Metropolitan Airports Commission: Year In Review 2018

REPORT

MINNEAPOLIS SAINT PAUL METROPOLITAN AIRPORTS COMMISSION

MAC

2018 Highlights

JetBlue

JetBlue joined the ranks of MSP Airport's 16 commercial airlines, bringing its low-cost fares and renowned customer service to the Minneapolis-St. Paul market in May 2018.

Super Bowl

Super Bowl LII fans flying in for the big game likely landed at one of the Metropolitan Airports Commission's seven area airports before heading downtown for the festivities. After more than a year of preparation, we were excited to welcome them.

Emergency Exercise

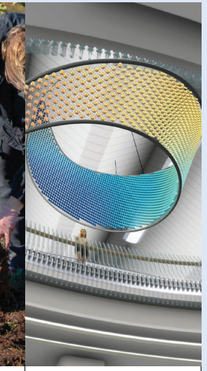
The Metropolitan Airports Commission, and dozens of partner agencies, exercised MSP Airport's emergency response plan. These triennial events ensure that all necessary resources and people are prepared for an emergency.

Restaurants

Seven new restaurants opened at MSP Airport in 2018 as part of the second phase of a multi-year overhaul of the airport's restaurant and retail offerings, including local favorites like People's Organic and Blue Door Pub.

75th Anniversary

The Metropolitan Airports Commission celebrated its 75th anniversary in 2018. Among other activities, the occasion was marked with a tree planting at our offices. More than 75 trees were planted - an investment for future generations to enjoy.



Arts

In April, a blue ribbon panel selected an internationally-renowned artist to create an iconic artwork for the departures and arrivals lobbies at MSP Airport's Terminal 1. Installation of the piece – called Aurora – is scheduled for 2020.

Greetings:

In 2018, the Metropolitan Airports Commission celebrated its 75th year of providing safe, efficient, economical air transportation services for the region.

The year saw a number of important milestones:

- Serving a record number of travelers the day after Super Bowl LII was played in Minneapolis.
- The arrival of JetBlue as the 16th airline to serve Minneapolis-St. Paul International Airport (MSP).
- Announcements of major new international service: Delta Air Lines, service to Mexico City and Seoul in 2019 and, pending governmental approval, Shanghai in 2020; and Aer Lingus, service to Dublin in 2019. New international service grew from work by the Regional Air Service Partnership, a cooperative effort between the Metropolitan Airports Commission and GREATER MSP.
- Opening of the new InterContinental MSP Airport Hotel, offering inspiring vistas of MSP's airfield, the soaring skylines of Minneapolis and Saint Paul, and the natural beauty of nearby state parks.
- Unveiling of the concept for Aurora, a new multi-story, iconic, interactive artwork to be installed as part of an ongoing project to modernize MSP's Terminal 1 ticketing, bag claim and vertical circulation facilities.
- Opening of Holman's Table, a fantastic new restaurant and event space in St. Paul Downtown Airport's historic terminal building.
- Progress on long-term comprehensive plans and related activities for Airlake, Crystal and Lake Elmo airports.
- Opening of seven new MSP restaurants as part of a multi-year renovation creating 80 new shops and restaurants between 2016 and 2019.

We hope you enjoy the report and invite you to experience the Metropolitan Airports Commission's airports firsthand in 2019 and beyond.

Dan Boivin
Chairman

Brian Ryks
Executive Director and CEO

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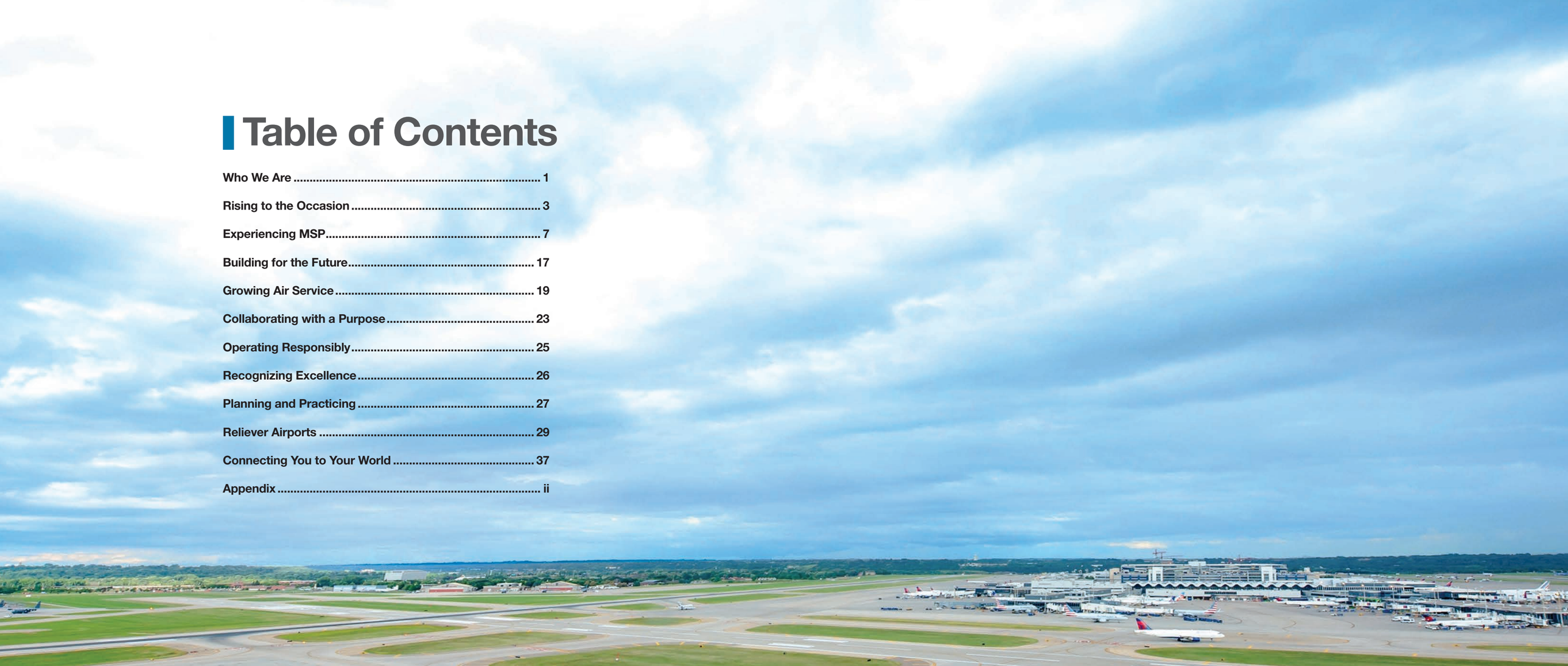
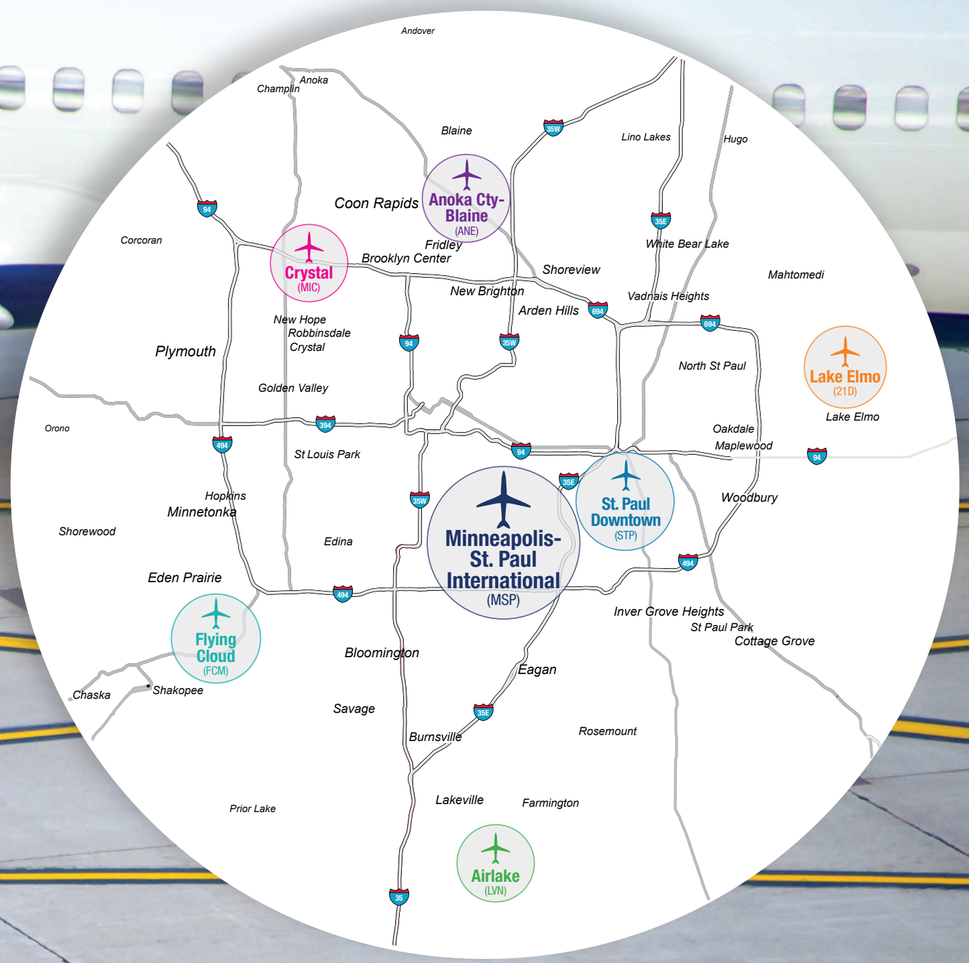


Who We Are

The Metropolitan Airports Commission (MAC) owns and operates an airport system that includes Minneapolis-St. Paul International (MSP) and six general aviation airports. As one of the nation's largest airport systems, the MAC delivers more than

$16.7 billion annually for the local economy and supports more than 90,000 jobs in the region.

The MAC's airports connect the region to the world and showcase Minnesota's extraordinary culture to the more than 38 million passengers from around the globe who arrive or depart through MSP each year. Though a public corporation of the state of Minnesota, the MAC is not funded by income or property taxes. Instead, the MAC's operations are funded by rent and fees generated by the users of its airports.



Rising to the Occasion

After more than a year of preparation, the MAC kicked off 2018 by welcoming travelers to the most watched sporting event of the year: **Super Bowl LII.**

MSP Airport and the MAC's six general aviation airports would be many people's first impression of the Minneapolis-St. Paul area. So it was essential the MAC provide a positive Minnesota experience for the tens of thousands of attendees and football enthusiasts flying in for the big game.

An airport organizing committee made up of 30 subcommittees led the way, preparing for everything from: accommodating the influx of private aircraft, screening twice as many people as usual the Monday following the event, coordinating hundreds of volunteers and welcoming team players and their guests to Minnesota. It definitely took an entire airport community – including airports outside the MAC's jurisdiction – to make it the best airport experience ever.

msp 02.04.2018

365
private aircraft accommodated at MSP Airport

1,265
private aircraft accommodated by the MAC's general aviation airports

60,883
passengers screened at MSP Airport security checkpoints the Monday following the game

34,368
bags processed on the Monday after the game

445 airport volunteers coordinated by the MAC and its partner, Airport Foundation MSP

5,454 volunteer hours

Prior to the game, the MAC and Delta Air Lines welcomed the teams to the Twin Cities.

The Monday following the game, MAC employees and other airport volunteers helped keep a record number of passengers moving smoothly through the departures lobby of MSP's Terminal 1, providing a great last impression of Minnesota and MSP Airport.

Experiencing MSP

MSP Airport welcomed seven new restaurants in 2018 as part of the second phase of a massive renovation of the airport's food and retail program. The entire program will result in 35 new retail shops and 45 new restaurants opening between 2016 and the end of 2019.

Caribou Coffee

The Blue Door Pub

Peoples Organic

City Point Bar

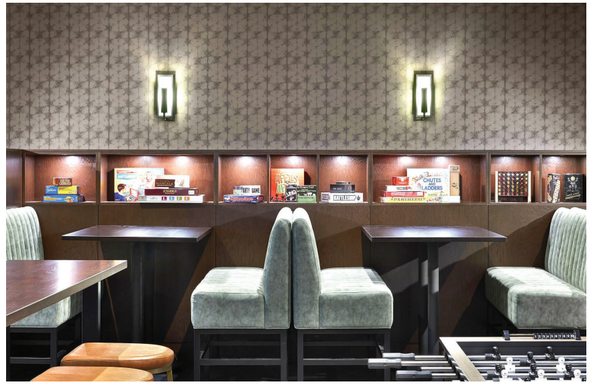
Starbucks

Panda Express Chinese Kitchen

Wendy's

The MAC's vision:

Providing your best airport experience



In July, the new InterContinental MSP Airport Hotel opened at Terminal 1.

The 12-story, on-site hotel is the airport's first and features 291 rooms including two elegant suites. Amenities include a luxury spa, two signature restaurants, a cocktail bar, 30,000 square feet of flexible state-of-the-art event spaces, and security screening access (carry-on luggage only) to Terminal 1.

The Arts@MSP program, a partnership between the MAC and the non-profit Airport Foundation MSP, kicked off several initiatives, including choosing the artist and approving a concept for an iconic art piece.

The artwork – called Aurora – will resemble a "wisp of light" suspended between the departures and arrivals levels at Terminal 1, as well as an interactive element integrated into the floor below it. Coming in 2020!

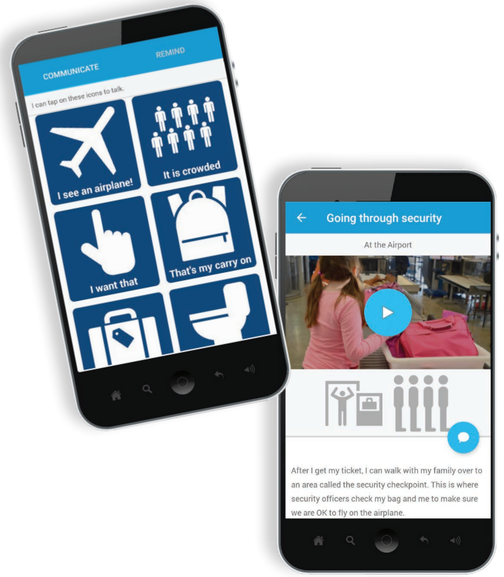
New wall mosaic installations continued as part of the restroom renovation program. The presence of musicians and dancers created a festive feel during the days leading up to Super Bowl LII, as well as throughout the year, appearing in many areas of the airport.

To honor Minnesota's contributions to athletics, the Thomson Reuters Concourse C Art Gallery featured an exhibit called "Best Game in the World," where memorabilia and photographs from Minnesota sports teams – past and present – helped tell the story of a state steeped in sporting history.

Several other exhibits throughout the airport caught travelers' eyes as well. The "Transfer of Memory" exhibit – a portrait series capturing and celebrating the lives of Minnesotans who survived the Holocaust – was brought to MSP in January by the Jewish Community Relations Council of Minnesota and the Dakotas. Other exhibits, curated by smaller regional arts groups, could also be viewed in the new art cases located throughout both MSP terminals.

The MAC partnered with outside organizations to offer MSP Airport guests two new helpful mobile apps.

Navigate MSP, created by InfiniTeach, helps families, particularly those with children with autism, prepare for trips through visual, narrative and interactive content.



The **Aira Airport Network** provides its app users who are blind or low vision with on-demand wayfinding assistance via a remote Aira agent. In 2018, the MAC partnered with the company to provide its services free of charge at MSP Airport.

Building for the Future

Work on several major improvements at MSP continued in 2018. Construction of the new 5,000-space Silver Parking Ramp at Terminal 1 took shape with the ramp scheduled to open in 2020.

The first phase of improvements to expand and modernize the arrivals and departures lobbies and streamline movement between levels was completed in January, just prior to Super Bowl LII.

Phase two – on the south end of the building – began shortly thereafter and continued throughout 2018, including construction of a new security exit near the beginning of Concourse G.

Ensuring the MAC's airport system continues to meet the air transportation needs of the community and the region requires continuous planning, design and construction to maintain and improve the organization's seven airports. In 2018, the MAC budgeted nearly **$223 million** for capital improvements at MSP and more than **$5.6 million** for capital improvements at MAC general aviation airports.

Growing Air Service

Minneapolis-St. Paul International Airport is Delta Air Lines' second largest hub, the base for Sun Country, and an operations site for nearly every major domestic carrier and a growing number of international airlines.

In 2018, airlines offered non-stop service to more than 160 destinations from MSP: 137 domestic and 29 international. Multiple airlines served 58 of those routes, helping keep fares competitive.

Passenger levels climbed to a record high in 2018 with 38,037,381 total travelers flying to or from MSP. Aircraft landings and takeoffs were down 2.1 percent, as major airlines continued to add aircraft seats and shift to larger aircraft, enabling them to meet growing demand on fewer flights.

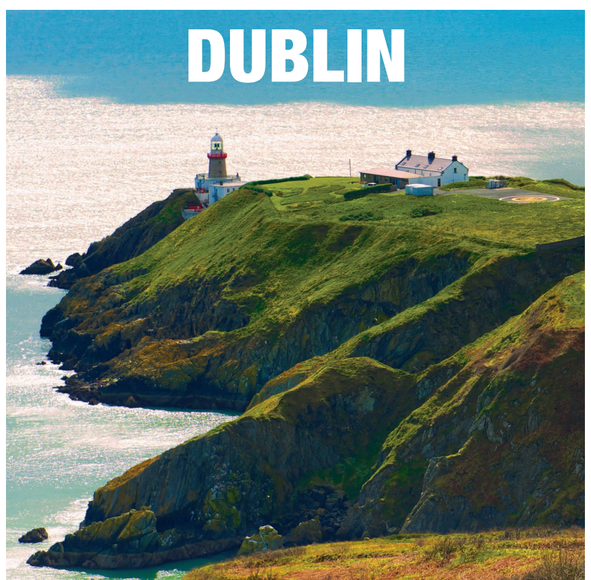
Below are some of the air service highlights of 2018.

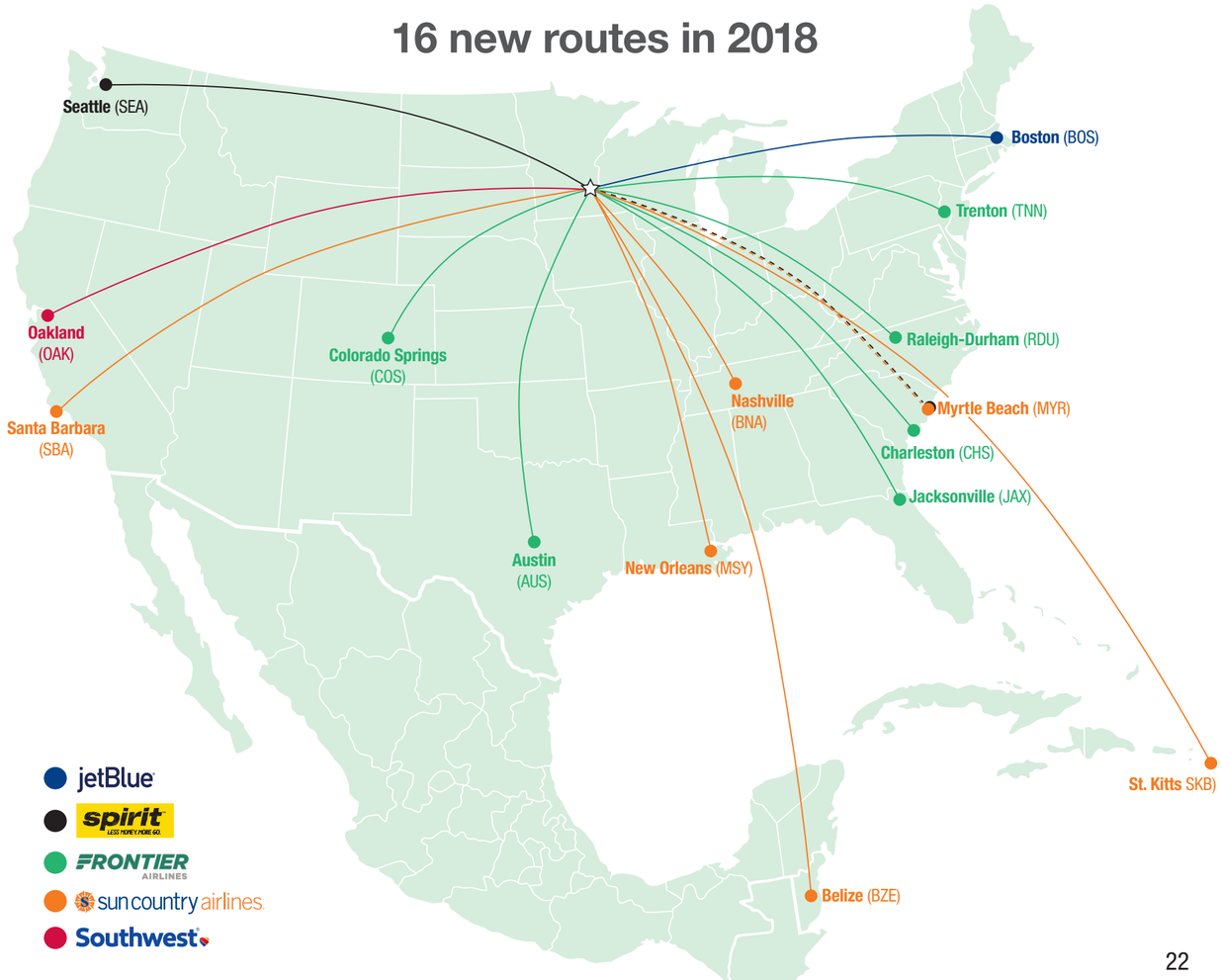
JetBlue launched service to MSP in May 2018, capping a 10-year effort to bring the popular low-cost air carrier to the Minneapolis-St. Paul market. The airline offers three round trips per day between Boston and MSP.

Sun Country Airlines began its transition to an ultra-low-cost carrier, investing tens of millions of dollars to buy planes, new seats, spare engines and new technology. In December it took ownership of its first 737-800 and revealed its new livery. Also in December, the MAC and the airline negotiated terms of an agreement that will bring Sun Country's headquarters to the MSP campus.

In June, **Delta Air Lines** announced it would begin nonstop service to Seoul, South Korea from MSP starting in April 2019. In October, it announced its intention to begin nonstop service to Shanghai, China starting in 2020, pending approval by the Chinese and United States governments. And in December, the airline announced it would offer nonstop service to Mexico City beginning in June 2019.

In addition to Delta's Seoul and Mexico City routes, the MAC's continued work with Greater MSP and the MSP Regional Air Services Partnership resulted in another nonstop international route for MSP. In September, **Aer Lingus** announced it would begin nonstop service between Dublin and MSP starting in July 2019.





Collaborating with Purpose

As part of a year-long celebration of its 75th anniversary, the MAC planted more than 40 trees from six different species on the grounds of its administration building. The trees were purchased through **Tree Trust**, a local organization providing training and jobs to local youth while improving the environment through planting trees.

The MAC partnered with locally-based **Recycle Across America** in 2018 as well, displaying the organization's celebrity-centric public service campaign aimed at educating MSP's guests about which materials can be recycled. The MAC joins the likes of Disney, Best Buy, Whole Foods and Sony in helping spread the word about how to "recycle right."

The MAC also maintained its Level 2 **Airport Carbon Accreditation** and continued to implement its carbon management plan in an effort to reduce MSP's carbon footprint by 15 percent by 2020 from the airport's 2014/2015 baseline.

The MAC is a member of the **Minnesota Sustainable Growth Coalition.** In 2018, this group announced its vision for Minnesota's clean energy future.

The group's vision is that Minnesota will be known for:

- Surpassing the state of Minnesota's economy-wide greenhouse gas emission targets of a 30 percent reduction by 2025 and an 80 percent reduction by 2050
- Increasing access to affordable, reliable, clean energy to improve racial, economic, social and public health outcomes
- Fueling economic growth for all Minnesotans

TREE TRUST
Transforming Lives and Landscapes

recycle across america
let's recycle right!

airport carbon accredited
REDUCTION

Operating Responsibly

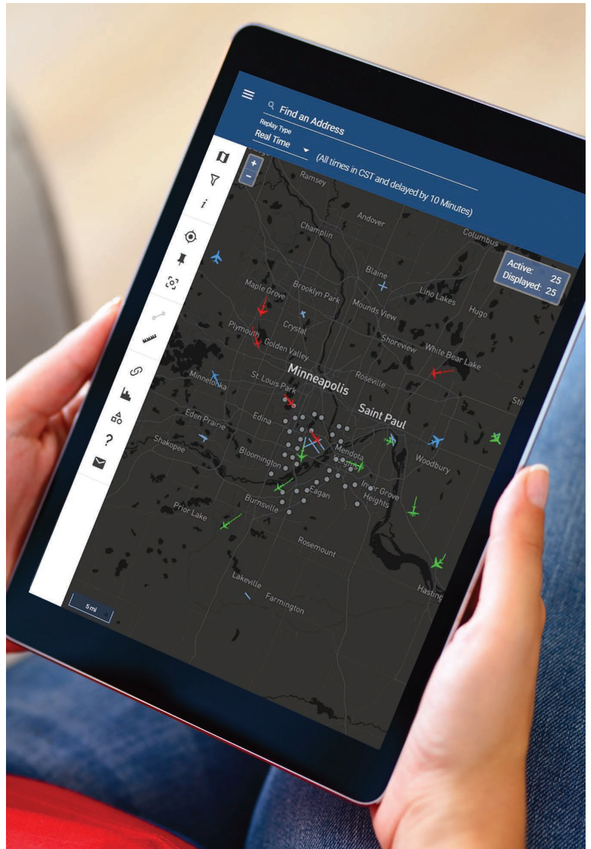
In 2018, the MAC continued its noise mitigation program by providing residential noise abatement improvements for more than 180 homes - an investment in the community of more than $5 million - and introduced an additional 527 homes to the first phase of construction.

To date, the MAC has provided mitigation to more than 15,300 homes, nearly 3,300 multi-family units and 19 schools at a total cost of nearly $500 million.

Technology updates made by the MAC's noise program staff made it easier than ever for people to find information about aircraft flying nearby and to access information about MSP runway use and related noise topics.

In 2018, the online **FlightTracker** went through a complete redesign that includes enhanced analysis tools, more map views, and weather details. This redesign also improves the user experience on mobile devices.

Another tool unveiled in 2018 is a brand new **Noise Abatement Dashboard**. This tool is used by MAC staff and Federal Aviation Administration air traffic controllers to view real time compliance with the MSP Runway Use System and noise abatement procedures that are established for departures on Runways 17, 12L and 12R.



Recognizing Excellence

The MAC and MSP were recognized with a number of prestigious awards in 2018, including accolades for customer experience, on-time performance, marketing, construction, and innovative food and beverage options.

Chief among the awards:

Airports Council International named MSP **Best Airport in North America** for the second year in a row in its size category based on surveys of travelers throughout the continent.

- For the second consecutive year, the Air Transport Research Society determined MSP to be the **Most Efficiently Managed Airport in North America** for airports in its size category.
- Minneapolis-St. Paul International Airport was named one of the **most on-time** airports in the world by the OAG Punctuality League.
- MSP's food and beverage program was recognized for excellence at the industry's international FAB awards, with **Food Truck Alley winning Best Airport Food Hall of the Year for the Americas region.**
- The new **InterContinental MSP Airport** won **Best Hospitality Development Award** from the Minnesota Real Estate Journal.

Planning and Practicing

In May 2018, the MAC exercised its emergency plan for MSP as part of a Federal Aviation Administration-required triennial exercise. Planning for this exercise begins at least 12 months prior and involves stakeholders throughout the airport and the local community. The exercise spanned two days, enabling participants to practice incident recovery plans in full.

Working off a mock aircraft crash scenario, emphasis was placed on testing the MAC's survivor reunification and assistance to family and friends of those directly impacted by an incident, as well as assisting people with disabilities during an emergency.

While public safety activities are front and center during such exercises, behind the scenes, employees from across the organization are involved in supporting activities related to logistics, purchasing, planning and communications.

Thank You

- Allina Medical Transport
- American Red Cross
- Airport Foundation MSP
- Bloomington Fire Department
- Bloomington Police Chaplains
- Center for Disease Control
- Customs and Border Protection
- Federal Aviation Administration ATC
- Federal Bureau of Investigation
- Hennepin County Emergency Management
- Hennepin County Sheriff's Office
- Hennepin County Medical Examiner Mortuary Science Division
- Metropolitan Emergency Services Board
- Metro Transit
- MN State Duty Officer
- National Transportation Safety Board
- Southwest Airlines
- Swissport
- Transportation Security Administration
- Richfield Fire Department
- Salvation Army

Reliever Airports

The MAC's six general aviation "reliever" airports play a vital role in the Twin Cities metropolitan area, providing $756 million in economic activity, easy access to businesses and communities throughout the metropolitan area, and an attractive alternative to MSP for private pilots.

The MAC's primary reliever airports are Anoka County-Blaine (ANE), Flying Cloud (FCM) and St. Paul Downtown (STP). The three complementary reliever airports are Airlake (LVN), Crystal (MIC) and Lake Elmo (21D). Each airport is unique in its design layout and the role it plays within the MAC's system.

In 2018, the MAC invested more than $5.6 million in capital improvements to the reliever airports to ensure they continue to serve the needs of the general aviation community.

In February 2018, the three primary airports played an integral role in the success of Super Bowl LII, as they hosted more than **1,200 private aircraft** over the days leading up to and including game day. Preparations for the influx began 14 months prior with airport tenants and the Federal Aviation Administration, resulting in **exceptional experiences** for both pilots and passengers.

Airlake Airport

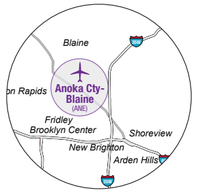
Located south of the Twin Cities in Lakeville and Eureka Township, Airlake Airport has a single 4,099' x 75' runway and a full-length parallel taxiway.

In April 2018, the MAC approved the final 2035 Long Term Comprehensive Plan for Airlake Airport. The plan envisions:

- Providing airspace clearance over railroad tracks by having aircraft land further down Runway 12
- Extending Runway 12-30 with declared distances to maximize overall airfield utility for existing users
- Reconfiguring the taxiway and expanding the apron area

Any required environmental review for the planned improvements at Airlake Airport will be completed prior to construction.

Also in 2018, the City of Lakeville annexed 120 acres of Airlake Airport from Eureka Township at the request of the MAC. The action paves the way for city sewer and water to be brought to the south side of the airport – providing essential services to a new building area for aircraft hangars.



Anoka County-Blaine Airport

Situated in the north metro near the National Sports Center, Anoka County-Blaine Airport (ANE) serves the most diverse aircraft mix in the MAC's reliever airport system. The airport has two runways, the longest of which measures 5,000' x 100'. It is served by a non-federal air traffic control tower.

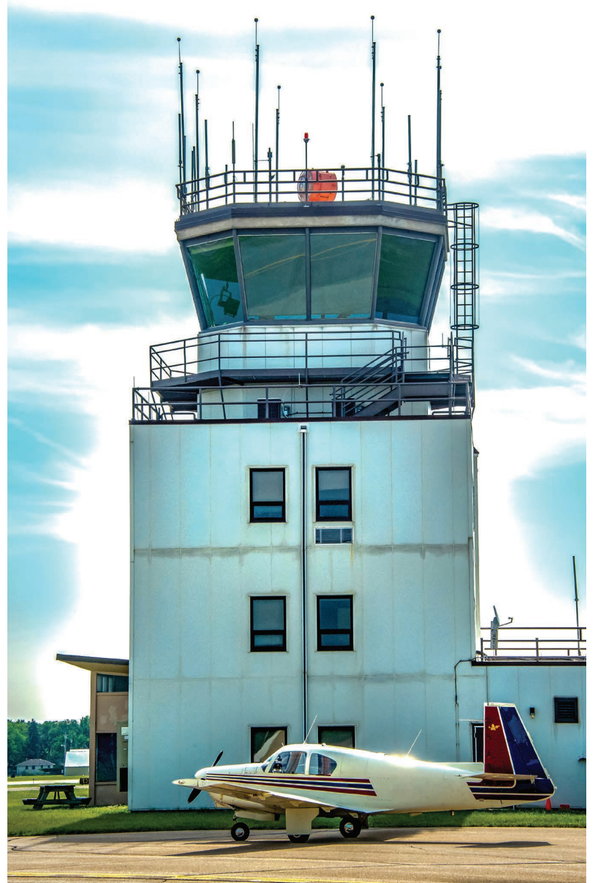
Prior to initiating a long-term planning update for ANE, the MAC is conducting a broader system-level assessment of the three primary reliever airports (ANE, FCM and STP) and the general aviation activity at MSP.

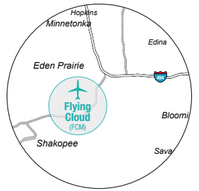
Crystal Airport

Crystal Airport lies within the cities of Crystal, Brooklyn Park and Brooklyn Center in the northwest metro. The airport has three paved and one turf runway – the most runways of any MAC reliever airport as well as the only turf runway in the system. Runway 14R-32L is the longest, measuring 3,267' x 75'. An FAA-operated air traffic control tower is located on site.

After approval of the airport's 2035 Long Term Comprehensive Plan in 2017, the MAC began an environmental review in 2018 of the plan's proposed projects. A draft Environmental Assessment/ Environmental Assessment Worksheet document is expected to be published for comment in early 2019.

The MAC owns a portion of the land around the airport - part of which is the MAC Wildlife area - a 40-acre area of wetland where visitors can experience a variety of unique wildlife in the middle of the city. In 2018, the City of Crystal and the Three Rivers Park District replaced an existing, partially submerged boardwalk and added a new learning station.



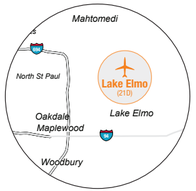


Flying Cloud Airport

Flying Cloud Airport (FCM) is situated in Eden Prairie and serves the southwest metro. The busiest general aviation airport in the MAC system, FCM is a popular home base for corporate business jets and turbo props.

The airport has three runways, the longest of which is 5,000’ x 100’, and an FAA-operated air traffic control tower.

Prior to initiating a long-term planning update for FCM, the MAC is conducting a broader system-level assessment of the three primary reliever airports (ANE, FCM and STP) and the general aviation activity at MSP.



Lake Elmo Airport

Located in the east metro, Lake Elmo Airport ranks third amongst MAC reliever airports for the number of based aircraft. The airport has two runways, the longest of which is 2,849’ x 75’. An easy drive to the St. Paul business district or to scenic destinations along the St. Croix River, Lake Elmo Airport is conveniently located for both business and leisure travelers. The airport is served by a fixed base operator and an aircraft maintenance provider. Lake Elmo Airport has two runways. Runway 14/32 is 2,850’ x 75’, while 4/22 measures 2,497’ x 75.’

An environmental assessment of proposed improvements at the airport was completed and approved in 2018, a process that included robust stakeholder engagement to inform, educate and engage the public and airport users throughout the process.

Planned improvements include:

- Relocating primary runway 14-32 to the northeast by 615 feet and extending it to 3,500’
- Converting existing Runway 14-32 into a partial parallel taxiway
- Constructing other taxiways and engine run-up pads as needed to support the new runway ends
- Realigning 30th St. North around the new Runway 32 runway protection zone to the south
- Reconstructing existing crosswind Runway 4-22 and extending it to 2,750’
- Voluntarily pursuing creation of Rusty Patched Bumble Bee/ pollinator habitat on airport property

St. Paul Downtown Airport

St. Paul Downtown Airport (STP) is the only airport in the MAC reliever system with a runway longer than 5,000'. As such, the airport is a popular draw for larger corporate jet aircraft. Of the airport's three runways, Runway 14-32 is the longest, measuring 6,491' x 150'. Nestled along the Mississippi River with scenic limestone bluffs on one side and downtown Saint Paul on the other, the airport is served by an FAA-operated air traffic control tower. St. Paul Downtown Airport offers easy access to many local businesses and amenities.

STP has the fewest based aircraft in the MAC system but ranks third for aircraft operations.

Prior to initiating a long-term planning update for STP the MAC is conducting a broader system-level assessment of the three primary reliever airports (ANE, FCM and STP) and the general aviation activity at MSP.

In January 2018, Holman's Table opened in the historic airport terminal, providing a unique and much celebrated culinary experience for the Twin Cities. Named in honor of Charles W. "Speed" Holman, as well as the airfield's official designation, the restaurant pays homage to this local, daredevil pilot and the early days of flight through patina-tinged photographs, rich leather seating, and aviation-themed cocktails.

Connecting You to Your World

The Minnesota Legislature created the Metropolitan Airports Commission (MAC) in 1943 to promote the efficient, safe handling of air commerce and to develop the full potential of the Minneapolis-Saint Paul metropolitan area as an aviation center.

As a public corporation of the state, the MAC generates the revenues it needs to operate through rents and user fees, not general tax appropriations. Bonding and financing authority – along with MAC-generated cash and state and federal aviation grants and fees – fund capital investments in the MAC's seven-airport system. The MAC maintains an AA- senior bond rating, among the highest of any U.S. airport operator.

The organization is governed by a 15-member policy board. The board chairman and 12 commissioners are appointed by Minnesota's governor. The mayors of Minneapolis and Saint Paul each appoint an additional commissioner. The chairman and mayoral appointees serve at the will of the elected officials who appoint them. All other commissioners serve four-year, staggered terms, providing continuity when administrations change. Eight commissioners are appointed by the governor to metropolitan districts, and four represent greater Minnesota.

MAC Board Members

Commission Chair
Daniel Boivin

District A
Carl Crimmins

District B
Rick King

District C
Katie Clark Sieben

District D
Steve Cramer

District E
James Deal

District F
Michael Madigan

District G
Richard Ginsberg

District H
Ibrahim Mohamed

City of Minneapolis
Leili Fatehi

City of Saint Paul
Ikram Koliso

Outstate St. Cloud
Patti Gartland

Outstate Duluth
Donald Monaco

Outstate Thief River Falls
Dixie Hoard

Outstate Rochester
Randy Schubring

The MAC operates much like a city, with its own police, fire, emergency dispatch and maintenance departments. The MAC board establishes policies, ordinances and budgets. Executive Director and Chief Executive Officer Brian Ryks oversees day-to-day operations and administration of the organization. With 650 employees, the MAC is among the most efficient airport operators in the nation, keeping the cost to airlines low and encouraging growth in air service and airline competition.

The MAC's mission:

Connecting you to your world

The MAC's vision:

Providing your best airport experience

MAC Senior Leadership Team

Brian Ryks
Executive Director
Chief Executive Officer

Steve Busch
Chief Financial Officer

Roy Fuhrmann
Chief Operating Officer

Eduardo Valencia
Chief Information Officer

Cameron Boyd
General Counsel

Mitch Kilian
Governmental Affairs

Scott Zaczkowski
Internal Audit

Atif Saeed
Finance & Revenue Development

Jim Laurent
Human Resources & Labor Relations

Bridget Rief
Planning & Development

Chad Leqve
Management & Operations

Naomi Pesky
Strategy & Stakeholder Engagement

Appendix

This report and appendix is prepared in accordance with the requirements of Minnesota Statutes Section 473.621, Subd. 1b. It presents Minneapolis-Saint Paul International Airport passenger and aircraft operations activity, current airport capacity in terms of operations and passenger enplanements, average length of delay statistics, and technological developments affecting aviation operations and capacity at the airport. To satisfy the Metropolitan Airports Commission's statutory obligations, this appendix includes MSP airfield capacity and delay information, technological developments and capacity enhancements at MSP.

MSP Revenue Passenger Summary

Rank	Airline	2016	2017	2018	Gain/Loss 2016-2018	% Change 2016-2018
1	Delta	25,843,245	25,995,533	26,254,595	**411,350**	**1.59%**
2	Sun Country	2,197,819	2,411,903	2,349,393	**151,574**	**6.90%**
3	American	2,403,295	2,363,226	2,103,725	**(299,570)**	**-12.46%**
4	Southwest	2,109,637	2,058,405	1,944,336	**(165,301)**	**-7.84%**
5	United	1,736,055	1,696,922	1,588,226	**(147,829)**	**-8.52%**
6	Spirit	1,200,623	1,232,433	1,149,731	**(50,892)**	**-4.24%**
7	Frontier	327,798	346,053	486,713	**158,915**	**48.48%**
8	Alaska Airlines	276,412	321,768	350,940	**74,528**	**26.96%**
9	JetBlue	---	---	153,816	**153,816**	---
10	Air Canada	89,282	103,146	118,141	**28,859**	**32.32%**
11	Icelandair	74,564	99,406	90,858	**16,294**	**21.85%**
12	KLM	---	52,356	78,815	**78,815**	---
13	Air France	52,845	63,570	56,040	**3,195**	**6.05%**
14	Condor	18,861	28,112	28,840	**9,979**	**52.91%**
15	Boutique Air	6,458	11,334	9,605	**3,147**	**48.73%**
16	Air Choice One	3,113	10,128	10,093	**6,980**	**224.22%**
17	Great Lakes	1,557	---	---	**(1,557)**	**-100.00%**
	Total	**36,341,564**	**36,794,295**	**36,773,867**	**432,303**	**1.19%**

Source: MAC Year End Operations Reports - 02-6-2019. Note, this chart reflects numbers of paying passengers only. Each year's totals are greater if you also count non-revenue passengers such as airline employees with flight benefits.

MSP Revenue Passenger Market Share

Rank	Airline	2016	2017	2018	Gain/Loss 2016-2018
1	Delta	71.09%	70.65%	71.39%	**0.31%**
2	Sun Country	6.05%	6.56%	6.39%	**0.34%**
3	American/US Airways	6.65%	6.42%	5.72%	**-0.92%**
4	Southwest/AirTran	5.80%	5.59%	5.29%	**-0.52%**
5	United	4.78%	4.61%	4.32%	**-0.46%**
6	Spirit	3.30%	3.35%	3.13%	**-0.18%**
7	Frontier	0.90%	0.94%	1.32%	**0.42%**
8	Alaska Airlines	0.76%	0.87%	0.95%	**0.19%**
9	JetBlue	0.00%	0.00%	0.42%	**0.42%**
10	Air Canada	0.25%	0.28%	0.32%	**0.08%**
11	Icelandair	0.21%	0.27%	0.25%	**0.04%**
12	KLM	0.00%	0.14%	0.21%	**0.21%**
13	Air France	0.15%	0.17%	0.15%	**0.01%**
14	Condor	0.05%	0.08%	0.08%	**0.03%**
15	Boutique Air	0.02%	0.03%	0.03%	**0.01%**
16	Air Choice One	0.01%	0.03%	0.03%	**0.02%**
17	Great Lakes	0.00%	0.00%	0.00%	**0.00%**

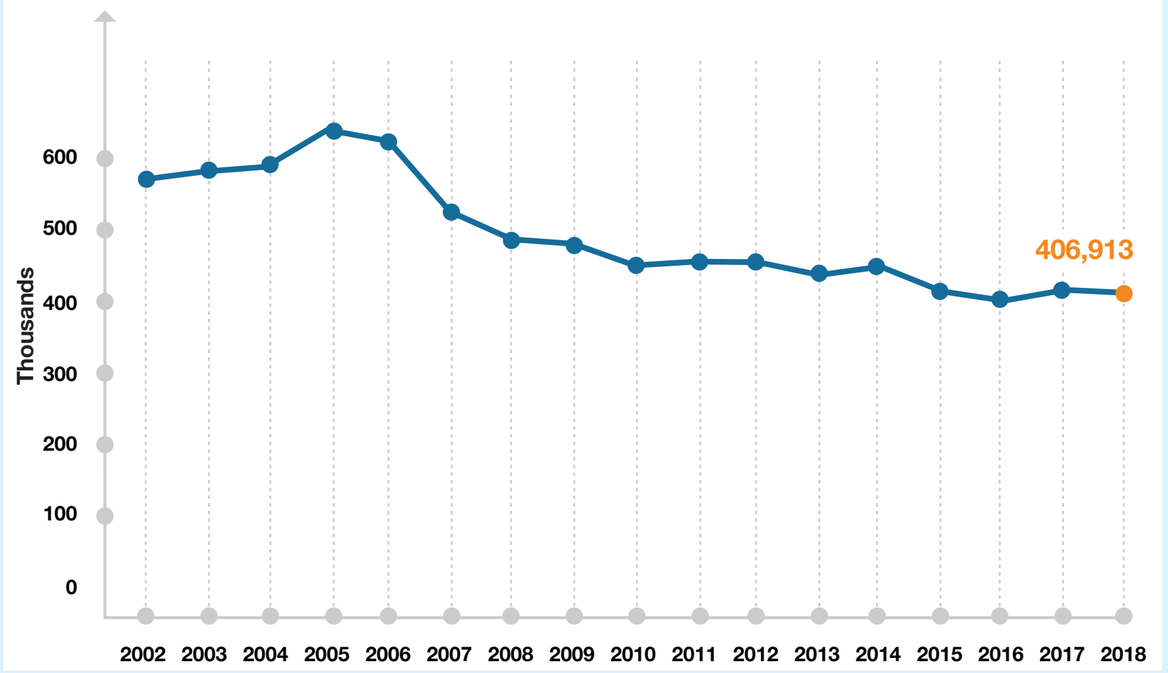
Source: MAC Year End Operations Reports - 2-6-2019

MSP Aircraft Operations

Calendar Year	Air Carrier	Air Taxi	Itinerant General Aviation	Military	Total Operations
2013	285,278	132,241	11,510	2,544	431,573
2014	292,445	105,606	11,272	2,437	411,760
2015	303,357	86,497	11,691	2,829	404,374
2016	311,271	87,198	11,489	2,940	412,898
2017	319,278	82,861	11,521	2,043	415,703
2018	**321,650**	**72,609**	**10,081**	**2,573**	**406,913**

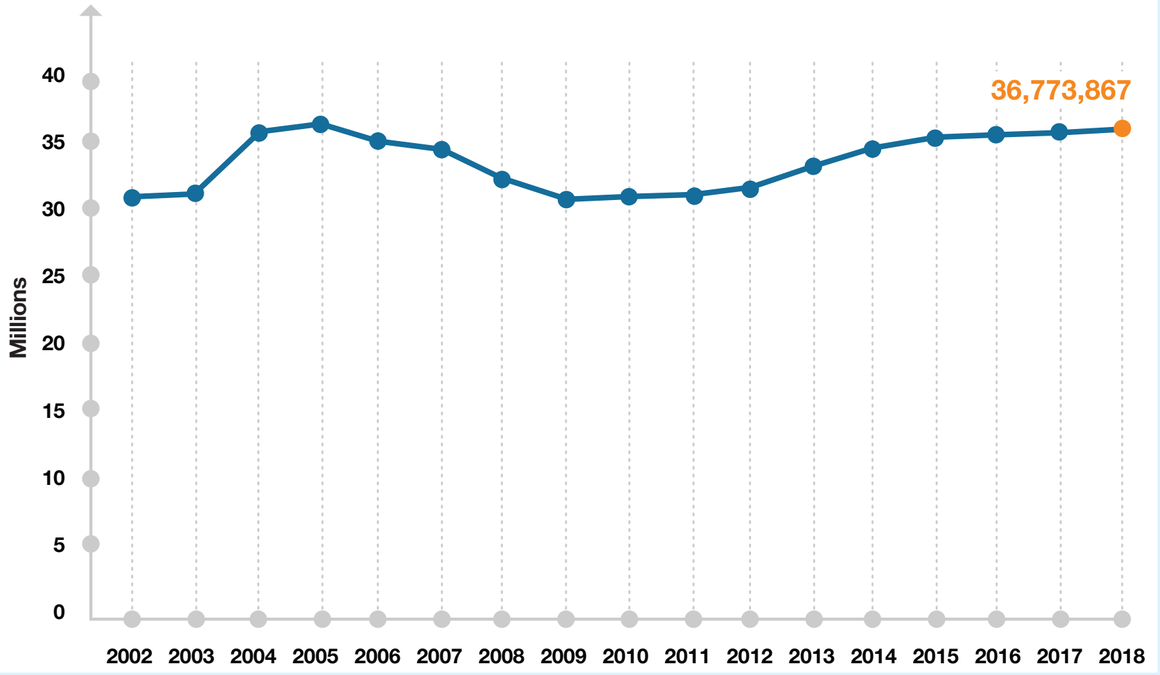
Source: FAA Air Traffic Operations Network

MSP Aircraft Operations



Source: FAA Air Traffic Operations Network

MSP Revenue Passengers



Source: MAC Monthly Statistics. Note, this graph reflects numbers of paying passengers only. Each year's totals are greater if you also count non-revenue passengers such as airline employees with flight benefits.

Airfield Capacity

Airfield capacity is typically described in terms of hourly capacity and annual capacity under good and poor weather conditions. **Table A-1** below reflects the hourly capacity for MSP in optimum, marginal and poor weather conditions.

MSP Airfield Capacity *Table A-1*

Weather Conditions	Operations per hour
Optimal Rate (1)	158
Marginal Rate (2)	146
IFR Rate (3)	114

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

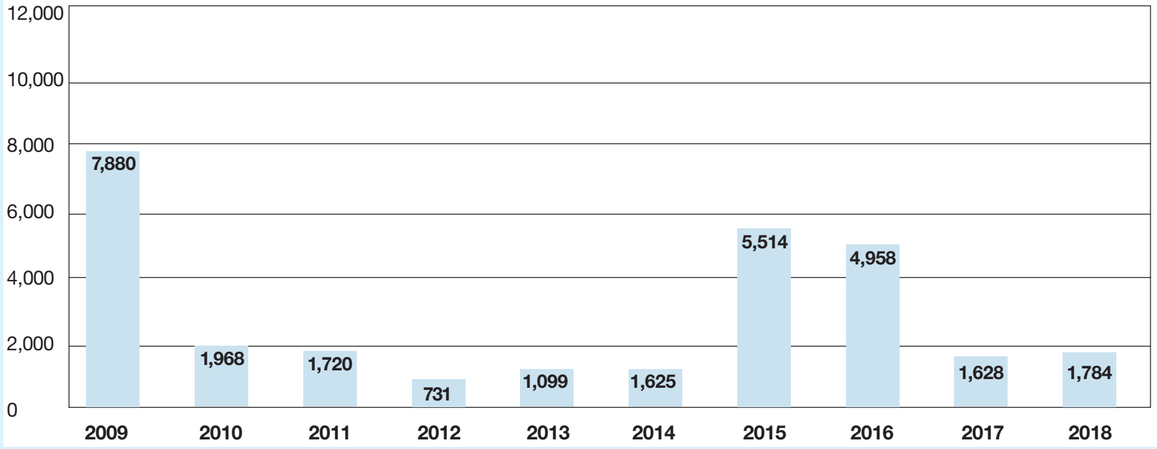
Source: Federal Aviation Administration Air Traffic Control Tower Analysis

MSP's current airfield capacity is about 158 aircraft operations (takeoffs and landings) in optimum conditions and 114 operations in poor weather, when instrument flight rules are being used due to low-level, heavy cloud cover and/or low visibility. Since 2015, when new Converging Runway Operations (CRO) measures were put in place, the Federal Aviation Administration (FAA) has worked to refine the procedures at MSP to regain capacity and reduce environmental impacts.

During 2018, the FAA continued the implementation of tools and agreements designed to standardize operating expectations within its air traffic control system. The three local FAA facilities have similar interests in controlling air traffic but different constraints on their activity. To standardize the agreements regarding use of CRO, the facilities began to develop rules between the local facilities that identify the variables necessary to commence CRO measures. The agreements between the facilities are expected to be finalized in 2019.

In late 2018 and early 2019, the MAC began the data collection process for the Minneapolis-St. Paul International Airport 2040 Long-Term Comprehensive Plan. The Plan is a forward-looking planning tool that studies facility and infrastructure needs based on projected 20-year passenger demand and aircraft operations. The most recently adopted long-term plan for MSP was completed in 2010, forecasting needs and presenting plans for addressing them through 2030. In 2015, the MAC undertook the process of updating that plan with an eye toward addressing forecasted needs through 2035. However, community concerns about CRO and how the FAA intended to address them paused the 2035 planning process. The delay was needed to better understand and incorporate changes to ground and air operations due to CRO into the MAC's long-term planning efforts.

MSP Flights Delayed by ATC* 2009 - 2018 *Figure A-2*



**In 2009, MSP Runway 12L/30R was closed temporarily for reconstruction. Beginning in 2015, RNAV arrival procedures and Converging Runway Operations were implemented at MSP.*
Source: FAA Air Traffic Operations Network

AIRFIELD DELAY

The FAA Air Traffic Operations Network database counts flights that were reported by Air Traffic Control (ATC) to be delayed for more than 15 minutes. **Figure A-2** depicts the annual number of MSP flights delayed by ATC in 2009 through 2018.

The FAA combines arrival and enroute delays into one category and reports delays for aircraft that accumulate 15 minutes or more holding delay at each facility throughout the entire route of flight. Delays of fewer than 15 minutes are not counted, nor are delays not initiated by ATC.

In 2018, there were 1,784 delayed flights at MSP, which is an increase of 156 flights when compared to 2017. In 2015 and 2016 delays at MSP largely were attributed to the implementation of new RNAV/RNP arrival procedures in March and April 2015 and implementation of new CRO requirements beginning in August 2015.

The highest level of delayed flights at MSP between 2009 and 2018 occurred in 2009 when MSP Runway 12L/30R was closed temporarily for reconstruction.

Airfield Delay per Aircraft Operation

When calculating the average delay per flight operation, delay is averaged by each flight's taxi time and airborne time. The total averaged delay is expressed in minutes of delay per operation. The current industry standard for estimating delay is established by the FAA Aviation System Performance Metrics (ASPM).

The FAA uses ASPM results to create performance benchmarks for airports each year. Since 2005, use of ASPM data has been a well-supported methodology to calculate aircraft delays, accepted by both government and industry as the most valid, accurate and reliable metric.[1]

Top 25 Large Hub Airports with Highest Average Total Delay Per Operation *Table A-2*

Rank	Airport	2018 Total Airports Operations	2018 Average Minutes of Delay per Operation	2017 Average Minutes of Delay per Operation	2017 Rank	Change from 2017 to 2018
1	LGA	368,865	11.2	12.3	1	-1.1
2	ORD	903,747	11.1	9.4	4	1.7
3	EWR	452,021	9.9	9.1	5	0.8
4	CLT	550,013	9.9	9.8	2	0.1
5	JFK	461,054	9.7	9.7	3	-0.1
6	PHL	379,657	9.6	9.0	6	0.6
7	SFO	470,166	8.6	8.6	8	0.0
8	DFW	667,213	8.2	7.8	10	0.4
9	LAX	707,833	8.1	8.9	7	-0.8
10	SEA	438,391	8.0	7.4	11	0.6
11	DCA	297,048	7.9	7.9	9	0.0
12	IAH	466,740	7.3	6.1	13	1.2
13	IAD	305,543	6.5	5.7	15	0.8
14	MIA	416,032	6.5	6.4	12	0.1
15	BOS	429,334	6.3	5.9	14	0.4
16	**MSP**	**406,913**	**6.2**	**5.4**	**19**	**0.8**
17	RDU	210,642	6.2	5.6	16	0.6
18	MCO	355,533	6.1	5.2	21	0.9
19	DEN	603,403	5.8	5.4	18	0.5
20	PHX	434,252	5.7	5.5	17	0.2
21	DTW	393,681	5.6	5.1	22	0.5
22	HPN	156,278	5.5	4.1	37	1.4
23	ATL	895,502	5.2	5.2	20	0.0
24	MEM	226,715	5.1	4.8	25	0.3
25	CLE	126,478	5.1	4.4	29	0.7

[1]*Prior to 2005, the industry standard was the FAA's Consolidated Operations and Delay Analysis System; the U.S. Department of Transportation Airline Service Quality Performance data were used to compare optimal versus actual taxi and flight times for MSP.*

MSP operated with higher-than-average levels of delay between January-April 2018 and in November 2018, above the national average, largely due to adverse weather conditions. The highest level of delay at MSP in 2018 occurred in January 2018 with an average of 7.5 minutes of delay per operation.

During the months of May-October 2018, MSP operated below the national average. The lowest average of delay per operation at MSP occurred in October 2018 with 5.3 minutes of delay. When compared to other large hub U.S. airports as shown in **Table A-2**, MSP ranked 16th with an overall average delay of 6.2 minutes in 2018; in 2017 MSP ranked 19th with an overall average of 5.4 minutes of delay.

TECHNOLOGICAL DEVELOPMENTS AND CAPACITY ENHANCEMENTS AT MSP

The FAA continuously explores potential capacity-enhancing development/technology 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.

Installation of ASDE-X at MSP was completed in 2009 and provides seamless coverage for complete aircraft identification information. This equipment also allows for future implementation and upgrade to Next Generation (NextGen) navigation technology (Automatic Dependence Surveillance – Broadcast, "ADS-B"); ADS-B uses a Global Navigation Satellite System to broadcast critical information.

Federal policy requires aircraft operating in capacity-constrained airspace, at capacity-constrained airports or in any other airspace deemed appropriate by the FAA, to be equipped with ADS-B/Cockpit Display of Traffic Information (ADS-B/CDTI) technology by 2020. This includes MSP.

Runway 4-22 Taxiway Lighting System

In 2018, the MAC began a project as part of the Capital Improvement Program for the construction of taxiway lighting systems for Runway 4-22 between Runway 12L-30R and Runway 17-35 with lead-in/off centerline lighting on the end connector taxiways.

The project, which will conclude in 2019, includes installation of taxiway edge and centerline lights and cabling. This will provide the FAA air traffic control tower the ability to convert runway 4-22 into a fully functional taxiway and back to a runway configuration, as necessary. The lighting system will allow for safe aircraft taxi operations on Runway 4-22 during peak operational periods without the risk of a possible pilot-caused runway incursion due to confusion of current lighting systems. This will make this unique operation conversion fully compliant with the FAA design requirements for a taxiway operation. The flexibility allows the tower to better utilize existing infrastructure and allow for more efficient ground handling of aircraft.

FAA'S NEXTGEN INITIATIVE

In 2011, as part of the FAA's NextGen initiative to modernize the national airspace system, the agency began to pursue advanced aircraft navigation technology at MSP in the form of performance-based navigation/area navigation (PBN/RNAV) flight procedures. After extensive review and community input, the FAA chose to implement new arrival procedures incorporating optimized profile descents (OPD) at MSP. Publication of the arrival flight procedures and air traffic control implementation began in March 2015 and was fully implemented by April 2015. OPDs occur when pilots keep the throttle pulled back for a continuous descent into the airport, rather than using more traditional procedures that involve descending in steps, reducing fuel and carbon emissions. In 2017, MAC staff completed an evaluation to quantify the benefits of OPDs. The findings were endorsed by the FAA and showed the OPDs provide the largest carbon emission reduction in documented history at MSP with a savings of approximately 2.9 million gallons of fuel per year, resulting in 28,465 fewer metric tons of carbon dioxide.

Also, in April 2017, the FAA introduced Data Communications at MSP. Data Comm, as it is known, is a NextGen technology that allows traditional voice transmissions to be sent to aircraft as text. The technology is most beneficial when air traffic controllers modify the routing of aircraft flight plans. These long verbal instructions can now be sent in seconds, reducing radio congestion, decreasing the potential for error, and increasing the accuracy of communications.

Ongoing Precision Instrument Approach Capabilities

In addition to runway separation and configuration, airfield capacity can be affected greatly by how the runways are equipped for inclement weather. A number of precision instrument approaches continue to be available at MSP as summarized in **Table A-3**.

Precision Instrument Approaches *Table A-3*

MSP	CAT 1	CAT 2	CAT 3
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 runway visual range (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

MAC RELIEVER AIRPORTS

The MAC's six general aviation reliever airports are open for public use 24 hours a day. 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. The tables below show the 2017 and 2018 reliever airport operations and reliever airport based aircraft. The operations totals are obtained from the FAA for MAC reliever airports with an air traffic control tower. At the two reliever airports without an air traffic control tower (LVN and 21D), the operations totals are estimated through various methods and available data.

Reliever Airport Operations

Airport	LVN	21D	MIC	STP	FCM	ANE	ANNUAL TOTAL
2017	36,670	28,337	34,223	40,489	90,835	74,943	**305,497**
2018	32,986	31,693	38,109	40,116	88,762	75,465	**307,131**
YY Comparison 2018-2017	(3,684)	3,356	3,886	(373)	(2,073)	522	**1,634**

Source: MAC Airport Development and FAA

Reliever Airports Based Aircraft

Airport	LVN	21D	MIC	STP	FCM	ANE	ANNUAL TOTAL
2017	135	193	168	87	373	377	**1,333**
2018	142	189	168	90	364	381	**1,334**
YY Comparison 2018-2017	7	(4)	-	3	(9)	4	**1**

Source: MAC Airport Development and FAA

LVN = Airlake | **21D** = Lake Elmo | **MIC** = Crystal | **STP** = St. Paul Downtown | **FCM** = Flying Cloud | **ANE** = Anoka County-Blaine

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