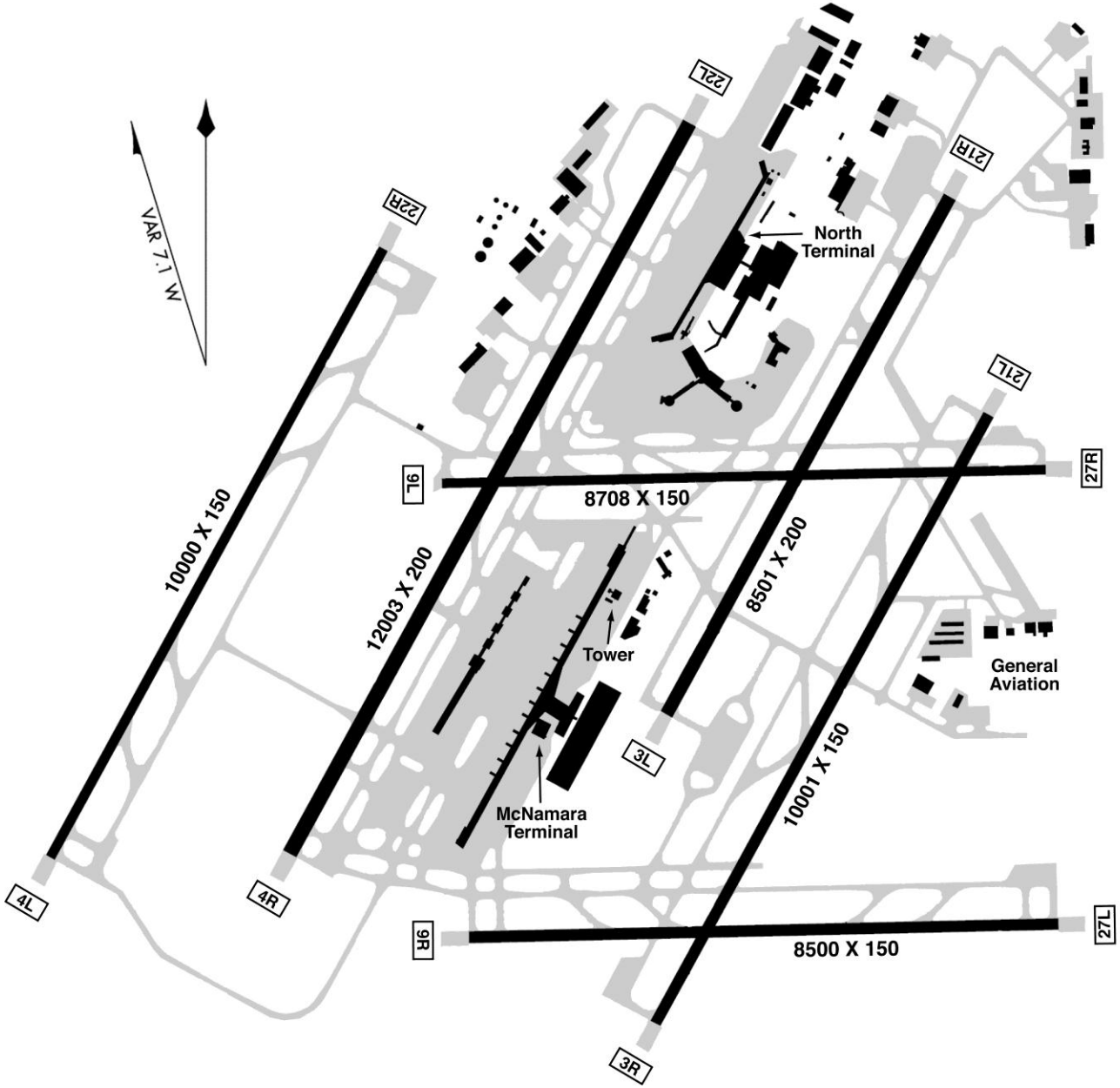
DTW

Detroit Metropolitan Wayne County



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.

DTW — Detroit Metropolitan Wayne County

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 DTW.

Recent Capacity Improvements at DTW

- Implementation of Traffic Management Advisor (TMA) helps to improve the flow of arrivals to the runways.

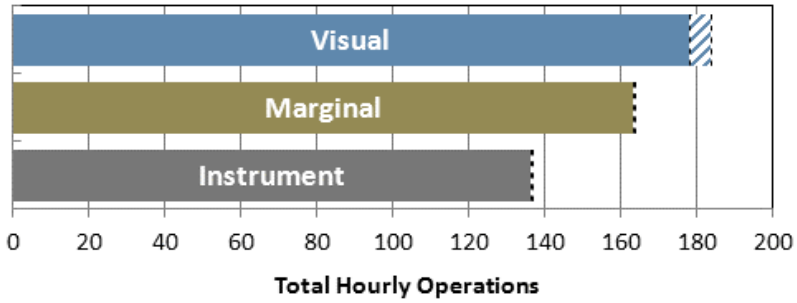
Future Improvements at DTW

- *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.
- *Improved Parallel Runway Operations:* Installation of Precision Runway Monitor (PRM-A) with multi-lateration will allow Triple Simultaneous Instrument Approaches with current close parallel runways. [*Note:* PRM-A was installed and the procedure was operational prior to the publication of this report.]
- Additional information on these improvements may be found in this report under "Future Operation Assumptions."

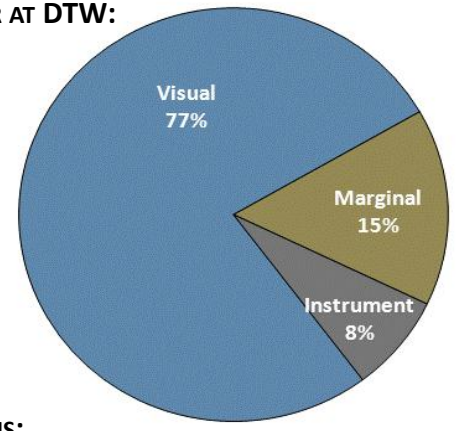
Data Sources

- Actual hourly DTW 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 DTW.
- Model-estimated rates are derived from operational information provided by ATC.

Current Operations Capacity Rate Range



Annual Weather at DTW:



Visual Conditions:

- Ceiling and visibility allow for visual approaches: at least 3000 feet ceiling and 5 miles visibility

Marginal Conditions:

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

Instrument Conditions:

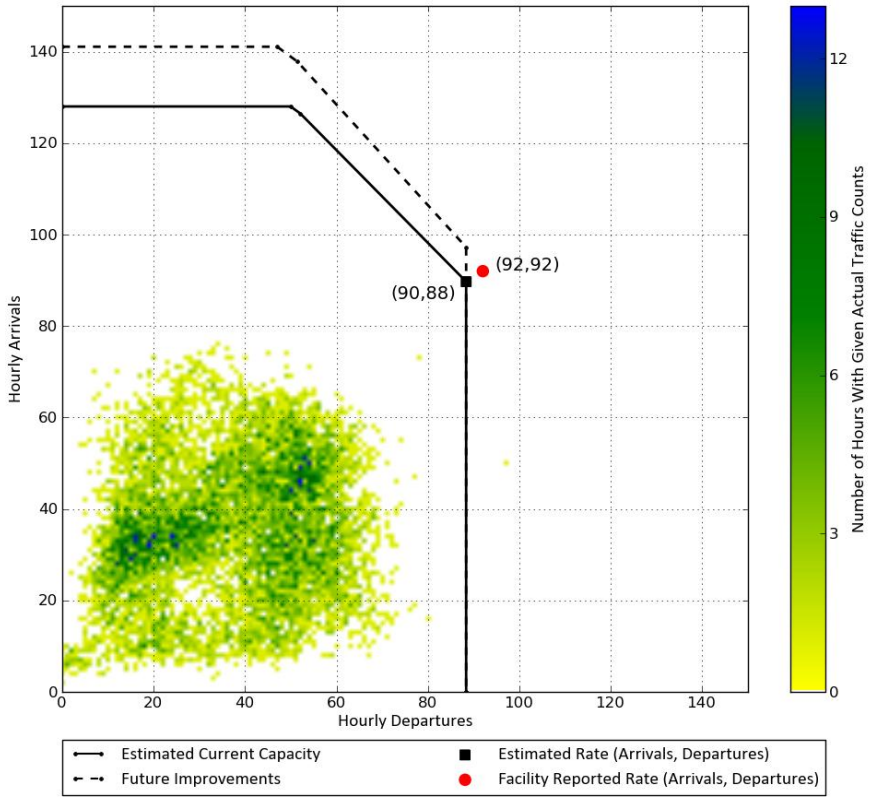
- Ceiling and visibility below 1000 feet ceiling or 3 miles visibility

VISUAL

DETROIT METROPOLITAN WAYNE COUNTY

DTW Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	21L,22L,22R	21R,22L	Visual Approaches, Visual Separation	184	178
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	21L,22L,22R	21R,22L		N/A	185

VISUAL WEATHER CONDITIONS



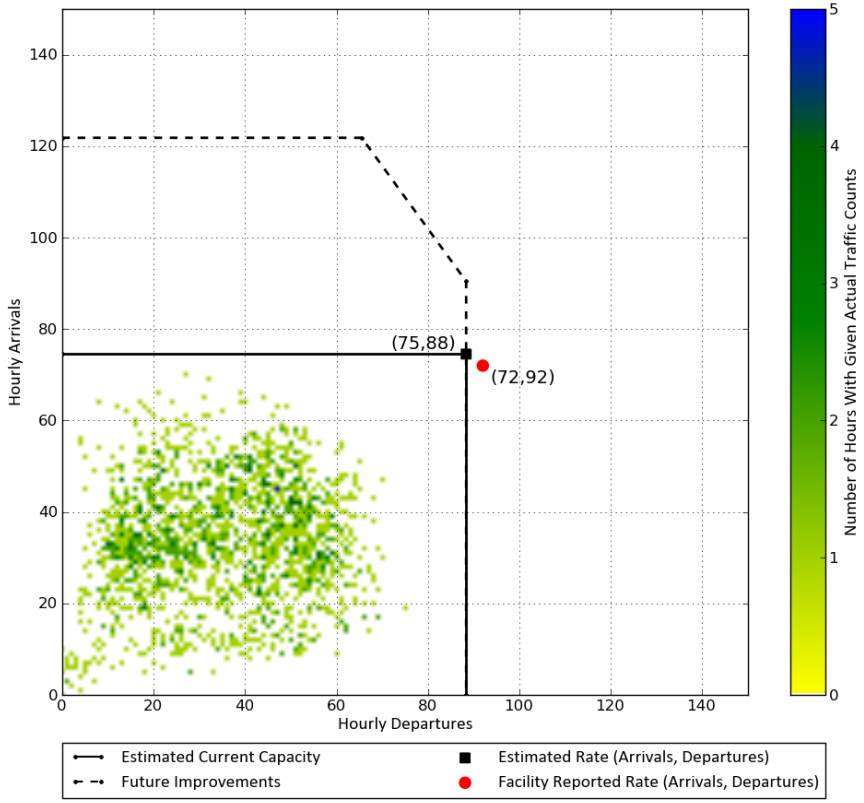
- The capacity rate range in Visual conditions is currently 178-184 operations per hour.
- DTW has two primary directional traffic flows. The airport operates in variations of this configuration approximately 43% of the time in Visual weather conditions (totaling 4% annually).

MARGINAL

DETROIT METROPOLITAN WAYNE COUNTY

DTW Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	21L,22R	21R,22L	Dual Simultaneous Instrument Approaches, Visual Separation	164	163
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy Improved Parallel Operations	21L,22L,22R	21R,22L	Triple Simultaneous Instrument Approaches, Visual Separation	N/A	178

MARGINAL WEATHER CONDITIONS



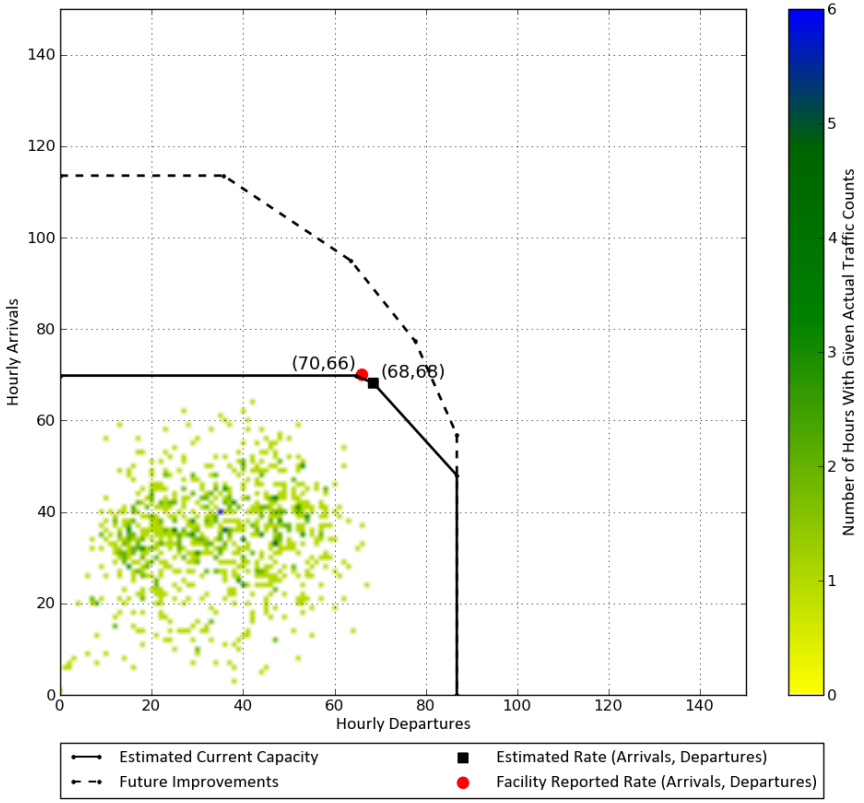
- The capacity rate range in Marginal conditions is currently 163-164 operations per hour.
- DTW has two primary directional traffic flows. The airport operates in variations of this configuration approximately 61% of the time in Marginal weather conditions (totaling 9% annually).
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to Runways 21L, 22L and 22R at DTW.
- Peak arrival capacity is estimated to increase as future improvements are implemented.

INSTRUMENT

DETROIT METROPOLITAN WAYNE COUNTY

DTW Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	21L,22R	21R,22L	Dual Simultaneous Instrument Approaches, Radar Separation	136	136
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy Improved Parallel Operations	21L,22L,22R	21R,22L	Triple Simultaneous Instrument Approaches, Radar Separation	N/A	155

INSTRUMENT WEATHER CONDITIONS



- The capacity rate range in Instrument conditions is currently 136 operations per hour.
- DTW has two primary directional traffic flows. The airport operates in variations of this configuration approximately 53% of the time in Instrument weather conditions (totaling 4% annually).
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to Runways 21L, 22L and 22R at DTW.
- Peak arrival capacity is estimated to increase as future improvements are implemented.