3.3.2 Forecast Results

Forecasts for FY2017 are based on Airport activity data through March 31, 2016 and airline flight schedules for April 1, 2017 - June 30, 2017 published in the OAG database as of April 2017. Forecasts after FY2017 consider trends in airline schedules for the first quarter of FY2018, projected national economic growth trends and real passenger yield trends at STL. The model coefficient estimates measuring the contributions of market drivers to growth in STL's enplanements, along with projections of trends in the key market demand drivers, produce the base forecast growth in enplanements beyond FY2017.

Recognizing uncertainty in the future trends of key market drivers, alternative forecasts were developed using Monte Carlo simulation. A comprehensive approach to forecast risk analysis, Monte Carlo simulation uses probability distributions and random sampling techniques for assigning future values to the key explanatory variables of the regression model. The simulation, involving 5,000 iterations, produces a wide range of possible scenarios for future enplanement growth and corresponding percentile rankings. Percentiles provide an indication of the probability of each of the forecast scenarios.

Table 3-6 summarize the base forecast enplanements, and Figure 3-14 compares the base forecast enplanements with select percentile results from the Monte Carlo simulation and the FAA's Terminal Area Forecast (TAF) for STL. The FAA develops TAF for its planning, budgeting, and staffing purposes. The most recent TAF was published in January 2017. Forecast publications lag more than a year behind forecast development, and so the latest TAF considers actual performance only through federal fiscal year 2015 (which ended on September 30, 2015).

Under the base forecast, enplanements will increase from 6.8 million in FY2017 to 8.0 million in FY2022, growing at an average annual rate of 3.1 percent (Table 3-6). The relatively high annual growth rates during the first half of the forecast period reflect continuing momentum from recent airline capacity expansion, especially by Southwest, as well as the projected acceleration in U.S. economic growth. Enplanement growth is forecast to taper in the second half of the forecast period, reflecting the projected slowdown in U.S. economic growth and Southwest's return to its slow and steady growth strategy.

The base forecast enplanements are slightly higher than the median results from the Monte Carlo simulation in the first two years of the forecast period. After the second year, the base forecast enplanements decrease to levels between the median and 25-percentile ranges.

The base forecast enplanements are lower than FAA's TAF through FY2022, but they get closer to the TAF in later years. The base forecast enplanements for FY2022 are only 1.6 percent lower than the TAF. According to the TAF, annual enplanements will grow at an average rate of 2.6 percent, reaching 8.1 million in FY2022.

Table 3-6: Base Forecast Commercial Enplanements by Fiscal Year

Activity	Actual 2016	Forecast 2017	2018	2019	2020	2021	2022	CAGR 2016-2022
Mainline Air Carrier								
American/US Airways	874,000	903,000	950,000	977,000	989,000	998,000	1,012,000	2.5%
Delta	684,000	640,000	673,000	693,000	701,000	708,000	718,000	0.8%
Southwest	3,504,000	4,010,000	4,215,000	4,337,000	4,389,000	4,430,000	4,494,000	4.2%
Others	385,000	502,000	528,000	543,000	549,000	554,000	562,000	6.5%
Subtotal-Mainline	5,446,000	6,055,000	6,365,000	6,550,000	6,629,000	6,690,000	6,786,000	3.7%
Regional Air Carrier								
American/US Airways	399,000	306,000	322,000	331,000	335,000	338,000	343,000	-2.5%
Delta Regional	209,000	216,000	227,000	233,000	236,000	238,000	242,000	2.5%
Others	594,000	550,000	578,000	595,000	602,000	607,000	616,000	0.6%
Subtotal-Regional	1,202,000	1,072,000	1,127,000	1,159,000	1,173,000	1,184,000	1,201,000	0.0%
Charter	25,000	28,000	29,000	30,000	30,000	31,000	31,000	3.8%
Total-Enplanements	**6,673,000**	**7,155,000**	**7,521,000**	**7,739,000**	**7,832,000**	**7,905,000**	**8,018,000**	3.1%
Annual Growth Rate	6.5%	7.2%	5.1%	2.9%	1.2%	0.9%	1.4%	

CAGR - Compound Annual Growth Rate

Figure 3-14: Comparison of Base Forecast with FAA Terminal Area Forecast by Fiscal Year
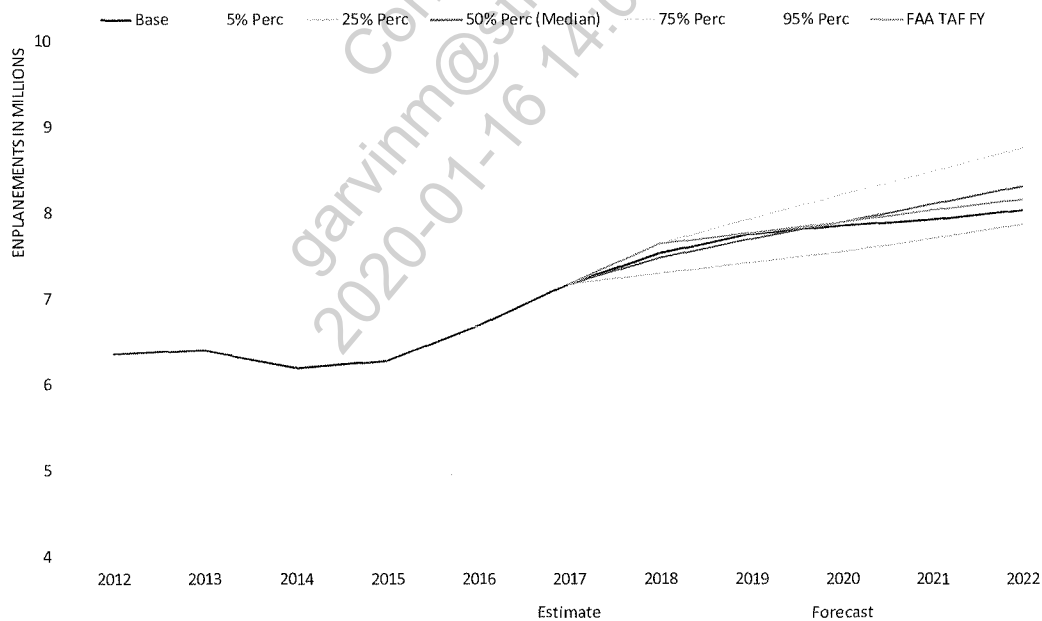
FAA TAF enplanements are converted from Federal FYs (ending September) to the Airport's FYs (ending June).
Sources: FAA Terminal Area Forecast (TAF) and Unison Consulting, Inc. (all other forecasts).

Table 3-7 shows the forecast aircraft departures corresponding to the base forecast enplanements. Forecast aircraft departures will grow at an average annual rate of 1.1 percent—slower than projected for enplanements owing to continued improvements in load factors and continued upgauging in airlines' fleet. Aircraft departures are projected to level off around 91,000 per year in FY2020, after growing annually by 7 percent from current levels.

Table 3-8 shows the landed weight forecast corresponding to the base forecast aircraft landings (the same as departures). Forecast growth rates for landed weight are similar to forecast growth rates for enplanements—averaging 3.1 percent annually between FYs 2016 and 2022.

Mainline carriers drive the growth in all measures of commercial aviation activity at STL.

Table 3-7: Base Forecast Commercial Aircraft Departures (Landings) by Fiscal Year

Activity	Actual 2016	2017	2018	Forecast 2019	2020	2021	2022	CAGR 2016-2022
Mainline Air Carrier								
American/US Airways	8,000	8,000	9,000	9,000	9,000	9,000	9,000	2.0%
Delta	5,000	5,000	6,000	6,000	6,000	6,000	6,000	1.0%
Southwest	31,000	35,000	37,000	38,000	38,000	39,000	39,000	3.6%
Others	3,000	3,000	3,000	3,000	3,000	3,000	3,000	5.3%
Subtotal-Mainline	47,000	52,000	55,000	56,000	56,000	57,000	57,000	3.1%
Regional Air Carrier								
American/US Airways	7,000	6,000	6,000	6,000	6,000	6,000	6,000	-1.9%
Delta Regional	4,000	4,000	4,000	4,000	4,000	4,000	4,000	0.9%
Others	25,000	23,000	23,000	22,000	21,000	21,000	20,000	-3.2%
Subtotal-Regional	35,000	33,000	33,000	32,000	31,000	31,000	31,000	-2.4%
Charter	372	562	562	562	562	562	562	23.8%
Subtotal-Passenger	83,000	86,000	89,000	90,000	89,000	89,000	89,000	1.1%
All-Cargo	2,000	2,000	2,000	2,000	2,000	2,000	2,000	0.0%
Total-Departures	**85,000**	**88,000**	**91,000**	**92,000**	**91,000**	**91,000**	**91,000**	1.1%
Annual Growth Rate	0.3%	3.6%	3.3%	0.7%	-0.7%	-0.4%	0.2%	

CAGR - Compound Annual Growth Rate

Table 3-8: Base Forecast Commercial Aviation Landed Weights by Fiscal Year

	Actual	Forecast						CAGR
Activity	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2016-2022**
Mainline Air Carrier								
American/US Airways	1,048,000	1,078,000	1,164,000	1,193,000	1,203,000	1,210,000	1,224,000	2.6%
Delta	773,000	738,000	802,000	823,000	830,000	836,000	846,000	1.5%
Southwest	3,997,000	4,568,000	4,855,000	4,979,000	5,021,000	5,052,000	5,111,000	4.2%
Others	372,000	496,000	535,000	550,000	556,000	561,000	569,000	7.4%
Subtotal-Mainline	6,190,000	6,880,000	7,356,000	7,546,000	7,611,000	7,659,000	7,750,000	3.8%
Regional Air Carrier								
American/US Airways	427,000	353,000	366,000	376,000	380,000	383,000	388,000	-1.6%
Delta Regional	260,000	289,000	285,000	293,000	296,000	299,000	303,000	2.6%
Others	694,000	664,000	663,000	674,000	675,000	676,000	682,000	-0.3%
Subtotal-Regional	1,380,000	1,306,000	1,314,000	1,343,000	1,351,000	1,358,000	1,373,000	-0.1%
Charter	40,000	90,000	90,000	90,000	90,000	90,000	90,000	14.6%
Subtotal-Passenger	7,610,000	8,277,000	8,760,000	8,979,000	9,053,000	9,108,000	9,213,000	3.2%
All-Cargo	362,000	339,000	343,000	343,000	343,000	343,000	343,000	-0.9%
Total-Landed Weight	**7,972,000**	**8,616,000**	**9,103,000**	**9,322,000**	**9,396,000**	**9,451,000**	**9,556,000**	**3.1%**
Annual Growth Rate	2.4%	8.1%	5.7%	2.4%	0.8%	0.6%	1.1%	

CAGR - Compound Annual Growth Rate

3.4 Sources of Forecast Risk and Uncertainty

The forecasts of aviation activity are based on information available at the time of analysis, measurable factors that drive air travel demand, and assumptions about the availability and characteristics of airline service at the Airport. Forecasts, however, are inherently uncertain. Broader factors affecting the aviation industry and the Airport can cause the Airport's actual performance to differ from the forecasts. Several of these factors are discussed below.

3.4.1 Economic Conditions

National and regional economic conditions drive trends in the Airport's commercial aviation activity. Economic expansions increase income, boost consumer confidence, stimulate business activity, and increase air travel demand. In contrast, economic recessions reduce income, diminish consumer confidence, dampen business activity, and weaken air travel demand. The regional economy moves with the national economy. While the diversity of the regional economy helps temper the effects of business cycles, the regional economy can be vulnerable to a national economic recession as deep as the Great Recession in 2008-2009. During the Great Recession, the regional economy suffered declines in output (real GDP), income, and employment.

The U.S. economy is now on its eighth year of expansion after the Great Recession. Driven by growth in consumer spending and business investment, the U.S. economy is predicted to continue growing over the next few years. While the probability of a recession remains low, many factors