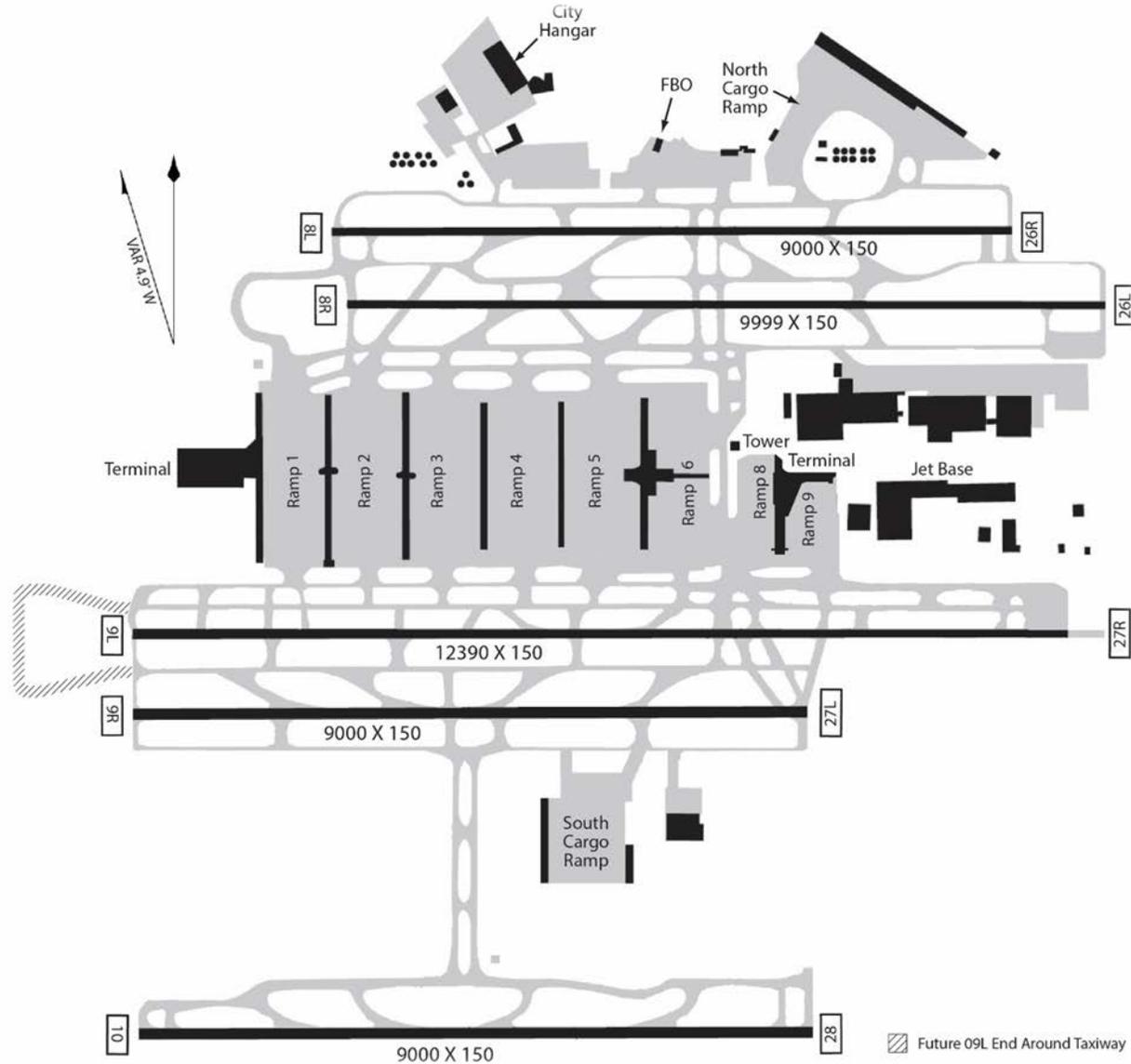


# AIRPORT CAPACITY PROFILE: HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT



*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.*

# HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT (ATL) OVERVIEW

## About this Airport Capacity Profile

- 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 capacity rate range.
- For each weather scenario, capacity estimates are based on information provided by ATC, including reported arrival and departure rates.

## Recent Capacity Improvements at ATL

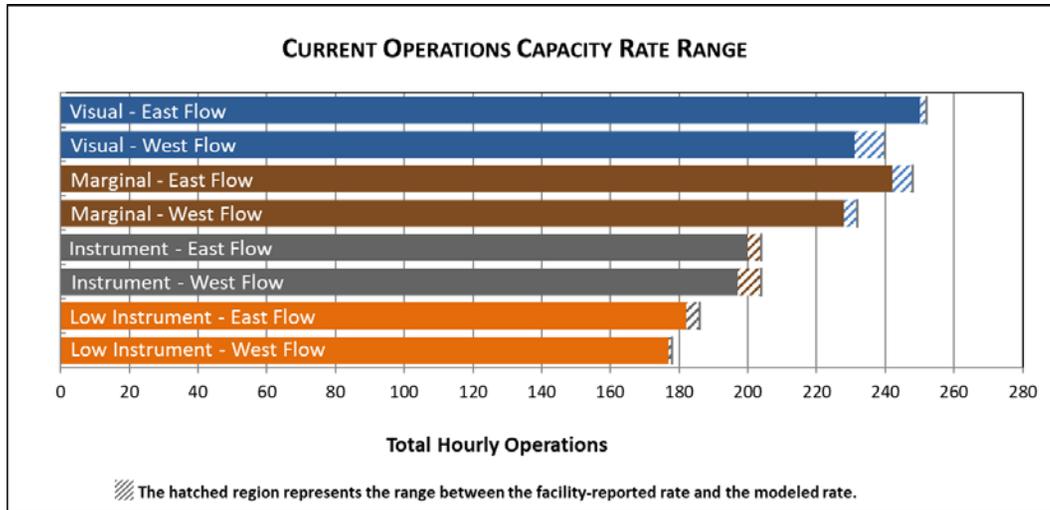
- *Time-Based Flow Management (TBFM)* helps to improve the flow of arrivals to the runways.
- *Wake Recategorization Phase 1* assigns aircraft to new wake turbulence classifications based on their wake turbulence characteristics, such as wake generation, wake decay, and encounter effects. This results in closer longitudinal separation for certain aircraft types without sacrificing safety.
- *Same Runway Departure Fanning* using Equivalent Lateral Spacing Operations (ELSO) is in use at ATL. This improvement allows reduced separation between successive departures due to the availability of new Standard Instrument Departure (SID) procedures which provide more precise guidance and control for departing aircraft.

## Future Improvements at ATL

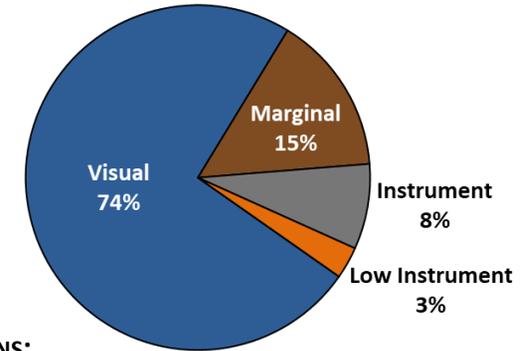
- *Improved Runway Delivery Accuracy*: The combined effects of several new capabilities, including Automatic Dependent Surveillance-Broadcast (ADS-B) Out, Cockpit Display of Traffic Information (CDTI), and Terminal Sequencing and Spacing (TSAS) in the terminal area, will improve the ability of controllers 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.
- *Wake Recategorization Phase 2* assigns aircraft to new wake turbulence classifications based on their wake turbulence characteristics, such as wake generation, wake decay, and encounter effects. This results in closer longitudinal separation for certain aircraft types without sacrificing safety.
- *The end around taxiway* around the end of Runway 09L will allow for the movement of aircraft to the terminal in West Flow without needing to cross Runway 09L/27R.

# HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT OVERVIEW - 2

## CURRENT OPERATIONS CAPACITY RATE RANGE



## ANNUAL WEATHER CONDITIONS



### VISUAL CONDITIONS:

- Ceiling and visibility allow for visual approaches: at least 5000 feet ceiling and 6 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 but better than low instrument conditions

### LOW INSTRUMENT CONDITIONS:

- Ceiling and visibility below 500 feet ceiling or 1 mile visibility

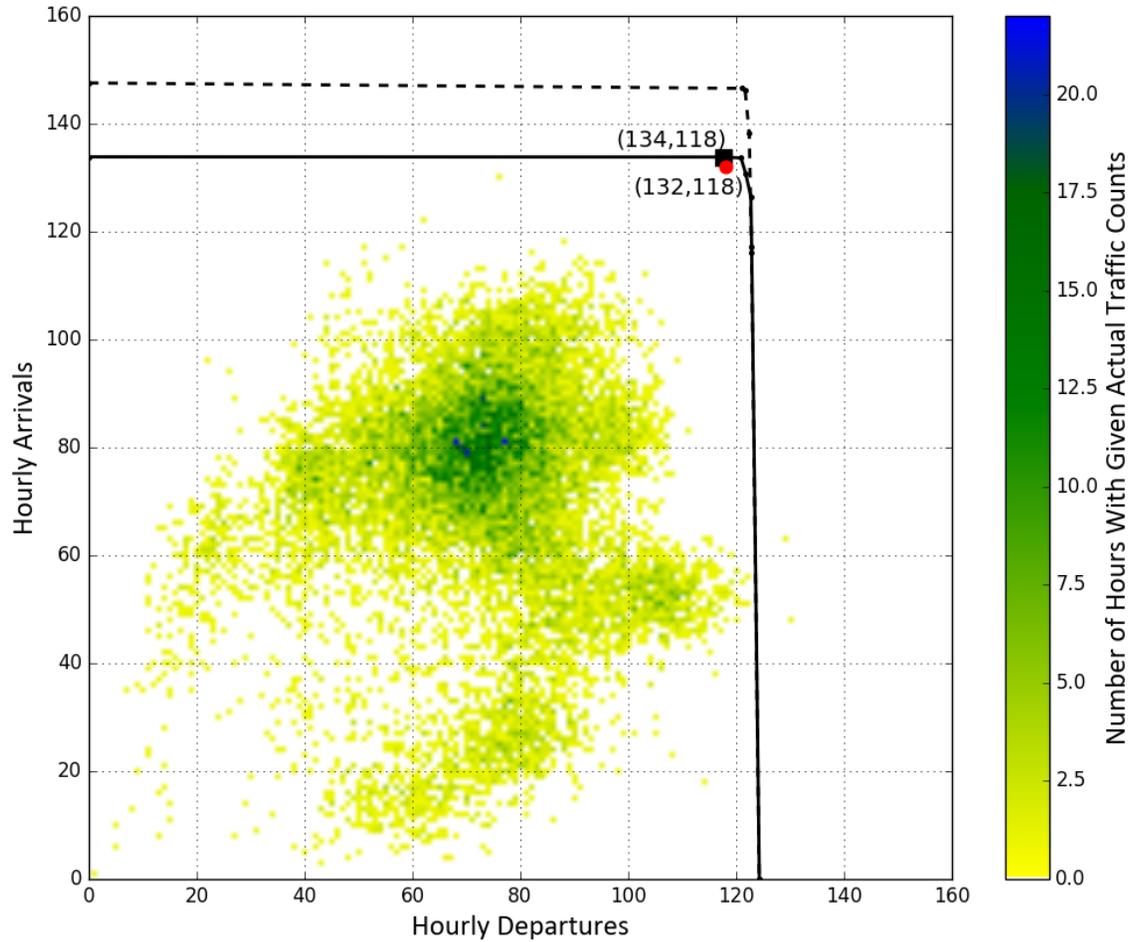
## Data Sources

- Throughout the profile, actual hourly ATL operations, weather and configuration data were obtained from the FAA ASPM database, and represent operational hours from 7am to 11pm local time for October 1, 2014 through September 30, 2017. Actual configuration usage is determined by multiple operational factors, including weather conditions.
- Facility-reported rates were provided by ATC personnel at ATL.
- Model-estimated rates are derived from operational information provided by ATC.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	08L,09R,10	08R,09L	250	252
FUTURE IMPROVEMENTS	08L,09R,10	08R,09L	N/A	260

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2
- The capacity rate range in Visual conditions in East flow is currently 250-252 operations per hour.
- Same runway departure fanning is conducted from Runways 08R and 09L. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings are not modeled because preferred taxi paths allow arrivals to cross behind departing aircraft in East flow.

### VISUAL WEATHER CONDITIONS



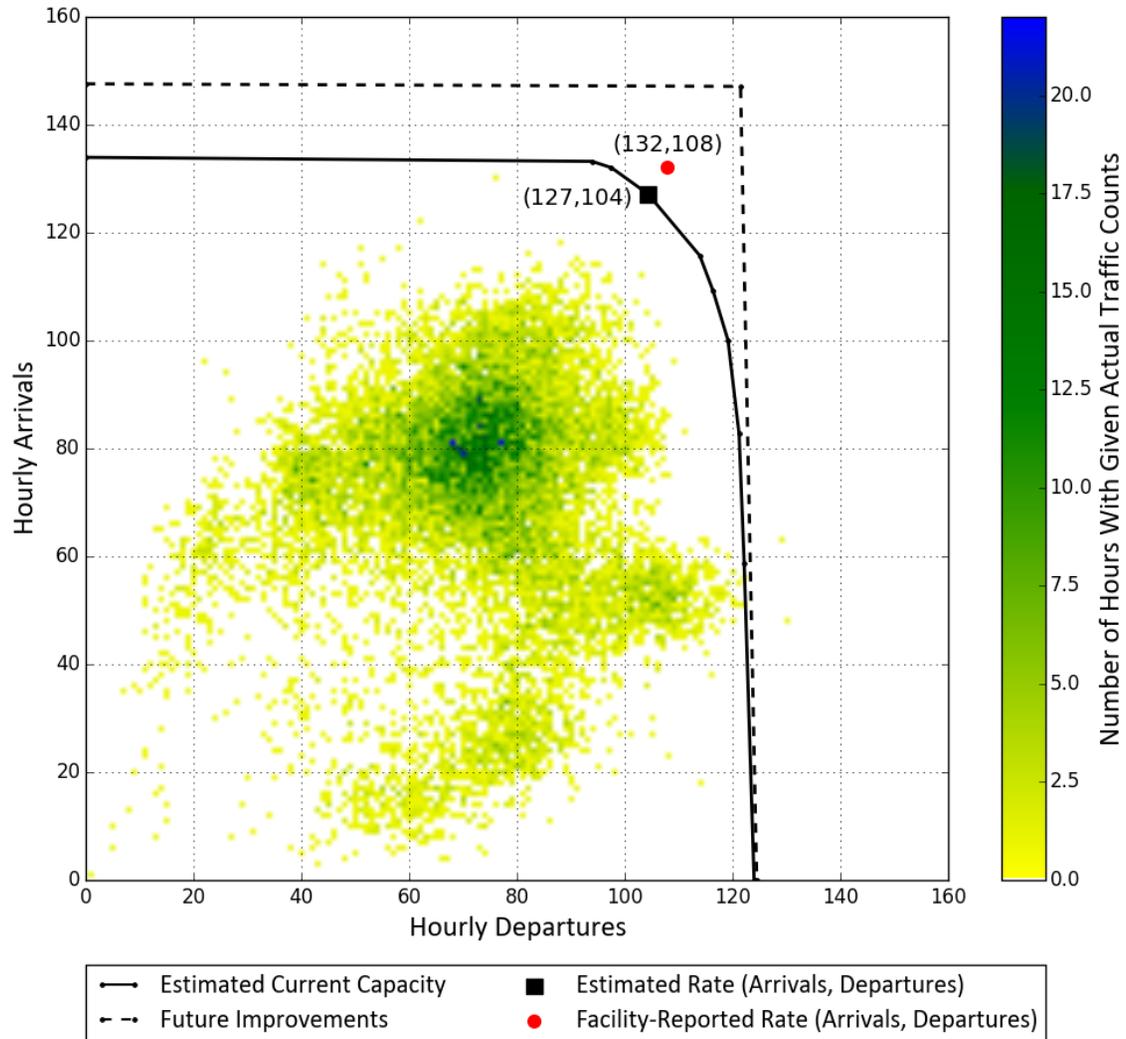
- Estimated Current Capacity
- - Future Improvements
- Estimated Rate (Arrivals, Departures)
- Facility-Reported Rate (Arrivals, Departures)

Actual traffic counts shown are for all Visual hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	26R,27L,28	26L,27R	240	231
FUTURE IMPROVEMENTS	26R,27L,28	26L,27R	N/A	268

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2, End Around Taxiway
- The capacity rate range in Visual conditions in West flow is currently 231-240 operations per hour.
- Same runway departure fanning is conducted from Runways 26L and 27R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings have been modeled on the South side of the airport terminal to reflect current operations. This assumption is removed in the future scenario to reflect completion of the planned end around taxiway.

## VISUAL WEATHER CONDITIONS

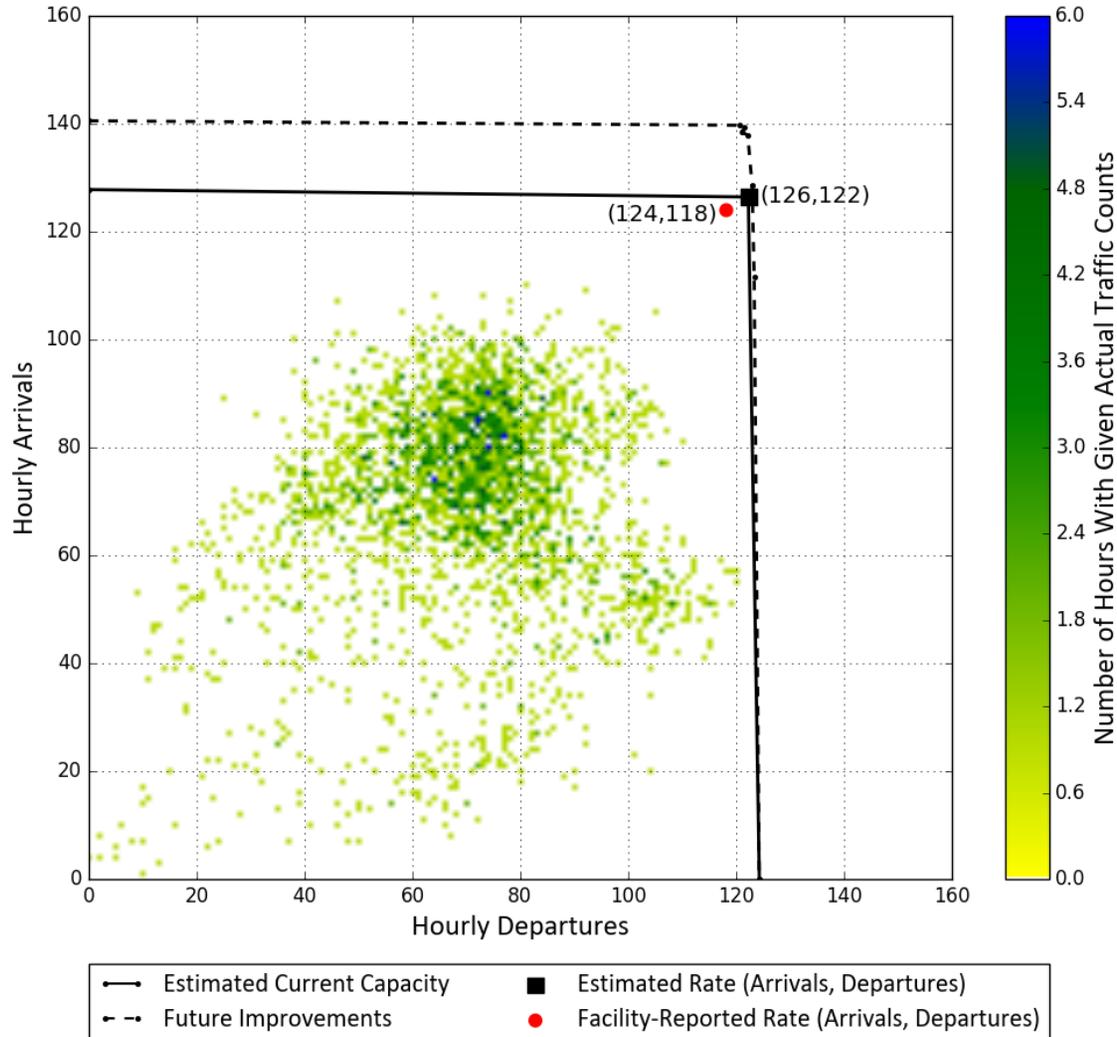


Actual traffic counts shown are for all Visual hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	08L,09R,10	08R,09L	242	248
FUTURE IMPROVEMENTS	08L,09R,10	08R,09L	N/A	252

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2
- The capacity rate range in Marginal conditions in East flow is currently 242-248 operations per hour.
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to all arrival runways.
- Visual approaches are run to Runways 08L and 10, while an instrument approach is used to Runway 09R.
- Same runway departure fanning is conducted from Runways 08R and 09L. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings are not modeled because preferred taxi paths allow arrivals to cross behind departing aircraft in East flow.
- As ATL approaches Marginal conditions, ATC loses the ability to run visual approaches to all three runways. Instead, a combination of visual and instrument approaches is used. This Marginal configuration occurs most frequently.

### MARGINAL WEATHER CONDITIONS

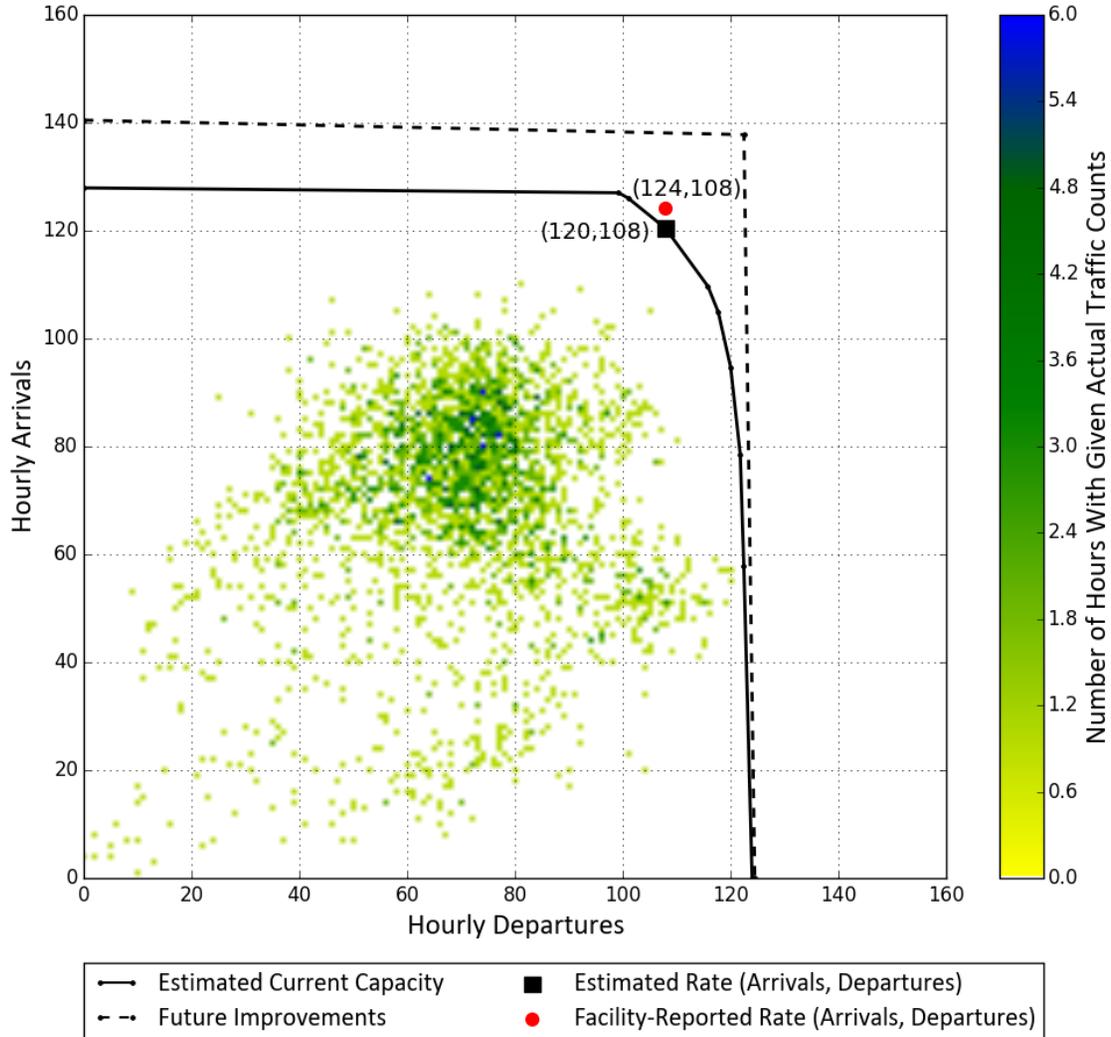


Actual traffic counts shown are for all Marginal hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	26R,27L,28	26L,27R	232	228
FUTURE IMPROVEMENTS	26R,27L,28	26L,27R	N/A	260

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2, End Around Taxiway
- The capacity rate range in Marginal conditions in West flow is currently 228-232 operations per hour.
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to all arrival runways.
- Visual approaches are run to Runways 26R and 28, while an instrument approach is used to Runway 27L.
- Same runway departure fanning is conducted from Runways 26L and 27R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings have been modeled on the South side of the airport terminal to reflect current operations. This assumption is removed in the future scenario to reflect completion of the planned end around taxiway.
- As ATL approaches Marginal conditions, ATC loses the ability to run visual approaches to all three runways. Instead, a combination of visual and instrument approaches is used. This Marginal configuration occurs most frequently.

### MARGINAL WEATHER CONDITIONS

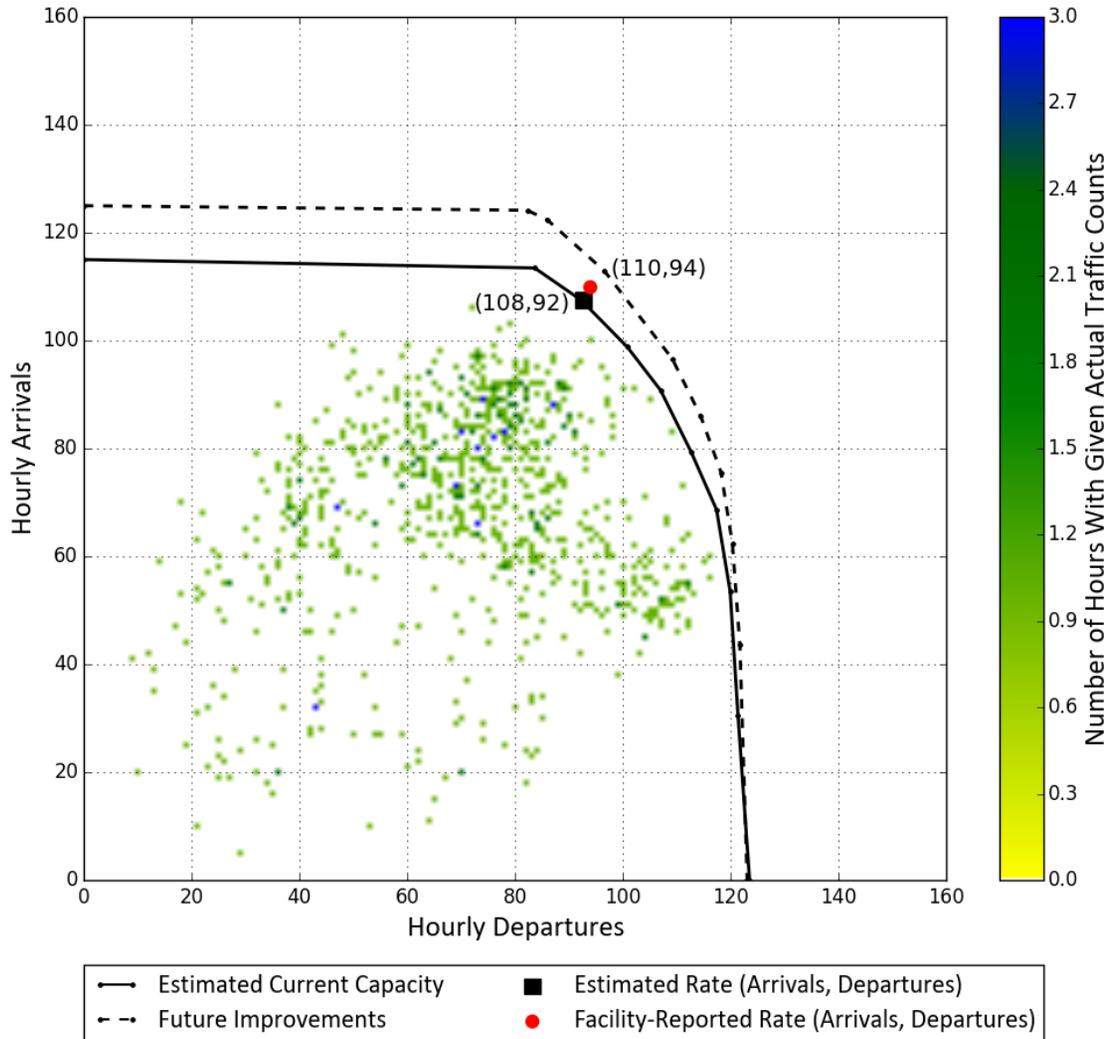


Actual traffic counts shown are for all Marginal hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
<b>CURRENT OPERATIONS</b>	08L,09R,10	08R,09L	204	200
<b>FUTURE IMPROVEMENTS</b>	08L,09R,10	08R,09L	N/A	210

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2
- The capacity rate range in Instrument conditions in East flow is currently 200-204 operations per hour.
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to all arrival runways.
- Same runway departure fanning is conducted from Runways 08R and 09L. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings are not modeled because preferred taxi paths allow arrivals to cross behind departing aircraft in East flow.

## INSTRUMENT WEATHER CONDITIONS

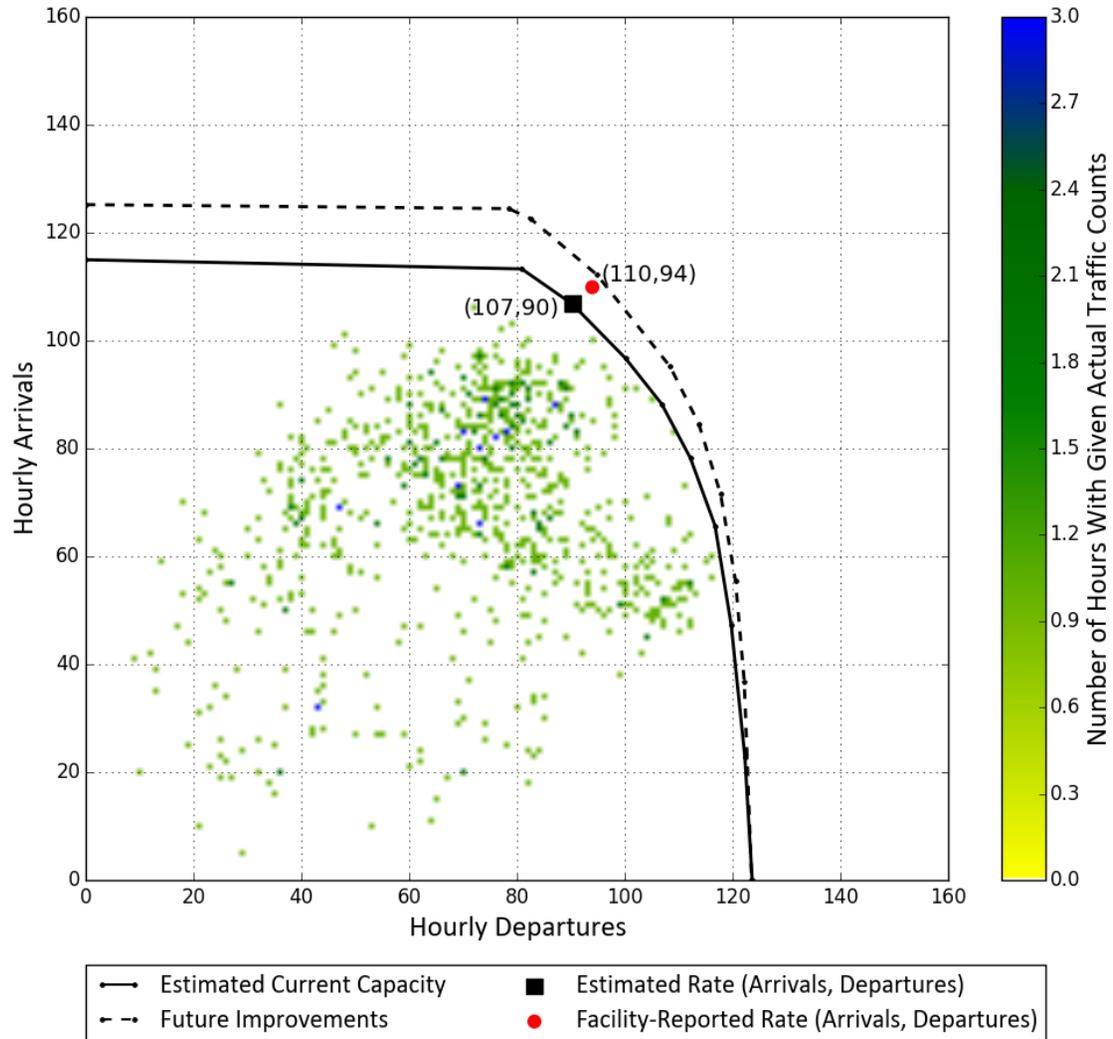


Actual traffic counts shown are for all Instrument hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
<b>CURRENT OPERATIONS</b>	26R,27L,28	26L,27R	204	197
<b>FUTURE IMPROVEMENTS</b>	26R,27L,28	26L,27R	N/A	207

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2
- The capacity rate range in Instrument conditions in West flow is currently 197-204 operations per hour.
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to all arrival runways
- Same runway departure fanning is conducted from Runways 26L and 27R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings were not explicitly modeled in this configuration because arrival departure dependencies in Instrument conditions allows natural crossing gaps to occur.

## INSTRUMENT WEATHER CONDITIONS

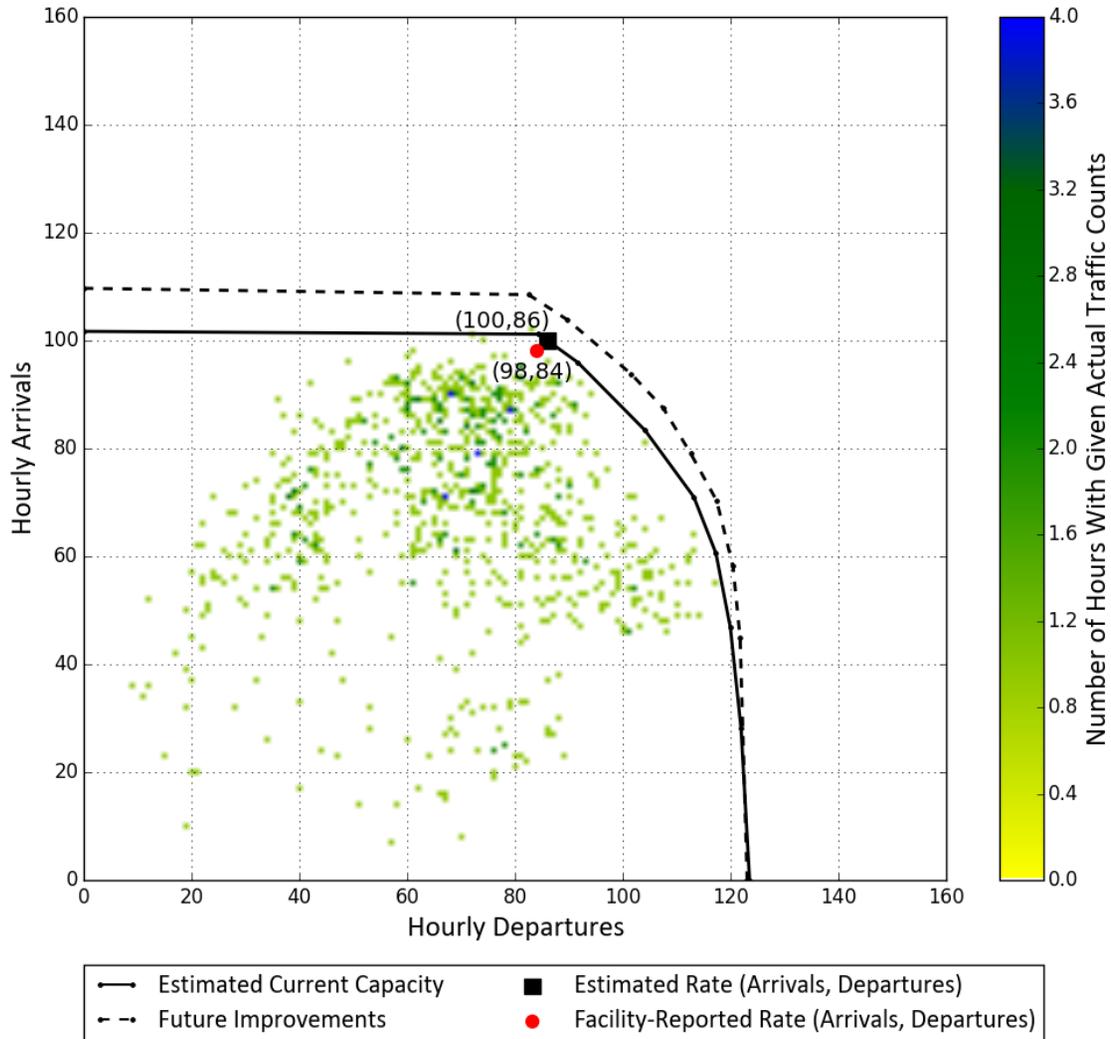


Actual traffic counts shown are for all Instrument hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	08L,09R,10	08R,09L	182	186
FUTURE IMPROVEMENTS	08L,09R,10	08R,09L	N/A	194

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2.
- The capacity rate range in Low Instrument conditions in East flow is currently 182-186 operations per hour.
- Reduced separation (2.5 NM) between arrivals is not available during Low Instrument conditions.
- Same runway departure fanning is conducted from Runways 08R and 09L. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings are not modeled because preferred taxi paths allow arrivals to cross behind departing aircraft in East flow.

### LOW INSTRUMENT WEATHER CONDITIONS

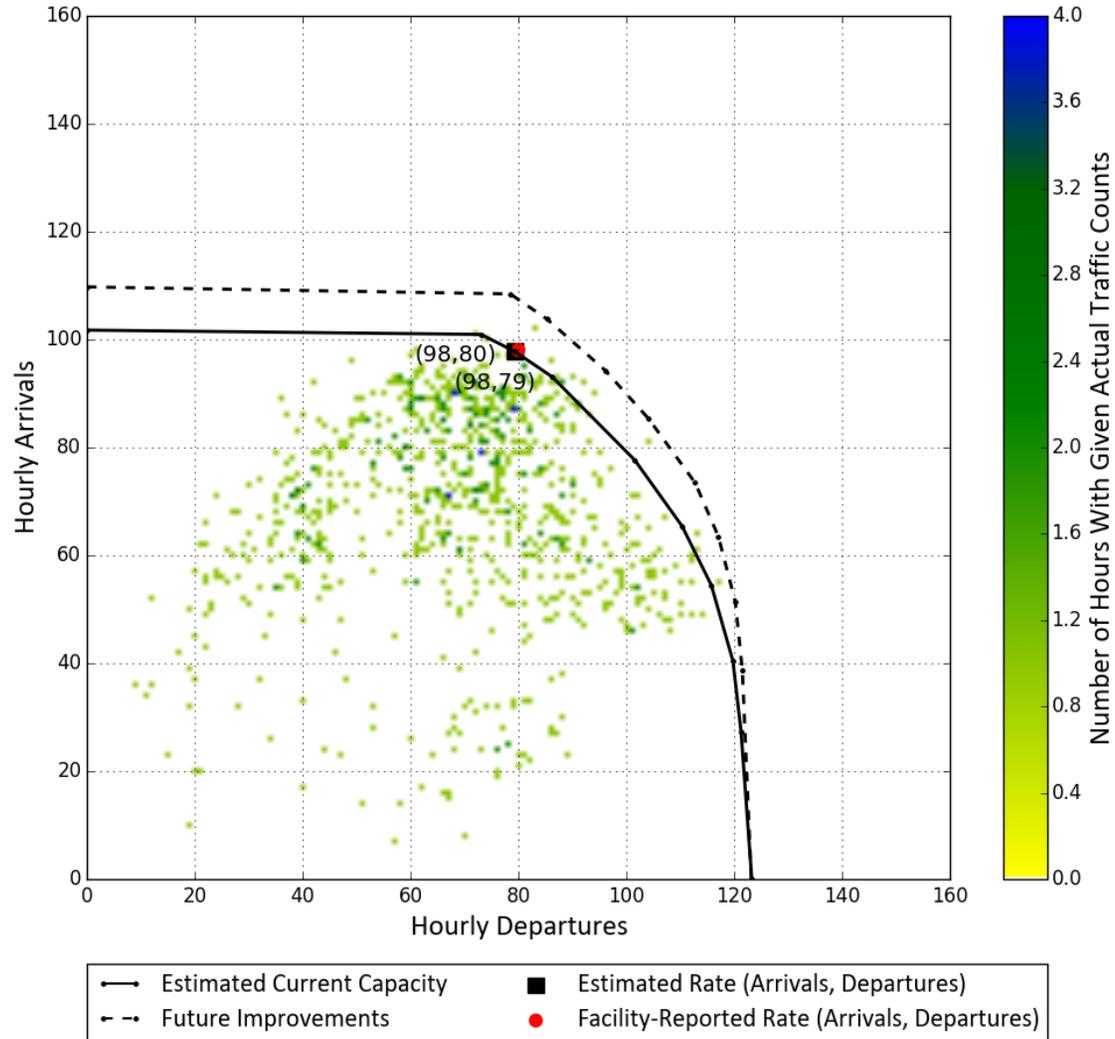


Actual traffic counts shown are for all Instrument hours, all configurations.  
For data source information, see page 3.

Type Operations	Arrival Runways	Departure Runways	Hourly Rate	
			ATC Facility-Reported	Model-Estimated
CURRENT OPERATIONS	26R,27L,28	26L,27R	178	177
FUTURE IMPROVEMENTS	26R,27L,28	26L,27R	N/A	189

- **Future improvements:** Improved Runway Delivery Accuracy, Wake Recategorization Phase 2
- The capacity rate range in Instrument conditions in West flow is currently 177-178 operations per hour.
- Reduced separation (2.5 NM) between arrivals is not available during Low Instrument conditions.
- Same runway departure fanning is conducted from Runways 26L and 27R. This procedure enables higher departure throughput by reducing the minimum time required between successive departures.
- Runway crossings were not explicitly modeled in this configuration because arrival departure dependencies in Low Instrument conditions allows natural crossing gaps to occur.

### LOW INSTRUMENT WEATHER CONDITIONS

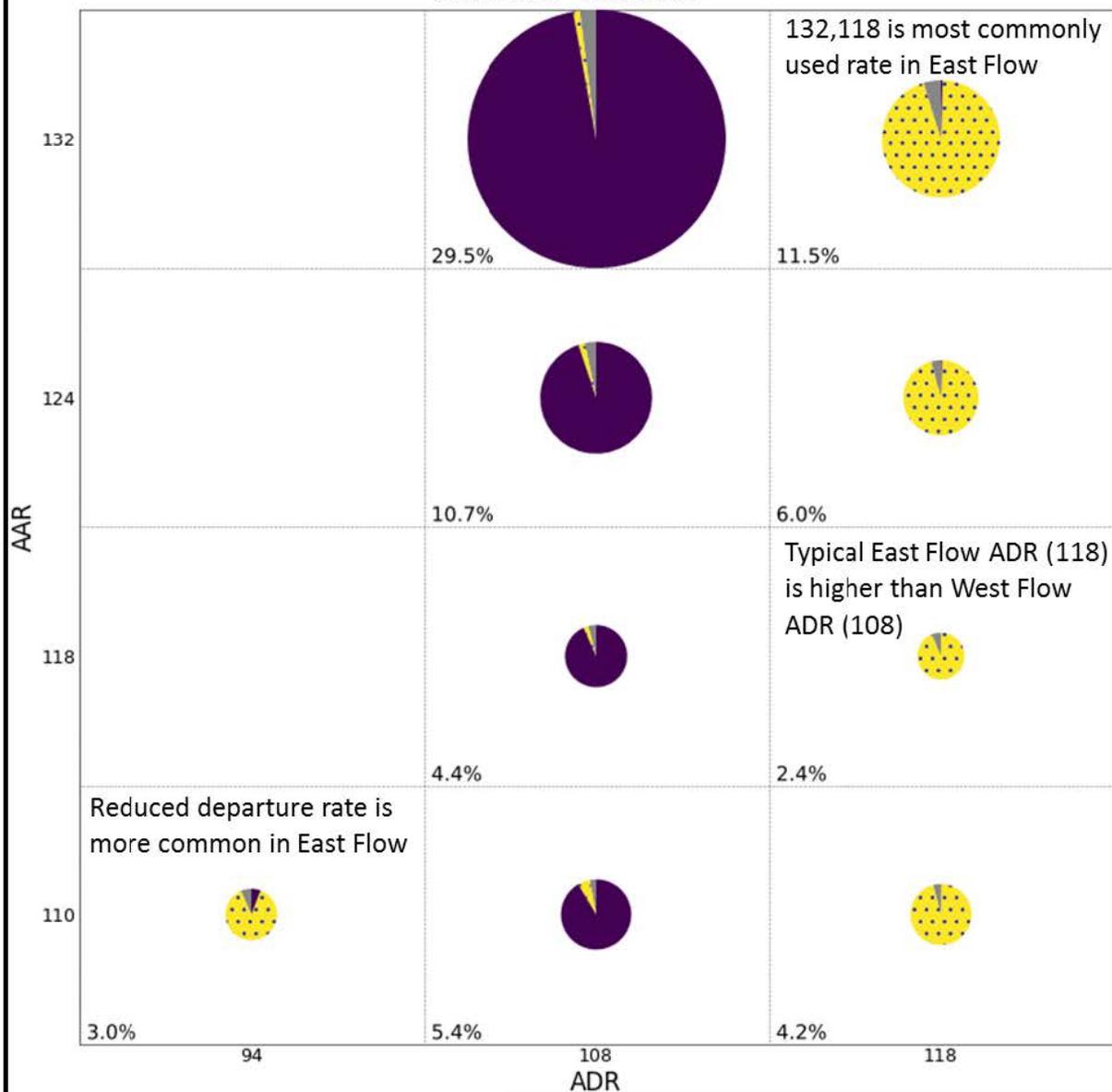


Actual traffic counts shown are for all Instrument hours, all configurations.  
For data source information, see page 3.

# HISTORICAL CALLED RATE AND CONFIGURATION USAGE BY FLOW

# HISTORICAL USAGE – EAST FLOW

## Called Rates



Other rates: 22.9%

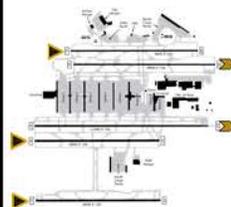
Rates for all hours regardless of configuration, minimum 2% of time

EAST FLOW FACILITY REPORTED RATES			
132,118 (VMC)	124,118 (MMC)	110,94 (IMC)	98,84 (Low IMC)

All data for hours from 1 Oct 2014 – 30 Sept 2017, 7 AM to 11 PM. Excludes variable winds and missing or incomplete data. Only shows rates called at least 2% of all hours.

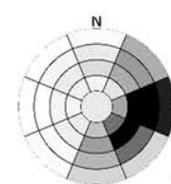
## Configuration Usage

8L,9R,10 | 8R,9L (34%)



### RATES

- 132,118 (33%)
- 124,118 (17%)
- 110,118 (12%)
- 110,94 (8%)
- 118,118 (7%)



### WIND & WEATHER

- VMC: 70%
- MMC: 15%
- IMC: 9%
- Low IMC: 6%

West Flow Configurations

Other Configurations

**\*\*DRAFT\*\***

### Key

Arrivals | Departures (percent of time in configuration)



### RATES

90,90 (90%) Rates (AAR, ADR) called at least 5% of time when configuration used

### WIND & WEATHER



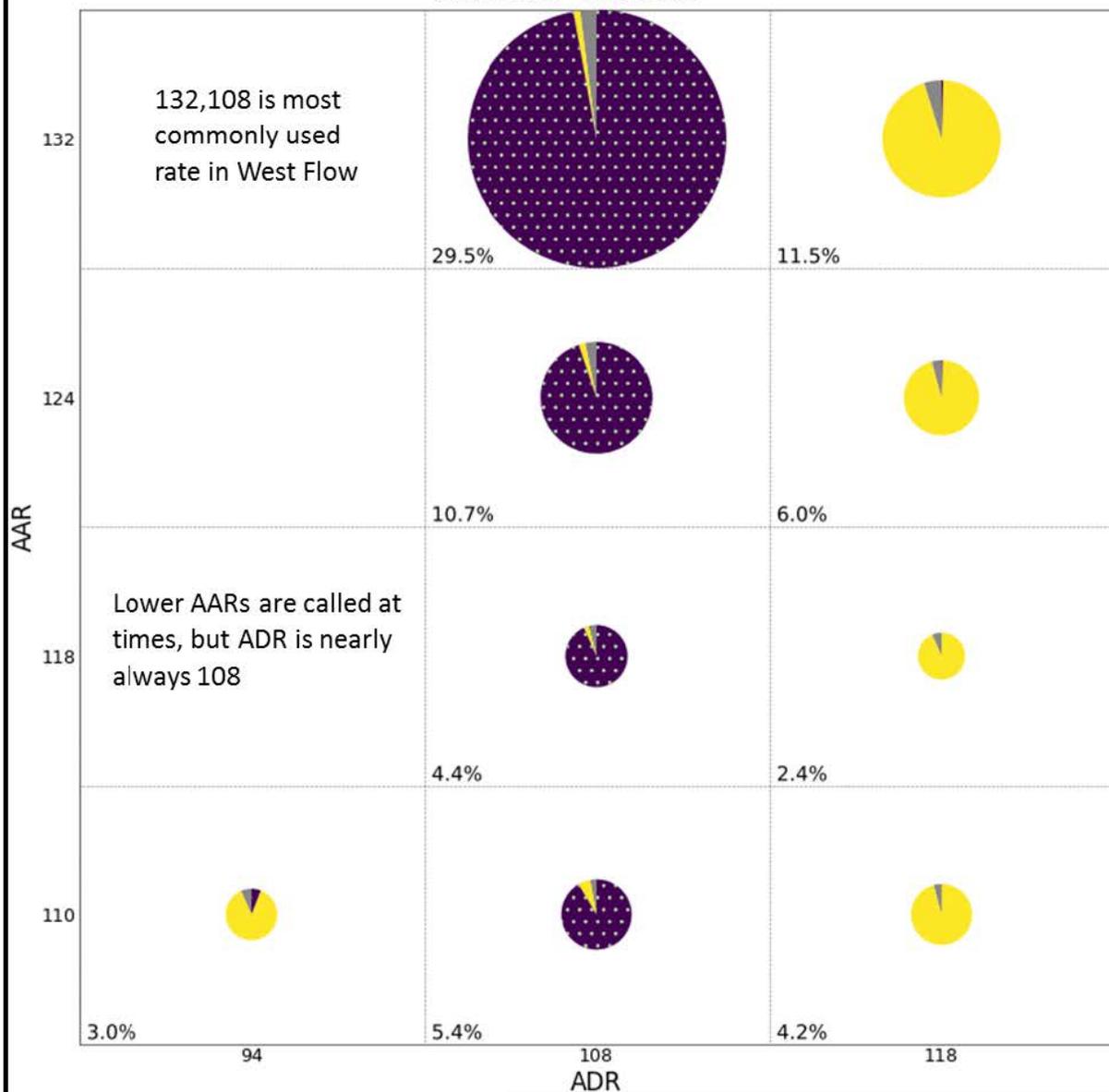
Wind speeds increase away from center (3 knot increments)

More common winds are darker

Percent of time spent in VMC/MMC/IMC when configuration used

# HISTORICAL USAGE – WEST FLOW

## Called Rates



Other rates: 22.9%

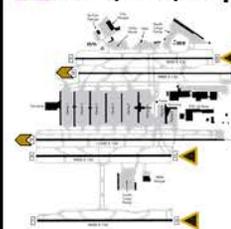
Rates for all hours regardless of configuration, minimum 2% of time

WEST FLOW FACILITY REPORTED RATES			
132,108 (VMC)	124,108 (MMC)	110,94 (IMC)	98,80 (Low IMC)

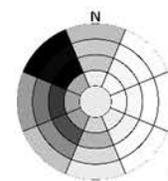
All data for hours from 1 Oct 2014 – 30 Sept 2017, 7 AM to 11 PM. Excludes variable winds and missing or incomplete data. Only shows rates called at least 2% of all hours.

## Configuration Usage

26R,27L,28 | 26L,27R (59%)



RATES	
132,108	(50%)
124,108	(18%)
110,108	(9%)
118,108	(7%)



WIND & WEATHER

VMC: 87%  
MMC: 10%  
IMC: 3%  
Low IMC: 0%

East Flow Configurations

Other Configurations

**\*\*DRAFT\*\***

### Key

Arrivals | Departures (percent of time in configuration)



### RATES

90,90 (90%) Rates (AAR, ADR) called at least 5% of time when configuration used

### WIND & WEATHER



Wind speeds increase away from center (3 knot increments)

More common winds are darker

Percent of time spent in VMC/MMC/IMC when configuration used