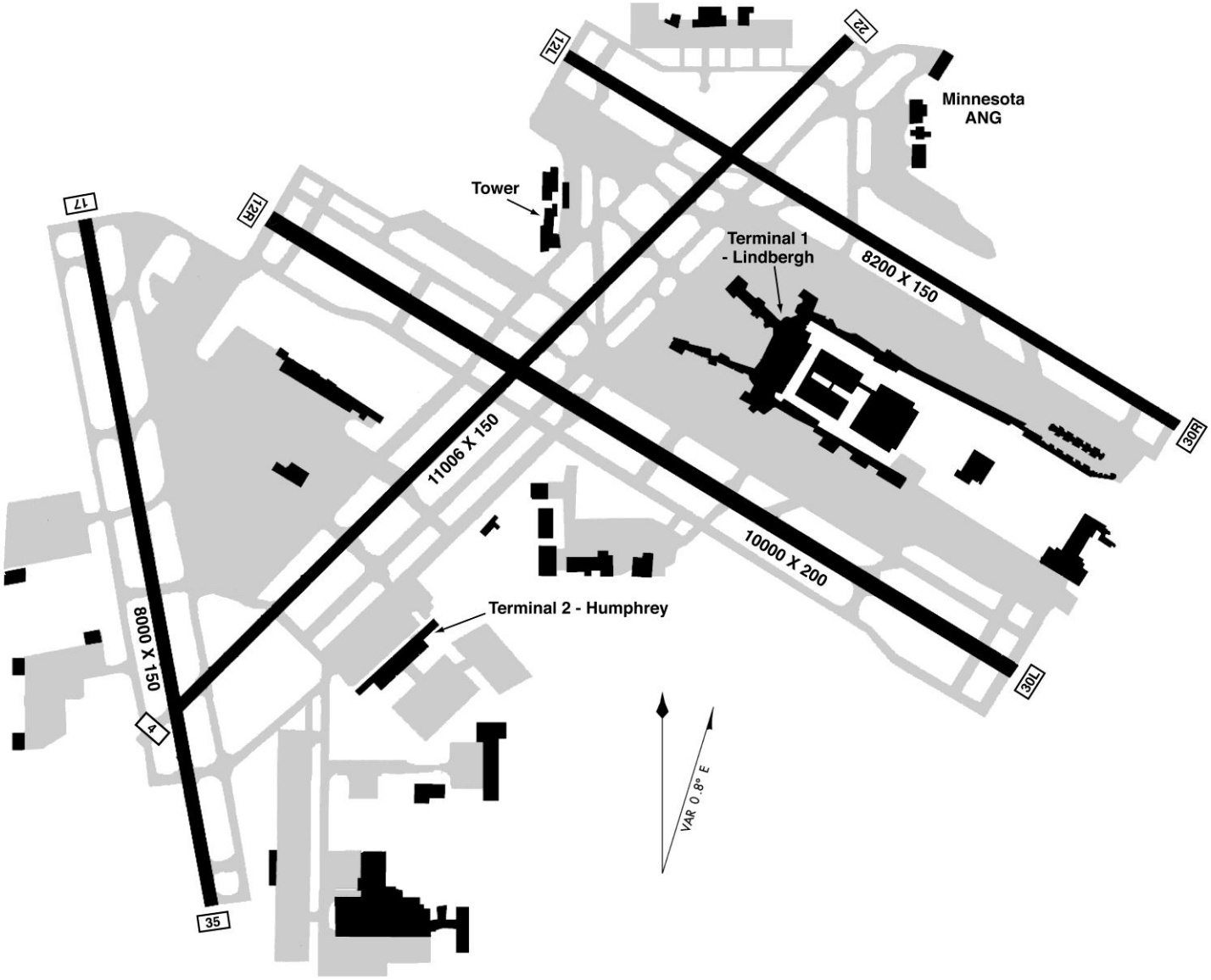
MSP

MINNEAPOLIS-SAINT PAUL INTERNATIONAL



Airport capacity profile estimates were created using a standard set of performance characteristics and do not take into account non-runway constraints, unless otherwise noted. The capacity estimates developed for this report are not intended to replace the results of any detailed analysis that would precede an environmental, investment, or policy decision.

The list of Future Improvements and their expected effects on capacity does not imply FAA commitment to, or approval of, any item on the list.

MSP Minneapolis-Saint Paul International

Definition

- The capacity profile shows the hourly throughput that an airport is able to sustain during periods of high demand, represented as the range between the model-estimated capacity and the ATC facility reported rate (called rate). Each weather condition has a unique capacity rate range.
- The following charts compare actual hourly traffic with the estimated capacity curves for MSP.

Recent Capacity Improvements at MSP

- In 2006 MSP commissioned a new runway, 17/35, which is primarily used for arrivals on Runway 35 and departures on Runway 17.
- Implementation of Traffic Management Advisor (TMA) helps to improve the flow of arrivals to the runways.

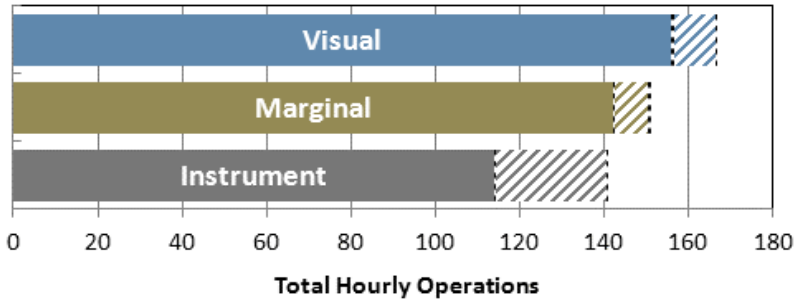
Future Improvements at MSP

- *Improved Runway Delivery Accuracy:* The combined effects of several new capabilities, including ADS-B Out, CDTI, and TBM in the terminal area, will improve the ability of controllers by 2020 to deliver aircraft to the runway with the desired separation from the preceding aircraft. This will reduce the average spacing between arrivals and boost arrival capacity.
- Additional information on these improvements may be found in this report under "Future Operation Assumptions."

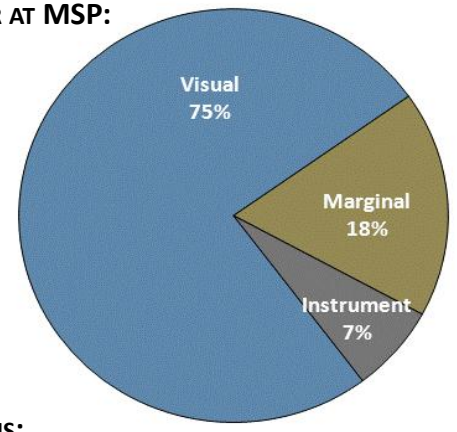
Data Sources

- Actual hourly MSP operations, weather and configuration data were obtained from the FAA ASPM database, and represent operational hours from 7am to 11pm local time for all of Fiscal Years 2009 and 2010. Actual configuration usage is determined by multiple operational factors, including weather conditions.
- Facility reported rates were provided by ATC personnel at MSP.
- Model-estimated rates are derived from operational information provided by ATC.

Current Operations Capacity Rate Range



Annual Weather at MSP:



Visual Conditions:

- Ceiling and visibility allow for visual approaches: at least 5000 feet ceiling and 7 miles visibility

Marginal Conditions:

- Ceiling and visibility below visual approach minima but better than Instrument conditions

Instrument Conditions:

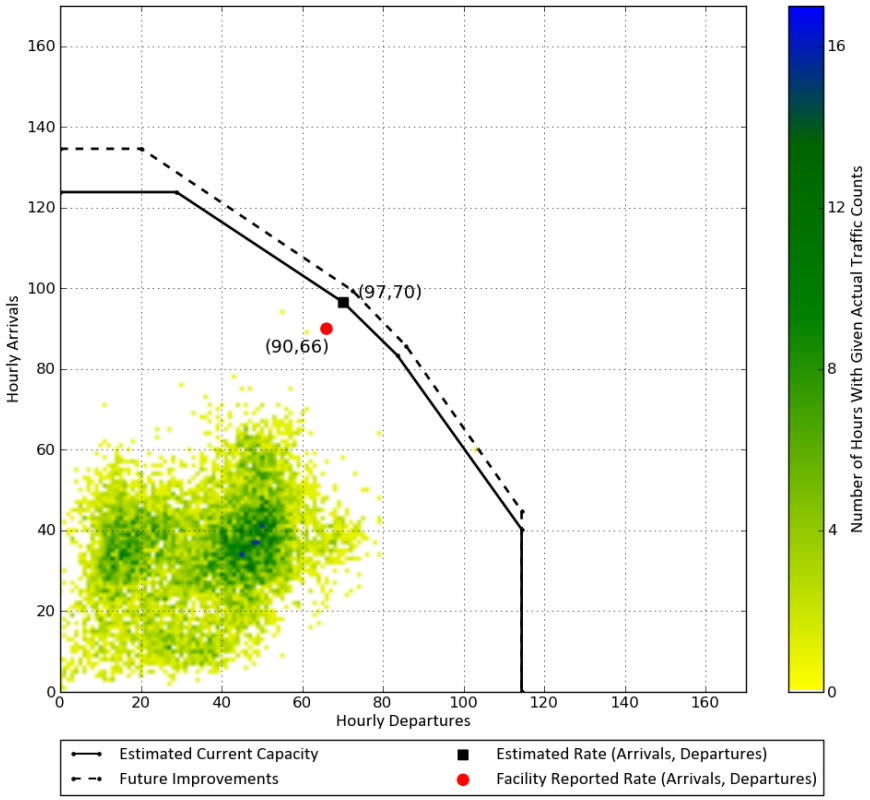
- Ceiling and visibility below 1000 feet ceiling or 3 miles visibility

VISUAL

MINNEAPOLIS-SAINT PAUL INTERNATIONAL

MSP Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	30L, 30R, 35	30L, 30R	Visual Approaches, Visual Separation,	156	167
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	30L, 30R, 35	30L, 30R		N/A	172

VISUAL WEATHER CONDITIONS



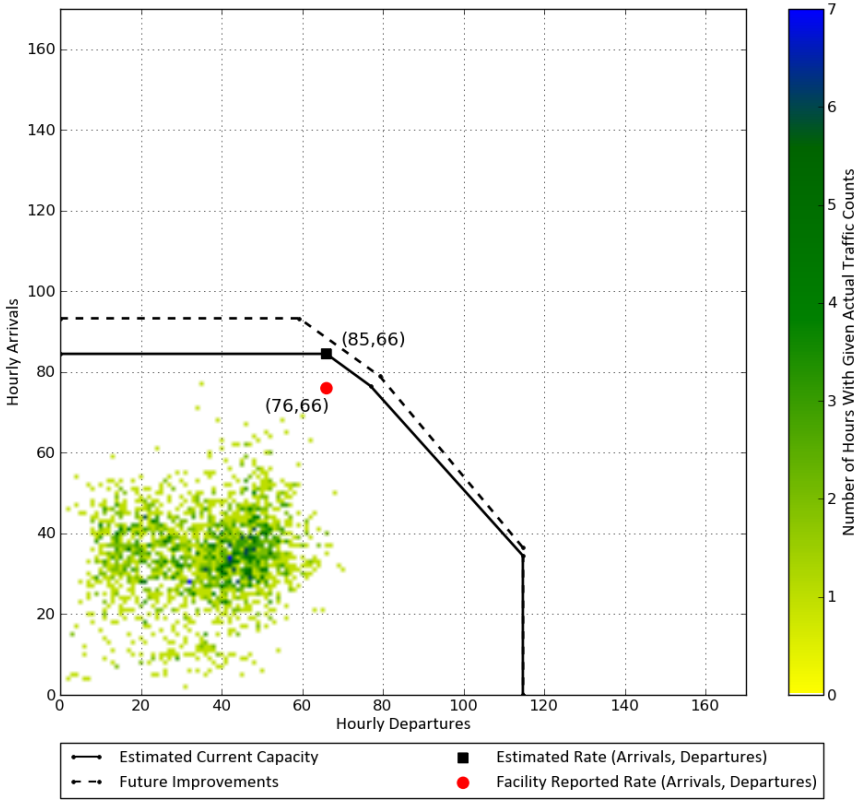
- The capacity rate range in Visual conditions is currently 156-167 operations per hour.
- MSP operates in variations of this configuration approximately 58% of the time in Visual weather conditions (totaling 43% annually). [Note: Runway 12L/30R was closed from August through October of 2009, so the percentages cited above include hours during which the this configuration was not available.]
- Same runway departure fanning is conducted from Runways 30L and 30R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.

MARGINAL

MINNEAPOLIS-SAINT PAUL INTERNATIONAL

MSP Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	30L, 30R, 35	30L, 30R	Dependent and Converging Instrument Approaches, Visual Separation	142	151
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	30L, 30R, 35	30L, 30R		N/A	152

MARGINAL WEATHER CONDITIONS



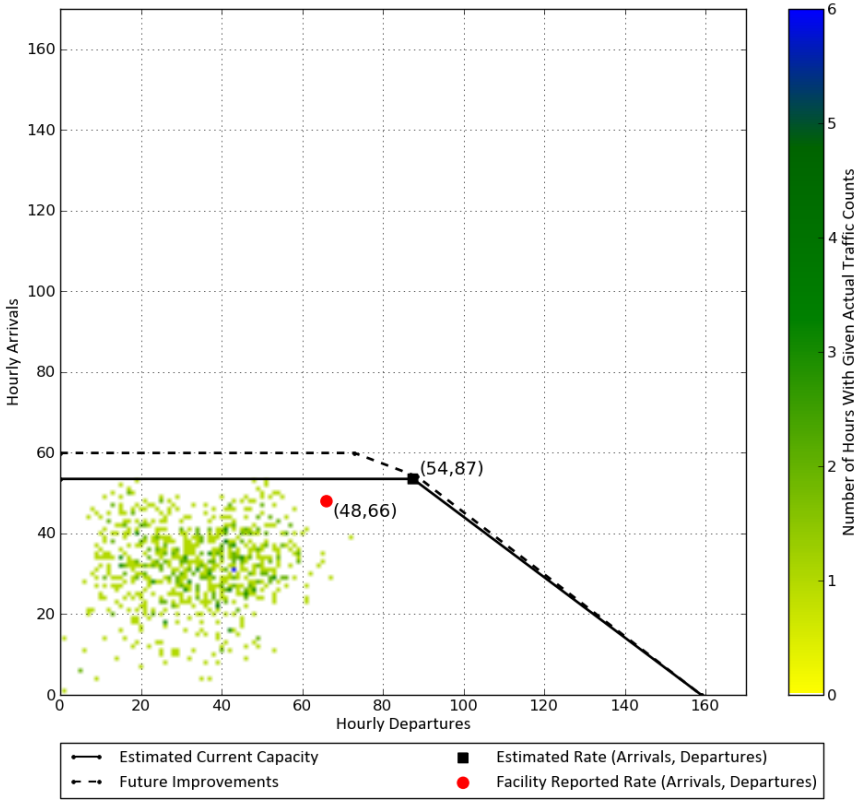
- The capacity rate range in Marginal conditions is currently 142-151 operations per hour.
- MSP has two primary directional traffic flows. The airport operates in variations of this configuration approximately 51% of the time in Marginal weather conditions (totaling 9% annually). [Note: Runway 12L/30R was closed from August through October of 2009, so the percentages cited above include hours during which this configuration was not available.]
- The profiled configuration uses Simultaneous Converging Instrument Approaches (SCIA) for arrivals to Runway 35 with arrivals to Runways 30L and 30R. This procedure is only available when the ceiling is at or above 1,700 feet and visibility is 4 miles or greater. The *Safety Risk Management Document (SRMD)* for this procedure, dated July 2006, requires a minimum 4 miles spacing between Runway 35 arrivals to reduce the likelihood of a balked landing.
- Same runway departure fanning is conducted from Runways 30L and 30R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.

INSTRUMENT

MINNEAPOLIS-SAINT PAUL INTERNATIONAL

MSP Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	12L, 12R	12L, 12R, 17	Dependent Instrument Approaches, Radar Separation	114	141
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	12L, 12R	12L, 12R, 17		N/A	143

INSTRUMENT WEATHER CONDITIONS



- The capacity rate range in Instrument conditions is currently 114-141 operations per hour.
- MSP has two primary directional traffic flows. The airport operates in variations of this configuration approximately 61% of the time in Instrument weather conditions (totaling 4% annually). [Note: Runway 12L/30R was closed from August through October of 2009, so the percentages cited above include hours during which this configuration was not available.]
- Same runway departure fanning is conducted from Runways 12L, 12R and 17. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.