

ITEM 1 REVIEW AND APPROVAL OF JULY 18, 2018 MEETING MINUTES



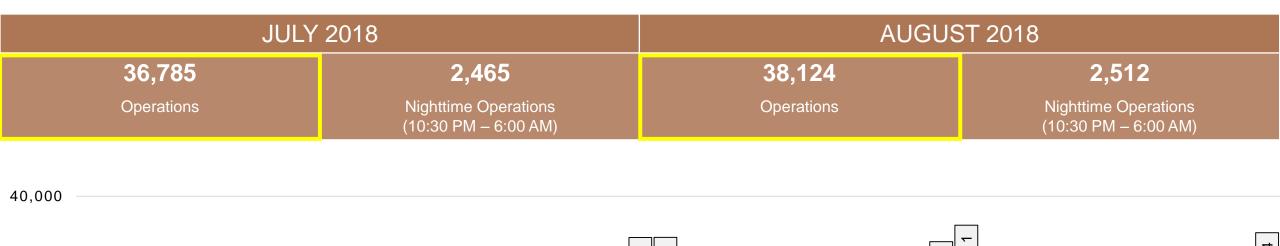
ITEM 2 REVIEW OF MONTHLY OPERATIONS REPORTS: JULY AND AUGUST 2018

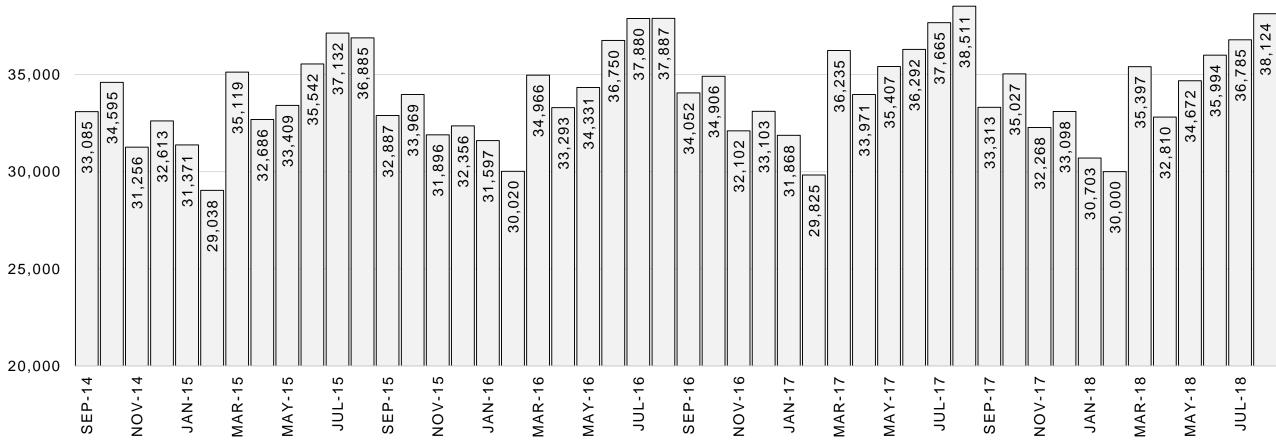


NOISE OVERSIGHT COMMITTEE SEPTEMBER 19, 2018



MSP OPERATIONS





MSP OPERATIONS

NOV-14

SEP-14

JAN-15

MAY-15

MAR-15

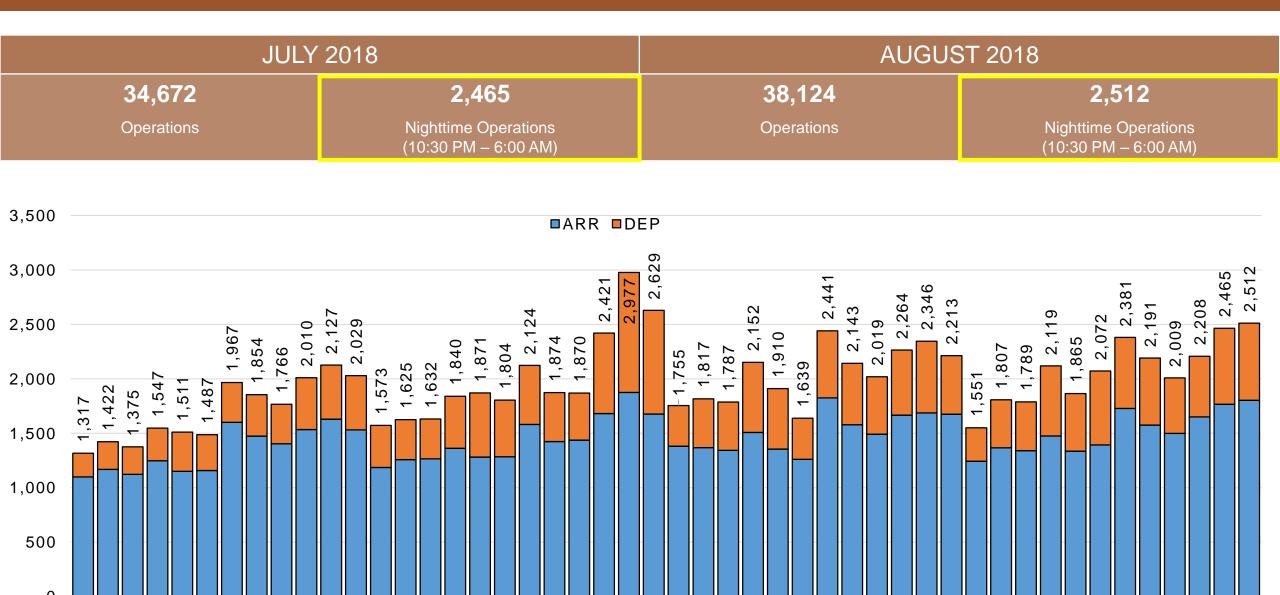
NOV-15

JAN-16

SEP-15

MAR-16

MAY-16



JUL-16

SEP-16

NOV-16

MAR-17

JAN-17

MAY-17

SEP-17

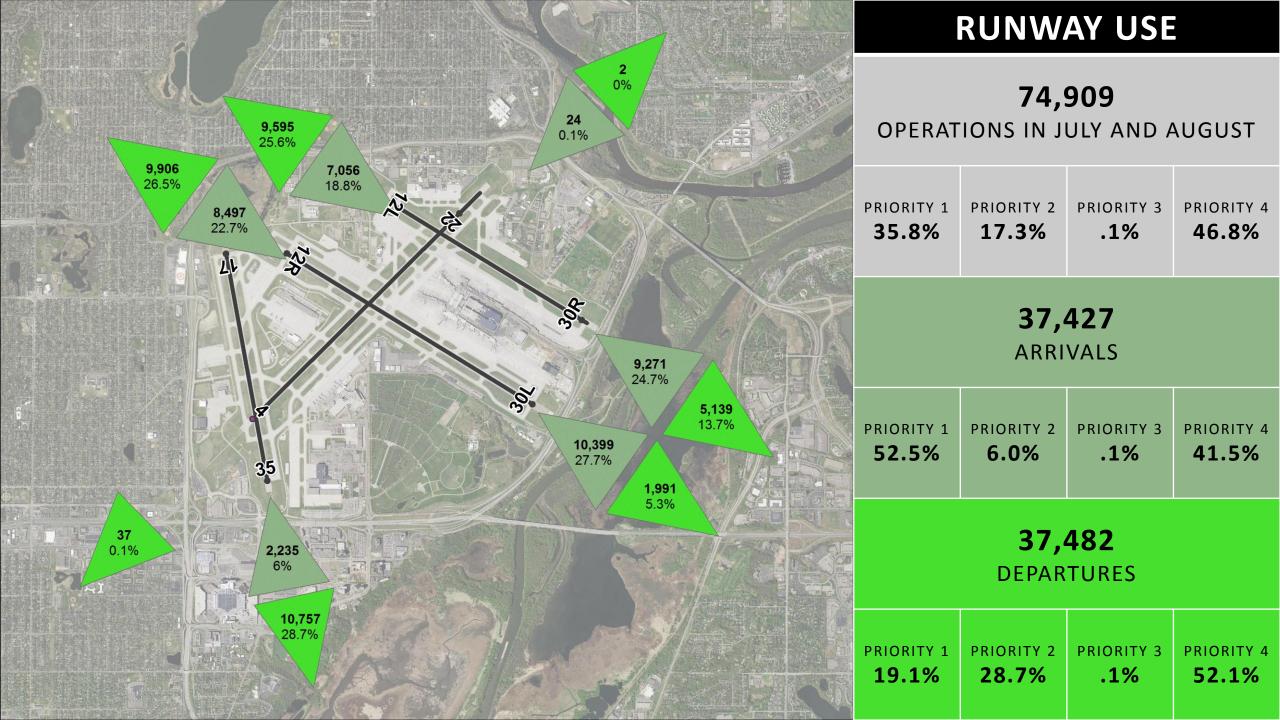
NOV-17

JUL-17

MAY-18

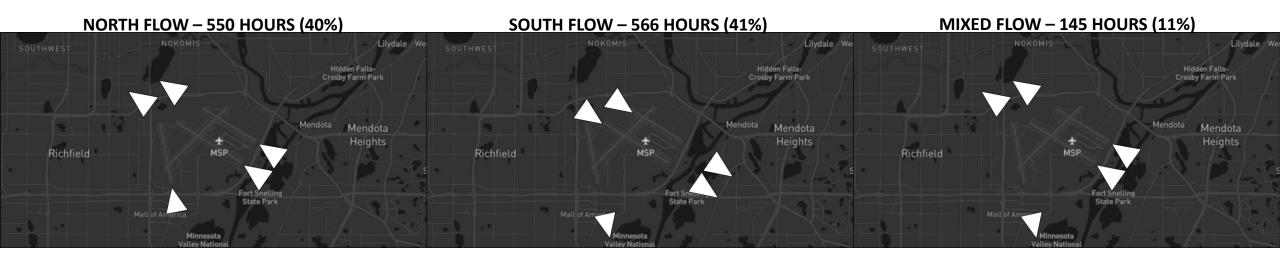
MAR-18

JAN-18



RUNWAY USE

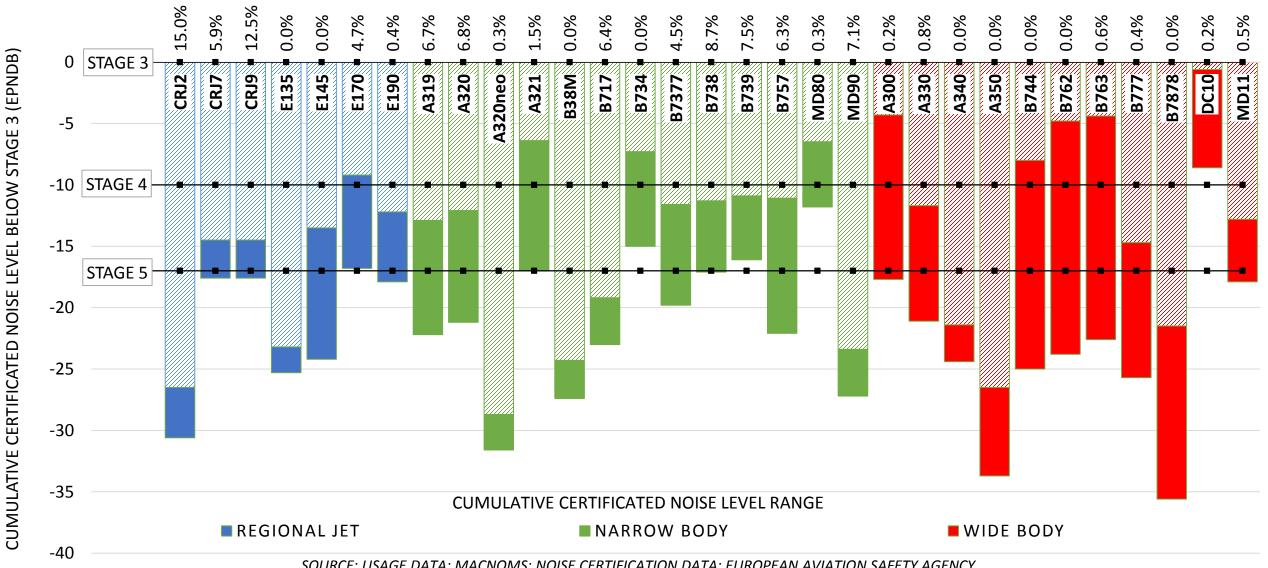
	JULY 2018			AUGUST 2018	
NORTH FLOW	SOUTH FLOW	MIXED FLOW	NORTH FLOW	SOUTH FLOW	MIXED FLOW
44%	38%	11%	36%	45%	10%



MSP OPERATIONS

2018 MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS

JUL - AUG

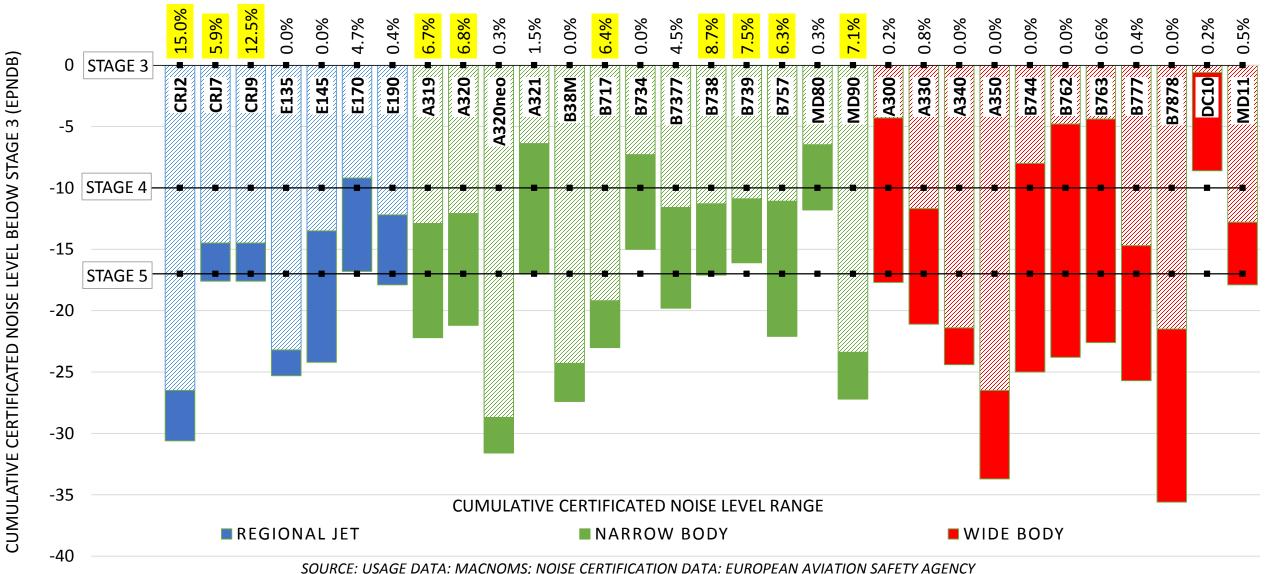


SOURCE: USAGE DATA: MACNOMS; NOISE CERTIFICATION DATA: EUROPEAN AVIATION SAFETY AGENCY

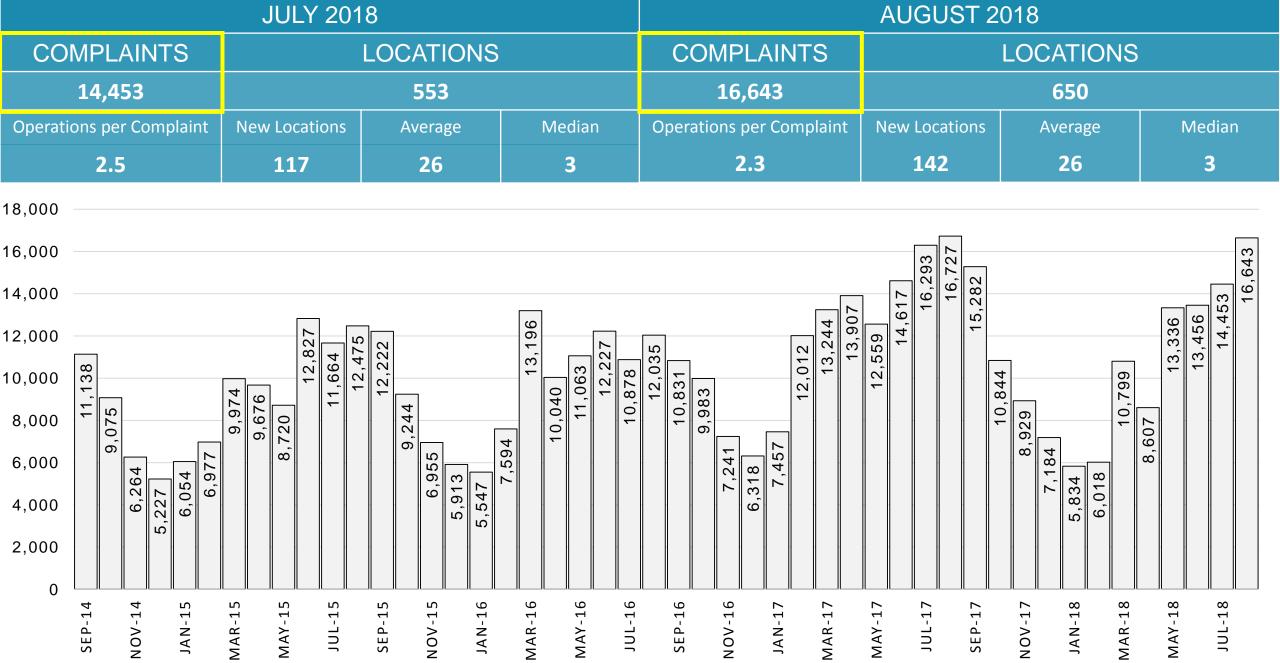
MSP OPERATIONS

2018 MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS

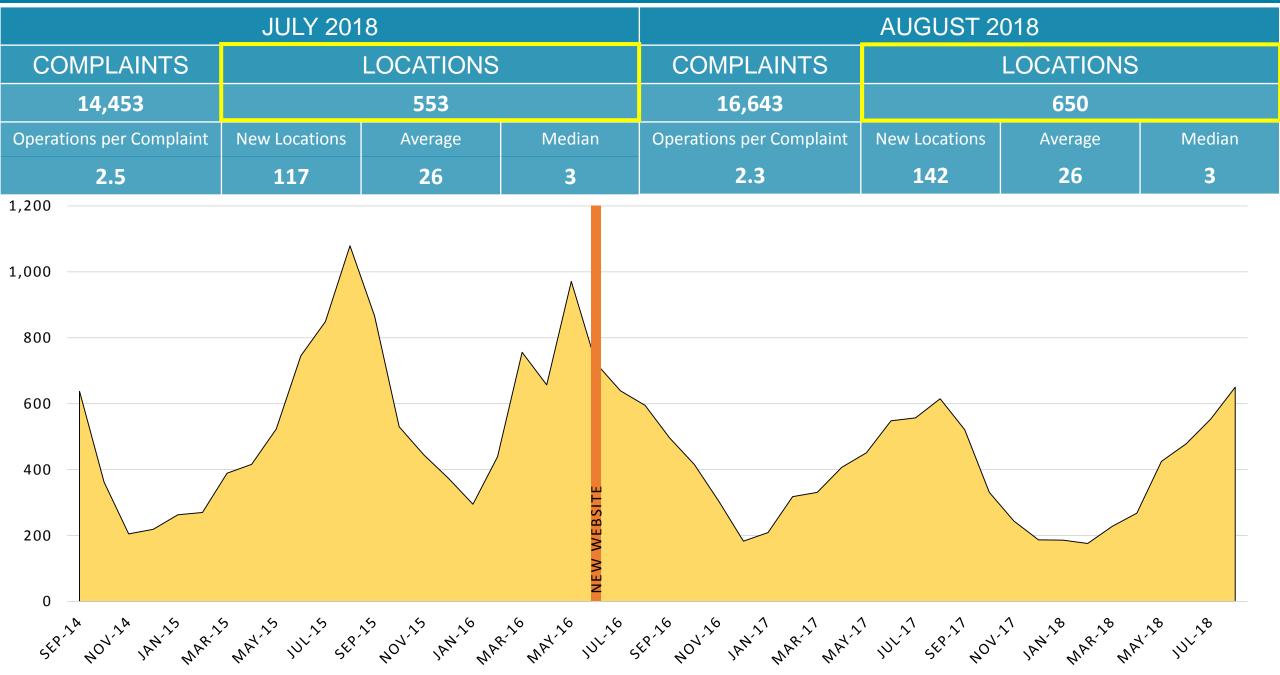
JUL - AUG



MSP COMPLAINTS



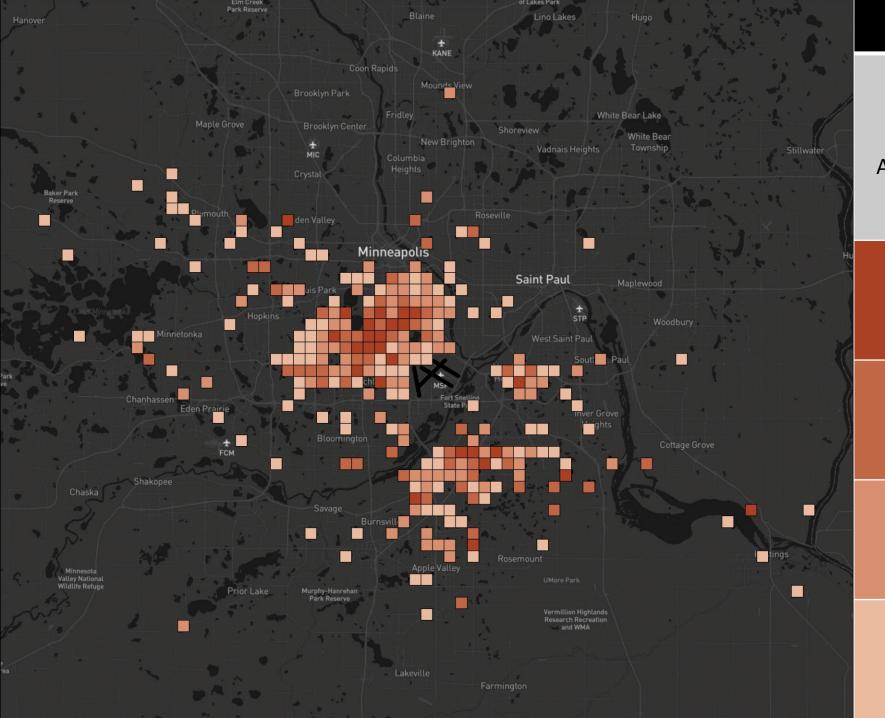
MSP COMPLAINTS



MSP COMPLAINTS

	JULY 201	8			AUGUST 2	018	
COMPLAINTS		LOCATIONS		COMPLAINTS		LOCATIONS	
14,453		553		16,643		650	
Operations per Complaint	New Locations	Average	Median	Operations per Complaint	New Locations	Average	Median
2.5	117	26	3	2.3	142	26	3





TOTAL COMPLAINTS

275AREAS WITH AT LEAST 1 LOCATION

26AREAS WITH MORE THAN 300
COMPLAINTS – 9.5%

51

AREAS BETWEEN 60 AND 300 COMPLAINTS – 18.5%

84

AREAS BETWEEN 8 AND 60 COMPLAINTS - 30.5%

114

AREAS WITH LESS THAN 8 COMPLAINTS- 41.5%



TOP 10 LOCATIONS

FILED

13,876

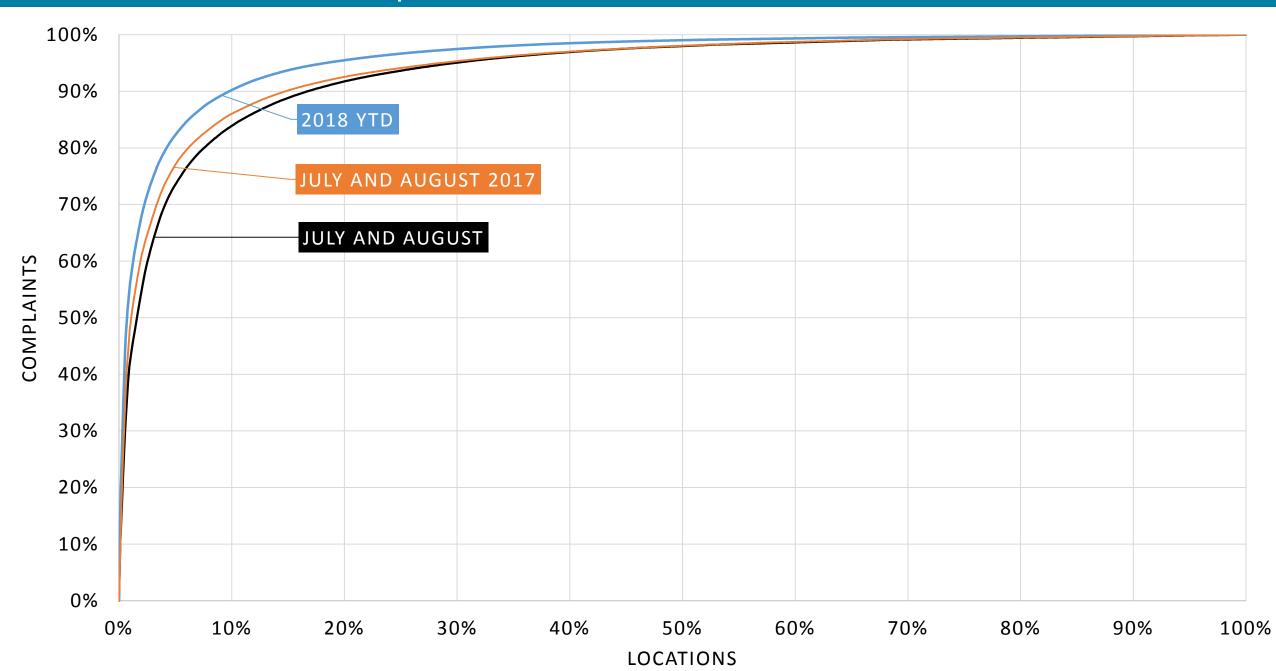
(45%)

COMPLAINTS DURING THE PREVIOUS 2 MONTHS

7 OF 10LOCATIONS WERE IN THE TOP 10
FOR MAY / JUNE DATA

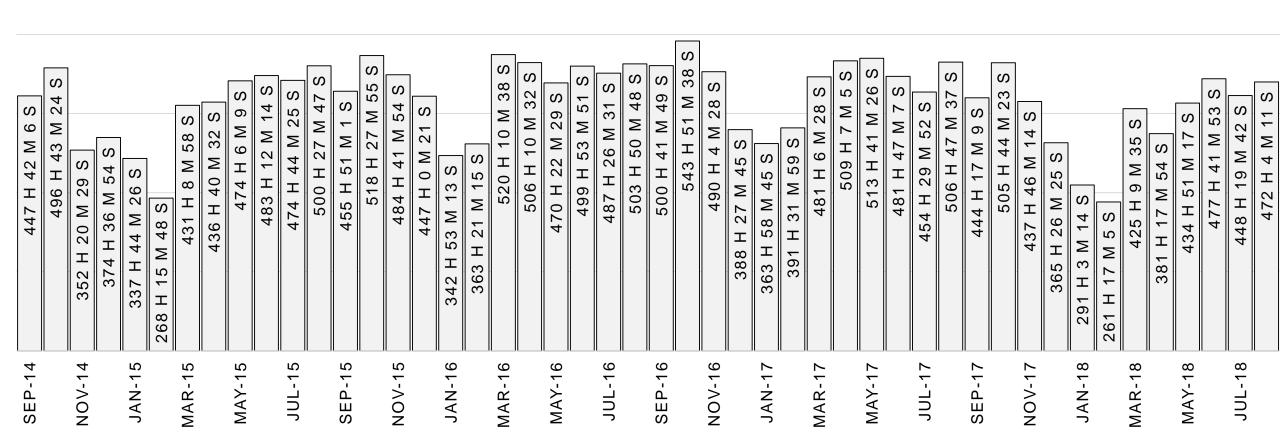
637 (73%) LOCATIONS FILED 10 OR LESS COMPLAINTS

MSP COMPLAINTS – Complaint Contribution



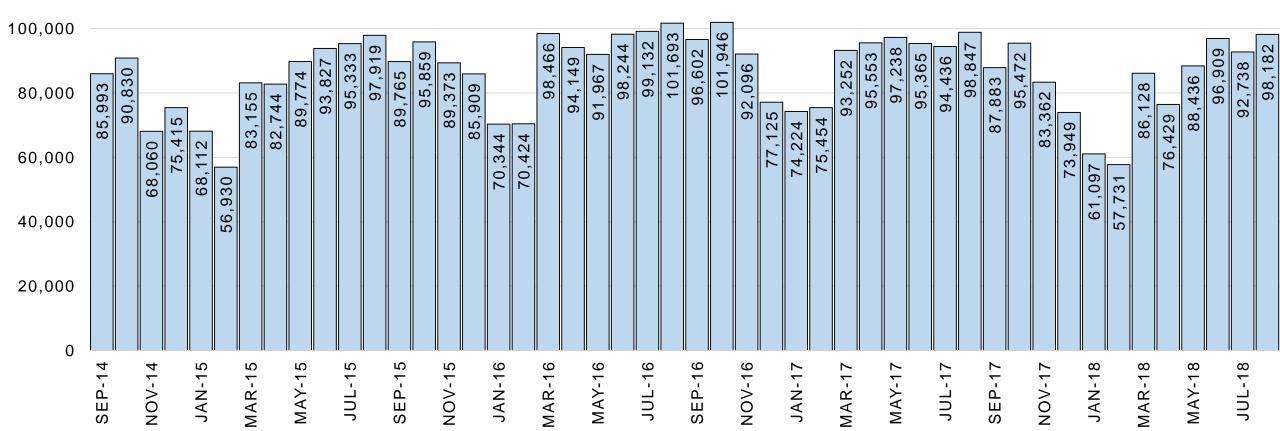
SOUND MONITORING

Time Above		JULY 2018			AUGUST 2018	
Count Above	Time Above			Time Above		
N° per operation N° in per operation in	Count Above	2.52 N ⁶⁵ per operation	92,738 N ⁶⁵	Count Above	2.58 N ⁶⁵ per operation	98,182 N ⁶⁵



SOUND MONITORING

	JULY 2018			AUGUST 2018	
Time Above	44 _s TA ⁶⁵ per operation	448_h 19_m TA ⁶⁵	Time Above	45 _s TA ⁶⁵ per operation	472_h 4_m TA ⁶⁵
Count Above	2.52 N ⁶⁵ per operation	92,738 N ⁶⁵	Count Above	2.58 N ⁶⁵ per operation	98,182 N ⁶⁵
120,000					



NOISE ABATEMENT

JULY 2018

Runway 17	99.7%
Corridor	95.8%
Cross Day	35.7%
ross Night	46.7%

AUGUST 2018



ITEM 3 PUBLIC COMMENT PERIOD

Speaking at a Meeting

- Please complete and submit a speaker card.
- Each speaker will have one opportunity to speak and is allotted three (3) minutes.
- When called upon to speak, speak clearly into the microphone, state your name and address. If you are affiliated with any organization, please state your affiliation.
- Commenters shall address their comments to the NOC and not to the audience.
- · Use of profanity, personal attacks, or threats of violence will not be tolerated.











NOISE OVERSIGHT COMMITTEE SEPTEMBER 19, 2018



Commercial Airplanes

Accelerating Innovation for Community Noise and Emissions Reduction

Doug Christensen

BCA Product Strategy and Future Airplane Development ecoDemonstrator Program Manager

September 19, 2018

Global Aviation Brings Together People, Countries and Cultures

38.2M annual global flights. Every day...

- 9.8 million passengers
- 104,000 flights

Supports 62.7M jobs globally

\$2.7T in global economic impact, 3.5% of global GDP

~ 41,000 new airplanes over next 20 years

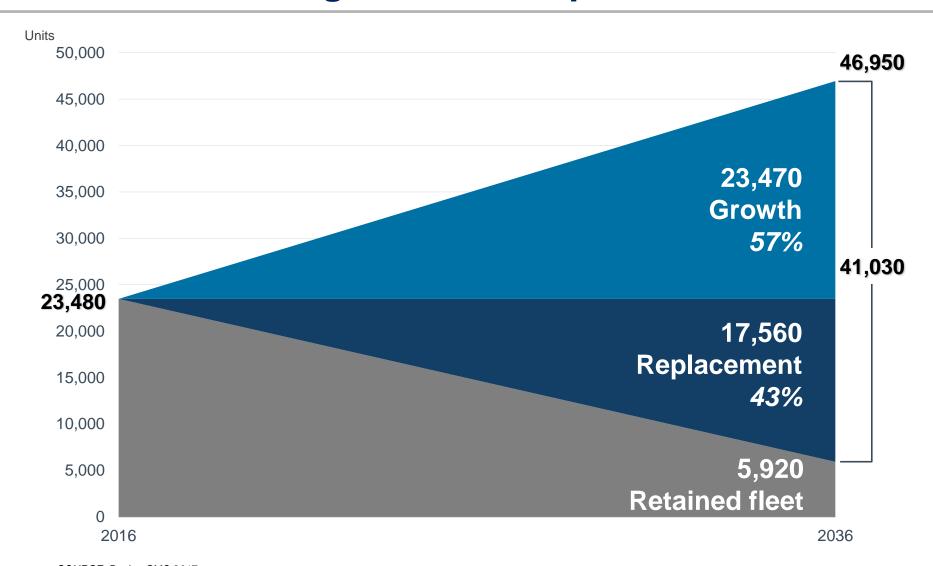






Source: ATAG Aviation Benefits Beyond Borders

Airplanes will be replaced with quieter, more efficient, newer generation airplanes



Most Efficient, Quieter Family of new Airplanes

777X

12% Reduction in fuel and CO₂ Substantially smaller noise footprint **787**

20% Reduction in fuel and CO₂60% Smaller noise footprint



737 MAX

14% Reduction in fuel and CO₂40% Smaller noise footprint

*than the model it replaces

747-8

16% Reduction in fuel and CO₂30% Smaller noise footprint

*than the model it replace

Pioneers on the Frontier of Innovation

Technologies For Quieter and Efficient Airplanes

All Composite Fuselage



Modern High Lift Devices



Chevrons

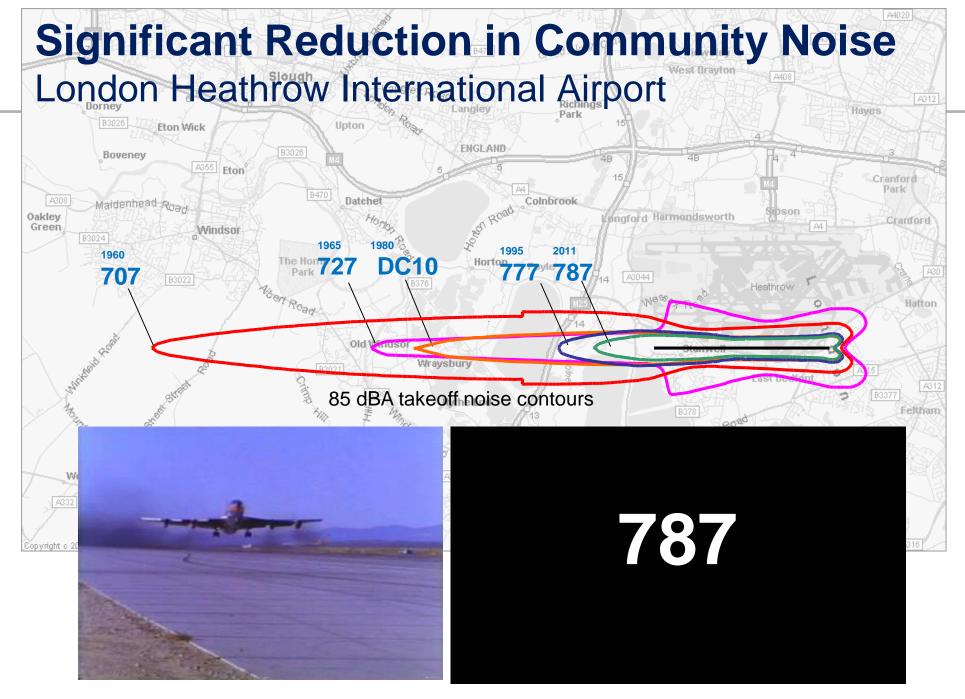


Operational Procedures

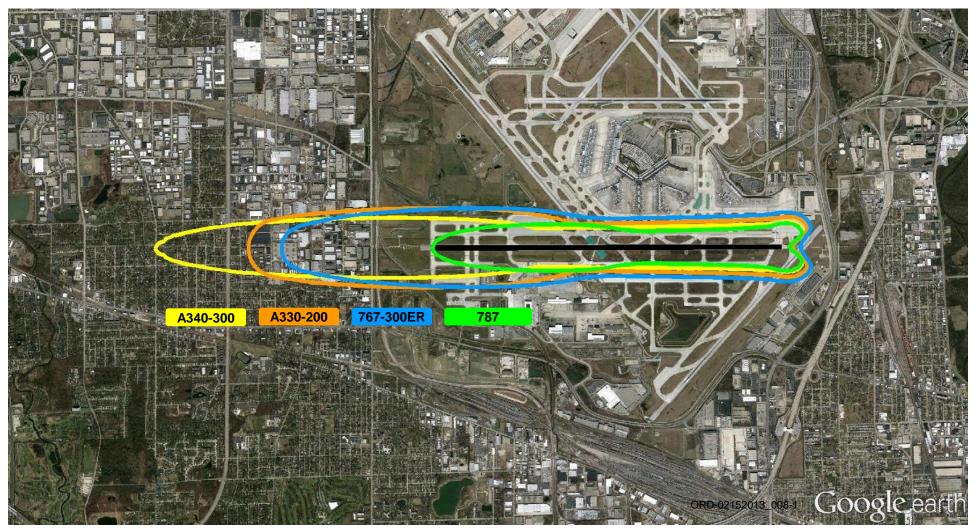


Higher Bypass Ratio Engines





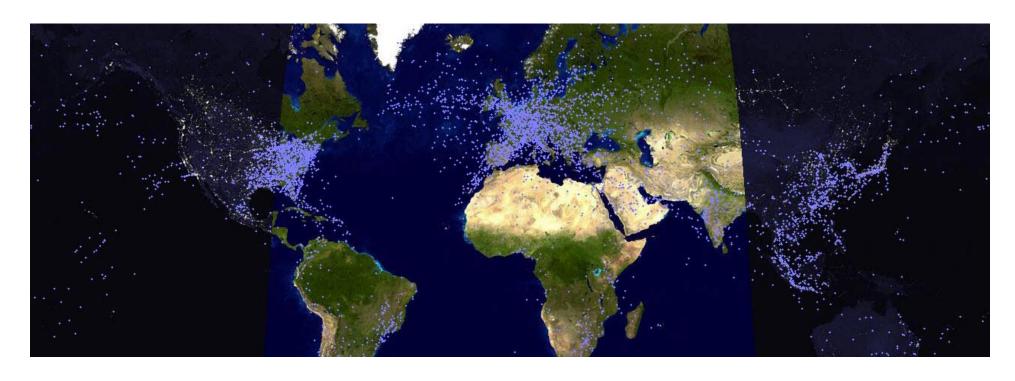
787 is Quieter for Communities Chicago, O'Hare International Airport



- Chicago-O'Hare International Airport RWY 28
- •85-dBA noise contours
- •NADP 1 (ICAO-A)

- Takeoff noise contours
- •6000-nmi mission

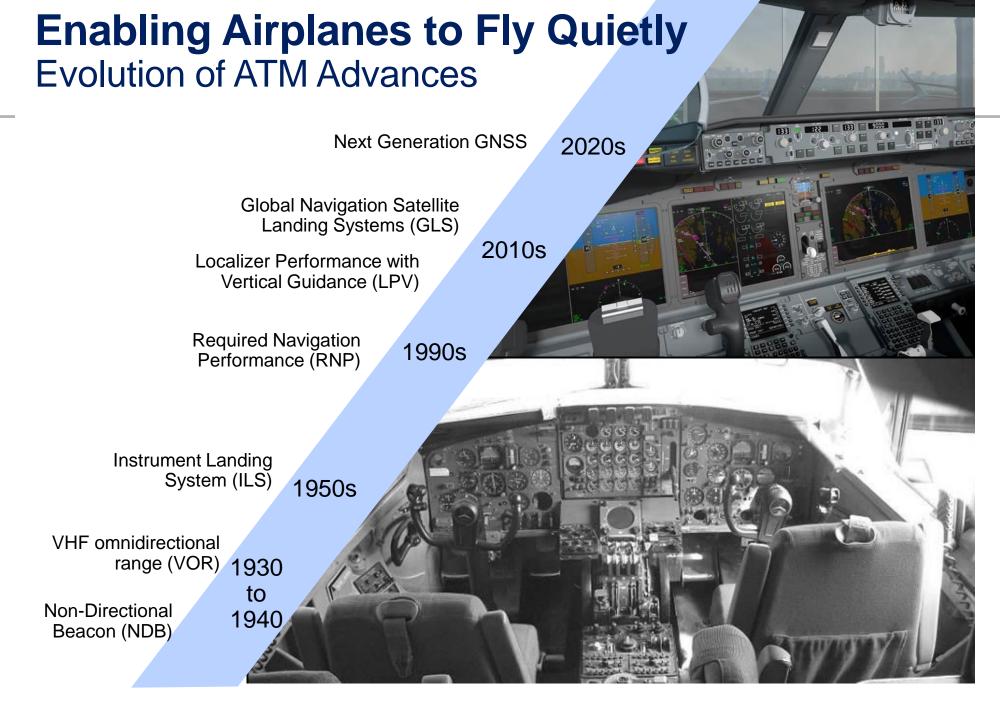
Cleaner, Smarter Airspace Operations



Optimize flight paths to reduce fuel consumption, emissions and noise

Realize the full potential of current airplane capabilities

Less congestion on runways and in landing patterns



Finding Noise and Fixing It Demonstrators Accelerate Technology



Quiet Technology Demonstrator Phased Array





ecoDemonstrator Program

Innovate, Collaborate, Accelerate



Innovate

- Learn by doing, fail fast, discover quickly

Collaborate

- With airlines, government, suppliers, academia and industry

Accelerate

- Speed path to products, services and production

























2012 ecoDemonstrator 737

- Adaptive Trailing Edges
- Variable Area Fan Nozzle
- Low Noise Approaches







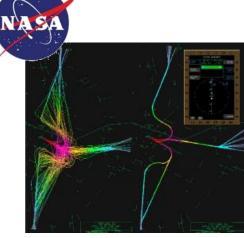


2014 ecoDemonstrator 787

- Ceramic Matrix Composite Nozzle
- MEMS Microphones
- · GLS CAT III
- · Airborne Spacing for Terminal Routes (ASTAR)







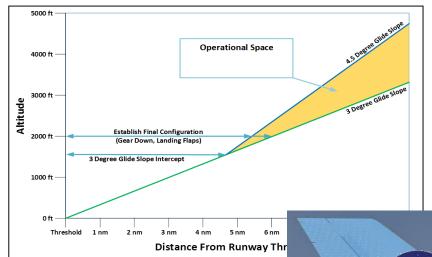


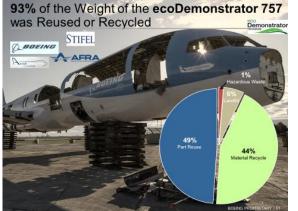
2015 ecoDemonstrator 757

- Sustainable Printed Flight Desk
- Environmental Control System Diffusers
- · 2-Segment Approaches
- · Active Flow Control







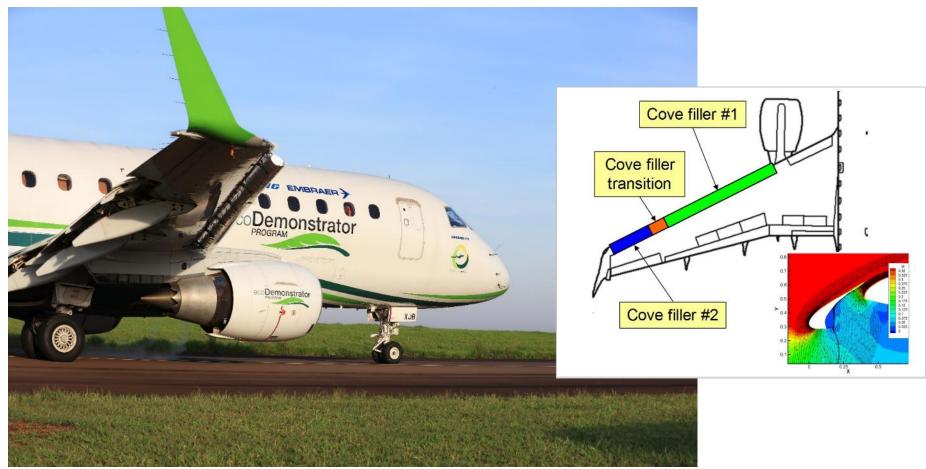




2016 ecoDemonstrator Embraer E170

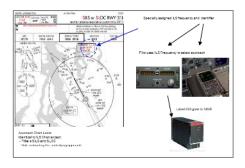
Slat Noise Cove Filler





2018 ecoDemonstrator 777F FedEx





Synthetic Instrument Landing System

- Reduced community noise up to 1.5dB
- Increased airport capacity and efficiency



Airborne Collision Avoidance System (ACAS X)

- Next Gen flexible alerting system
- Supports new airspace procedures
- Significantly fewer unnecessary alerts





100 % Paraffinic Biofuel and HFP-HEFA Biofuel Blend

- ~ 3 to 4% lower fuel consumption
- Lower smoke emissions
- Potential 50 to 80% reduction in life-cycle GHG emissions
- Better airplane operability

Technologies to Improve Community Noise / Emissions

Demonstrator Program *What's Next*

2012



2013 / 2014



2015



2016



2018 2019 2020 20xx



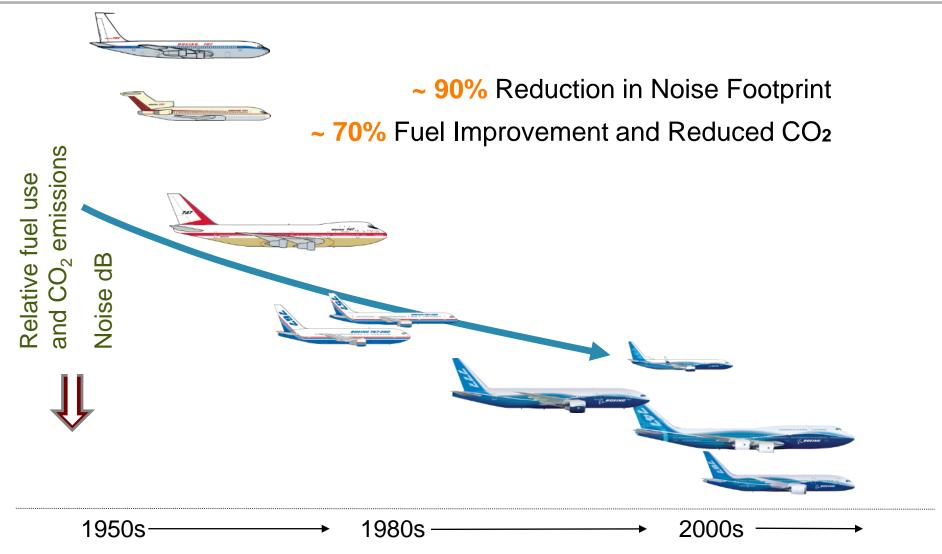
777F FedEx



TBD

Aviation Working Together

A Strong Track Record



Fuel Efficiency /CO2 emissions based on 1500 N Mi Trip, 2-class seating Noise footprint based on 85 dBa.

Sustainable Solutions

Collaboration Is Key



Creating a Better Future Together











Brian Ryks, Chief Executive Officer Metropolitan Airports Commission



Metropolitan Airports Commission



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 St. Paul Ikram Koliso



Outstate St. Cloud Patti Gartland



Outstate Duluth Donald Monaco



Outstate Thief River Falls Dixie Hoard



Outstate Rochester Randy Schubring



Legislated Purpose





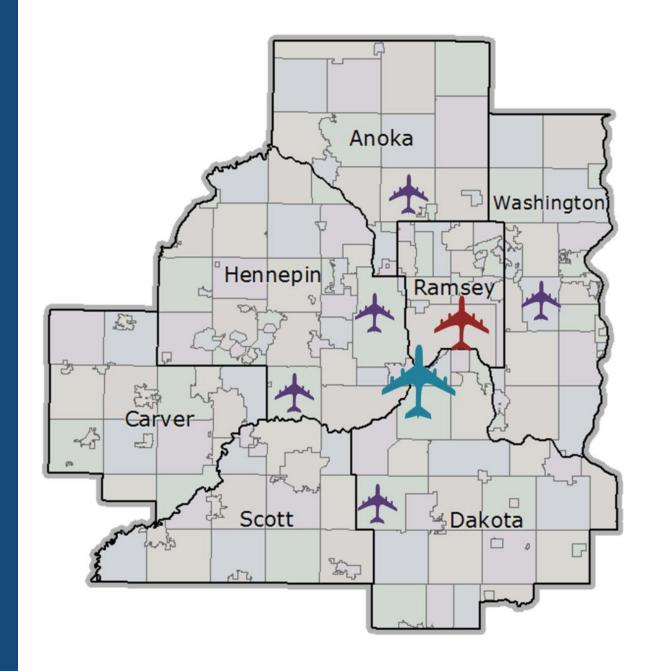
- Promote efficient, safe and economical air commerce
- Develop the full potentialities of the metropolitan area as an aviation center
- Minimize the environmental impact from air transportation and the public's exposure to noise and safety hazards around airports





The MAC Airport System

The MAC owns and operates seven airports, providing convenient access to air transportation for all parts of the Twin Cities metropolitan area.







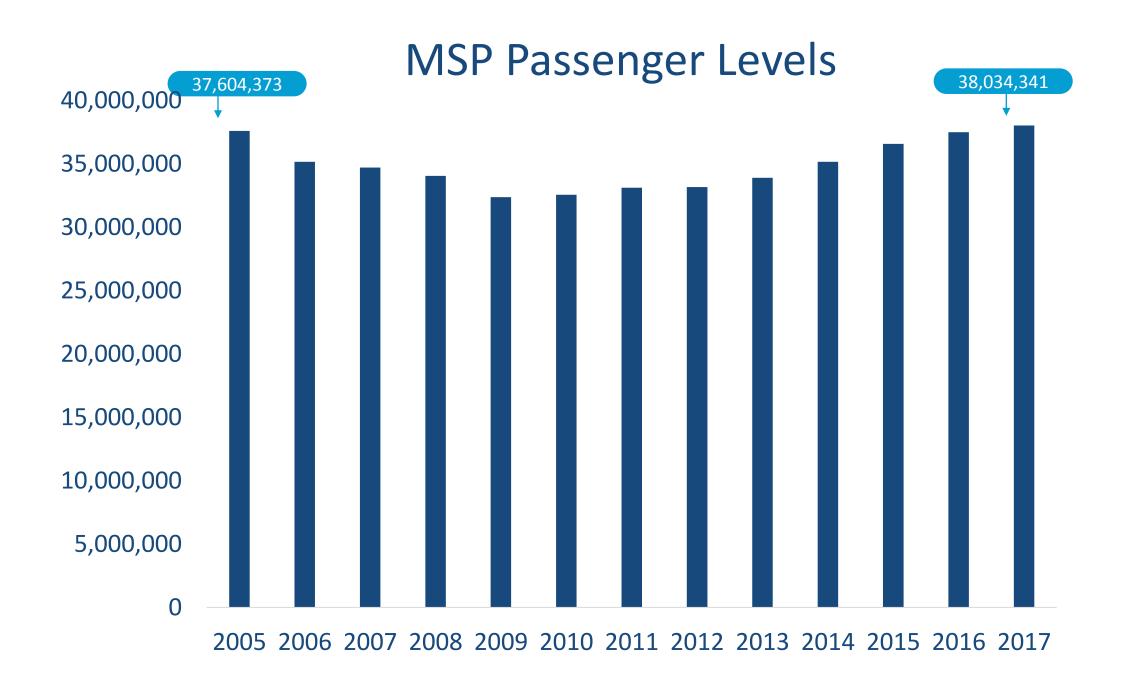
- 600-person staff
- Operates much like a city, with its own:
 - Police
 - Fire
 - 9-1-1 dispatch
 - Building inspection
 - Planning
 - Maintenance Department



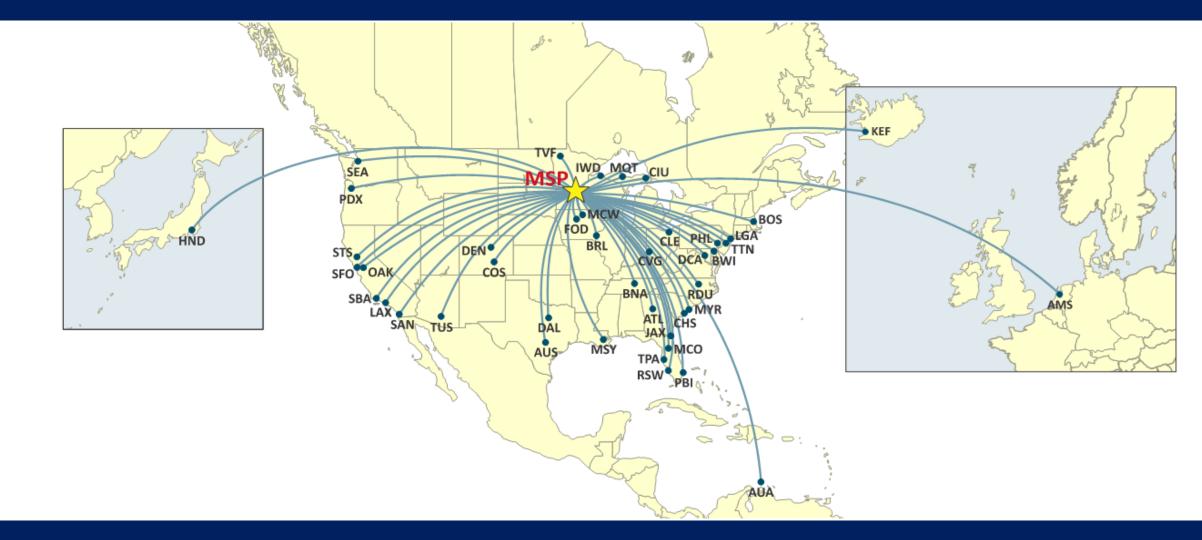




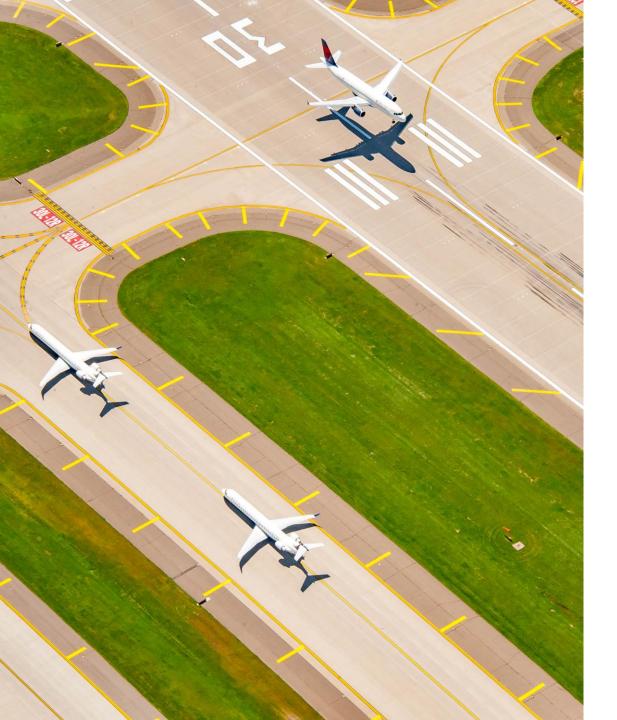
Minneapolis – St. Paul International Airport



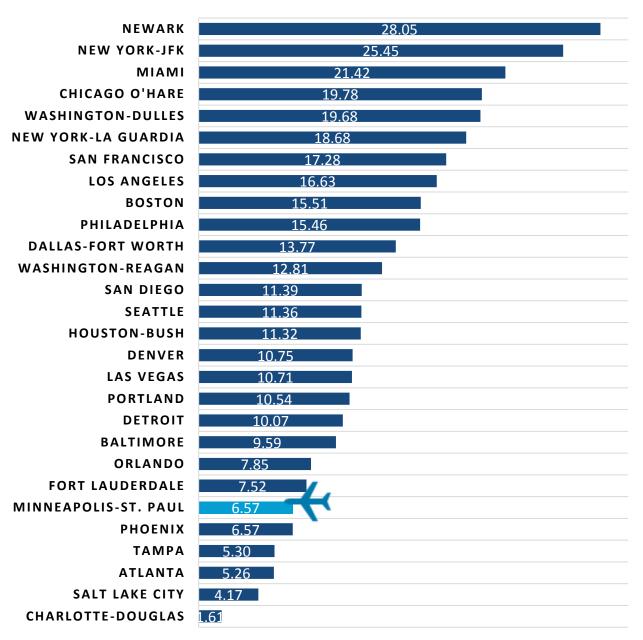
Air Service Added in 2016-2018



Eleven airlines added a total of 50 additional routes from MSP since 2016. MSP now enjoys competitive air service on 58 of its total 164 direct routes.

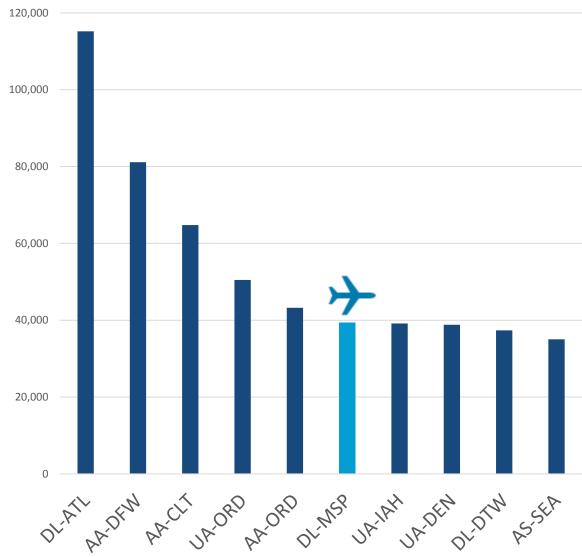


2018 Airline Cost Per Enplaned Passenger (\$)



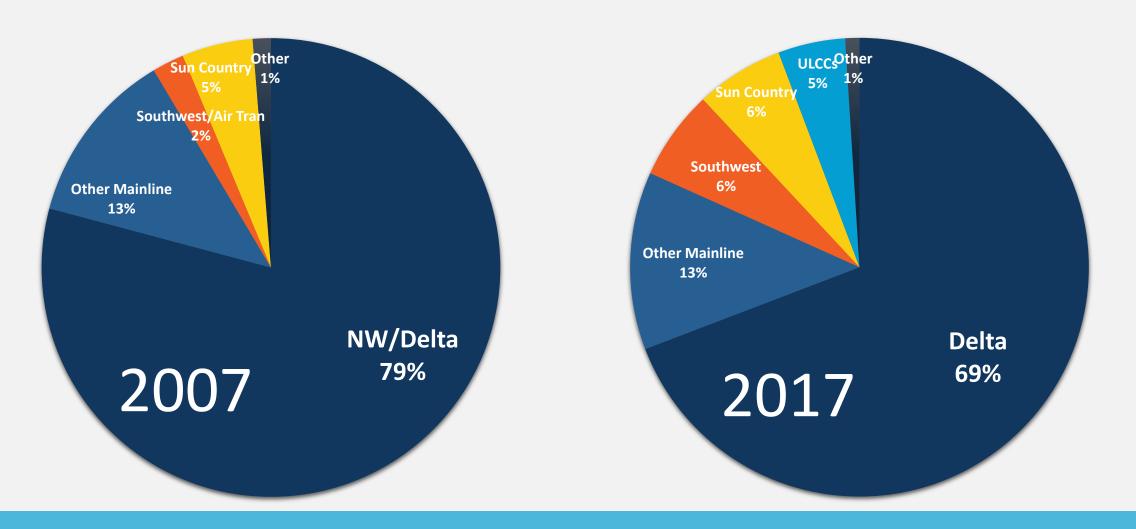
Top 2017 U.S. Hubs by Daily Domestic Seats





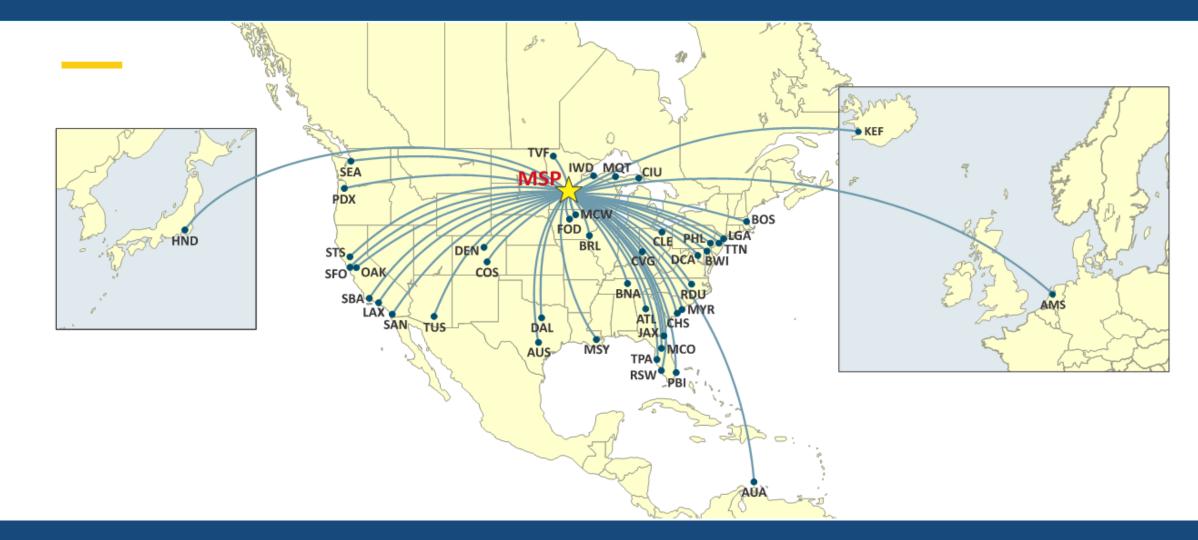
Source: InterVISTAS

MSP Domestic Seats by Carrier



Recent growth at MSP has come from low-cost and ultra low-cost carriers.

Air Service Added in 2016-2018

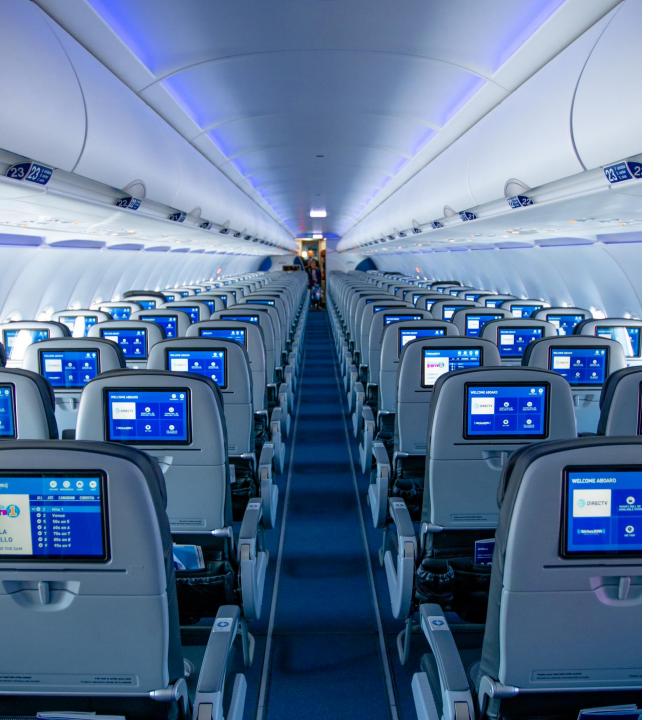


Eleven airlines added a total of 50 additional routes from MSP since 2016. MSP now enjoys competitive air service on 58 of its total 164 direct routes.



- Recently announced new non-stop flights to Nashville, New Orleans, Santa Barbara, Belize, and St. Kitts & Nevis
- Investing \$20 million for new aircraft interiors to provide more comfort and convenience
- Procuring technology for more selfservice options and reduced wait times for agents and customer service



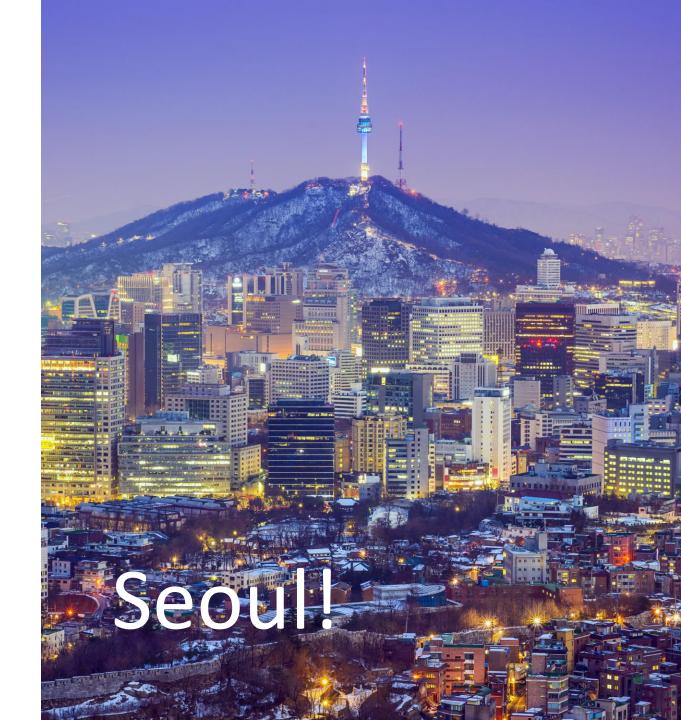


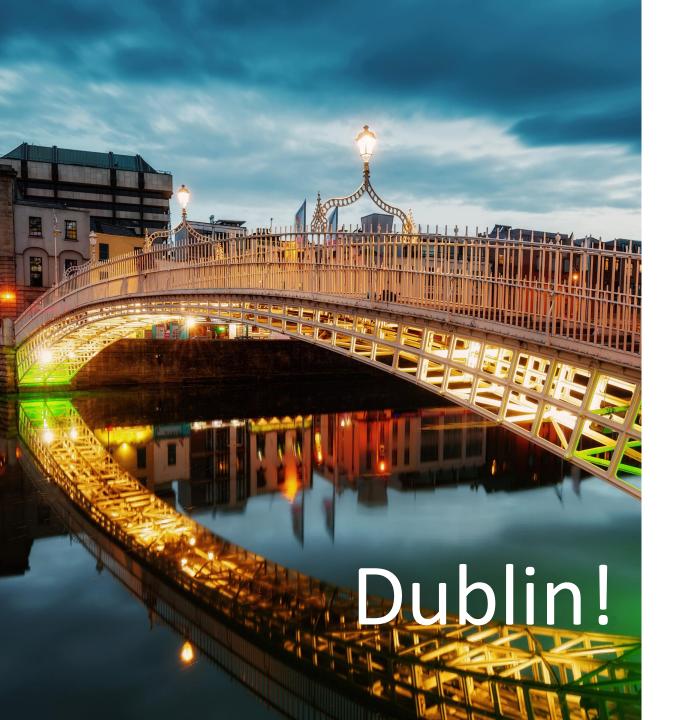
jetBlue

- Three-times daily service to Boston on an A320
- 10th most popular destination from MSP, with 700 people a day flying the route
- From Boston, travelers have access to about 20 additional East Coast destinations



- First ever direct service from MSP to Seoul, South Korea begins April 1, 2019
- Through Delta's joint venture with Korean Air, travelers can connect to 80+ destinations in Asia
- Flights will occur on Boeing 777 aircraft with all new cabins







- Aer Lingus launching non-stop service effective July 8, 2019
- Daily service on Boeing 757 aircraft
- From Dublin, passengers can connect to 30+ cities in Europe

MSP Air Carriers







Air Choice One





American Airlines

COBOUTIQUE AIR



DELTA



Condor FRONTIER





































accenture



























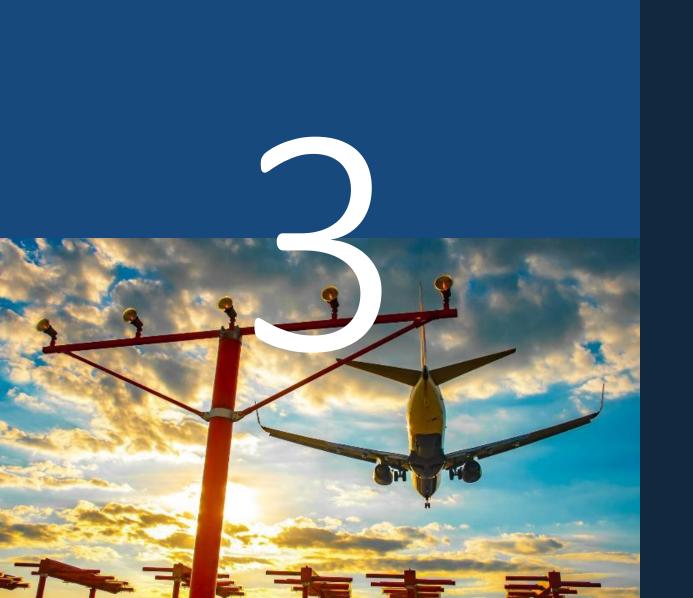










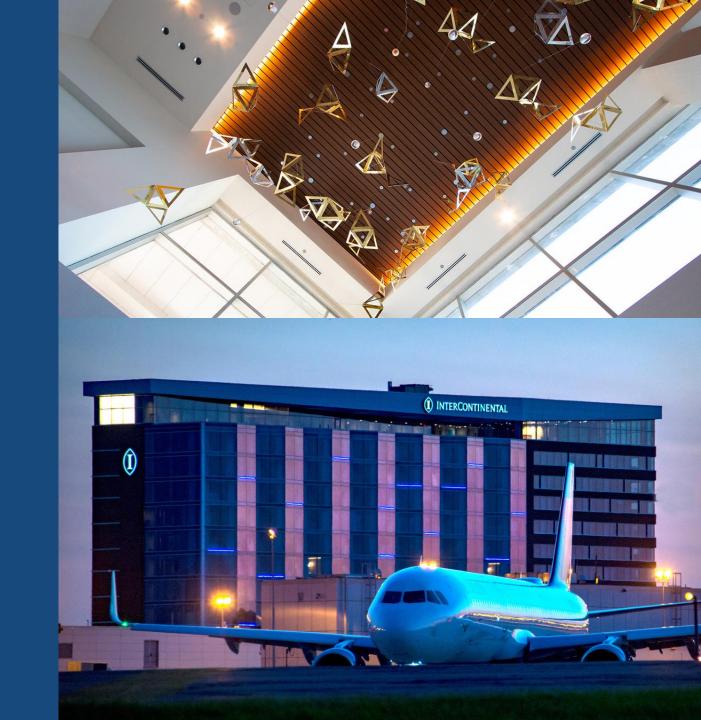


MSP Reimagined



Recent Improvements

- InterContinental Hotel opened
 July 30
- Developed and managed by Graves Hospitality
- Connects directly to Terminal 1 via skyway
- 30,000 square feet of meeting and event space will help attract more conferences to Minnesota







Local Favorites Featured in New 30-Restaurant Rollout













STEAK HOUSE · COCKTAILS









Preparing for the Future



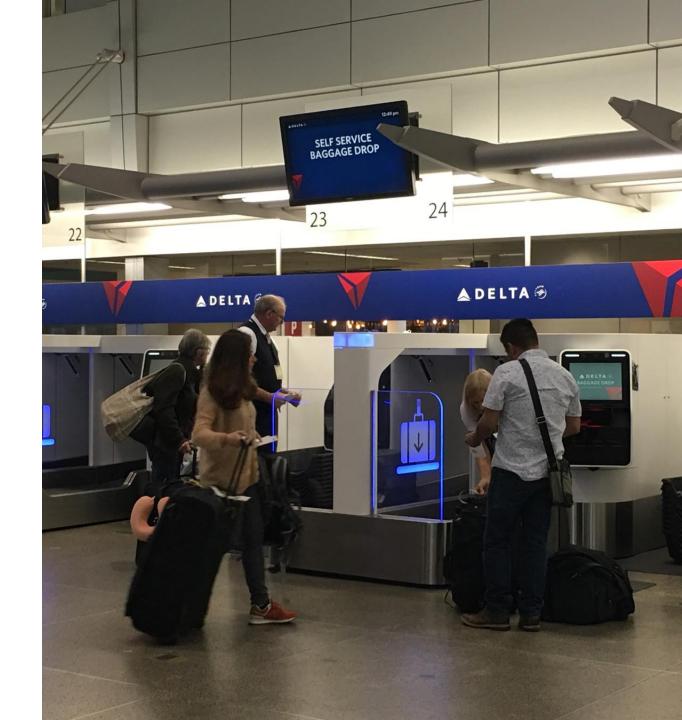
Improved Flow Between Levels of Terminal 1

- Adding 16 feet to provide more space for airline check-in, security and bag claim functions
- Elevators and escalators linearly aligned to provide more efficient movement
- Improved sightlines and daylighting
- Centrally located services: food, retail, information desks and restrooms



Ticketing Lobby of the Future

- Partnering with American, Delta and United to test automated bag check technologies
- Exploring technologies that speed processing and provide a seamless journey for travelers







Silver Parking Ramp

Construction of 5,000-space ramp with improved auto rental facilities on schedule for 2020 completion.







Recognizing Excellence

"Best Airport in North America"

25-40 Million Passenger Category



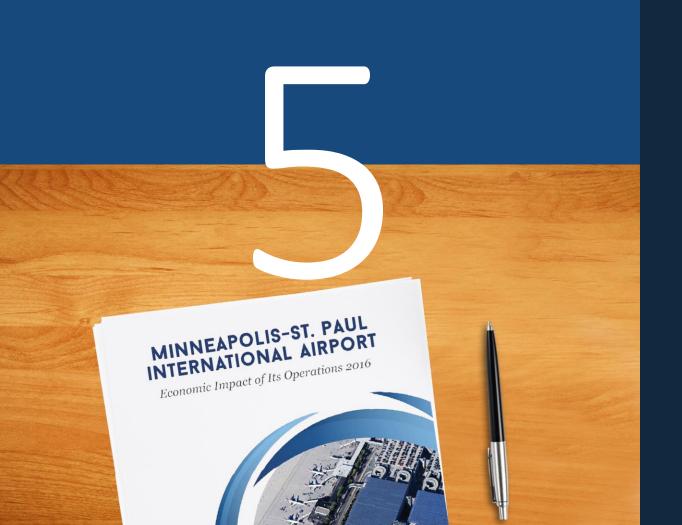




Most Efficient Airport in North America

Air Transport Research Society





Economic Impacts

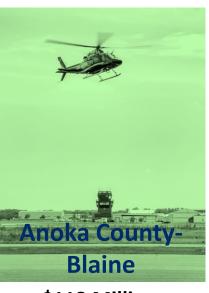




Total Economic Output by Reliever Airport







\$118 Million



\$71 Million



\$229 Million



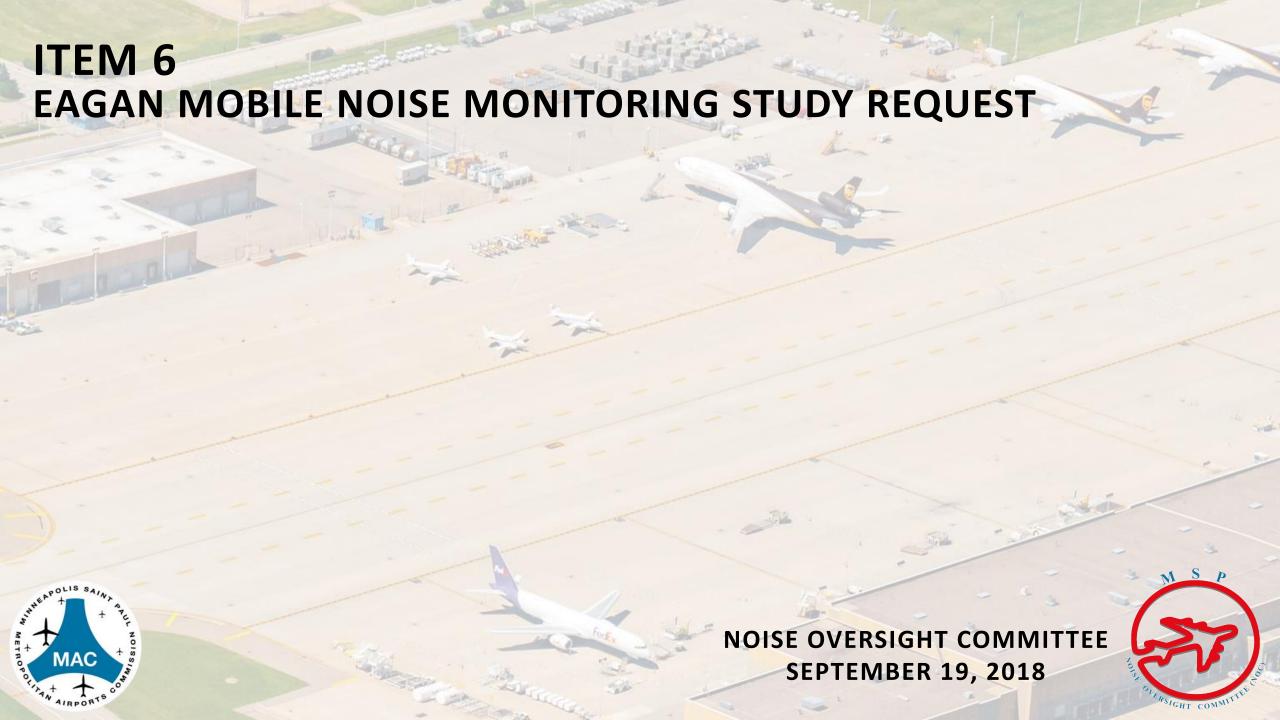
\$12.8 Million



\$312 Million

The MAC's six reliever airports contribute a combined \$756 million in total economic output and support more than 3,600 jobs.

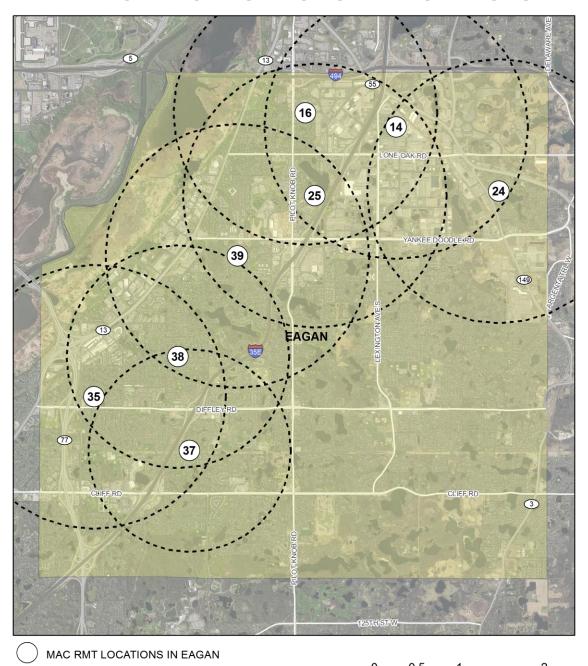




- Request was received from a current NOC Representative
- The goal of the mobile noise monitoring is well-defined:
 - 1. Determine if gaps in the RMT coverage area currently exist in the City of Eagan.
 - 2. Determine if two of the RMT closest to Interstate 35-E are properly located to best monitor aircraft noise given the ambient freeway noise.
- The goal of the mobile noise monitoring is realistically achievable
- Mobile noise monitoring will benefit a large section of the community that is suffering the effects of unusual aircraft noise
- Current noise monitoring data being collected are inadequate for the requested analysis

NOISE OVERSIGHT COMMITTEE SEPTEMBER 19, 2018

MAC REMOTE MONITORING TOWER LOCATIONS



RMT BUFFER

Item 7: Eagan Mobile Noise Monitoring Study Request

REQUESTED ACTION

IT IS REQUESTED THAT THE NOC MEMBERS VOTE ON THE MOBILE NOISE MONITORING REQUEST, AND IF APPROVED, DIRECT MAC STAFF TO WORK WITH THE CITY OF EAGAN AND THE EAGAN AIRPORT RELATIONS COMMISSION TO DETERMINE THE MONITORING SET-UP, DURATION AND REPORTING.





Item 6: Review of the Eagan Listening Session

On August 27, 40 residents attended a Listening Session at the Eagan Community Center.

The majority of the attendees were from Eagan.

The meeting was also attended by representatives from FAA air traffic and Great Lakes Region staff, Eagan Councilmembers and staff, Eagan Airport Relations Commissioners (ARC), NOC members, and Minnesota congressional representatives.

City Councilmember, Gary Hansen opened the meeting then MAC staff, along with FAA and Delta representatives presented responses to questions submitted by the Eagan ARC. Slides are available at:

www.macnoise.com/sites/www.macenvironment .org/files/pdf/eagan_Listening%20Session_2018 0827.pdf

The audience Q&A focused on operations related to Runway 17/35.



Item 6: Review of the Eagan Listening Session



Memorandum

Date: September 13, 2018

To: Minneapolis Tower Employees

From: Joseph R. Winingar, Air Traffic Manager, Minneapolis Tower

Subject: Noise Abatement Procedures during Midnight Operations

Due to an uptick in noise complaints in the surrounding area during midnight operations, I want to reiterate the Standard Operating Procedure (SOP):

During quiet hours (2230 until 0600 local), maximize the use of the Mendota Heights/Eagan corridor as much as feasible by departing Runways 12L and 12R, and landing Runways 30L and 30R. When either of the parallel runways are available, assign Runway 17 for departure only if the pilot indicates it is required for operational necessity.

Additionally, during these hours and under non-simultaneous departure conditions, aircraft departing Runway 12R should be assigned a heading to maintain an approximate ground track of 105-degrees and aircraft departing Runway 12L should be assigned a 120-degree, straight-out heading.

I want to stress that just because a pilot request to deviate from this procedure does not mean you should automatically approve the request. There must be an operational necessity stated if you are deviating from the SOP.

Effective immediately we will be starting audits on aircraft that deviate from this SOP.

If you have any questions regarding this, please free to reach out to me.

NOISE OVERSIGHT COMMITTEE SEPTEMBER 19, 2018



ITEM 8 REVIEW FINAL MSP NOISE MANAGEMENT BENCHMARKING STUDY REPORT



NOISE OVERSIGHT COMMITTEE SEPTEMBER 19, 2018



Item 8: Review Final MSP Noise Management Benchmarking Study Report



FULL REPORT

www.macnoise.com/sites/www.macenvironment. org/files/pdf/Benchmarking Final Report 9.4.18. pdf

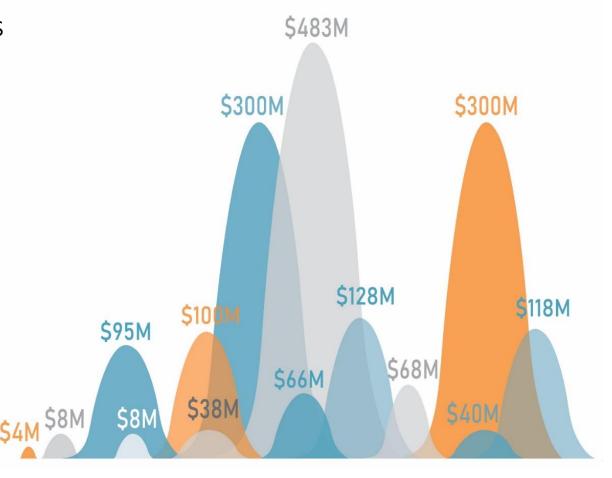
CONTENTS

- 1 Airport Noise Background
- 2 Overview of Noise Management Categories
- 3 Benchmarking Study Methodology and Results
- 4 Conclusion and Findings



Item 8: Review Final MSP Noise Management Benchmarking Study Report

- Additional analysis comparing the reported cost of residential noise mitigation programs with publicly accessible population data.
- Results of the additional analysis do not show a strong correlation between program cost and population surrounding airports.
- MSP reported the highest program cost but has the 7th largest population within a 1 mile radius of the airport, the 6th largest population within 3 miles of the airport, and the 3rd largest population within 5 miles of the airport.







ESTABLISHED OR STATED GOALS - EXAMPLES

Standing Noise Committee/ Roundtable goals aligned more closely with creating and following defined work plans, mission statements, or committee charters.

Goals listed by respondents include:

- 1. Limiting and reducing the impact of aircraft noise related to the airport.
- Increasing the community's understanding of aviation noise.
- 3. Finding practical solutions and recommendations for the FAA to consider when determining aircraft operating procedures at the airport.
- 4. Consider present and future aircraft noise impacts arising from operations at the airport.
- 5. Explore, consider and recommend programs and practices that may be helpful in reducing or mitigating aircraft noise impacts.



BEST PRACTICES FOR AIRPORT NOISE OFFICES

- TRANSPARENCY
- > Reporting
- Interactive and up-to-date noise website
- > Informing community
- > Share data

COLLABORATION

- RESPONSIVENESS
- Responding to noise complaints
- Engaging with community
- > Open dialogue
- → Technology
- → Partner with stakeholders
- → Look ahead
- → Plan



STUDY FINDINGS AND CONSIDERATIONS

Considerations included in the Benchmarking Study include:

- 1. Take noise complaints from non-residential addresses;
- 2. Live streak NOC meetings;
- 3. Provide real-time alerting to the FAA for established noise abatement procedures to increase compliance and awareness.



ITEM 9 **DRAFT 2019 WORK PLAN**



Item 10: Draft 2019 NOC Work Plan



- 1. Review Residential Noise Mitigation Program
- 2. MSP Noise Program Specific Efforts
 - a) 2018 Actual Noise Contour Report and First Amendment to the Consent Decree Noise Mitigation Program Eligibility
 - b) Improve MACNOMS for a better user experience
 - c) MSP Fleet Mix and Nighttime Operations Assessment
 - d) Status of FAA Center of Excellence/ASCENT, TRB and FICAN Research Initiatives
 - e) Update on Converging Runway Operations at MSP
 - f) Update on the MSP Long Term Comprehensive Plan Update and Associated Stakeholder Engagement

- g) Update on the FAA's Survey to Re-Evaluate Noise Measurement Methods
- h) Evaluate the Noise Management Benchmarking Study findings and discuss considerations
- 3. Continue to Review Input Received from Public Input Meetings as Possible Agenda Items



ITEM 10 ANNOUNCEMENTS

Fall Listening Session

Wednesday, October 24, 2018 @ 7:00 PM

MAC General Offices

Lindbergh Conference Room

Next NOC Meeting

Wednesday, November 28, 2018 @ 6:30 PM

MAC General Offices

Lindbergh Conference Room





