

Activity Forecasting Session

MSP 2040 Long-Term Comprehensive Plan (LTCP)

Forecast Elements

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Data Collection Complete

Market Assessment and Factors Affecting Aviation Activity Complete

Baseline Aviation Activity Forecast Development Complete

Alternative Demand Scenarios Complete

Peaking Metrics and Design Day Flight Schedule Development In Progress

Documentation In Progress/Ongoing

Percentage of MSP's Aircraft Operations



Source: 2018 MAC activity statistics



Disaggregate Passenger Types at MSP

Who is traveling to and from MSP?



Determine Which Flights Passengers Use to Get To/From MSP *How do Passenger Types Contribute to Flight Profitability?*

How are they getting there? Is the service profitable and sustainable?





How will the various passenger types grow over time?





Could those passengers choose other routings? Could other passengers choose MSP?





Is it likely that the new demand will be accommodated?







Passengers Using MSP

MSP Serves Passengers From Around the US and the World on an O&D Basis...

Source: US DOT O&D Survey and Sabre MIDT data (four quarters ending Q2 2018)

...and On a Connecting Basis (Domestic Connections)

Domestic Connections: 31% of Total Passengers

Source: US DOT O&D Survey (four quarters ending Q2 2018)

Top 10 Connecting Flows	Portion of Total Psgrs
Great Lakes-Southwest	4%
Northeast-Southwest	3%
North Central-Northeast	2%
North Central-Southeast	2%
Great Lakes-North Central	2%
Mountain-Northeast	2%
North Central-Southwest	2%
Great Lakes-Mountain	2%
Great Lakes-Northwest	2%
Southeast-Southwest	<u>1%</u>
Top 10 Flows	22%

...and On a Connecting Basis (International Connections)

Top 10 Connecting Flows	Portion of Total Psgrs
Canada-Southeast	1%
Canada-Great Lakes	1%
Canada-Northeast	1%
Canada-North Central	0%
Europe-North Central	0%
Europe-Southwest	0%
Canada-Southwest	0%
Mexico-North Central	0%
Europe-Mountain	0%
Canada-South Central	<u>0%</u>
Top 10 Flows	5%

International Connections: 9% of Total Passengers

Source: US DOT O&D Survey and Sabre MIDT data (four quarters ending Q2 2018)

Four General Groupings of Flight Segments at MSP

Source: Innovata schedule data (twelve months ending May 2019)

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In Total, Domestic Segments Play the Most Important Role

Source: Innovata schedule data (twelve months ending May 2019); US DOT O&D Survey and Sabre MIDT data (four quarters ending Q2 2018)

Airline Profitability is Examined at Multiple Levels

- By airline
- By specific route
- By specific passenger type

Determine Which Flights Passengers Use to Get To/From MSP *How do Passenger Types Contribute to Flight Profitability?*

How are they getting there? Is the service profitable and sustainable?

How will the various passenger types grow over time?

Drivers of Growth – O&D Passengers

O&D Passenger Forecast Approach

- Evaluated relationships between O&D passengers and socioeconomic factors
- Identified markets where O&D activity may be affected beyond typical market influences
- Near-term new and expanding O&D markets were modeled based on recent airline growth patterns
- Longer term O&D forecasts considered socioeconomic-driven demand and the airline business decision process (i.e., is demand growth profitable growth?)

Socioeconomic Drivers Present a Range of Growth at MSP – Combined Domestic and International O&D Passengers

Source: BTS RITA data (2018 is four quarters ending Q3 2018), MAC activity statistics, Woods & Poole Economics, Inc., Ricondo (analysis)

Comparison of Socioeconomic Forecasts and Regions

		Woods & Poole Data CAGR			Metropolitan Council Data CAGR		
		2000-	2010-	2020-	2000-	2010-	2020-
Independent Variable	<u>Area</u>	<u>2010</u>	<u>2040</u>	<u>2040</u>	<u>2010</u>	<u>2040</u>	<u>2040</u>
Population	US	0.9%	0.8%	0.9%			
	CSA / 7 County Region	1.0%	1.0%	1.0%	0.7%	0.9%	0.8%
Non-farm employment	US	0.5%	1.4%	1.2%			
	CSA / 7 County Region	0.4%	1.5%	1.3%	0.2%	0.9%	0.6%
Non-farm earnings	US	1.1%	1.9%	1.7%			
	CSA / 7 County Region	0.5%	2.2%	1.7%			
Personal income	US	1.7%	2.1%	1.8%			
	CSA / 7 County Region	1.2%	2.3%	1.9%	1.0%	2.5%	2.2%
Net earnings	US	1.0%	2.0%	1.7%			
	CSA / 7 County Region	0.5%	2.3%	1.8%			
Per capita personal income	US	0.7%	1.2%	0.9%			
	CSA / 7 County Region	0.2%	1.3%	0.8%			
Gross domestic product	US	1.7%	1.8%	1.6%			
	CSA / 7 County Region	1.3%	2.1%	1.7%	1.1%	2.2%	2.2%

Source: Woods & Poole Economics, Inc., Metropolitan Council data

Drivers of Growth – Connecting Passengers

Connecting Passenger Forecast Approach

- Evaluated relationships between passengers and socioeconomic factors in markets likely to connect in MSP
- Reviewed other forecasts for connecting flows
- Analyzed the historical development of the MSP hub and impact on connecting passengers
- Considered external factors that could affect passenger choice of MSP (other hubs, alternative nonstop flights) as well as the airline business decision process for accommodating demand growth

Connections Have Been Affected by Other Hubs and Nonstop Flights

Connecting Passengers Tended Toward Increased Use of These Hubs

MSP's Domestic Connections Have Fallen By 12% Since 2008

Source: US DOT O&D Survey (2018 is four quarters ending Q2 2018)

Examples of External Developments That May Impact Connecting Activity

Upside:

- Several competing hubs are approaching capacity
- Others that have shown recent rapid growth are beginning to slow

Downside:

- Development at some competing hubs will add capacity for growth
- Growth of ULCCs and their expanding fleets will increase the number of nonstop options to bypass hubs
- Increased use of Canadian hubs to carry passengers from the US to Europe and Asia

Airline Profitability is Examined at Multiple Levels

- By airline
- By specific route
- By specific passenger type

How will the various passenger types grow over time? Could those passengers choose other routings or vice versa? Is it likely that the new demand will be accommodated?

Forecast Results – Passenger Enplanements

Enplaned Passenger Forecast – O&D vs. Connecting

■ O&D ■ Connecting

Sources: US DOT T100 and O&D Survey data (actual); Sabre MIDT (actual); Ricondo (forecast) Note: Enplaned passengers reflect revenue passengers only, and may include a small portion of same-plane "Thru" passengers. Figures shown may not reflect those reported by the Commission.

Forecast Results – Passenger Airline Operations

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Historical Passenger Growth Has Been Accommodated Primarily Through Larger Aircraft and Higher Load Factors

Annual Percentage of Operations by Aircraft Seat Capacity at MSP – All Airlines

Forecast in 5 Year Increments

Source: Innovata schedule data; Ricondo (forecast)

Passenger Aircraft Operations Forecast

Domestic International

Sources: US DOT T100 data (actual); Ricondo (forecast)

Forecast Results – Other Aircraft Operations

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Cargo, General Aviation/Air Taxi, and Military Aircraft Operations Forecast Methodology

- Cargo Aircraft Operations
 - Cargo volumes were forecast for all-cargo and passenger airlines, separately
 - The cargo aircraft fleet mix was developed considering known aircraft orders and expected future cargo airline fleets
 - Future tonnage per operation was estimated based on the cargo fleet mix, and was applied to projections of all-cargo aircraft volumes
- General Aviation/Air Taxi Aircraft Operations
 - MSP general aviation operations were modeled to grow at a rate slightly lower than that forecast by the FAA for the US overall, similar to past trends
 - Air taxi operations were combined with GA and grown in proportion to historical "other" commercial operations
- Military Aircraft Operations
 - The Department of Defense does not provide guidance for future military aircraft activity, the TAF's projection of military aircraft operations was adopted for use

Forecast of Total Operations

Sources: US DOT and MAC (historical); Ricondo (forecast)