

MSP Airport Long-Term Comprehensive Plan – A 20-Year Look Ahead



Neil Ralston, MAC Airport Planner
Dana Nelson, MAC Stakeholder Engagement
October 2, 2019

Presentation Overview

MSP Airport Long-Term Plan Introduction

Stakeholder Engagement Program

Planning Process Update:

- **Aviation Activity Forecasts**
- **Airfield Capacity Study Update**



1



MSP Airport Long-Term Plan Introduction

Long-Term Plan Overview



The Plan is:

A forward-looking planning tool that studies facility and infrastructure needs based on projected 20-year demand levels.

It will focus on evaluating when facility improvements are needed to accommodate projected demand in a manner that is safe, efficient, orderly and cost-effective.

The Plan does not:

Authorize construction or improvements to facilities, nor does it serve as a basis for determining eligibility for noise mitigation programs.

Long-Term Plan Goals



1. Plan for future facilities that will meet projected passenger activity levels in a manner that maintains and enhances customer service, while facilitating a seamless experience.
2. Produce a development plan that positions the MAC to
 - meet future demand levels,
 - enhance financial strength,
 - leverage environmental stewardship, and
 - infuse sustainable thinking.
3. Conduct the planning process in a manner that includes meaningful stakeholder engagement processes.

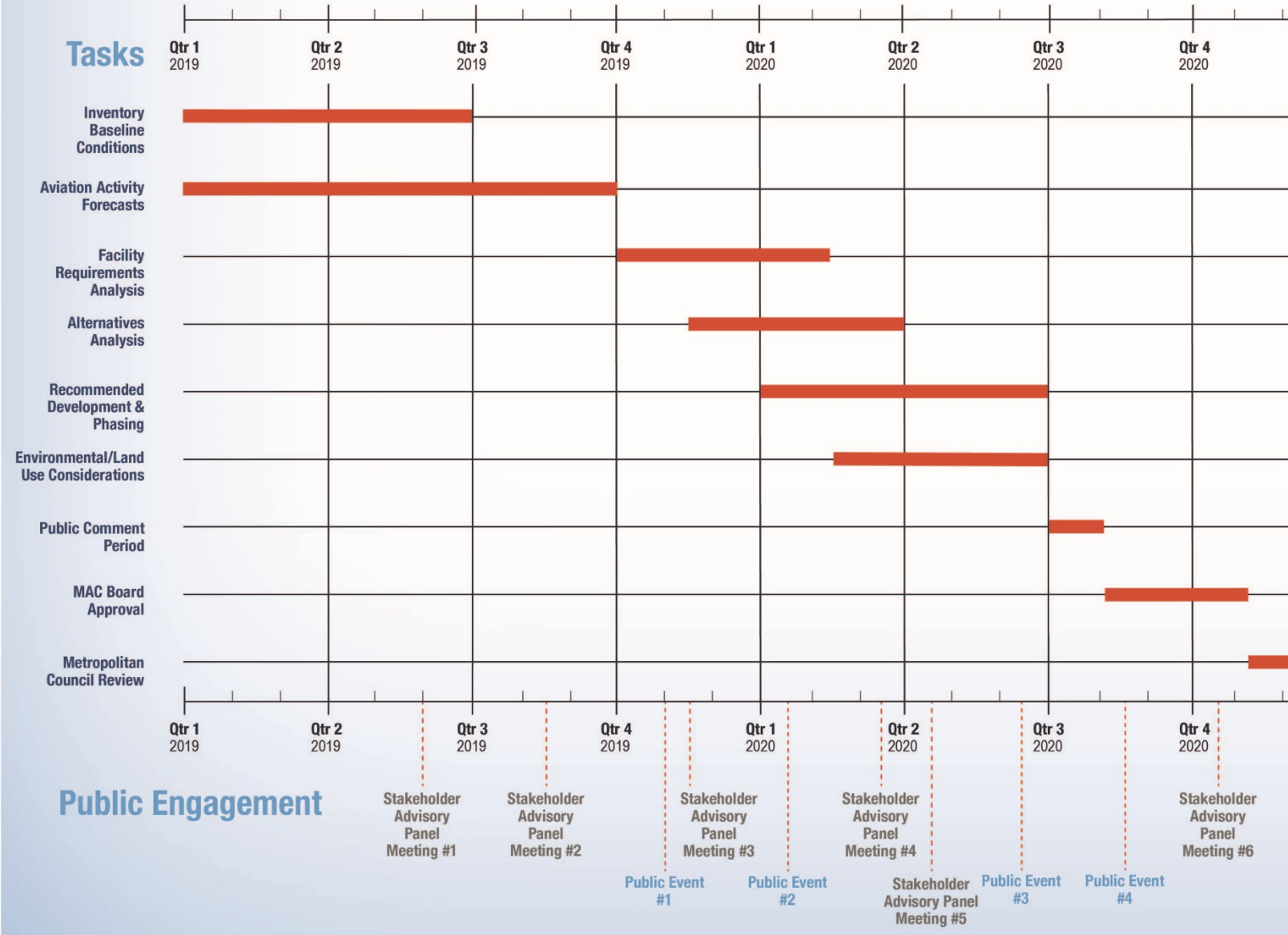
Planning Process

Baseline Existing Facilities	Inventory and document existing facilities and aviation activity levels to establish baseline conditions
Forecasts	Forecast MSP aviation activity levels (passengers, cargo, and aircraft operations) for the milestone years between 2020 and 2040
Facility Requirements (Gap Analysis)	Determine any facility deficiency gaps between the baseline condition and desired future conditions based on forecasted activity levels
Development Concepts	Develop and evaluate alternative means to remedy facility deficiencies identified through the process
Proposed Development	Determine a proposed development program, funding plan, and implementation strategy to present to the community and the MAC board
Environmental Considerations	Prepare an overview of factors that should be considered when determining the appropriate level of environmental review needed to implement the plan

MSP Airport Long-Term Plan

Initial Timeline + Stakeholder Engagement

We are here





2

Stakeholder Engagement Program

Stakeholder Engagement Program Objectives

Fulfill the MAC's legislative purpose

- Promote air navigation in and through the State.
- Promote the efficient, safe and economical handling of air commerce.
- Assure minimum environmental impact from air navigation.

Conduct responsible and transparent planning for future airport facilities with engagement designed to build trust and establish a shared understanding of airport, traveler, and community needs.

Support and document a thorough and effective public involvement process.



MSP Long-Term Plan Stakeholder Engagement Program

- Stakeholder Advisory Panel
- Experience MSP Public Event Series
- Project Website (mspairport.com/long-term-plan)
- E-News Monthly Project Updates
- Online Public Polling through Polco
- Project Newsletters
- Print Notifications for Public Events
- Updates at NOC and MAC's PD&E Committee

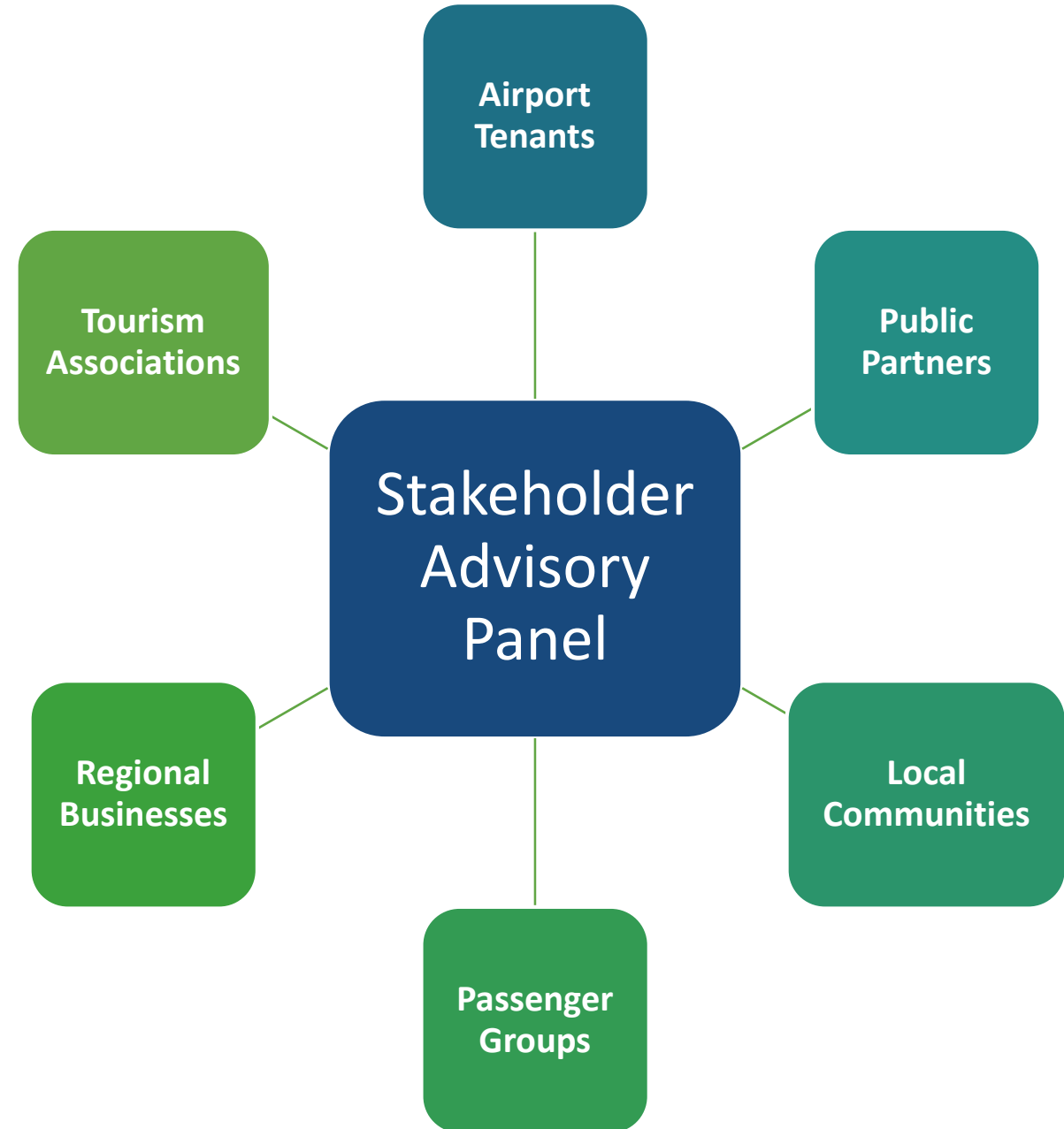


MSP Long-Term Plan Stakeholder Advisory Panel

An advisory board representing major stakeholder groups that have an interest in the planning process.

The Panel serves **several important functions**:

- Representing a broad range of stakeholder groups;
- Receiving information about the planning process;
- Communicating public concerns and aspirations as the voice of key stakeholders.



Project Website

[mspairport.com/
long-term-plan](https://mspairport.com/long-term-plan)

Overview

Community and Stakeholder Engagement

Progress and Schedule

Documents and Links

Frequently Asked Questions

Contact Us

Sign up to receive updates on the project



Questions or Comments about the MSP Long-Term Plan?



- Contact us via email at MSPAirportLongTermPlan@mspmac.org
- Visit the project website at www.mspairport.com/long-term-plan
- Receive regular updates by [signing up](#) for our e-newsletter

What the MAC will do with input

The Project Team will listen to concerns, input and aspirations and, when possible, make changes

The Plan may not incorporate all input provided by the public

Things to balance include:

- Maintaining a high level of service
- Achieving the established goals of the Plan
- Conforming to design standards
- Safety
- Operational feasibility
- Federal and state policies
- Project costs





Planning Process Update

Aviation Activity Forecasts

Objective: develop aviation forecasts for MSP that identify a likely range of demand levels in a manner that will facilitate a meaningful evaluation of facility performance

Forecasts will:

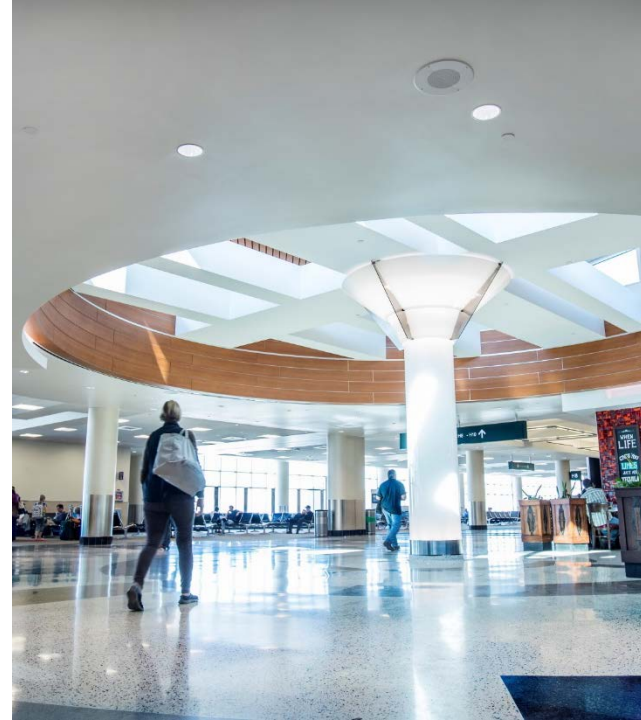
Have enough detail to inform future development to meet demand level

Provide a reasonable range of forecast outcomes to promote operational efficiency and flexibility

Engage stakeholders to provide insights into forecast development



Forecast Elements (2018 – 2040)



Passengers

Cargo Activity

Aircraft Operations



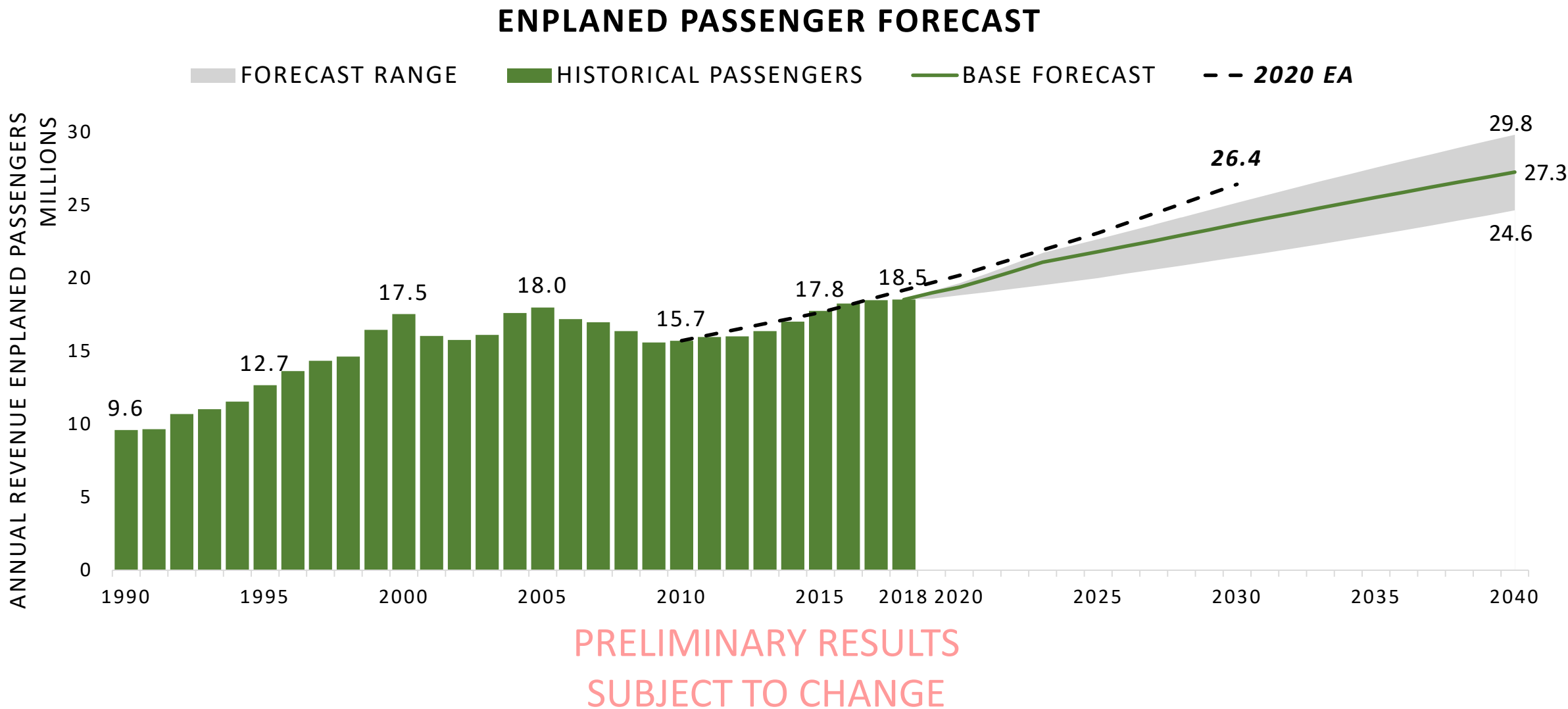
Forecast Scenarios

Baseline

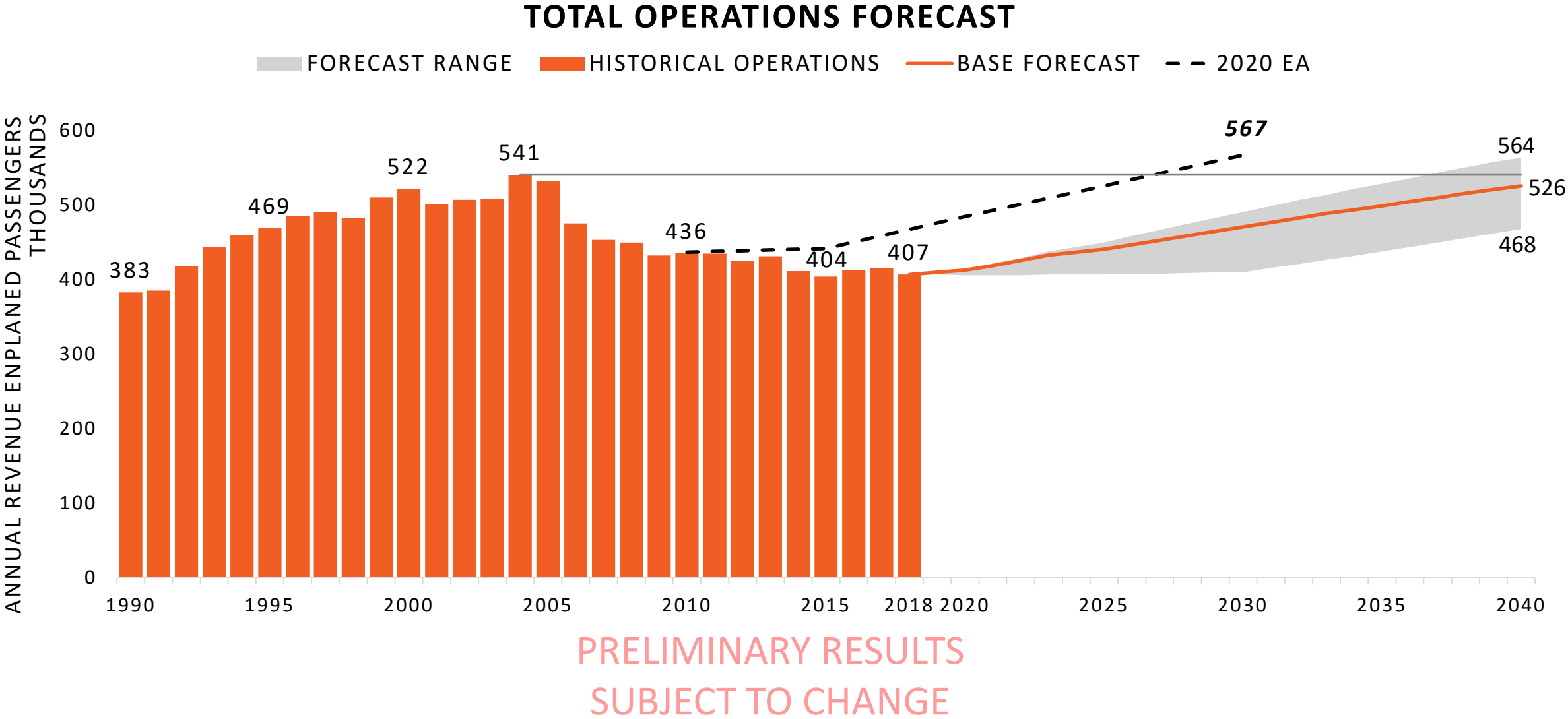
High

Low

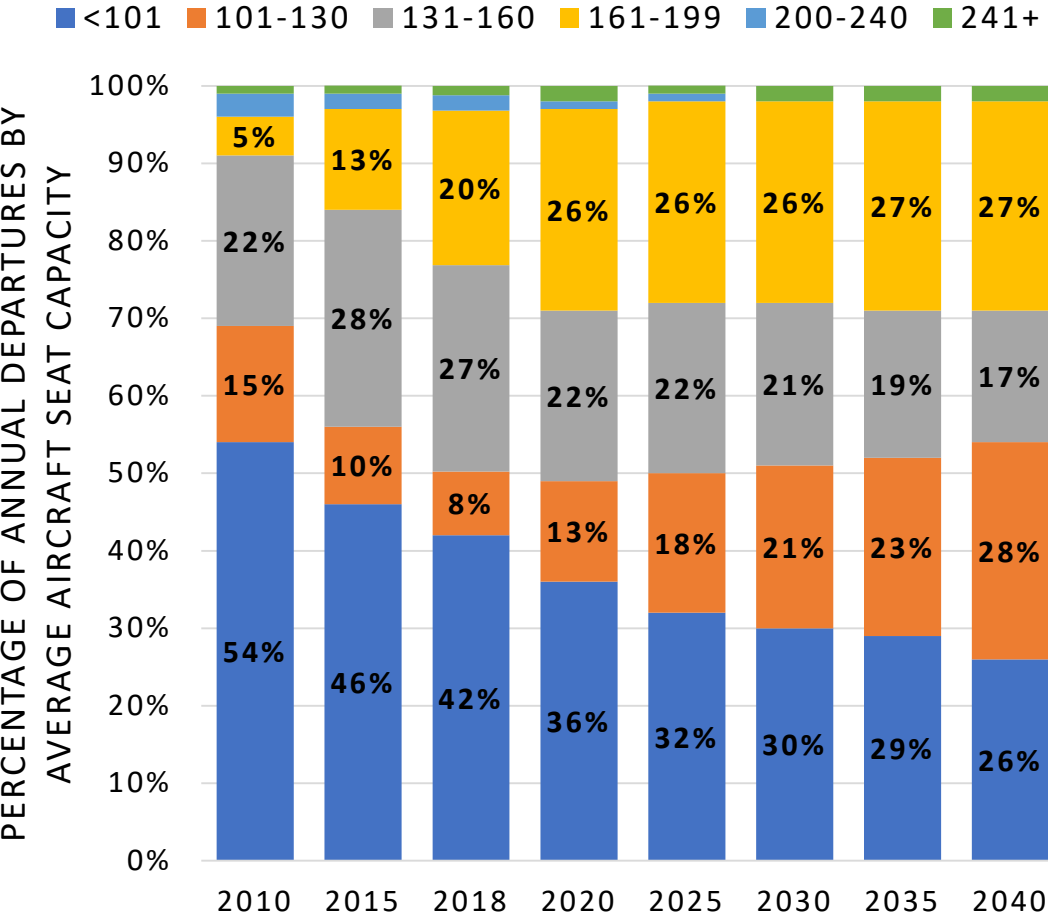
Enplaned Passenger Forecasts



Total Operations Forecast



Future Fleet Mix



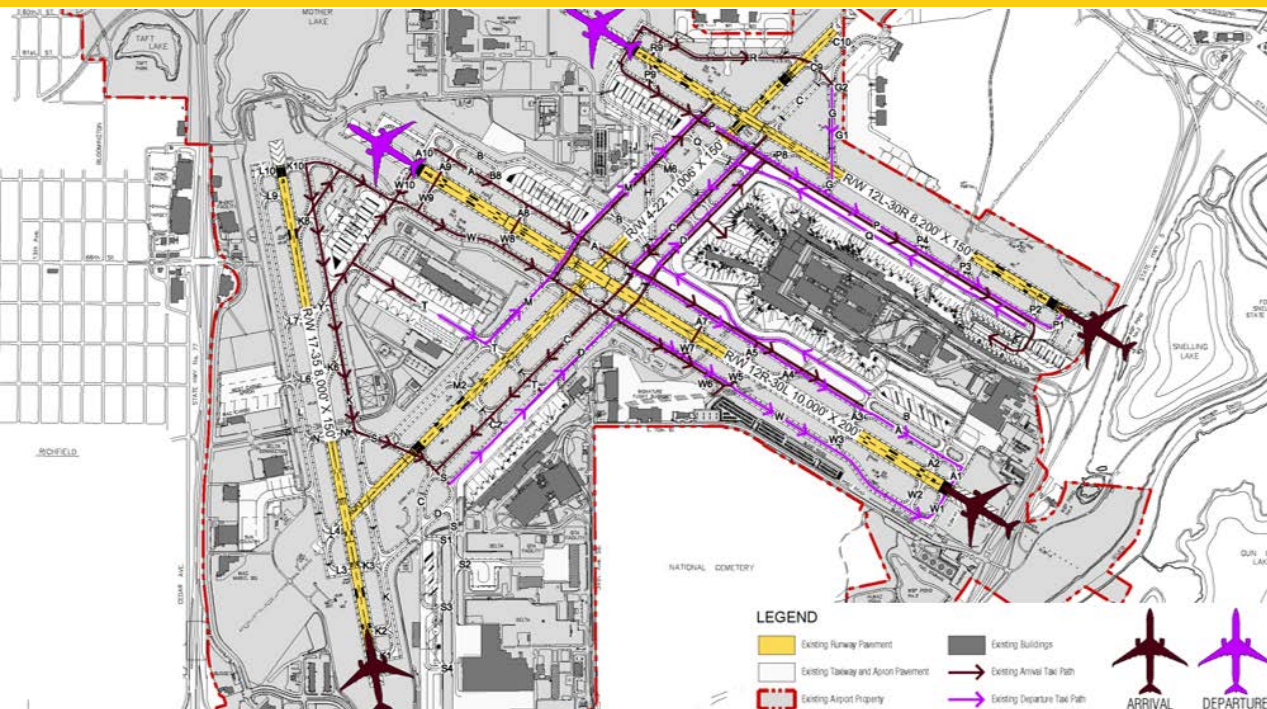
PRELIMINARY RESULTS
SUBJECT TO CHANGE

Airfield Capacity Study

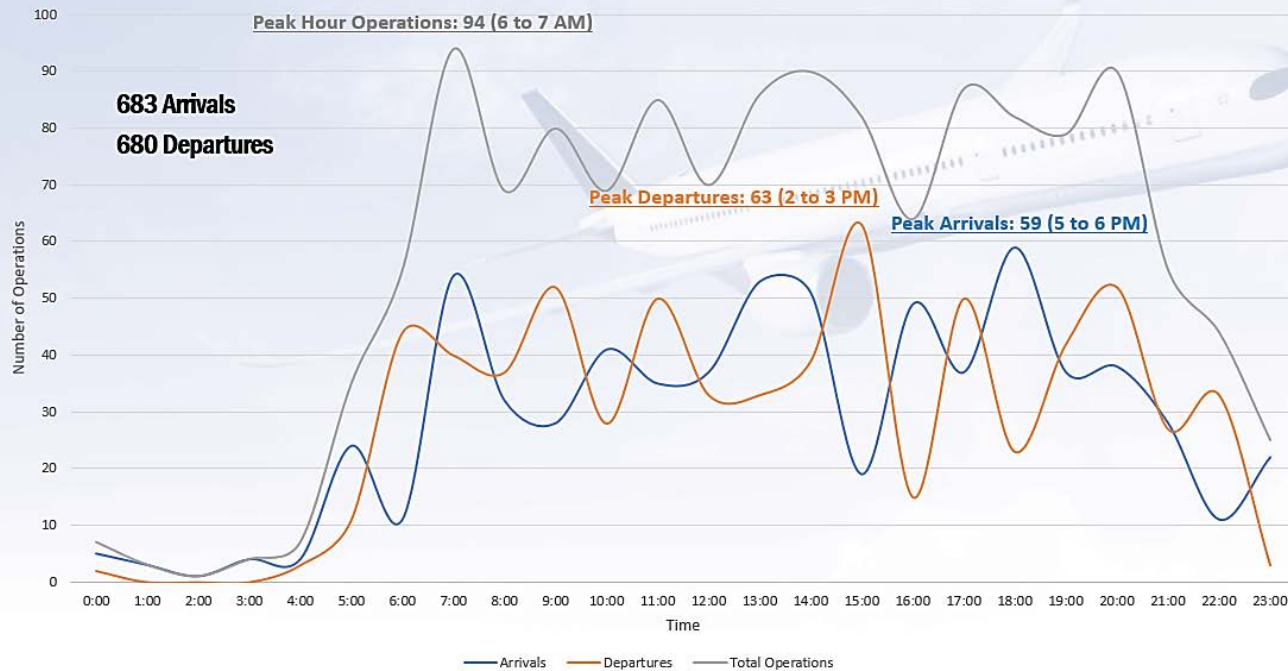
Objective is to use state-of-the-art simulation tools to predict how the MSP airfield and close-in airspace will perform under forecasted aircraft activity levels.

The capacity study should:

- Develop a well-calibrated simulation that accurately represents how actual air traffic is managed.
- Predict how much of the existing airfield's capacity is needed to accommodate existing and forecast demand levels.
- Develop a flexible simulation model that can be used to test how alternative scenarios affect airfield capacity.
- Provide summary results in a manner that facilitates effective dialogue and promotes a better understanding of the relationship between airfield capacity and delay.



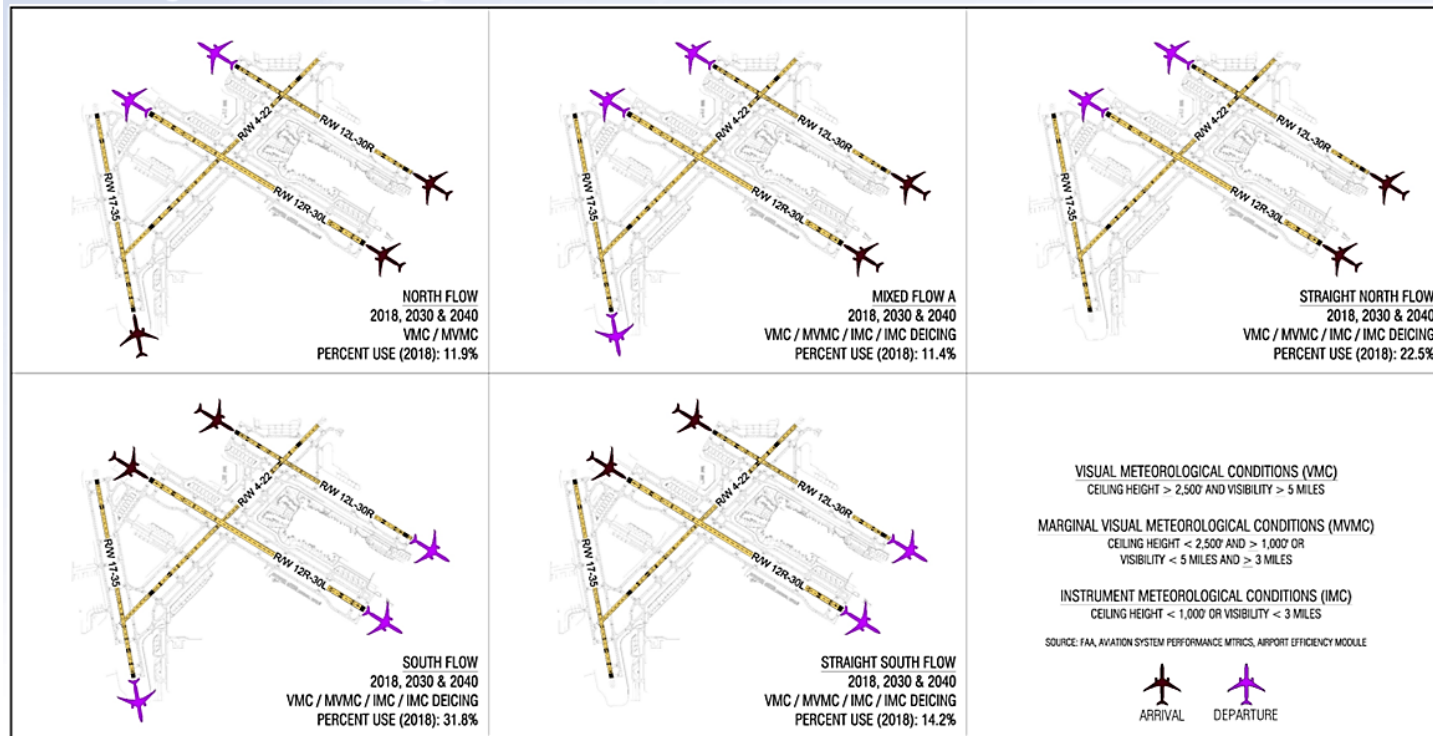
2018 Design Day Flight Schedule – Aug 7, 2018



Model Inputs

- Peak Month, Average Day Flight Schedule
- August 7, 2018
- 683 arrivals, 59 in peak hour
- 680 departures, 63 in peak hour
- 1,363 combined operations, 94 in peak hour

Runway Use Configurations to be Modeled



Model Inputs

- Runway Use Configurations
 - Modeling the most commonly-used runway configurations representing 92% of total operations
- Modeling operations in three weather conditions (visual, marginal visual, instrument)

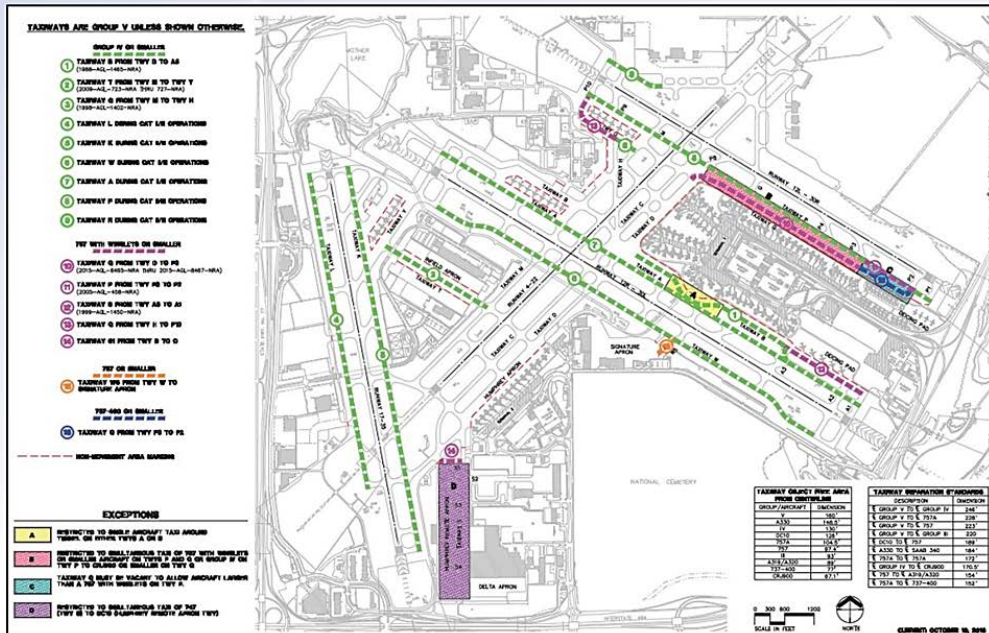
- **Criteria for Runways 30L/R and 35 CR0**



- **Converging Runway Operations (CRO)**

- **Airfield Operational Restrictions**

Operational Restrictions




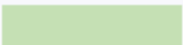


Baseline (2018)					
	North VMC	Mixed A VMC	Straight N VMC	South VMC	Straight S VMC
Arrival Delay (Minutes)					
Ground - Taxi Delay	0.33	0.50	0.52	0.30	0.43
Airspace - Sequencing & Holding Delays	1.92	1.22	1.63	1.25	1.37
Average Arrival Delay (Exclude Airspace Delays)	0.33	0.50	0.52	0.30	0.43
Average Arrival Delay (Include Airspace Delays)	2.25	1.72	2.15	1.55	1.80
Undelayed Taxi Time	4.50	4.10	4.22	5.08	4.98
Total Arrival Travel Time	4.83	4.60	4.73	5.38	5.42
Departure Delay (Minutes)					
Ground - Gate Traffic Delay	0.72	0.75	0.95	0.57	0.40
Ground - Runway Crossing Delay	0.37	0.40	0.43	0.22	0.18
Ground - Taxi Delay	1.03	0.58	0.90	1.17	0.60
Ground - Runway Queue Delay	4.05	1.83	5.37	0.97	5.20
Average Departure Delay	6.17	3.57	7.65	2.92	6.38
Undelayed Taxi Time	7.18	7.72	7.05	7.95	7.00
Total Departure Travel Time	13.35	11.28	14.70	10.87	13.38
Average Delay Excluding Arrival Airspace Delays					
Average Total Delay Per Operation (Minutes)	3.3	2.0	4.1	1.6	3.4
ADPM Annualization Adjustment Factor	82.0%	82.0%	82.0%	82.0%	82.0%
Annual Percent in Flow	13.5%	13.0%	24.1%	33.4%	15.8%
Representative ADPM Delay (Minutes)	0.4	0.3	1.0	0.5	0.5
Representative Annual Delay (Minutes)	0.4	0.2	0.8	0.4	0.4
Average Delay Including Arrival Airspace Delays					
Average Total Delay Per Operation (Minutes)	4.2	2.6	4.9	2.2	4.1
ADPM Annualization Adjustment Factor	82.0%	82.0%	82.0%	82.0%	82.0%
Annual Percent in Flow	13.5%	13.0%	24.1%	33.4%	15.8%
Representative ADPM Delay (Minutes)	0.6	0.3	1.2	0.7	0.6
Representative Annual Delay (Minutes)	0.5	0.3	1.0	0.6	0.5
Average ADPM Delay (Minutes / Operation) Excluding Arrival Airspace Delay					
Average ADPM Delay (Minutes / Operation) Including Arrival Airspace Delay	2.8				
Average Annual Delay (Minutes / Operation) Excluding Arrival Airspace Delay	3.5				
Average Annual Delay (Minutes / Operation) Including Arrival Airspace Delay	2.3				
Average Annual Delay (Minutes / Operation) Including Arrival Airspace Delay	2.9				

PRELIMINARY RESULTS

SUBJECT TO CHANGE

Schedule



-  Phase 1: Baseline Model Development – In Progress
-  Phase 2: Future Year Simulations – Not Yet Authorized
-  Phase 3: Test Capacity Improvements – Not Yet Authorized
-  Technical Working Group (TWG) Meeting



Questions

MetroAirports.org MSPAirport.com



@mspairport