2012 ANNUAL REPORT TO THE LEGISLATURE

PREPARED BY THE
METROPOLITAN AIRPORTS COMMISSION
ENVIRONMENT DEPARTMENT

MARCH 2013

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1. INTRODUCTION

1.0 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 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 Minneapolis-St. Paul International Airport (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 1996, and the MAC and the MC submitted their recommendations to the Legislature on March 18, 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.

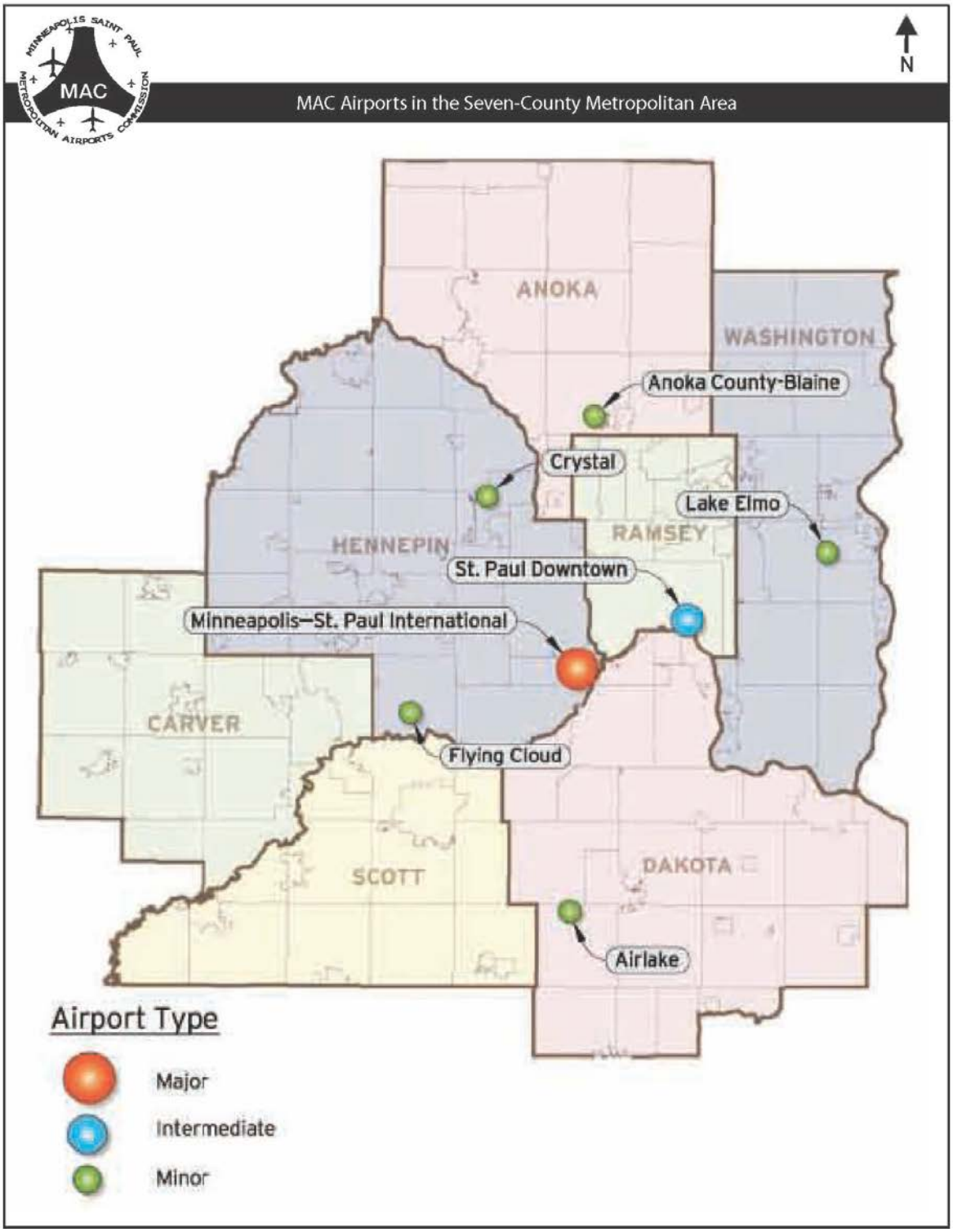
This same legislation requires the MAC to prepare an Annual Report to the Legislature that describes recent MSP activity, current and anticipated capacity and delay for its airfield and terminals, and technological developments that could improve airport efficiency. In 2006, the 1996 legislation was 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 2012 Annual Report to the Legislature is divided into three sections:

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

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

Figure 1-1


MAC
MINNEAPOLIS SAINT PAUL METROPOLITAN AIRPORTS COMMISSION
N
MAC Airports in the Seven-County Metropolitan Area
ANOKA
WASHINGTON
Anoka County-Blaine
Crystal
Lake Elmo
HENNEPIN
RAMSEY
St. Paul Downtown
Minneapolis–St. Paul International
CARVER
Flying Cloud
SCOTT
DAKOTA
Airlake
Airport Type
Major
Intermediate
Minor

1.1 METROPOLITAN AIRPORTS COMMISSION STRATEGIC PLAN

The Metropolitan Airports Commission's (MAC) 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 goals for MSP and the reliever airports are outlined in the 2013 Strategic Plan[1]. The MAC's vision statement and commitment is "To give our customers the best airport experience in North America." To that end, the key initiatives of the Plan are described below.

Key initiatives for 2013:

1. Refine three-year operating budgeting process to include lifecycle costs, aligned with the strategic plan and capital improvement budget.
2. Monitor and manage the performance of the new General Aviation model closely to ensure it delivers financial viability.
3. Explore options for expanding non-aeronautical revenue.
4. Implement improvements in the international arrival facilities at Terminal 1-Lindbergh.
5. Implement technology to inform passengers of security checkpoint wait times.
6. Implement a porter program to help customers with baggage at Terminal 1-Lindbergh.
7. Assess customer needs of an aging and increasingly diverse traveling public.
8. Implement internship programs.
9. Implement a leadership development/career enrichment program.
10. Upgrade operating system and office productivity suite to Windows 7 and Office 2010 including SharePoint.
11. Initiate expanded staff training using e-learning and classroom training to maximize the use of current technologies.
12. Expand use of the MAC's Enterprise Resource Planning product, EnterpriseOne, including automated time entry, capital project management and maintenance management.
13. Sponsor dialogues with regional business leaders.
14. Complete the environmental documentation associated with MSP 2020 improvements.

[1] The Metropolitan Airports Commission 2012-2016 Strategic Plan (2013 Update)

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

2.0 OVERVIEW

Minneapolis-St. Paul International Airport (MSP) is the primary commercial service airport in Minnesota. Owned and operated by the Metropolitan Airports Commission (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.

Aircraft operations and passenger activity associated with MSP contribute to the Twin Cities economy by generating or supporting more than 76,000 jobs, $10.1 billion in business revenue, $3 billion in personal income, and $611 million in state and local taxes.[2]

Despite the MAC's $2.8 billion investment in expanding MSP, the airport was recently ranked the second-most financially efficient airport in North America.[3]

Notable service accomplishments at MSP during 2012 include introduction of new air service and receipt of Travel+Leisure Magazine's award for "Best Airport" in America.[4]

New Air Service

Great Lakes Airlines expanded its service from one destination (Devils Lake, North Dakota) to eight destinations, averaging about 22 daily departures. Current destinations from MSP are: Watertown, South Dakota; Devils Lake, North Dakota; Fort Dodge, Iowa; Huron, South Dakota; Ironwood, Michigan; Jamestown, North Dakota; Mason City, Iowa; and Thief River Falls, Minnesota.

In May 2012, ultra-low-cost carrier Spirit Airlines commenced service from MSP to Chicago-O'Hare and Las Vegas. In November 2012 service was expanded to Fort Lauderdale and Fort Myers, Florida. Spirit has announced that it will commence service to Dallas-Fort Worth and Denver in April 2013.

Upgraded Remote Noise Monitoring Tower System (RMTs)

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 and ancillary equipment, and aircraft noise data collection and processing software and storage.

The next sections of this report highlight facilities, activities and resource management at MSP as follows:

- A description of MSP facilities

[2] According to the Local and Regional Economic Impacts of the Minneapolis-St. Paul International Airport, conducted by John C. Martin Associates LLC and completed in March 2013.

[3] Air Transport Research Society Airport Benchmarking Report 2011, Global Standards for Airport Excellence.

[4] Travel + Leisure Magazine, April 2012

- 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
- Environmental resource management

2.1 MSP AIRPORT FACILITIES

2.1.1 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 general airport layout, and **Table 2.1** summarizes the major airport components.

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 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 2012 included improvements to perimeter gate security and ongoing pavement repairs/rehabilitation and the installation of an approach lighting system for Runway 30R. Storm water pond improvements were also completed to enhance pond capacity and reduce the potential for overflow into Snelling Lake. Improvements were made to the existing north fuel island oil/water separator, and a new fire protection foam distribution building will be completed in the spring 2013 for the fuel farm.

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)[5]	1
	Total Runways:	4
Terminal Building Facilities		
	Terminal 1-Lindbergh million sq. ft.	2.8
	Terminal 2-Humphrey million sq. ft.	0.4
	Total Terminal Square Footage (millions):	3.2
	Terminal 1-Lindbergh Gates	117
	Terminal 2-Humphrey Gates	10
	Total Gates	**127**
PUBLIC AUTO PARKING		
	Terminal 1-Lindbergh	13,202
	Terminal 2-Humphrey	9,253
	Total Public Auto Parking Spaces:	**22,455**[6]

Source: Data provided by the Metropolitan Airports Commission

[5] Runway 4/22 is the longest runway (11,006 ft.).

[6] Data provided by the Metropolitan Airports Commission for revenue-control equipped public parking.

Figure 2-1

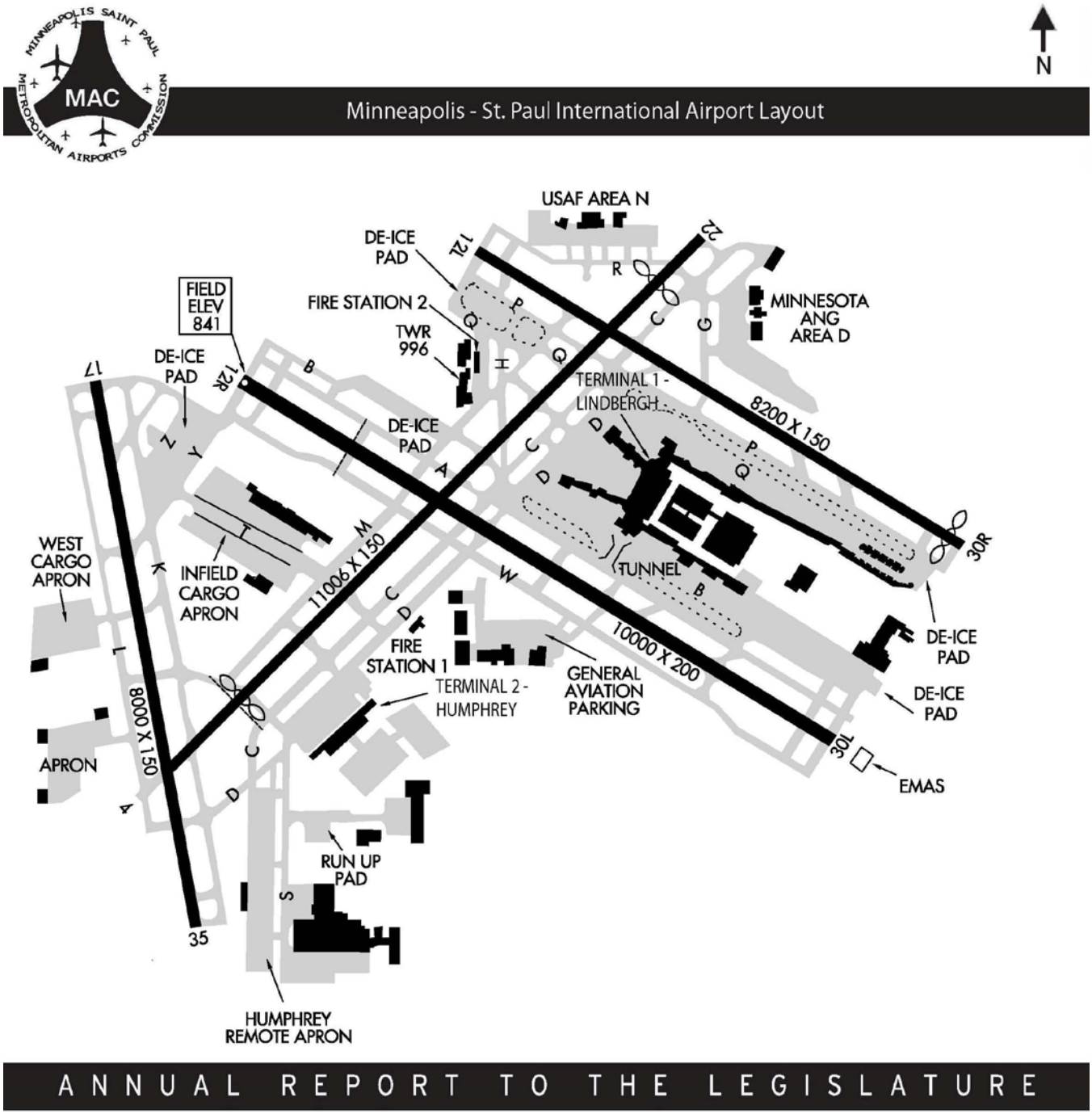

MINNEAPOLIS SAINT PAUL
MAC
METROPOLITAN AIRPORTS COMMISSION
N
Minneapolis - St. Paul International Airport Layout
USAF AREA N
DE-ICE PAD
12L
22
R
FIELD ELEV 841
FIRE STATION 2
TWR 996
MINNESOTA ANG AREA D
DE-ICE PAD
12R
17
TERMINAL 1 - LINDBERGH
8200 X 150
DE-ICE PAD
30R
WEST CARGO APRON
INFIELD CARGO APRON
11006 X 150
TUNNEL
10000 X 200
DE-ICE PAD
FIRE STATION 1
TERMINAL 2 - HUMPHREY
GENERAL AVIATION PARKING
DE-ICE PAD
8000 X 150
APRON
18L
EMAS
RUN UP PAD
35
HUMPHREY REMOTE APRON
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Figure 2-2:
Terminal 1-Lindbergh

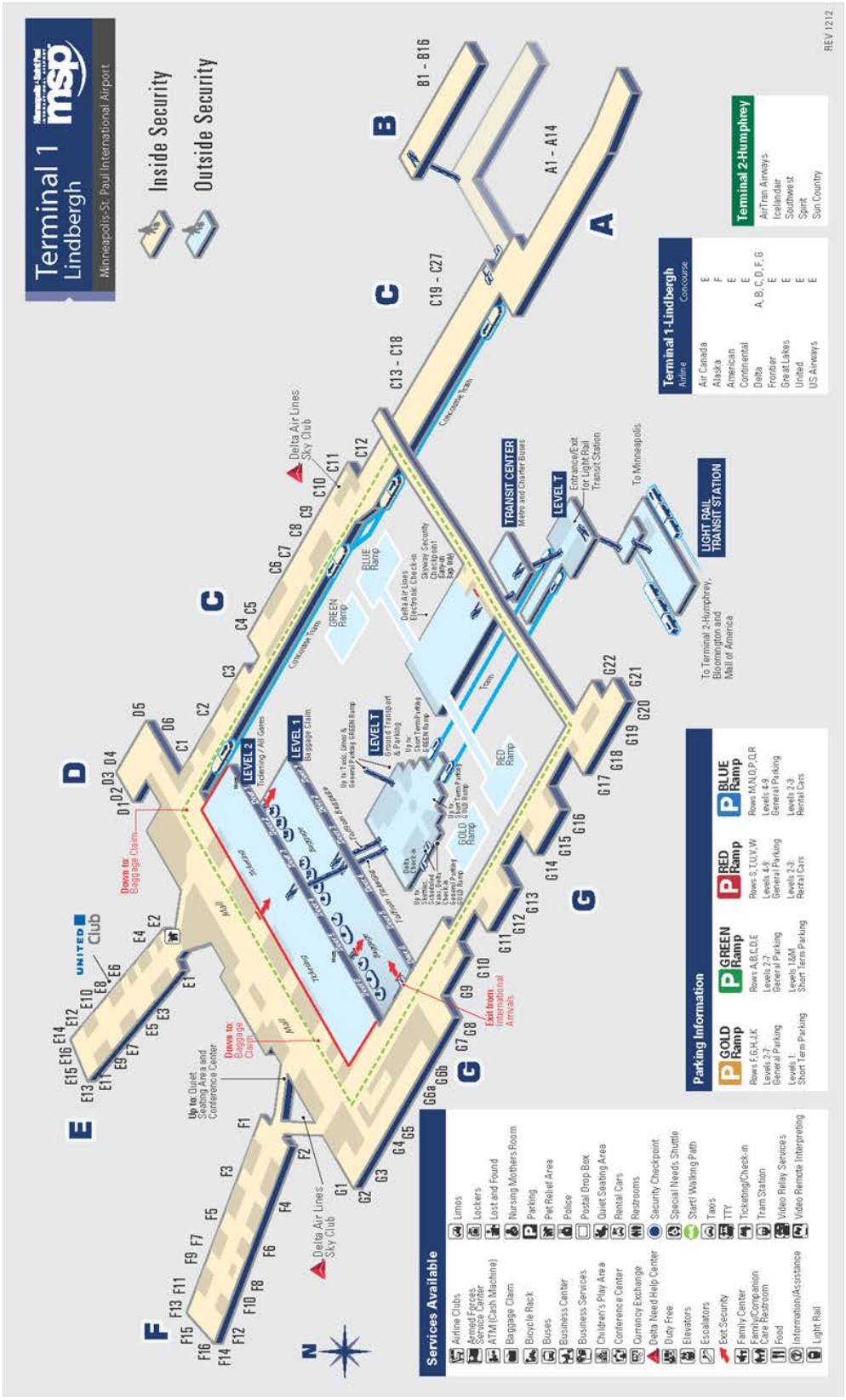
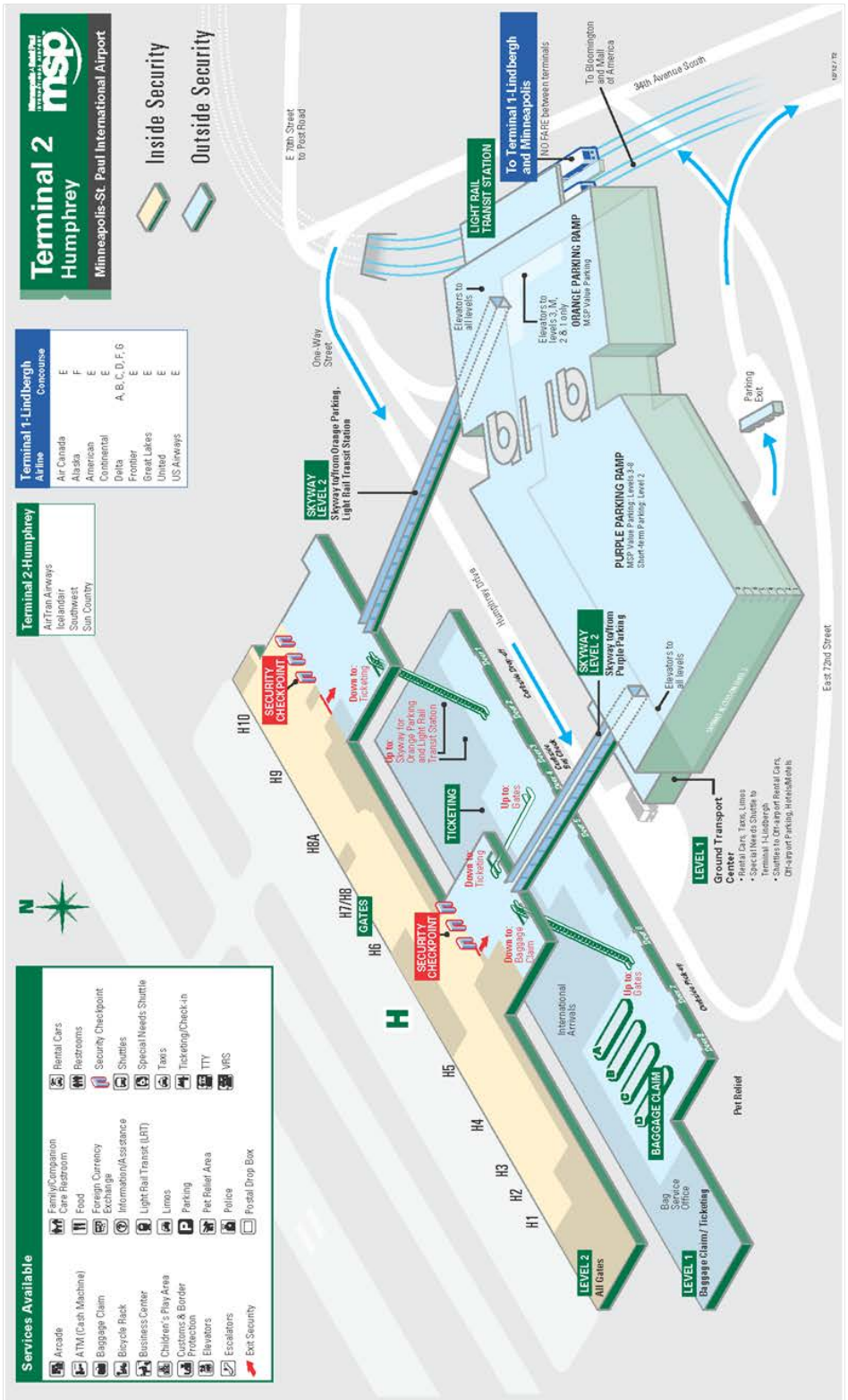


Figure 2-3:
Terminal 2-Humphrey



2.1.2 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. During 2010, changes were made to roadway signage that now refer to this terminal as Terminal 1 and list the individual air carrier service providers that serve the terminal. In 2012, this terminal reached its 50th anniversary.

Terminal 1 is located between the north parallel runway (12L) and the south parallel runway (12R), east of Runway 4-22. **Figure 2-2** displays the terminal layout with single-loaded and double-loaded concourses, and 117 gate positions. Of those, 10 gates support international arrivals into the International Arrival Facility. A concourse tram and moving sidewalks assist passenger travel along Concourse C. Moving sidewalks also facilitate passenger movement on Concourses A, B and G, and through the skyway connector between Concourses C and G. 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.

Improvements completed in 2012 for Terminal 1 parking facilities include ramp area pavement rehabilitation and maintenance, and upgraded parking revenue control software and hardware to enhance performance and achieve payment card industry (PCI) compliance. Installation of electrical vehicle charging stations is planned to occur in 2013.

2.1.3 Terminal 2-Humphrey

Terminal 2-Humphrey opened in 1977 with four gates and was named for Hubert H. Humphrey. A new terminal replaced the original terminal in 2001, and May 2011 marked the 10th anniversary of the updated facility. In 2010, changes were made to roadway signage that now refer to the Humphrey Terminal as Terminal 2 and list the individual air carrier service providers that serve the terminal. Terminal 2 is located southwest of the parallel runways and consists of 10 common-use gates currently used by five airlines, including Sun Country, Icelandair, Spirit, Southwest/Air Tran and charter companies. Spirit Airlines launched service at MSP in May 2012 and now operates six daily flights out of Terminal 2.

The building layout of Terminal 2 is depicted in **Figure 2-3**, and includes an International Arrival Facility. The Orange Ramp Skyway provides an elevated, temperature-regulated connection between Terminal 2, the Orange Ramp and the light rail station. There is also a skyway connection between the terminal and the Purple parking ramp.

The busiest year on record for Terminal 2 was 2012 with over 3.3 million passengers and over 30,000 aircraft operations.

Terminal 2 building improvements in 2012 included the addition of a new security checkpoint (now called Checkpoint 1). Checkpoint 2, previously the only security checkpoint in Terminal 2, was remodeled and reopened in March 2013. Parking facilities modifications at Terminal 2 in 2012 include improved vehicle entry, circulation and exit flow; upgraded parking revenue control software and hardware; construction com-

pleted on the skyway connector between the Orange Ramp and the Terminal 2 building; and annual pavement rehabilitation and maintenance.

In 2014, expansion of the car rental facility and installation of electrical vehicle charging stations will be completed. Also, project bids will be solicited for a new Checked Baggage Inspection System (CBIS) and a north apron expansion project.

2.1.4 Light Rail and Bus Transit

The Metro Transit Hiawatha Line provides a light rail transit (LRT) option for MSP travelers and visitors commuting between terminals and off-airport locations from 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 2012 remained consistent with activity in 2011. There were approximately 4,800 boardings in both years.

2.1.5 MSP Long Term Comprehensive Plan Update

In 2010, the MAC completed an update to the MSP Long Term Comprehensive Plan (LTCP). The previous plan was published in 1996 and included projects that improved airfield efficiency dramatically, particularly with the addition of Runway 17-35 and associated infrastructure in 2005. The updated LTCP is necessary for planning purposes, and it reflects significant changes in the aviation industry and the impacts of economic conditions on aviation. This plan identifies facility improvements for MSP out to the year 2030 based upon forecasted aircraft operations and passenger activity forecasts.

2.1.6 MSP 2020 Improvements Environmental Assessment

In July 2010 the Minneapolis-St. Paul International Airport (MSP) 2030 Long-Term Comprehensive Plan (LTCP) was approved by the MAC. 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 the mid-1990s. 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 will be 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 arrival curb, passenger processing facilities, parking and international arrival facilities will be needed at Terminal 1 in addition to more 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.

The environmental analysis began in September 2010 when the MAC approved the resources necessary to begin the environmental review process required for the potential developments at MSP to the year 2020. The environmental analysis process is being conducted in compliance with both the National Environmental Policy Act (NEPA) and the Minnesota Environmental Policy Act (MEPA). This process is guided by the Federal Aviation Administration's (FAA) policies and procedures for considering environmental impacts: FAA Order 5050.4B, "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions" and FAA Order 1050.1E, "Environmental Impacts, Policies and Procedures." Additionally, MEPA requirements—as detailed under the Minnesota Environmental Review Program—are considered in this process.

After review of the federal and state environmental review requirements, it was determined that the implementation of the needed airport capacity improvements would require the preparation of a federal Environmental Assessment (EA) and state Environmental Assessment Worksheet (EAW).

An EA is a concise document used to describe a proposed action's anticipated environmental impacts. It provides a comprehensive approach for identifying and satisfying applicable environmental laws, regulations, and executive orders in an efficient manner. In the case of this combined federal and state environmental analysis, the process must provide analysis sufficient to:

- Understand the purpose and need for the proposed action, identify reasonable alternatives (including a no action alternative), and assess the proposed action's potential environmental impacts.
- Address all of the Environmental Assessment Worksheet impact categories as well as the FAA NEPA impact categories.
- Determine whether an Environmental Impact Statement (EIS) is needed because of the proposed action's potential environmental impacts.
- Determine whether a Finding of No Significant Impact (FONSI) can be issued by the FAA because the proposed action will have no significant impacts.

The MSP 2020 Improvements EA/EAW public coordination, hearing, and comment processes have been completed. Currently, the process is nearing completion with a final determination by the FAA on the EA, and MAC determination on the EAW, anticipated in early/mid 2013.

As a result of compiling planning data and finalizing development options as part of the EA/EAW document, 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. The following details the specifics associated with each of the alternatives:

No Action Alternative

Consideration of the No Action Alternative is required by the National Environmental Policy Act (NEPA) per the Council on Environmental Quality (CEQ) Regulations. This alternative serves as a basis of comparison with other alternatives considered for detailed analysis. The No Action Alternative represents the airport without the improvements included in the Preferred Alternative. The No Action Alternative includes some airport improvements that will be implemented prior to the completion of the EA/EAW. These improvements are independent of the Preferred Alternative and have already received environmental approval or are categorically excluded from formal environmental assessment by the FAA and the Minnesota Environmental Quality Board (EQB).

Table 2.2 lists the improvements that are included in the No Action Alternative, and an illustration of the No Action Alternative is presented on **Figure 2-4**.

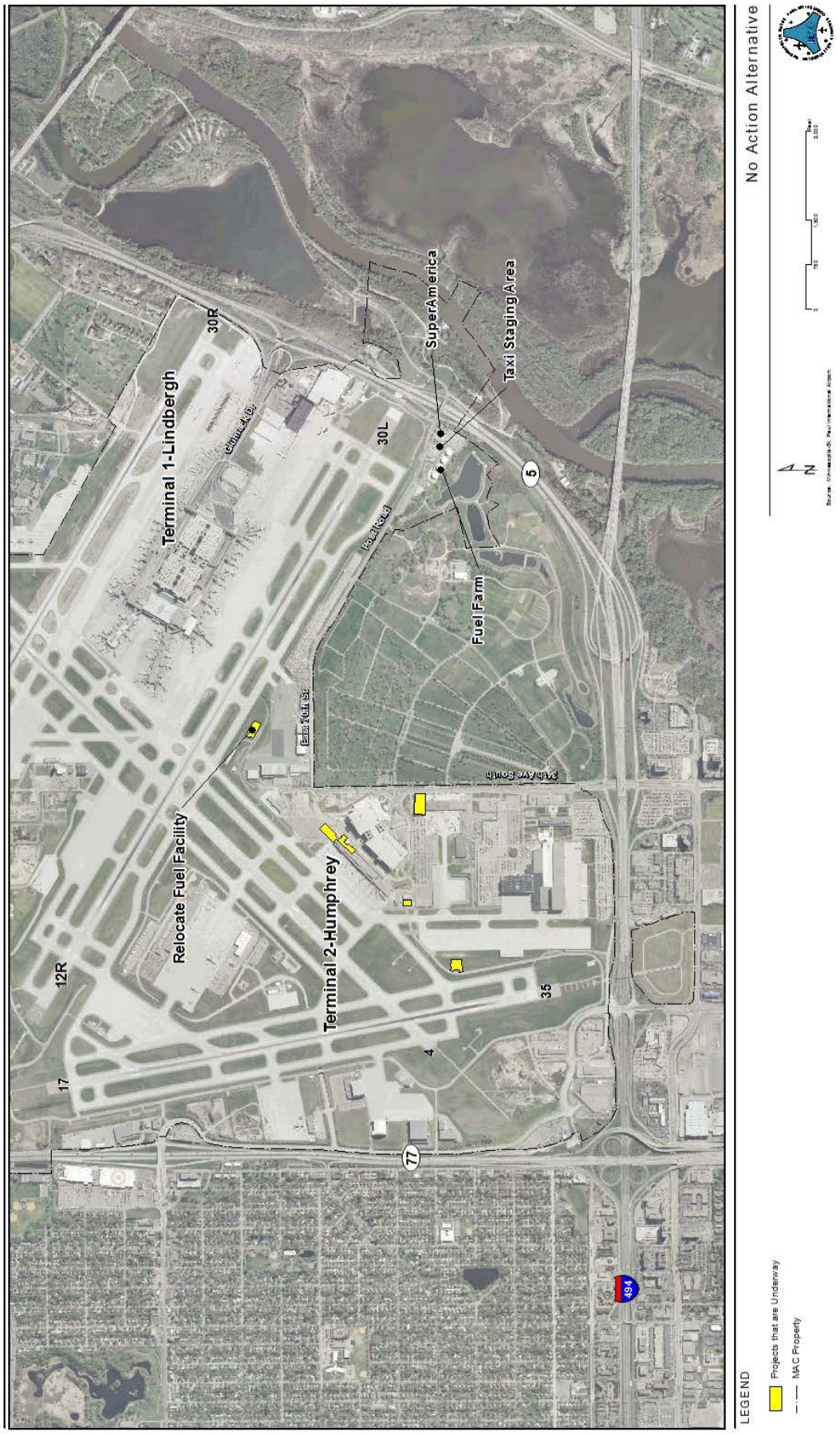
Table 2.2

NO ACTION ALTERNATIVE

Terminal 1-Lindbergh	Terminal 2-Humprhrey
	Terminal ~ Construct north security checkpoint ~ Construct Checked Baggage Inspection System (CBIS)
	Airside ~ Construct new Glycol Storage Facility ~ Relocate Fuel Facility
	Other ~ Demolish Building F Tower

Source: MSP 2020 Improvements EA/EAW

Figure 2-4: MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet
No Action Alternative



Alternative 1 - Airlines Remain

Alternative 1 – Airlines Remain includes the improvements needed through 2020 presuming that the airlines remain in their current terminals. The gate, terminal, landside, roadway and airside facility improvements consist of those necessary to accommodate the forecasted airlines' growth at each terminal. The specific gate, terminal and landside requirements are identified in the EA/EAW. The improvements included in Alternative 1 are listed in **Table 2.3** and an illustration of Alternative 1 is presented on **Figure 2-5**.

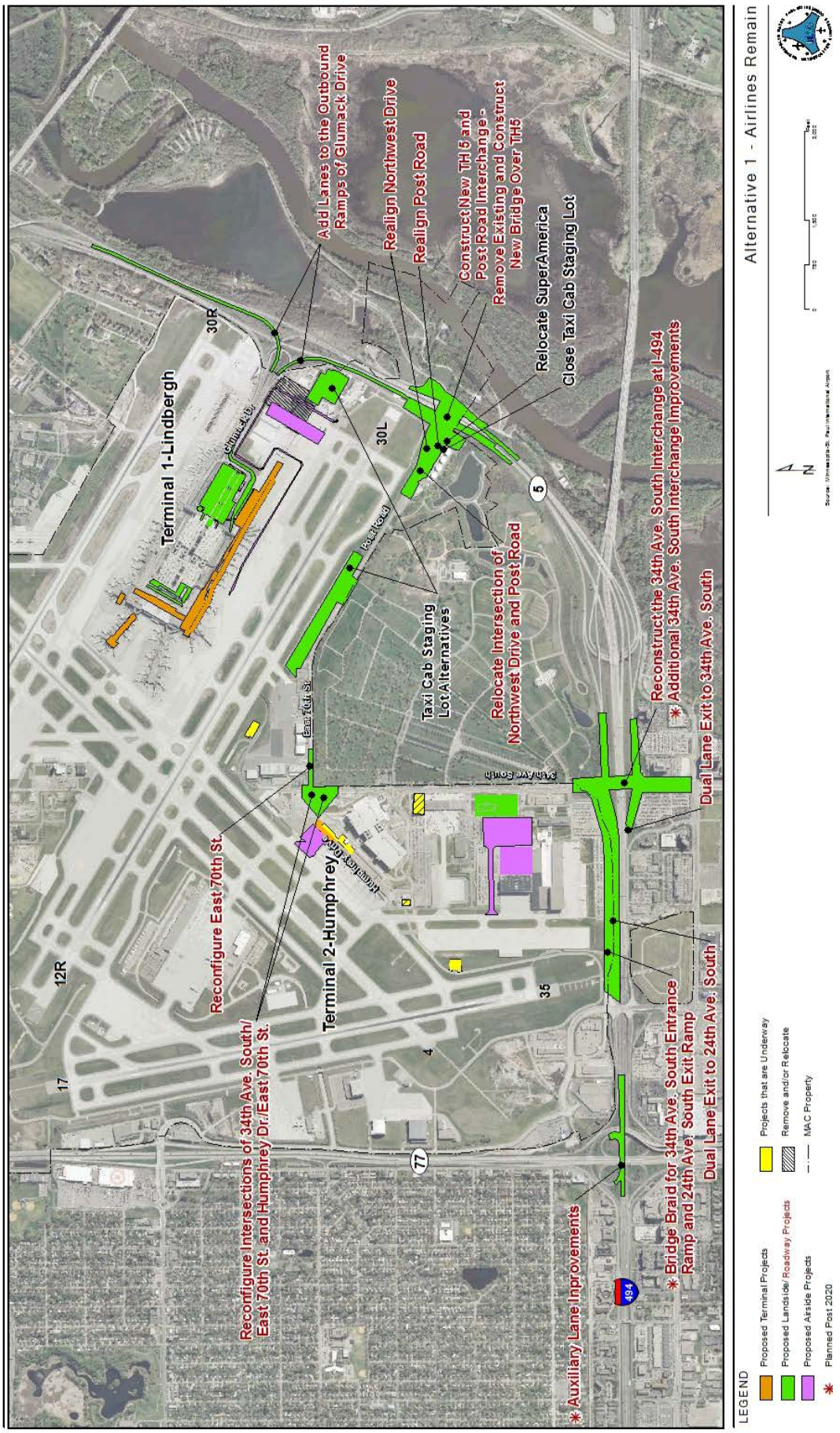
Table 2.3

ALTERNATIVE 1 - AIRLINES REMAIN

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 facilities ~ Expand Concourse E	~ Expand terminal
Landside / Roadway	**Landside / Roadway**
~ Expand terminal arrivals curb and relocate commercial ground transportation center (GTC) ~ Construct a new parking ramp ▪ Relocate portions of Glumack Drive ▪ Remove above-ground portion of Post Office ▪ Extend underground hub tram tunnel ~ Add lanes to the outbound ramps of Glumack Drive to Trunk Highway (TH) 5	~ Construct new Delta Air Lines Employee Parking Ramp ▪ Demolish Building G ~ Reconstruct 34th Avenue South interchange at I-494 ~ 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 a 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 ▪ Demolish remainder of Building B Hangar Complex ~ Extend airfield service road ~ Extend Airport Operations Area (AOA) tunnel and A Street ~ Relocate Concourse G Fuel Main Line	~ Expand terminal apron ~ Construct Replacement Hangar B Complex ▪ Construct access taxiway ▪ Construct apron

Source: MSP 2020 Improvements EA/EAW

Figure 2-5: MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet
Alternative 1 – Airlines Remain



Alternative 2-Airlines Relocate

Alternative 2 - Airlines Relocate includes the 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 2.4**, and an illustration of the Alternative 2 is presented on **Figure 2-6**.

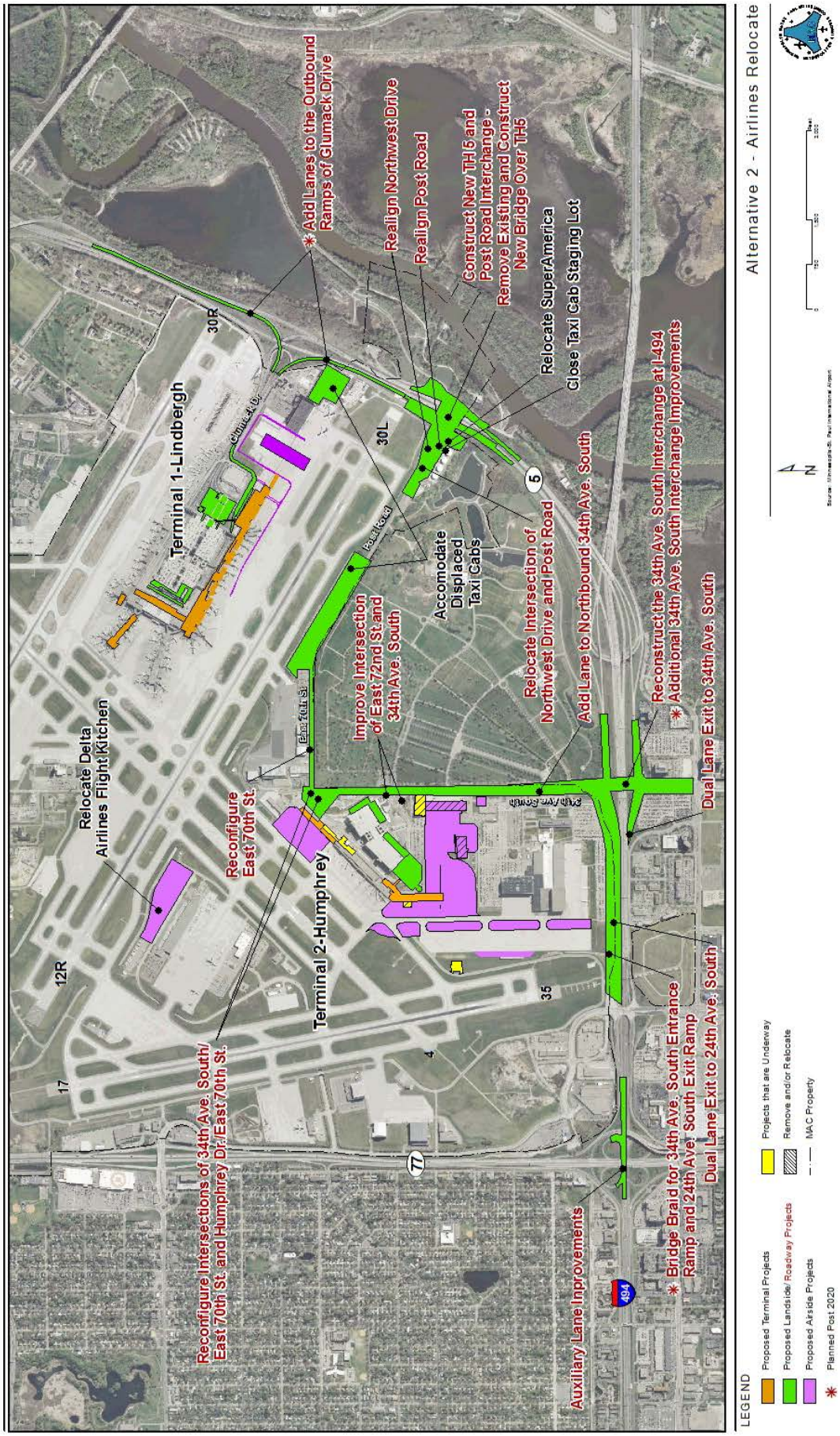
Table 2.4

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 2-6: MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet
Alternative 2 – Airlines Relocate



2.2 AIRPORT ACTIVITY AND SERVICE TRENDS

MSP is served by 13 commercial passenger airlines; 8 are located at Terminal 1 - Lindbergh and 5 are located at Terminal 2 - Humphrey. This section highlights an overview of the airline and passenger activity, and aircraft operations trends in 2012.

Economic challenges continued to affect the entire aviation industry in 2012, including MSP. However, in 2012 the passenger levels at MSP rose from 2011 levels. A total of 33,170,960 passengers arrived and departed MSP, which is a 0.16 percent increase over the 2011 passenger level of 33,118,499. Passengers included in these totals are revenue and non-revenue passengers that utilized traditional major air carrier services, regional air carriers or charter companies. Total passengers at MSP peaked in 2005 with 37,663,664, which is approximately 13 percent higher than the 2012 level.

Delta Air Lines is the largest air carrier service provider at MSP and operates out of Terminal 1-Lindbergh. Delta Air Lines and its regional partners averaged more than 400 flights per day from MSP to more than 130 destinations worldwide in 2012. Delta's market share of MSP passengers in 2012 was 76.51 percent, slightly less than its market share of 77.38 percent of MSP passengers in 2011. In 2012, Delta did not add any new destinations from MSP, but did grow existing service to Chicago-O'Hare, IL; New York-JFK, NY; Boston, MA; Pittsburgh, PA; Los Angeles, CA; Orlando, FL; and Dallas/Fort Worth, TX among others.

Sun Country Airlines is headquartered in Mendota Heights and continues to grow its markets and expand its services from Terminal 2-Humphrey. In 2012, Sun Country operated approximately 19 flights per day and served more than 20 year-round and seasonal destinations. Sun Country experienced significant passenger growth in 2012, serving 10.87 percent more passengers than in 2011. Sun Country grew existing service to: San Francisco, CA; Orlando, FL; Lansing, MI; New York-JFK, NY; Las Vegas, NV; Anchorage, AK; Boston, MA; Fort Myers, FL; Dallas/Fort Worth, TX, and Seattle, WA among others.

In 2012, the operations of Southwest Airlines/AirTran Airways shrunk slightly. Southwest/AirTran accommodated 1.60 percent fewer passengers than in 2011. Southwest operated approximately 15 roundtrip flights per day to seven destinations: Chicago Midway, IL; Denver, CO; St. Louis, MO; Phoenix, AZ; Atlanta, GA; Milwaukee, WI; and Orlando, FL. Southwest added nonstop service to Kansas City, MO on February 14, 2013. Southwest/AirTran is MSP's second largest airline, accounting for 5.58 percent of MSP's passengers in 2012.

US Airways experienced passenger growth in 2012, accommodating 14.79 percent more passengers than in 2011, boosted by the introduction of new nonstop service to Washington D.C.'s Reagan-National Airport effective July 11, 2012. US Airways also added service to Charlotte, NC in 2012.

The MAC is monitoring the potential merger of American Airlines and US Airways closely. Such a merger is not expected to have a significant impact on operations at MSP as the existing service of American and US Airways does not overlap.

Tables 2.5 and 2.6 depict the revenue passenger activity for all air carriers serving MSP markets.

Table 2.5

MSP Revenue Passenger Summary

Rank	Airline	2010	2011	2012	Gain/Loss 2010-2012	% Change 2010-2012
1	Sun Country	944,874	1,110,913	1,231,655	**286,781**	**30.35%**
2	Southwest/AirTran	1,531,266	1,816,451	1,787,448	**256,182**	**16.73%**
3	US Airways	976,878	1,043,619	1,198,002	**221,124**	**22.64%**
4	Spirit	0	0	217,192	**217,192**	**---**
5	Great Lakes	0	423	48,444	**48,444**	**---**
6	Air Canada	42,539	53,786	60,960	**18,421**	**43.30%**
7	Icelandair	41,524	44,841	42,115	**591**	**1.42%**
8	Alaska Airlines	192,110	191,419	170,964	**-21,146**	**-11.01%**
9	American	1,046,926	1,010,695	1,019,085	**-27,841**	**-2.66%**
10	United/Continental	1,465,935	1,448,307	1,376,606	**-89,329**	**-6.09%**
11	Frontier	486,411	510,945	375,524	**-110,887**	**-22.80%**
12	Delta	24,722,914	24,730,908	24,525,492	**-197,422**	**-0.80%**
	Total	31,451,377	31,962,307	32,053,487	**602,110**	**1.91%**

Source: MAC Operations Reports

Table 2.6

MSP Revenue Passenger Market Share

Rank	Airline	2010	2011	2012	Gain/Loss 2010-2012	% Change 2010-2012
1	Delta	78.61%	77.38%	76.51%	**-2.09%**	**-2.66%**
2	Southwest/AirTran	4.87%	5.68%	5.58%	**0.71%**	**14.54%**
3	United/Continental	4.66%	4.53%	4.29%	**-0.37%**	**-7.86%**
4	Sun Country	3.00%	3.48%	3.84%	**0.84%**	**27.90%**
5	US Airways	3.11%	3.27%	3.74%	**0.63%**	**20.33%**
6	American	3.33%	3.16%	3.18%	**-0.15%**	**-4.49%**
7	Frontier	1.55%	1.60%	1.17%	**-0.37%**	**-24.25%**
8	Spirit	0.00%	0.00%	0.68%	**0.68%**	**---**
9	Alaska Airlines	0.61%	0.60%	0.53%	**-0.08%**	**-12.68%**
10	Air Canada	0.14%	0.17%	0.19%	**0.05%**	**40.61%**
11	Great Lakes	0.00%	0.00%	0.15%	**0.15%**	**---**
12	Icelandair	0.13%	0.14%	0.13%	**0.00%**	**-0.48%**

Source: MAC Operations Reports

2.2.1 Passenger Originations/Destinations and Connections

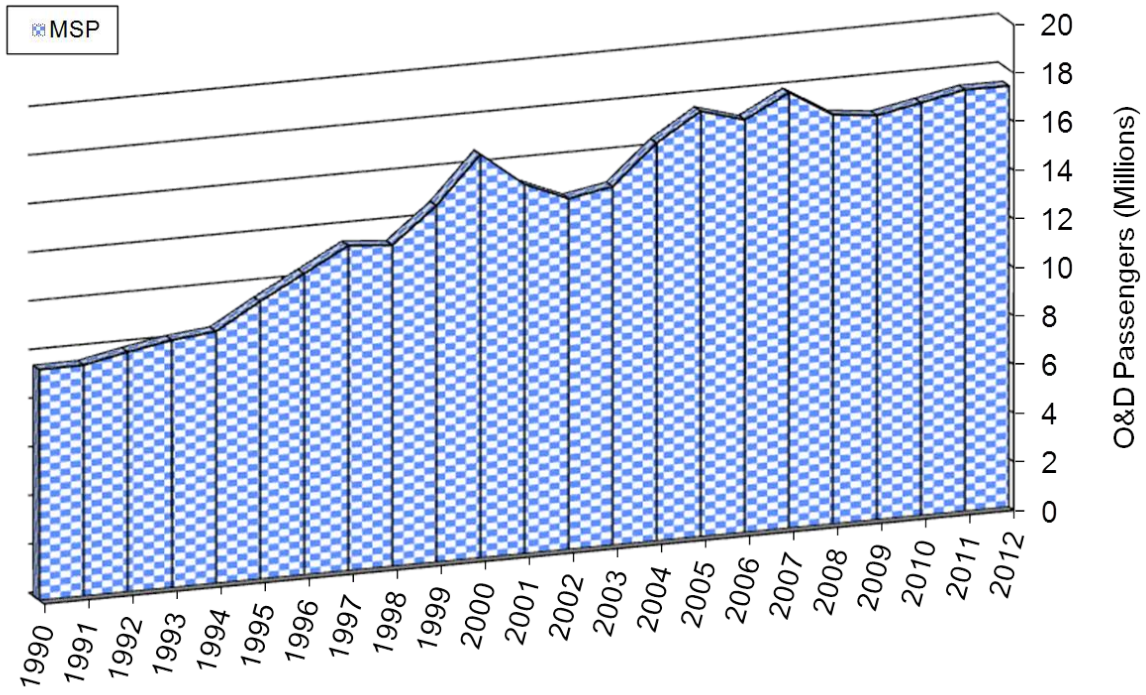
Figure 2-7 depicts the annual historical passenger originations/destinations (O&D) data for MSP for the years 1990 through 2012. O&D passengers are those who begin or end their trip at the airport. Connecting passengers are those who travel through the airport en route to another destination.

The following information details MSP O&D and connecting passenger data for 2012:

- There were 17,335,778 O&D passengers in 2012, which is approximately 0.1 percent lower than the 2011 O&D passenger level of 17,353,528.[7]
- Between 1990 and 2012, O&D passengers at MSP rose from 9.5 million to over 17 million. This change represents an estimated annual compounded growth rate of 2.77 percent. O&D passenger demand is driven primarily by local socioeconomic factors.

There were 14,704,298 connecting passengers at MSP in 2012, which is approximately 0.8 percent more than the connecting passenger level of 14,590,850 in 2011.

Figure 2-7:
Annual Passenger Originations/Destinations (O&D) Totals
1990-2012



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

[7] 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 and 2012 numbers were derived from Metropolitan Airports Commission year-end reports, providing the most accurate MSP-specific statistics.

2.2.2 Annual Revenue Passengers

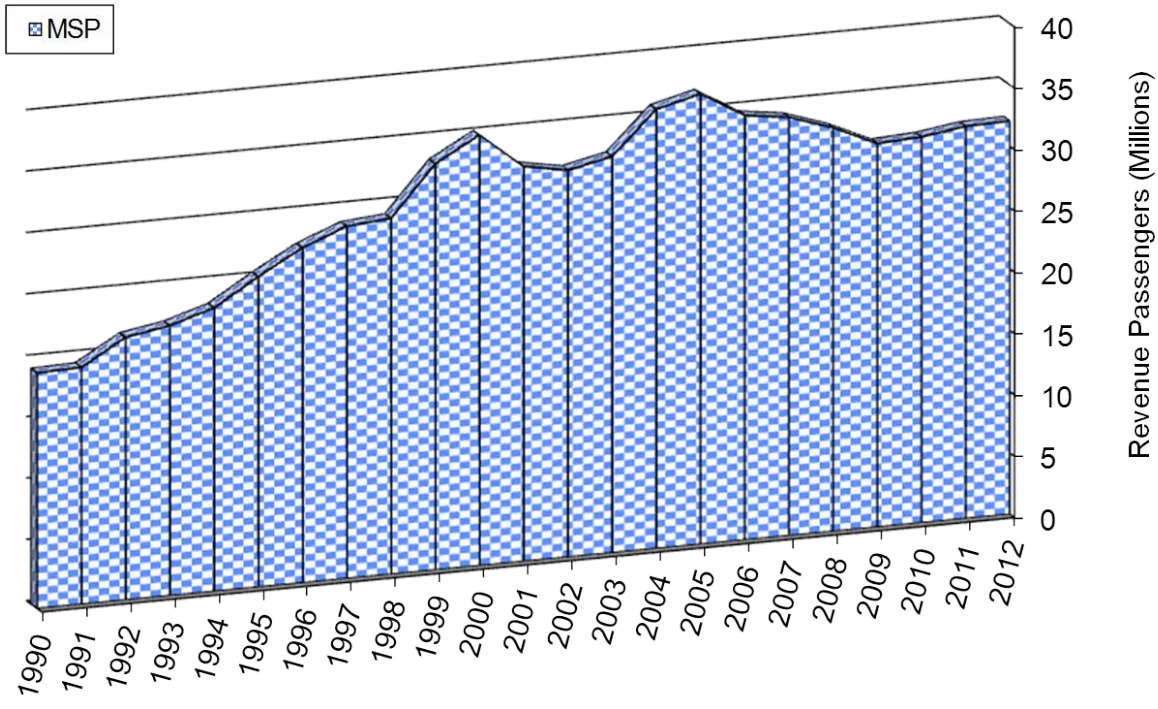
The revenue passenger level at MSP reported by the airlines in 2012 reached 32,070,628, approximately 0.23 percent higher than the previous year's level of 31,997,163.

When MSP revenue passengers and aircraft operations activity of traditional major air carriers is compared with the passengers and operations activity of regional air carriers over the past five years, there is a trend that indicates a shift toward increased use of regional-type aircraft (i.e., those with 100 seats or less). This shift continued in 2012 with a slight increase of 1.41 percent more passengers traveling on regional air carriers than in 2011 and approximately 0.17 percent fewer passengers traveling on traditional air carriers.

Total annual revenue passenger levels are shown in **Figure 2-8** and include O&D and connecting passengers. Between 1990 and 2012, total annual revenue passengers grew from 19.2 million to 31.98 million, an annual compounded growth rate of 2.35 percent.

Airports Council International reports that global passengers increased by 3.9 percent in 2012 when compared to 2011. The level of domestic passengers in 2012 increased 2.8 percent and the level of international passengers is up 5.3 percent compared to 2011[8].

Figure 2-8:
Total Annual Revenue Passengers
1990-2012



Source: MAC Year End Statistics Report

[8] Airport Council International (ACI) Table 1:Summary Worldwide Traffic Results, December 2012

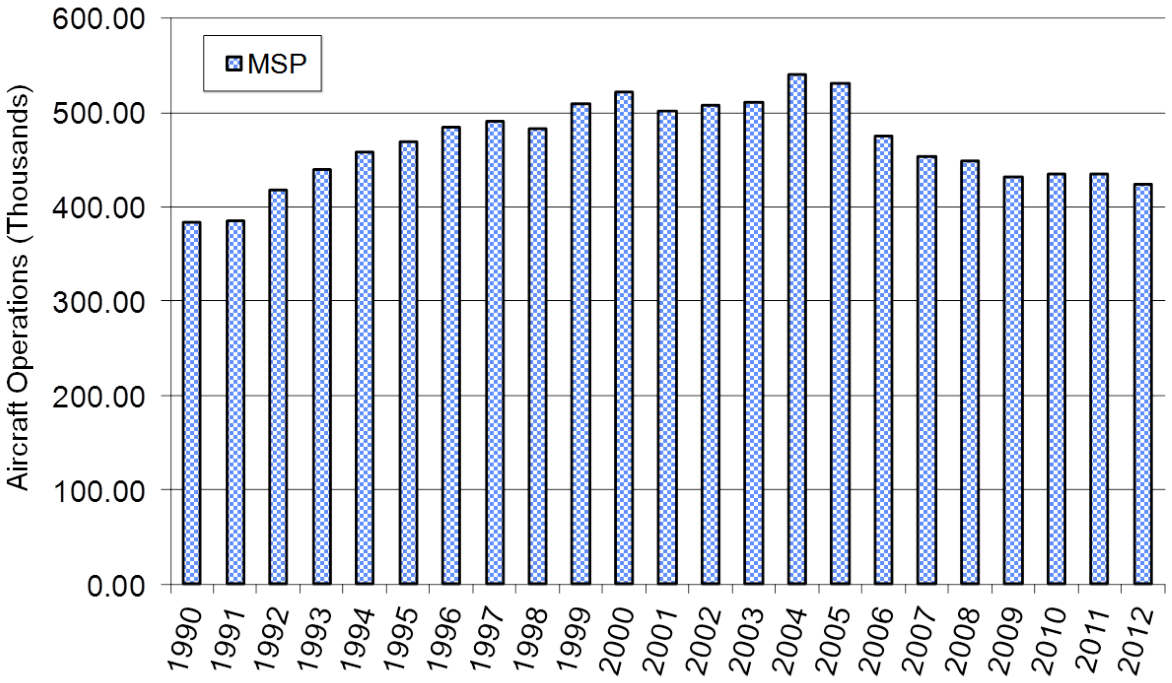
2.2.3 Annual Aircraft Operations

Total aircraft operations at MSP in 2012 were 2.3 percent lower than the levels reported in 2011. The total number of landings and takeoffs reported by the Federal Aviation Administration (FAA) in 2012 is 424,928. Total operations at MSP peaked in 2004 when the FAA reported 540,727 aircraft arrived at and departed from the airport.

Annual MSP aircraft operations are presented in **Figure 2-9**. 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 to 6.0 percent in 2004.

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 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.

Figure 2-9:
Annual Aircraft Operations
1990-2012



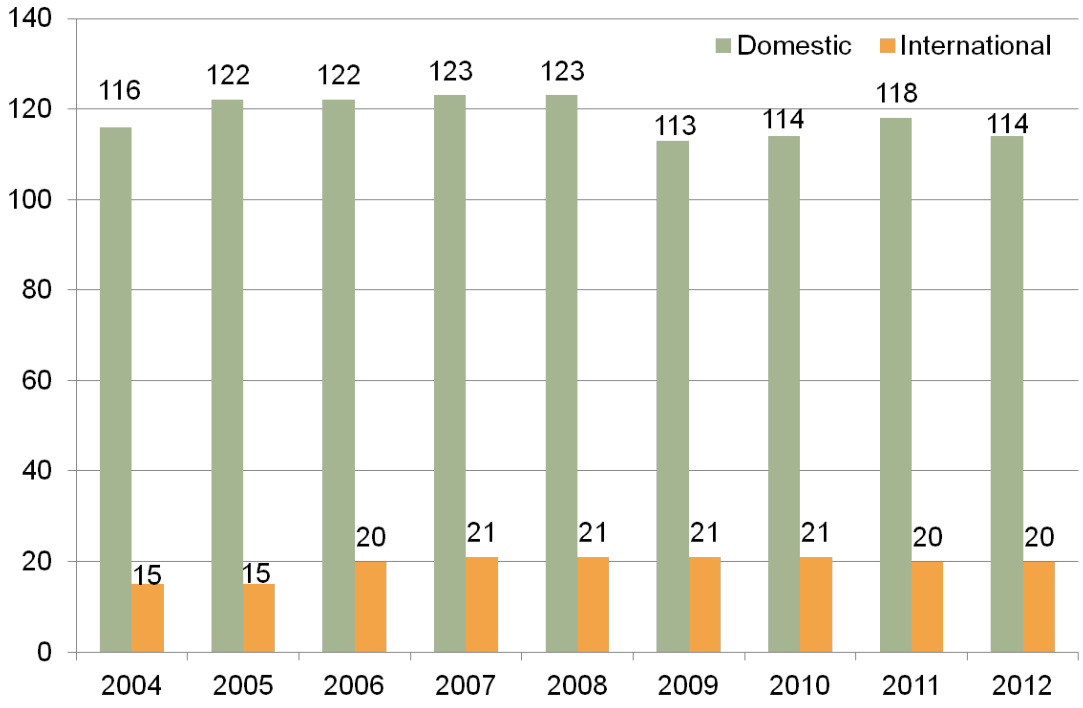
Source: MAC Year End Statistics Report and FAA OpsNet

2.2.4 Nonstop Markets

Figure 2-10 shows the number of nonstop domestic and international (including Canadian) markets served from MSP from 2004 through 2012. 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 134 nonstop markets served by MSP in 2012—114 domestic and 20 international—that met the criteria mentioned above. This total is slightly lower than the 138 total nonstop markets served in 2011.

Figure 2-10:
Number of Nonstop Markets
2004-2012

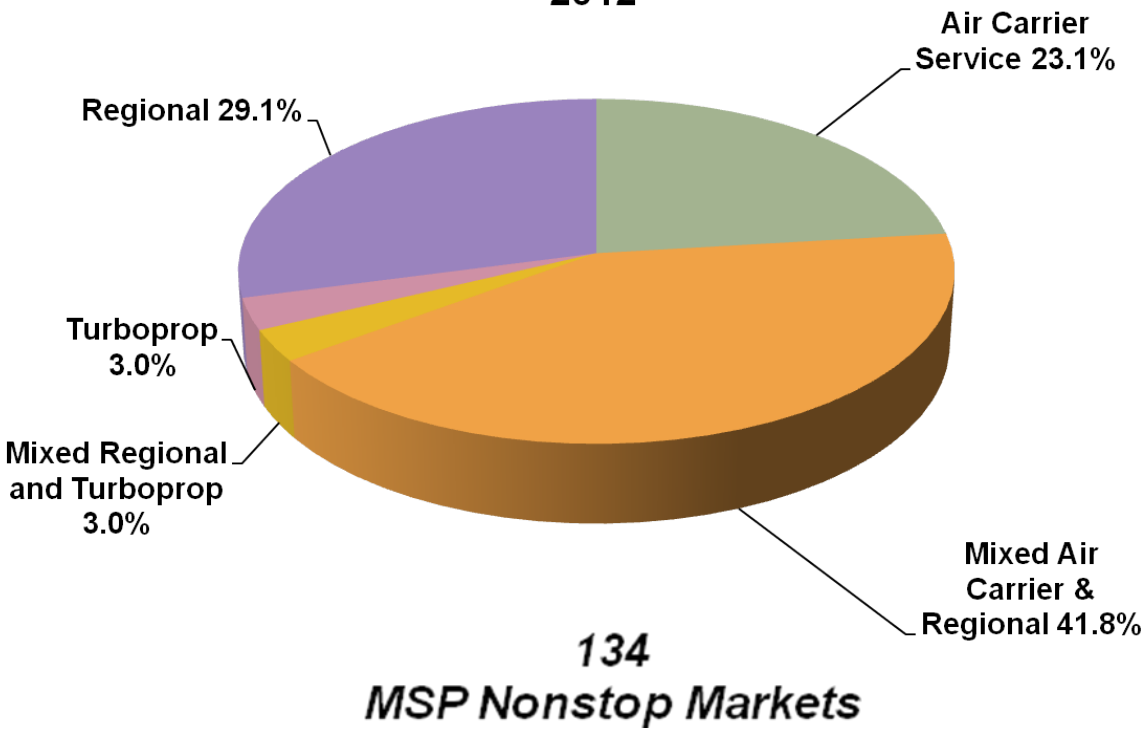


Source: Innovata (via Diio Mi) and MAC Analysis

Figure 2-11 summarizes the use of various types of aircraft that serve MSP's nonstop markets. In 2012, approximately 23.1 percent of the nonstop markets were served exclusively by air carrier jets (e.g., A320, B757, etc.) compared with 22.5 percent in 2011. The percentage of nonstop markets served by regional air carrier aircraft (e.g. CRJ, E170, etc.) increased from 23.2 percent in 2011 to 29.1 percent in 2012.

There are some markets where the aircraft type varies based upon market demand, and the air carriers will adjust the aircraft type as necessary. Markets that are served by a mixture of regional and turboprop aircraft utilizing MSP (e.g., E170, Beechcraft 1900, etc.) accounted for 3 percent in 2012 compared with 10.1 percent in 2011. There were 41.8 percent of MSP nonstop markets in 2012 that were served by a mixture of air carrier jets and regional aircraft.

Figure 2-11:
MSP Nonstop Markets by Aircraft Type
2012



Source: Innovata (via Diio Mi) and MAC Analysis

Table 2.7 and **Figure 2-12** compare 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 2.7

NONSTOP MARKETS BY METROPOLITAN AREA 2012

Rank	Metropolitan Area	Population[1] (Millions)	Nonstop Markets[2][3]	Markets/Population (Millions) Ratio
1	New York	22.2	220	9.9
2	Los Angeles	18.1	134	7.4
3	Chicago	9.7	199	20.5
4	Washington D.C - Baltimore	8.7	156	17.9
5	Boston	7.6	96	12.6
6	San Francisco - Oakland	7.6	103	13.6
7	Dallas - Ft. Worth	6.9	182	26.4
8	Philadelphia	6.6	115	17.5
9	Houston	6.2	175	28.3
10	Atlanta	5.7	212	37.1
11	Miami - Fort Lauderdale	5.7	152	26.8
12	Detroit	5.2	134	25.7
13	Seattle	4.3	86	20.1
14	Phoenix	4.3	97	22.8
15	**Minneapolis - St. Paul**	3.7	**134**	**36.7**
16	Denver	3.2	161	51.0
17	San Diego	3.1	45	14.3
18	St. Louis	2.9	59	20.5
19	Cleveland	2.9	62	21.6
20	Orlando	2.9	98	34.3
21	Tampa-St. Petersburg	2.8	61	21.6
22	Sacramento	2.5	26	10.4
23	Pittsburgh	2.5	33	13.5
24	Charlotte	2.4	134	54.9
25	Portland	2.3	47	20.8
26	Cincinnati	2.2	47	21.6
27	Las Vegas	2.0	97	48.2
28	Salt Lake City	1.8	87	49.0
29	Milwaukee	1.8	33	18.8
30	Memphis	1.3	61	46.0

Notes:

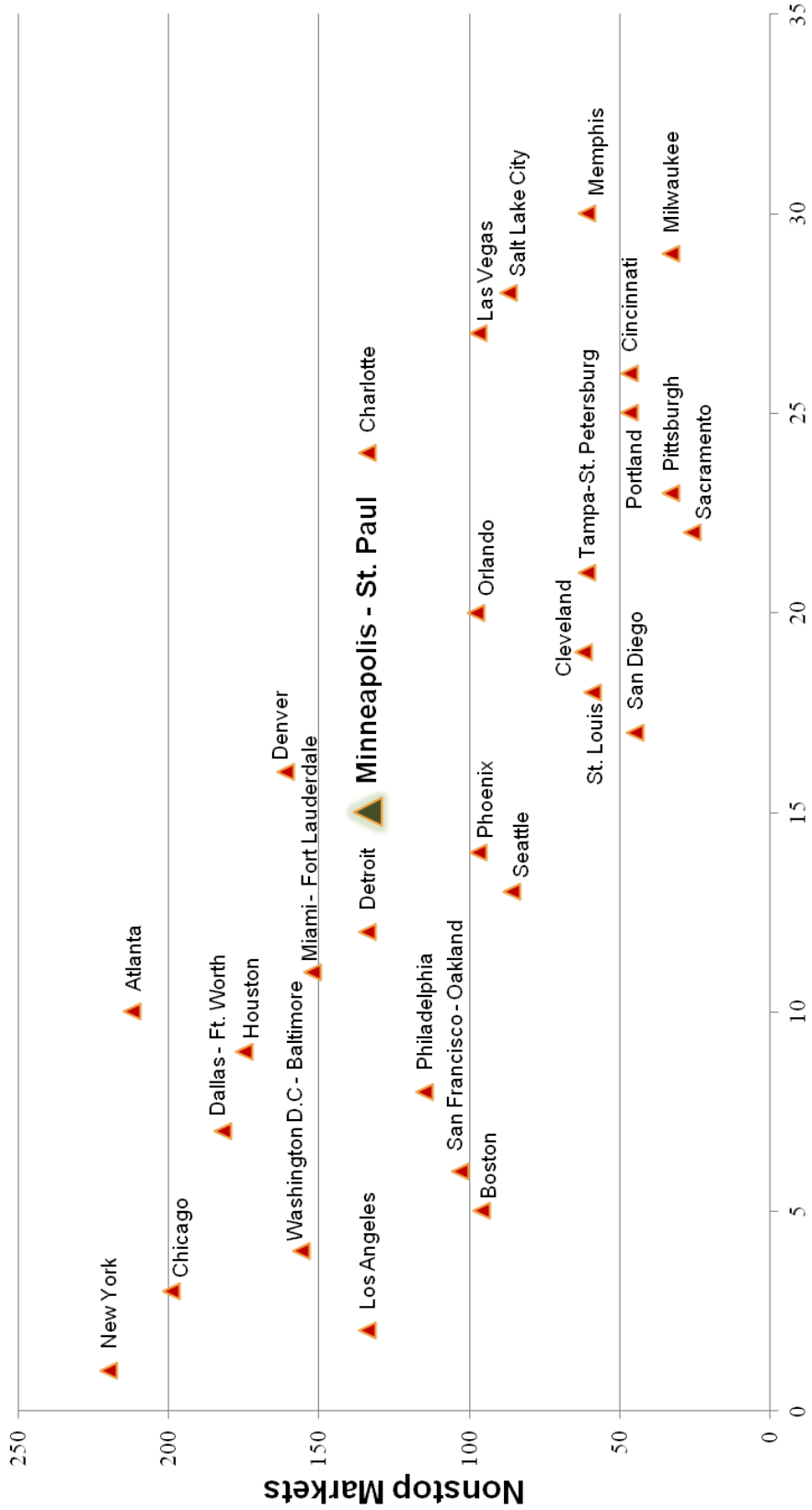
[1] U.S. Census Bureau; Annual Estimates of Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2010 - July 1, 2011 (CBSA-EST2011-02)

[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 2012.

Source: US Census Bureau, Innovata (via Diio Mi) and MAC Analysis

Figure 2-12:
Population vs. Nonstop Service
2012



Source: US Census Bureau, Innovata (via Diio Mi) and MAC Analysis

2.3 COMPARISON OF MAC FORECAST WITH ACTUAL ACTIVITY

In 2010, the MAC updated the Long Term Comprehensive Plan (LTCP) for MSP. Revised forecasts were approved as part of that process and published in mid-2010. The forecasts were updated once again in May 2011 as part of the MSP 2020 Improvements Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) process. The forecast conducted in 2011 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 primary forecast data source for this document.

The 2011 forecast analysis provides the annual activity forecast levels at the airport 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 forecast effects assessment 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 depression that occurred during the 1930s.
- 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 is assumed that the Transportation Security Administration will maintain a 10-minute limit for security-related delays.
- The real cost of fuel is assumed to increase from 2011 levels. It is assumed that there will be no major disruptions (e.g., similar to what occurred in the 1970s).
- No major changes in the physical environment are assumed. It is assumed that global climate changes will not be sufficient to force restrictions on the burning of hydrocarbons or result in major fuel tax increases.
- It is assumed that the FAA will implement any required changes and improvements for the national airspace system to accommodate unconstrained aviation demand.
- It is assumed that government regulations and labor union resistance will prevent any major airline consolidation beyond the mergers of United/Continental and Southwest/Air Tran. It is also assumed that some minor airline consolidation could continue to occur.

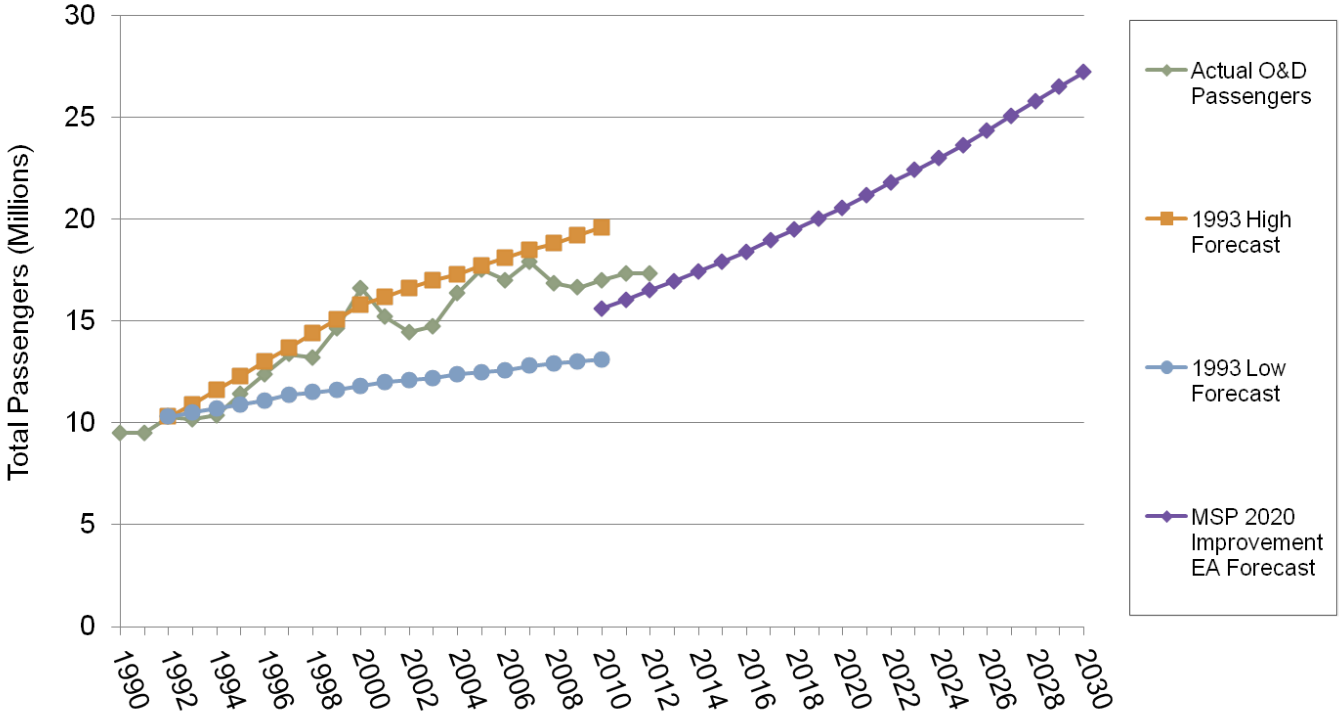
- It is assumed that new entrants will attempt to establish service at MSP by 2015. Southwest Airlines is assumed to expand at MSP. It is also assumed that new airlines may attempt to become established during the forecast period; however, it is not possible to predict the names and characteristics of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

A comparison of actual 2012 activity and forecasted activity for the Origination and Destination (O&D) passengers, revenue passenger enplanements, and aircraft operations is provided in **Figures 2-13 through 2-15.** For reference, the 2012 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.[9]

- **Figure 2-13** shows a comparison of actual and forecasted O&D passengers. Actual O&D passengers in 2012 were approximately 17.34 million, which is 5.0 percent above the 2012 forecast level of 16.51 million O&D passengers.
- **Figure 2-14** shows a comparison of the actual revenue passenger level of 32.07 million in 2012 and the 2012 forecasted level of 32.97 million. The actual number of revenue passengers in 2012 is 2.73 percent lower than the forecasted level.
- **Figure 2-15** compares the actual number of aircraft operations as counted by the Federal Aviation Administration of 424,928 in 2012 with the forecasted level of 439,018. The level of actual operations is approximately 0.32 percent lower than the forecasted level.

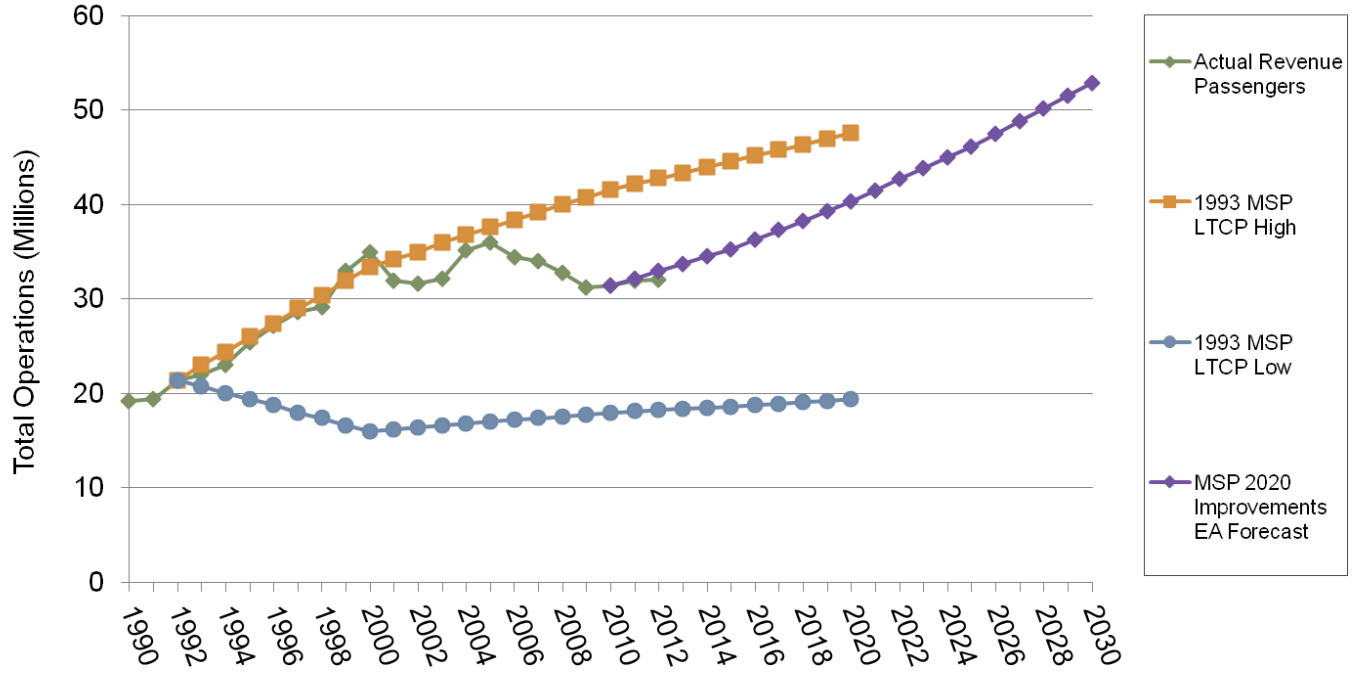
[9] Data were obtained from the MSP 2020 Improvements EA Aviation Activity Forecast 2011, Metropolitan Airports Commission records, Federal Aviation Administration Opsnet, and HNTB analysis.

Figure 2-13:
Minneapolis-St. Paul International Airport
Forecast vs. Actual 2012 O&D Passengers



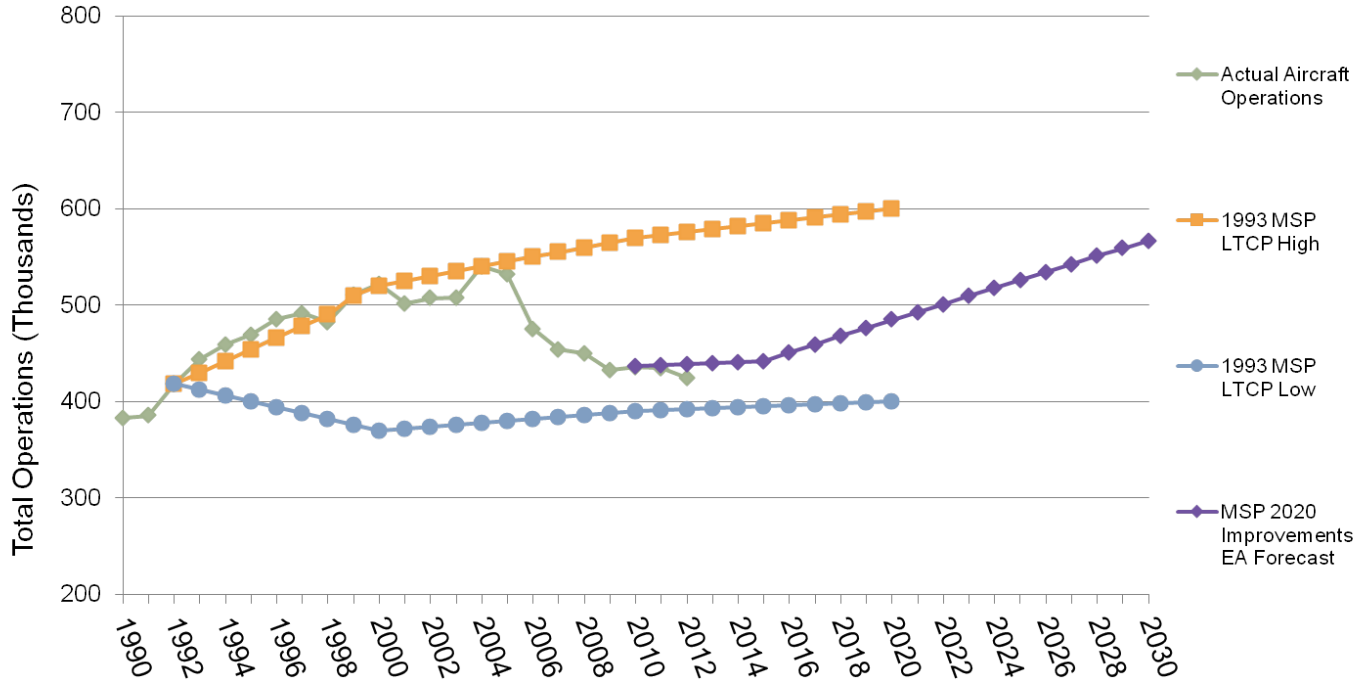
Source: MSP 2020 Improvements EA/EAW, MSP Long Term Comprehensive Plan Update 2010, Metropolitan Airports Commission, and HNTB analysis

Figure 2-14:
Minneapolis-St. Paul International Airport
Forecast vs. Actual Revenue Passengers



Source: MSP 2020 Improvements EA/EAW, MSP Long Term Comprehensive Plan Update 2010, Metropolitan Airports Commission, and HNTB analysis

Figure 2-15:
Minneapolis-St. Paul International Airport
Forecast vs. Actual Aircraft Operations



Source: MSP 2020 Improvements EA/EAW, MSP Long Term Comprehensive Plan Update 2010, Metropolitan Airports Commission, and HNTB analysis

2.4 AIRPORT CAPACITY AND DELAY

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

2.4.1 Airfield Capacity

Airfield capacity is typically described in terms of hourly capacity and annual capacity under good and poor weather conditions. **Table 2.8** shows existing and future hourly capacity for MSP.

Table 2.8

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 2.8**, 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).

According to the Federal Aviation Administration's (FAA) 2004 *Airport Capacity Benchmark Report*, it is possible that improvements in technology could occur in the future that will support higher capacity levels. These improvements include advanced Traffic Management Advisor (TMA) technology to allow controllers to sequence aircraft more efficiently, and Cockpit Display of Traffic Information (CDTI) and CDTI Enhanced Flight Rules (CEFR), which will enable specially-equipped aircraft to maintain visual approaches even in marginal weather conditions.

Forecasted aircraft operations developed for the MSP 2020 Improvements EA/EAW (see Section 2.3) 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. In 2012, the FAA continued to focus efforts on implementing available advanced aircraft navigation technology at MSP in the form of airspace-wide Area Navigation (RNAV) departure and arrival procedure design and implementation. The following provides a chronology of the

public discussions in 2012 that were related to the FAA's RNAV implementation efforts at MSP.

In August 2012 the FAA finalized the package of draft 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. At the meeting MAC staff reviewed a noise analysis of the procedures in compliance with the related NOC criteria. The FAA informed the NOC that it needed a statement of support from the MAC by the end of November 2012 to avoid a 16-month delay in procedure publication. In an effort to accommodate the FAA's scheduling requirement, the NOC voted unanimously to direct MAC staff to move forward with a public information program, including two public open houses to be conducted in early-to-mid November, prior to the November NOC meeting. At its November meeting the NOC planned to determine whether the FAA had adequately considered the NOC noise criteria in its procedure design and implementation process.

Shortly after the September 19th NOC meeting, NOC-sponsored PBN informational open houses were scheduled and information was posted on the MAC Noise Program website. Open houses were held the evenings of November 8, 2012 in Minneapolis and November 13, 2012 in Eagan. Notice of the open houses was published widely in area newspapers. Several stories about the FAA's project ran in local newspapers and on news channels. Coverage by local news channels began on October 8, 2012 directing those interested to attend the FAA and MAC staff briefing to the Mendota Heights City Council on October 30, 2012. The story also announced the community open houses and directed interested parties to the information on the MAC Noise Program website.

In addition to the open houses, there was a focus on community briefings. FAA and MAC staff provided an informational briefing to any entity that requested one, including the city councils of Richfield, Eagan, and Mendota Heights. Additionally, briefings were provided to a group of Minneapolis policy makers, to Apple Valley and Burnsville city staffs, to participants in the fourth quarter 2012 NOC Public Input Meeting on October 23rd, and to multiple individual residents.

In all, 109 people attended the Minneapolis open house, and 203 people attended the Eagan open house. Depending on where people lived the feedback ranged from positive to very concerned. The predominant concern was with the concentration of overflights over certain residential areas. Following the open houses, the NOC voted 10 to 1 that the FAA's procedure design and implementation process adequately considered the NOC noise criteria. The question of whether or not to support the FAA's implementation of the procedures was then placed on the November 19, 2012 MAC Full Commission 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 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 took action during its meeting on November 19, 2012 to support only partial implementation of the FAA's proposed procedures, with-holding support for the departure procedures proposed for Runways 30L and 30R, which would direct departure operations over areas of South Minneapolis, Richfield and Edina.

The FAA is in the process of determining whether to move forward with partial implementation of PBN/RNAV as supported by the MAC. If the FAA moves forward with the partial implementation supported by the MAC, the procedures would be implemented to the south and east of the airport with implementation likely no sooner than mid-2014.

Decisions about where and how aircraft fly are determined solely by the FAA, not by the MAC or other airport authorities. The future of possible RNAV departure procedures off Runways 30L and 30R over areas of South Minneapolis, Richfield, and Edina is unknown. The FAA is the agency responsible for design, environmental review, and implementation of aircraft procedures, and will untimely make that determination.

2.4.2 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 facility, a flight that was delayed by 13 minutes by one facility and 12 minutes by another 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 which accumulate 15 minutes or more holding delay at each facility throughout the entire route of flight.

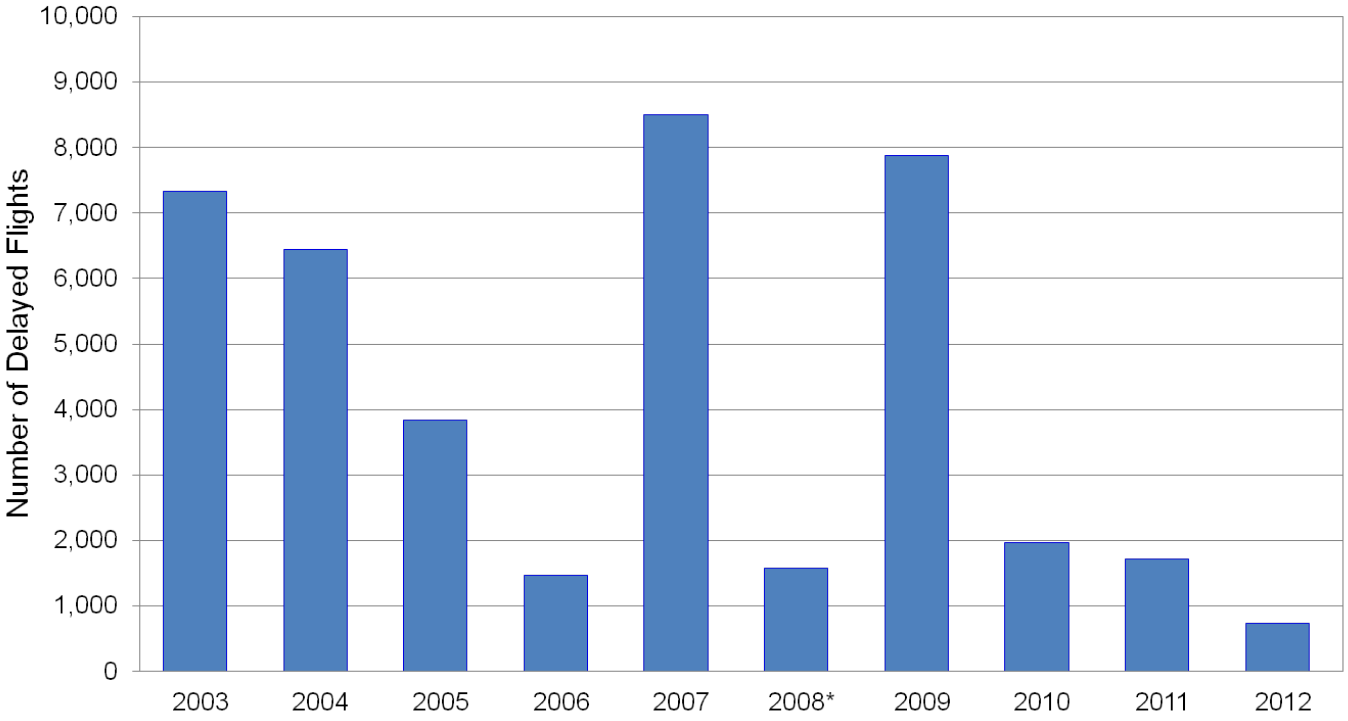
Figure 2-16 depicts the number of MSP flights delayed by ATC[10]. There was a steady decline of flight delays between 2003 and 2006, reaching a low of 1,474 in 2006.[11] In 2007, the closure of Runway 12R-30L for two months due to reconstruction contributed to the jump in the number of reported delays. 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. The number of delayed flights in 2012 totaled 731, which is approximately 135% percent fewer delayed flights than the 2011 level of 1,720. This decrease is affected largely by the reduction in the number of weather-related delays reported by the FAA in 2012 compared to 2011.

[10] Delays at MSP peaked in 2002 with at total of 8,733 flights reported as delayed.

[11] 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.

In 2012 there were 697 flights delayed due to weather compared with 1,580 flights delayed due to weather in 2011.

Figure 2-16:
MSP Flights Delayed by ATC*
2003-2012



*This total is reported differently in 2008 due to FAA adjusting the way air traffic control (ATC) calculates delays for arriving and departing flights.

Source: FAA OpsNet

Percentage of Flights Arriving On-time

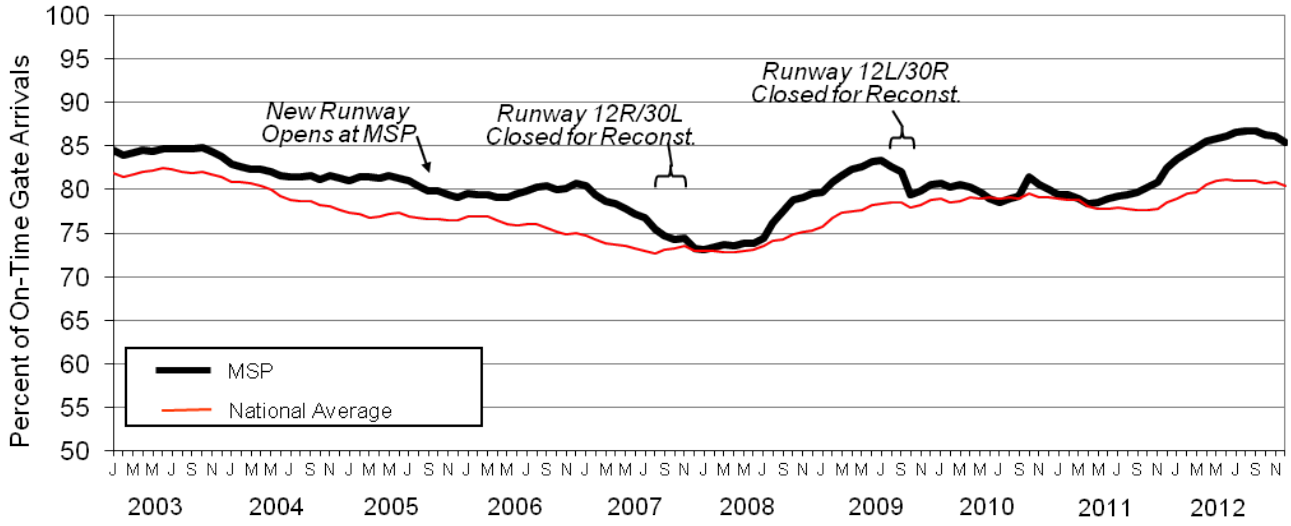
The data series used to calculate on-time performance for arrivals is the FAA's Aviation System Performance Metrics (ASPM) database. Within this data set, aircraft must be airborne in order for them to be considered delayed; therefore, cancelled and/or diverted flights are not considered late in this system. Scheduled times typically include some cushion for delay, 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 2-17 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 rolling 12-month average for on-time performance with the national average. Between 2003 and 2008, the highest on-time performance for MSP occurred in 2003, when overall annual on-time performance averaged about 84 percent. In 2004 and 2005, on-time performance slowly declined to about 80 percent, and remained at roughly 80 percent through 2006.

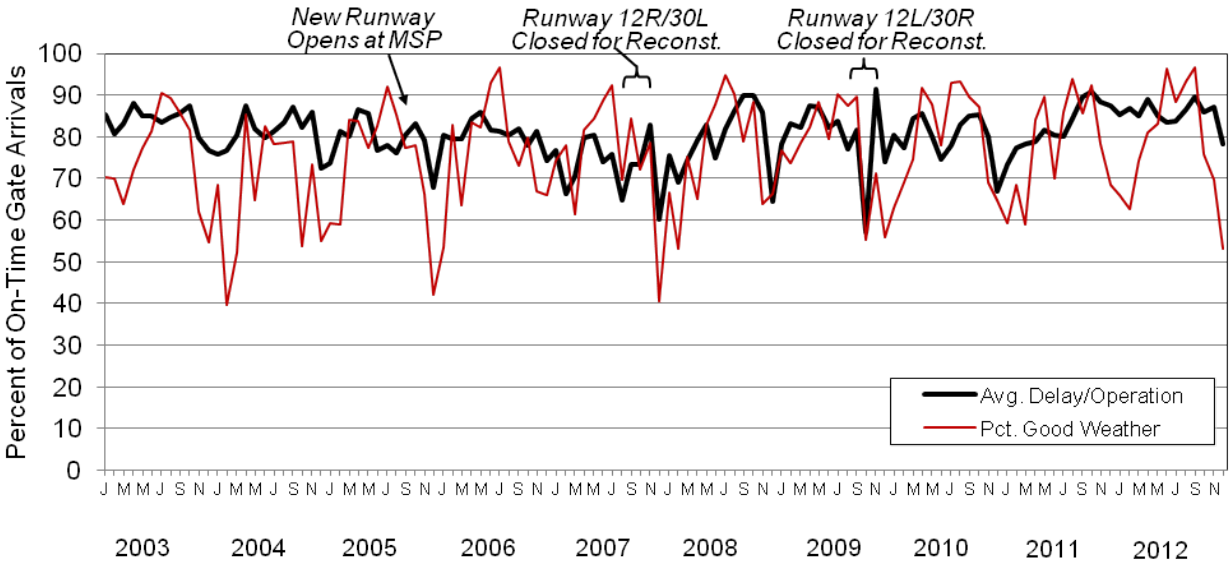
In general, MSP's on-time performance has tracked higher than the national average between 2003 and 2012. MSP saw its on-time performance decline in 2007 to a low of 73 percent due to reconstruction of Runway 12R-30L from August 13, 2007 to October 18, 2007 and poor weather at MSP in December 2007. Reconstruction of Runway 12L/30R from August 18 to October 30, 2009 was a contributing factor to the decline in on-time performance during late summer/early fall in 2009.

MSP's annual rolling average for on-time gate arrivals reached a high of 86.7 percent in August and September 2012.

Figure 2-17:
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.

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

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.

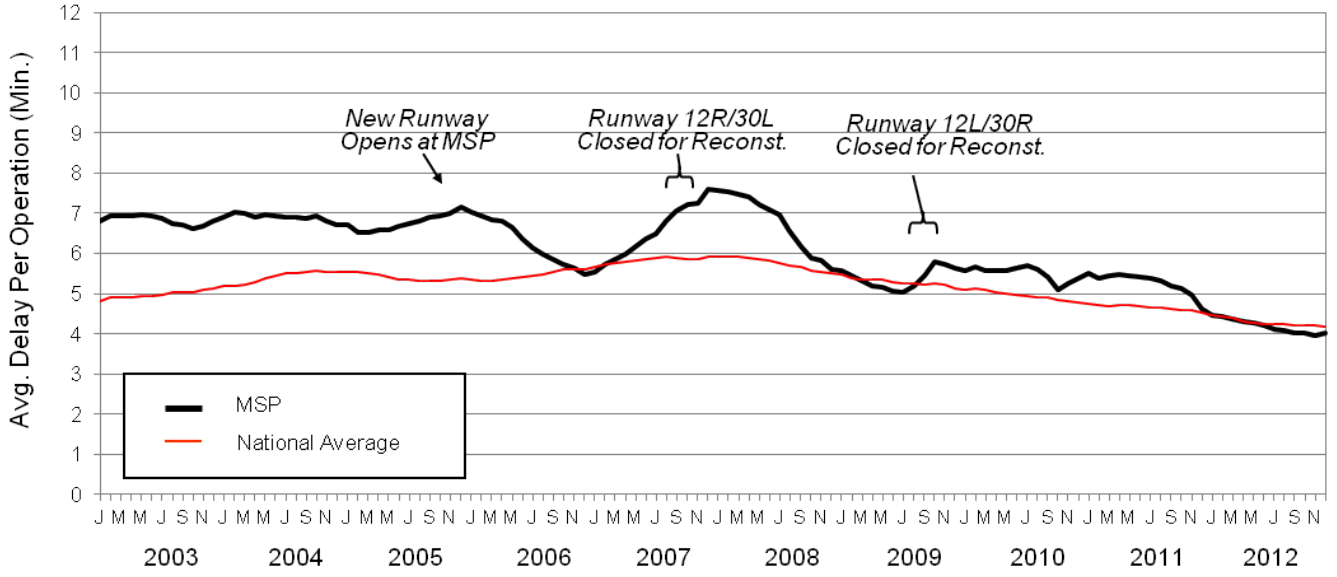
After 2005, the FAA's Aviation System Performance Metrics (ASPM) database was used to estimate delay. The FAA replaced CODAS with this new program, providing delay information to industry professionals and government agencies. ASPM data provide a more comprehensive analysis of airport delay and capacity, 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 2-18** 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 rolling average with the average for 75 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 75 airports tracked by the FAA ranged from about 4.8 minutes to 5.6 minutes.

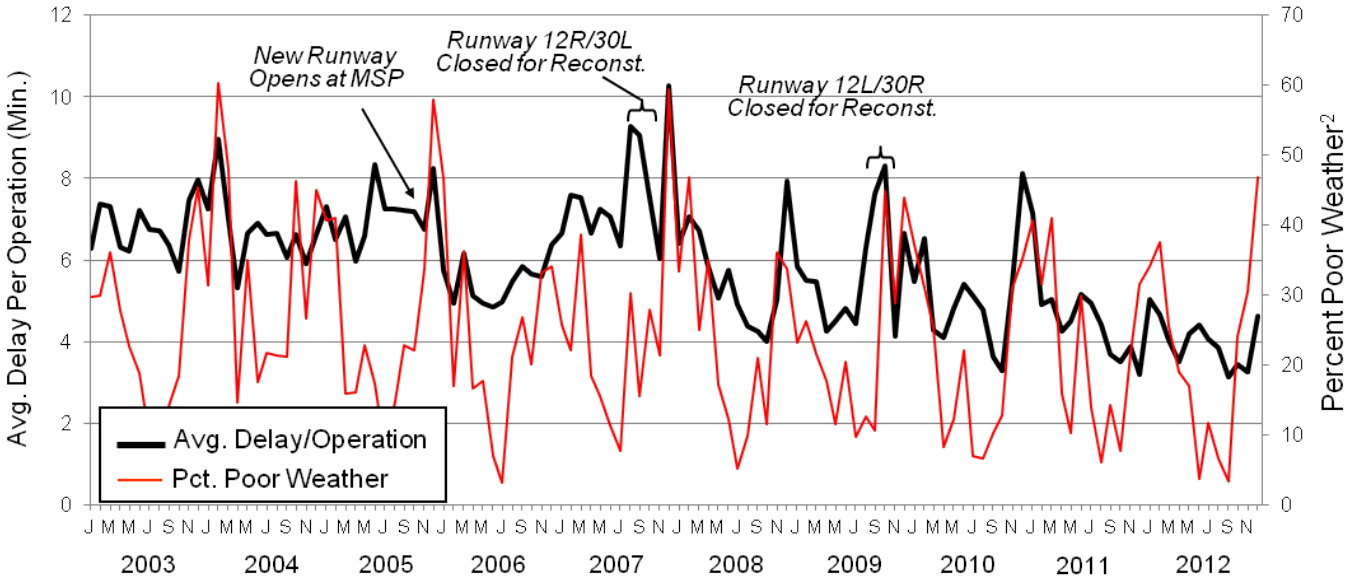
After MSP's new Runway 17/35 opened in late October 2005, average delay per aircraft began to decrease dramatically, reaching a low of about 5.5 minutes toward the end of 2006. The 12-month rolling average delay per operation began to increase steadily, reaching about 7.5 minutes by the end of 2007, while average delay for the 75 airports tracked by the FAA remained fairly constant at about 6.0 minutes. In December 2012 the 12-month rolling average delay per aircraft operation was 4.01 percent.

When compared to other large hub U.S. airports as shown in **Table 2.9**, MSP ranked 17th overall in 2012 in terms of highest average delay per operation. This is the first time since 2002 that MSP has not ranked within the top 15 large hub airports with highest average total delay per operation.

Figure 2-18:
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.

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

Table 2.9

TOP 15 LARGE HUB AIRPORTS WITH HIGHEST AVERAGE TOTAL DELAY PER OPERATION

Rank	Airport	2012 Total Airport Operations	2012 Average Minutes of Delay per Operation	2011 Average Minutes of Delay per Operation	2011 Rank	Change from 2011 to 2012
1	LGA	374,253	9.2	9.8	1	-0.6
2	EWR	421,175	7.7	7.9	3	-0.2
3	JFK	409,916	7.0	8.1	2	-1.1
4	PHL	443,236	5.9	7.3	4	-1.4
5	SFO	423,322	5.8	5.1	9	0.7
6	LAX	605,480	5.4	5.0	10	0.4
7	ATL	930,098	5.3	6.9	5	-1.6
8	CLT	552,515	5.1	5.7	7	-0.6
9	ORD	878,108	4.9	5.3	8	-0.4
10	IAH	511,034	4.9	4.8	12	0.1
11	BOS	359,633	4.8	5.7	6	-0.9
12	PHX	450,204	4.7	4.2	17	0.5
13	DFW	650,124	4.5	4.2	18	0.3
14	DCA	289,191	4.2	4.8	11	-0.6
15	MIA	391,195	4.1	4.1	20	0
17	**MSP**	**424,928**	**4.0**	**4.6**	**14**	**-0.6**

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

2.5 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.

- In 1993, the FAA published the *Minneapolis-Saint Paul International Airport Capacity Enhancement Plan*. The purpose of the plan was to identify potential cost-effective projects that would appreciably increase airport capacity. The plan was followed by the 1996 *Airport Capacity Enhancement Terminal Airspace Study*, which identified potential methods of improving airspace capacity.
- Airport Surface Detection Equipment (ASDE-3) was installed at MSP in 1996 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.
- Efficiency improvements at MSP will be aided by implementation of new procedures at MSP that leverage use of Flight Management System/Area Navigation (FMS/ RNAV) onboard aircraft. RNAV procedures will promote more efficient and predictable traffic flow of aircraft during the arrival and departure phases of flight. As mentioned in section 2.4.1, these procedures are currently being considered for possible implementation in mid-2014 with RNAV/RNP arrival procedures to all runways excluding Runway 4/22 and RNAV departure procedures off Runways 12L, 12R, and 17.
- In an effort to increase the operational efficiency and capacity of MSP 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 con-

strained airspace, at capacity constrained airports, or in any other airspace deemed appropriate by the FAA to be equipped with ADS-B technology by 2020.

2.5.1 Precision Instrument Approaches

In addition to runway separation and configuration, airfield capacity can be greatly affected by how the runways are equipped for inclement weather. The number and type of precision instrument approaches at MSP is summarized in **Table 2.10**.

Table 2.10

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

2.6 STEWARDS OF TOMORROW'S AIRPORT RESOURCES (STAR) PROGRAM

The Metropolitan Airports Commission (MAC) has been a longtime leader in addressing environmental concerns through a wide spectrum of initiatives, ranging from a standard-setting noise mitigation program to the preservation of Minnesota wetlands.

The MAC views environmental sustainability as an integral part of its mission and is committed to setting the standard for environmental stewardship in the development and operation of its airport system. Sustainable solutions are those that address long-term environmental, operational, financial and social needs.

Recognizing that MSP is a large and complex operation with many stakeholders, the MAC is focused on optimizing and improving all MAC-controlled operational and developmental actions at MSP in an effort to minimize impacts to the environment and implement sustainable solutions. Additionally, the MAC continues to conduct outreach and advocacy to influence, to the degree possible, non-MAC-controlled activities at MSP to further reduce environmental impacts.

The Stewards of Tomorrow's Airport Resources (STAR) Program was developed with the intent to maintain a focus on the MAC's commitment to the environment and the community through the development of initiatives that are environmentally-sound and contribute to the financial viability and operational efficiency at MSP and the reliever airports.

STAR Program sustainable practices focus on the following areas:

- MAC Energy Conservation and Renewable Energy (MECP)
- Green Buildings, Facilities and Infrastructure
- Water Quality and Conservation
- Air Quality
- Waste Management and Recycling
- Noise Abatement
- Natural Resources Management
- Financial Stability

The MAC's energy conservation program (MECP) completed projects in 2012 that are estimated to reduce electrical consumption by 684 MWH/yr and natural gas usage by 60,000 Therms/yr on an annual basis. This results in an additional projected utility cost savings of $215,000. In addition, the MAC received utility company rebates of approximately $42,000 for 2012.

Since the MECP was initiated 12 years ago, cumulative energy cost reductions have exceeded expenditures. The utility cost reduction from all MECP projects is now estimated at an annual savings of $4.11 million per year and growing as the MAC continues MECP projects and as energy rates continue to increase. If the program continues with the same parameters, the cost reductions are anticipated to be twice the expendi-

tures by 2020. In addition, the program has earned over $2.3 million in utility company rebates which continue to accumulate yearly.

MECP projects in 2012:

1. Mechanical: The steam boilers at Terminal 1 waste approximately 20 percent of the energy content of the fuel they burn. The waste occurs in the form of steam and heat going up the boiler stack and discharging into the atmosphere. This project recovers lost heat from the Terminal 1 Boiler #2 stack, which is now used, in lieu of steam, to temper the combustion air required for Boiler #2. The Trades Building has become the Energy Conservation Development Center for the MSP Campus. The first MSP solar thermal heating system has been installed on the roof of the Trades Building and will provide supplemental heating for the existing in-floor heat and snow melt system, the domestic hot water system and the building reheat system.

2. Electrical: This project entails adding variable speed drives to mechanical system motors. A new generator stack exhaust catalyst has been installed at the Terminal 2 ramp generator to meet emissions requirements. The old, inefficient unit was replaced with a higher efficiency one.

3. Lighting: Lighting left on in spaces that are empty is wasteful. This year's project reduced this waste for the Terminal 1 A-Concourse and at the MAC's Trades Building. OABA integrated automatic lighting controls are installed to conserve energy by turning off lights (except emergency lighting) when spaces are unoccupied. Existing photocells were also incorporated into the automatic lighting control system. Existing lower efficiency light fixtures were replaced with higher efficiency and longer life fixtures in the A concourse and drive bay at the Trades Building. As part of the Trades Building Energy Conservation Development Center, a solar powered LED light pole fixture was installed near the entrance to the Trades Building.

4. Conveyance Systems: Motor Efficiency Controllers (MEC) were installed in Terminal 1 that utilize Nola technology on moving walks and escalators. The conveyance study performed in MECP Phase 11 revealed that the Nola devices installed on moving walks reduced energy consumption by approximately 15 percent and by as much 23 percent when installed on escalators.

5. Building Envelope: This year's project included the installation of eight Tubular skylights on the vehicle maintenance bay roof at the Trades Building. The Tubular skylights coupled with the daylight controls installed on the existing lighting will displace the energy consumption of the existing lights in this location. The Tubular skylights allow up to five times more light into a space opposed to window glazing of the same dimensions. Skylights take advantage of solar energy which means energy savings.

3. RELIEVER AIRPORTS

3.0 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[12] while reducing general aviation operations at MSP. 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 the following three sections:

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

3.1 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.[13] 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.

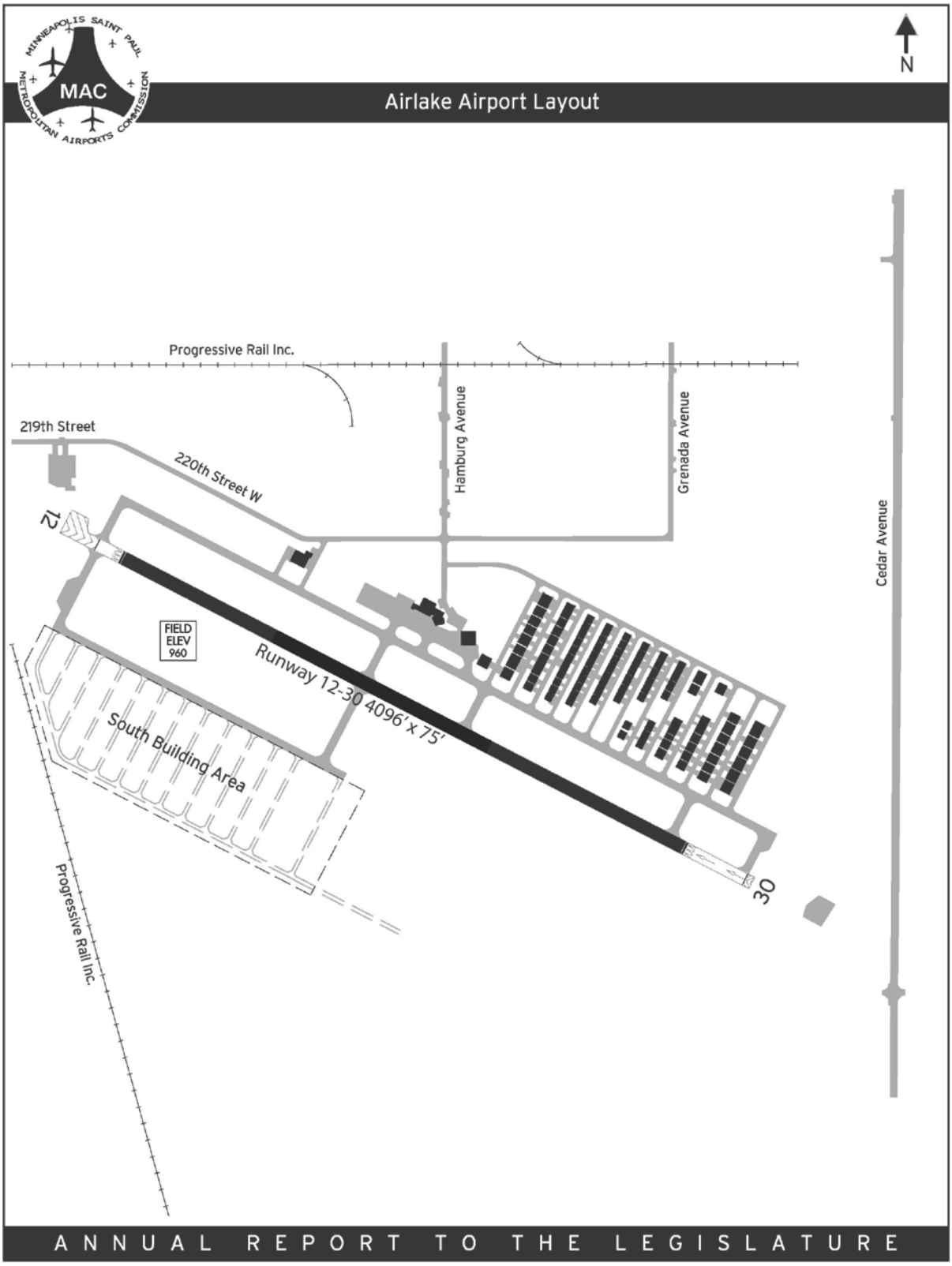
3.1.1 Airlake Airport (LVN)

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 147 based aircraft and an estimated level of 34,560 aircraft operations in 2012. This operations level is 0.8 percent higher than the level estimated in 2011 of 34,270. 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.

[12] Metropolitan Airports Commission, Economic Impact Analysis of the Reliever Airport System, Wilder Research, October 2005

[13] 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.

Figure 3-1


MAC
MINNEAPOLIS SAINT PAUL
METROPOLITAN AIRPORTS COMMISSION
N
Airlake Airport Layout
Progressive Rail Inc.
219th Street
220th Street W
Hamburg Avenue
Grenada Avenue
Cedar Avenue
12
30
FIELD ELEV 960
Runway 12-30 4096' x 75'
South Building Area
Progressive Rail Inc.
ANNUAL REPORT TO THE LEGISLATURE

3.1.2 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 433 based aircraft and 79,190 aircraft operations in 2012. This operations level is approximately 8.0 percent higher than the 73,292 aircraft operations documented in 2011. 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.

3.1.3 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[14] at the airport provide fueling, flight training and aircraft maintenance services. The airport had 219 based aircraft and 48,220 aircraft operations in 2012. This operations total is 9.6 percent higher than the level of 43,986 operations at MIC in 2011. 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.

3.1.4 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 403 based aircraft and 88,663 aircraft operations in 2012. The operations level in 2012 was approximately 22.6 percent lower than the level of 114,574 in 2011.[15] An FAA-operated Air Traffic Control Tower is located at

[14] In 2012 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.

[15] 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 2011.

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

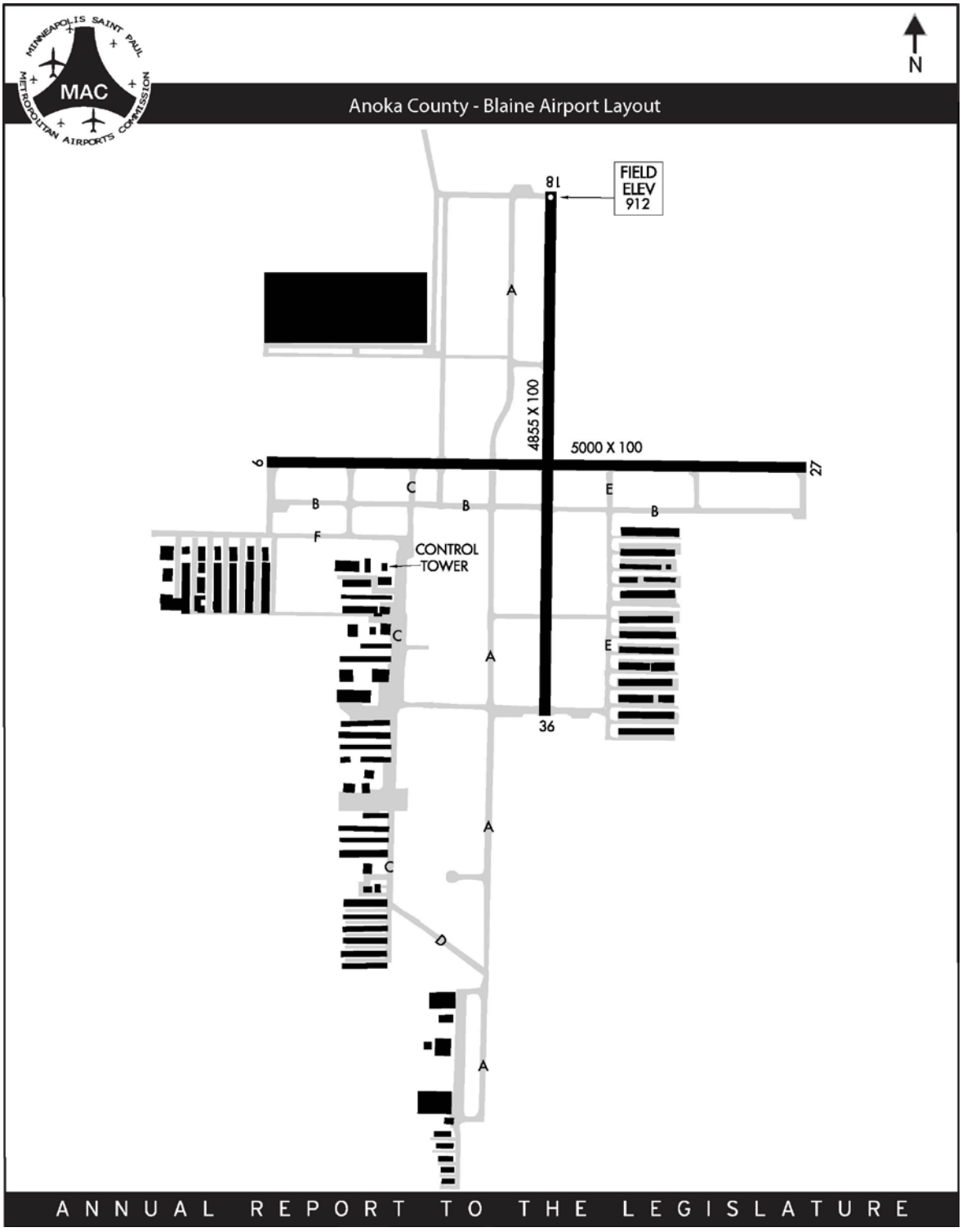


Figure 3-3

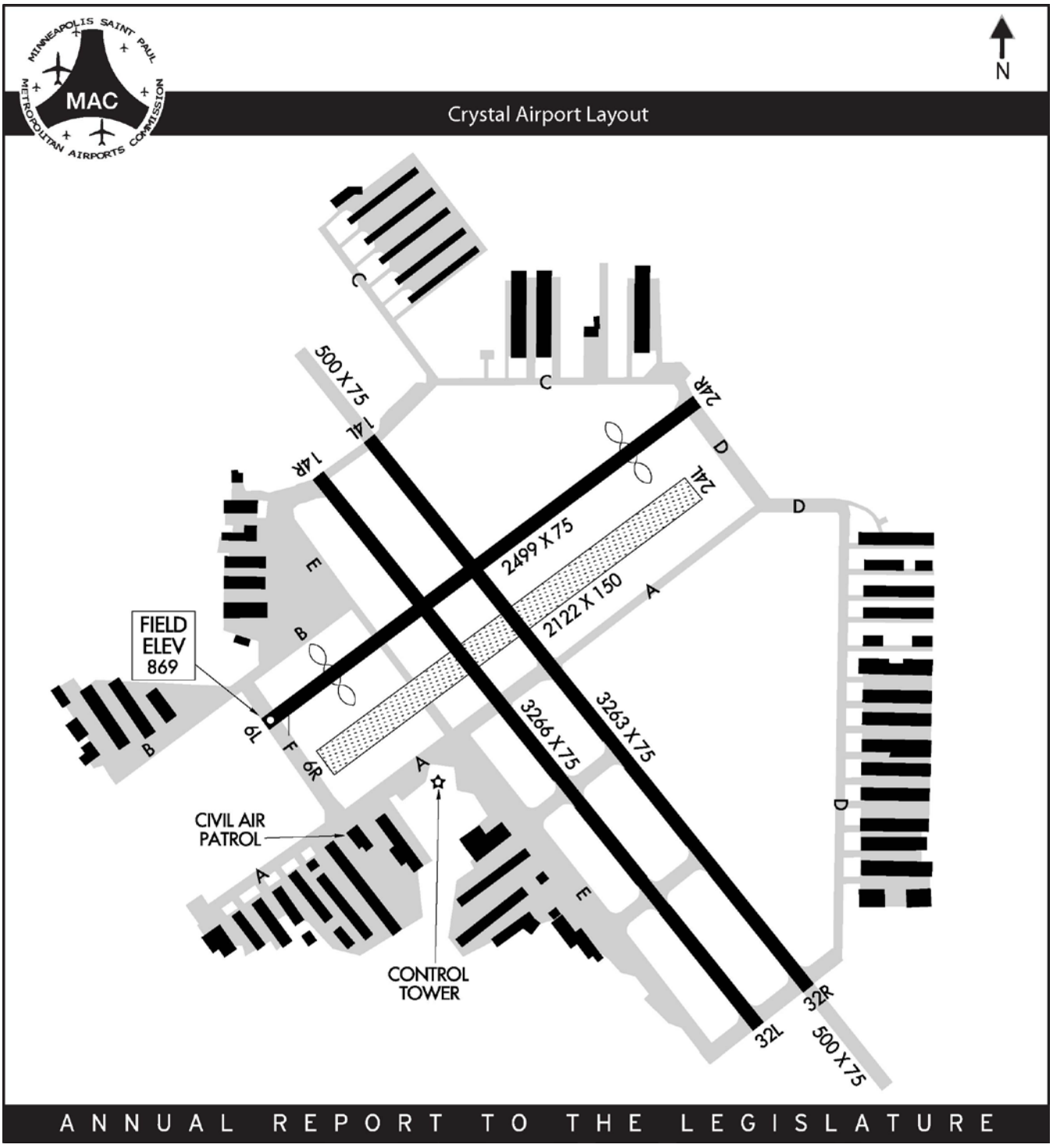
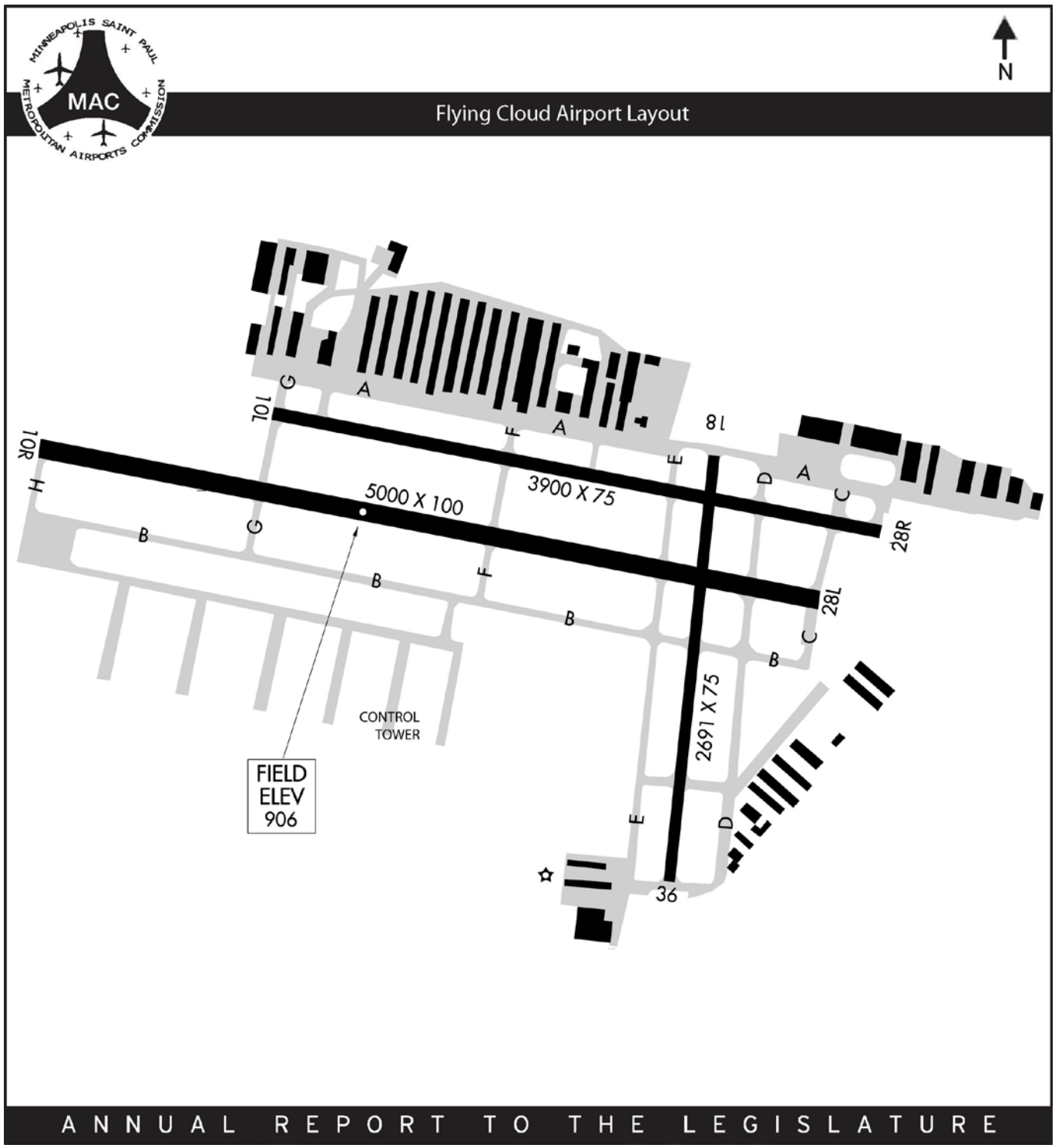

MINNEAPOLIS SAINT PAUL
MAC
METROPOLITAN AIRPORTS COMMISSION
N
Crystal Airport Layout
500 X 75
14L
14R
2AR
2AL
2499 X 75
2122 X 150
3266 X 75
3263 X 75
FIELD ELEV 869
6L
6R
CIVIL AIR PATROL
CONTROL TOWER
32R
32L
500 X 75
ANNUAL REPORT TO THE LEGISLATURE

Figure 3-4


MINNEAPOLIS SAINT PAUL
MAC
METROPOLITAN AIRPORTS COMMISSION
N
Flying Cloud Airport Layout
10R
10L
18
28R
28L
36
5000 X 100
3900 X 75
2691 X 75
CONTROL TOWER
FIELD ELEV 906
ANNUAL REPORT TO THE LEGISLATURE

3.1.5 Lake Elmo Airport (21D)

Lake Elmo Airport (21D) consists of approximately 640 acres and includes one northwest-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 229 based aircraft and it is estimated that there were 33,319 aircraft operations in 2012. This operations level is 0.9 percent higher than the level of 33,032 estimated in 2011. 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.

3.1.6 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 94 based aircraft and 79,238 aircraft operations in 2012. This operations level is approximately 9.2 percent lower than the operations level of 87,229 in 2011 due to reduction in some military operations and inconsistent flight school activity. 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 3-5

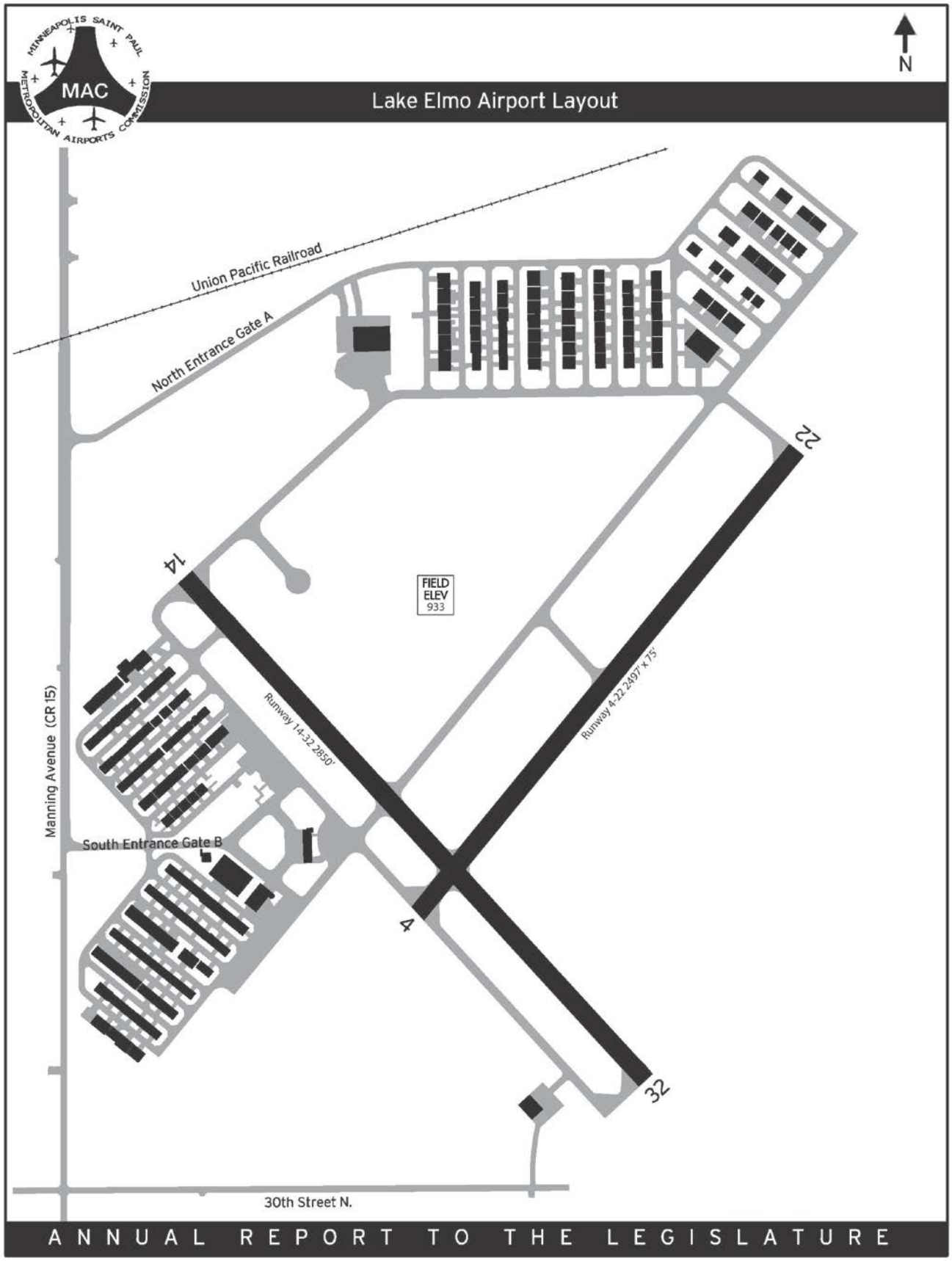
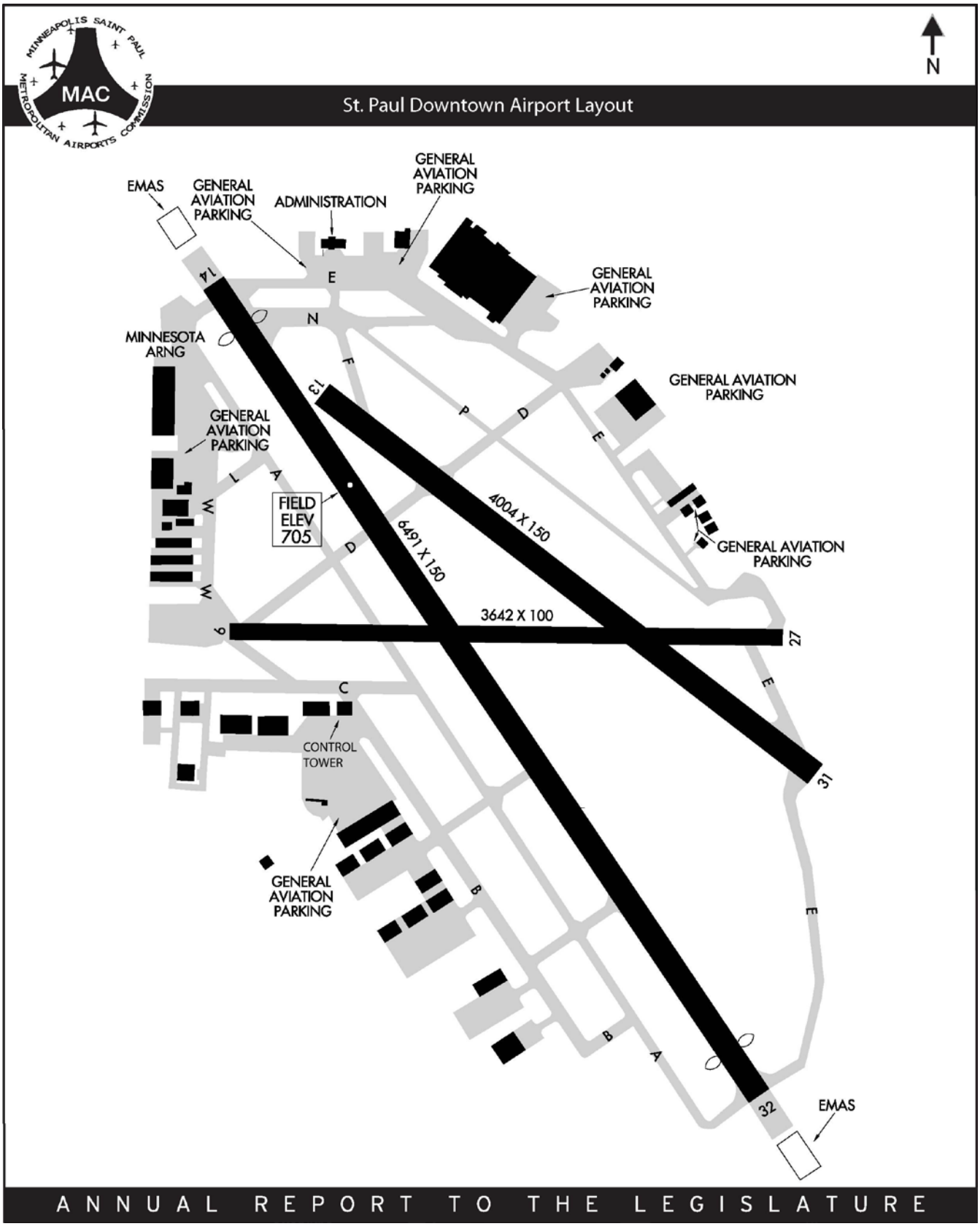

MINNEAPOLIS SAINT PAUL
MAC
METROPOLITAN AIRPORTS COMMISSION
N
Lake Elmo Airport Layout
Union Pacific Railroad
North Entrance Gate A
22
14
FIELD
ELEV
933
Runway 14-32 2850'
Runway 4-22 2497 x 75'
Manning Avenue (CR 15)
South Entrance Gate B
4
32
30th Street N.
ANNUAL REPORT TO THE LEGISLATURE

Figure 3-6


MINNEAPOLIS SAINT PAUL
MAC
METROPOLITAN AIRPORTS COMMISSION
N
St. Paul Downtown Airport Layout
EMAS
GENERAL AVIATION PARKING
ADMINISTRATION
GENERAL AVIATION PARKING
GENERAL AVIATION PARKING
MINNESOTA ARNG
GENERAL AVIATION PARKING
GENERAL AVIATION PARKING
GENERAL AVIATION PARKING
FIELD ELEV 705
4004 X 150
6491 X 150
3642 X 100
CONTROL TOWER
GENERAL AVIATION PARKING
EMAS
14
32
13
31
9
27
E
N
F
P
D
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L
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W
W
D
C
B
B
A
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ANNUAL REPORT TO THE LEGISLATURE

3.2 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 2012. Total based aircraft grew slowly between 1984 and 1999, peaking at 1,864 aircraft in 1999. Since that time, total based aircraft declined to 1,586 in 2007 and has fluctuated each year. In 2012 the number of based aircraft totaled 1,525, which is 5.0 percent higher than the level of 1,452 in 2011.

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 2012.

The combined total for aircraft operations estimated at the reliever airports in 2012 is 363,095.[16] This total represents a decrease of 6.0 percent when compared with a total operations level of 386,383 in 2011.

[16] The methodology for counting air traffic operations at FCM was changed in 2012. 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 El-mo (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

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 Downtown (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

*Note: The FAA Air Traffic Control Tower revised the methodology used to count aircraft operations in 2012. This change contributed to the decrease in the aircraft operations total for FCM in 2012.

Source: Metropolitan Airports Commission 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 Long Term Comprehensive Plan (LTCP) updates for LVN, MIC, 21D, 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
2010	162	437	244	421	229	93	1,586
2015	195	455	261	420	253	105	1,689
2020	211	452	269	411	261	117	1,721
2025	203	433	254	406	247	128	1,671

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
2010	58,590	72,424	74,719	99,540	60,197	111,870	477,340
2015	60,546	73,328	74,686	97,154	61,321	117,399	484,434
2020	61,519	75,973	76,850	106,030	61,764	130,056	512,192
2025	61,325	79,560	77,266	113,876	63,700	137,310	533,037

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

3.3 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 opportunities and researching 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 2012, pavement rehabilitation was completed at STP, 21D, ANE, MIC, and FCM. The new south hangar area at FCM was serviced with sanitary sewer and water utilities, and taxiway guidance sign modifications were done at MIC.

3.3.1 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 underway and planned to be complete in 2013.

3.3.2 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.

The recommendations included in the LTCP for ANE are as follows:

1. Xylite Street relocation to facilitate future construction of the East Building area annex
2. Improvements to the existing security gate system
3. Consideration for an extension to Taxiway C to the south
4. Continuation of existing pavement reconstruction and rehabilitation as part of the MAC's ongoing pavement maintenance program
5. Potential development of revenue-generating land uses on airport property that is not needed for aviation purposes
6. Continuation of cooperative community interactions including, but not limited to, coordination with the existing Anoka County-Blaine Airport Advisory Commission

3.3.3 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 underway and planned to be complete in 2013.

3.3.4 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. Draft LTCP documents were made available for public review and comment in November 2009. Plan recommendations include the following:

1. Shift Runway 18/36 to the north 58 feet and extend the total runway length from 2,691 feet to 2,800 feet in order to comply with FAA standards pertaining to Runway Safety Area (RSA) and Object Free Area (OFA) requirements
2. Continuation of pavement reconstruction and rehabilitation as part of the ongoing pavement maintenance program
3. Continue to work with FCM tenants along Taxiway A to eliminate taxiway obstructions in compliance with FAA standards pertaining to OFA requirements
4. Continue discussions with the FAA related to ultimate relocation of the air traffic control tower
5. Potential development of revenue generating land uses on airport property that is not needed for aviation purposes
6. Continue cooperative interactions with the City of Eden Prairie through, but not limited to, the existing Flying Cloud Airport Advisory Commission

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.

3.3.5 Lake Elmo Airport (21D)

The MAC completed the Long Term Comprehensive Plan (LTCP) for 21D 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 underway and planned to be complete in 2013. It is anticipated that the updated plan will include new recommendations for providing the necessary extended runway length.

3.3.6 St. Paul Downtown Airport (STP)

Construction of a perimeter floodwall and its components were completed in 2008, and related aesthetic improvements were completed in 2009. The wall has been deployed four times since the project was completed, protecting STP's infrastructure, tenant investments and operational capabilities of the airfield.

The Long Term Comprehensive Plan (LTCP) update was completed for STP 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 STP LTCP recommendations include:

1. Continuation of the MAC's ongoing pavement maintenance program
2. Ongoing maintenance, training, compensatory excavation monitoring, and permit compliance for the floodwall
3. Continuation of research and potential development of revenue generating land uses on airport property that is not needed for aviation purposes
4. Continuation of cooperative interactions with the cities of St. Paul, South St. Paul and West St. Paul through, but not limited to, the existing Downtown St. Paul Airport Advisory Council (DAAC)

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.