2013 ANNUAL REPORT TO THE LEGISLATURE

PREPARED BY THE
METROPOLITAN AIRPORTS COMMISSION
ENVIRONMENT DEPARTMENT

MARCH 2014

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1. INTRODUCTION

1.1 OVERVIEW

The Metropolitan Airports Commission (MAC) was created in 1943 by the Minnesota Legislature to promote air transportation in the seven-county metropolitan area. The MAC's 15-member board of commissioners, which sets the MAC's policies, consists of 13 appointments by Minnesota's Governor and one appointment each by the mayors of Minneapolis and St. Paul. The MAC's policies are implemented by the MAC's Executive Director/Chief Executive Officer and staff.

The MAC airport system is comprised of seven airports: Minneapolis-St. Paul International Airport (MSP) and six reliever airports. The reliever airports include Airlake, Anoka County-Blaine, Crystal, Flying Cloud, Lake Elmo and St. Paul Downtown. **Figure 1-1** shows each MAC airport location.

In 1989, the Minnesota Legislature adopted the Metropolitan Airport Planning Act. This legislation required the 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 expanding MSP at its current site with the option of building a new airport elsewhere.

The analysis, known as the Dual-Track Airport Planning Process, was completed in March 1996. On April 2, 1996, legislation was passed by both the House and Senate and signed by Governor Arne Carlson that terminated further study of a new airport and directed the MAC to implement the MSP 2010 Long Term Comprehensive Plan.

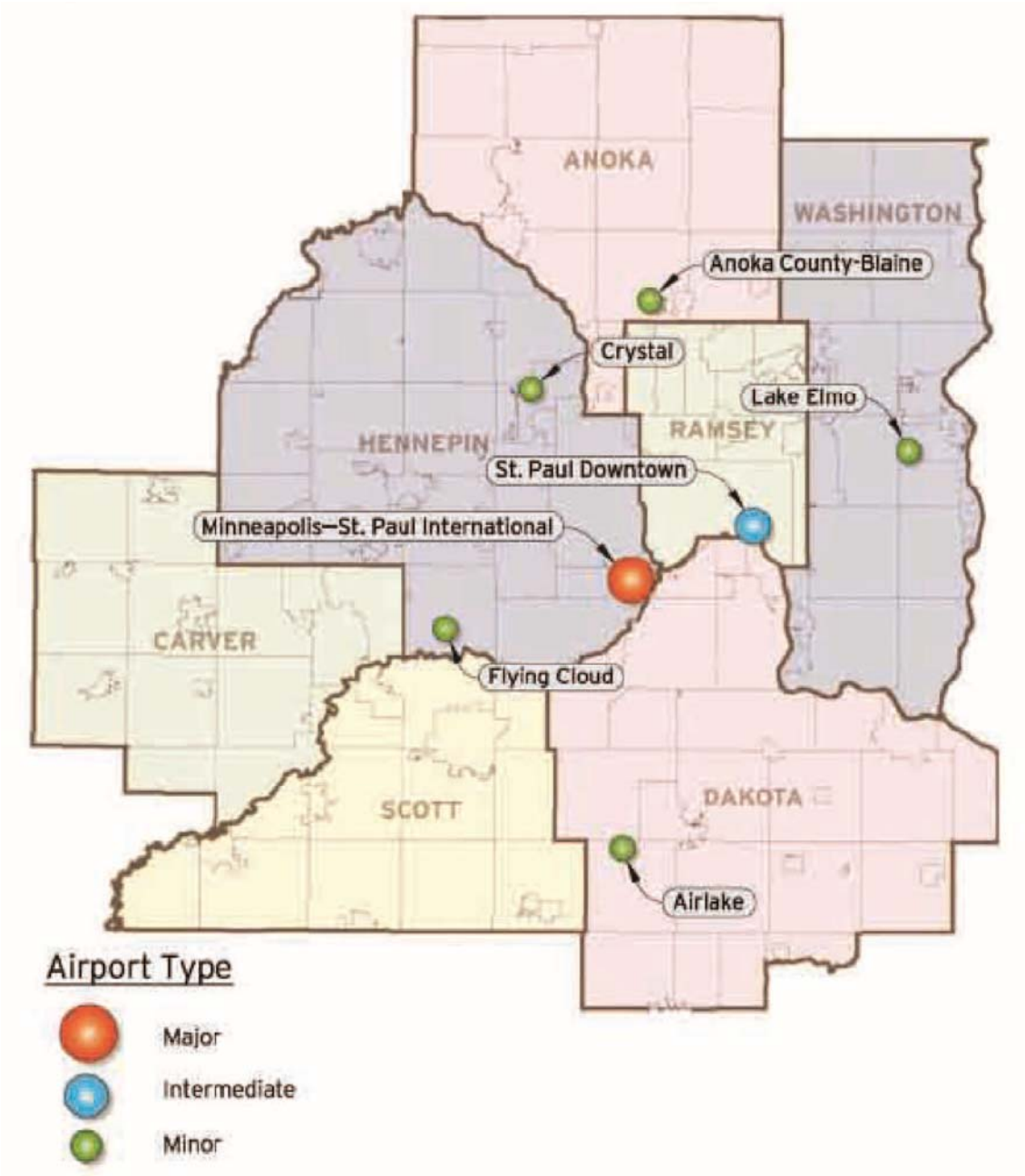
This same legislation requires the MAC to prepare an Annual Report to the Legislature that describes recent MSP activity, current and anticipated capacity and delay for its airfield and terminals, and technological developments that could improve airport efficiency. In 2006, the 1996 legislation was amended to require the MAC to include an update on the six reliever airports in the annual report and to submit the report to the Legislature by March 30 each year.

The 2013 Annual Report to the Legislature is divided into three sections:

1. Introduction
2. Minneapolis-St. Paul International Airport (MSP)
3. Reliever Airports

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

Figure 1-1:
Metropolitan Airports Commission Airports in the Seven-County Twin Cities Metropolitan Area



1.2 METROPOLITAN AIRPORTS COMMISSION (MAC) STRATEGIC PLAN

The MAC's core mission is to provide and promote safe, convenient, environmentally-sound and cost-competitive aviation services for its customers. This mission, and the MAC's organizational vision and adopted Wildly Important Goals (WIGs) and associated sub-WIGs are detailed in the 2014-2017 Strategic Plan. [1] The Strategic Plan identifies several considerations and outlines strategies that are critical to the MAC's success in giving its customers the best airport experience in North America.

The MAC's Wildly Important Goals (WIGs):

1. Move MSP's Airport Service Quality score (the most robust measure of airport customer satisfaction) for "overall satisfaction with the airport" to #1 by the 4th quarter of 2015 and no lower than #3 by the 4th quarter of 2014.
2. Increase new tenant investments at the MAC's reliever airports by a minimum of $2 million by the end of 2014.

Considerations:

1. Leveraging Resources and Technology
2. Planning/Strategizing for the Financing and Implementation of the MSP 2020 Improvements Plan
3. Transitioning the Organization through Changes in Leadership
4. Diversifying Revenue Streams
5. Maintaining Current and New Infrastructure
6. MSP Becoming the "Airport of Choice" for Airlines and Passengers
7. Achieving Long-term Financial Viability of the General Aviation System

Strategies:

1. Assure Financial Viability

   Ensure the MAC has the financial resources necessary to operate its airport system, meet all debt service obligations in any scenario and maintain its existing bond ratings.

2. Provide a Great Customer Experience

   Ensure all the MAC's customers can enjoy the best airport experience in North America.

3. Develop Employee Talent

   Have the right people with the right skills and experience in the right place to fulfill the MAC's mission and achieve its vision.

[1] Wildly Important Goals are concepts developed in the Franklin Covey Company's book titled, *The 4 Disciplines of Execution*.

4. Leverage Resources and Technology

   Take full advantage of resources and technology to improve performance, increase productivity and deliver cost-effective services.

5. Strengthen Partnerships and Relationships

   Expand effectiveness through internal teamwork and strengthened external relationships and partnerships with tenants, concessionaires, airlines, neighboring communities, regional businesses and governmental entities.

6. Enhance Air Service at MSP

   Provide airlines and the traveling public with expanded alternatives by enhancing domestic, regional and international air service at MSP.

2. MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT (MSP)

2.1 OVERVIEW

MSP is the primary commercial service airport in Minnesota. Owned and operated by the MAC, its funding stems from self-generated revenues from airport users, aviation grants, bonds, and passenger facility charges. MSP does not receive an appropriation from the State's General Fund, and it has not levied local property taxes since 1969.

Economic Impact

In 2013, InterVISTAS published an economic impact study of Minneapolis-St. Paul International Airport. The study found that MSP generates more than $10.1 billion annually for the Twin Cities economy and supports more than 76,000 jobs, including nearly 20,000 jobs related directly to MSP operations and development. The average salary among the dozens of businesses and organizations operating at MSP is more than $66,000 a year, well above Minnesota's median household income.

More than 4 million MSP passengers spend nearly $2 billion in the state each year, without even leaving the airport. The airport also contributes significant funding for federal, state and local government programs by producing more than $600 million a year in tax revenues.

Noteworthy Capital Projects

Renovations to Building C at MSP were undertaken by Delta Air Lines in 2013 to accommodate relocation of the Pinnacle Airlines (now Endeavor Air) headquarters to Minnesota from Memphis. In addition, the MAC partnered with the Minnesota Department of Transportation and the City of Bloomington to create a diverging diamond interchange connecting 34th Avenue and Interstate 494, providing for more efficient traffic flow and enhanced safety. The completed project is one of three in the state of Minnesota, and the only one with light rail train tracks running down the center of the roadway.

Air Service Development

Both passenger levels and aircraft operations at MSP increased slightly in 2013, led by more than 21 percent passenger growth at Terminal 2-Humphrey. Four airlines--Delta, Southwest, Sun Country and Spirit--added service to new destinations in 2013 that were not served by the respective airlines in 2012.

Delta Air Lines added service to Dickinson, ND (DIK), and Rhinelander, WI (RHI). Southwest Airlines added service to Kansas City, MO (MCI). Sun Country Airlines added service to Chicago-Midway, IL (MDW), and Washington-National (DCA). Spirit Airlines added service to Denver, CO (DEN); Dallas/Fort Worth, TX (DFW); Los Angeles, CA (LAX); Orlando, FL (MCO); Phoenix, AZ (PHX); and, Tampa, FL (TPA).

In May 2013, French airline Air France added service between MSP and Paris Charles de Gaulle Airport (CDG), on a summer-seasonal basis, marking the first time Air France has provided service to MSP. Air France will provide similar service in 2014.

In June 2014, German airline Condor will add service between MSP and Frankfurt, Germany (FRA), on a summer-seasonal basis. This will be the first time since 1996 that MSP will have nonstop air service to Frankfurt, Germany.

Additionally, Spirit Airlines will commence service to Baltimore-Washington, MD (BWI); Houston, TX (IAH); and, Detroit, MI (DTW) in May 2014. United Airlines will commence service to Los Angeles, CA (LAX) in May 2014.

Awards

MSP continues to win national and international awards, including Airports Council International-North America's 2013 award for Best Food and Beverage Program among large airports in North America. MSP also received the Air Transport Research Society's award for Most Efficiently Managed Airport in North America in 2013 and, in 2012, Travel + Leisure magazine's award for Best Airport in America.

The following sections of this report highlight:

- A description of MSP facilities
- A description of MSP activity and service trends
- A comparison of MSP forecasted activity with actual activity
- Current airfield capacity and average length of delay statistics
- Technological developments affecting aviation and their effects on airport operations and capacity
- MSP Long Term Comprehensive Planning and MSP 2020 Improvements
- Aircraft noise mitigation program development
- 2013 environmental accomplishments
- Formal sustainability program development

2.2 MSP AIRPORT FACILITIES

2.2.1 Airfield

The MSP airfield is approximately 3,400 acres in size and consists of two parallel runways, one north-south runway, and one crosswind runway. Runway 4-22 is 11,006 feet long; Runway 12R-30L is 10,000 feet long; Runway 12L-30R is 8,200 feet long; and, Runway 17-35 is 8,000 feet long. **Figure 2-1** shows MSP's current layout, and **Table 2-1** summarizes the major airport components.

Figure 2-1:

Minneapolis-St. Paul International Airport (MSP)

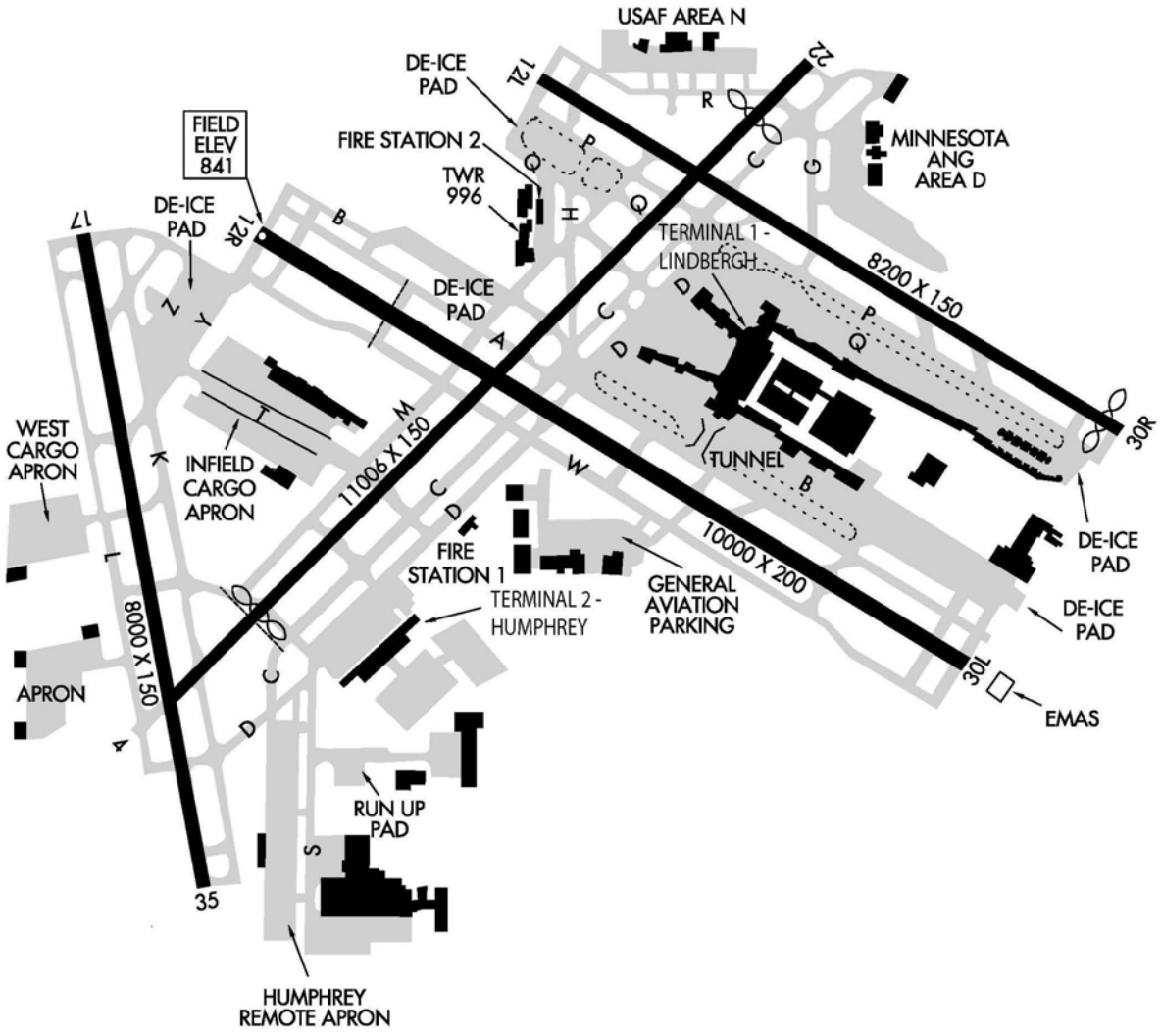


Table 2-1

Existing Airport Facilities

Airport Components		Quantity
Runways		
	East-West Parallel (Runways 12L-30R and 12R-30L)	2
	North-South (Runway 17-35)	1
	Crosswind (Runway 4-22)[2]	1
	Total Runways:	4
Terminal Building Facilities		
	Terminal 1-Lindbergh million sq. ft.	2.8
	Terminal 2-Humphrey million sq. ft.	0.5
	Total Terminal Square Footage (millions):	**3.2**
	Terminal 1-Lindbergh Gates	114
	Terminal 2-Humphrey Gates	10
	Total Gates	**124**
PUBLIC AUTO PARKING		
	Terminal 1-Lindbergh	13,142
	Terminal 2-Humphrey	8,861
	Total Public Auto Parking Spaces:	**22,003[3]**

Source: Data provided by the Metropolitan Airports Commission

Deicing pads are located at the ends of each parallel runway. Runway 17-35 has a seven-position deicing pad only at its north end to accommodate departures to the south because current operating restrictions normally preclude departures to the north over Minneapolis from that runway. The deicing pads have facilities nearby for recharging deicing trucks and for providing a rest area for deicing crews. A combined operations and maintenance facility adjacent to the Runway 12L deicing pad serves to coordinate deicing operations on all pads.

There are two cargo aprons (50 acres total) located at MSP: Infield Cargo Apron and West Cargo Apron. The Infield Cargo Apron is situated between Runway 12R-30L and Runway 17-35 and supports a FedEx cargo sort facility and a UPS facility. The West Cargo Apron accommodates a multi-tenant cargo facility. Three aircraft maintenance hangars are located on an apron on the western edge of the airfield.

Airfield improvements in 2013 included apron concrete pavement rehabilitation, pavement joint sealing, tunnel roadway repairs, runway shoulder bituminous repairs, and installation of new airfield guidance signs.

[2] Runway 4/22 is the longest runway (11,006 ft.).
[3] Data provided by the Metropolitan Airports Commission for revenue-control equipped public parking.

2.2.2 Terminal 1-Lindbergh

Terminal 1-Lindbergh is the largest terminal at MSP. It opened in 1962 and was named the Charles A. Lindbergh Terminal in 1985. Signage changes in 2010 now refer to this terminal as Terminal 1-Lindbergh (Terminal 1).

Terminal 1 is located between the north and south parallel runways, east of the cross-wind runway. **Figure 2-2** displays a layout of the facilities, which house single-loaded and double-loaded concourses and 114 gates. Ten of those gates support international arrivals into the International Arrival Facility. Work began in 2013 on improvements to this facility that will provide additional baggage claim conveyor length. Also in 2013, design work was completed for the installation of automated kiosks to speed re-entry of U.S. citizens into the country.

Nine airlines operated out of Terminal 1 in 2013: Air Canada, Air France, Alaska Airlines, American Airlines, Delta Air Lines, Frontier Airlines, Great Lakes Airlines, United Airlines, and US Airways. A number of enhancements were made to the Terminal 1 passenger experience recently that include seven new retail shops and 13 new restaurants, and the addition of passenger services such as free Wi-Fi, an indoor pet relief facility, porter services in Baggage Claim, a new spa and hair salon services. Additionally, the Airport Foundation MSP launched the new MSP Navigators program, assisting travelers with check-in and security procedures, and with ground transportation services.

Four parking ramps provide short- and long-term parking for passengers and space for rental cars. A tram assists passenger movements from the terminal to the two most distant parking ramps, light rail transit (LRT) and auto rental facilities.

Terminal 1 vehicle parking revenue exceeded $69.8 million in 2013, which is an increase of 2.1% compared to 2012.

2.2.3 Terminal 2-Humphrey

Terminal 2-Humphrey originally opened in 1977 with four gates and was named for Hubert H. Humphrey. A new terminal replaced the original terminal in 2001. Signage changes were made in 2010 that now refer to the Humphrey Terminal as Terminal 2-Humphrey (Terminal 2).

Terminal 2 is located southwest of the parallel runways and consists of 10 common-use gates currently used by six airlines: AirTran Airways, Condor, Icelandair, Southwest Airlines, Spirit Airlines, and Sun Country Airlines. The building layout of Terminal 2 is depicted in **Figure 2-3**, and includes an International Arrival Facility.

New concessions at Terminal 2 include local favorites Cocina del Barrio, Surdyk’s Flights and Caribou Coffee. Subway and Minneapolis/St. Paul Magazine News also opened recently. Free Wi-Fi is now available in Terminal 2; a second security checkpoint was constructed, and the original security checkpoint was expanded for additional screening capacity.

Figure 2-2:
Terminal 1-Lindbergh

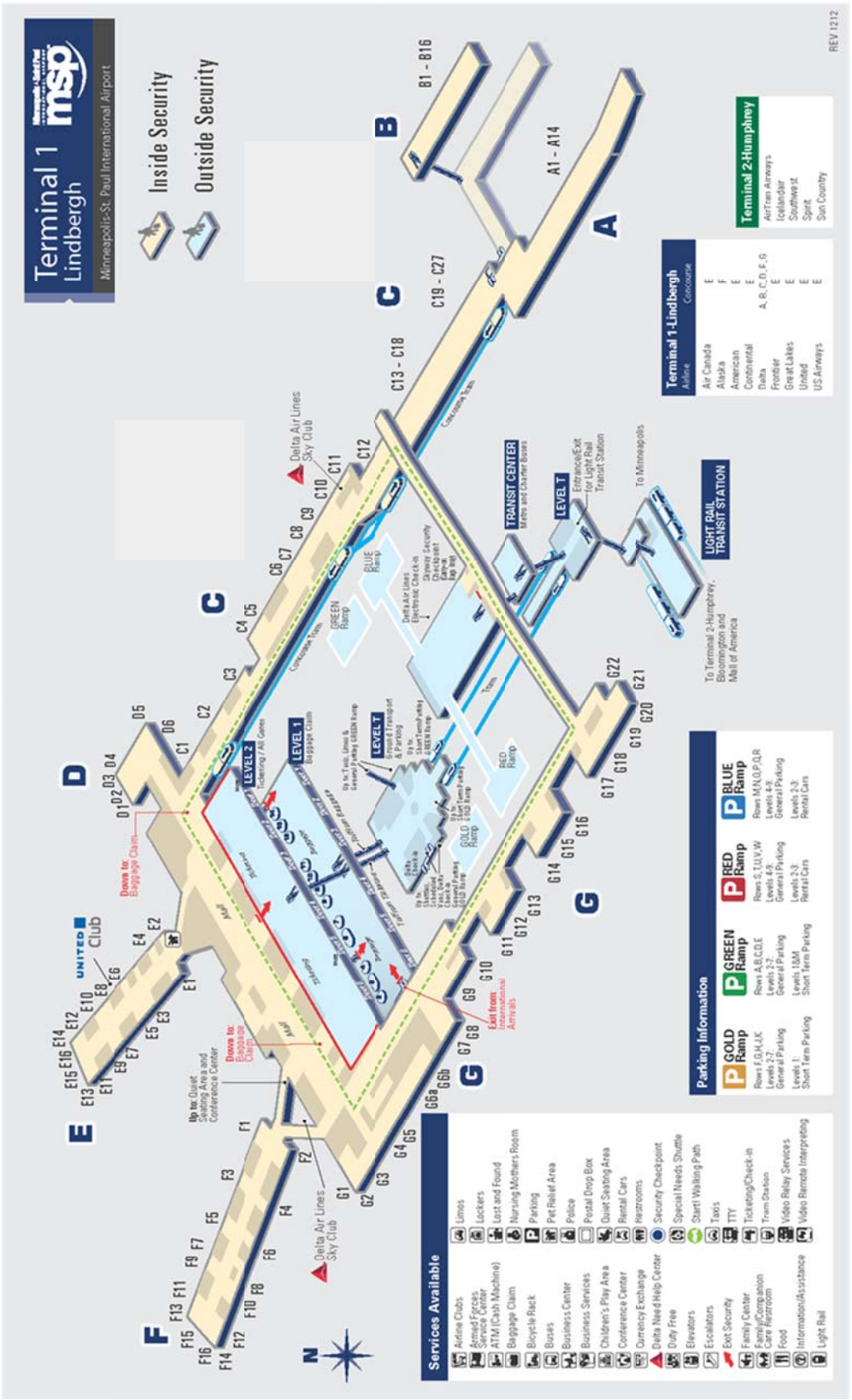
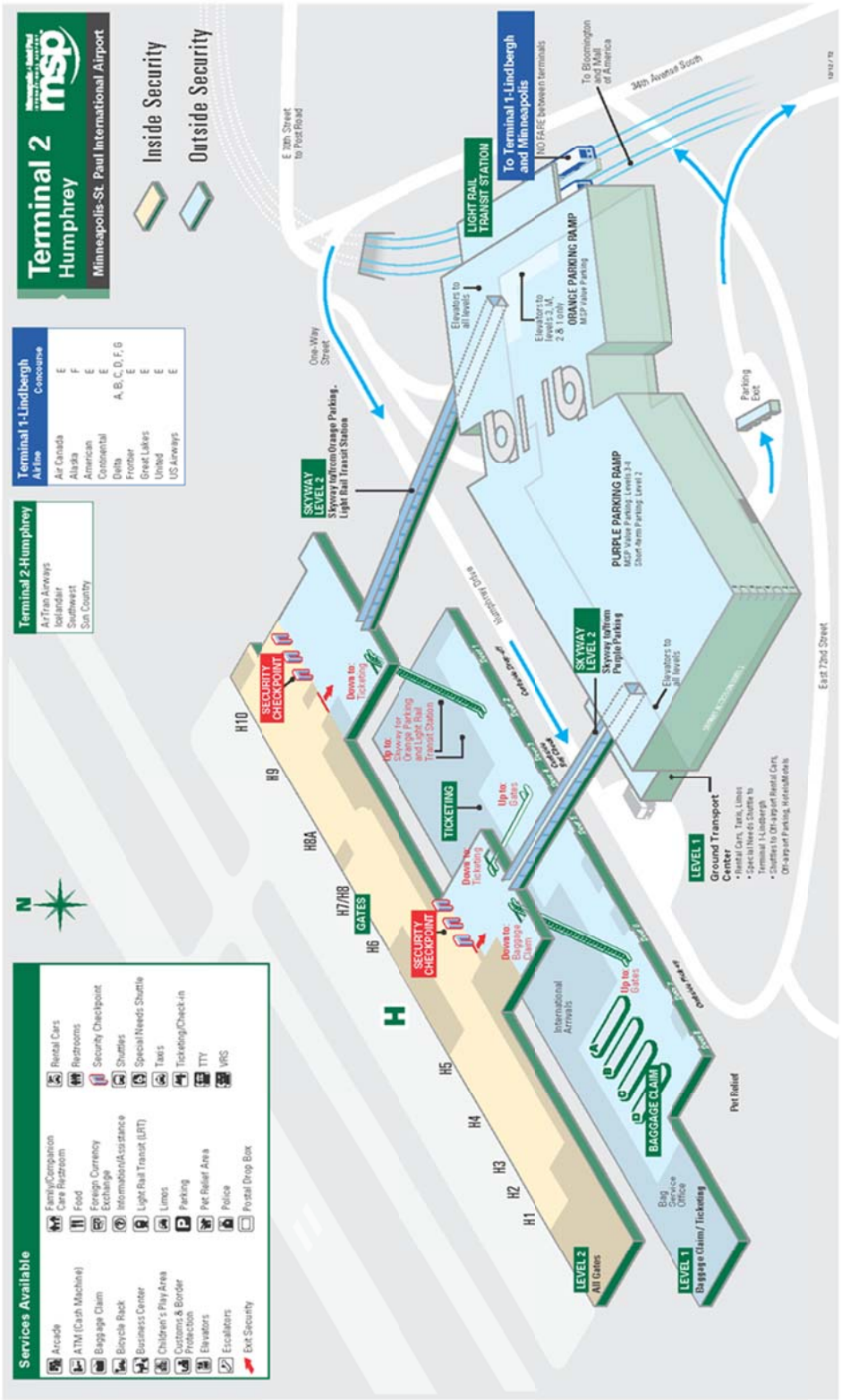


Figure 2-3:
Terminal 2-Humphrey



Terminal 2 vehicle parking is provided in the Orange and Purple Ramps, which includes access to the terminal building and Light Rail Station through elevated, temperature-regulated skyways. Vehicle parking revenue for Terminal 2 rose 23.7% in 2013 compared to 2012, reaching approximately $14.1 million.

Work began on a number of other Terminal 2 improvements as well, including development of expanded auto rental public and operational facilities, additional ramp area for aircraft parking, and creation of an automated checked bag screening facility. Expansion of the north apron concrete area will accommodate additional aircraft parking and possible future gate expansion.

2013 was the busiest year on record for Terminal 2 with over 4 million passengers traveling through the facilities and over 37,000 aircraft operations. This growth was largely a result of competitive, low-fare air service that continued to thrive at Terminal 2, spurred primarily by increased activity by Minnesota-based Sun Country Airlines and ultra-low-fare carrier Spirit Airlines.

2.2.4 Light Rail and Bus Transit

The Metro Transit METRO Blue Line provides a light rail transit (LRT) option for MSP travelers and visitors commuting between terminals and off-airport locations from Target Field in downtown Minneapolis to the Mall of America.

The Terminal 1 Station at MSP is located below ground at the south end of the Terminal 1 parking complex, and the Terminal 2 Station is located directly east of Terminal 2. No fare is required for travel between the two MSP LRT stations. A bus station at ground level above the Terminal 1 Station provides additional transit service and connectivity between the LRT and bus systems.

Metro Transit estimates total daily average rides in 2013 increased slightly over activity in 2012. There was an average of approximately 5,000 daily boardings in 2013 at MSP compared with 4,800 in 2012.

2.3 AIRPORT ACTIVITY AND SERVICE TRENDS

MSP is served by 14 commercial passenger airlines; nine are located at Terminal 1 and six are located at Terminal 2. This section highlights an overview of the airline and passenger activity, and aircraft operations trends in 2013.

The airline industry experienced a solid and profitable 2013, following several difficult years due to the lingering effects of the economic recession. MSP's passenger total increased to 33,892,074, a 2.17 percent increase over the 2012 passenger total of 33,170,960. This represents the fourth consecutive year MSP's total passenger activity has grown over the previous year. However, MSP's 2013 total passenger activity was about 10 percent lower than its peak year 2005, when 37,663,664 total passengers utilized MSP.

Delta Air Lines is the largest air service provider at MSP and operates out of Terminal 1. Delta Air Lines and its regional partners averaged more than 400 flights per day from MSP to more than 130 destinations worldwide in 2013. Delta's market share of MSP passengers in 2013 was 75.1 percent, slightly less than its market share of 76.5 percent

of MSP passengers in 2012. In 2013, Delta added new service to Rhinelander, WI and Dickinson, ND. Delta also grew existing service to Houston, TX; Pittsburgh, PA; Las Vegas, NV; Dallas, TX; St. Louis, MO; San Francisco, CA; and, Boston, MA, among others.

Sun Country Airlines continues to grow its markets and expand its services from Terminal 2. In 2013, Sun Country operated approximately 19 flights per day at MSP and served more than 20 year-round and seasonal destinations. Sun Country experienced significant passenger growth in 2013, serving 23 percent more passengers than in 2012. Sun Country added new service to Chicago-Midway (MDW) and Washington-National (DCA). Sun Country increased existing service to essentially every destination it serves. Boston, MA; San Diego, CA; San Francisco, CA; and, Dallas, TX experienced the most growth.

Spirit Airlines experienced tremendous growth in 2013, serving 612,438 total passengers at MSP, representing 182 percent growth over the 217,192 total passengers served in 2012. Spirit continues to plan aggressive growth at MSP in 2014, expanding service to 13 total destinations.

An impact of the American/US Airways merger will be the loss of nonstop service by this company from MSP to Washington-National (DCA) and New York LaGuardia (LGA) in 2014. As part of its settlement with the Department of Justice in 2013, American/US Airways agreed to relinquish slot pairs at both airports. MSP is one of 17 destinations to lose Washington-National service. Other markets losing Washington-National service include Detroit, MI; Montreal, Quebec; Omaha, NE; and San Diego, CA. MSP is one of three destinations to lose New York-LaGuardia service by the merged airline, in addition to Atlanta, GA, and Cleveland, OH.

Frontier Airlines announced it will expand its low-fare service at Trenton-Mercer Airport (TTN), in Ewing, N.J., with the addition of nonstop service to MSP beginning June 2014 using A319 aircraft. This is the only airline providing scheduled service out of Trenton-Mercer Airport, the gateway to New Jersey’s state capital, all of central New Jersey, and Southeast Pennsylvania, including metro Philadelphia.

Tables 2-2 and 2-3 depict the revenue passenger activity for all air carriers serving MSP markets.

Table 2-2

MSP Revenue Passenger Summary

Rank	Airline	2011	2012	2013	Gain/ Loss 2011-2013	% Change 2011-2013
1	Spirit	0	217,192	612,438	612,438	---
2	Sun Country	1,110,913	1,231,655	1,515,394	404,481	36.4%
3	US Airways	1,043,619	1,198,002	1,327,869	284,250	27.2%
4	Great Lakes	0	48,444	50,045	50,045	---
5	Air France	0	0	45,739	45,739	---
6	Air Canada	53,786	60,960	70,010	16,224	30.2%
7	Alaska Airlines	191,419	170,964	189,928	-1,491	-0.8%
8	Icelandair	44,841	42,115	40,657	-4,184	-9.3%
9	Southwest/AirTran	1,816,451	1,787,448	1,810,118	-6,333	-0.3%
10	American	1,010,695	1,019,085	1,002,095	-8,600	-0.9%
11	Delta	24,730,908	24,525,492	24,583,275	-147,633	-0.6%
12	Frontier	510,945	375,524	354,257	-156,688	-30.7%
13	United/Continental	1,448,307	1,376,606	1,151,755	-296,552	-20.5%
	Total	**31,961,884**	**32,053,487**	**32,753,580**	**791,696**	**2.5%**

Source: MAC Operations Reports

Table 2-3

MSP Revenue Passenger Market Share

Rank	Airline	2011	2012	2013	Gain/ Loss 2011-2013	% Change 2011-2013
1	Delta	77.38%	76.51%	75.06%	-2.32%	-3.0%
3	Southwest/AirTran	5.68%	5.58%	5.53%	-0.15%	-2.7%
5	Sun Country	3.48%	3.84%	4.63%	1.15%	33.2%
6	US Airways	3.27%	3.74%	4.05%	0.78%	24.0%
4	United/Continental	4.53%	4.29%	3.52%	-1.01%	-22.3%
7	American	3.16%	3.18%	3.06%	-0.10%	-3.2%
9	Spirit	0.00%	0.68%	1.87%	1.87%	---
8	Frontier	1.60%	1.17%	1.08%	-0.52%	-32.4%
10	Alaska Airlines	0.60%	0.53%	0.58%	-0.02%	-3.2%
11	Air Canada	0.17%	0.19%	0.21%	0.05%	27.0%
12	Great Lakes	0.00%	0.15%	0.15%	0.15%	---
2	Air France	0.00%	0.00%	0.14%	0.14%	---
13	Icelandair	0.14%	0.13%	0.12%	-0.02%	-14.5%

Source: MAC Operations Reports

2.3.1 Passenger Originations/Destinations and Connections

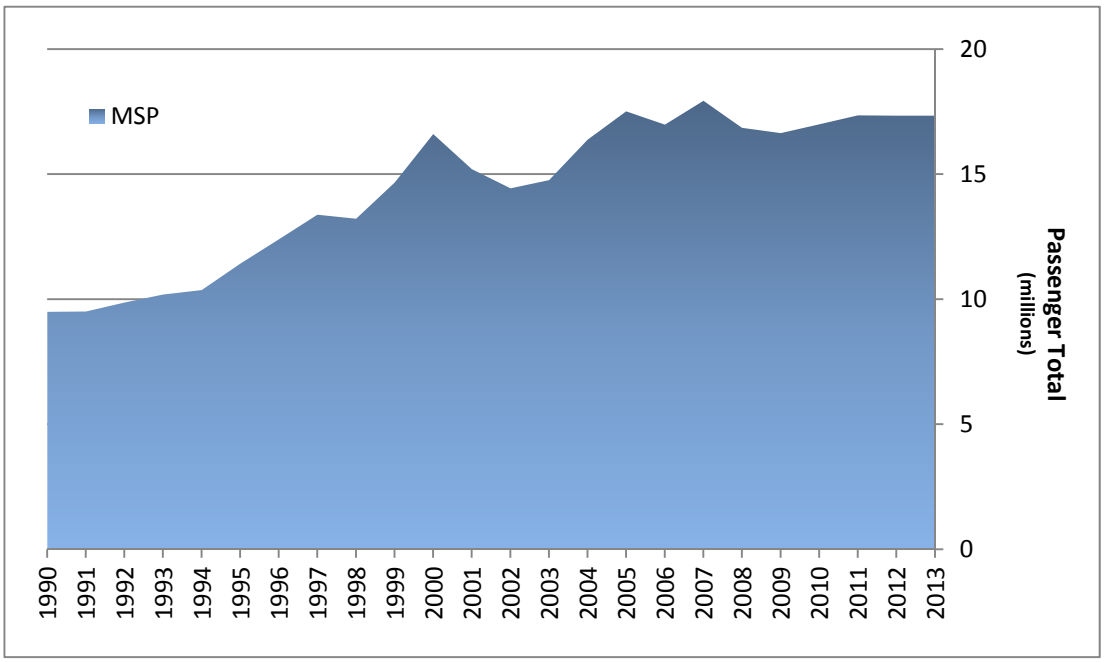
Figure 2-4 depicts the annual historical passenger originations/destinations (O&D) data for MSP for the years 1990 through 2013. O&D passengers are those who begin or end their trip at MSP. O&D passenger demand is driven primarily by local socioeconomic factors.

The following information details MSP O&D and connecting passenger data for 2013:

- There were 17,584,106 O&D passengers in 2013, which is approximately 1.4 percent higher than the 2012 O&D passenger level of 17,335,778.[4]
- Between 1990 and 2013, O&D passengers at MSP rose from 9.5 million to over 17 million, which represents an estimated annual compounded growth rate of 2.71 percent.

Connecting passengers are those who travel through the airport enroute to another destination. There were 14,880,428 connecting passengers at MSP in 2013, which is approximately 1.2 percent more than the connecting passenger level of 14,704,298 in 2012.

Figure 2-4:
Annual Passenger Originations/Destinations (O&D) Totals
1990-2013



Source: 1990-2008 U.S. DOT DB1B and MAC Year End Statistics Report

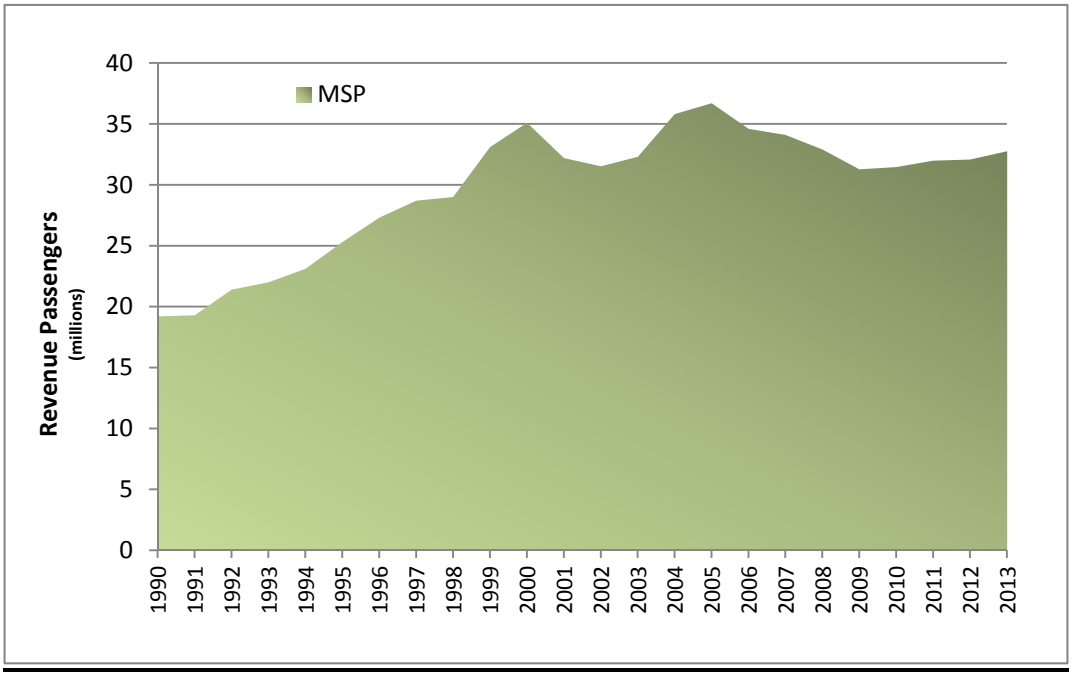
[4] Because of prior Detroit Metro Airport comparison requirements, the data from 1990-2008 were obtained from the U.S. DOT and HNTB analysis. The airport comparison is no longer required in this report; therefore, the 2009 through 2013 numbers were derived from Metropolitan Airports Commission year-end reports, providing the most accurate MSP-specific statistics.

2.3.2 Annual Revenue Passengers

The revenue passenger level at MSP reported by the airlines in 2013 reached 32,763,027, which is 2.16 percent higher than the level in 2012. The number of passengers flying on major airlines rose 4.34 percent in 2013 while the number of passengers using regional airlines and charter flights decreased 2.7 percent and 2.85 percent, respectively.

Total annual revenue passenger levels are shown in **Figure 2-5** and include O&D and connecting passengers. Between 1990 and 2013, total annual revenue passengers grew from 19.2 million to 32.8 million, an annual compounded growth rate of 2.35 percent. MSP revenue passenger levels peaked at 36.7 million in 2005 then declined to 31.3 million in 2009. Since 2009 revenue passengers levels have been increasing steadily.

Figure 2-5:
Total MSP Annual Revenue Passengers
1990-2013



Source: MAC Year End Statistics Report

Airports Council International reports that global passengers increased by 3.9 percent in 2013 when compared to 2012. The level of domestic passengers in 2013 increased 2.7 percent and the level of international passengers rose 5.2 percent compared to 2012. [5]

2.2.3 Annual Aircraft Operations

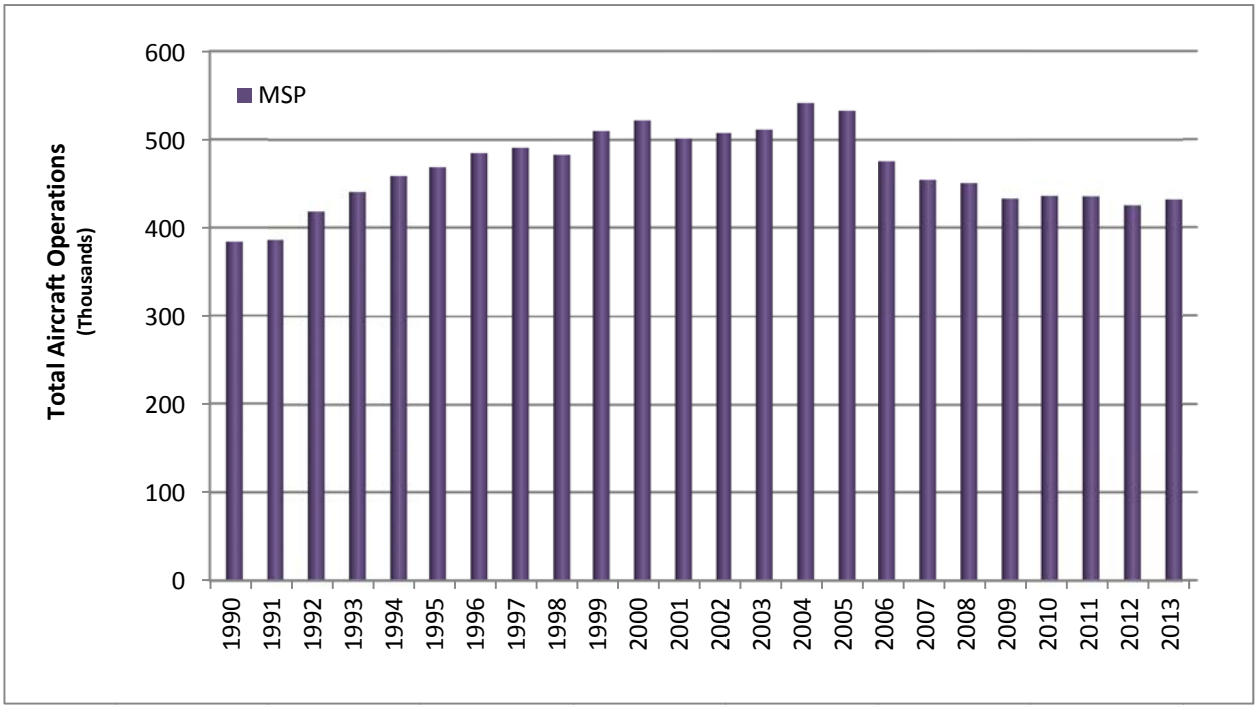
The FAA reported aircraft operations at MSP increased by 1.6 percent in 2013 compared to 2012. According to the FAA's air traffic counts, there were 431,573 arrivals and departures at MSP in 2013, up from 424,928 in 2012. Annual MSP aircraft operations are presented in **Figure 2-6**.

[5] Airport Council International (ACI) Table 1:Summary Worldwide Traffic Results, December 2013.

In 1990, MSP had 382,960 annual operations according to FAA Air Traffic Control Tower counts. Total annual operations at MSP generally increased through 2000, and then declined as a result of the terrorist attacks on September 11, 2001. The year 2001 ended with 501,252 total operations at MSP, a 4.0 percent decline from the previous year. In 2002 and 2003 operations rose approximately 1.2 percent over the level in 2001, but then jumped 6.0 percent in 2004. Total operations at MSP peaked in 2004 at 540,727.

The years that followed 2004 were impacted by increasing fuel prices and an overall struggling economy, which was reflected in the fairly steady decline of aircraft operations at MSP between 2004 and 2009. During that timeframe operations dropped at MSP from 540,727 to 432,604; many airlines reduced their scheduled flights and thinned out their fleets to lower operating costs, and several airlines raised ticket prices and initiated fees for traditionally "no-charge" passenger services (e.g., baggage fees, ticket counter customer service, in-flight food and beverages, etc.) to generate additional revenue. In addition, several large air carriers merged their business operations and other air carriers went through bankruptcy proceedings.

Figure 2-6:
Total MSP Annual Aircraft Operations
1990-2013



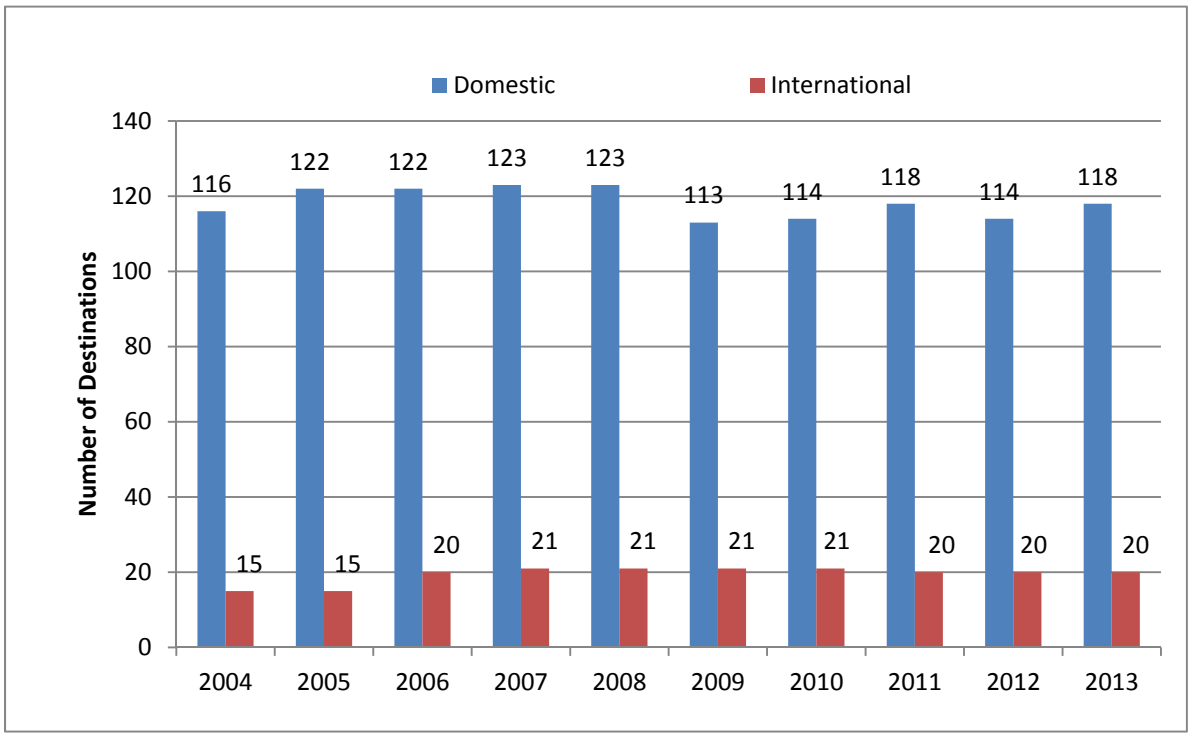
Source: MAC Year End Statistics Report and FAA OpsNet

2.3.4 Nonstop Markets

Figure 2-7 shows the number of nonstop domestic and international (including Canadian) markets served from MSP from 2004 through 2013. The domestic markets included in these totals are those that are served by an annual average of at least five weekly nonstop flights. The international markets include those that are served by an annual average of at least one weekly nonstop flight. Some of these markets are served only seasonally.

Based on airline schedule data obtained through Innovata, LLC (via Diio Mi), there were 138 nonstop markets served by MSP in 2013—118 domestic and 20 international—that met the above criteria.

Figure 2-7:
Total MSP Annual Aircraft Operations
2004-2013



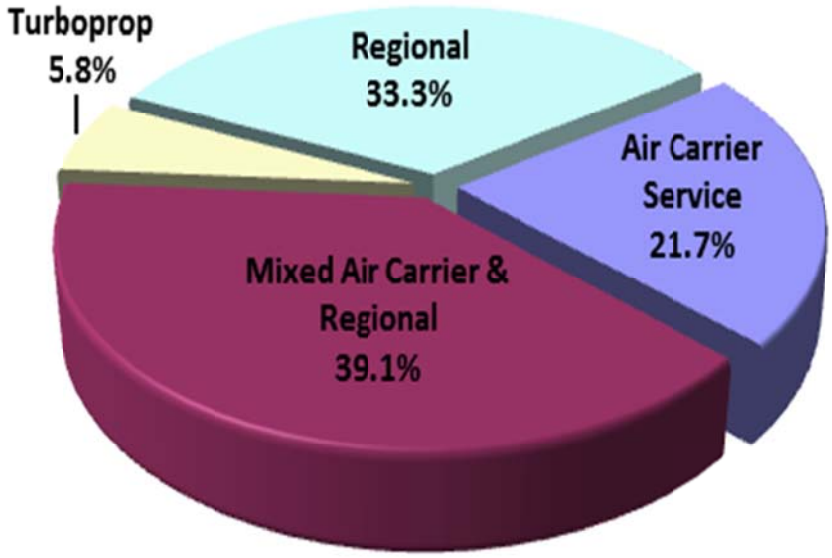
Source: Innovata (via Diio Mi) and MAC Analysis

Figure 2-8 summarizes the use of various types of aircraft that serve MSP's nonstop markets. In 2013, approximately 21.7 percent of the nonstop markets were served exclusively by air carrier jets (e.g., A320, B757, etc.) compared with 22.5 percent in 2012. The percentage of nonstop markets served by regional air carrier aircraft (e.g., CRJ, E170, etc.) increased from 23.2 percent in 2012 to 33.3 percent in 2013. Turboprop aircraft utilizing MSP (e.g. Beechcraft 1900, etc.) accounted for 5.8 percent of nonstop markets in 2013. In 2012 there were no dedicated nonstop markets in turboprop aircraft.

Some nonstop markets are flexible and utilize aircraft types based upon market demand and seasonal fluctuations; 39.1 percent of MSP nonstop markets in 2013 were served by a mixture of air carrier jets and regional type aircraft. In 2012, 44.2 percent of non-

stop markets were served by mixed aircraft types. The decrease in mixed-use aircraft and the aforementioned increase in use of regional jets are indications that some air carriers are dedicating use of regional type aircraft for certain nonstop destinations.

Figure 2-8:
MSP Nonstop Markets by Aircraft Type
2013



138 Nonstop Markets

Source: Innovata (via Diio Mi) and MAC Analysis

Table 2-4 compares Minneapolis-St. Paul to other major metropolitan areas in terms of the number of nonstop markets served by each airport per population of the Metropolitan Statistical Area.

Table 2-4

Nonstop Markets by Metropolitan Area 2013

Rank	Market Area	Population (millions)[1]	Nonstop Markets[2][3]	Markets/ Population (millions) Ratio
1	New York	23.1	221	9.6
2	Los Angeles	17.9	141	7.9
3	Chicago	9.8	210	21.3
4	Washington D.C - Baltimore	9.1	156	17.2
5	San Francisco - Oakland	8.2	103	12.6
6	Boston	7.9	101	12.8
7	Philadelphia	7.1	118	16.7
8	Dallas - Ft. Worth	6.8	190	27.9
9	Miami - Fort Lauderdale	6.2	148	24.0
10	Houston	6.1	171	28.0
11	Atlanta	5.9	209	35.4
12	Detroit	5.3	133	25.0
13	Seattle	4.3	90	21.1
14	Phoenix	4.2	95	22.7
15	**Minneapolis - St. Paul**	**3.7**	**138**	**37.4**
16	Cleveland	3.5	64	18.2
17	San Diego	3.1	48	15.5
18	Denver	3.1	164	53.1
19	Tampa-St. Petersburg	2.9	62	21.2
20	Portland	2.9	49	16.8
21	St. Louis	2.9	58	20.1
22	Orlando	2.8	101	35.8
23	Sacramento	2.8	26	9.3
24	Pittsburgh	2.7	35	13.2
25	Charlotte	2.4	138	56.5
26	Salt Lake City	2.3	86	37.9
27	Indianapolis	2.3	31	13.7
28	Las Vegas	2.2	97	44.2
29	Cincinnati	2.2	42	19.3
30	Milwaukee	2.0	31	15.3

Notes:
[1] U.S. Census Bureau; Annual Estimates of Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2010 - July 1, 2012 (CBSA-EST2012-01); Annual Estimates of the Population of Combined Statistical Areas: April 1, 2010 to July 1, 2012 (CBSA-EST2012-02)
[2] Metropolitan 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 CY 2013.

Sources: US Census Bureau, Innovata CY2013, MAC analysis, http://www.census.gov/popest/data/metro/totals/2012/index.html

2.4 COMPARISON OF MAC FORECAST WITH ACTUAL ACTIVITY

As part of the MAC update to the Long Term Comprehensive Plan (LTCP) for MSP in 2010 revised forecasts were approved and published. The forecasts were updated once again in May 2012 as part of the MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) process. The forecast conducted in 2012 considered recent economic conditions and changes in the industry since 2009, resulting in the most up-to-date statistics on forecast operations levels at MSP. The MSP 2020 Improvements EA/EAW forecasts are used as the forecast data source for this report.

The 2012 forecast analysis provides the annual activity forecast levels at MSP for the years 2010, 2015, 2020, 2025, and 2030. The EA/EAW analysis of future environmental effects from the proposed development focused on 2020 (year of project implementation) and 2025 (providing additional assessment of the forecast effects five years beyond project implementation).

The General Forecast Assumptions that were used in this forecast include:

- There are sufficient MSP airfield, terminal, and landside facilities at the airport to accommodate all commercial aviation activity.
- No return to airline regulation, as occurred prior to 1979; market conditions will dictate the airline services provided and associated fares/fees.
- No major economic downturn, such as the economic depression that occurred during the 1930's.
- No major international conflicts that would disrupt aviation.
- No major trade wars or embargoes that would restrict flow of commerce and travel.
- Security requirements are still evolving as a result of terrorist activity. These requirements affect passenger demand by increasing the cost of travel, delays, and inconvenience. It was assumed that the Transportation Security Administration will maintain a 10-minute limit for security-related delays.
- The real cost of fuel was assumed to increase from 2011 levels. It was assumed that there would be no major disruptions (e.g., similar to what occurred in the 1970's).
- No major changes in the physical environment were assumed. It was assumed that global climate changes would not be sufficient to force restrictions on the burning of hydrocarbons or result in major fuel tax increases.
- It was assumed that the FAA would implement any required changes and improvements for the national airspace system to accommodate unconstrained aviation demand.
- It was assumed that government regulations and labor union resistance would prevent any major airline consolidation beyond the mergers of Unit-

ed/Continental and Southwest/Air Tran. It was also assumed that some minor airline consolidation could continue to occur.

- It was assumed that new entrants would attempt to establish service at MSP by 2015. Southwest Airlines was assumed to expand at MSP. It was also assumed that new airlines might attempt to become established during the forecast period; however, it was not possible to predict the names and characteristics of new airlines.
- It was assumed that the SkyTeam alliance would continue with its current members (Delta, Air France, KLM, Alitalia, Korean, Aeromexico, Aeroflot, China Southern, Air Europa, Kenya Airways, TAROM, Vietnam Airlines, and CSA Czech Airlines).
- It was assumed that Delta Air Lines and Sun Country Airlines would continue to operate as hub carriers at MSP. Further, these hub carriers were not assumed to either add or delete major hubs elsewhere in the United States, and the connecting percentage was assumed to remain similar to the percentages from 1992-2010.

A comparison of actual 2013 activity and forecasted activity for the Origination and Destination (O&D) passengers, revenue passenger enplanements, and aircraft operations is provided in **Figures 2-9 through 2-11.** For reference, the 2013 forecasted levels from the MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet and the previous 1993 MSP Long Term Comprehensive Plan are provided in the comparison figures.[6]

- **Figure 2-9** shows a comparison of actual and forecasted O&D passengers. Actual O&D passengers in 2013 were approximately 17.58 million, which is 3.6 percent above the 2013 forecast level of 16.97 million O&D passengers.
- **Figure 2-10** shows a comparison of the actual revenue passenger level of 32.8 million in 2013 and the 2013 forecasted level of 33.7 million. The actual number of revenue passengers in 2013 is 2.8 percent lower than the forecasted level.
- **Figure 2-11** compares the actual number of aircraft operations as counted by the Federal Aviation Administration of 431,573 in 2013 with the forecasted level of 439,989. The level of actual operations is approximately 1.9 percent lower than the forecasted level.

[6] Data were obtained from the MSP 2020 Improvements EA/EAW Aviation Activity Forecast 2012, Metropolitan Airports Commission records, Federal Aviation Administration Opsnet, and HNTB analysis.

Figure 2-9:
MSP Forecast vs. Actual 2013 O&D Passengers

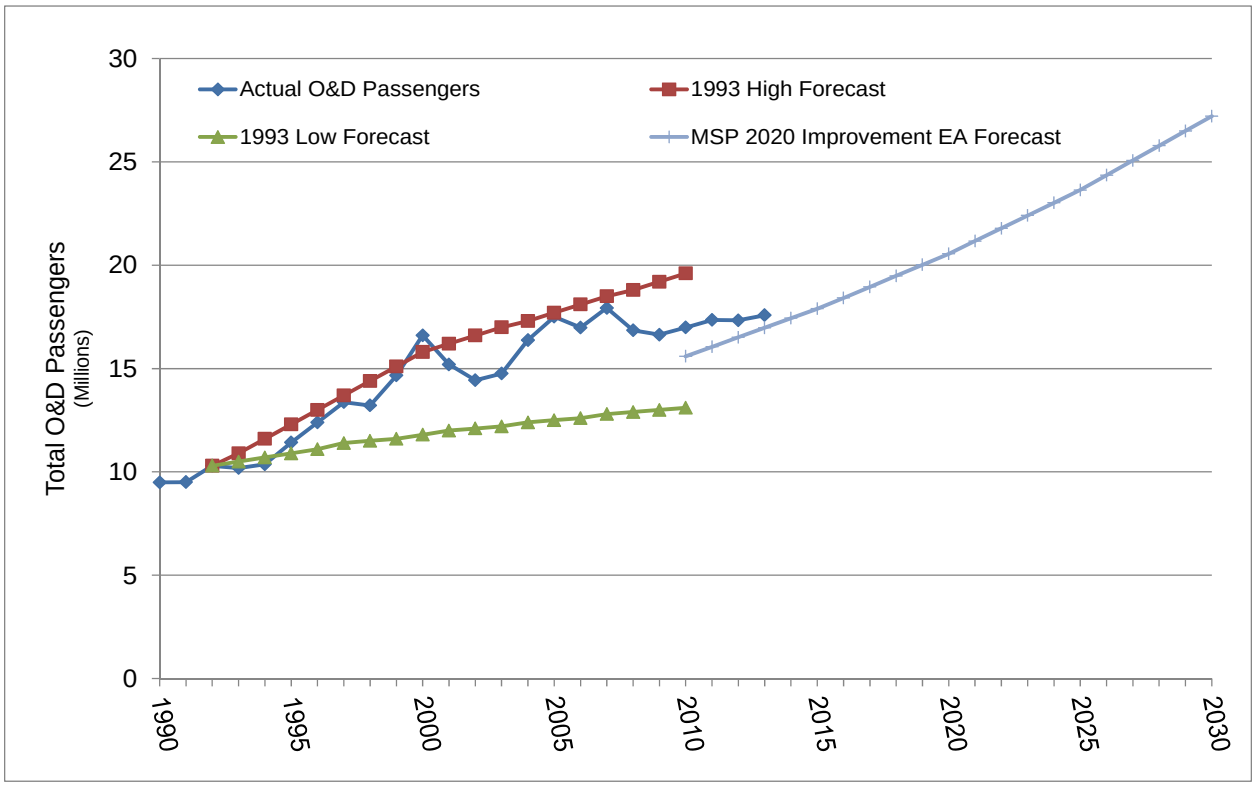


Figure 2-10:
MSP Forecast vs. Actual 2013 Revenue Passengers

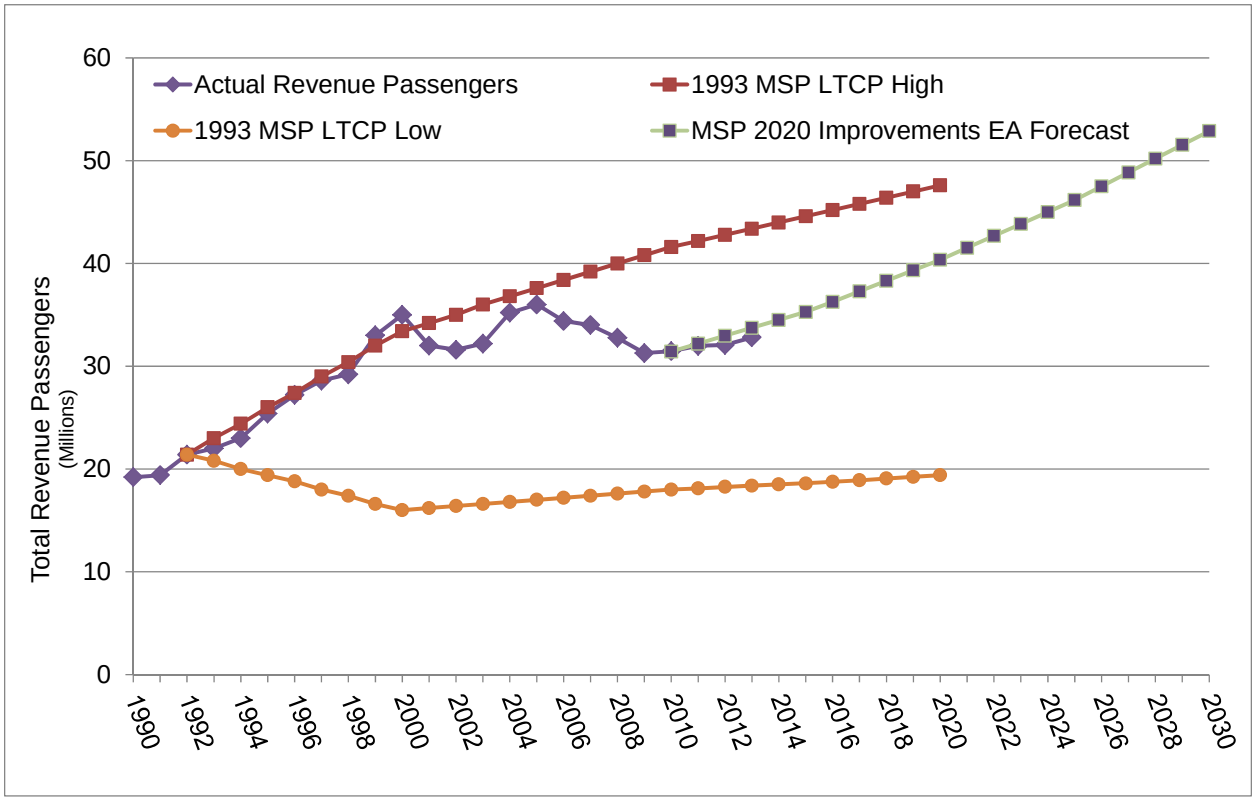
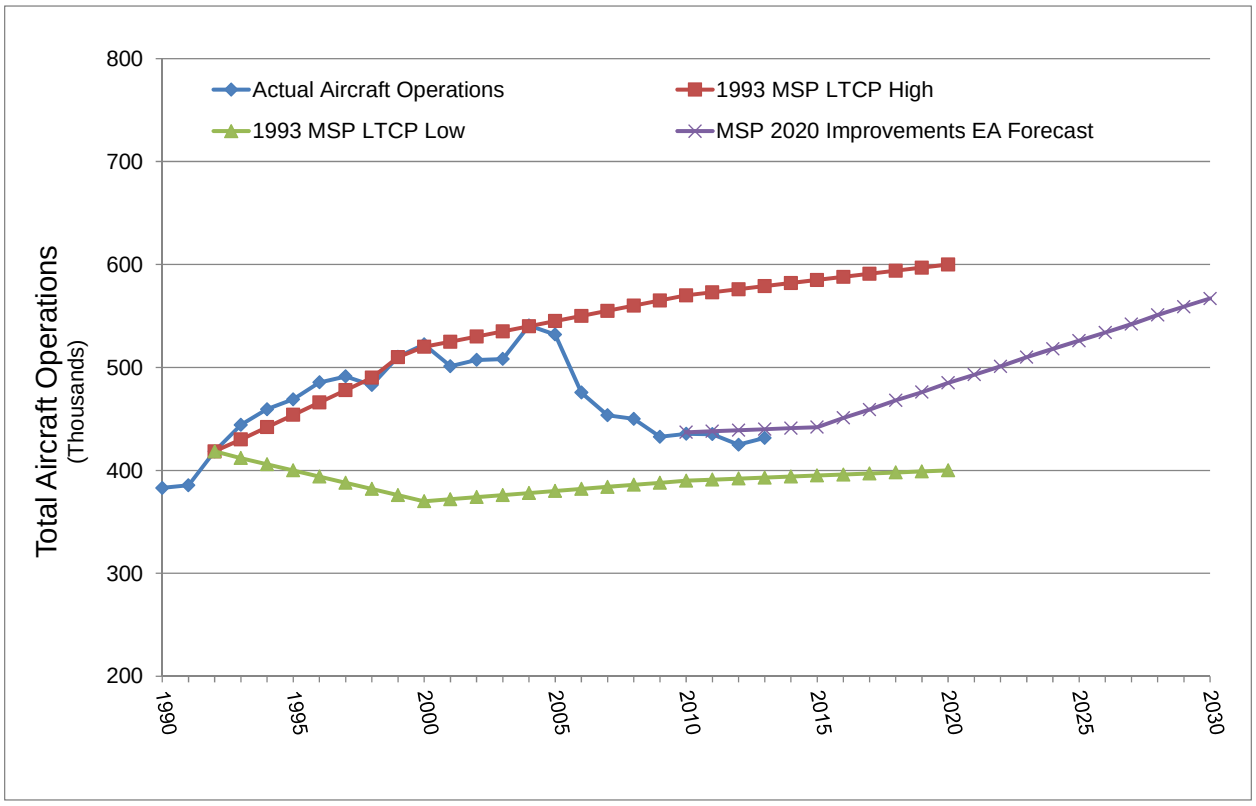


Figure 2-11:
MSP Forecast vs. Actual 2013 Aircraft Operations



2.5 AIRFIELD CAPACITY AND DELAY

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

2.5.1 Airfield Capacity

Airfield capacity is typically described in terms of hourly capacity and annual capacity under good and poor weather conditions. **Table 2-5** shows existing and future hourly capacity for MSP.

Table 2-5

MSP AIRFIELD CAPACITY

Hourly Airfield Capacity	Existing	Future
Optimum Rate (1)	150	160
Marginal Rate (2)	142	155
IFR Rate (3)	120	125

Notes:
(1) Ceiling and visibility above minima for visual approaches.
(2) Below visual approach minima but better than instrument conditions.
(3) Instrument conditions (ceiling less than 1,000 feet or visibility less than 3 miles).

Source: Federal Aviation Administration (FAA) Air Traffic Control Tower Analysis

As shown in **Table 2-5**, existing hourly capacity at MSP is about 150 operations in good weather and 120 operations in poor weather. Specific conditions that define poor weather include the airport's most commonly-used instrument criteria, where operations are conducted below visual approach minima (e.g., instrument approaches).

Forecasted aircraft operations developed for the MSP 2020 Improvements EA/EAW (see Section 2.4) project total aircraft operations will increase to a level of 526,040 by the year 2025. MSP's current airfield location and configuration is expected to meet projected demand through 2030 with the existing runway capacity.

2.5.2 Airfield Delay

Delay can be measured in several ways. This section reviews various delay measures as they are reported by the FAA and apply to MSP.

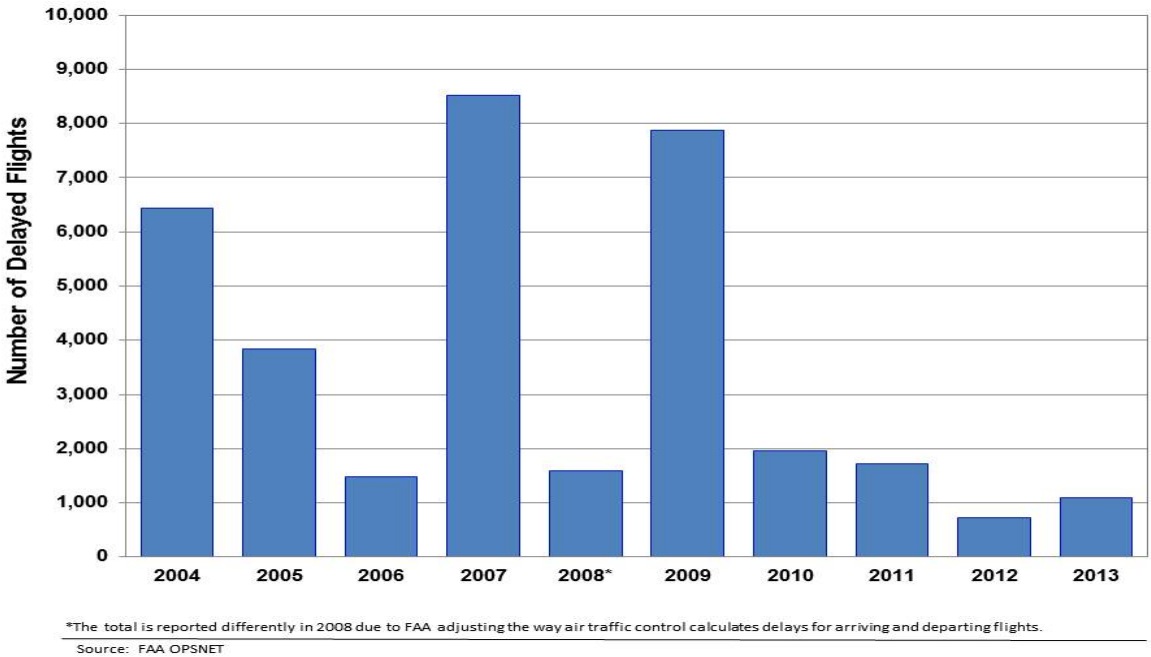
Number of Delayed Flights as Reported by the FAA

The FAA Air Traffic Operations Network (OPSNET) database counts flights that were reported by Air Traffic Control (ATC) to be delayed for more than 15 minutes. Delays of fewer than 15 minutes are not counted, nor are delays not initiated by ATC. In addition, since delays are reported by each airport facility, a flight that was delayed by 13 minutes at one airport facility and 12 minutes by another airport facility (for a total delay of 25 minutes) was not included in the OPSNET database prior to October 1, 2008. These data limitations should be kept in mind when reviewing OPSNET delay data.

In 2008, the FAA made significant modifications to its reporting rules that affect historical data comparisons. The FAA now combines arrival and enroute delays into one category, and now reports delays for aircraft that accumulate 15 minutes or more holding delay at each facility throughout the entire route of flight.

Figure 2-12 depicts the number of MSP flights delayed by ATC. [7] There was a steady decline of flight delays between 2003 and 2006, reaching a low of 1,474 in 2006.[8] In 2007, the closure of Runway 12R-30L for two months due to reconstruction contributed to the increase in the number of reported delays. The number of delayed flights dropped significantly in 2008 to 1,579, but increased dramatically in 2009 to 7,880 due to the closure of Runway 12L-30R for two months for reconstruction work. There were 1,099 delayed flights in 2013 and 731 in 2012. The increase in 2013 is attributed to more weather-related delays reported by the FAA.

Figure 2-12:
MSP Flights Delayed by ATC*
2004-2013



*The total is reported differently in 2008 due to FAA adjusting the way air traffic control calculates delays for arriving and departing flights.
Source: FAA OPSNET

Percentage of Flights Arriving On-time

The data series used to calculate on-time performance for arrivals is the FAA's Aviation System Performance Metrics (ASPM) database. Within this data set, aircraft must be airborne enroute to their scheduled destination in order for them to be considered delayed; therefore, cancelled and/or diverted flights are not considered late in this system. Scheduled flight times typically include some cushion for delay, especially for arrivals operating during peak periods. A delayed flight can be attributed to mechanical problems, lack of crew or poor weather, and is not limited to capacity constraints.

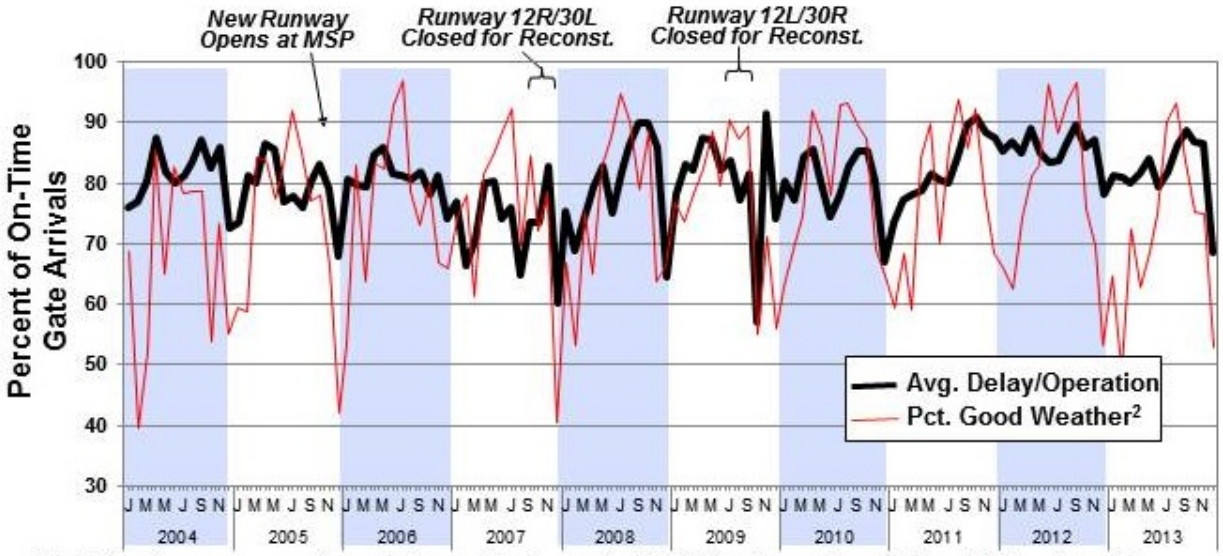
Figure 2-13 shows average on-time gate arrival performance for domestic air carrier flights at MSP based on the delay data extracted from the FAA ASPM database. The top graph compares MSP's moving 12-month average for on-time performance with the national average. Between 2003 and 2008, the highest on-time performance for MSP

[7] Delays at MSP peaked in 2002 with at total of 8,733 flights reported as delayed.
[8] Runway 17/35 was completed and operational in October 2005. The year 2006 was the first full year of operations using Runway 17/35, which significantly contributed to the decrease in flight delays.

Figure 2-13:

On-Time Gate Arrivals, MSP vs. National Average[1]
(12-Month Moving Average)

Comparison of MSP Monthly On-Time Gate Arrivals[2] and Percent of Good Weather[3]



(1) National average consists of the top 55 airports in ASPM database through Oct. 2004 and top 77 airports for rest of period.
(2) Percentage of flights arriving within 15 minutes of scheduled arrival time.
(3) Good weather is defined as when conditions may allow visual approaches; actual separation standards used at time of observation are not available in ASPM database.

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

occurred in 2003, when overall annual on-time performance averaged about 84 percent. MSP saw its on-time performance decline to a low of 73 percent due to reconstruction of Runway 12R-30L from August 13, 2007 to October 18, 2007 and poor weather at MSP in December 2007. Reconstruction of Runway 12L/30R from August 18 to October

30, 2009 also was a contributing factor to the decline in on-time performance during late summer/early fall in 2009.

In general, MSP's on-time performance has tracked higher than the national average between 2003 and 2013.

Average Delay per Aircraft Operation

When calculating the average delay per aircraft operation, airport-attributable delay is estimated by comparing a flight's actual air and taxi times with estimated unconstrained times. The total cumulative amount of delay experienced by all scheduled flights in the database is then divided by the total number of flights in the database for the same time period. The output is usually expressed in minutes of delay per operation.

In editions of this report prior to 2005, delay was estimated by using the FAA's Consolidated Operations and Delay Analysis System (CODAS) and the U.S. Department of Transportation (DOT) Airline Service Quality Performance (ASQP) database to compare optimal vs. actual taxi and flight times for MSP.

After 2005, the FAA's Aviation System Performance Metrics (ASPM) database was used to estimate delay. The FAA replaced CODAS with this new program, providing delay information to industry professionals and government agencies. ASPM data provide a more comprehensive analysis of airport delay and capacity, and the FAA uses ASPM results to create performance benchmarks for airports each year. The main objective was to develop a clear and well-supported methodology to calculate aircraft delays that would be accepted by both government and industry as valid, accurate and reliable. Currently, there is general industry acceptance of the ASPM metric.

The ASPM information presented in **Figure 2-14** shows average delay per operation and compares MSP's month-by-month average delay per operation with the percentage of time the airport operated in poor weather conditions (which typically increases delays). The top graph compares MSP's 12-month moving average with the average for 77 high-delay airports tracked by the FAA.

Between 2003 and 2005, MSP's average delay per operation ranged between 6.5 minutes and 7.1 minutes, while the average delay for the 77 airports tracked by the FAA ranged from about 4.8 minutes to 5.6 minutes.

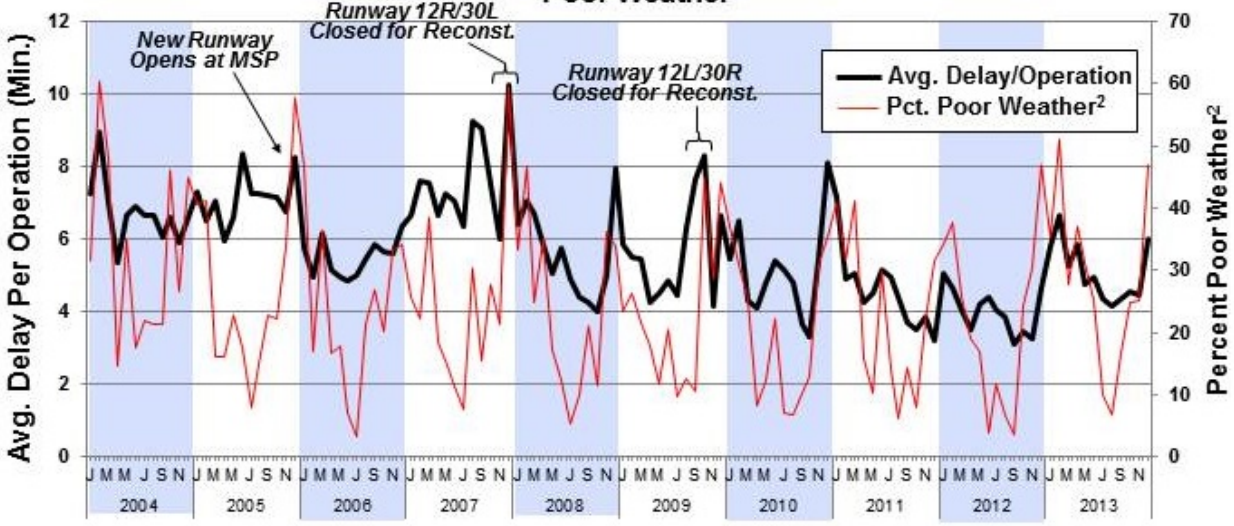
After MSP Runway 17/35 opened in late October 2005, average delay per aircraft began to decrease dramatically, reaching a low of about 5.5 minutes toward the end of 2006. The 12-month rolling average delay per operation began to increase steadily, reaching about 7.5 minutes by the end of 2007, while average delay for the 77 airports tracked by the FAA remained fairly constant at about 6.0 minutes. In December 2013 the 12-month rolling average delay per aircraft operation was 5 minutes.

When compared to other large hub U.S. airports as shown in **Table 2-6**, MSP ranked 10th overall in 2013 in terms of highest average delay per operation.

Figure 2-14:

MSP Average Delay Per Aircraft Operation Compared to National Average[1] (12-Month Moving Average)

Comparison of MSP Average Delay Per Aircraft Operation and Percent Poor Weather[2]



(1) An operation is either a landing or a takeoff. National average consists of top 55 airports in ASPM database through Oct. 2004 and top 77 airports for rest of period.

(2) Poor weather is defined as when aircraft must make instrument approaches; actual separation standards used at time of observation are not available in ASPM database.

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

Table 2-6

Top 15 Large Hub Airports with the Highest Average Total Delay Per Operation

Rank	Airport	2013 Total Airport Operations	2013 Average Minutes of Delay per Operation	2012 Average Minutes of Delay per Operation	2012 Rank	Change from 2012 to 2013
1	LGA	375,420	9.3	9.2	1	0.1
2	JFK	411,776	7.6	7.0	3	0.6
3	EWR	419,850	7.2	7.7	2	-0.5
4	PHL	432,884	6.2	5.9	4	0.3
5	ORD	883,287	5.7	4.9	9	0.8
6	DTW	425,732	5.7	3.9	18	1.8
7	CLT	557,955	5.7	5.1	8	0.6
8	ATL	911,074	5.3	5.3	7	0.0
9	BOS	366,485	5.1	4.8	11	0.3
10	**MSP**	**431,573**	**5.1**	**4.0**	**17**	**1.1**
11	DFW	678,059	4.9	4.5	13	0.4
12	LAX	614,917	4.8	5.4	6	-0.6
13	SFO	420,915	4.6	5.8	5	-1.2
14	DCA	296,192	4.6	4.2	14	0.4
15	DEN	586,860	4.4	4.0	16	0.4

Source: FAA OPSNET for airport operations data, FAA Aviation Performance Metrics (ASPM) for average minutes of delay per operation (taxi-in, taxi-out, and airborne delay).

2.6 TECHNOLOGICAL AND CAPACITY ENHANCEMENTS

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

- Airport Surface Detection Equipment (ASDE-3) was installed at MSP in 1996 to allow air traffic controllers to “see” aircraft maneuvering on the ground during poor visibility conditions. Installation of an upgraded system called ASDE-X was completed in 2009, but the upgraded system retained some components of the older ASDE-3. All-in-all, the upgraded system added remote units around MSP’s airfield to provide for more precise aircraft positioning; it provides seamless coverage for complete aircraft identification information, and it will allow for the Next Generation (NextGen) of navigation technology (Automatic Dependence Surveillance - Broadcast "ADS-B") to broadcast critical information using the Global Navigation Satellite System.

- In an effort to increase MSP's operational efficiency and capacity during inclement weather, the MAC has implemented additional CAT II and CAT III capabilities at the airport. The CAT II approach on Runway 30L allows aircraft descent down to 1200 feet visibility and 110 feet cloud ceiling. The CAT III approach on Runway 12R allows descent down to 700 feet visibility and no ceiling. The CAT III approaches on Runways 12L and 35 allow descent down to 600 feet visibility, and no ceiling.
- Future increases in MSP capacity levels will depend, in part, on the introduction of new aircraft avionics. An enhanced tool called Automatic Dependent Surveillance-Broadcast/Cockpit Display of Traffic Information (ADS-B/CDTI) identifies the location of other aircraft and displays their position in the cockpit. This technology allows controllers and pilots to maintain the desired separation between aircraft more precisely; however, aircraft must be properly equipped to use this device. The ADS-B system requires associated ground equipment to be installed to facilitate the transfer of traffic information to the aircraft. The ground equipment associated with ADS-B was installed at MSP in September 2010. Federal policy requires aircraft operating in capacity-constrained airspace, at capacity-constrained airports, or in any other airspace deemed appropriate by the FAA, to be equipped with ADS-B technology by 2020.
- Installation of a Runway Status Light System (RWSL) was completed at MSP in 2013. This technology is intended to prevent inadvertent runway crossing with indicators at the runway hold-short demarcation to let pilots and surface vehicle operators know that there is a presence of an aircraft or vehicle using the runway. Although this system is not yet commissioned fully, the system is currently in operation and expected to be commissioned in 2014.

2.6.1 FAA Area Navigation (RNAV) Procedure Implementation at MSP

In 2013 the FAA continued to focus efforts on implementing available advanced aircraft navigation technology at MSP in the form of airspace-wide Performance Based Navigation (PBN)/ Area Navigation (RNAV) departure and arrival procedures. The following provides a chronology of the public discussions that are related to the FAA's RNAV implementation efforts at MSP.

In August 2012 the FAA finalized the package of draft RNAV departure and arrival procedure tracks. At the September 19, 2012 MSP Noise Oversight Committee (NOC) meeting the FAA presented the procedures, highlighting the considerations given to NOC procedure noise design criteria. Additionally, the FAA requested an accelerated process that would provide MAC's support for the procedures by the end of November 2012. Subsequently, by a unanimous vote, the NOC directed MAC staff to move forward with a public information program, including two public open houses to be conducted in early-to-mid November 2012.

NOC-sponsored PBN/RNAV informational open houses were held on November 8, 2012 in Minneapolis and November 13, 2012 in Eagan. Information about the procedures and open houses was published on the MAC's Noise Program Office website and given coverage by local print and television news media. The FAA and MAC staff conducted briefings with several communities as requested, including the city councils of

Richfield, Eagan, and Mendota Heights; with Minneapolis policy makers, Apple Valley and Burnsville city staffs; with participants in the fourth quarter 2012 NOC Public Input Meeting; and with multiple individual residents.

Depending on where people lived, the feedback ranged from positive to very concerned. The predominant concern was with the concentration of departures over certain residential areas. The FAA's implementation of the procedures was then placed on the November 19, 2012 MAC Board of Commissioners meeting agenda in an attempt to meet the FAA's deadline for MAC support by the end of November 2012.

Prior to the November 19th Commission meeting, a large volume of communication was received from residents and elected officials expressing concern about concentrating departure flights over certain residential areas in South Minneapolis and Edina, the speed of the process, and other matters.

Based on that input, the MAC Board of Commissioners took action during its meeting on November 19, 2012 to support only partial implementation of the FAA's proposed procedures, withholding support for the departure procedures proposed for Runways 30L and 30R, which would direct departure operations over areas of South Minneapolis, Richfield and Edina. As a result, the FAA indicated it would need to study the safety implications of partially implementing the federal RNAV plan for the airport.

On February 19, 2014, the results of the FAA's safety risk management evaluation concluded partial implementation of RNAV departures introduces unsafe risk factors. Specifically, moving forward with implementation of RNAV departure procedures for Runways 12L, 12R, and 17 without implementation of RNAV departure procedures on Runways 30L and 30R it was determined unsafe.

Therefore, the FAA will not be moving forward with the implementation of RNAV departure procedures at MSP at this time. However, the FAA will move forward with the approved RNAV arrival procedures incorporating Optimized Profile Descents (OPD) to the runways at MSP. Details on the timeline for implementation of the RNAV arrival procedures will be forthcoming from the FAA.

In response to the FAA's safety analysis findings, on March 6, 2014 the NOC passed Resolution 01-2014 regarding future FAA Performance-Based Navigation (PBN)/Area Navigation (RNAV) standard departure procedure design and implementation efforts at MSP. Subsequently, on March 17, 2014 the MAC Board of Commissioners took unanimous action supporting NOC Resolution 01-2014 and forwarded it to the FAA (see Appendix A).

2.6.2 Ongoing Precision Instrument Approach Capabilities

In addition to runway separation and configuration, airfield capacity can be affected greatly by how the runways are equipped for inclement weather. A number of precision instrument approaches continue to be available at MSP as summarized in **Table 2-7**.

Table 2-7

PRECISION INSTRUMENT APPROACHES

MSP	CAT I	CAT II	CAT III
Runways:	30R	30L	12L 12R 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) or a decision height below 100 feet and an RVR down to 700 feet.
iv. Category IIIb (CAT IIIb) – provides approaches without a decision height or a decision height below 50 feet 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: MSP Airfield Operations, FAA

2.7 MSP LONG TERM COMPREHENSIVE PLANNING AND MSP 2020 IMPROVEMENTS

Periodic planning assessments are conducted by the MAC for MSP airfield, landside, and roadway facilities in the form of a Long Term Comprehensive Plan (LTCP). In July 2010 the most recent MSP LTCP update was approved by the MAC's Board of Commissioners; the plan revised the anticipated future development activities at MSP from those previously outlined as part of the Dual-Track Airport Planning Process that concluded in 1996. Specifically, the updated MSP LTCP determined that the airfield capacity at MSP is adequate to sustain aircraft operations to the year 2030. However, the analysis concluded that substantial landside and terminal building improvements are needed to achieve the following goals:

- Provide sufficient, environmentally-friendly facilities to serve existing and future demand;
- Provide improved energy efficiencies;
- Encourage increased use of public transportation;
- Minimize confusion associated with having two terminals and multiple access points;
- Allow for flexibility in growth;
- Utilize and maintain existing facilities to the fullest extent possible; and,

- Enhance aircraft operational safety and efficiency.

Based on existing conditions and the capacity demands placed on the facility as passenger numbers grow, the LTCP determined that development activities that focus on the enhancement of the arrival curb, passenger processing facilities, parking and international arrival facilities at Terminal 1, and gate capacity at Terminal 2 to accommodate existing seasonal demand and new carrier entrants at MSP. In general, the LTCP also determined that the terminal environment at MSP will need enhancement in the form of gates, ticket counters, passenger check-in areas, security screening checkpoints, and baggage claim areas.

Environmental analyses associated with the MSP 2020 Improvements were conducted in compliance with both the National Environmental Policy Act (NEPA) and the Minnesota Environmental Policy Act (MEPA). Guidance was provided by the FAA's policies and procedures for considering environmental impacts: FAA Order 5050.4B, "NEPA Implementing Instructions for Airport Actions" and FAA Order 1050.1E, "Environmental Impacts, Policies and Procedures" and MEPA's Minnesota Environmental Review Program.

Preparation of a federal Environmental Assessment (EA) and state Environmental Assessment Worksheet (EAW) began in September 2010 and was concluded in March 2013 with a Finding of No Significant Impact (FONSI) by the FAA and in April 2013 with a Negative Declaration on the need for an EIS by the MAC.

Three development options were evaluated: the No Action Alternative, Alternative 1 - Airlines Remain, and Alternative 2 - Airlines Relocate. Alternative 2 - Airlines Relocate is the Preferred Alternative that best meets the purpose and need for enhanced airport facilities.

Alternative 2-Airlines Relocate (Alternative 2)

Alternative 2 includes projected improvements needed through 2020 presuming that the non-SkyTeam airlines currently located in Terminal 1 are relocated to Terminal 2. This alternative was conceived in recognition of the fact that MSP's two-terminal system could be utilized more efficiently by relocating all airlines other than Delta and its SkyTeam partners from Terminal 1 to Terminal 2. This would relieve some of the capacity constraints at Terminal 1 while better balancing the mix of passengers beginning and ending their trips at MSP between the two facilities.

The improvements included in Alternative 2 are listed in **Table 2-8**, and an illustration of the Alternative 2 concept is presented on **Figure 2-15**.

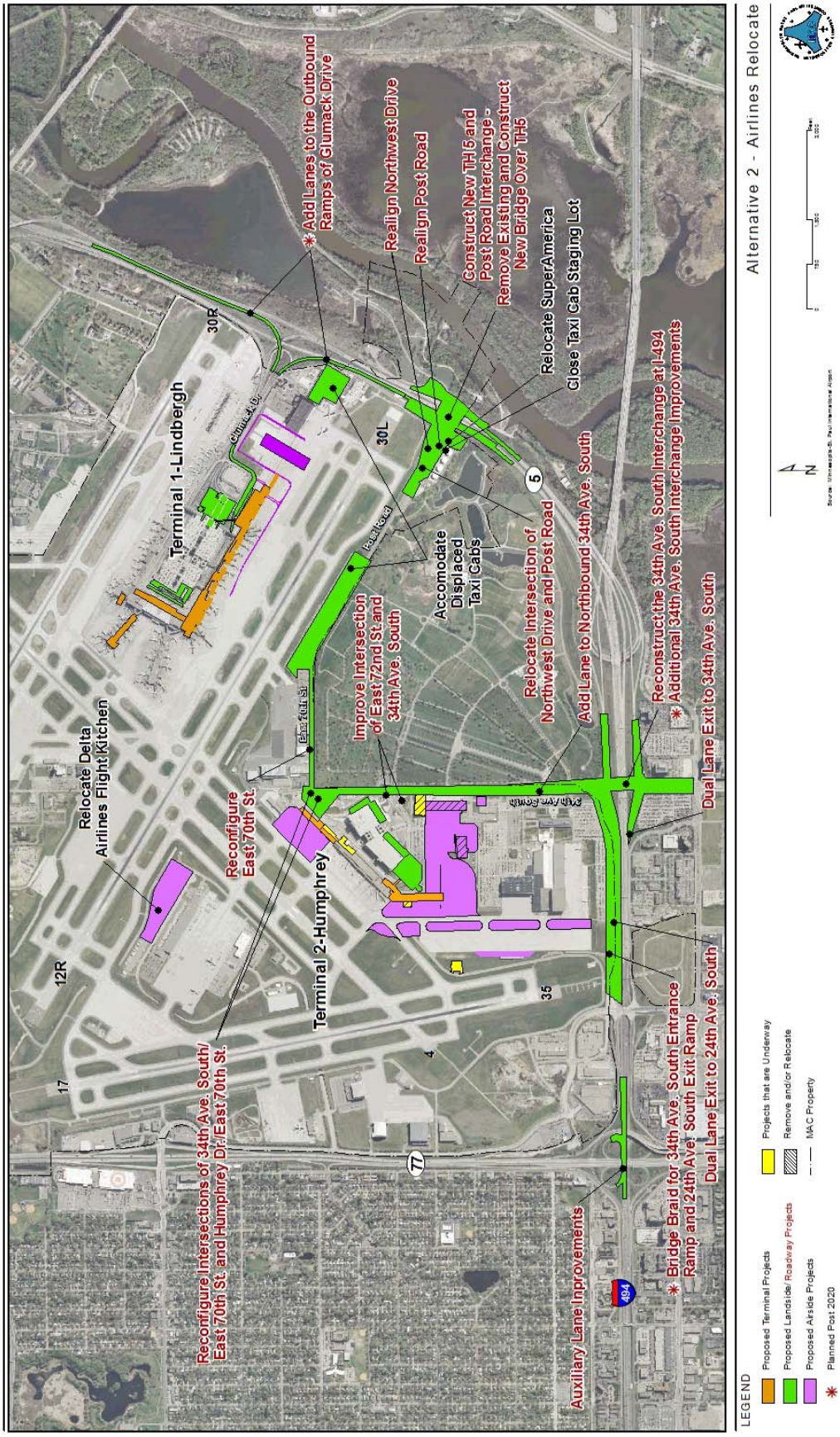
Table 2-8

Alternative 2 – Airlines Relocate

Terminal 1-Lindbergh	Terminal 2-Humprhrey
Terminal	**Terminal**
~ Expand and remodel Concourse G ▪ Construct new International Facility ▪ Install new Concourse G tram ~ Remodel and reconfigure the terminal lobby ~ Reconfigure and expand baggage claim area ~ Remodel Concourse E	~ Expand terminal
Landside / Roadway	**Landside / Roadway**
~ Expand terminal arrivals curb and relocate commercial Ground Transportation Center ~ Construct a new parking ramp ▪ Relocate portions of Glumack Drive ▪ Extend underground hub tram tunnel	~ Expand terminal curb ~ Expand existing and construct new parking ramps ~ Reconstruct 34th Avenue South interchange at I-494 ~ Add Lane to Northbound 34th Avenue South ~ Improve intersection of East 72nd Street and 34th Avenue South ~ Reconfigure the intersections of 34th Avenue South / East 70th Street and Humphrey Drive / East 70th Street ~ Reconfigure East 70th Street ~ Construct new Trunk Highway (TH) 5 and Post Road Interchange ▪ Remove existing and construct new bridge over TH 5 ▪ Realign Post Road and Northwest Drive ▪ Relocate the intersection of Northwest Drive and Post Road ▪ Relocate SuperAmerica ▪ Close taxi cab staging lot and accommodate displaced taxi cabs
Airside	**Airside**
~ Relocate Runway 30L deicing pad ~ Relocate airfield service road ~ Extend AOA tunnel and A Street ~ Relocate Concourse G Fuel Main Line	~ Expand terminal apron ~ Construct Remain Overnight (RON) aircraft apron ▪ Construct new taxiway ▪ Demolish Building F ~ Relocate run-up pad ~ Demolish and relocate Delta Air Lines Flight Kitchen ~ Relocate Ground Service Equipment facility

Source: MSP 2020 Improvements EA/EAW

Figure 2-15: MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet
Alternative 2 – Airlines Relocate



2.8 AIRCRAFT NOISE MITIGATION PROGRAM DEVELOPMENT

The MAC administers the most extensive noise mitigation program in the nation if not the world. In 1992, the MAC commenced a 14 CFR Part 150 Sound Insulation Program, providing acoustical modifications for homes located in neighborhoods surrounding MSP that were subject to aircraft noise impacts in the area projected in the 1996 65 dB DNL noise exposure map, which is the federally-established threshold for mitigating aircraft noise impacts. The acoustical modifications of this program involved installing new or re-conditioned windows and doors, central air-conditioning, wall insulation and roof-vent baffling as determined by the construction design process at each home. The goal of the mitigation was to reduce interior noise levels by a minimum of five decibels in neighborhood areas affected by the highest aircraft noise impacts. This program was completed in 2005.

2.8.1 MSP Residential Aircraft Noise Mitigation Consent Decree

As a result of a lawsuit settlement in 2007 known as the Consent Decree (October 19, 2007), the MAC began providing a Noise Mitigation Program to dwellings located within the 60 to 64 dB DNL forecasted noise contours. Mitigation activities varied within this program based on the noise contour level; noise mitigation construction phases began in 2008.

In 2013, construction phases of the residential noise mitigation program were completed; however, property owners of homes located within the eligibility area for mitigation reimbursements will have until July 31, 2014 to submit their claims. MAC, in turn, must settle all valid reimbursement claims by September 1, 2014. At that time all of the required noise mitigation under the original Consent Decree will be completed.

When the original Consent Decree mitigation program is complete in 2014, the MAC will have spent nearly $500 million on noise mitigation around MSP, including residential insulation, school insulation and limited property acquisition.

As a result of the extensive stakeholder engagement process conducted for the MSP 2020 Improvements EA/EAW, a negotiated amendment to the Consent Decree was reached between the MAC and the communities around MSP (including the Cities of Minneapolis, Richfield and Eagan). The new program will begin in 2014 and provide a framework for noise mitigation efforts at MSP out to 2024.

2.8.2 First Amendment to the Aircraft Noise Mitigation Consent Decree

Subsequent to the FAA Finding of No Significant Impact/Record of Decision (FONSI/ROD) on the Final MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) in early 2013, the cities of Minneapolis, Richfield, Eagan, the Minneapolis Public Housing Authority and the MAC jointly filed a First Amendment to the 2007 Consent Decree. The amendment contains language that binds the MAC to provide noise mitigation consistent with the noise mitigation terms described in the EA/EAW. The modified Residential Noise Mitigation Program was approved on September 25, 2013 by the Fourth Judicial District Court and is effective until December 31, 2024. The first year of eligibility will begin with the 2013 Annual Noise Contour.

Under the First Amendment, eligibility of single-family and multi-family homes will be determined based upon actual noise contours that are developed on an annual basis. A single-family or multi-family home will be considered eligible for mitigation under the noise mitigation program when the following criteria are met:

> (a) the community in which the home is located has adopted local land use controls and building performance standards that prohibit new residential construction or remodeling on the block in which the home is located, unless the construction or remodeling materials and practices are consistent with the noise impact levels and consistent with noise mitigation provided by this program, and
>
> (b) the home is located, for a period of three consecutive years (the first of the three years cannot be later than calendar year 2020) in the actual 60-64 dB DNL noise contour, and, within a higher noise impact mitigation area when compared to the single-family home's status under the noise mitigation program prior to the amendment.

Noise mitigation will be provided to eligible properties in the year following the determination of eligibility. Single-family and multi-family homes that were opted out of mitigation previously are not eligible to participate in the modified mitigation program.

The 2013 Annual Noise Contour Report was completed by March 1, 2014. A total of 119 single-family units previously between the 2005 and 2007 60 dB DNL noise contours, and therefore eligible for noise mitigation reimbursement under the 2007 Consent Decree, moved into a higher noise impact area in the actual 2013 noise contour. These properties meet the first year of eligibility for additional mitigation, less any reimbursement funds already paid to each individual property. Additionally, 18 single-family and 89 multi-family units previously outside the noise mitigation program area moved into a higher noise impact area in the actual 2013 noise contour and meet the first year of eligibility for noise mitigation under the First Amendment of the Consent Decree.

Provided these 226 single- and multi-family residential units remain in higher noise impact areas in the 2014 and 2015 actual noise contours, additional mitigation will be provided in 2017.

The 2013 MSP Annual Noise Contour Analysis report contains the first-year eligibility noise contour map and specifics on the mitigation provided. The report can be found on the Internet at:

http://www.macnoise.com/tools-reports/annual-reports.

Homeowners are able to establish their home's location within the first-year eligibility map by reviewing the Annual Noise Contour Analysis report or contacting the MAC's Noise Program Office at 612-726-9411.

2.9 2013 ENVIRONMENTAL ACCOMPLISHMENTS

In 2008 the MAC began to build a message around its efforts to protect the environment and reduce resource consumption. This resulted in the Stewards of Tomorrow's Airport Resources (STAR) Program, which was intended to showcase the MAC's past

achievements and coordinate new initiatives. A number of projects have been advanced under the banner of the STAR Program.

In 2013, MAC staff developed the following mission statement to guide activities throughout the year:

> *"Recognizing the impact an organization's and/or individual's activities has on natural resources and the environment, the STAR Working Group actively seeks opportunities to support the implementation of measures that reduce pollution, resource consumption and waste in all of the MAC's business activities. We strive to understand and minimize environmental impacts by raising awareness of the importance of sustainable practices."*

Following this mission, ongoing efforts were enhanced, and new accomplishments were realized in 2013.

2.9.1 Improvement of Ongoing Environmental Programs

Energy Conservation

Since 2002 the MAC has been dedicating a portion of Capital Improvement Program (CIP) funds to specific projects that reduce energy use. Although there were no funds specifically dedicated for this purpose in the 2013 CIP, there were efforts to incorporate energy consumption efficiencies in certain 2013 CIP projects.

The efficiencies are anticipated to reduce electrical consumption by 2,943 MWH/yr and result in a projected utility cost savings of $206,000 per year at today's rates. In addition, the MAC is estimated to receive utility company rebates of approximately $210,000.

In 2014 a budget of $2 million in dedicated funds is reinstated in the CIP for specific energy saving projects.

Alternative Energy

Currently, the MAC has 93 flex-fuel engine vehicles (14 were added in 2013), 4 electric vehicles and 2 hybrid vehicles. With the MAC's continued focus on the use of E85, unleaded fuel was reduced by 58% for fiscal year 2013 (a 28% reduction in unleaded fuel usage from 2012), compared to fiscal year 2005.[9] MAC Field Maintenance continues to expand the purchase of E85 vehicles.

Additionally, 14 electric vehicle charging stations were added in parking ramps (5 on Level 8 of each the Blue and Red Ramps at T1 and 4 on Level 7 of the Orange Ramp at T2) in 2013.

[9] The Governor's Executive Order 11-13 establishes a goal of 50% reduction in gasoline usage in on-road vehicles by 2015 using 2005 as a baseline.

Recycling Efforts

The MAC has a long history of operating a comprehensive program targeting recycling practices. As detailed below, this program was enhanced in 2013 by expanding the Organics Composting Program to all concession operations in Terminal 1-Lindbergh.

In 2013 the MAC:

- recycled 1,502 tons of non-regulated material (e.g., scrap metal, baled cardboard, comingled recyclables, and wood pallets) resulting in avoided disposal costs totaling $190,487. (In 2012, 1,258 tons of material was recycled with avoided disposal costs totaling $141,112.);
- generated and recycled 128 tons of regulated waste (e.g., paints, tires, batteries, etc.). (This represents a 34-ton reduction in regulated waste generation from 2012.); and
- expanded the Organics Composting Program to all 67 food concessionaires in Terminal 1-Lindbergh. Over 266 tons of organic waste was diverted from the solid waste stream and delivered to a compost site. (160 tons were diverted in 2012.)

Stormwater Management

In 2013 the MPCA reissued the NPDES Permit for MSP. In contrast to previous versions, this permit includes co-permittees, in addition to the MAC, as parties responsible for complying with the requirements therein. Any and all entities at MSP whose activities have the potential to impact stormwater are named co-permittees and therefore are directly subject to permit terms and conditions. This is a significant change that promises to spread accountability for managing potential impacts to stormwater across the MSP campus. A new spirit of cooperation has already been demonstrated with a combination of successful efforts in the latter part of 2013 to improve deicing fluid containment.

Specifically, in 2013 MAC staff conducted over 12 meetings that included a number of workshops and strategy sessions with MSP airlines and operators. The discussions focused on establishing a framework for managing and coordinating permittee compliance activities and strategies for minimizing stormwater impacts to avoid a permit violation in 2013.

As a result of these efforts, the reissued NPDES permit is being implemented successfully with a well-structured monitoring, reporting, and communication program that is meeting all permittee requirements effectively. Additionally, a number of efforts on behalf of the co-permittees were taken to help reduce the $CBOD_5$ stormwater impacts during the 2013/2014 deicing season.

These actions included the MAC's reconfiguration of the Runway 12R deicing pad to increase the pad's capacity and airline efforts to increase usage of deicing locations that provide higher ADF collection rates (increased use of the deicing pads and certain plug-and-pump locations). As a result, to date, the 2013/2014 deicing season has a higher deicing pad use than any other past season (about 4% above the long-term average).

Noise Program

The MAC Noise Program Office completed a software and hardware upgrade for its 20-year old system of 39 Remote Noise Monitoring Towers (RMT) in January 2013. The upgraded components include new acoustical equipment, ancillary equipment, aircraft noise data collection, processing software, and storage. In November 2013, the MAC Noise Program Office successfully transitioned to use of the FAA's Next Gen flight track data, which is used to correlate the measured noise events at the RMTs with aircraft operations.

In 2013 the MAC Noise Program Office increased its focus on improving community engagement and collaboration. This resulted in the development of a video library on the MAC Noise Program Website. As part of this new program, informational and tutorial videos are posted regularly to the website. The new video library page on the website is available at: http://www.macnoise.com/our-neighbors/videos.

A new Noise Oversight Committee (NOC) meeting format was developed to provide regularly-scheduled expert presentations at NOC meetings. Additionally, in 2013 a MAC Noise and Operations Monitoring System (MACNOMS) validation study was planned to be completed in 2014 with the involvement of, and in coordination with, NOC-member city representatives.

2.9.2 New Environmental Initiatives

Compliance-Focused Environmental Management System

In 2013 the MAC Environment Department developed an environmental management system framework targeting enhancement of the MAC's environmental compliance programs. The project was executed with the goal of providing immediate benefit to the organization by reducing risk, increasing efficiency, providing business continuity and a scalable management system and model. The result was the development of the MAC's Environmental Management Information System (EMIS).

The MAC EMIS is constructed around the tenets of a compliance-focused Environmental Management System (EMS): assisting in day-to-day environmental compliance job functions, effective management through efficient and thorough oversight, and providing a structure that supports continual improvement.

The EMIS consists of two components: (1) the Knowledge Base application and (2) a vendor-provided, MAC-customizable, software as a service management technology solution provided by Enviance.

The Knowledge Base application is a web-based document management solution that provides secure user access to relevant compliance activity documents, fact sheets, reference materials, and regulatory submittals. The Knowledge Base can be accessed independently via the Internet or through the Enviance portal of the EMIS.

The Enviance component of the MAC's EMIS provides access to the Knowledge Base, centralized data storage, flexible data entry (including remote entry), real-time data analysis, automated custom report generation, task completion tracking, emailed task

reminders with links to relevant documents and input forms, event logging, and dashboards. As part of the project this portion of the MAC's EMIS has been integrated into the MAC's Stormwater Management Program. In 2014 this portion of the MAC's EMIS will be integrated into the other aspect area compliance programs. Organization support and leadership endorsement of this effort will be critical during the 2015-2017 planning cycle to ensure the enterprise-wide integration and use that will be required for program success.

As part of the formal sustainability program development during the 2015-2017 planning cycle, efforts will be made to leverage the capabilities of the EMIS to accommodate future sustainability considerations, targets, data management, performance tracking, and reporting. This will drive further enhancement of key components of the EMIS including, but not limited to: operational commitment to the framework; environmental baseline information, objectives, targets, and aspects (topics) incorporated into the EMIS framework; resources, roles, and responsibilities related to sustainability commitments; communication and awareness; monitoring and measurement of sustainability initiative progress; and performance tracking/reporting.

Sustainable Purchase/Life-Cycle Cost Analysis

The MAC Environment Department budgeted $39,000 to replace one of its aging vehicles in 2013. This vehicle, used primarily for the maintenance of the MAC's system of permanent noise monitors, is a 1999 Dodge Durango (a mid-sized 4x4 SUV with a V8 engine) with 94,000 miles.

The budget request identified the intent to purchase a vehicle that would support the goals of the MAC's environmental efforts by advancing new alternative fuels. However, the vehicle options were analyzed with a focus on the minimum vehicle requirements, initial cost, fuel usage/cost and CO_2 emissions over the life of the vehicle to ensure that the purchase decision was driven by a comprehensive sustainability perspective.

As a result of this analysis, two of the Environment Department's vehicles will be replaced with more appropriately sized Jeep Patriots. In addition to the 1999 Dodge Durango, the Department's 2009 Chevrolet Crew Cab 4x4 Hybrid pickup with 29,000 miles (used primarily for environmental compliance inspections at the reliever airports) is being repurposed. The 2009 Chevrolet pickup was determined to provide excessive capability and is being transferred to Facilities to eliminate that department's need to purchase a new vehicle.

As a result of the life-cycle cost and emissions analysis conducted by the Environment Department, the MAC can expect to reduce impending capital costs by approximately $30,000, reduce fuel costs by over $13,000, and reduce CO_2 emissions by over 37 tons during the lifetime of the two Jeep Patriot vehicles.

Green House Gas Evaluation and Reduction

In 2013 the MAC completed its fifth voluntary MSP Green House Gas (GHG) Report since 2007. As with previous reports, the GHG report established that 2012 MAC-controlled sources account for a very small portion (1%) of the total MSP carbon dioxide equivalent (CO_2e) emissions. MAC tenant operations account for 99% of MSP's CO_2e

emissions. Of the total MSP emissions, 82% are generated by aircraft landing and take-off cycles above 3,000 feet (13% are below 3,000 feet). The MSP CO_2e emissions in 2012 were down by 24.6% from 2005.[10]

Although there have been some great efforts to reduce CO_2e emissions at MSP, one of the most significant reductions in CO_2e emissions to date at MSP will be made possible through the FAA's implementation of Area Navigation (RNAV) Standard Terminal Arrival Routes (STARs) with the incorporation of Optimized Profile Descents (OPD).

In 2013 the MAC Environment Department established a schedule for the production of the MSP GHG Report on an annual basis moving forward. When the FAA implements RNAV STAR procedures with OPD, the MSP GHG Report will be updated to incorporate an ongoing analysis of the emission reductions provided by OPD operations at MSP.

Waste Reduction and Resource Conservation

In 2013, two MAC initiatives targeted water conservation and waste reduction: (1) the Rental Auto Companies (RAC) Quick Turn-Around (QTA) Facility water reclamation system, and (2) the bottled water evaluation and use reduction program.

An Environmental Assessment Worksheet (EAW) was completed in 2013 for the RAC QTA detailing the incorporation of an extensive water reclamation system in the car wash component of the facility being constructed at Terminal 2-Humphrey. Approximately 85% of the water from the car wash facilities will be recycled.

Additionally, the MAC conducted an assessment of bottled water (water cooler-size) usage. The goal was to reduce the cost and waste associated with the use of bottled water where possible.

As a result of this effort, the purchase of bottled water at the MAC was reduced by 68% and bottled water cost was trimmed by over $6,800 annually.

MAC Green Team

In August 2013 the MAC Green Team (MAC employees) helped to keep Ft. Snelling State Park beautiful by conducting a park clean-up. More than 30 MAC Green Team members and their families collected trash and disposed of it properly. These MAC employees and their families helped preserve a natural resource and gave back to the community consistent with the MAC's commitment to being a good neighbor.

More MAC Green Team events will be planned in 2014.

[10] The Minnesota Next Generation Energy Act of 2007 established statewide GHG reduction goals from a 2005 baseline of 15% by 2015, 30% by 2025 and 80% by 2050.

Solar Energy Facility

Over time, the MAC has constructed various small-scale alternative energy projects including wind turbines atop Fire Station One, and solar tubes and panels at the MSP Maintenance Facility.

In November 2012 the Commission authorized staff to issue a Request for Proposals (RFP) for a Solar Energy Facility and Marketing Sponsorship at MSP. The process sought to establish an agreement with a company to finance, design, construct, install, operate, maintain, repair and manage a solar energy generation facility providing a minimum of three megawatts (MW). The RFP also requested ideas for other innovative energy or cost saving solutions and funding options.

Ameresco was selected as the MAC's partner for this project and in February 2014 the terms of the agreement and cost of the project were approved by the Commission.

The solar energy facility's photovoltaic (PV) array will be constructed above the Red and Blue Parking Ramps with an LED lighting component within the ramps. The solar energy facility will generate approximately three megawatts (MW) of Direct Current (DC) power from the sun – enough energy to provide the MAC with approximately 20% of MSP's peak electric power requirements.

This project will act as a visible cornerstone of the organization's formal sustainability program currently under development, as detailed below.

2.10 FORMAL MAC SUSTAINABILITY PROGRAM DEVELOPMENT

In early 2013 MAC began the process of developing a scope and plan for the development of a comprehensive Sustainable Management Plan (SMP) for the MAC–MSP. This included an evaluation of the resources required to complete the planning process. In an effort to secure the needed resources for this project, a Letter of Interest (LOI) was submitted to the FAA for Airport Improvement Program (AIP) funding through the FAA's emerging Sustainable Master/Management Planning Program.

As a result of the LOI, the MAC received an FAA grant totaling $517,500 (providing approximately 75% federal discretionary funding). The 2014 CIP includes $700,000 for the development of the SMP.

Following publication of a Request for Qualifications (RFQ), a total of nine teams submitted qualification statements.

At the January 2014 Commission meeting Vanasse Hangen Brustlin, Inc. (VHB) - teaming with Wenck and Associates, Inc., Liesch Associates, Architectural Alliance, Richardson, Richter & Associates, Inc., Mead & Hunt, Inc., Economic Development Services, Inc., and EnerNOC, Inc. - was awarded the project. MAC has finalized the project scope and executed a contract with VHB. It is anticipated that the SMP planning process will begin in April 2014 and last approximately 18 months.

This effort will provide a foundation for the formal integration of sustainability into the MAC's organizational culture, while providing a coordinated and accountable approach

to establishing metrics, goals, strategies, and assessment and improvement frameworks that address long-term environmental, operational, financial and social needs. The SMP will establish a formal and ongoing sustainability program at the MAC-MSP aided by input from the organization's employees and its other stakeholders.

In addition to the SMP program development, in early second quarter 2014 the MAC will be hiring its first Sustainability Manager. This new management position will be responsible for ongoing sustainability program implementation and improvement across the organization.

3. RELIEVER AIRPORTS

3.1 OVERVIEW

The Metropolitan Airports Commission (MAC) owns and operates six reliever airports throughout the metropolitan area that surrounds Minneapolis-St. Paul International Airport (MSP). Reliever airports are defined by the Federal Aviation Administration (FAA) as airports designated to relieve congestion at commercial service airports and to provide improved general aviation access to the overall community. This system of airports generates an estimated $1.4 billion annually for the Twin Cities economy while reducing general aviation operations at MSP. [11] The reliever airports are Airlake, Anoka County-Blaine, Crystal, Flying Cloud, Lake Elmo and St. Paul Downtown.

This portion of the report highlights the facilities and activities at each of the reliever airports and organizes the information into three sections:

- Description of Reliever Airport Facilities
- Historic and Existing Activity Levels
- Development Programs

3.2 RELIEVER AIRPORT FACILITIES

According to the Metropolitan Council Transportation Policy Plan, adopted November, 10, 2010, all but one of the MAC reliever airports are classified as minor airports.[12] This means that primary runway lengths are between 2,500 and 5,000 feet. St. Paul Downtown is classified as an intermediate airport, which means its primary runway is between 5,000 and 8,000 feet long.

Airport users at the MAC reliever airports include air taxi, business aviation, general aviation, flight training, recreational aviation, and military aviation. Each of the reliever airports is open for public use 24 hours per day, in keeping with federal regulations. The following sections outline the existing airport facilities at each location.

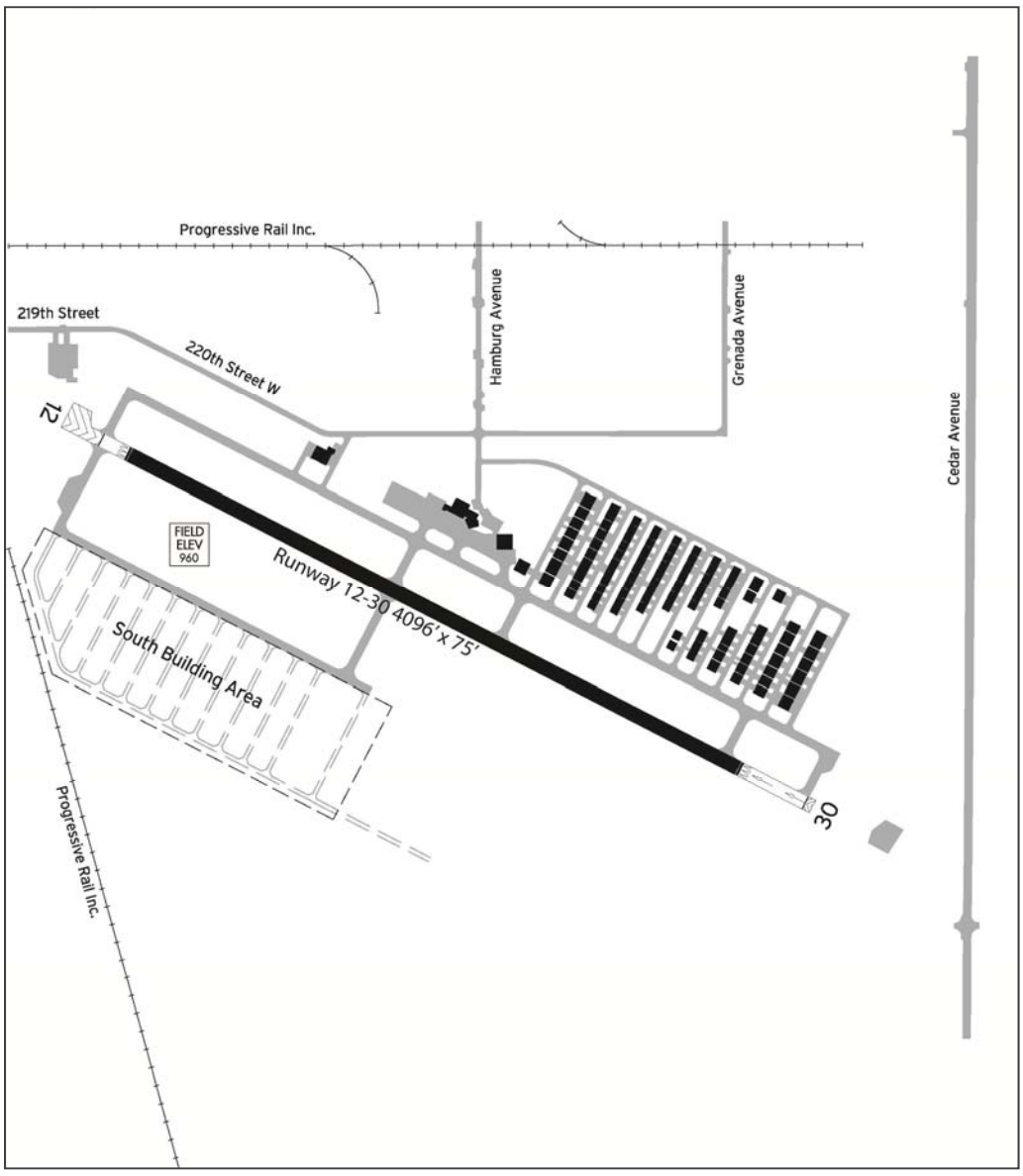
[11] Metropolitan Airports Commission, Economic Impact Analysis of the Reliever Airport System, Wilder Research, October 2005.
[12] The Metropolitan Council Transportation Policy Plan was in process of being updated at the time this report was prepared. It is anticipated the updated plan will be complete in late 2013 or early 2014.

3.2.1 Airlake Airport (LVN)

Airlake Airport (LVN) consists of approximately 595 acres, and the airfield includes one northwest-southeast runway and one 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. **Figure 3-1** shows the general airport layout and facilities. A Fixed Base Operator (FBO) at the airport provides fueling and aircraft maintenance services. The airport had 127 based aircraft and an estimated level of 31,346 aircraft operations in 2013. This operations level is 9 percent lower than the level estimated in 2012 of 34,560. There is no Air Traffic Control Tower located at the airport. Aircraft operators utilize common traffic advisory procedures while flying to and from the airport.

Figure 3-1:

Airlake Airport (LVN)

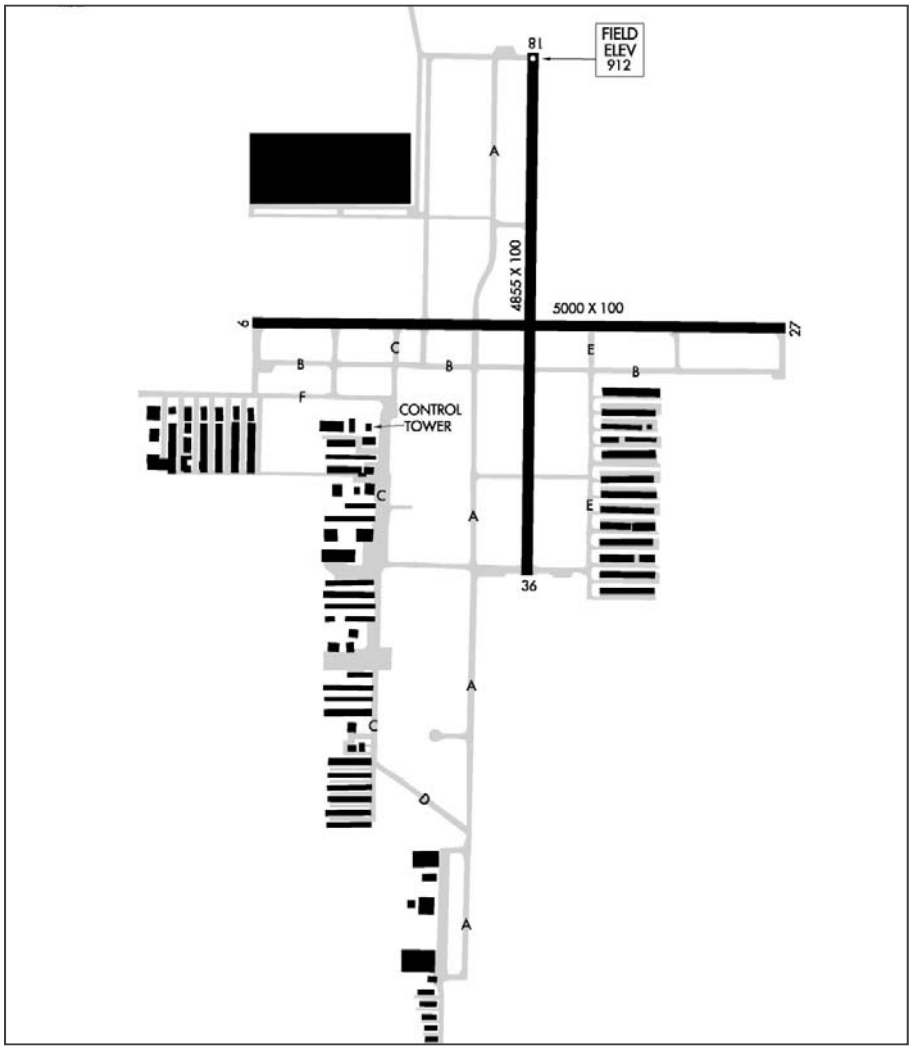


3.2.2 Anoka County-Blaine Airport (ANE)

Anoka County-Blaine Airport (ANE), also known as Janes Field, consists of approximately 1,900 acres, and the airfield includes one east-west runway and one north-south runway. Both runways 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. **Figure 3-2** shows the general airport layout and facilities. Two FBOs at the airport provide fueling, flight training and aircraft maintenance services for aircraft and helicopters. The airport had 405 based aircraft and 76,721 aircraft operations in 2013. This operations level is approximately 3 percent lower than the 79,190 aircraft operations documented in 2012. A non-federal Air Traffic Control Tower is located at the airport and operates each day in the winter from 7 a.m. to 9 p.m., and 7 a.m. to 10 p.m. in the summer. The change in operating hours coincides with daylight saving time.

Figure 3-2:

Anoka County-Blaine Airport (ANE)

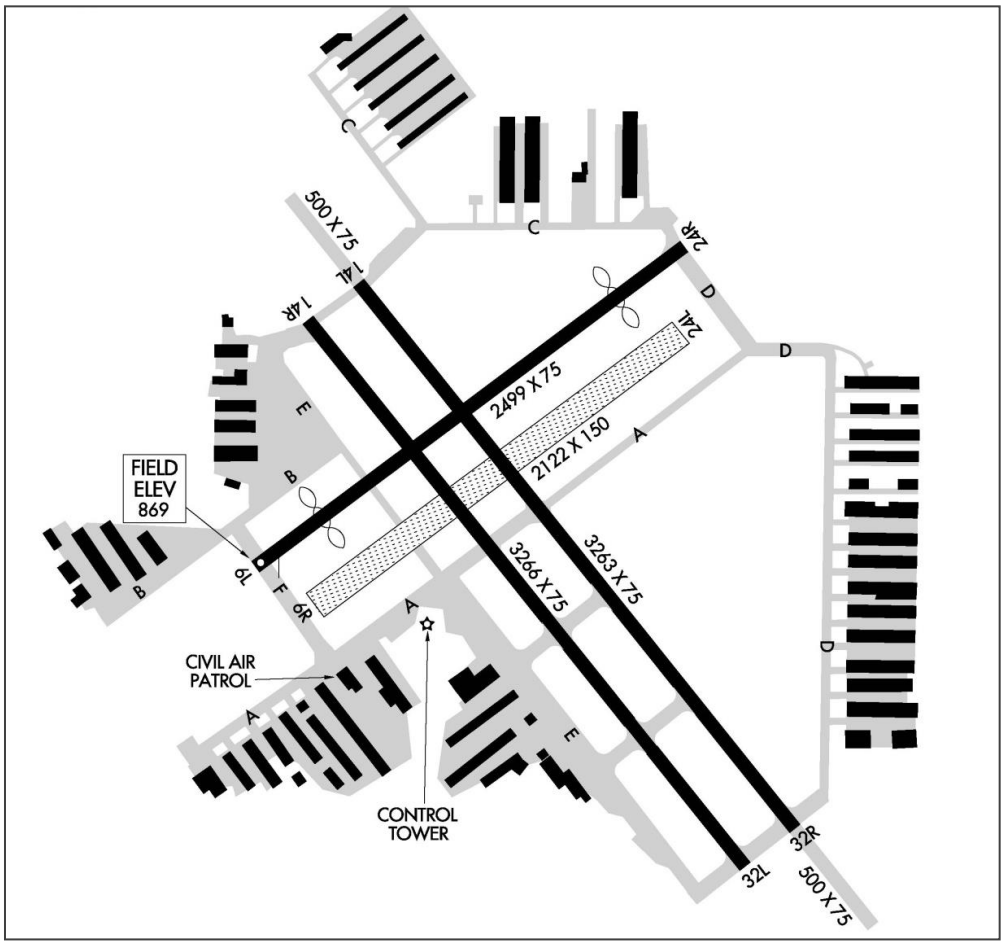


3.2.3 Crystal Airport (MIC)

Crystal Airport (MIC) consists of approximately 436 acres and includes two northwest-southeast runways and two southwest-northeast runways. Runway 12R/32L has a full-length parallel taxiway. Runway 14L/32R is 3,263 feet long by 75 feet wide, Runway 12R/32L is 3,266 feet long by 75 feet wide and Runway 6L/24R is 2,499 feet long by 75 feet wide. The turf runway (6R/24L) is 2,122 feet long by 150 feet wide, and is closed during the winter months. The airport has two non-precision instrument approaches. **Figure 3-3** shows the general airport layout and facilities. Two FBOs at the airport provide fueling, flight training and aircraft maintenance services.[13] The airport had 185 based aircraft and 42,308 aircraft operations in 2013.[14] This operations total is 12 percent lower than the level of 48,220 operations at MIC in 2012.[15] An FAA-operated Air Traffic Control Tower is located at the airport and operates each day in the winter from 7 a.m. to 9 p.m., and 7 a.m. to 10 p.m. in the summer. The change in operating hours coincides with daylight saving time.

Figure 3-3:

Crystal Airport (MIC)



[13] In 2013 the Flying Scotchman transferred ownership after 53 years of service as a Fixed Base Operator at MIC. The new business is operated under an aircraft storage lease and does not provide FBO services.

[14] This number was revised in early April 2014 based on updated information provided by the MAC Reliever Airports.

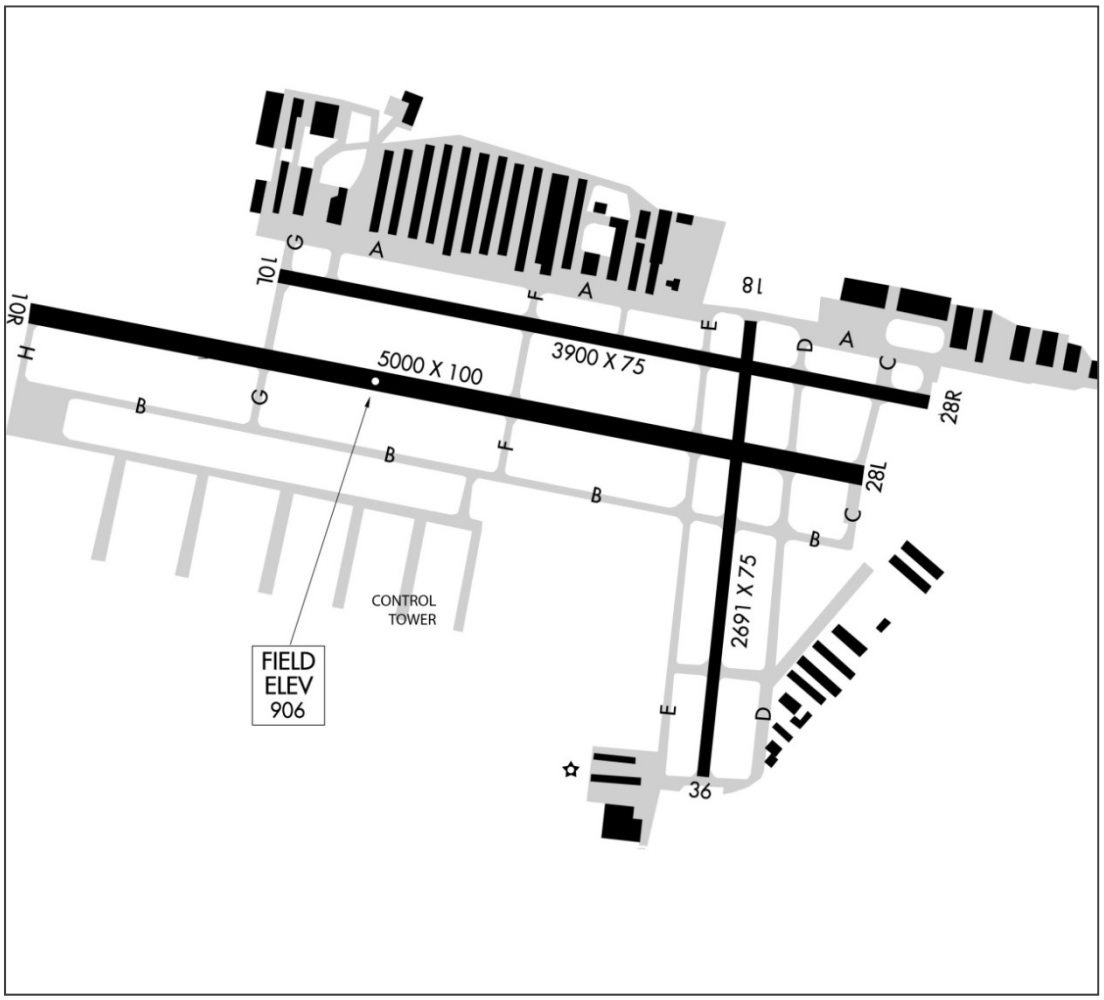
[15] Ibid.

3.2.4 Flying Cloud Airport (FCM)

Flying Cloud Airport (FCM) consists of approximately 860 acres and includes two east-west runways and one north-south runway. All runways have full-length parallel taxiways. Runway 10R-28L was extended to 5,000 feet long and widened to 100 feet in 2009; Runway 10L-28R was extended to 3,900 feet in 2008 and is 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 10L, 28L, 28R, and 36. It also has a published precision instrument approach procedure for helicopters. **Figure 3-4** shows the general airport layout and facilities. Six FBOs at the airport provide fueling, flight training and aircraft maintenance services for aircraft and helicopters. The airport had approximately 357 based aircraft and 79,511 aircraft operations in 2013. This operations level is approximately 10 percent lower than the level of 88,663 in 2012.[14] An FAA-operated Air Traffic Control Tower is located at the airport; beginning in December 2013 the Tower revised its operating hours to 6 a.m. to 9 p.m.

Figure 3-4:

Flying Cloud Airport (FCM)



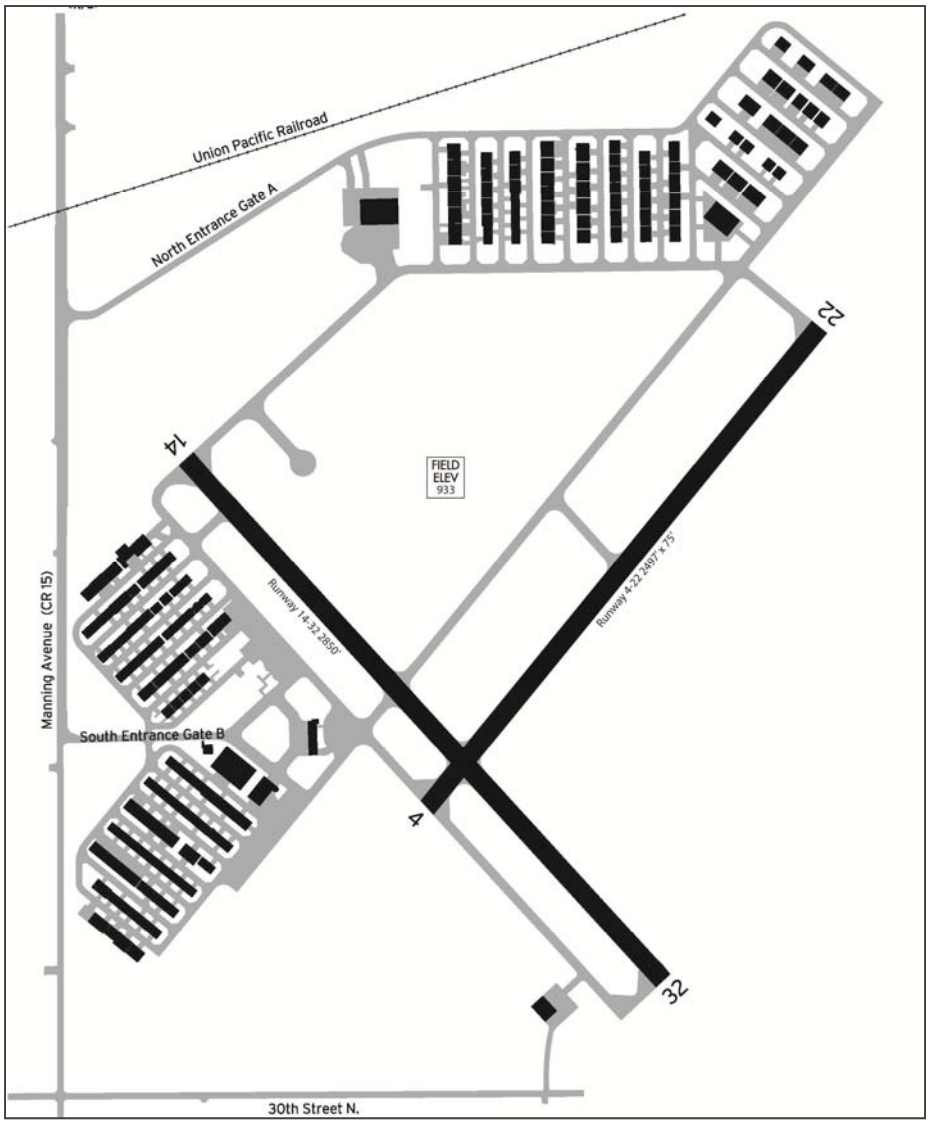
[14] The FCM Air Traffic Control Tower changed the reporting methodology for counting air traffic in 2012, which contributed to the decrease in operations when compared to level of operations in 2012.

3.2.5 Lake Elmo Airport (21D)

Lake Elmo Airport (21D) consists of approximately 640 acres and includes one north-west-southeast runway and one southwest-northeast runway. Both runways 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. **Figure 3-5** shows the general airport layout and facilities. One FBO at the airport provides fueling, flight training and aircraft maintenance services. The airport had 192 based aircraft and it is estimated that there were 33,220 aircraft operations in 2013. This operations level is 0.3 percent lower than the level of 33,319 estimated in 2012. There is no Air Traffic Control Tower located at the airport. Aircraft operators utilize common traffic advisory procedures while flying to and from the airport.

Figure 3-5:

Lake Elmo Airport (21D)

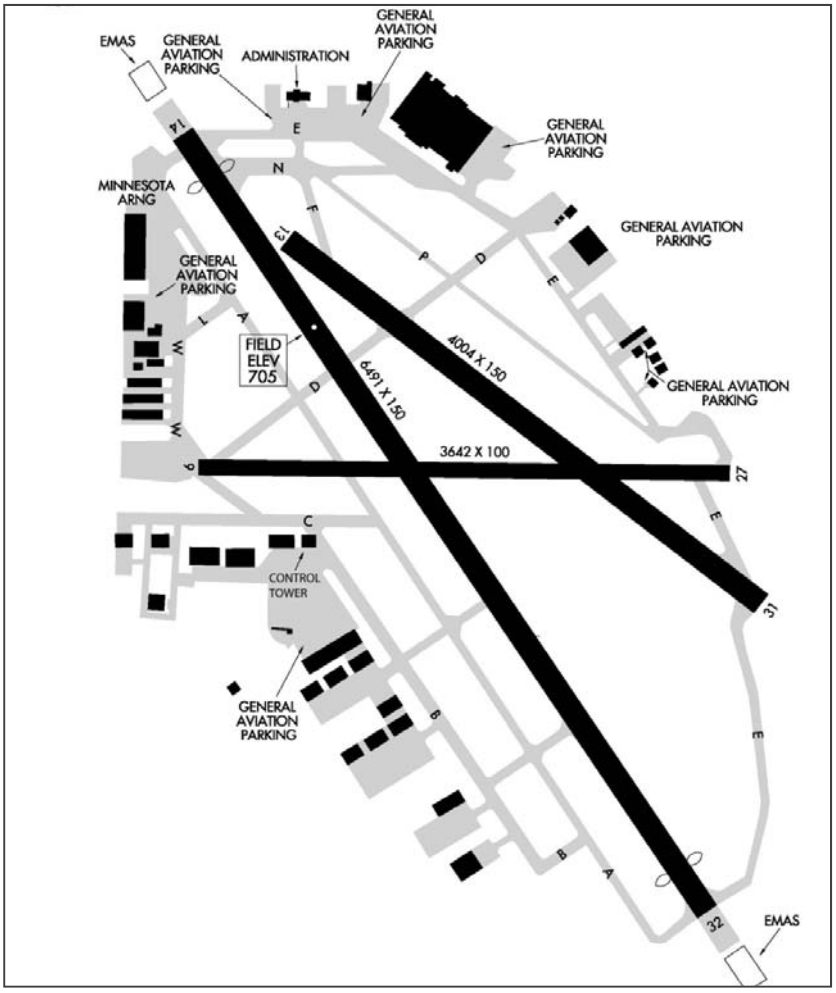


3.2.6 St. Paul Downtown Airport (STP)

St. Paul Downtown Airport (STP) is commonly referred to as Holman Field. The land area measures approximately 576 acres, and the airfield consists of two northwest-southeast runways and one east-west runway. Runway 14/32 has a full-length parallel taxiway. Both of the other runways have partial parallel taxiways. Runway 14/32 is 6,491 feet long by 150 feet wide; Runway 13/31 is 4,004 feet long by 150 feet wide; and Runway 9/27 is 3,642 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. **Figure 3-6** shows the general airport layout and facilities. Two FBOs at the airport provide fueling, flight training and aircraft maintenance services for aircraft. The airport had 100 based aircraft and 69,277 aircraft operations in 2013. This operations level is approximately 13 percent lower than the operations level of 79,238 in 2012. An FAA-operated Air Traffic Control Tower is located at the airport and operates from 7 a.m. to 10 p.m. on weekends and 6 a.m. to 10 p.m. on weekdays.

Figure 3-6:

St. Paul Downtown Airport (STP)



3.3 HISTORIC AND FORECAST ACTIVITY LEVELS

Aircraft operators must choose an airport at which to base their aircraft. Airports in Minnesota are required to submit to the State a report that identifies the aircraft based at their facilities for 180 days or more. **Table 3.1** shows historical based aircraft counts for each of the reliever airports from 1980 through 2013. Total based aircraft grew slowly between 1984 and 1999, peaking at 1,864 aircraft in 1999. Total based aircraft declined to 1,586 in 2007 and has fluctuated each year. In 2013 the number of based aircraft totaled 1,370, which is 10 percent lower than the level of 1,525 in 2012.

The data in **Table 3.1** are the best available historical totals for based aircraft, but these data should be viewed purely as estimates. Numbers that remained unchanged over periods of several years suggest that data limitations were likely and that updated information may not be available.

Historically, the total number of aircraft based at MAC reliever airports has accounted for less than 1 percent of the U.S. active fleet.

Historical data on aircraft operations at the reliever airports are presented in **Table 3.2**. An operation is either an arrival or a departure. Therefore, one arrival and one departure together equal two operations. Aircraft operations totals reported for each airport are generally obtained from the Air Traffic Control Towers located at each airport. Of the six reliever airports, ANE, FCM, MIC, and STP have control towers. However, aircraft operations are counted only while the towers at those airports are operational. It should be noted that these airports are open 24 hours per day, but the control towers are closed during late night and early morning hours. The aircraft operations totals in **Table 3.2** do not include operations that occurred while the towers were closed.

At airports where there is no air traffic control tower, such as LVN and 21D, the operations totals are estimated through various methods and available data. The operations totals presented for LVN and 21D are airport staff estimations calculated from actual aircraft operations counts completed in 2013.

The combined total for aircraft operations estimated at the reliever airports in 2013 is 341,024.[15] This total represents a decrease of 6.0 percent when compared with a total operations level of 363,095 in 2012.

[15] The methodology for counting air traffic operations at FCM was changed in 2013. The methodology used at the other MAC-owned reliever airports was not changed.

Table 3.1

HISTORICAL VIEW OF BASED AIRCRAFT AT MAC RELIEVER AIRPORTS

Year	Airlake (LVN)	Anoka County-Blaine (ANE)	Crystal (MIC)	Flying Cloud (FCM)	Lake Elmo (21D)	St. Paul Downtown (STP)	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	162	437	244	421	229	93	1,586
2008	158	439	238	413	230	124	1,602
2009	147	433	219	403	229	89	1,520
2010	147	433	219	403	229	100	1,531
2011	131	423	199	389	216	94	1,452
2012	147	433	219	403	229	94	1,525
2013	127	405	189	357	192	100	1,370

Source: Metropolitan Airports Commission Records, and MSP Reliever Airports Activity Forecasts Technical Report, April 2009.

Table 3.2

HISTORICAL VIEW OF OPERATIONS AT MAC RELIEVER AIRPORTS

Year	Airlake (LVN)	Anoka County-Blaine (ANE)	Crystal (MIC)	Flying Cloud (FCM)	Lake Elmo (21D)	St. Paul Down-town (STP)	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	227,410	66,950	190,507	957,757
1991	74,745	195,650	173,150	186,503	69,650	168,450	868,148
1992	81,087	195,650	179,546	198,306	69,650	152,378	876,617
1993	81,087	195,650	183,554	218,643	69,950	131,388	880,272
1994	82,500	199,000	185,991	239,038	71,000	146,839	924,368
1995	75,397	181,866	171,478	216,309	64,887	133,686	843,623
1996	75,397	192,600	187,957	212,695	68,400	139,056	876,105
1997	72,382	143,063	175,728	198,199	65,664	135,079	790,115
1998	76,725	143,981	179,186	210,908	69,604	158,705	839,109
1999	76,725	149,769	178,342	192,746	70,996	158,808	827,386
2000	76,418	156,546	176,554	186,078	70,687	158,216	824,499
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	132,145	98,612	155,837	54,205	131,794	630,701
2004	53,309	109,853	75,023	159,648	49,855	127,478	575,166
2005	51,678	101,272	72,205	157,710	48,329	131,708	562,902
2006	48,014	92,947	65,528	144,178	44,903	135,156	530,726
2007	41,292	80,517	53,038	118,178	38,617	117,977	449,619
2008	39,021	69,403	49,244	119,139	37,612	109,512	423,931
2009	35,802	68,534	42,311	117,180	34,509	91,507	389,843
2010	35,662	79,589	44,229	94,244	34,374	88,995	377,093
2011	34,270	73,292	43,986	114,574	33,032	87,229	386,383
2012	34,560	79,190	48,220	88,663*	33,319	79,238	363,095
2013	31,346	76,721	42,308**	79,511	33,220	69,277	341,024

*Note: The FAA Air Traffic Control Tower revised the methodology used to count aircraft operations in 2013. This change contributed to the decrease in the aircraft operations total for FCM in 2013.

**Note: This number was revised in early April 2014 based on updated information provided by the MAC Reliever Airports.

Source: MAC Records, FAA Opsnet, and MSP Reliever Airports Activity Forecasts Technical Report, April 2009.

Table 3.3 and **Table 3.4** show forecasts for based aircraft and operations at the six MAC reliever airports through 2025. More detailed analyses of forecasted based aircraft and forecasted operations were done as part of the 2008 Long Term Comprehensive Plan (LTCP) updates for MIC, 21D, LVN and the 2009 Reliever Airports Activity Forecasts Technical Report for ANE, FCM, and STP.

Table 3.3

SUMMARY OF BASED AIRCRAFT FORECAST AT MAC RELIEVER AIRPORTS 2010-2025

Year	Airlake (LVN)	Anoka County-Blaine (ANE)	Crystal (MIC)	Flying Cloud (FCM)	Lake Elmo (21D)	St. Paul Downtown (STP)	Total
2015	211	452	269	411	261	117	1,721
2020	203	433	254	406	247	128	1,671
2025	195	414	244	401	243	132	1,629

Source: MSP Reliever Airports Activity Forecasts Technical Report, April 2009.

Table 3.4

SUMMARY OF FORECAST OPERATIONS AT MAC RELIVER AIRPORTS 2010-2025

Year	Airlake (LVN)	Anoka County-Blaine (ANE)	Crystal (MIC)	Flying Cloud (FCM)	Lake Elmo (21D)	St. Paul Downtown (STP)	Total
2015	93,558	73,328	100,564	97,154	80,426	117,399	562,429
2020	99,701	75,973	108,342	106,030	86,301	130,056	606,403
2025	106,060	79,560	115,730	113,876	92,363	137,310	644,899

Source: Metropolitan Airports Commission MIC, 21D, and LVN Long Term Comprehensive Plan Updates, June 2008; and MSP Reliever Airports Activity Forecasts Technical Report, April 2009.

3.4 DEVELOPMENT PROGRAMS

This section outlines the status of major development programs at each of the reliever airports. It is important to note that the MAC is investigating revenue-generating development at the reliever airports as a way to help make the reliever airport system as financially self-sustaining as possible.

The MAC has an ongoing program to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays and seal coats; in some instances, reconstruction is necessary to restore the surfaces to a smooth, even condition for optimum operating conditions. Projects vary from year to year, depending on available funding and airport needs. In 2013, pavement rehabilitation was completed at ANE, LVN and 21D.

3.4.1 Airlake Airport (LVN)

The LVN 2008 Long Term Comprehensive Plan (LTCP) update recommends that the airfield's only runway (Runway 12/30) be extended to 5,000 feet at some point in the future to coincide with industrial/commercial development in Lakeville and potentially in Eureka Township. The runway extension shown in the plan requires relocation of a portion of Cedar Avenue. In 2010 the MAC completed a Draft Scoping Decision Document and a Draft Environmental Assessment Worksheet (EAW) for the proposed development activity. An Environmental Impact Statement (EIS) is required before the project can begin. The MAC will continue to work with Dakota County and other agencies as appropriate on the runway extension and roadway realignment. Another update to the LTCP for LVN is currently underway and planned to be complete in 2014.

3.4.2 Anoka County-Blaine Airport (ANE)

A Long Term Comprehensive Plan (LTCP) update was completed in 2010 for ANE. This plan analyzed existing facilities, forecasted future activity, and outlined development needed to meet the projected demand. Based upon the forecasts and existing airfield configuration, no airside or landside expansions are proposed in the LTCP. Currently, there is no demonstrated need for longer runway lengths, additional runways or additional hangar areas.

3.4.3 Crystal Airport (MIC)

The MAC completed the Long Term Comprehensive Plan (LTCP) update for MIC in 2008. The adopted LTCP recommends that two runways be closed to "right-size" the airport. The LTCP for MIC suggests keeping the original paved runway and one paved crosswind runway intact. The MAC is evaluating the process for implementing the runway closure recommendations.

Another update to the LTCP for MIC is currently underway and planned to be complete in 2014.

3.4.4 Flying Cloud Airport (FCM)

The Long Term Comprehensive Plan (LTCP) update for FCM was completed in 2010. This plan analyzed existing facilities, forecasted future activity, and outlined development needed to meet projected demands. The primary project recommended in the plan

involved shifting the crosswind runway at FCM (Runway 18/36) to the north. This project was completed in 2013 and provides a fully compliant runway safety area at FCM.

In 2009, the MAC convened a Joint Airport Zoning Board (JAZB), the purpose of which was to develop a Flying Cloud Airport Zoning Ordinance for review and approval by the Commissioner of the Minnesota Department of Transportation (MnDOT), then subsequent adoption by the JAZB and local municipalities in accordance with Minnesota statutes. The JAZB submitted the draft ordinance to MnDOT in December 2010. However, the Flying Cloud Zoning Board is awaiting further legal determinations that will help establish the appropriate way forward for the Board. It is anticipated this consideration will be influenced significantly by litigation related to airport zoning around MSP.

3.4.5 Lake Elmo Airport (21D)

The Long Term Comprehensive Plan (LTCP) for 21D was completed in 2008. The plan recommends that a new hangar area be constructed in the near future.

The LTCP also recommends that the crosswind runway be reconstructed and extended from 2,499 feet to 3,200 feet to better accommodate the existing aircraft at the airport.

An update to the LTCP for 21D is currently underway and planned to be complete in 2014. It is anticipated that the updated plan may include new recommendations for providing necessary extended runway length.

3.4.6 St. Paul Downtown Airport (STP)

Storm sewer improvements were completed at STP in 2013. The Long Term Comprehensive Plan (LTCP) update for STP was completed in 2010. This plan analyzed existing facilities, forecasted future activity and outlined development needs in order to meet projected demand. Based upon the forecasts and existing airfield configuration, no airside or landside expansions are proposed in the LTCP. There is currently no demonstrated need for longer runways, additional runways, or additional hangar areas.

The MAC began working with local communities in 2008 to enact airport safety zoning around STP. A Joint Airport Zoning Board (JAZB) was formed, and its first meeting was held in May 2008. The goal of the JAZB is to develop a zoning ordinance for STP for review and approval by the Commissioner of the Minnesota Department of Transportation (MnDOT) and subsequent adoption by the JAZB and local municipalities. This process continued through 2009 and 2010. The JAZB submitted the draft ordinance to MnDOT in September 2010 and received comments. However, the STP Zoning Board is awaiting further legal determinations that will help establish the appropriate way forward for the Board. It is anticipated this consideration will be significantly influenced by litigation related to airport zoning around MSP.

Appendix A

NOC Area Navigation (RNAV) Resolution 01-2014 and Related Documents

METROPOLITAN AIRPORTS COMMISSION

Minneapolis-Saint Paul International Airport
6040 - 28th Avenue South • Minneapolis, MN 55450-2799
Phone (612) 726-8100

March 17, 2014

Mr. Dennis Roberts
Director, Airspace Service
Orville Wright Bldg. (FOB10A)
FAA National Headquarters
800 Independence Ave., SW
Washington, DC 20591

RE: POSSIBLE FAA RNAV SID IMPLEMENTATION AT MSP

Dear Mr. Roberts,

I am writing in response to the Federal Aviation Administration's (FAA) February 19, 2014, Safety Risk Management (SRM) study findings on the partial Area Navigation (RNAV) procedure implementation at Minneapolis-St. Paul International Airport (MSP). As you are aware, this process has raised significant concern and frustration in the communities surrounding MSP.

As a result, in response to the FAA's findings, on March 6, 2014, the MSP Noise Oversight Committee (NOC) unanimously adopted Resolution 01-2014 regarding future FAA Performance-Based Navigation (PBN)/RNAV Standard Instrument Departure (SID) procedure design and implementation efforts at MSP. Please see the attached Resolution. The City of Minneapolis NOC Representative was unable to attend the March 6 NOC meeting due to scheduling conflicts and subsequently submitted a written statement of support for the Resolution, which is also attached.

On March 17, 2014, the MAC Board of Commissioners took unanimous action supporting NOC Resolution 01-2014. Please accept this letter as the MAC's endorsement of the attached NOC Resolution and the recommendations to the FAA contained therein.

Sincerely,

Dan Boivin
MAC Chairman

cc: MSP NOC
Mr. Jeff Hamiel, MAC Executive Director/CEO

MINNEAPOLIS-ST.PAUL INTERNATIONAL AIRPORT (MSP)

NOISE OVERSIGHT COMMITTEE (NOC)

RESOLUTION # 01-2014

REGARDING FUTURE FAA PERFORMANCE-BASED NAVIGATION (PBN)/AREA NAVIGATION (RNAV) STANDARD DEPARTURE PROCEDURE DESIGN AND IMPLEMENTATION EFFORTS AT MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT (MSP)

WHEREAS, the NOC is the primary advisory body to the full Metropolitan Airports Commission (MAC) on topics related to aircraft noise at MSP; and,

WHEREAS, NOC members have been officially selected to represent their respective community group and airport user group constituencies and vote accordingly; and,

WHEREAS, the NOC is a balanced forum for the discussion and evaluation of noise impacts around MSP including the identification, study, and analysis of noise issues; and,

WHEREAS, since 2007 the NOC has advocated for implementation of Performance-Based Navigation (PBN) procedures in the form of Area Navigation (RNAV) to enhance existing vectored noise abatement procedures at Minneapolis-St. Paul International Airport (MSP); and,

WHEREAS, in late 2010, amidst the ongoing NOC dialogue on RNAV noise abatement procedures, the Federal Aviation Administration determined it was moving forward with an airspace-wide Performance-Based Navigation (PBN) procedure design and implementation process in the form of Area Navigation (RNAV) Standard Instrument Departures (SIDs) and Standard Terminal Arrival Routes (STARs) on all runways at MSP; and,

WHEREAS, the NOC realized there were expanded considerations such as capacity, noise mitigation, and operational efficiency, beyond just noise, that would factor into the process as a result of the transition from a locally-focused noise procedure enhancement initiative, to an FAA headquarter-driven airspace-wide effort; and,

WHEREAS, on March 22, 2011 the NOC sent a letter, and the MAC Commission sent a similar letter on May 16, 2011, to the FAA requesting that the Agency's process include

various measures in the form of five noise related activities including noise impact analyses, community engagement, information sharing, and noise-reducing procedure design considerations; and,

WHEREAS, following the March 2011 NOC letter, FAA representatives indicated that the project scope did not include the requested analyses and community engagement/information sharing activities; and,

WHEREAS, the NOC structured a plan to attempt to provide the desired analyses and community engagement/information sharing activities (planned to require approximately six months to complete) following receipt of the FAA's final proposed procedure tracks; and,

WHEREAS, in early September 2012 the MAC and the NOC received the FAA's final proposed procedure tracks and shortly thereafter, in mid-September 2012, the FAA requested the MAC's support for the procedures by the end of November 2012 to avoid jeopardizing the procedure implementation by delaying publication by more than a year beyond the planned 2014 dates; and,

WHEREAS, the NOC analyses and community engagement/information sharing activities were accelerated and the planned six month timeframe was shortened to approximately a month-and-a-half to aid in the MAC's consideration of the procedures on the FAA's requested timeline; and,

WHEREAS, at the November 19, 2012 MAC Commission meeting over one hundred residents living northwest of MSP expressed passionate concern regarding the speed of the process and lack of FAA efforts to engage communities on the noise impacts of the procedures; and,

WHEREAS, at the November 19, 2012 MAC Full Commission meeting, in consideration of the residents' concerns, the MAC voted to support the proposed STARs to all runways at MSP and the proposed SIDs off all runways except Runways 30L and 30R; and,

WHEREAS, since the November 19, 2012 MAC Commission meeting, NOC City Representatives have received increasing concerns from their constituencies located southeast and south of MSP regarding the possible noise impacts of RNAV implementation on their neighborhoods; and,

WHEREAS, in February 2014 the FAA determined the RNAV STARs can be implemented as proposed and that the partial implementation of RNAV SIDs at MSP is not possible for safety reasons; and,

WHEREAS, the FAA's proposed RNAV STARs integrate the use of Optimized Profile Descents, are overlays of existing arrival paths, reduce noise impacts under the arrival paths, and reduce fuel burn and associated emissions,

NOW THEREFORE BE IT RESOLVED, by the Noise Oversight Committee of the Minneapolis-St. Paul International Airport that:

The NOC supports the following FAA actions related to any possible future RNAV SID design and implementation at MSP, and requests the MAC's support of the following provisions to be communicated to the FAA:

1. The NOC remains supportive of the RNAV STARs as presented and the FAA should move forward with the implementation of these procedures at MSP.
2. The FAA RNAV STAR procedures should incorporate Optimized Profile Descents for all runways at MSP.
3. Prior to the commencement of any future RNAV SID design and implementation efforts at MSP, the FAA must present to the NOC and the MAC a case study of the successful implementation of RNAV at an airport with similar challenges to those existing at MSP, which includes the airport's location adjacent to densely populated residential areas. The case study should detail, how the FAA's proposed design and implementation plan for MSP builds on the proven successes at the other similarly-situated airport.
4. Any future FAA RNAV SID design and implementation plans must, in addition to the above, be structured in a way that incorporates the provisions communicated in Mr. Jeff Hamiel's February 1, 2013 letter to the FAA regarding future FAA community outreach efforts related to RNAV implementation at MSP (See Attachment 1).
5. The NOC acknowledges the FAA will need adequate time to prepare the requested case study and community outreach plan, and as such, the FAA's future implementation of RNAV SID could be delayed until said study and outreach plan are finalized.

Adopted by the Noise Oversight Committee of the Minneapolis-St. Paul International Airport this 6th day of March 2014.

Representative	**Vote**
Oleson	Aye
Miller	Aye
Petschel	Aye
Quincy	Absent
Fitzhenry	Aye
Bergman	Aye
Hennessy	Aye
Carlson	Absent
Erazo	Aye
Underwood	Aye
McQuillan	Aye
Christiansen	Aye

Resolution adopted by a unanimous vote of 10 to 0.

Christene Sirois Kron, NOC Secretary

Attachment 1

METROPOLITAN AIRPORTS COMMISSION

Minneapolis-Saint Paul International Airport
6040 - 28th Avenue South • Minneapolis, MN 55450-2799
Phone (612) 726-8100

Office of Executive Director

February 1, 2013

Mr. Dennis Roberts
Director, Airspace Service
Orville Wright Bldg. (FOB10A)
FAA National Headquarters
800 Independence Ave., SW
Washington, DC 20591

Dear Mr. Roberts,

I am writing to follow up on our January 15, 2013 meeting regarding the Federal Aviation Administration's (FAA) Performance-Based Navigation Implementation (PBN) efforts at Minneapolis-St. Paul International Airport (MSP). As you know, on November 19, 2012, the MAC provided support for "partial implementation" of the FAA-proposed Area Navigation/Required Navigation Performance (RNAV/RNP) Standard Terminal Arrival Routes (STARs) and RNAV Standard Instrument Departures (SIDs), with the exception of the Runways 30L and 30R RNAV SIDs to the northwest of MSP. As part of our discussion, you asked that we provide a framework for the FAA's consideration in its community outreach efforts at MSP to facilitate any future implementation of RNAV SIDs.

Our recommendations are as follows:

1. **Timing**

   We recommend that the FAA focus on the partial implementation proposal supported by the MAC. FAA efforts to re-engage the communities on the possibility of RNAV SIDs on Runways 30L and 30R should commence in July 2015 after the partial implementation proposal has been implemented and there has been ample time between partial implementation and follow-on outreach efforts. This will allow for successful integration of the procedures and data gathering in support of follow-on efforts.

2. **Local FAA Leadership as a Critical Component**

   Local FAA Air Traffic Control representatives (Mr. Rydeen and his team) should be placed in lead positions when communicating with the public and strategizing on the appropriate allocation of FAA resources in addressing community concerns. The insight and years of experience that Mr. Rydeen and his team can provide will help to ensure that FAA resources are directed toward community initiatives, the successful completion of which will be critical to ensuring local needs and expectations will be addressed in the process and conflict minimized. Moreover, including local FAA Air Traffic Control in decisions related to procedure design and publishing schedule development should ensure that future community initiatives, and the time required to complete them adequately, are not excluded from the overall FAA planning process.

3. **Holistic Outreach**

Any future FAA efforts to re-engage communities northwest of MSP (such as Richfield, Minneapolis, or Edina) in support of RNAV SID implementation on Runways 30L and 30R, should also include a component intended to reach out to the communities impacted by the partial implementation of RNAV procedures. The plan should include components for engaging the communities to the south and east of MSP to receive feedback on how the procedures are impacting communities. Moreover, the effort should include a willingness on behalf of the FAA to consider procedure changes to address community concerns, in circumstances where such changes would not impact safety or efficiency.

4. **Early Coordination with Local Community Leaders**

Future FAA efforts to re-engage communities around MSP must begin with outreach to key community representatives in each of the cities located within a defined area around the airport (at a minimum this should include communities that have expressed interest in this issue to date) to establish community expectations related to community outreach efforts and related analyses. This effort will help to define the specific elements in the plan that will be critical to addressing community concerns in the case of communities to the northwest of MSP where RNAV SIDs are yet to be implemented, as well as in communities where the procedures are being used. This will be critical for maintaining support throughout the process for the implementation of RNAV SIDs on Runways 30L and 30R.

5. **Adequate Resource Allocation**

The FAA will need to dedicate the resources necessary to complete the elements of the plan successfully. This will likely require a mix of FAA staff resources and consultant services with a dedicated project budget. Local FAA Air Traffic Control representatives will be an important participant in the development and prioritization of these project resources. As we have experienced over the years, early outreach to the communities will tend to define the scope and focus of the plan required for a successful outcome. The appropriate allocation of the resources necessary to address local expectations is critical to the success of the community outreach effort.

The communities around MSP are very engaged and have a long history of intelligent dialogue, and active participation, with regard to the topic of aircraft noise. This has resulted in a complex environment within which to plan for and implement projects that have a well-defined aircraft noise component, such as PBN.

I hope you find the above insights helpful in defining a productive path forward that positions the FAA to meet local expectations successfully. Respecting that the FAA is the lead agency on PBN initiatives, I want to assure you that the MAC stands ready to provide assistance as needed.

Sincerely,

Jeffrey W. Hamiel
Executive Director/CEO
Metropolitan Airports Commission

Minneapolis
City of Lakes

City Council

John Quincy
Council Member, Eleventh Ward

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Dan Boivin
Chair, Metropolitan Airports Commission
6040 28th Avenue South
Minneapolis, MN 55450

Dear Dan,

I am writing to you today to express my full support for Noise Oversight Committee (NOC) Resolution 01-2014, which recently passed the during a special meeting of the NOC on March 6, 2014. I had collaborated with the other community members in the drafting of the resolution, and support it, but due to an anomaly in scheduling, official City of Minneapolis business kept me from being able to attend the meeting. The City of Minneapolis alternate has been recovering from a bicycle accident, so was also unavailable to attend.

These combined events left Minneapolis without a body at the dais, but that lack of a vote in favor the resolution does not lessen the City's support for notifying the FAA of their obligations to public process should they choose to develop RNAV or other NextGen procedures at MSP.

Sincerely,

CC: Paul Rehkamp, Chair PD&E
Erica Prosser