NextGen Performance Snapshots

The Performance Snapshots Reference Guide provides information about the following:

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Access: Key Performance Indicators (KPI)

As described by the International Civil Aviation Organization (ICAO): A global Air Traffic Management (ATM) system should provide an operating environment that ensures all airspace users have right of access to the ATM resources needed to meet their specific operational requirements and that the shared use of airspace by different users can be achieved safely.

LPV & LP Access at GA Airports without ILS

**Reported as** Count of Airports for NAS

**Desired Trend:** Increase

**Source:** FAA Office of Airport Planning and Programming.


The count of national, regional, local and basic General Aviation (GA) airports (as defined in the 2017-2021 National Plan of Integrated Airport Systems Report) without an Instrument Landing System (ILS) that have an LPV or LP procedure in the indicated year.

**Computations**

Sum of the count of airports within the defined scope having an LPV or LP procedure for a given fiscal year (FY).

**Scope**

LPV and LP procedures were counted for airports that were not a primary airport as defined in the 2017-2021 NPIAS Report, were listed as either a national, regional, local or basic GA airport in the 2017-2021 NPIAS Report, and did not have any ILS procedures.

**Statistical Issues**

This data is calculated based on the number of procedures published by the end of the FY; the value may vary within the year due to different procedure publication dates. Airports are counted per the earliest LP/LPV initial publishing date in their current list of procedures and may not account for procedure updates or changes. Previously published procedures that are no longer available will not be reflected in the data. This may cause historical values to change slightly when updated procedure lists are used to update the metric.

The list and categorization of non-primary airports is subject to change.

**Completeness**

Procedure data used to calculate the metric was last updated on February 20, 2018 and includes procedures published through the final charting date of FY 2017 (September 14, 2017).
Percent of Qualified GA Airports with LPV or LP Access

**Reported as** Cumulative Percent for NAS only

**Desired Trend:** Increase

**Source:** FAA Office of Airport Planning and Programming.


The cumulative percent of qualified national, regional, local and basic General Aviation (GA) airports (as defined in the 2017-2021 NPIAS Report) with an LPV or LP procedure.

**Computations**

The cumulative percent of qualified airports that have an LPV or LP procedure in a specific year.

**Scope**

This metric only includes LPV and LP qualified national, regional, local and basic GA airports (as defined in the 2017-2021 NPIAS Report).

The yearly numbers of LPV and LP Procedures counted include those available at airports both with and without ILS procedures.

**Statistical Issues**

This data is calculated based on the number of procedures published by the end of the fiscal year (FY); the value within a year may vary due to the different charting dates.

Airports are counted per the earliest LP/LPV initial publishing date in their current list of procedures and may not account for procedure updates or changes. Previously published procedures that are no longer available will not be reflected in the data. This may cause historical values to change slightly when updated procedure lists are used to update the metric.

The list and categorization of airports is subject to change.

**Completeness**

Procedure data used to calculate the metric was last updated on February 20, 2018 and includes procedures published through the final charting date of FY 2017 (September 14, 2017).

The NPIAS Report was submitted to Congress in September 2016.
Capacity: Key Performance Indicators (KPI)

As described by the International Civil Aviation Organization (ICAO): *The global Air Traffic Management (ATM) system should exploit the inherent capacity to meet airspace user demands at peak times and locations while minimizing restrictions on traffic flow. ICAO also notes: The ATM system must be resilient to service disruption and the resulting temporary loss of capacity.*

**Average Daily Capacity**

Reported as Number of Operations at Core Airports during reportable hours

Desired Trend: Increase

Source: FAA/MITRE/Aviation System Performance Metrics (ASPM) data.

During reportable hours, the average daily sum of the Airport Departure Rate (ADR) and Airport Arrival Rate (AAR) reported by fiscal year (FY). The reportable hours vary by airport.

Computations

The yearly sum of the hourly AAR and the hourly ADR during reportable hours divided by the number of days in the year.

Scope

Called rates include all arrival and departure traffic that an airport can support.

Statistical Issues

Due to the units of this metric (Number of Operations), the results were rounded to the nearest whole number.

Completeness

The type of data from which this metric is calculated is intended to capture the full set of ASPM records.

Reliability

The data for FY 2017 is not yet final as amendments may be made to the ASPM source data until six weeks after the end of FY 2018.

When calculating the FY 2016 values for this metric, the FY 2015 values for several airports (DEN; EWR; JFK; LAS; MDW; PHL and SEA) have changed. This could be attributed to updates to the source data after the FY 2015 metrics were initially calculated.

In addition to calculating the FY2014 data values, the entire dataset (FY 2009 - 2013) was re-calculated prior to the April 2015 NPS release to ensure that any data amendments would
be reflected in the final metric.

**Additional Notes**

Reportable hours vary by airport and are based on local time. Additional reportable hours information is included in the Airports section below.

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**Average Hourly Capacity During Instrument Meteorological Conditions (IMC)**

**Reported as** Number of Operations at Core Airports during reportable hours and Instrument Meteorological Condition (IMC) weather conditions (as defined by ASPM).

**Desired Trend:** Increase

**Source:** FAA/MITRE/Aviation System Performance Metrics (ASPM) data.

The average hourly capacity reported during IMC weather conditions (as defined by ASPM). Capacity is defined as the sum of Airport Departure Rate (ADR) and Airport Arrival Rate (AAR). It is calculated based on the reportable hours at the destination airport. The reportable hours vary by airport.

**Computations**

The yearly sum of the hourly AAR and the hourly ADR during IMC during reportable hours divided by the number of days in the year.

**Scope**

Called rates include all arrival and departure traffic that an airport can support.

**Statistical Issues**

Due to the units of this metric (capacity of operations), the results were rounded to the nearest whole number. The identification of IMC is based on the most recent ceiling and visibility criteria for each airport.

**Completeness**

The type of data from which this metric is calculated is intended to capture the full set of ASPM records.

**Reliability**

The data for FY 2017 is not yet final as amendments may be made to the ASPM source data until six weeks after the end of FY 2018.

In addition to calculating the FY2014 data values, the entire dataset (FY 2009 - 2013) was re-calculated prior to the April 2014 NPS release to ensure that any data amendments would be reflected in the final metric.
Efficiency: Key Performance Indicators (KPI)

As described by the International Civil Aviation Organization (ICAO), efficiency addresses the operational and economic cost-effectiveness of gate-to-gate flight operations from a single-flight perspective. In all phases of flight, airspace users want to depart and arrive at the times they select and fly the trajectory they determine to be optimum.

Airborne Distance (City Pairs)

**Reported as** Nautical Miles for Selected City Pairs during reportable hours (based on the local time for the destination airport)

**Desired Trend:** Decrease


During reportable hours at the destination airport, the average airborne distance of flights between the selected city pair. The reportable hours vary by airport and the results are reported by fiscal year (FY). Additional reportable hour information can be found in the airport information section of the Reference Guide.

**Formula**

\[ F \frac{D}{n_F} \]

\( D \) is the airborne distance flown for each flight in the Scope, \( F \) is the set of all flights in the Scope and \( n_F \) is the number of \( F \).

**Computations**

The metric is calculated as the sum of airborne distances of the flights within the Scope, divided by the total number of flights within the Scope.

For FY 2011–FY 2015 the metric is derived from a fusion of flight position reports throughout the flight envelope into a single synthetic trajectory. These sources currently include National Offload Program (NOP), Automated Radar Terminal System (ARTS), Standard Terminal Automation Replacement System (STARS), and Air Route Traffic Control Center (ARTCC) sensors, Traffic Flow Management System (TFMS) reports, and Airport Surface Detection Equipment, Model X (ASDE-X) surveillance data.

For each flight using the MITRE Threaded Track data source, the first radar track point greater than 500 ft. above the origin airport is chosen to approximate wheels-up time. Similarly, the last radar track point greater than 500 ft. above the arrival airport is chosen to
approximate touchdown time. The along-track distance of the flight trajectory between these two track points, derived from flight position reports, is calculated as the airborne distance. Note that the calculated airborne distance will consistently underestimate the actual airborne distance for a given flight by approximately 1–2 nautical mile (NM), depending on climb and descent gradients, because the chosen first and last track points are always at least 500 ft. above the ground.

Scope

The metric considers ASQP reporting carriers operating domestic service between the selected pair of airports in the direction indicated. Only flights arriving at the destination airport within the reportable hours are included in this measurement. Flights may depart the origin airport outside the reportable hours.

Statistical Issues

FY 2016 data is not available for the IAD-LGA airport pair due to operator changes between this city pair.

Due to a change in data providers, the 2016 values from this metric were calculated by the FAA using TFMS data, while the preceding year’s data was provided by MITRE using Threaded Track. When developing the FY 2016 metrics, we recalculated the FY 2015 metrics to verify that the results were consistent. It was determined that the slight variations between the FY2015 values from the two data sources were acceptable for this release.

For the MITRE Threaded Track data, the airborne distance computation includes a filter for flights with a first radar track point greater than 4000 ft. above the origin airport or a last radar track point greater than 4000 ft. above the destination airport, to minimize inaccurate airborne distance calculations due to poor radar coverage near the ground. The airborne distance computation also includes a filter for flights with a first radar track point greater than 10NM from the origin airport or a last radar track point greater than 10NM from the destination airport, to eliminate any additional radar coverage issues and deviations to alternative airports. These filters exclude 1.5 percent of flights in the Scope.

TFMS processes all available data sources such as flight plan messages, flight plan amendment messages, and departure and arrival messages. The FAA’s airspace lab assembles TFMS flight messages into one record per flight. TFMS is restricted to the subset of flights that fly under IFR and are captured by the FAA’s en route computers. Most VFR and some non-en route IFR traffic are excluded.

TFMS contains complete flight information for all IFR flights, including air carrier, air taxi/commuter, general aviation, and military operations. TFMS also has flight information for cargo flights and for the departures and arrivals of international flights.

Reliability

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

Additional Notes

The metric is first calculated for all IFR operations between the city pairs and then linked to ASQP flights, obtained through the ASPM website. In the original data set the Official Airline
Guide Aircraft Identification (OAG_ACID) column must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

**Average Airborne Time (City Pairs)**

**Reported as** Minutes for Selected city pairs during reportable hours (based on the local time for the destination airport)

**Desired Trend:** Decrease

**Source:** Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data, for reportable hours only.

During reportable hours at the destination airport, the average Airborne Time for flights between the selected city pair. The reportable hours vary by airport and the results are reported by fiscal year. Additional reportable hour information can be found in the airport information section of the [Reference Guide](#).

**Computations**

The metric is calculated as the average Airborne Time. Airborne time is the difference between the Actual On Time at the destination airport and the Actual Off Time at the origin airport.

**Scope**

This metric only measures ASQP reporting carriers operating domestic service between the selected pair of airports in the direction indicated. Only flights arriving at the destination airport within the reportable hours are included in this measurement. Flights may depart the origin airport outside the reportable hours.

**Statistical Issues**

Calculating the average of all flights helps provide a better picture of the typical airborne time by reducing the effect of atypical data points.

This calculation did not normalize the data for any changes in operator fleet mix.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

FY 2016 and FY 2017 data is not available for the IAD-LGA airport pair due to operator changes between this city pair.

**Reliability**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hours
information is included in the Airports section below.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

Additional Notes

The metric is derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal “ASQP” in order for the flight to be considered an ASQP flight and used in the calculations.

Average Gate Arrival Delay

**Reported as** Minutes per Flight for Core Airports during reportable hours

**Desired Trend:** Decrease

**Source:** FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours, the yearly average of the difference between the Actual Gate-In Time and the Scheduled Gate-In Time for flights to the selected airport from any of the ASPM airports. The delay for each fiscal year (FY) is calculated based on the 0.5th — 99.5th percentile of the distributions for the year. Flights may depart outside reportable hours, but must arrive during them. The reportable hours vary by airport.

**Formula**

\[ F \frac{AD}{nF} \text{ for each } G \]

where

\[ AD = ( t \text{ in act} - t \text{ in sch}) \]

and where \( G \) are the groups defined within scope, Arrival Delay \((AD)\) is equal to the actual time into the gate at the arrival airport \(( t \text{ in act})\) minus the scheduled time in at the arrival airport \(( t \text{ in sch})\); \( F \) are all flights over the year within each group and \( nF \) is the number of \( F \).

**Computations**

Average Gate-In Delay against schedule over all flights in the FY for each group defined within the scope.

**Scope**

Flights are restricted to domestic ASQP flights departing from an ASPM airport and traveling to the selected airport. To be included a flight needs to arrive within the reportable hours, but may depart the origin outside reportable hours.

**Statistical Issues**
The list of ASQP reporting carriers is subject to change yearly. Additionally, changes in carrier operations at an airport may impact data results over time.

This calculation did not normalize the data for any changes in operator fleet mix.

This calculation may include time an aircraft spends in a non-movement area (defined in the Aeronautical Information Manual as *Taxiways and apron (ramp) areas not under the control of air traffic*). Reporting carriers (operators) may use slightly different starting and/or ending points when gathering performance data.

After the metric was calculated, the data was truncated to remove outliers. The information provided is based on the 0.5 — 99.5 percentile of the distributions by airport and year.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

**Reliability**

The metrics are derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set, the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

Positive delays are considered any time beyond the scheduled arrival time (including delays less than 15 minutes). Due to the inclusion of flights arriving before schedule (negative delays), negative values are possible for this metric.

The January 2017 NPS Release reflects the latest updates in the dataset and improvements in the algorithm.

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.

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**Average Number of Level-offs per Flight**

**Reported as** Counts per Flight for Core Airports

**Desired Trend:** Decrease

**Source:** National Offload Program (NOP) Track Data

The count of level-offs as flights descend from cruise altitudes to the arrival airport, averaged for the fiscal year.
Formula

\[ \text{LO} \text{ n } F \]

\( \text{LO} \) is the count of level-offs for each arrival in the Scope, \( F \) is the set of all flights in Scope and \( n_F \) is the number of \( F \).

Computations

The metric is calculated as the sum of the count of level-offs for each flight within the Scope, divided by the total number of flights within the Scope.

The metric is derived from flight position reports from the National Offload Program (NOP).

Level-offs are tracked from the Top-of-Descent (TOD) point or 200 nautical miles (NM) from the airport, whichever is closer. A trajectory segment is considered as a level-off if the change in altitude of position reports is less than or equal to 200 feet and the segment is at least 50 seconds in duration.

Scope

Only non-military Instrument Flight Rules (IFR) operations arriving into Core Airports (from any origin airport) are considered.

Statistical Issues

Flights are excluded where the total level distance is greater than twice the 99th percentile for all arrivals into the destination airport based on a given time period (typically a year). If time and/or distance gaps exist in the trajectory data within 200 nautical miles of the destination airport, then these flights are excluded. Due to the sparsity of the NOP oceanic track data, level-off metrics are not reported for HNL. Additionally, level-offs below 1,800 feet are excluded, since these are considered adjustments for final approach.

Additional Notes

This metric is calculated using all hours.

The data set for this metric was refreshed using an updated methodology utilized by the FAA Air Traffic Office with the January 2017 update.

In fall 2018, the methodology for this metric was revised to exclude outliers which would affect the data. The FY2016 and FY2017 data was recalculated directly using this new methodology, and the FY2011—FY2015 data was multiplied by an adjustment factor.

Distance in Level Flight from Top of Descent to Runway Threshold

Reported as Nautical Miles per Flight for Core Airports

Desired Trend: Decrease

Source: National Offload Program (NOP) Track Data
The distance flown during level-off segments as flights descend from cruise altitudes to the arrival airport, averaged for the fiscal year (FY).

**Formula**

\[ D \text{ is the distance flown during level-off segments for each arrival in the Scope, } F \text{ is the set of all flights in the Scope and } n_F \text{ is the number of } F. \]

**Computations**

The metric is calculated as the sum of the total distance flown during level-off segments for all flights within the Scope, divided by the total number of flights within the Scope.

The metric is derived from flight position reports from the National Offload Program (NOP). Level-offs are tracked from the Top-of-Descent (TOD) point or 200 nautical miles (NM) from the airport, whichever is closer. A trajectory segment is considered as a level-off if the change in altitude of position reports is less than or equal to 200 feet and the segment is at least 50 seconds in duration.

**Scope**

Only non-military Instrument Flight Rules (IFR) operations arriving into Core Airports (from any origin airport) are considered.

**Statistical Issues**

Flights are excluded where the total level distance is greater than twice the 99th percentile for all arrivals into the destination airport based on a given time period (typically a year). If time and/or distance gaps exist in the trajectory data within 200 nautical miles of the destination airport, then these flights are excluded. Due to the sparsity of the NOP oceanic track data, level-off metrics are not reported for HNL. Additionally, level-offs below 1,800 feet are excluded, since these are considered adjustments for final approach.

**Additional Notes**

This metric is calculated using all hours.

The data set for this metric was refreshed using an updated methodology utilized by the FAA Air Traffic Office with the January 2017 update.

In fall 2018, the methodology for this metric was revised to exclude outliers which would affect the data. The FY2016 and FY2017 data was recalculated directly using this new methodology, and the FY2011—FY2015 data was multiplied by an adjustment factor.

**Effective Gate-to-Gate Time (Core 30 Airports)**

Reported as Minutes per Flight for Core Airports during reportable hours
Desired Trend: Decrease

Source: FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours, the difference between the Actual Gate-In Time at the destination (selected) airport and the Scheduled Gate-Out Time at the origin airport. Flights may depart outside reportable hours, but must arrive during them. The reportable hours vary by airport and the results are reported by fiscal year (FY).

Computations

Gate-to-Gate time over all flights in the FY for each group defined within the scope.

Scope

Flights are restricted to domestic ASQP flights departing from any ASPM airport and traveling to the selected airport by an ASQP reporting carrier. Additionally, to be included, a flight needs to arrive within the reportable hours (but may depart the origin airport outside the reportable hours).

Statistical Issues

The list of ASQP reporting carriers is subject to change yearly. Additionally, changes in carrier operations at an airport may impact data results over time.

This calculation did not normalize the data for any changes in operator fleet mix.

This calculation may include time an aircraft spends in a non-movement area (defined in the Aeronautical Information Manual as Taxiways and apron (ramp) areas not under the control of air traffic). Reporting carriers (operators) may use slightly different starting and/or ending points when gathering performance data.

Completeness

ASQP flights are those with actual data reported to the Department of Transportation.

Reliability

The metric is derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set, the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal “ASQP” in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

Additional Notes

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.
Effective Gate-to-Gate Time (City Pairs)

**Reported as** Average Minutes per Flight for Selected city pairs during reportable hours (based on the local time of the arrival airport)

**Desired Trend:** Decrease

**Source:** FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours at the destination airport, the difference between the Actual Gate-In Time at the destination airport and the Scheduled Gate-Out Time at the origin airport. Flights may depart outside reportable hours, but must arrive during them. The reportable hours vary by airport and the results are reported by fiscal year (FY).

**Computations**

Average Gate-to-Gate Time over all flights in the FY for the selected City Pair within the scope.

**Scope**

This metric only measures ASQP reporting carriers operating domestic service between the selected pair of airports in the direction indicated. Only flights arriving at the destination airport within the reportable hours are included in this measurement. Flights may depart the origin airport outside reportable hours.

**Statistical Issues**

The list of ASQP reporting carriers is subject to change yearly. Additionally, changes in carrier operations at, or between the origin and destination may impact data results over time.

This calculation did not normalize the data for any changes in operator fleet mix.

This calculation may include time an aircraft spends in a non-movement area (defined in the Aeronautical Information Manual as *taxiways and apron (ramp) areas not under the control of air traffic*). Reporting carriers may use slightly different starting and/or ending points when gathering performance data.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

FY 2016 and FY 2017 data is not available for the IAD-LGA airport pair due to operator changes between this city pair.

**Reliability**

The metric is derived from individual ASQP flight data obtained through the ASPM website. In the original data set the Official Airline Guide Aircraft Identification (OAG_ACID) column
must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.

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**Taxi-In Time**

**Reported as** Minutes per Flight for Core Airports during reportable hours

**Desired Trend:** Decrease

**Source:** FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours, the yearly average of the difference between Wheels-On Time and Gate-In Time for flights arriving at the selected airport from any of the Aviation System Performance Metrics (ASPM) airports. Flights may depart outside reportable hours, but must arrive during them. The reportable hours vary by airport.

**Formula**

\[ F \left( T_{\text{I}} n F \right) \]

where

\[ T_{\text{I}} = t_{\text{in act}} - t_{\text{on act}} \]

The Taxi-In Time metric is calculated as the average over all flights in the fiscal year (FY) defined within the scope. The Taxi-In Time for a flight \( (T_I) \) is defined as the time the aircraft pulls into the gate ( \( t_{\text{in act}} \) ) minus the time the aircraft wheels touch the ground ( \( t_{\text{on act}} \) ). This value is added to all the other flights within scope \( (F) \) and divided by the number of \( F \) \( (nF) \).

**Computations**

The average of the difference between the actual Gate-In Time and actual Wheels-On Time over all arrivals for each group defined within the scope.

**Scope**

Flights are restricted to domestic ASQP flights departing from an ASPM airport and traveling to the selected airport by an ASQP reporting carrier. To be included, a flight needs to arrive within the reportable hours, but may depart the origin outside reportable hours.
**Statistical Issues**

The list of ASQP reporting carriers are subject to change yearly. Additionally, changes in carrier operations at an airport may impact data results over time.

This calculation did not normalize the data for any changes in operator fleet mix.

This calculation may include time an aircraft spends in a non-movement area (defined in the Aeronautical Information Manual as *taxiways and apron (ramp) areas not under the control of air traffic*). Reporting carriers (operators) may use slightly different starting and/or ending points when gathering performance data.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

**Reliability**

The metrics are derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set, the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.

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**Taxi-Out Time**

 Reported as Minutes per Flight for Core Airports during reportable hours

Desired Trend: Decrease

Source: FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours, the yearly average of the difference between Gate-Out Time and Wheels-Off Time for flights from the selected airport to any of the ASPM airports. Flights must depart during reportable hours, but may arrive outside them. The reportable hours vary by airport.

**Formula**

\[ F_{TO} - F \]
where

\[ TO = t_{\text{off act}} - t_{\text{out act}} \]

The Taxi-Out Time metric is calculated as the average over all flights in the fiscal year (FY) defined within the scope. The Taxi-Out Time for a flight \( TO \) is defined as the time the aircraft takes off \( t_{\text{off act}} \) minus the time the aircraft pushes back from the gate \( t_{\text{out act}} \). This value is added to all the other flights within scope \( F \) and divided by the number of \( F \) \( n_F \).

**Computations**

The average of the difference between the Actual Gate-Out Time and Actual Wheels-Off Time over all departures for each group defined within the scope.

**Scope**

Flights are restricted to domestic ASQP flights departing from the selected airport and traveling to an ASPM airport. To be included, a flight needs to depart within the reportable hours, but may arrive at the destination outside the reportable hours.

**Statistical Issues**

The list of ASQP reporting carriers is subject to change yearly. Additionally, changes in carrier operations at an airport may impact data results over time.

This calculation did not normalize the data for any changes in operator fleet mix.

This calculation may include time an aircraft spends in a non-movement area (defined in the Aeronautical Information Manual as *Taxiways and apron (ramp) areas not under the control of air traffic*). Reporting carriers (operators) may use slightly different starting and/or ending points when gathering performance data.

**Completeness**

ASQP flights are those with data reported to the Department of Transportation.

**Reliability**

The metrics are derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set, the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour
Environment: Key Performance Indicators (KPI)

As described by the International Civil Aviation Organization (ICAO): *The Air Traffic Management (ATM) system should contribute to the protection of the environment by considering noise, gaseous emissions, and other environmental issues in the implementation and operation of the global ATM system.*

**CO₂ Emissions**

- **Reported as** Kilograms for NAS only
- **Desired Trend:** Decrease
- **Source:** FAA Office of Environment and Energy

Estimated quantity of carbon dioxide emissions (CO₂) emitted by commercial aircraft within the NAS.

**Formula**

\[
\text{Fuel Burn (kg) } \times 3.155 \ (\text{CO}_2 \ \text{kg per kg of fuel burn}) = \text{CO}_2 \ \text{in kilograms}
\]

**Computations**

As part of measuring and tracking the National Airspace System (NAS) fuel efficiency from commercial aircraft operations, the FAA quantifies annual aircraft fuel burn using FAA’s Aviation Environmental Design Tool (AEDT). AEDT is a FAA-developed computer model that estimates aircraft fuel burn and emissions for variable year emissions inventories and for operational, policy, and technology-related scenarios.

**Statistical Issues**

Potential seasonal variability and variability from year-to-year can be expected when analyzing air traffic data and commercial operations.

The extent to which enhancements are incorporated to improve AEDT model accuracy, for example via more robust aerodynamic performance modeling algorithms and databases of aircraft/engine fuel burn information, will impact the overall results. This could create statistical variability from year-to-year if not taken into account. In cases where such enhancements have the potential to create a significant shift in baseline, annual inventories may need to be re-processed and/or adjusted to ensure consistency and accuracy of results.

The extent to which aircraft fleet improvements cannot be sufficiently modeled because of a lack of manufacturer proprietary data may also influence results. In this case, attempts will be made to characterize such aircraft with the best publicly available information, recognizing that newer aircraft types in the fleet will likely exist in significantly lesser numbers, thus minimizing the influence upon results.
The results for calendar years (CY) 2005, 2010 and 2011 have been re-calculated using the latest version of the AEDT. The NPS was updated in April 2015 to reflect these values.

**Completeness**

Data used to measure aircraft performance are assessed for quality control purposes. Input data for the AEDT model are validated before proceeding with model runs. Radar data from the Traffic Flow Management System (TFMS) are assessed to remove any anomalies, check for completeness, and pre-processed for input to the AEDT model. TFMS data are verified against the Official Airline Guide (OAG) information in order to avoid any duplication of flights in the annual inventory.

In some cases, TFMS data lack appropriate fields to conduct quality control and in these cases the data was removed. Data from the AEDT model are verified by comparing output from previous years and analyzing trends to ensure that they are consistent with expectations. In other cases monthly inventories may be analyzed to validate the results. Model output is subsequently post-processed to perform the calculations. Formulae and calculations are checked in order to ensure accuracy.

**Reliability**

The measuring procedure used is highly reliable. That is to say that the processing of data through the AEDT model including the performance of algorithms is not subject to random factors that could influence the results. However, this is potentially influenced by factors outside the control of FAA.

We do not expect increases in fuel burn or decreases in distance traveled or both to degrade the fleet fuel efficiency significantly.

**Additional Notes**

This metric is shown by calendar year (CY).

**NAS-Wide Energy Efficiency**

**Reported as** Kilograms per Tonne-Kilometer for NAS only

**Desired Trend:** Decrease

**Source:** FAA Office of Environment and Energy

Estimated fuel burn in kilograms per revenue tonne kilometer.

**Formula**

Fuel Burn (Revenue Payload x Distance Flown)

**Computations**

Measuring and tracking fuel efficiency from commercial aircraft operations allows FAA to
monitor improvements in aircraft/engine technology and operational procedures, as well as enhancements in the airspace transportation system. The FAA measures performance using the Aviation Environmental Design Tool (AEDT). AEDT is a FAA-developed computer model that estimates aircraft fuel burn and emissions for variable year emissions inventories and for operational, policy, and technology-related scenarios.

**Scope**

This metric focuses on all U.S. commercial operations.

**Statistical Issues**

Potential seasonal variability and variability from year-to-year can be expected when analyzing air traffic data and commercial operations.

The extent to which enhancements are incorporated to improve model accuracy, for example via more robust aerodynamic performance modeling algorithms and database of aircraft/engine fuel burn information, will impact the overall results. This could create some statistical variability from year-to-year if not taken into account. In cases where such enhancements have the potential to create a significant shift in baseline, annual inventories may need to be re-processed and/or adjusted to ensure consistency and accuracy of results.

The extent to which aircraft fleet improvements cannot be sufficiently modeled due to a lack of manufacturer proprietary data may also influence the performance results. In this case, attempts will be made to characterize such aircraft with the best publicly available information, recognizing that newer aircraft types in the fleet will likely exist in significantly lesser numbers, thus minimizing the influence upon the results.

**Completeness**

Data used to measure performance are assessed for quality control purposes. Input data for the AEDT model are validated before proceeding with model runs. Radar data from the Traffic Flow Management System (TFMS) are assessed to remove any anomalies, check for completeness, and pre-processed for input to the AEDT model. TFMS data are verified against the Official Airline Guide (OAG) information in order to avoid any duplication of flights in the annual inventory.

In some cases, TFMS data lack appropriate fields to conduct quality control and in these cases the data are removed. Data from the AEDT model are verified by comparing output from previous years and analyzing trends to ensure that they are consistent with expectations. In other cases monthly inventories may be analyzed to validate the results. Formulae and calculations are checked in order to ensure accuracy.

**Reliability**

The measuring procedure used is highly reliable. That is to say that the processing of data through the AEDT model including the performance of algorithms is not subject to random factors that could influence the results. However this is potentially influenced by factors outside the control of FAA.

We do not expect increases in fuel burn or decreases in distance traveled or both to degrade the fleet fuel efficiency significantly.
Noise Exposure

Reported as Number of People

Desired Trend: Decrease

Source: FAA Office of Environment and Energy

Number of persons exposed to significant aircraft noise (regardless of whether their houses or apartments have been sound-insulated). Significant aircraft noise levels are currently defined as values greater than or equal to Day-Night Average Sound Level (DNL) 65 decibels (dB).

Formula

\[
\sum_{i=1}^{n} \text{POP65}_i - \sum_{j=1}^{9} \text{POPREL}_j
\]

Where \( \text{POP65}_i \) is the number of people residing in the DNL 65 dB contour at the \( i \)th "Noise Inventory" airport as of the current year projected from the 2010 Census, and \( n \) is the number of "Noise Inventory" airports. A Noise Inventory airport is defined as any airport that reported having at least 365 jet departures for the year being used in the analysis. \( \text{POPREL}_j \) is the number of people relocated from the DNL 65 dB contour in the \( j \)th FAA region.

Computations

Beginning in FY 2012, the estimates of the number of people exposed to significant noise are calculated using the Aviation Environmental Design Tool (AEDT). Prior to the use of AEDT, estimates were calculated using the Model for Assessing Global Exposure to the Noise of Transport Aircraft (MAGENTA). The computational core of AEDT is FAA’s Integrated Noise Model (INM) with methodological improvements. INM was the most widely used computer program for the calculation of aircraft noise around airports. In FY 2015, INM was replaced by AEDT as the regulatory tool to calculate airport noise around airports. Major assumptions on local traffic utilization come from obtaining AEDT datasets that were developed for an airport and ETMS.

For calendar year 2015, the AEDT model calculates individual DNL contours for the top 121 U.S. airports using detailed flight tracks, runway use and track utilization. The contours are superimposed on year 2010 Census population densities projected to the current year being computed to calculate the number of people within the DNL 65 dB contour at each airport. For the remaining 597 smaller airports with at least 365 jet departures for the year, AEDT uses less detailed information consisting of flight tracks that extend straight-in and straight-out from the runway ends. The contours areas are then used to calculate people exposed using 2010 Census population densities projected to the current year being computed. The projection is used to account for population growth between 2010 and the computed year. The individual airport exposure data are then summed to the national level. Finally, the number of people relocated through the Airport Improvement Program (AIP) is subtracted from the total number of people exposed.
Scope

The metric tracks the residential population exposed to significant aircraft noise around U.S. airports. Significant aircraft noise is defined as aircraft noise above a Day-Night Average Sound Level (DNL) 65 decibels (dB). In 1981, FAA issued 14 CFR Part 150, Airport Noise Compatibility Planning, and as part of that regulation, formally adopted DNL. DNL, symbolized as Ldn, is the 24-hour average sound level, in dB, obtained from the accumulation of all events with the addition of 10 decibels to sound levels in the night from 10 PM to 7 AM. The weighting of the nighttime events accounts for the increased interfering effects of noise during the night when ambient levels are lower and people are trying to sleep.

In the promulgation of 14 CFR Part 150, FAA also published a table of land uses that are compatible or incompatible with various levels of airport noise exposure in DNL. This table established that levels below DNL 65 dB are considered compatible for all indicated land uses and related structures without restriction.

Statistical Issues

This metric is derived from model estimates that are subject to errors in model specification. Trends of U.S. noise exposure may change due to annual improvements to the noise exposure model. A major change to the model may result in a large change in the estimate of the number of people exposed to significant noise levels around U.S. airports.

Note: In April 2015, the NPS was updated to reflect a revision to the calendar year 2012 metric value.

Completeness

No actual count is made of the number of people exposed to significant aircraft noise. Aircraft type and event level are current. However, some of the databases used to establish route and runway utilization were developed from 1990 to 1997. Changes in airport layout including expansions may not be reflected. The FAA continues to update these databases as they become available. The benefits of federally funded mitigation, such as buyout, are accounted for.

Reliability

The Integrated Noise Model (the core of the MAGENTA and AEDT tool) has been validated with actual acoustic measurements at airports. The population exposure methodology has been thoroughly reviewed by an International Civil Aviation Organization (ICAO) task group and was most recently validated for a sample of airport-specific cases.

Additional Notes

The FAA migrated from the Model for Assessing Global Exposure to the Noise of Transport Aircraft (MAGENTA) to the AEDT with the FY 2012 report. This metric is shown by calendar year (CY), and is rounded to three significant figures.

Fuel Burn: Key Performance Indicators (KPI)
Fuel burn can be a function not only of aircraft size and flight stage length, which varies with the actual mix of flights across city pairs, but also of the weather, congestion and other operating conditions, which may vary from year to year and from one city pair to another. This metric is not a direct measure of operational fuel efficiency and should not be used as a proxy for system fuel efficiency.

The metrics are calculated based on data provided by select airlines for the 104 NAC recommended city pairs. The data does not include all operations for the select city pairs. See the Fuel Burn Reporting Carriers and Fuel Burn City Pairs sections of the NPS Reference Guide for additional information.

**Average Fuel Burn**

**Reported as** Pounds

**Desired Trend:** Decrease

**Source:** Carrier reported flights for key city pairs.

Fuel Burn is defined as the actual fuel used between gate departure and gate arrival. This metric is reported as an aggregated per flight average for all key city pairs over the course of a Fiscal Year (October-September). Average fuel used per flight is influenced by the mix flying across city pairs, aircraft size, traffic carried, aircraft performance characteristics and weather. Accordingly, as reported, this metric is not a direct measure of operational fuel efficiency and should not be used as a proxy for system fuel efficiency.

**Computations**

Total fuel burned between Gate-Out and Gate-In averaged across all flights within scope.

**Scope**

Source data is limited to reporting carrier flights between the 104 reported city pairs (see the Fuel Burn City Pairs and Fuel Burn Reporting Carriers sections below for additional details). Due to data issues, some reported flights may not be included in the calculations. See the Statistical Issues Section below for additional details.

**Statistical Issues**

Individual flight data used to compute this metric may have quality issues which prohibit it from being included in the metric sample. An example of this issue is missing/nonsensical fuel values for individual flights. Statistical issues were attempted to be rectified when encountered, if the data record issue could not be addressed, the record was not included in the metric calculation.

Additionally, due to the limited scope of city pairs and reporting carriers, some city pairs do not have substantial percentages of traffic included in the data set.

**Completeness**

Only complete reporting periods (quarterly and annually) are displayed for this metric. Incomplete Quarter and Fiscal Year values are not included.
Reliability

Airline provided data is reviewed prior to calculating the metric results. Records with abnormalities are either addressed or removed from the dataset when calculating the metric.

Additional Notes

This metric is reported in the following timeframes:

- Quarterly
  - Q1: October-December
  - Q2: January-March
  - Q3: April-June
  - Q4: July-September
- Annually (October-September)

The flights used to calculate this metric are not limited to reportable hours.

The Average Fuel Burn data set was recalculated in May 2016 to reflect the addition of another carrier’s data to the data set. This will cause a change to some metric values when compared to the data prior to the May 2016 NPS Release.

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Average Gate Weight

**Reported as** Pounds

**Desired Trend:** N/A. This is a descriptive metric, neither a positive or negative trend indicates improvement.

**Source:** Carrier reported flights for key city pairs.

Actual aircraft gate pushback weight, averaged across the flights reported in the Fuel Burn metric.

**Computations**

Average actual aircraft gate pushback weight for each flight included in the Average Fuel Burn Metric calculation.

**Scope**

This metric is limited to the flights included in the Average Fuel Burn metric calculation.

**Statistical Issues**

Individual flight data used to compute this metric may have quality issues which prohibit it from being included in the metric sample. An example of this issue is missing/nonsensical fuel values for individual flights. Statistical issues were attempted to be rectified when encountered, if the data record issue could not be addressed, the record was not included in the metric calculation.
Additionally, due to the limited scope of city pairs and reporting carriers, some city pairs do not have substantial percentages of traffic included in the data set.

**Completeness**

Only complete reporting periods (quarterly and annually) are displayed for this metric. Incomplete Quarter and Fiscal Year values are not included.

**Reliability**

Airline provided data is reviewed prior to calculating the metric results. Records with abnormalities are either addressed or removed from the dataset when calculating the metric.

**Additional Notes**

This metric is reported in the following timeframes:

- Quarterly
  - Q1: October-December
  - Q2: January-March
  - Q3: April-June
  - Q4: July-September
- Annually (October-September)

Aircraft weight is influenced by many factors including, but not limited to, aircraft type, load factor and fuel carried.

The flights used to calculate this metric are not limited to reportable hours.

The Average Gate Weight data set was recalculated in May 2016 to reflect the addition of another carrier’s data to the data set. This will cause a change to some metric values when compared to the data prior to the May 2016 NPS Release.

**Average Great Circle Distance**

**Reported as** Nautical Miles

**Desired Trend:** N/A. This is a descriptive metric, neither a positive or negative trend indicates improvement.

**Source:** Carrier reported flights for key city pairs.

The shortest distance between any two points on the surface of a sphere measured along a path on the surface of the sphere. While the great circle distance between an airport pair remains consistent over time, changes in the frequency of specific airport pairs in the data set may affect this measure.

**Computations**

Average of the great circle distance for each flight used in the Average Fuel Burn metric.
Scope

This metric is limited to the flights included in the Average Fuel Burn metric calculation.

Statistical Issues

Individual flight data used to compute this metric may have quality issues which prohibit it from being included in the metric sample. An example of this issue is missing/nonsensical fuel values for individual flights. Statistical issues were attempted to be rectified when encountered, if the data record issue could not be addressed, the record was not included in the metric calculation.

Additionally, due to the limited scope of city pairs and reporting carriers, some city pairs do not have substantial percentages of traffic included in the data set.

Completeness

Only complete reporting periods (quarterly and annually) are displayed for this metric. Incomplete Quarter and Fiscal Year values are not included.

Reliability

Airline provided data is reviewed prior to calculating the metric results. Records with abnormalities are either addressed or removed from the dataset when calculating the metric.

Additional Notes

This metric is reported in the following timeframes:

- Quarterly
  - Q1: October-December
  - Q2: January-March
  - Q3: April-June
  - Q4: July-September
- Annually (October-September)

The flights used to calculate this metric are not limited to reportable hours.

The Average Great Circle Distance data set was recalculated in May 2016 to reflect the addition of another carrier’s data to the data set. This will cause a change to some metric values when compared to the data prior to the May 2016 NPS Release.

Departure Mix by Fleet Type

Reported as Percent

Desired Trend: N/A. This is a descriptive metric, neither a positive or negative trend indicates improvement.

Source: Carrier reported flights for key city pairs and Traffic Flow Management System (TFMS) data.
(TFMS) data.

Breakdown of the types of aircraft included in the Average Fuel Burn metric data sample based on the categorizations in FAA Order JO 7340.2E.

Computations

The count of individual flights used in the Average Fuel Burn metric with aircraft in each weight class, divided by the total count of flights for the given period.

Scope

This metric is limited to the flights included in the Average Fuel Burn metric calculation.

Statistical Issues

Individual flight data used to compute this metric may have quality issues which prohibit it from being included in the metric sample. An example of this issue is missing/nonsensical fuel values for individual flights. The issue of different reporting styles was particularly prevalent for the Fleet Mix metric. Because of this, air carrier individual flight data was matched with TFMS data to ensure accurate reporting of aircraft type; if the data record issue could not be addressed, the record was not included in the metric calculation. Statistical issues were attempted to be rectified when encountered, if the data record issue could not be addressed, the record was not included in the metric calculation.

Additionally, due to the limited scope of city pairs and reporting carriers, some city pairs do not have substantial percentages of traffic included in the data set.

Completeness

Only complete reporting periods (quarterly and annually) are displayed for this metric. Incomplete Quarter and Fiscal Year values are not included.

Reliability

Airline provided data is reviewed prior to calculating the metric results. Records with abnormalities are either addressed or removed from the dataset when calculating the metric.

Additional Notes

This metric is reported in the following timeframes:

- Quarterly
  - Q1: October-December
  - Q2: January-March
  - Q3: April-June
  - Q4: July-September
- Annually (October-September)

The flights used to calculate this metric are not limited to reportable hours.

The Departure Mix by Fleet Type data set was recalculated in May 2016 to reflect the addition of another carrier’s data to the data set. This will cause a change to some metric values when
compared to the data prior to the May 2016 NPS Release.

**Fuel Burn Reporting Carriers**

The following list identifies fuel burn reporting carriers. Most carriers report their data through the industry association Airlines for America.

- Alaska Airlines
- American Airlines
- Delta Air Lines
- Express Jet Airlines
- FedEx Express
- JetBlue Airways
- Southwest Airlines
- United Airlines
- UPS Airlines
- US Airways

**Fuel Burn City Pairs**

The following list identifies the city (airport) pairs that the carriers documented in the Reporting Carriers section above report fuel burn data for. NPS Fuel Burn data is aggregated across the following city pairs, pairs not included in this list are not reflected in the fuel burn data.

- ATL-DFW
- ATL-EWR
- ATL-FLL
- ATL-HPN
- ATL-LGA
- ATL-MIA
- ATL-PDX
- BOS-BWI
- BOS-DCA
- BOS-EWR
- BOS-IAD
- BOS-JFK
- BUR-OAK
- BWI-BDL
- BWI-CLT
- BWI-ISP
- BWI-MDW
- BWI-MHT
- BWI-ORD
- BWI-PVD
- BWI-RDU
Predictability: Key Performance Indicators (KPI)

As described by the International Civil Aviation Organization (ICAO): *Predictability refers to the ability of airspace users and Air Traffic Management (ATM) service providers to provide consistent and dependable levels of performance.*

**Airborne Time Predictability**

*Reported as* Minutes for selected city pairs during reportable hours (based on the local time for the destination airport)

**Desired Trend:** Decrease

**Source:** FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data, for reportable hours only.
During reportable hours at the destination airport, the difference between the 85th and 15th percentiles of Airborne Time for flights between the selected city pair. The reportable hours vary by airport and the results are reported by fiscal year (FY). Additional reportable hour information can be found in the airport information section of the Reference Guide.

**Computations**

The metric is calculated as the difference between the 85th and 15th percentiles of Airborne Time. Airborne Time is the difference between the Actual On Time at the destination airport and the Actual Off Time at the origin airport.

**Scope**

This metric only measures ASQP reporting carriers operating domestic service between the selected pair of airports in the direction indicated. Only flights arriving at the destination airport within the reportable hours are included in this measurement. Flights may depart the origin airport outside the reportable hours.

**Statistical Issues**

Calculating the difference between the 85th and 15th percentile helps provide a better picture of the actual predictability by removing atypical data points.

A lower value for this metric is desired because it shows less variation in the airborne time for flights between the specified city pair within the indicated year.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

**Reliability**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

The metric is derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal “ASQP” in order for the flight to be considered an ASQP flight and used in the calculations.

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**Effective Gate-to-Gate Time Predictability**
Reported as Minutes for selected city pairs during reportable hours.

**Desired Trend:** Decrease

**Source:** FAA/MITRE/Airline Service Quality Performance System (ASQP) data derived from Aviation System Performance Metrics (ASPM) data.

During reportable hours, the difference between the $85^{th}$ and $15^{th}$ percentiles of the Effective Gate-to-Gate Time metric. The reportable hours vary by airport and the results are reported by fiscal year (FY). Additional percentile and reportable hour information can be found in the Reference Guide.

**Computations**

The value for the $15^{th}$ percentile of the Effective Gate-to-Gate Time subtracted from the value of the $85^{th}$ percentile of the Effective Gate-to-Gate Time.

**Scope**

This metric only measures ASQP reporting carriers operating domestic service between the selected pair of airports in the direction indicated. Only flights arriving at the destination airport within the reportable hours are included in this measurement. Flights may depart the origin airport outside the reportable hours.

**Statistical Issues**

Calculating the difference between the $85^{th}$ and $15^{th}$ percentile helps provide a better picture of the actual predictability by removing atypical data points.

A lower value for this metric is desired because it shows less variation in the Effective Gate-to-Gate time for flights for the specified city pair within the indicated year.

**Completeness**

ASQP flights are those with actual data reported to the Department of Transportation.

**Reliability**

The metric is derived directly from individual ASQP flight data obtained through the ASPM website. In the original data set the Official Airline Guide Aircraft Identification (OAG_ACID) column must equal "ASQP" in order for the flight to be considered an ASQP flight and used in the calculations.

The data for FY 2017 is not yet final as amendments may still be made to the ASPM source data until six weeks after the end of FY 2018.

**Additional Notes**

The Technical Directive outlining the ASQP reporting carriers is available on the Bureau of Transportation Statistics (BTS) website.

Reportable hours vary by airport and are based on local time. Additional reportable hour information is included in the Airport section below.
Airport and Facility Information

Airports included on the NextGen Performance Snapshots (NPS) website are often identified by several characteristics, including airport code, name and city. The locations detailed in the Airport Performance pages also include additional background information such as, operations and freight volume at the specified airport; this information is gathered from the 2016 Airports Council International, North American Airport Traffic Summary preliminary data. Additional information sources may include the individual airport website. Many of the locations listed below are included in the NPS portfolio pages. In these portfolio pages, a capability is considered implemented when it achieves a specific, predefined programmatic milestone or when operational. The subsections below provide information on the airports and FAA facilities referenced throughout the NPS.

Core 30 Airport Information Table

Several metrics on the NPS are measured during reportable hours. These hours, which are measured in local time, vary by airport and are selected to capture most of the total operations (arrivals and departures) at an airport. Reportable hours are designed to cover the busiest hours of operation at an airport. The duration of reportable hours may vary with changes in operators' schedules and may differ from year to year. The entire percentage of total operations covered under these reportable hours may not be reflected in the NPS metrics due to the characteristics of the data sources used. Please see the individual metric definitions for additional data source information. In addition to general airport information, the table below includes the reportable hours for the airports measured on the NPS prior to any of the reportable hour adjustments noted above. Memphis International Airport (MEM) is unique in this list as it is the only airport in which the reportable hours span a full 24-hour day due to its large number of freight operations during night hours.

<table>
<thead>
<tr>
<th>City</th>
<th>Airport Name</th>
<th>Airport Code</th>
<th>Metroplex</th>
<th>Reportable Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>Hartsfield-Jackson Atlanta International Airport</td>
<td>ATL</td>
<td>Atlanta</td>
<td>07:00 - 22:59</td>
</tr>
<tr>
<td>Boston</td>
<td>General Edward Lawrence Logan International Airport</td>
<td>BOS</td>
<td></td>
<td>06:00 - 21:59</td>
</tr>
<tr>
<td>Charlotte</td>
<td>Charlotte Douglas International Airport</td>
<td>CLT</td>
<td>Charlotte</td>
<td>07:00 - 22:59</td>
</tr>
<tr>
<td>Chicago</td>
<td>Chicago Midway International Airport</td>
<td>MDW</td>
<td></td>
<td>07:00 - 20:59</td>
</tr>
<tr>
<td>Chicago</td>
<td>Chicago O'Hare International Airport</td>
<td>ORD</td>
<td></td>
<td>06:00 - 21:59</td>
</tr>
<tr>
<td>Dallas-Fort Worth</td>
<td>Dallas/ Fort Worth International Airport</td>
<td>DFW</td>
<td>North Texas</td>
<td>07:00 - 21:59</td>
</tr>
<tr>
<td>Denver</td>
<td>Denver International Airport</td>
<td>DEN</td>
<td>Denver</td>
<td>07:00 - 21:59</td>
</tr>
<tr>
<td>Detroit</td>
<td>Detroit Metropolitan Wayne County Airport</td>
<td>DTW</td>
<td>Cleveland-Detroit</td>
<td>06:00 - 22:59</td>
</tr>
</tbody>
</table>
Fort Lauderdale-Hollywood International Airport  FLL  Florida  07:00 - 22:59
Daniel K Inouye International Airport  HNL  06:00 - 22:59
Houston - George Bush Intercontinental Airport  IAH  Houston  07:00 - 21:59
Las Vegas - McCarran International Airport  LAS  Las Vegas  07:00 - 21:59
Los Angeles International Airport  LAX  Southern California  06:00 - 22:59
Memphis International Airport  MEM  00:00 - 23:59
Miami International Airport  MIA  Florida  07:00 - 22:59
Minneapolis-Saint Paul International/Wold-Chamberlain Airport  MSP  07:00 - 22:59
New York - John F. Kennedy International Airport  JFK  06:00 - 22:59
New York - LaGuardia Airport  LGA  07:00 - 21:59
Newark Liberty International Airport  EWR  07:00 - 22:59
Orlando International Airport  MCO  Florida  07:00 - 21:59
Philadelphia International Airport  PHL  07:00 - 21:59
Sky Harbor International Airport  PHX  07:00 - 21:59
Salt Lake City International Airport  SLC  07:00 - 21:59
San Diego International Airport  SAN  Southern California  06:00 - 22:59
San Francisco International Airport  SFO  Northern California  07:00 - 22:59
Seattle-Tacoma International Airport  SEA  07:00 - 21:59
Tampa International Airport  TPA  Florida  07:00 - 22:59
Ronald Reagan Washington National Airport  DCA  D.C.  06:00 - 21:59
Washington Dulles International Airport  IAD  D.C.  07:00 - 22:59

Additional Airport Information

As shown on the NPS Portfolio Pages, NextGen's impacts touch many locations and stakeholders throughout the National Airspace System (NAS) including locations outside of the Core 30 Airports. The following table provides information on the non-Core 30 Airports referenced throughout the NPS.

<table>
<thead>
<tr>
<th>Airport Code</th>
<th>Airport Name</th>
<th>Time periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABQ</td>
<td>Albuquerque International Sunport</td>
<td></td>
</tr>
<tr>
<td>ACK</td>
<td>Nantucket Memorial</td>
<td></td>
</tr>
<tr>
<td>ACY</td>
<td>Atlantic City International</td>
<td></td>
</tr>
<tr>
<td>ADS</td>
<td>Addison Airport</td>
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AFA  Fairbanks International
AFF  United States Air Force Academy Airfield
AFW  Fort Worth Alliance Airport
ALB  Albany International
AMA  Rick Husband Amarillo International
ANC  Ted Stevens Anchorage International
ANE  Anoka County-Blaine Airport (Janes Field)
APA  Centennial Airport
ARR  Aurora Municipal Airport
AUS  Austin-Bergstrom International
BCT  Boca Raton
BDL  Bradley International
BED  Lawrence G. Hanscom Field
BFI  Boeing Field/King County International
BHM  Birmingham-Shuttlesworth International
BIH  Eastern Sierra Regional
BIL  Billings Logan International
BJC  Rocky Mountain Metropolitan
BKF  Buckley Air Force Base
BKL  Cleveland Burke Lakefront Airport
BLI  Bellingham International
BNA  Nashville International
BOI  Boise Air Terminal/Gowen Field
BTR  Baton Rouge Metropolitan, Ryan Field
BUF  Buffalo Niagara International
BUR  Bob Hope Airport
BVY  Beverly Municipal Airport
BZN  Bozeman Yellowstone International
CAE  Columbia Metropolitan Airport
CAG  Craig-Moffat County
CGF  Cuyahoga County Airport
CHS  Charleston Air Force Base/International
CLE  Cleveland-Hopkins International Airport
CMH  Port Columbus International
COS  City of Colorado Springs Municipal
CRP  Corpus Christi International
CRQ  McClellan-Palomar Airport
CRW  Yeager
CVG  Cincinnati/Northern Kentucky International
DAL  Dallas Love Field
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<td>Duluth International</td>
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<td>DuPage Airport</td>
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<td>DRO</td>
<td>Durango-La Plata County</td>
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<td>Des Moines International</td>
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<td>Denton Municipal Airport</td>
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<td>DWH</td>
<td>David Wayne Hooks Memorial Airport</td>
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<td>Fort Collins-Loveland</td>
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<td>Guam International</td>
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<td>Greeley-Weld County</td>
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<td>Barnstable Municipal-Boardman/Polando Field</td>
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<td>Wichita Mid-Continent</td>
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<td>ISM</td>
<td>Kissimmee Gateway Airport</td>
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<td>Long Island MacArthur Airport</td>
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<td>IWA</td>
<td>Phoenix-Mesa Gateway Airport</td>
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<td>Jackson-Medgar Wiley Evers International</td>
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<td>Jacksonville International</td>
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<td>Juneau International Airport</td>
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<td>Concord Regional Airport</td>
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<td>KOA</td>
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<td>LCK</td>
<td>Rickenbacker International</td>
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<td>Lihue</td>
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<td>LIT</td>
<td>Bill and Hillary Clinton National/Adams Field</td>
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<td>Lewiston-Nez Perce County</td>
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<td>Kansas City International</td>
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<td>Rogue Valley International — Medford</td>
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<td>Manchester-Boston Regional Airport</td>
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<td>General Mitchell International</td>
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<td>Louis Armstrong New Orleans International Airport</td>
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<td>Montrose Regional Airport</td>
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<td>Martin State Airport</td>
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<td>MYF</td>
<td>Montgomery Field</td>
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<td>Martha's Vineyard</td>
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<td>Kahului</td>
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<td>Olive Branch Airport</td>
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<td>OMA</td>
<td>Eppley Airfield</td>
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<td>Palo Alto Airport of Santa Clara County</td>
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<td>PBI</td>
<td>Palm Beach International Airport</td>
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<td>PDK</td>
<td>DeKalb-Peachtree Airport</td>
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<td>PDX</td>
<td>Portland International (OR)</td>
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<td>PIE</td>
<td>St. Petersburg-Clearwater International Airport</td>
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<td>Pittsburgh International</td>
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<td>Ernest A. Love Field</td>
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<td>PSC</td>
<td>Tri-Cities</td>
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<td>Palm Springs International Airport</td>
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<td>PTK</td>
<td>Oakland County International Airport</td>
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<td>PUW</td>
<td>Pullman/Moscow Regional</td>
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<td>Theodore Francis Green State</td>
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<td>Chicago Executive Airport</td>
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<td>Chicago/Rockford International</td>
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<td>Richmond International</td>
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<td>Garfield County Regional</td>
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<tr>
<td>RNO</td>
<td>Reno/Tahoe International</td>
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<td>ROC</td>
<td>Greater Rochester International</td>
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<td>Cobb County Airport-McCollum Field</td>
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<tr>
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<td>San Antonio International</td>
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<td>SAV</td>
<td>Savannah/Hilton Head International</td>
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<td>SBS</td>
<td>Steam Boat Springs/Bob Adams Field</td>
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<td>Deadhorse</td>
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<td>Louisville International-Standiford Field</td>
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<td>Scottsdale</td>
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<td>Sebring Regional</td>
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<td>SFB</td>
<td>Orlando Sanford International Airport</td>
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</table>
SGR  Sugar Land Regional Airport
SJC  Norman Y. Mineta San Jose International Airport
SJU  Luis Munoz Marin International
SMF  Sacramento International Airport
SMO  Santa Monica Municipal Airport
SNA  John Wayne Airport-Orange County
SRQ  Sarasota/Bradenton International Airport
STL  Lambert-St. Louis International
STP  St. Paul Downtown Holman Field
STS  Charles M. Schulz - Sonoma County Airport
SUN  Friedman Memorial
SWF  Stewart International Airport
SYR  Syracuse Hancock International
TEB  Teterboro
TEX  Telluride Regional
TIW  Tacoma Narrows Airport
TKI  McKinney National Airport
TMB  Kendall-Tamiami Executive Airport
TTN  Trenton Mercer
TUL  Tulsa International
TUS  Tucson International
TYS  McGhee Tyson Airport
UGN  Waukegan Regional Airport
VGT  North Las Vegas Airport
VNY  Van Nuys Airport
YIP  Willow Run Airport
YKM  Yakima Air Terminal/ McAllister Field

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Marquee Locations

Hartsfield-Jackson Atlanta International Airport (ATL)

The data included on the Atlanta Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Charlotte Douglas International Airport (CLT)

The data included in the Optimized Profile Descent descriptions were gathered from various
FAA sources including the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Ronald Reagan Washington National Airport (DCA)

The data included in the Optimized Profile Descent descriptions were gathered from various FAA sources including the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF) and the D.C. Post Implementation Team report. These documents contain additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Denver International Airport (DEN)

The data included in the Optimized Profile Descent descriptions were gathered from various FAA sources including the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Detroit Metropolitan Wayne County Airport (DTW)

The data included on the DTW Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Newark Liberty International Airport (EWR)

The data included on the Newark Liberty International Airport Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Fort Lauderdale-Hollywood International Airport (FLL)

The data included on the Fort Lauderdale Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.
George Bush Intercontinental Airport (IAH)

The main source of information for the Metroplex write up on the Houston Marquee page is the Houston Metroplex Post-Implementation Analysis conducted by The MITRE Corporation on behalf of the FAA. This report is available on the FAA website (PDF) in PDF format.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

LaGuardia Airport (LGA)

The data included on the LaGuardia Airport Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Chicago Midway International Airport (MDW)

The data included in the Required Navigation Performance (RNP) descriptions were gathered from various FAA sources including the 2011 NextGen Performance Assessment and the 2016 Update to the Business Case for the Next Generation Air Transportation System based on the Future of the NAS Report (PDF). These documents contain additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Memphis International Airport (MEM)

The data included in the Optimized Profile Descent and Wake Recategorization descriptions were gathered from various FAA sources. These sources include the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF) and the 2015 NextGen Operational Performance Assessment (PDF). These documents contain additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Philadelphia International Airport (PHL)

The data included on the Philadelphia International Airport Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

Seattle-Tacoma International Airport (SEA)

The data included in the Optimized Profile Descent descriptions were gathered from various FAA sources including the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on
the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

**San Francisco International Airport (SFO)**

The data included on the San Francisco International Airport Marquee Page was gathered from various FAA sources including the 2014 NextGen Operational Performance Assessment (PDF). This document contains additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

**Washington Dulles International Airport (IAD)**

The data included in the Optimized Profile Descent descriptions were gathered from various FAA sources including the Performance Based Navigation section of the 2014 NextGen Operational Performance Assessment (PDF) and the D.C. Post Implementation Team report. These documents contain additional information on the methodology and assumptions used to calculate this data.

For information on the Capacity and Efficiency scorecard metrics on this page, please see the appropriate metric information linked at the top of this page.

**FAA Facility Information**

The NPS portfolio pages reference several types of FAA facilities where NextGen capabilities have been implemented. As defined in FAA Order 7110.65, an Air Route Traffic Control Center (ARTCC) is a facility established to provide air traffic control service to aircraft operating on Instrument Flight Rules (IFR) flight plans within controlled airspace and principally during the En-route phase of flight. There are several different facilities that separate traffic in terminal areas. In some locations an air traffic control tower (ATCT) provides this service, while in other areas a designated Terminal Radar Approach Control (TRACON) facility is responsible. Some towers and TRACONs are co-located.

<table>
<thead>
<tr>
<th>Code</th>
<th>Facility</th>
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<td>Anchorage TRACON</td>
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<td>Atlanta TRACON</td>
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<td>A90</td>
<td>Boston TRACON</td>
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<td>C90</td>
<td>Chicago TRACON</td>
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<td>CLE</td>
<td>Cleveland Tower</td>
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<td>CLT</td>
<td>Charlotte Tower</td>
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<td>CLT</td>
<td>Columbus Tower</td>
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<td>CMH</td>
<td>Cincinnati Tower</td>
</tr>
<tr>
<td>CVG</td>
<td>Cincinnati Tower</td>
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<tr>
<td>D01</td>
<td>Denver TRACON</td>
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</table>
Metroplex Information

The NPS website provides an overview of several National Airspace System (NAS) metroplexes, showing their importance to the area in which they are located and to the NAS as a whole.

Metroplex Definition

Each metroplex is a unique system of airports, aircraft, weather patterns and geography. The following is a list of the primary airports in each of the metroplexes on the NPS. Metroplexes were initially defined around the 35 airports in FAA's earlier Operational Evolution Partnership, plus airports in FAA's Future Airport Capacity Task 2 (FACT2) initiative, all 77 airports within FAA's ASPM data system, and airports within 30 miles with more than 10 instrument flight rule (IFR) operations per day. Metroplexes were further refined as designs evolved as informed by subject matter expertise on a case by case basis. Due to data availability, all the airports included for a metroplex may not be included in the data describing it. Similarly, additional airports may be impacted by Metroplex designs. For the full name of an airport, please see the individual metroplex page.

<table>
<thead>
<tr>
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<td>CAE; CLT; GSO; GSP; JQF; RDU.</td>
</tr>
<tr>
<td>Cleveland-Detroit</td>
<td>BKL; CGF; CLE; DET; DTW; PTK; YIP.</td>
</tr>
<tr>
<td>D.C.</td>
<td>BWI; DCA; HEF; IAD; MTN.</td>
</tr>
<tr>
<td>Denver</td>
<td>APA; BJC; DEN.</td>
</tr>
<tr>
<td>Florida</td>
<td>FLL; FXE; ISM; MCO; MIA; OPF; ORL; PBI; PIE; SFB; SRQ; TMB; TPA.</td>
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<td>Houston</td>
<td>DWH; HOU; IAH; SGR.</td>
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<tr>
<td>Las Vegas</td>
<td>HND; LAS; VGT.</td>
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<tr>
<td>North Texas</td>
<td>ADS; AFW; DAL; DFW; DTO; FTW; GKY; TKI.</td>
</tr>
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<td>Northern California</td>
<td>HWD; OAK; PAO; SFO; SJC; SMF.</td>
</tr>
<tr>
<td>Southern California</td>
<td>BUR; HHR; LAX; LGB; ONT; OXR; PSP; SAN; SMO; SNA; VNY.</td>
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</tbody>
</table>

Metroplex Traffic

The Metroplex Traffic section provides an overview of the aircraft types operating within the selected metroplex. This traffic mix is segmented as Commercial Air Carrier, General Aviation (GA) and Military operations. Commercial Air Carrier operations are further defined as the sum of Air Carrier and Air Taxi operations. The information is calculated from FAA Operational Network (OPSNET) data and is reported for FY 2009–2017.
The data set used to calculate this metric includes all the airports listed in each metroplex, although some airports may not support a given traffic segment. The data include both itinerant and local operations for the airports being measured. Per the OPSNET user guide:

- **Local**: Operations that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and operations to or from the same airport within a designated practice area within a 20-miles radius of the tower.
- **Itinerant**: Operations that land at an airport arriving from outside the airport area, or depart from an airport and leave the airport area.

**Average Daily Scheduled Flights**

The number of average daily scheduled flights is calculated for FY 2009 through FY 2016 and is based on the sum of the departures scheduled to and from all the metroplex airports that offer scheduled service and for which data are available. Since some airports do not have scheduled service, this information may not include data for all the airports within the metroplex. To obtain the average daily value, the yearly sum is divided by the number of days in the year. The source for this data is the U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) Air Carrier Statistics Database for FY 2009–2014 and Innovata LLC for FY2015–2016. The FY 2015 values were recalculated using the Innovata data in March 2017 as a transition to the new data source for FY 2016.

**Projected Annual Benefits**

Several of the Metroplex pages contain projected annual benefits or post-implementation estimates of NextGen airspace and procedure improvements. The benefits are based on various phases towards post-implementation. The source of this data is the FAA Airspace Services Directorate.

The projected benefits shown on the NPS are annual values expected to accrue upon completion of the near-term NextGen procedural improvements implemented by the Metroplex program. They are based on the FAA's assessment of proposed airspace improvements compared to operations before any improvements were made. The value of the projected fuel savings is based on a $2.85 per gallon rate. Continued study may warrant that the operational vision used to calculate these projected benefits be modified, thus changing the value of the projected benefits.

**NextGen Priorities — Joint Implementation Plan Milestones**

Through the NextGen Advisory Committee, a federal advisory panel, the FAA and the aviation industry have agreed to high-level commitments that will provide significant near-term benefits to National Airspace System (NAS) users in four focus areas: Multiple Runway Operations, Performance Based Navigation, Surface Operations, and Data Communications.

Commitments include operational implementations of capabilities at specific locations,
pre-implementation activities such as safety analyses or engineering studies, and commitments by industry to complete activities required for successful implementation. The milestones in the plan are a subset of the overall series of programs and activities the FAA is executing for NextGen, which are broader in scope and timeline, creating a more extensive transformation of NAS operations.

In 2017 the FAA and Industry agreed to add a fifth Focus Area, the Northeast Corridor to the original four. The [2017 NextGen Priorities Joint Implementation Plan Update](http://example.com) provides an introduction to the Northeast Corridor commitments as well as some commitment updates to the original four focus areas.

An explanation of the [monitoring and oversight process](http://example.com) is available for viewing. Previous reports can be viewed at: [NextGen Priorities Joint Implementation Plan, 2014–2017](http://example.com), [NextGen Priorities October 2015 Joint Implementation Plan Update](http://example.com) and the [NextGen Priorities Joint Implementation Plan, 2017–2019](http://example.com).

**Acronym Information**

The NPS utilizes many acronyms to refer to NextGen and legacy technologies, programs, locations and data sources. Although most acronyms are accompanied by a brief description of their meaning, the following table provides links to sources that may be used to find additional detail and meaning behind these acronyms. Please note that acronyms occasionally have different meanings depending on their context, so a definition in these sources, while accurate, may not reflect the intended definition.

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td><a href="http://example.com">Air Traffic Management Glossary of Terms</a></td>
<td>Air traffic management glossary of acronyms with definitions produced by the FAA Air Traffic Control System Command Center.</td>
</tr>
<tr>
<td><a href="http://example.com">Aeronautical Information Manual</a></td>
<td>As noted within the document, this publication provides information on basic flight information and air traffic control procedures. Appendix 3 provides a list defining many acronyms and definitions.</td>
</tr>
<tr>
<td><a href="http://example.com">NextGen Priorities Joint Implementation Plan</a></td>
<td>Appendix B of the NextGen Priorities Joint Implementation Plan provides acronym and location abbreviation information related to the NextGen Priorities.</td>
</tr>
</tbody>
</table>