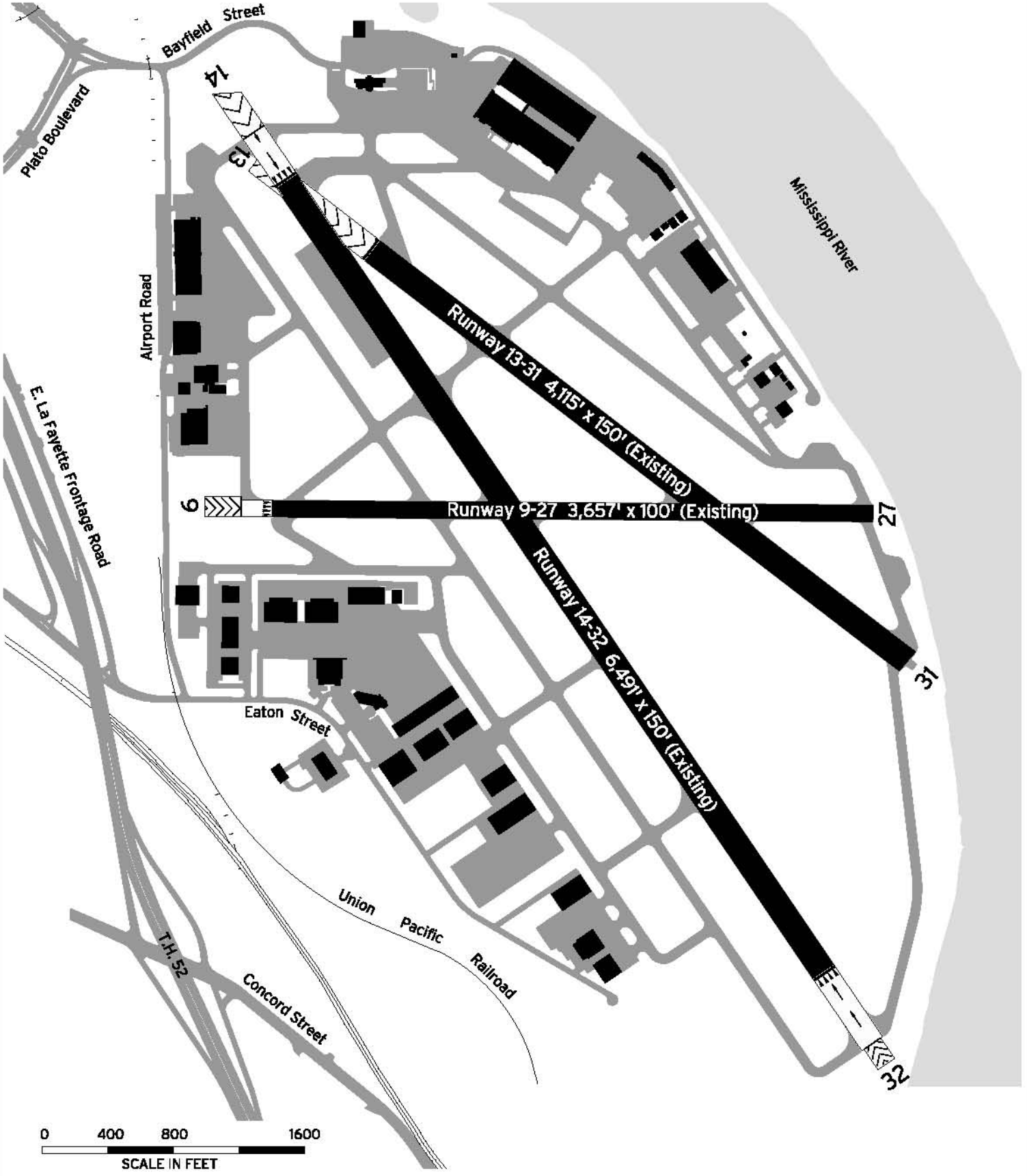
3.1.6 St. Paul Downtown Airport

Figure 3-6 shows the general airport layout for the St. Paul Downtown Airport (STP), also known as Holman Field. The airfield at STP consists of two northwest-southeast runways and one east-west runway. Runway 14-32 has a full-length parallel taxiway. Both other runways have partial parallel taxiways. Runway 14-32 is 6,491 feet long by 150 feet wide, Runway 13-31 is 4,115 feet long by 150 feet wide, and Runway 9-27 is 3,657 feet long by 100 feet wide. The airport has precision instrument approaches to Runways 14 and 32 and non-precision instrument approaches to Runways 14, 31, and 32. It also has a published precision instrument approach procedure for helicopters. Three FBOs at the airport provide fueling, flight training and other maintenance services for aircraft. The airport had 124 based aircraft and approximately 126,000 annual aircraft operations in 2006. An FAA operated ATCT is located at the airport.

N

St. Paul Downtown Airport Layout

Figure 3-6



3.2 HISTORIC AND FORECAST ACTIVITY LEVELS

This section presents an overview of aircraft activity at the reliever airports.

Table 3.1 shows historical based aircraft recorded at the six MAC reliever airports from 1980 through 2007. Total based aircraft grew slowly between 1984 and 1999, reaching a high of 1,864 aircraft. Since 1999, total based aircraft have declined nearly 10 percent to 1,686 aircraft in 2007. Over the last 10 years, the numbers of aircraft based at Airlake, Anoka County, and Lake Elmo have remained fairly constant, while the numbers of aircraft based at Crystal, Flying Cloud, and Holman Field have decreased. The data in **Table 3.1** are the best available, but should be viewed with caution, as in some cases the numbers remain unchanged over periods of several years suggesting infrequent updates.

Historically, the number of aircraft based at MAC airports has accounted for between 0.8 and 0.9 percent of the U.S. active fleet. Since 1999, the share has been gradually declining. A small part of this decline is attributable to the decline in the share of U.S. income accounted for by the Minneapolis-St. Paul seven-county metropolitan area. The decline in share, however, does not necessarily mean that the number of general aviation aircraft in the Twin Cities area is growing more slowly than in the United States, as some new aircraft could be based at non-MAC airports such as South St. Paul or Forest Lake, or at airports outside the seven county area. Recent increases in rates and charges at the MAC reliever airports may have encouraged migration of some aircraft to non-MAC airports.

Historical operations recorded at the reliever airports are presented in **Table 3.2**. Aircraft operations are difficult to estimate especially at airports with no ATCT. Although Anoka County-Blaine, Flying Cloud, Crystal, and St. Paul Downtown Airports have control towers, they are operational for 15 hours a day; therefore activity is likely under-reported. Operations at Airlake and Lake Elmo are estimated.

More detailed analysis of based aircraft and operations were done as part of the LTCP efforts for Airlake, Crystal, and Lake Elmo Airports. Forecasts for those reports were based on updated numbers. These numbers are not exactly the same as the FAA's numbers. For consistency, the FAA records were used in this report because more complete data were available for all of the airports.

Figure 3-7 and **Figure 3-8** show the historic activity at the reliever airports.

Table 3.1
Historical Based Aircraft at MAC Reliever Airports (MAC Records)

Year	Airlake	Anoka County	Crystal	Flying Cloud	Lake Elmo	St. Paul	Total
1980	N/A	353	315	582	170	190	1,610
1981	N/A	360	297	580	220	205	1,662
1982	N/A	384	337	608	238	181	1,748
1983	N/A	362	327	615	236	164	1,704
1984	61	361	352	568	244	165	1,751
1985	63	390	338	568	145	147	1,651
1986	93	412	333	560	145	160	1,703
1987	153	408	345	565	150	168	1,789
1988	153	384	325	492	149	181	1,684
1989	140	405	320	485	171	188	1,709
1990	140	411	324	485	177	191	1,728
1991	140	414	327	487	179	193	1,740
1992	165	408	327	482	189	198	1,769
1993	179	408	327	482	189	198	1,783
1994	179	415	327	482	198	198	1,799
1995	179	415	327	482	198	198	1,799
1996	179	431	327	482	205	198	1,822
1997	179	441	327	482	210	203	1,842
1998	179	451	327	482	210	180	1,829
1999	178	472	309	509	250	146	1,864
2000	175	454	296	485	245	137	1,792
2001	170	447	280	461	235	131	1,724
2002	170	464	278	473	237	130	1,752
2003	190	490	288	463	237	124	1,792
2004	177	488	263	456	236	124	1,744
2005	163	482	265	451	239	124	1,724
2006	159	475	261	447	233	124	1,699
2007	175	459	251	450	227	124	1,686

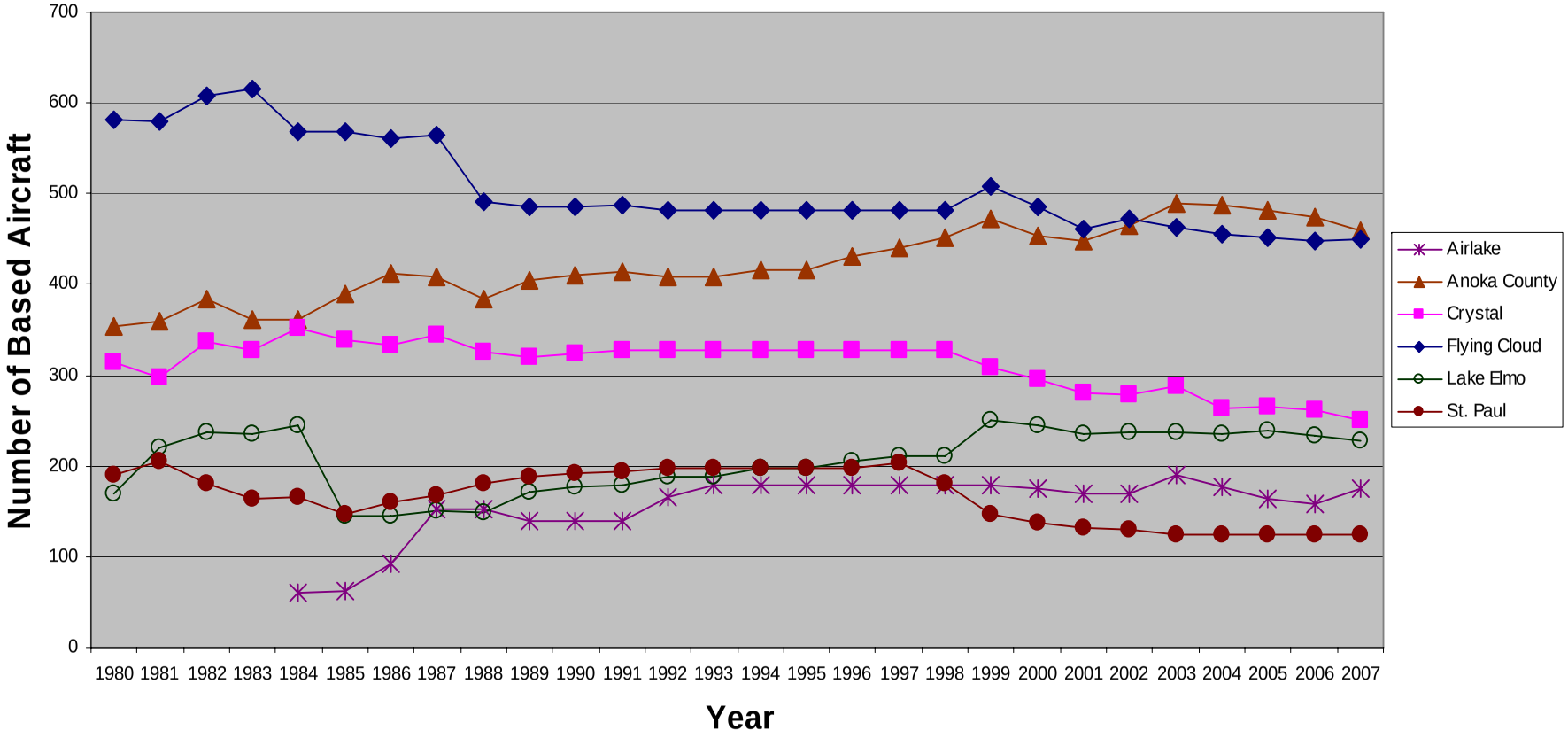
Source: Metropolitan Airports Commission.

Table 3.2
Historical Operations at MAC Airports (MAC Records)

Year	Airlake	Anoka County	Crystal	Flying Cloud	Lake Elmo	St. Paul	Total
1980	N/A	190,000	183,840	218,975	100,000	134,286	827,101
1981	N/A	150,000	154,436	194,229	90,000	107,305	695,970
1982	N/A	150,000	123,577	145,718	90,000	77,509	586,804
1983	20,000	140,000	136,314	166,266	90,000	97,118	649,698
1984	23,000	145,000	140,704	165,542	92,000	103,118	669,364
1985	35,000	160,000	143,665	176,246	82,000	112,019	708,930
1986	40,000	165,000	152,773	191,350	70,000	124,786	743,909
1987	52,000	180,000	165,367	209,423	63,000	135,397	805,187
1988	64,000	200,000	172,074	186,699	65,000	151,869	839,642
1989	66,000	212,000	177,679	207,661	65,000	166,436	894,776
1990	67,980	215,000	189,910	227,408	66,950	190,333	957,581
1991	74,745	195,650	173,150	186,496	69,650	168,450	868,141
1992	81,087	195,650	179,546	198,306	69,650	152,378	876,617
1993	81,087	195,650	183,554	218,745	69,950	132,531	881,517
1994	82,500	199,000	185,991	238,838	71,000	145,834	923,163
1995	75,397	181,866	171,478	216,313	64,887	133,686	843,627
1996	75,397	192,600	187,957	217,703	68,400	139,055	881,112
1997	72,382	143,083	175,728	198,199	65,664	136,968	792,024
1998	76,725	143,950	179,186	210,907	69,604	158,785	839,157
1999	76,725	150,014	178,342	192,737	70,996	158,835	827,649
2000	76,418	156,546	176,554	186,078	70,687	157,788	824,071
2001	70,229	136,892	156,801	185,593	64,962	142,794	757,271
2002	69,176	138,935	127,095	176,408	64,529	171,628	747,771
2003	58,108	132,144	98,612	155,837	54,205	131,794	630,700
2004	53,309	109,853	75,023	163,196	49,855	127,478	578,714
2005	51,678	101,267	72,205	157,710	48,329	129,814	561,003
2006	48,014	92,947	65,528	144,178	44,903	125,669	521,239

Source: Metropolitan Airports Commission.

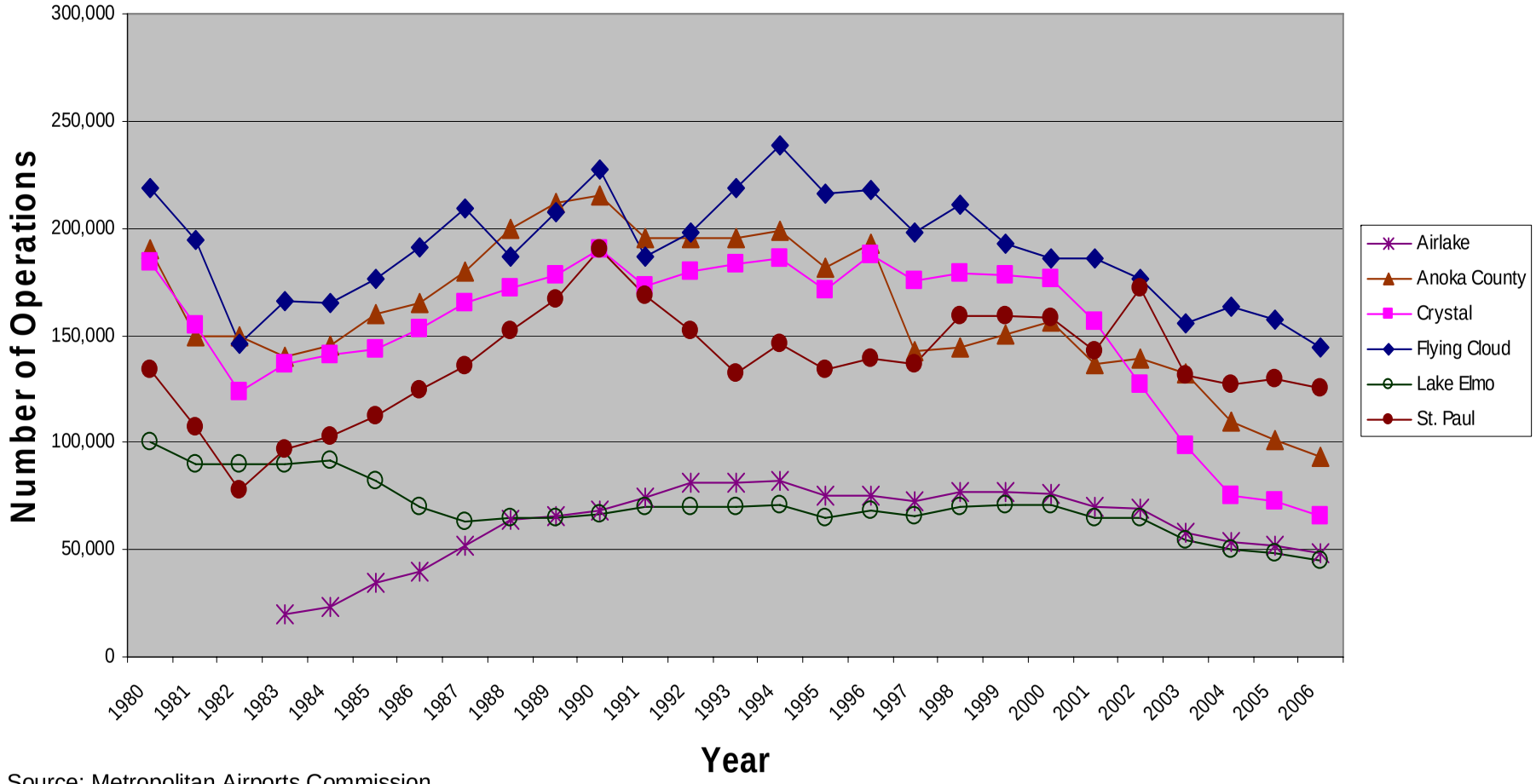
Figure 3-7
Historic Based Aircraft
1980-2007



Source: Metropolitan Airports Commission

Reliever Airports

Figure 3-8
Historic Operations
1980-2006



Source: Metropolitan Airports Commission

Reliever Airports

The FAA prepares activity forecasts called Terminal Area Forecasts (TAF) for these airports. **Table 3.3** and **Table 3.4** show FAA TAF for based aircraft and operations at the six MAC reliever airports through 2025.

The forecasts show a slow steady increase in based aircraft and operations at each of the airports over the next 20 years. The average annual growth rate of total based aircraft at is approximately 1.5%. The average annual growth rate of total operations is approximately 2.0%. These rates coincide with the national averages.

Figure 3-9 and **Figure 3-10** show the forecast trend in based aircraft and operations at each of the airports through the year 2025.

Table 3.3
Forecast Based Aircraft at MAC Airports (FAA TAF)

Year	Airlake	Anoka County	Crystal	Flying Cloud	Lake Elmo	St. Paul	Total
2008	167	504	278	475	244	333	2,001
2009	168	511	283	482	246	337	2,027
2010	169	517	288	490	248	342	2,054
2011	170	524	293	498	251	346	2,082
2012	172	533	298	507	253	351	2,114
2013	173	540	304	515	255	355	2,142
2014	175	548	309	523	258	360	2,173
2015	175	554	314	532	260	365	2,200
2016	177	562	320	541	262	371	2,233
2017	179	570	326	550	265	376	2,266
2018	180	578	332	559	267	381	2,297
2019	182	586	338	569	270	387	2,332
2020	184	594	344	578	272	392	2,364
2021	185	602	350	587	275	396	2,395
2022	186	611	356	596	277	402	2,428
2023	188	619	362	607	280	409	2,465
2024	190	627	369	617	282	414	2,499
2025	192	635	376	627	284	419	2,533

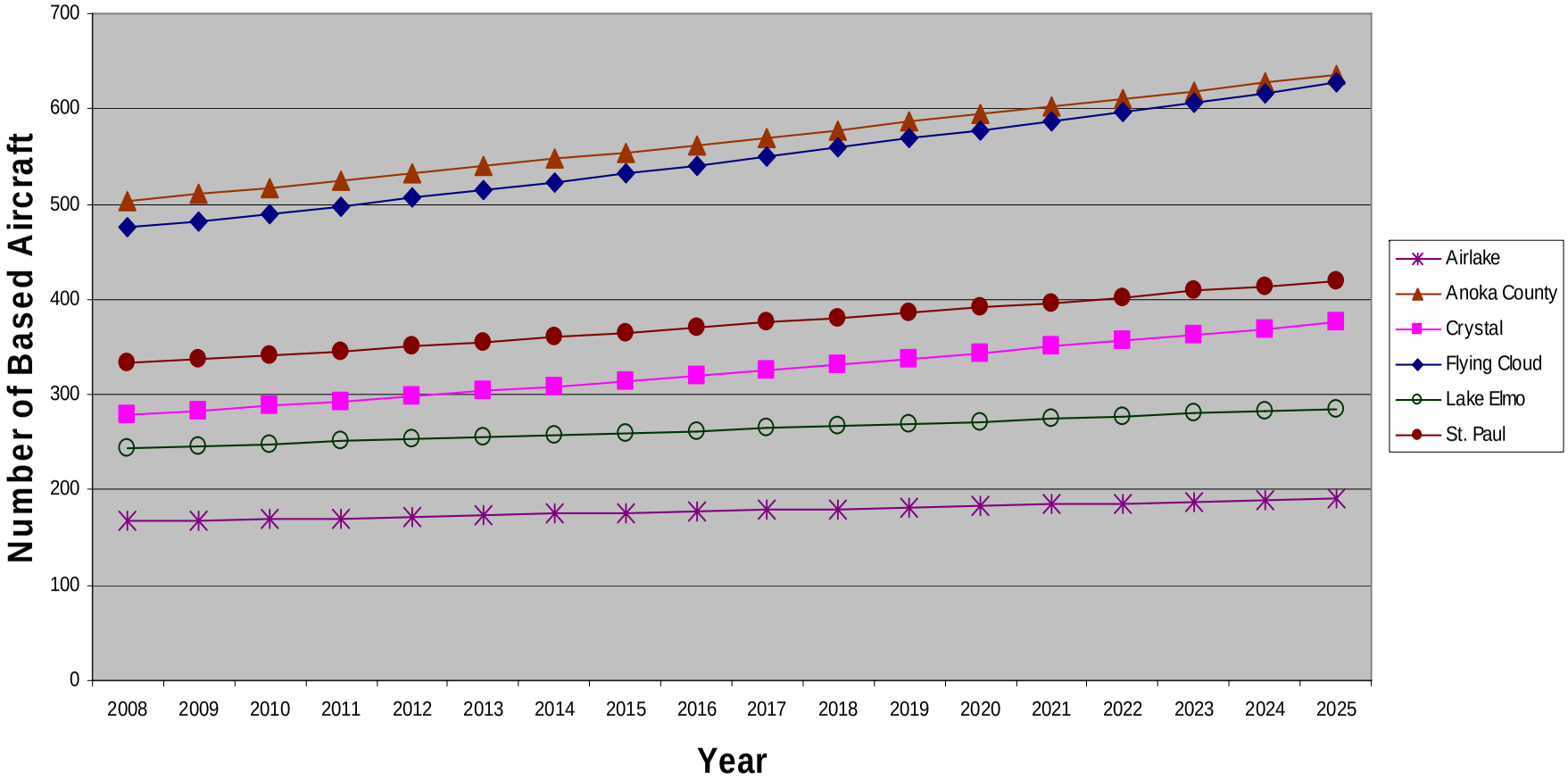
Source: FAA TAF, January 2007

Table 3.4
Forecast Operations at MAC Airports (FAA TAF)

Year	Airlake	Anoka County	Crystal	Flying Cloud	Lake Elmo	St. Paul	Total
2007	58,834	91,137	66,942	144,299	59,412	133,525	554,149
2008	60,727	93,107	68,242	146,509	60,836	136,336	565,757
2009	62,679	95,133	69,569	148,787	62,295	139,225	577,688
2010	64,695	97,216	70,924	151,134	63,789	142,196	589,954
2011	66,775	99,359	72,308	153,553	65,319	145,251	602,565
2012	68,923	101,563	73,719	156,046	66,885	148,391	615,527
2013	71,139	103,831	75,161	158,614	68,488	151,621	628,854
2014	73,427	106,164	76,632	161,261	70,131	154,943	642,558
2015	75,789	107,661	77,732	162,775	71,812	157,141	652,910
2016	78,225	109,181	78,847	164,313	73,535	159,378	663,479
2017	80,742	110,725	79,978	165,878	75,299	161,652	674,274
2018	83,338	112,293	81,126	167,470	77,104	163,964	685,295
2019	86,018	113,886	82,291	169,089	78,953	166,315	696,552
2020	88,784	115,505	83,473	170,734	80,847	168,705	708,048
2021	91,640	117,149	84,672	172,408	82,786	171,134	719,789
2022	94,587	118,819	85,889	174,110	84,773	173,604	731,782
2023	97,629	120,516	87,122	175,840	86,806	176,116	744,029
2024	100,769	122,240	88,375	177,600	88,888	178,670	756,542
2025	104,009	123,990	89,644	179,390	91,020	181,266	769,319

Source: FAA TAF, January 2007

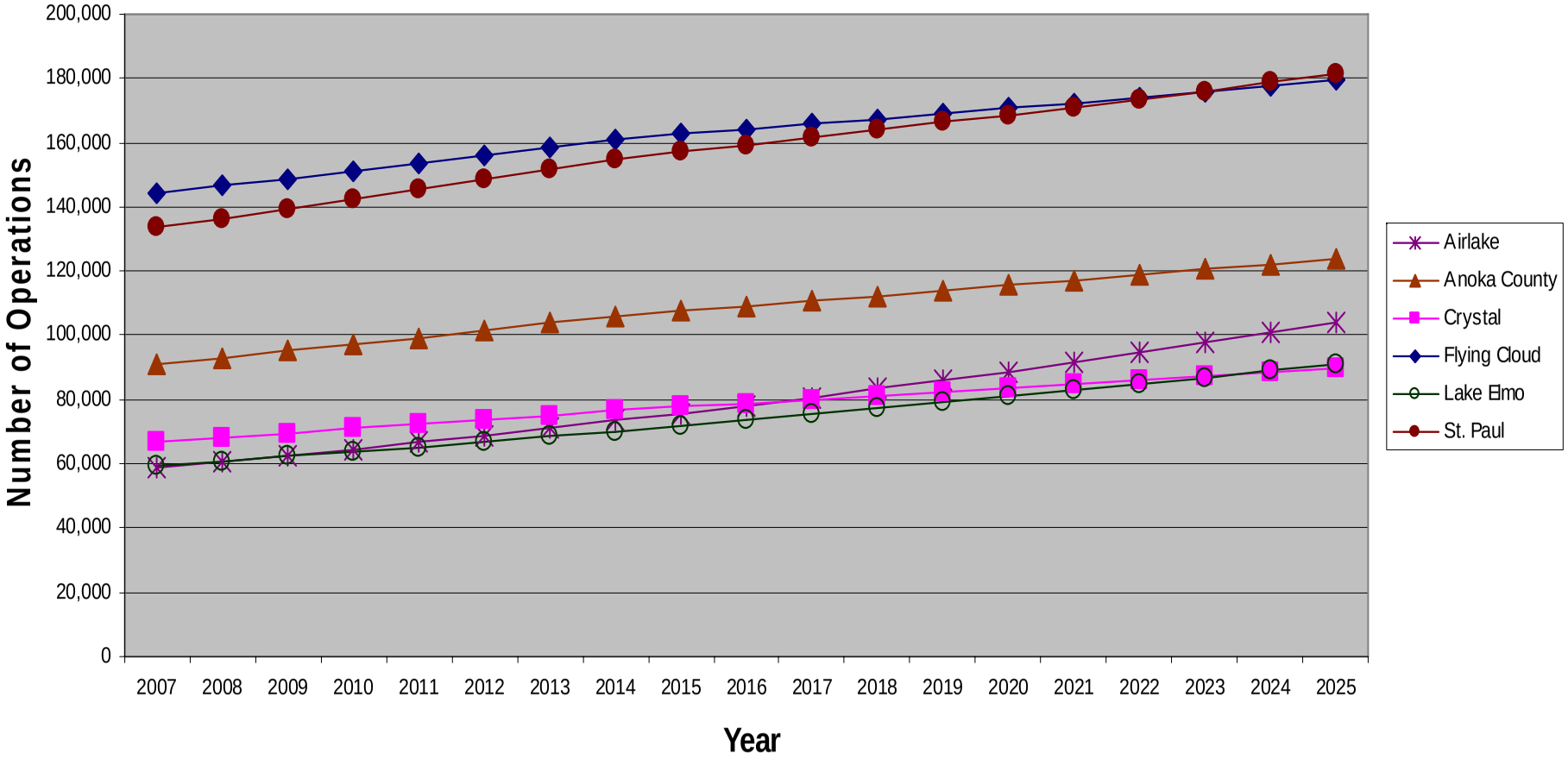
Figure 3-9
Forecast Based Aircraft
2008-2025



Source: FAA TAF, January 2007

Reliever Airports

Figure 3-10
Forecast Operations
2007-2025



Source: FAA TAF, January 2007

Reliever Airports

3.3 DEVELOPMENT PROGRAMS

This section outlines the status of major development programs at each of the reliever airports.

3.3.1 Airlake Airport

Recent projects at Airlake include a complete runway reconstruction in 2000, reconstruction and realignment of the north parallel taxiway, and construction of a partial south parallel taxiway in 2003. Another major development project ended in 1999 with the completion of grading for a new south building area. Since then, further development of this area has been delayed due to funding issues and issues with the provision of sanitary sewer and water to this area.

In 2006, rehabilitation of taxilanes in the North Building Area began. This work resulted in the reclamation of existing pavement and placement of new bituminous surfacing on five of 13 taxilanes. In addition, the pavement areas on the east side of MAC's maintenance facility were reconstructed. In 2007 the rehabilitation of pavement in the North Building Area will continue with rehabilitation of the remaining eight taxilanes. Also, the entrance road to the airport will be reconstructed.

A Long Term Comprehensive Development Plan (LTCP) is being prepared for the airport and will be made available to the public in April 2007. This plan analyzes existing facilities, forecasts future activity, and outlines development needed to meet the projected demand. It also reviews the previous LTCP recommendations for airport development, and summarizes new recommendations through 2025.

3.3.2 Anoka County – Blaine Airport

A major airport expansion program commenced in 2005 that included an extension to Runway 9-27 and the installation of an Instrument Landing System (ILS). The runway was extended from 4,000 feet to 5,000 feet, and widened from 75 feet to 100 feet. As a result, the entire runway pavement was reconstructed. The parallel taxiway was also extended and fully reconstructed. An approach lighting system (MALSR) was added for Runway 27.

A new hangar area was also included in the development. The project involved the construction of taxiways and connectors, a new FBO apron, site preparation for a new building area, security fencing, basins for storm water, and a water main loop from the new building area to the Air Traffic Control Tower. An access road was constructed from Radisson Road to the new building area. This area is now ready for a new FBO and storage hangars. The expansion program was funded through a pubic-public-private agreement between MAC, Anoka County and a developer. The latter will build new hangars for sale or lease.

All of the expansion projects have impacted wetland areas on the airport. A substantial wetland mitigation project has been completed on MAC owned property in the City of Ham Lake, which included the creation and restoration of approximately 120 acres of varying wetland types.

Recent construction projects include the on-going pavement rehabilitation projects for the taxiways and the installation of sanitary sewer and water facilities in 1999 and 2000. In addition, approximately 370 acres of land was leased to the Minnesota Amateur Sports Commission for the construction and operation of an 18-hole youth golf course.

MAC has just begun working with the local communities to enact airport safety zoning. This process is expected to take approximately six months to complete.

An LTCP will be prepared for the airport and is scheduled to begin in May 2007. This plan will analyze existing facilities, forecast future activity, and outline development needed to meet the projected demand. It will take approximately one year to complete.

3.3.3 Crystal Airport

There have been ongoing pavement rehabilitation projects at the airport over the last few years. The projects include bituminous overlays, seal coats and reconstruction to restore the pavement surfaces and improve overall airfield conditions. Runway 6L-24R was reconstructed in 2003. Other airfield taxiways have been reconstructed, and sanitary sewer and water facilities were installed in 1999.

An LTCP is being prepared for the airport and will be made available to the public in June 2007. This plan analyzes existing facilities, forecasts future activity, and outlines development needed to meet the projected demand. It also reviews the previous LTCP recommendations for airport development and summarizes new recommendations through 2025.

3.3.4 Flying Cloud Airport

Pavement rehabilitation projects have been ongoing at the airport over the few years. Runway 10R-28L was reconstructed in 2005. Security gate improvements were completed in 2004.

A State EIS was recently (2006) completed and approved for two runway extensions and a new building area development. The Federal Record of Decision approving the project is expected in 2007. The expansion projects are currently listed in the MAC Capital Improvement Program for 2008 and 2009 and include the extension of Runway 10L-28R to 3,900 feet and Runway 10R-28L to 5,000 feet. The project also includes new building area development on the south side of the parallel runways.

An LTCP will be prepared for the airport and is scheduled to begin in May 2007. This plan will analyze existing facilities, forecast future activity, and outline development needed to meet the projected demand. It will take approximately one year to complete.

3.3.5 Lake Elmo Airport

There have been ongoing pavement rehabilitation projects at the airport over the last few years involving runways and taxiways. Some projects have involved crack repairs and joint sealing. The compass calibration pad was reconstructed in 2006. In 2007 the northeasterly end of taxiway 4-22 pavements will be reclaimed and a new bituminous

surface placed. In addition, crack sealing of the northeasterly taxilanes will be accomplished.

The last major improvement project occurred in 2005 when the runway lights and circuit for Runway 14-32 were replaced.

An LTCP is being prepared for the airport and will be made available to the public in April 2007. This plan analyzes existing facilities, forecasts future activity, and outlines development needed to meet the projected demand. It also reviews the previous LTCP recommendations for airport development, and summarizes new recommendations through 2025.

3.3.6 St. Paul Downtown Airport

The St. Paul Downtown Airport is currently undergoing numerous construction projects. A subdrain improvement project is nearing completion. This project will provide for enhanced drainage of the airfield pavement areas which have reduced weight bearing strengths when the subgrade is saturated due to high ground water or elevated river stages.

A three-year runway safety area enhancement project began in 2006. MAC is scheduled to open bids for the construction of a floodwall in the summer of 2007. This project will consist of permanent floodwall sections, combined with the acquisition of and foundation work for, temporary walls to be erected during flood conditions. This allows the airfield to operate in its full capacity until a flood condition, during which it will operate at a reduced capability. In order to proceed with the floodwall construction, MAC completed a compensatory excavation project in 2006 which widened the Mississippi River channel so the new floodwall would not result in any upstream or downstream impacts.

Over the past two years, Runway 9-27 has been reconstructed and its lighting system replaced. Crack sealing of bituminous pavements have also been completed on an annual basis, along with various taxiway rehabilitation projects.

Projects that will bring the safety area for each runway into compliance with FAA regulations are either under construction or being planned over the next two years resulting in changes to runway lengths. Runway 14-32 is complete. The runway length changed from 6,707’ to 6,491’. Ultimate runway lengths will also change for Runway 13-31 (4,115’ to 4,004’) and Runway 9-27 (3,657’ to 3,642’).

MAC has just begun working with the local communities to enact airport safety zoning. This process is expected to take approximately six months to complete.

An LTCP will be prepared for the airport and is scheduled to begin in May 2007. This plan will analyze existing facilities, forecast future activity, and outline development needed to meet the projected demand. It will take approximately one year to complete.