



Federal Aviation
Administration

Terminal Area Forecast Executive Summary

Fiscal Years 2020-2045



Preface

This publication provides aviation data users with summary historical and forecast statistics on passenger demand and aviation activity at U.S. airports. The summary level forecasts are based on individual airport projections.

The Terminal Area Forecast (TAF) includes forecasts for active airports in the National Plan of Integrated Airport Systems (NPIAS). The Federal Aviation Administration's (FAA) Forecast and Performance Analysis Division, Office of Aviation Policy and Plans, develops the TAF. The TAF is available on the Internet. The TAF model and TAF database can be accessed at:

<https://taf.faa.gov>

The TAF model allows users to create their own forecast scenarios. It contains a query data application that allows the public to access and print historical (1990 to 2019) and forecast (2020 to 2045) aviation activity data by individual airport, state, or FAA region.

The FAA welcomes public comment on the forecasts, as well as suggestions for improving the usefulness of the TAF.

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Summary Historical and Forecast Highlights

- A total of 924.1 million passengers were enplaned at U.S. airports in 2019; This figure decreased by 44.4 percent in 2020 to 514.0 million enplanements as a result of the COVID-19 pandemic. Total enplanements at U.S. airports are forecast to recover in aggregate to their 2019 level by 2025.
- In 2020, FAA tower airports and FAA contract tower airports accounted for 510.6 million enplanements or 99.3 percent of total enplanements at U.S. airports.
- The top 100 airports accounted for 481.9 million enplanements in 2020, or 93.8 percent of total U.S. enplanements.
- FAA tower airports and FAA contract tower airports handled 53.3 million operations in 2019. This figure decreased by 16.7 percent in 2020 to 44.4 million operations. Total operations at these airports are forecast to recover in aggregate to their 2019 level by 2025.
- In 2019 there were 39.2 million total TRACON operations. These operations decreased by 20.3 percent in 2020 to 31.3 million operations. Total TRACON operations are forecast to recover in aggregate to their 2019 level by 2025.
- The 30 large hub airports¹ enplaned 360.3 million passengers in 2020. These airports are projected to enplane 1.1 billion passengers in 2045, a 193.8 percent increase over the 25-year period (or 4.4 percent annually).
- The 32 medium hub airports² recorded 88.3 million enplanements in 2020. These airports are projected to enplane 252.9 million passengers in 2045, a 186.3 percent increase over the 25-year period (or 4.3 percent annually).
- Atlanta (28.7 million enplanements), Dallas/Ft. Worth (22.5 million), Los Angeles (21.5 million), Chicago O'Hare (21.5 million), and Denver (20.1 million) led U.S. commercial airports in passenger enplanements in 2020, accounting for 22.2 percent of enplanements at U.S. airports.
- Atlanta is projected to remain the country's busiest airport, as measured by passenger enplanements, through the forecast period with a projected 82.7 million enplaned passengers in 2045. Los Angeles is projected to enplane the

¹ Airports enplaning one percent or more of total enplanements.

² Airports enplaning 0.25 to 0.99 percent of total enplanements.

second most passengers (66.5 million) in 2045, followed by Chicago O'Hare with 62.2 million enplanements.

- Enplanements at San Francisco, John F. Kennedy, Portland, and Boston airports are projected to grow fastest among the large hub airports. The annual growth rates at these airports are forecast to increase by 5.5, 5.3, 5.1, and 5.1 percent per year, respectively, over the forecast period.
- In terms of total operations, Chicago O'Hare was the busiest U.S. airport in 2020 with 644,000 aircraft operations. Atlanta and Dallas/Ft. Worth were the second and third busiest airports with 621,000 and 559,000 operations, respectively.
- In 2045, Atlanta is expected to be the busiest airport in the nation, as measured by total operations, with a projected 1.34 million operations. Chicago O'Hare (1.26 million operations) is projected to be in second place and Los Angeles (1.08 million operations) is projected to be in third place.
- The FAA's Southern region airports enplaned more passengers at tower airports than any other region with 127.1 million passengers in 2020. The Western Pacific region was second with 102.3 million enplanements.
- The Southern region is expected to lead in passenger enplanements at tower airports in 2045, reaching 359.4 million. The Western Pacific region is projected to stay in second place with 318.7 million enplanements.
- The Southern region led all FAA regions in the number of airport operations at tower airports with 10.9 million in 2020. The Southern region is expected to remain first in 2045 with 16.4 million operations. The Western Pacific and Southwest regions ran second and third in airport operations in 2020 with 10.0 and 5.8 million, respectively. In 2045, the Western Pacific region is projected to remain in second place with 15.1 million operations and the Southwest region is projected to remain in third place with 8.4 million operations.

Forecast Process

Introduction

The Terminal Area Forecast (TAF) contains historical and forecast data for enplanements, airport operations, TRACON operations, and based aircraft. The data cover 264 FAA tower airports, 256 FAA contract tower airports, 153 terminal radar approach control facilities, and 2,786 non FAA airports. Data in the TAF are presented on a U.S. Government fiscal year basis (October through September).

The TAF is available on the Internet. The TAF model and TAF database can be accessed at:

<https://taf.faa.gov>

The TAF model allows users to create their own forecast scenarios. The TAF database allows public access to historical and forecast aviation activity data by individual airport, state, or FAA region. In addition, links to the TAF from previous years are available via the address noted above.

The TAF is prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. In addition, state aviation authorities and other aviation planners use the TAF as a basis for planning airport improvements.

The airport activity data contained in the TAF consist of the following:

- **enplanements** (sum of originating and connecting passengers) for air carriers and regionals;
- **itinerant operations** for air carriers, commuters and air taxis, general aviation (GA), and military aircraft;
- **local operations** for civil and military aircraft; and
- **TRACON operations** for aircraft operations under radar control.

Impact of COVID-19 Pandemic on TAF Forecasts

In the 2020 TAF the forecasts account for the downturn and recovery from the COVID-19 pandemic to varying degrees based on airport type. The types are:

. **FAA and FAA contract tower airports** – Forecasts account for impact on passenger enplanements, commercial operations, and general aviation operations. In 2019 these airports accounted for 99.4 percent of total US passenger enplanements and 89.4 percent of total US commercial operations.

. *Non-FAA airports with greater than 100,000 passenger enplanements in 2019* –
Forecasts account for impact on passenger enplanements and commercial operations. In 2019 these airports accounted for 0.2 percent of total US passenger enplanements and 0.3 percent of total US commercial operations.

. *Non-FAA airports with fewer than 100,000 passenger enplanements in 2019* –
Forecasts do not account for impact on passenger enplanements, commercial operations, and general aviation operations. In 2019 these airports accounted for 0.4 percent of total US passenger enplanements and 10.3 percent of total US commercial operations.

Data on operations presented in the TAF show historical information from 1990 through 2019 and forecasts for 2020 to 2045.³ The historical enplanement information in the TAF is from 1976 through 2020. The enplanement forecasts are from 2021 to 2045. Appendix A provides a detailed description of the activity data elements in the TAF. Appendix B provides a list of FAA tower airports and FAA contract tower airports by hub size for the large, medium, and small hubs.

Forecast Method

The TAF assumes a demand driven forecast for aviation services based upon local and national economic conditions as well as conditions within the aviation industry. In other words, an airport's forecast is developed independent of the ability of the airport and the air traffic control system to furnish the capacity required to meet demand. However, if the airport historically functions under constrained conditions, the FAA forecast may reflect those constraints since they are embedded in historical data. In statistical terms, the relationships between economic growth data and data representing growth in aviation activity reflect those constraints.

In 2020 there was a major decrease in passenger enplanements and commercial operations as a result of the COVID-19 pandemic. There is uncertainty associated with the forecasts because of the uncertainty regarding the path of the pandemic and its economic impacts. Particular attention was spent on forecasting the near term recovery back to 2019 activity. In addition to the baseline TAF forecasts, FAA has prepared optimistic and pessimistic recovery scenarios as a means to address forecast uncertainty in the near term. The scenarios can be found at <https://taf.faa.gov>.

The forecasts of passenger enplanements and commercial operations at airports with more than 100,000 enplanements in 2019 are based on a bottoms-up approach. The domestic enplanements are forecast by generating origin and destination (O&D) market demand forecasts using the DB1B (quarterly 10% sample) data to model passenger

³ Operations data for FAA towers and FAA contract towers for 2020 are actual.

flow on a quarterly basis. The O&D passenger demand forecasts are based on regression analysis using fares, regional demographics, and regional economic factors as the independent variables. The O&D forecasts are then combined with DOT T-100 segment data to generate passenger forecasts by airport pair and segment pair. The segment pair passenger forecasts are assigned to aircraft equipment in order to produce segment pair operation forecasts. The quarterly segment pair forecasts are aggregated to produce annual airport forecasts.

Separate models are used to forecast international passenger enplanements and operations and cargo operations. The international passenger enplanements are forecast on a quarterly basis using time series analysis and T-100 segment data. The segment pair passenger enplanement forecasts are used to generate segment pair operation forecasts. The cargo operation forecasts are also generated on a quarterly basis using time series analysis and T-100 segment data. The segment pair forecasts for international passenger enplanements and operations and cargo operations are aggregated to the market pair and airport level on an annual basis.

The near term recovery forecasts to 2019 activity were based on an analysis of the recovery from previous external shocks and real personal income projections. The previous external shocks include the September 11, 2001 Terrorist Attack and the 2008 Financial Crisis. The real personal income projections incorporate the risks associated with the pandemic and its impact on the economy. The pandemic risks are based on assumptions about transmission rates and vaccine availability. The economic impacts incorporate the effects on employment.

The forecasts of passenger enplanements at FAA facilities with fewer than 100,000 enplanements in 2019 are based on analysis of historic trends. The commercial operations forecasts are based on the enplanement forecasts, trend analysis, and enplanements per operation. In addition the commercial forecasts for these airports may be prorated in comparison to national forecast trends by category. The near term recovery forecasts of passenger enplanements and commercial operations to 2019 activity at these airports were based on the forecasts of non-hub airports with more than 100,000 enplanements in 2019.

Forecasts of itinerant general aviation operations and local civil operations at FAA facilities are based primarily on time series analysis. On average the 2020 decrease in these operations was significantly less than the decrease in passenger enplanements and commercial operations. Because military operations forecasts have national security implications, the Department of Defense (DOD) provides only limited information on future aviation activity. Hence, the TAF projects military activity at its present level except when FAA has specific knowledge of a change. For instance, DOD may announce a base closing or may shift an Air Force wing from one base to another.

For non-FAA facilities, historic operations in the TAF are from the Form 5010 data. These operations levels are held constant for the forecast unless otherwise specified by a local or regional FAA official.

Forecast Review Process

Initially, FAA headquarters staff and management review forecasts for airports with more than 100,000 enplanements in 2019 and FAA facilities with fewer than 100,000 enplanements in 2019. These preliminary estimates are then submitted to FAA regional and district offices for review. Suggested changes made by the FAA regional staff are reviewed and, if determined reasonable by APO staff economists, are incorporated into the TAF. Significant increases in commercial activity forecasts are normally incorporated into the TAF only where APO receives verifiable evidence of a firm commitment by an air carrier or regional airline to initiate new service.

Summary statistics presented in the TAF differ from the national totals contained in FAA Aerospace Forecasts, Fiscal Years 2021-2041. Reasons for the differences are threefold. First, the TAF forecast methods consider airport and market specific trends. Second, the TAF and national forecast measurements vary. For example, the TAF includes facilities not serviced by the FAA in its totals. These facilities make up a large share of total general aviation operations. In addition, the TAF includes enplanements at U.S. airports only, whereas the national forecast includes enplanements on U.S. airlines at both U.S. and foreign airports. Finally, individual forecasts are not scaled to force aggregates to equal national totals.

Data Sources

The development of the TAF begins with an update of the latest historical enplanement, operation, and based aircraft statistics, using information derived from several sources. FAA's National Flight Data Center provides general airport information such as the airport name, location, and location identifier. Airport operations and TRACON (radar assisted) operations data for airports with FAA and FAA contract air traffic control services are reported by FAA air traffic and FAA contract tower staff. Operations at non FAA airports are taken from FAA Form 5010 reports on aviation activity at the airport as estimated by FAA inspectors or information provided by airport managers, state aviation activity surveys, and other sources.

U.S. domestic and international (U.S. and foreign flag carriers) enplanements are derived from the Department of Transportation's (DOT's) T-100 database. Regional carrier enplanements are derived from DOT T-100 and 298-C data.⁴

⁴ In October 2002, DOT began collecting data for all airlines using the T-100 format. This change provides more detail on regional airlines, who previously reported on Form 298-C.

The origin and destination (O&D) data are based on the Airline Origin and Destination Survey (DB1B). This is a 10 percent sample of airline tickets from carriers reporting to the Office of Airline Information at the Bureau of Transportation Statistics.

Based aircraft data are collected by FAA inspectors, airport managers, and state aviation officials and reported on FAA Form 5010. These data show numbers of aircraft, mostly general aviation aircraft, permanently based at an airport.

TAF and National Forecast Summary

Near-Term and Long-Term Forecasts

In 2020 total enplanements at FAA and FAA contract towers decreased 44.4 percent as a result of the COVID-19 pandemic. Total operations at these airports decreased 16.7 percent, commercial operations decreased 26.5 percent, and non-commercial operations decreased 9.1 percent based on OPSNET.

Total enplanements at tower airports are forecast to increase at an average annual rate of 4.3 percent from 2020 to 2045. Enplanements at these airports are forecast to recover to their 2019 level by 2025. The projected average annual rate of increase for enplanements during the 2020 to 2025 recovery period is 13.3 percent and during the 2025 to 2045 post recovery period is 2.2 percent.

Total operations at tower airports are forecast to increase at an average annual rate of 1.6 percent from 2020 to 2045. The growth rates for this period by user group are as follows: air carrier, 3.4 percent; air taxi/commuter, 0.7 percent; itinerant general aviation, 0.9 percent; and local civil, 0.7 percent. Total operations at the towers are forecast to recover to their 2019 level by 2025. The projected average annual rate of increase for total operations during the 2020 to 2025 recovery period is 4.1 percent and during the 2025 to 2045 post recovery period is 1.0 percent.

National Forecast Trends

Trends at individual airports reflect to varying degrees national aviation trends as well as the dynamics at individual airports. The national forecasts for FAA and FAA contract tower airports in FAA Aerospace Forecasts, Fiscal Years 2021-2041 show aircraft operations growing at an average annual rate of 1.8 percent over the 21-year forecast period. Average annual growth rates for this period by user group are as follows: air carrier, 3.8 percent; air taxi/commuter, 0.7 percent; itinerant general aviation, 1.1 percent; and local civil, 0.7 percent. The projected average annual rate of increase for total enplanements on U.S. mainline and regional carriers from the national forecast is 5.0 percent over the 21-year forecast period.

Trends by Region

Table S-1 shows enplanements and airport operations at the tower airports by FAA region. The Southern region led FAA regions in passenger enplanements at tower airports with 127.1 million in 2020, followed by the Western Pacific region with 102.3 million enplanements, and Eastern region with 73.3 million enplanements. Enplanements in the New England region are projected to increase the fastest with an

average annual rate of 4.8 percent from 2020 to 2045. The next two regions with the fastest projected increases in enplanements are Western Pacific and Eastern with average annual forecast rates of 4.6 percent and 4.4 percent, respectively.

In 2020 the Southern (10.9 million operations), Western Pacific (10.0 million operations), and Southwest (5.8 million operations) regions ranked as the top three FAA regions in tower airport operations. The Eastern (1.9 percent), New England (1.8 percent), and Alaskan (1.8 percent) regions are projected to be the fastest growing FAA regions from 2020 to 2045 in terms of tower airport operations.

Large, Medium, and Small Hubs

Table S-2 presents passenger enplanements and airport operations at FAA and FAA contract towers by hub size. An airport qualifies as a large hub with one percent or more of total U.S. passenger enplanements. A medium hub airport enplanes from 0.25 to 0.99 percent of total U.S. passenger enplanements while small and non-hub airports enplane from 0.05 to 0.249 percent and less than 0.05 percent, respectively. Appendix B contains a list of hub tower airports classified by size for the large, medium, and small hubs.

The 30 large hub airports enplaned 360.3 million passengers in 2020 while the 32 medium hub airports enplaned 88.3 million, and the 70 small hub airports enplaned 45.6 million. The 388 non-hub airports enplaned 16.3 million passengers. Enplanements at large hubs are expected to increase at an annual rate of 4.4 percent over the 2020 to 2045 forecast period. Medium hub airports are forecast to increase 4.3 percent and small hub airports are forecast to increase 4.0 percent per year.

Operations at large hub airports totaled 9.3 million in 2020 compared to 4.0 million at medium hub airports and 5.8 million at small hub airports. Operations at large hub airports are forecast to increase at an annual rate of 3.0 percent from 2020 to 2045. Operations at the medium hubs are forecast to rise at an annual rate of 2.5 percent from 2020 to 2045; operations at small hub airports are forecast to grow 1.5 percent per year.

In 2020 non-hub airports accounted for 25.3 million operations or 57.0 percent of total operations at FAA and FAA contract towers. General aviation aircraft operations accounted for the majority of operations at the non-hub airports.

Large Hub Airports

Table S-3 presents enplanement forecast summaries for the large hub airports. Atlanta was the busiest airport in 2020 (28.7 million enplanements), followed by Dallas/Ft. Worth (22.5 million), Los Angeles (21.5 million), Chicago O'Hare (21.5 million), and Denver (20.1 million). The ranking of the top five airports in terms of projected enplanements in 2045 is Atlanta (82.7 million), Los Angeles (66.5 million), Chicago

O'Hare (62.2 million), Dallas/Ft. Worth (57.0 million), and Denver (56.6 million). The three airports with the fastest projected increases in enplanements are San Francisco (5.5 percent), John F. Kennedy (5.3 percent), and Portland (5.1 percent).

Table S-4 presents operations forecast summaries for the large hub airports. In 2020, FAA controllers at Chicago O'Hare handled 644,000 landings and takeoffs, followed by Atlanta (621,000 operations), Dallas/Ft. Worth (559,000 operations), Denver (483,000 operations), and Los Angeles (457,000 operations). The ranking of the top four airports in terms of projected operations in 2045 is Atlanta (1.3 million), Chicago O'Hare (1.3 million), Los Angeles (1.1 million), and Dallas/Ft. Worth (1.1 million). The three airports with the fastest projected increases in operations are John F. Kennedy (4.1 percent), San Francisco (4.0 percent), and Boston (3.8 percent).

TAF Forecast Tables

**Table S-1 Enplanements and Airport Operations at FAA Towers
and FAA Contract Towers by FAA Region**

Enplanements at Tower Airports

Region	Name	Airports	2019	2020	Rate 2019 - 2020	2045	Annual rate 2020 - 2045
ASO	Southern	111	217,017,772	127,132,542	-41.4%	359,431,179	4.2%
AWP	Western - Pacific	80	190,459,918	102,316,554	-46.3%	318,709,399	4.6%
AEA	Eastern	61	143,857,499	73,301,045	-49.0%	213,514,231	4.4%
AGL	Great Lakes	80	115,650,594	63,300,445	-45.3%	174,098,769	4.1%
ASW	Southwest	77	106,595,067	63,124,358	-40.8%	170,410,195	4.1%
ANM	Northwest Mountain	51	91,848,514	53,500,905	-41.8%	154,835,713	4.3%
ANE	New England	25	29,183,428	14,496,859	-50.3%	46,777,386	4.8%
ACE	Central	27	20,183,108	11,279,508	-44.1%	29,105,377	3.9%
AAL	Alaskan	8	3,966,720	2,170,643	-45.3%	5,578,134	3.8%
Total		520	918,762,620	510,622,859	-44.4%	1,472,460,383	4.3%

Operations at Tower Airports

Region	Name	Airports	2019	2020	Rate 2019 - 2020	2045	Annual rate 2020 - 2045
ASO	Southern	111	12,885,702	10,889,231	-15.5%	16,413,491	1.7%
AWP	Western - Pacific	80	11,872,488	9,983,424	-15.9%	15,062,795	1.7%
ASW	Southwest	77	6,758,991	5,841,405	-13.6%	8,367,157	1.4%
AGL	Great Lakes	80	6,368,083	5,185,773	-18.6%	7,725,765	1.6%
ANM	Northwest Mountain	51	5,291,465	4,611,513	-12.8%	6,728,048	1.5%
AEA	Eastern	61	6,045,368	4,469,183	-26.1%	7,203,753	1.9%
ANE	New England	25	1,781,888	1,450,542	-18.6%	2,278,113	1.8%
ACE	Central	27	1,436,560	1,239,188	-13.7%	1,721,462	1.3%
AAL	Alaskan	8	840,477	691,487	-17.7%	1,083,130	1.8%
Total		520	53,281,022	44,361,746	-16.7%	66,583,714	1.6%

**Table S-2 Enplanements and Airport Operations at FAA Towers
and FAA Contract Towers by Hub Size**

Enplanements at Tower Airports

				Rate 2019 -	Aggregate Recovery to		Annual rate
	Airports	2019	2020	2020	2019	2045	2020 - 2045
Large Hubs	30	656,741,680	360,323,987	-45.1%	2025	1,058,478,619	4.4%
Medium Hubs	32	157,204,466	88,333,440	-43.8%	2025	252,855,171	4.3%
Small Hubs	70	77,762,534	45,635,767	-41.3%	2025	121,911,573	4.0%
Non Hubs	388	27,053,940	16,329,665	-39.6%	2025	39,215,020	3.6%
Total	520	918,762,620	510,622,859	-44.4%	2025	1,472,460,383	4.3%

Operations at Tower Airports

				Rate 2019 -	Aggregate Recovery to		Annual rate
	Airports	2019	2020	2020	2019	2045	2020 - 2045
Large Hubs	30	13,253,109	9,290,306	-29.9%	2026	19,519,230	3.0%
Medium Hubs	32	5,191,645	4,006,625	-22.8%	2025	7,383,291	2.5%
Small Hubs	70	6,819,032	5,783,683	-15.2%	2025	8,369,182	1.5%
Non Hubs	388	28,017,236	25,281,132	-9.8%	2023	31,312,011	0.9%
Total	520	53,281,022	44,361,746	-16.7%	2025	66,583,714	1.6%

Table S-3 Enplanements at Large Hub Airports

Loc Id	Region	Airport Name	2019	2020	Rate 2019 - Recovery		2045	Annual rate 2020 - 2045
					2020	to 2019		
ATL	ASO	HARTSFIELD - JACKSON ATLANTA INTL	53,247,153	28,673,571	-46.2%	2025	82,725,965	4.3%
DFW	ASW	DALLAS - FORT WORTH INTL	34,862,295	22,473,562	-35.5%	2024	56,953,150	3.8%
LAX	AWP	LOS ANGELES INTL	42,843,207	21,535,502	-49.7%	2026	66,461,983	4.6%
ORD	AGL	CHICAGO O'HARE INTL	40,625,824	21,455,616	-47.2%	2026	62,177,469	4.3%
DEN	ANM	DENVER INTL	33,124,919	20,080,348	-39.4%	2025	56,636,046	4.2%
CLT	ASO	CHARLOTTE/DOUGLAS INTL	23,636,955	15,612,061	-34.0%	2024	41,234,458	4.0%
JFK	AEA	JOHN F KENNEDY INTL	31,098,349	14,305,036	-54.0%	2026	51,554,478	5.3%
LAS	AWP	MC CARRAN INTL	24,219,454	14,126,647	-41.7%	2025	39,299,517	4.2%
MCO	ASO	ORLANDO INTL	24,087,917	13,987,850	-41.9%	2024	43,703,027	4.7%
PHX	AWP	PHOENIX SKY HARBOR INTL	22,191,142	13,532,629	-39.0%	2024	40,793,344	4.5%
SEA	ANM	SEATTLE - TACOMA INTL	24,606,683	13,411,558	-45.5%	2025	39,884,647	4.5%
SFO	AWP	SAN FRANCISCO INTL	27,653,896	13,101,582	-52.6%	2025	50,260,438	5.5%
MIA	ASO	MIAMI INTL	21,278,987	12,026,359	-43.5%	2026	33,064,401	4.1%
EWR	AEA	NEWARK LIBERTY INTL	23,019,514	11,956,803	-48.1%	2026	35,990,059	4.5%
IAH	ASW	GEORGE BUSH INTERCONTINENTAL/HOUSTON	21,698,376	11,910,367	-45.1%	2025	35,482,545	4.5%
FLL	ASO	FORT LAUDERDALE/HOLLYWOOD INTL	17,705,497	10,272,945	-42.0%	2025	30,665,907	4.5%
MSP	AGL	MINNEAPOLIS - ST PAUL INTL/WOLD - CHAMBERLAIN	18,906,393	10,201,631	-46.0%	2025	29,143,572	4.3%
BOS	ANE	GENERAL EDWARD LAWRENCE LOGAN INTL	20,563,644	10,020,610	-51.3%	2025	34,680,694	5.1%
DTW	AGL	DETROIT METROPOLITAN WAYNE COUNTY	17,910,009	9,752,707	-45.5%	2026	24,754,764	3.8%
PHL	AEA	PHILADELPHIA INTL	15,797,162	8,411,359	-46.8%	2026	22,336,386	4.0%
SLC	ANM	SALT LAKE CITY INTL	12,685,897	7,578,626	-40.3%	2025	20,418,002	4.0%
BWI	AEA	BALTIMORE/WASHINGTON INTL THURGOOD MARSHALL	13,135,609	7,543,458	-42.6%	2025	19,886,307	4.0%
LGA	AEA	LAGUARDIA	15,360,464	7,325,959	-52.3%	2026	18,552,864	3.8%
SAN	AWP	SAN DIEGO INTL	12,545,612	6,769,829	-46.0%	2025	21,477,022	4.7%
TPA	ASO	TAMPA INTL	10,787,303	6,468,055	-40.0%	2024	19,055,756	4.4%
DCA	AEA	RONALD REAGAN WASHINGTON NATIONAL	11,506,509	5,944,030	-48.3%	2025	15,445,442	3.9%
IAD	AEA	WASHINGTON DULLES INTL	11,868,312	5,894,731	-50.3%	2026	18,374,283	4.7%
MDW	AGL	CHICAGO MIDWAY INTL	10,183,786	5,709,747	-43.9%	2025	15,224,791	4.0%
PDX	ANM	PORTLAND INTL	9,786,535	5,136,097	-47.5%	2024	18,024,071	5.1%
HNL	AWP	DANIEL K INOUE INTL	9,804,277	5,104,712	-47.9%	2026	14,217,231	4.2%
Total			656,741,680	360,323,987	-45.1%	2025	1,058,478,619	4.4%

Table S-4 Operations at Large Hub Airports

Loc Id	Region	Airport Name	2019	2020	Rate 2019 - Recovery		2045	Annual rate 2020 - 2045
					2020	to 2019		
ORD	AGL	CHICAGO O'HARE INTL	914,615	643,751	-29.6%	2028	1,258,535	2.7%
ATL	ASO	HARTSFIELD - JACKSON ATLANTA INTL	903,135	621,012	-31.2%	2026	1,341,964	3.1%
DFW	ASW	DALLAS - FORT WORTH INTL	703,157	559,315	-20.5%	2025	1,052,305	2.6%
DEN	ANM	DENVER INTL	629,315	483,345	-23.2%	2026	957,841	2.8%
LAX	AWP	LOS ANGELES INTL	694,975	457,397	-34.2%	2026	1,075,917	3.5%
CLT	ASO	CHARLOTTE/DOUGLAS INTL	570,751	443,933	-22.2%	2025	866,855	2.7%
LAS	AWP	MC CARRAN INTL	549,098	377,933	-31.2%	2025	805,589	3.1%
PHX	AWP	PHOENIX SKY HARBOR INTL	435,577	343,118	-21.2%	2023	755,357	3.2%
SEA	ANM	SEATTLE - TACOMA INTL	445,303	329,778	-25.9%	2025	714,801	3.1%
IAH	ASW	GEORGE BUSH INTERCONTINENTAL/HOUSTON	474,155	320,900	-32.3%	2026	695,879	3.1%
SFO	AWP	SAN FRANCISCO INTL	460,720	292,390	-36.5%	2025	778,214	4.0%
MIA	ASO	MIAMI INTL	417,747	290,478	-30.5%	2026	611,026	3.0%
SLC	ANM	SALT LAKE CITY INTL	342,738	285,900	-16.6%	2026	479,041	2.1%
MSP	AGL	MINNEAPOLIS - ST PAUL INTL/WOLD - CHAMBERLAIN	404,644	279,768	-30.9%	2026	570,892	2.9%
EWR	AEA	NEWARK LIBERTY INTL	448,622	278,420	-37.9%	2029	624,404	3.3%
DTW	AGL	DETROIT METROPOLITAN WAYNE COUNTY	394,907	275,412	-30.3%	2030	494,815	2.4%
BOS	ANE	GENERAL EDWARD LAWRENCE LOGAN INTL	432,722	273,560	-36.8%	2025	697,210	3.8%
JFK	AEA	JOHN F KENNEDY INTL	465,003	273,181	-41.3%	2026	747,166	4.1%
PHL	AEA	PHILADELPHIA INTL	388,598	268,220	-31.0%	2034	457,262	2.2%
MCO	ASO	ORLANDO INTL	363,677	261,674	-28.0%	2024	639,616	3.6%
FLL	ASO	FORT LAUDERDALE/HOLLYWOOD INTL	331,201	225,470	-31.9%	2025	553,535	3.7%
HNL	AWP	DANIEL K INOUE INTL	324,579	222,451	-31.5%	2029	396,366	2.3%
LGA	AEA	LAGUARDIA	374,397	210,873	-43.7%	2027	394,510	2.5%
IAD	AEA	WASHINGTON DULLES INTL	309,147	209,638	-32.2%	2029	398,606	2.6%
BWI	AEA	BALTIMORE/WASHINGTON INTL THURGOOD MARSHALL	261,338	203,297	-22.2%	2025	377,920	2.5%
DCA	AEA	RONALD REAGAN WASHINGTON NATIONAL	297,843	188,757	-36.6%	2025	309,679	2.0%
MDW	AGL	CHICAGO MIDWAY INTL	233,933	172,418	-26.3%	2025	324,726	2.6%
PDX	ANM	PORTLAND INTL	237,051	171,017	-27.9%	2024	407,940	3.5%
TPA	ASO	TAMPA INTL	214,176	166,590	-22.2%	2024	352,707	3.0%
SAN	AWP	SAN DIEGO INTL	229,985	160,310	-30.3%	2025	378,552	3.5%
Total			13,253,109	9,290,306	-29.9%	2026	19,519,230	3.0%

Appendix A: Description of Activity Measures

Air Carrier Enplanements

These data summarize domestic enplaned passengers (originations and connections) of U.S. commercial air carriers and international enplanements for both U.S. and foreign flag carriers submitted to the U.S. Department of Transportation (DOT), Bureau of Transportation Statistics (BTS) on T-100 reports. Estimates include both scheduled and non-scheduled enplaned passengers.

Regional Enplanements

Starting in FY 2003, FAA includes in the regional category enplanements for those airlines whose primary function is to provide passenger feed to mainline carriers, regardless of aircraft size. As of October 2002, all scheduled and non-scheduled operations using aircraft with 10 or more seats to transport regional passengers must report on T-100.

Historic enplanement data includes originating passengers on scheduled commuter or regional carriers as reported on DOT Form 41 and 298-C; where possible, adjustments were made to include connecting passengers. Historically, Form 298-C included carriers operating at least five scheduled round trips per week whose entire fleet consists of aircraft having 60 seats or less.

Aircraft Operations

FAA air traffic controllers count landings and takeoffs at FAA towered airports. Controllers employed by an FAA contractor count operations at FAA contract towers. At non-FAA facilities, operations counts represent an estimate.

Air carrier operations represent either takeoffs or landings of commercial aircraft with seating capacity of more than 60 seats.

Commuter/air taxi operations are one category. Commuter operations include takeoffs and landings by aircraft with 60 or fewer seats that transport regional passengers on scheduled commercial flights. Air taxi operations include takeoffs and landings by aircraft with 60 or fewer seats conducted on non-scheduled or for-hire flights.

Itinerant general aviation and local civil operations represent all civil aviation aircraft takeoffs and landings not classified as commercial. Military operations represent takeoffs and landings by military aircraft. Operations are either itinerant or local flights.

Local Operations

Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.

Itinerant Operations

FAA reports all aircraft operations other than local operations as itinerant. Essentially, these data represent takeoffs and landings of aircraft going from one airport to another.

Tracon Operations

These data include arrivals, departures, and overflights conducted by an FAA radar approach control facility for aircraft under Instrument Flight Rule (IFR) or Visual Flight Rule (VFR) plans.

Overflights

These data include operations of aircraft in transit through the approach control facility airspace.

Appendix B: List of Large, Medium, and Small Hub Tower Airports

Table B-1 List of Large Hub Towers			
Identifier	Region	Airport Name	City, State
ATL	ASO	HARTSFIELD - JACKSON ATLANTA INTERNATIONAL	ATLANTA, GA
BOS	ANE	GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL	BOSTON, MA
BWI	AEA	BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL	BALTIMORE, MD
CLT	ASO	CHARLOTTE/DOUGLAS INTERNATIONAL	CHARLOTTE, NC
DCA	AEA	RONALD REAGAN WASHINGTON NATIONAL	ARLINGTON, DC
DEN	ANM	DENVER INTERNATIONAL	DENVER, CO
DFW	ASW	DALLAS-FORT WORTH INTERNATIONAL	DALLAS-FORT WORTH, TX
DTW	AGL	DETROIT METROPOLITAN WAYNE COUNTY	DETROIT, MI
EWR	AEA	NEWARK LIBERTY INTERNATIONAL	NEWARK, NJ
FLL	ASO	FORT LAUDERDALE/HOLLYWOOD INTERNATIONAL	FORT LAUDERDALE, FL
HNL	AWP	DANIEL K INOUE INTERNATIONAL	HONOLULU, HI
IAD	AEA	WASHINGTON DULLES INTERNATIONAL	DULLES, DC
IAH	ASW	GEORGE BUSH INTERCONTINENTAL/HOUSTON	HOUSTON, TX
JFK	AEA	JOHN F KENNEDY INTERNATIONAL	NEW YORK, NY
LAS	AWP	MCCARRAN INTERNATIONAL	LAS VEGAS, NV
LAX	AWP	LOS ANGELES INTERNATIONAL	LOS ANGELES, CA
LGA	AEA	LAGUARDIA	NEW YORK, NY
MCO	ASO	ORLANDO INTERNATIONAL	ORLANDO, FL
MDW	AGL	CHICAGO MIDWAY INTERNATIONAL	CHICAGO, IL
MIA	ASO	MIAMI INTERNATIONAL	MIAMI, FL
MSP	AGL	MINNEAPOLIS-ST PAUL INTERNATIONAL/WOLD-CHAMBERLAIN	MINNEAPOLIS, MN
ORD	AGL	CHICAGO O'HARE INTERNATIONAL	CHICAGO, IL
PDX	ANM	PORTLAND INTERNATIONAL	PORTLAND, OR
PHL	AEA	PHILADELPHIA INTERNATIONAL	PHILADELPHIA, PA
PHX	AWP	PHOENIX SKY HARBOR INTERNATIONAL	PHOENIX, AZ
SAN	AWP	SAN DIEGO INTERNATIONAL	SAN DIEGO, CA
SEA	ANM	SEATTLE-TACOMA INTERNATIONAL	SEATTLE, WA
SFO	AWP	SAN FRANCISCO INTERNATIONAL	SAN FRANCISCO, CA
SLC	ANM	SALT LAKE CITY INTERNATIONAL	SALT LAKE CITY, UT
TPA	ASO	TAMPA INTERNATIONAL	TAMPA, FL

Listed 30 Airports

Table B-2 List of Medium Hub Towers

Location Identifier	Region	Airport Name	City, State
ABQ	ASW	ALBUQUERQUE INTERNATIONAL SUNPORT	ALBUQUERQUE, NM
ANC	AAL	TED STEVENS ANCHORAGE INTERNATIONAL	ANCHORAGE, AK
AUS	ASW	AUSTIN-BERGSTROM INTERNATIONAL	AUSTIN, TX
BDL	ANE	BRADLEY INTERNATIONAL	WINDSOR LOCKS, CT
BNA	ASO	NASHVILLE INTERNATIONAL	NASHVILLE, TN
BUF	AEA	BUFFALO NIAGARA INTERNATIONAL	BUFFALO, NY
BUR	AWP	BOB HOPE	BURBANK, CA
CHS	ASO	CHARLESTON AFB/INTERNATIONAL	CHARLESTON, SC
CLE	AGL	CLEVELAND-HOPKINS INTERNATIONAL	CLEVELAND, OH
CMH	AGL	JOHN GLENN COLUMBUS INTERNATIONAL	COLUMBUS, OH
CVG	ASO	CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL	COVINGTON, KY
DAL	ASW	DALLAS LOVE FIELD	DALLAS, TX
HOU	ASW	WILLIAM P HOBBY	HOUSTON, TX
IND	AGL	INDIANAPOLIS INTERNATIONAL	INDIANAPOLIS, IN
JAX	ASO	JACKSONVILLE INTERNATIONAL	JACKSONVILLE, FL
MCI	ACE	KANSAS CITY INTERNATIONAL	KANSAS CITY, MO
MKE	AGL	GENERAL MITCHELL INTERNATIONAL	MILWAUKEE, WI
MSY	ASW	LOUIS ARMSTRONG NEW ORLEANS INTERNATIONAL	NEW ORLEANS, LA
OAK	AWP	METROPOLITAN OAKLAND INTERNATIONAL	OAKLAND, CA
OGG	AWP	KAHULUI	KAHULUI, HI
OMA	ACE	EPPLEY AIRFIELD	OMAHA, NE
ONT	AWP	ONTARIO INTERNATIONAL	ONTARIO, CA
PBI	ASO	PALM BEACH INTERNATIONAL	WEST PALM BEACH, FL
PIT	AEA	PITTSBURGH INTERNATIONAL	PITTSBURGH, PA
RDU	ASO	RALEIGH-DURHAM INTERNATIONAL	RALEIGH/DURHAM, NC
RSW	ASO	SOUTHWEST FLORIDA INTERNATIONAL	FORT MYERS, FL
SAT	ASW	SAN ANTONIO INTERNATIONAL	SAN ANTONIO, TX
SJC	AWP	NORMAN Y MINETA SAN JOSE INTERNATIONAL	SAN JOSE, CA
SJU	ASO	LUIS MUNOZ MARIN INTERNATIONAL	SAN JUAN, PR
SMF	AWP	SACRAMENTO INTERNATIONAL	SACRAMENTO, CA
SNA	AWP	JOHN WAYNE AIRPORT-ORANGE COUNTY	SANTA ANA, CA
STL	ACE	ST LOUIS LAMBERT INTERNATIONAL	ST LOUIS, MO

Listed 32 Airports

Table B-3 List of Small Hub Towers

Location Identifier	Region	Airport Name	City, State
ACY	AEA	ATLANTIC CITY INTERNATIONAL	ATLANTIC CITY, NJ
ALB	AEA	ALBANY INTERNATIONAL	ALBANY, NY
AVL	ASO	ASHEVILLE REGIONAL	ASHEVILLE, NC
BHM	ASO	BIRMINGHAM-SHUTTLESWORTH INTERNATIONAL	BIRMINGHAM, AL
BOI	ANM	BOISE AIR TERMINAL/GOWEN FIELD	BOISE, ID
BTV	ANE	BURLINGTON INTERNATIONAL	BURLINGTON, VT
BZN	ANM	BOZEMAN YELLOWSTONE INTERNATIONAL	BOZEMAN, MT
CAE	ASO	COLUMBIA METROPOLITAN	COLUMBIA, SC
CHA	ASO	LOVELL FIELD	CHATTANOOGA, TN
CID	ACE	THE EASTERN IOWA	CEDAR RAPIDS, IA
COS	ANM	CITY OF COLORADO SPRINGS MUNICIPAL	COLORADO SPRINGS, CO
DAY	AGL	JAMES M COX DAYTON INTERNATIONAL	DAYTON, OH
DSM	ACE	DES MOINES INTERNATIONAL	DES MOINES, IA
ECP	ASO	NORTHWEST FLORIDA BEACHES INTERNATIONAL	PANAMA CITY, FL
ELP	ASW	EL PASO INTERNATIONAL	EL PASO, TX
EUG	ANM	MAHLON SWEET FIELD	EUGENE, OR
EYW	ASO	KEY WEST INTERNATIONAL	KEY WEST, FL
FAI	AAL	FAIRBANKS INTERNATIONAL	FAIRBANKS, AK
FAT	AWP	FRESNO YOSEMITE INTERNATIONAL	FRESNO, CA
FSD	AGL	JOE FOSS FIELD	SIOUX FALLS, SD
GEG	ANM	SPOKANE INTERNATIONAL	SPOKANE, WA
GRR	AGL	GERALD R FORD INTERNATIONAL	GRAND RAPIDS, MI
GSO	ASO	PIEDMONT TRIAD INTERNATIONAL	GREENSBORO, NC
GSP	ASO	GREENVILLE SPARTANBURG INTERNATIONAL	GREER, SC
GUM	AWP	GUAM INTERNATIONAL	GUAM, GU
HPN	AEA	WESTCHESTER COUNTY	WHITE PLAINS, NY
HSV	ASO	HUNTSVILLE INTERNATIONAL-CARL T JONES FIELD	HUNTSVILLE, AL
ICT	ACE	WICHITA DWIGHT D EISENHOWER NATIONAL	WICHITA, KS
ILM	ASO	WILMINGTON INTERNATIONAL	WILMINGTON, NC
ISP	AEA	LONG ISLAND MACARTHUR	NEW YORK, NY
ITO	AWP	HILO INTERNATIONAL	HILO, HI
IWA	AWP	PHOENIX-MESA GATEWAY	PHOENIX, AZ
JAN	ASO	JACKSON-MEDGAR WILEY EVERS INTERNATIONAL	JACKSON, MS
KOA	AWP	ELLISON ONIZUKA KONA INTERNATIONAL AT KEAHOLE	KAILUA/KONA, HI
LBB	ASW	LUBBOCK PRESTON SMITH INTERNATIONAL	LUBBOCK, TX
LEX	ASO	BLUE GRASS	LEXINGTON, KY
LGB	AWP	LONG BEACH /DAUGHERTY FIELD/	LONG BEACH, CA
LIH	AWP	LIHUE	LIHUE, HI
LIT	ASW	BILL AND HILLARY CLINTON NATIONAL/ADAMS FIELD	LITTLE ROCK, AR
MAF	ASW	MIDLAND INTERNATIONAL AIR AND SPACE PORT	MIDLAND, TX
MDT	AEA	HARRISBURG INTERNATIONAL	HARRISBURG, PA
MEM	ASO	MEMPHIS INTERNATIONAL	MEMPHIS, TN
MFR	ANM	ROGUE VALLEY INTERNATIONAL - MEDFORD	MEDFORD, OR
MHT	ANE	MANCHESTER	MANCHESTER, NH
MSN	AGL	DANE COUNTY REGIONAL-TRUAX FIELD	MADISON, WI
MYR	ASO	MYRTLE BEACH INTERNATIONAL	MYRTLE BEACH, SC
OKC	ASW	WILL ROGERS WORLD	OKLAHOMA CITY, OK
ORF	AEA	NORFOLK INTERNATIONAL	NORFOLK, VA
PGD	ASO	PUNTA GORDA	PUNTA GORDA, FL
PIE	ASO	ST PETE-CLEARWATER INTERNATIONAL	ST PETERSBURG-CLEARWATER , FL
PNS	ASO	PENSACOLA INTERNATIONAL	PENSACOLA, FL
PSP	AWP	PALM SPRINGS INTERNATIONAL	PALM SPRINGS, CA
PVD	ANE	THEODORE FRANCIS GREEN STATE	PROVIDENCE, RI
PWM	ANE	PORTLAND INTERNATIONAL JETPORT	PORTLAND, ME
RDM	ANM	ROBERTS FIELD	REDMOND, OR
RIC	AEA	RICHMOND INTERNATIONAL	RICHMOND, VA
RNO	AWP	RENO/TAHOE INTERNATIONAL	RENO, NV
ROC	AEA	GREATER ROCHESTER INTERNATIONAL	ROCHESTER, NY
SAV	ASO	SAVANNAH/HILTON HEAD INTERNATIONAL	SAVANNAH, GA
SBA	AWP	SANTA BARBARA MUNICIPAL	SANTA BARBARA, CA

Table B-3 List of Small Hub Towers			
Location Identifier	Region	Airport Name	City, State
SDF	ASO	LOUISVILLE MUHAMMAD ALI INTERNATIONAL	LOUISVILLE, KY
SFB	ASO	ORLANDO SANFORD INTERNATIONAL	ORLANDO, FL
SGF	ACE	SPRINGFIELD-BRANSON NATIONAL	SPRINGFIELD, MO
SRQ	ASO	SARASOTA/BRADENTON INTERNATIONAL	SARASOTA/BRADENTON, FL
STT	ASO	CYRIL E KING	CHARLOTTE AMALIE, VI
SYR	AEA	SYRACUSE HANCOCK INTERNATIONAL	SYRACUSE, NY
TUL	ASW	TULSA INTERNATIONAL	TULSA, OK
TUS	AWP	TUCSON INTERNATIONAL	TUCSON, AZ
TYS	ASO	MCGHEE TYSON	KNOXVILLE, TN
XNA	ASW	NORTHWEST ARKANSAS REGIONAL	FAYETTEVILLE/SPRINGDALE/ROGERS , AR

Listed 70 Airports