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May 26, 2017

Ms. Rhonda Hamm-Niebruegge
Airport Director
St. Louis Lambert International
Airport Post Office Box 10212
St. Louis, MO 63145

Re: Financial Feasibility Report--The City of St. Louis, Missouri, Airport Revenue and Refunding Bonds, Series 2017A, B, C and D (St. Louis Lambert International Airport)

Dear Ms. Hamm-Niebruegge:

Unison-Consulting, Inc. is pleased to submit this Financial Feasibility Report (the Report) in connection with the issuance by The City of St. Louis, Missouri, of (i) Airport Revenue Refunding Bonds, Series 2017A (Non-AMT) (St. Louis Lambert International Airport (the Series 2017A Refunding Bonds); (ii) Airport Revenue Refunding Bonds, Series 2017B (AMT) (St. Louis Lambert International Airport) (the Series 2017B Refunding Bonds) and together with the Series 2017A Refunding Bonds (the Series 2017 Refunding Bonds) in an aggregate principal amount not to exceed $209.8 million along with the issuance of (iii) Airport Revenue Bonds, Series 2017C (Non-AMT) (St. Louis Lambert International Airport) (the Series 2017C Project Bonds); (iv) Airport Revenue Bonds, Series 2017D (AMT) (St. Louis Lambert International Airport) (the Series 2017D Project Bonds) and together with the Series 2017C Project Bonds (the Series 2017 Project Bonds), in an amount not to exceed $60.8 million and together with the Series 2017 Refunding Bonds will be collectively known as (the Series 2017 Bonds). The proceeds from the sale of the Series 2017 Bonds will be used to refund all or a portion of the Series 2007A (except the 2001A-1 Bonds) and the Series 2007B Bonds (the Refunded Bonds). In addition, the proceeds will provide funding for a portion of the costs of construction, extension and improvement of the St. Louis Lambert International Airport (STL or Airport), to reimburse the City for prior Airport capital expenditures (collectively the Series 2017 Project), to fund all or a portion of capitalized interest, if required, and provide funding for any required reserves or cost of issuance for the Series 2017 Bonds.

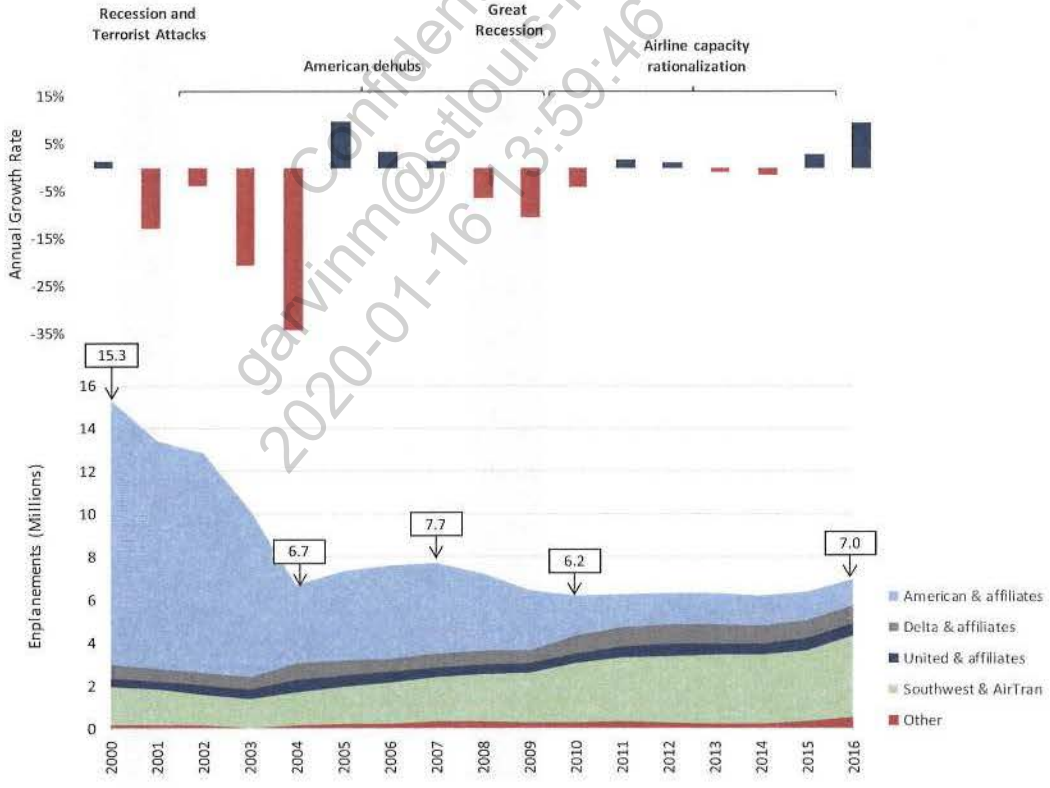
The St. Louis Lambert International Airport (the Airport) is owned by the City and operated by the City of St. Louis Airport Authority (the Authority), an agency of the City. The Airport is the principal airport serving the St. Louis metropolitan area, a region with a population of approximately 2.8 million as of CY 2016. In Fiscal Year (FY) 2016, approximately 6.7 million passengers were enplaned at the Airport, of which 5.7 million (85.4%) were originating passengers and 1.0 million (14.6%) were connecting passengers.

Historical Passenger Traffic Trends

Over the years, the Airport's passenger traffic has grown and declined with U.S. economic cycles (Figure 1). In the early 2000s, growth was set back by American Airlines' (American) significant service cuts—not long after the crash of two American flights during the terrorist attacks in September 2001—to end hub operations at the Airport. STL's enplanements were more than halved from their all-time peak of 15.3 million in 2000 to 6.7 million in 2004, and decreased further through the Great Recession to 6.2 million in 2010.

As American reduced capacity, Southwest Airlines (Southwest) gradually emerged as the Airport's largest carrier. Southwest's expansion aided traffic recovery, which progressed slowly until the past year. In 2016, traffic growth at STL picked up—enplanements grew nearly 10 percent from the previous year to almost 7 million.

Figure 1
HISTORICAL ENPLANEMENT TRENDS AT STL
CY 2000-2016



Source: Airport records.

In addition to the changes in air service particular to STL, the entire U.S. aviation industry has faced a challenging business environment resulting from the following developments:

- A recession, lasting from March to November 2001, ended a 10-year U.S. economic expansion. On September 11, 2001, while the U.S. economy was in recession, terrorists attacked U.S. aviation. Passenger traffic plummeted, and airport security tightened.
- Jet fuel prices rose to record high levels, causing airline operating costs to escalate.
- Amid record fuel prices, in 2008-2009, the U.S. economy entered the Great Recession, so called because it is the longest and deepest recession since the Great Depression. The Great Recession again weakened demand for both passenger and cargo air services.
- To improve financial results, airlines cut domestic seat capacity to increase load factors, retired fuel-inefficient aircraft, added seats to aircraft, and implemented other cost-cutting measures. They optimized their networks, transferred routes between mainline and regional service, and changed their pricing structures. Mounting financial difficulties eventually led to bankruptcies, mergers, and business restructuring.
- Bad weather, natural disasters, disease outbreaks, and geopolitical conflicts also hurt the aviation industry in various ways—by disrupting air service, decreasing traffic, and hampering economic recovery.

The Airport's passenger traffic recovered gradually after 2004 and increased through 2007. However, annual enplanements declined by 6.6 percent in 2008, as the U.S. economy entered another recession period and airlines responded with a new round of capacity adjustments. STL's passenger enplanements decreased by 20 percent over the course of the recession, from 7.7 million in 2007 to less than 6.2 million in 2010. Enplanement levels in 2010 were the lowest recorded for the Airport since the early 1980s.

Even after the Great Recession ended, American and other airlines continued to limit system capacity to keep air fares from falling, contain costs, and turn profits. Airline capacity restraint amid slow demand recovery has kept annual enplanement levels at the Airport flat—6.3 million on average—between 2009 and 2014. Boosted by air service expansion, largely by Southwest, STL's enplanements increased 2.8 percent in 2015 and 9.6 percent in 2016.

Through 2003, American and its affiliate carriers accounted for over 70 percent of enplanements at the STL, and the Airport's passenger traffic was vulnerable to service cuts by American. The significant service cuts by American leading to the closing of its connecting hub at STL paved the way for Southwest's expansion at the Airport. Today, Southwest accounts for more than 50 percent of STL's passenger traffic (55 percent in 2016). The closing of American's connecting hub also left the Airport with a much stronger O&D traffic base. O&D traffic now accounts for more than 80 percent of the Airport's annual enplanements (83 percent in 2016).

During 2016, the Airport executed a new Airline Use and Lease Agreement (AUA) with the airlines, which is similar in form to the previous AUA and contained a pre-approved 5-year Capital Improvement Plan for the period FY 2017 – 2021(the FY 2017-2021 CIP) totaling approximately $170.3 million. The City's expected funding for the FY 2017-2021 CIP will be comprised of proceeds from the sale of the Series 2017 Project Bonds along with moneys from AIP entitlement and discretionary, passenger facility charges (PFCs), Airport Development Funds (ADF) and any other available resources.

The Series 2017 Bonds are issued pursuant to an Indenture of Trust, dated as of October 15, 1984, as amended and restated by the Amended and Restated Indenture of Trust, dated as of July 1, 2009, as amended and supplemented, including by the Twenty-First and Twenty-Second Supplemental Indentures dated June 1, 2017 (collectively the Indenture). The Series 2017 Bonds are limited obligations of the City secured by and payable solely from GARB Revenues (as defined in the Indenture), and any other available moneys deposited with the Trustee for deposit in the Revenue Fund (collectively, the Revenues).

The Series 2017 Bonds will be subject to the Additional Bonds Test. As a condition for the issuance of Additional Bonds, the Indenture requires that the following documents be prepared and delivered to the Trustee:

- An Accountant's Certificate setting forth (a) for any 12 consecutive calendar months out of the 18 months next preceding the authentication and delivery of such Series of Bonds, the Net Revenues for such 12-month period, and (b) the Aggregate Adjusted Debt Service for such 12-month period, and demonstrating that for such 12-month period Net Revenues equaled at least 1.25 times the Aggregate Adjusted Debt Service;

- A certificate of the Airport Consultant setting forth for each of the three Airport Fiscal Years following the Airport Fiscal Year in which the Consulting Engineers estimate the Project or any Additional Project will be completed, estimates of (a) Net Revenues and (b) amounts to be deposited from Revenues into the Debt Service Reserve Account, the Renewal and Replacement Fund, and the Development Fund; and

- A certificate of an Authorized Officer of the City setting forth (a) the estimates of Net Revenues, as set forth in the certificate of the Airport Consultant..., (b) the estimates of the amounts to be deposited in certain funds and accounts from Revenues as set forth in the certificate of the Airport Consultant..., and (c) the Aggregate Adjusted Debt Service, determined after giving effect to the issuance of such Additional Bonds and including the Aggregate Debt Service...with respect to future Series of Bonds, if any, [estimated to be] required to complete payment of the Cost of Construction of the Project..., and demonstrating that the estimated Net Revenues in each of the Airport Fiscal Years set forth in (a) above is at least equal to 1.25 times Aggregate Adjusted Debt Service for the corresponding Airport Fiscal Year.

These provisions are referred to as the Additional Bonds Test. This Report has been prepared in part to assist the City in complying with the provisions of the Additional Bonds Test.

The City and the scheduled passenger airlines serving the Airport have each entered into a substantially similar Airline Use and Lease Agreement (AUA) that govern, among other things, airline use and occupancy of Airport facilities and the calculation of airline rates and charges. The term of the AUA extends to June 30, 2021. The AUA provides that terminal rental rates are to be calculated under a "compensatory" rate methodology and landing fees are to be calculated under a "cost center residual cost" rate methodology.

In addition, the AUA has a provision intended to provide the airlines serving the Airport with some relief on the current landing fee due to the significant reduction in air traffic activity during recent years.

This Report is organized into the following sections:

Section 1	**Introduction** – Review of the Airport structure, governance, and provide an overview of the Airport's pre-approved five (5) five year capital improvement plan (FY 2017-2021 CIP), including the Series 2017 Projects.
Section 2	**The Economic Base of the Airport** – A discussion of the demographic and economic characteristics of the Airport's service area, provides context for the forecasts of commercial aviation activity.
Section 3	**Analysis and Forecast of Commercial Aviation Activity** – A discussion of historical trends in commercial air traffic activity and forecasts through 2022.
Section 4	**Financial Analysis** – A discussion of the framework for the operation of the Airport (including the Indenture and the AUAs), the sources of Revenues and the components of Operation and Maintenance Expenses, and forecasts of Revenues, Operation and Maintenance Expenses, Net Revenues, the application of Revenues to the funds and accounts established by the Indenture, and debt service coverage.

Major Assumptions

The financial forecasts presented in the Report are based on the following major assumptions:

1. The City will complete all projects in the FY 2017-2021 CIP in accordance with the approved schedule.

2. There will be no major cuts in airline service, especially by Southwest Airlines, during the forecast period.

3. The FAA will fulfill the terms of the federal grants (AIP, TSA and Stimulus grants) as part of the overall funding of the 5-Year CIP.

4. There will be no major disruption or loss of service resulting from a terrorist or any other catastrophic event.

These and other important assumptions underlying the forecasts of air traffic activity, Revenues, and Operation and Maintenance Expenses are set forth in Sections 3 and 4.

Findings and Conclusions

As indicated in the Report, Net Revenues are forecast to exceed 1.25 times Aggregate Adjusted Debt Service in the first three Airport Fiscal Years following the estimated date of completion of the last Series 2017 Project Bonds project in the FY 2017-2021 CIP, thereby satisfying the Additional Bonds Test for the base case as shown on page 7 of this letter.

In addition, based on our knowledge of comparable airports and our experience in providing financial consulting services to a variety of airports, we believe the forecasted airline costs per enplaned passenger, are reasonable in comparison with other major airports that have completed or are currently implementing major capital improvement programs.

The financial forecasts presented in this Report are based on information and assumptions that have been provided by Airport management, or developed by us and reviewed with and confirmed by Airport management. Based upon our review, we believe that the information is accurate and that the assumptions provide a reasonable basis for the forecasts.

Finally, some variation from the forecasts is inevitable due to unforeseen events and circumstances, and these variations may be material. The Report should be read in its entirety for an understanding of the forecasts and the underlying assumptions.

We appreciate the opportunity to assist the City on this important financing program for the Airport.

Sincerely,

UNISON CONSULTING, INC.

Unison Consulting, Inc.

Projected Debt Service Coverage (in Thousands)

PROJECTED COVERAGE CALCULATIONS
Lambert St. Louis International Airport
in thousands except for rates
For Fiscal years Ending June 30

	Actual			Projected			
	2016 [1]	2017	2018	2019	2020	2021	2022
Total Revenues (including DSSF Contribution and Additional Requirement)	$180,823	$191,583	$182,812	$187,692	$192,832	$196,207	$200,318
less: Operation and Maintenance Expenses [2]	79,871	87,378	87,738	90,058	92,440	94,887	97,400
Net Revenues	$100,951	$104,205	$95,074	$97,634	$100,392	$101,320	$102,918
Debt Service							
Outstanding Bonds	74,946	74,988	63,751	64,220	64,097	64,197	64,090
Future Bonds [3]	0	0	0	1,522	3,044	3,717	5,065
	$74,946	$74,988	$63,751	$65,742	$67,140	$67,915	$69,155
Debt service coverage ratio	**1.35**	**1.39**	**1.49**	**1.49**	**1.50**	**1.49**	**1.49**

[1] Based on audited financial statements and Airport records.

[2] The Operating and Maintenance Expenses for FY 2016 reported on this table are $5.2 million higher than that reflected in the FY 2016 audit due to a prior year adjustment.

[3] The Series 2017 Project Bonds and the future 2020 bond issue both assume 18 months of capitalized interest.

FINANCIAL FEASIBILITY REPORT

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Prepared by:

UNISON Consulting, Inc.

May 26, 2017

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Section 1 Introduction

The purpose of this Financial Feasibility Report (the Report) is to evaluate the financial impact of the proposed issuance by The City of St. Louis, Missouri (the City) of (i) Airport Revenue Refunding Bonds, Series 2017A (Non-AMT) (St. Louis Lambert International Airport) (the Series 2017A Bonds); (ii) Airport Revenue Refunding Bonds, Series 2017B (AMT) (St. Louis Lambert International Airport) (the Series 2017B Bonds) along with the Series 2017A Bonds known as (the Series 2017 Refunding Bonds); (iii) Airport Revenue Bonds, Series 2017C (Non-AMT) (St. Louis Lambert International Airport) (the Series 2017C Project Bonds); and (iv) Airport Revenue Bonds, Series 2017D (AMT) (St. Louis Lambert International Airport) (the Series 2017D Project Bonds along with the Series 2017C Bonds known as the Series 2017 Project Bonds, and together with the Series 2017 Refunding Bonds (the Series 2017 Bonds). The Series 2017 Bonds are issued pursuant to an Indenture of Trust, dated as of October 15, 1984, as amended and restated by the Amended and Restated Indenture of Trust, dated as of July 1, 2009, as amended and supplemented, including by the Twenty-First and Twenty-Second Supplemental Indenture of Trust, dated as of June 1, 2017 (collectively referred to as the Indenture).

This Report addresses the interest savings to be realized from the issuance of the Series 2017 Refunding Bonds from refunding a portion of the outstanding City of St. Louis, Missouri, Airport Revenue Refunding Bonds, Series 2007A (Non-AMT) (the Series 2007A Bonds) and the outstanding City of St. Louis, Missouri, Airport Revenue Refunding Bonds, Series 2007B (AMT) (the Series 2007B Bonds) including providing funding of the debt service reserve and paying cost of issuance for the Series 2017 Refunding Bonds. Additionally, the Report will address the use of proceeds from the Series 2017 Project Bonds to fund a portion of the costs of construction, extension and improvement, including reimbursement for certain prior capital expenditures (collectively the Series 2017 Project) of the St. Louis Lambert International Airport (the Airport). In addition, proceeds from the Series 2017 Project Bonds will be used to pay all or a portion of capitalized interest, if any, provide funding for a Debt Service Reserve Account (or the purchase of a surety bond or bond insurance policy), and pay cost of issuance on the Series 2017 Project Bonds.

During April 2017, the Federal Aviation Administration (FAA) accepted the City's preliminary application into the Airport Privatization Program (APP). This application was submitted to explore the potential for the City to gain access to capital funding. The City's next steps would include choosing a private operator that meets the criteria of APP, negotiating an operations agreement, which would then require approval by the airlines, the City, the Airport Commission, and the FAA. Currently, San Juan, Puerto Rico is the only airport operating under private management.

The Report is comprised of the following sections:

- Section 1 - Review of the Airport structure, governance and an overview of the plan of finance for the Airport's pre-approved five- (5-) year capital improvement program covering fiscal years (FY) (FY 2017–2021 CIP), including the Series 2017 Project.
- Section 2 - Discussion of the demographic and economic characteristics of the Airport's service area providing context for the forecasts of commercial aviation activity.

- Section 3 - A discussion of historical trends in commercial air traffic activity and forecasts through FY 2022.
- Section 4 - A discussion of the framework for the operation of the Airport (including the Indenture and the Airline Use and Lease Agreement (AUA)), the sources of Revenues and the components of Operation and Maintenance Expenses (O&M), and forecasts of Revenues, O&M, Net Revenues to the funds and accounts established by the Indenture and debt service coverage.

1.1 The Airport

Located in St. Louis County, approximately 15 miles northwest of downtown St. Louis, the Airport is situated approximately 10 miles from the St. Louis metropolitan area. The Airport is comprised of approximately 3,600 acres of land.

The Federal Aviation Administration (FAA) classifies the Airport as a medium hub airport. A medium hub airport is defined as an airport that enplanes between 0.25 and 1.0% of the total passengers in the United States in a calendar year. In CY 2016, the Airport enplaned approximately 7.0 million passengers, which accounted for approximately 0.97% of total U.S. enplanements. The Airport Council International's (ACI) preliminary CY 2015 report ranked the Airport as 32^{nd} nationwide in terms of total passengers and 44^{th} nationwide in terms of aircraft operations.[1]

The Airport has four runways and an extensive taxiway system. The largest commercial aircrafts can use the primary runways, 12R-30L, 12L-30R and 11-29 without restrictions. The current runway configuration allows the Airport to achieve simultaneous take-offs and landings with Runway 12L-30R during instrument flight rule (IFR) conditions. All runways, including Runway 6-24 (crosswind runway), have sufficient length to handle most type of aircrafts that currently serves the Airport. The airfield has over 15 miles of 75-foot-wide concrete taxiways and four concrete holding pads. Approximately 49 acres of concrete apron provide space for aircraft parking, servicing and refueling by scheduled commercial air carriers. In addition, another approximately 17 acres are leased to two fixed-base operators that support general aviation aircraft.

Terminal facilities consist of Terminals 1 and 2 formerly named West and East Terminal respectively.[2] Terminal 1 contains approximately 1.2 million usable square feet of building space and is comprised of the main terminal space under the domes and four concourses (Concourses A, B, C and all but the four eastern most gates in Concourse D) with 50 aircraft gates in mixed configuration. Currently 25 of the gates are being used in Terminal 1. Concourse D continues to be inactive at this time, except for the four most eastern gates. Terminal 2 has approximately 380 thousand usable square feet of building space with 18 narrow body aircraft gates, including the four most eastern gates in Concourse D. As of June 1, 2017 Southwest will be leasing 17 gates with the remaining City gate operated by United States Custom and Border Protection Services.

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[1] ACI traffic data for CY 2015

[2] The West and East Terminal were renamed in 2010 during the implementation of the Airport Experience Program renovations.

Currently, the Airport has 9,001 public parking spaces available consisting of 3,032 short-term (Terminal 1 and 2 garages), long-term and 4,728 (Lots B, C and D), 993 intermediate public parking spaces (Lot A) and 248 in the recently completed Lot E adjacent to Terminal 2. The FY 2017-2021 CIP includes funding for various improvements for the existing parking structures and lots as further described under the Airport capital section below.

Metro Link, the metropolitan area's light rail system, currently serves the Airport with two stations—one at the Terminal 1 and the other at the Terminal 2. Both provide another mode to and from the Airport.

The other Airport facilities owned by the City at the Airport include two off-site office building, five warehouse type buildings in Cargo City, eleven shops and service buildings, and hangars leased by American Airlines, JetLinx St. Louis, Trans States Airlines, Airport Terminal Services, Signature Flight Support, and MHS Travel & Charter. In 2016 one of the office buildings was leased on a long-term basis to the Missouri Air National Guard (MoANG) and one of the buildings in Cargo City was leased on a long-term basis to Southwest Airlines.

Federal Express and various freight forwarders lease space from St. Louis Air Cargo Services. The facility includes a 100,000 square foot cargo building and 448,000 square feet of adjacent aircraft parking space, on land leased from the Airport. Also on the St. Louis Air Cargo leasehold, United Parcel Service (UPS) owns an 18,000 square foot warehouse facility adjacent to a 200,000 square foot aircraft parking area. The Spire Corporation (formerly Laclede) operates a public access Compressed Natural Gas fueling station on a parcel of land owned by the City. Under the terms of the lease, Spire pays the City a set ground rent plus a royalty percentage for fuel pumped at the station. In January 2017, the City entered into a long-term lease agreement with Enterprise Leasing Company of St. Louis, LLC for a formerly vacant parking lot known as the "Springdale Lot," consisting of 17.86 acres of paved land with a small building. The Springdale Lot will be used for vehicle storage.

The airline fuel consortium STL Fuel Company, LLC currently leases approximately 88,000 square feet of fuel farm space and has begun the process of developing a replacement fuel farm. The replacement fuel farm will be located on the former "Brownleigh" site, to the northeast of the Airport, and is currently in the design and site investigation phase. Construction on the replacement fuel farm is expected to begin during FY 2018. At that time, the old fuel farm will be decommissioned, remediated, and the land returned to the Airport for future redevelopment.

The City also owns certain former aircraft production facilities and grounds of approximately 61 acres on the north side of the Airport's airfield for which it is has entered into a long-term lease agreement with Bi-National Gateway Terminal, LLC for the development, construction, and operation of an air cargo Dual Customs facility (for the processing of customs with the United Mexican States). The lease agreement grants Bi-National the right to redevelop the leased premises to accommodate, handle, and support air cargo operations and distribution facilities on the leased premises. Construction on Phase 1 of the development is scheduled to begin in summer 2017, with Phases 2 and 3 to follow.

Additionally, there are other structures at the Airport that are not owned by the City but are located on grounds leased from the City. These sites include facilities owned by St. Louis Air Cargo Services, the Boeing Company, and MoANG.

1.2 Airport Governance

The Airport is owned by the City and operated by the City of St. Louis Airport Authority (the Authority). The City is governed by a charter under the Constitution and the laws of the State of Missouri. The Mayor serves as Chief Executive Officer of the City and the Comptroller serves as the Chief Fiscal Officer. Both are elected to four-year terms.[3] The Board of Aldermen, consisting of a President and 28 Aldermen who serve four-year terms, is the legislative body of the City. The Mayor, the Comptroller and the President of the Board of Aldermen constitute the Board of Estimate and Apportionment, which is primarily responsible for the City's finances.

The Authority was created to manage the Airport by an ordinance enacted by the City's Board of Aldermen. The Director of Airports serves as the Chief Executive Officer of the Authority. The Airport Commission (the Commission) is the governing board of the Authority and is responsible for overseeing the planning, development, management, and operation of the Airport. The Commission has 17 members: the Director of Airports (acting as Chairman), the Comptroller, the President of the Board of Aldermen, the Chairman of the Transportation and Commerce Committee of the Board of Aldermen, six members appointed by the Mayor, five members appointed by the St. Louis County Executive, one member appointed by the County Executive of St. Charles, Missouri, and one by the Chairman of the County Board of St. Clair County, Illinois. The Director of Airports is supported by three Deputy Directors as further described below.

With the approval of the Commission and the Board of Estimate and Apportionment of the City, the Director of Airports has the power to enter into contracts, leases and agreements for use of STL's property and facilities. Any contracts, leases and agreements with a term of more than three years must be authorized by the Board of Aldermen and, if such contract, lease or agreement relates to the construction of public works, by the City's Board of Public Service. The Director of Airports, with the approval of the Commission, has the power to establish schedules fixing all other fees and charges.

The key officials of the Airport management team are as follows:

Rhonda Hamm-Niebruegge, *Director of Airports, has served in this capacity since* January 2010. Ms. Hamm-Niebruegge has more than two decades of aviation management experience with key leadership positions with Ozark Airlines, Trans World Airlines and American Airlines. She previously served as American Airlines Managing Director, St. Louis Operations.

Jerry Beckmann, P.E., Deputy Airport Director of Planning and Development, was promoted to this *position in* October 2013. *He was* previously the Assistant Director of Engineering, a position he held for four years. Mr. Beckmann is responsible for the planning, contracting and executing all

[3] On April 7, 2017 the City elected its first woman Mayor – Lyda Krewson and reelected Darlene Green as Comptroller.

construction projects at Lambert, while also coordinating long-range master plan goals for all airfield and Airport properties.

Ron Stella, Deputy, was promoted to Airport Director of Operations and Maintenance in July 2015. He was formerly the Airport Assistant Director of Operations and Maintenance. Mr. Stella is responsible for Airfield and Building Operations, Security Operations, Emergency Planning and manages compliance with all FAA airport operations regulations and standards. He is also responsible for multiple operating departments, including Airfield and Grounds Maintenance, the Airport Operations Center, Airport Building Maintenance, Airport and Airfield Electrical Maintenance, Housekeeping, Radio Systems, and Emergency Planning.

Antonio Strong, C.P.A., was promoted to Deputy Director of Finance and Administration in July 2015 from his previous position of Assistant Director of Finance and Administration which he held since being hired in November 2014. Mr. Strong leads all Airport finance and business units including Finance and Accounting, the Properties Department and the Business Diversity Development Office. Mr. Strong has a strong background in accounting and management with over 20 years of experience.

Airport management developed a Strategic Plan to build on the momentum from several transformational campaigns, which established a foundation for the City to achieve an immediate operational and financial benefit. The Strategic Plan incorporates four core objectives:

1. Sustain and grow passenger air service
2. Strengthen financial stability
3. Create positive and lasting impression for the region
4. Generate economic development

The Strategic Plan has become an important part of Airport management's mission as defined by the City and its business community.

1.2.1 The Airport Capital Program

The City successfully negotiated a new five- (5) year Airline Use and Lease Agreement (AUA) during the last quarter of FY 2016. The new AUA covers the period FY 2017–2021, including the new five- (5) year capital improvement plan (FY 2017-2021 CIP). One of the integral parts of the new AUA was the City and the signatory airlines establishing a pre-approved FY 2017–2021 CIP that provides Airport staff with a plan for key projects needed during the lease term. Table 1-1 provides a summary of the FY 2017 – 2021 CIP totaling $170.3 million, which identifies key projects within each project category. The current FY 2017–2021 CIP consists of various projects that Airport management and Airlines agreed were essential for the continued safe and efficient operation of the Airport.

Below is a brief discussion of each project element within a specific cost center included in the FY 2017–2021 CIP.

Airfield Projects – This category totals approximately $109.6 million, of which approximately $25.7 million will be funded with a portion of the proceeds of the Series 2017 Project Bonds. This category consists of various projects to improve or focused on improvement of the airfield operations such as: airfield pavement reconstruction, airfield safety improvements, and general planning studies and noise studies. The remaining projects focus on the acquisition of various airfield vehicles to meet FAA Part 139 requirements for snow and aircraft emergency response and projects to maintain compliance with environmental regulations for handling fluids from deicing of aircraft to washing of large ground vehicles.

Terminal 1 Projects – These projects total approximately $23.6 million, of which approximately $14.0 million will be funded with a portion of the proceeds of the Series 2017 Project Bonds. These projects focus on building improvements and restoration of Terminal 1. Nearly half of the project costs in this category are replacing the HVAC and electrical equipment in this terminal. Additionally, sewer repairs, waterproofing, and building maintenance issues are being addressed in order to ensure optimal efficiency of Terminal 1's operations.

Parking Projects – This category is comprised of various parking facility improvements and other ancillary projects to extend the useful life of the parking facilities. The total project cost for this category is approximately $11.9 million with approximately $5.7 million to be funded with a portion of the proceeds of the Series 2017 Project Bonds. These projects are required to extend the existing parking structures and lots in their current operating conditions. These projects will consist of replacement of electrical equipment, re-lamping of light fixtures, structural assessment and restoration and asphalt resurfacing lots as deemed needed. In addition, a Ground Transportation Center and expanded surface parking is included for Terminal 2.

Terminal 2 Projects – The project in this category is totaling $8.5 million, of which approximately $6.2 million will be funded with a portion of the proceeds of the Series 2017 Project Bonds. These projects are also focusing on the restoration and building improvement for Terminal 2. The major focus is replacement of various HVAC equipment and evaluation of other conditions for the building. This category also includes costs to replace two inbound baggage carousels.

Passenger Loading Bridges Cost Center – This project consists of the purchase of three (3) loading bridges for Terminal 1 and the reactivation of two (2) gates in Concourse C, which is also in Terminal 1. The purchase of the loading bridges and reactivation of two gates totals $6.0 million, which primarily all will be funded with a portion of the proceeds of the Series 2017 Project Bonds. Upon establishment of a loading bridge program, the AUA provides for the amortization of the loading bridge costs along with related operations and maintenance costs, to be charged to a designated cost center that will be used to establish a per loading bridge fee as further outlined in Section 604 of the AUA.

Airport Roadways – This category consists is estimated at $4.2 million. These projects will restore and rehabilitate Airport owned rights-of way. Specific projects consist of bridge replacement, several asphalt mills and overlay projects and concrete removal and replacement.

Shared Projects and Other – This final category totals approximately $6.5 million and consists of shared projects between Terminals 1 and 2 (approximately $3.8 million) and other miscellaneous CIP projects totaling $2.7 million that consists of land grading and reroofing of five cargo buildings.

Table 1-1: Five Year CIP Summary

Project Name	Estimated Project Cost	Fiscal Year Ending June 30th 2017	2018	2019	2020	2021
Airfield Projects						
Airfield Maintenance Projects	$2,119,520	$0	$2,119,520	$0	$0	$0
Planning Projects						
Culvert CW Creek in TW Sierra protection zone - AIP	$6,794,880	$0	$0	$0	$0	$6,794,880
Master Plan update w/eALP	4,450,992	-	4,450,992	-	-	-
Other Planning projects	259,000	259,000	-	-	-	-
FAR Pt 150 study (update noise contours)	259,000	259,000	-	-	-	-
Planning Total	$11,504,872	$259,000	$4,450,992	$0	$0	$6,794,880
Airfield Vehicles						
Snow Removal Vehicles	16,751,592	3,082,100	2,320,874	2,543,106	3,822,600	4,982,912
ARFF Vehicles	4,275,772	170,940	1,589,640	1,382,712	-	1,132,480
Other Airfield Vehicles	2,287,979	-	847,808	138,271	1,301,900	-
Airfield Vehicles Total	$23,315,343	$3,253,040	$4,758,322	$4,064,089	$5,124,500	$6,115,392
Runway Construction/Rehab, Taxiway and Apron Projects	$70,249,840	$9,842,000	$14,624,688	$14,640,480	$15,401,200	$15,741,472
Other Airfield						
Electric Shop Projects	137,769	-	137,769	-	-	-
Environmental Projects	741,832	-	741,832	-	-	-
Climate Control Projects	1,483,664	-	1,483,664	-	-	-
Other Airfield Total	$2,363,265	$0	$2,363,265	$0	$0	$0
Airfield Total	**$109,552,840**	**$13,354,040**	**$28,316,787**	**$18,704,569**	**$20,525,700**	**$28,651,744**
Terminal 1 Projects						
Building Maintenance Projects	$6,169,176	$0	$529,880	$5,639,296	$0	$0
Climate Control - T1						
Replace Chiller 2, West Plant (const only, des funded)	$3,108,000	$3,108,000	$0	$0	$0	$0
Replace Misc. HVAC Equipment, T1 and Concourses	3,567,800	2,072,000	-	-	1,495,800	-
Replace T1 Air Handling Units 12, 16, 17	4,662,944	-	4,662,944	-	-	-
Other Climate Control Projects	2,132,055	-	1,965,855	-	166,200	-
Climate Control Total	$13,470,799	$5,180,000	$6,628,799	$0	$1,662,000	$0
Other Projects - T1						
Properties Projects	$158,964	$0	$158,964	$0	$0	$0
Operations Projects	647,453	-	92,199	555,254	-	-
Arc Flash Study - Breaker Coordination and Code Compliance	1,059,760	-	1,059,760	-	-	-
Engineering Building Projects	2,138,056	1,502,200	635,856	-	-	-
Other Projects Total	4,004,233	1,502,200	1,946,779	555,254	0	0
Terminal 1 Total	**$23,644,208**	**$6,682,200**	**$9,105,458**	**$6,194,550**	**$1,662,000**	**$0**
Terminal 1&2 Shared Projects						
Operations Projects	$959,922	$0	$264,940	$140,982	$554,000	$0
Climate Control Project	1,036,000	1,036,000	-	-	-	-
Information Technology Projects	$1,796,148	$828,800	$837,210	$130,138	$0	$0
Terminal 1&2 Shared Projects Total	**$3,792,070**	**$1,864,800**	**$1,102,150**	**$271,120**	**$554,000**	**$0**

Table 1-1: Five Year CIP Summary (continued)

Terminal 2 Projects						
Operations Projects	$249,452	$0	$45,570	$203,882	$0	$0
T2 Replace Inbound Make-Up Carrousels	2,168,960	-	-	2,168,960	-	-
Climate Control - T2						
Replace Misc. HVAC Equipment, T2 - E AHU, Hub Server Rm	$1,413,000	$1,191,400	$0	$0	$221,600	$0
HVAC Equipment Evaluation	166,200	-	-	-	166,200	-
Replace Chiller 3, East Plant (des and const)	3,783,320	-	529,880	3,253,440	-	-
Replace Boiler Controls, West and East Plants	180,159	-	180,159	-	-	-
Other Climate Control Projects	902,733	-	736,533	-	166,200	-
Climate Control Total	$6,099,053	$1,191,400	$1,266,413	$3,253,440	$387,800	$0
Terminal 2 Total	**$8,517,465**	**$1,191,400**	**$1,311,983**	**$5,626,282**	**$387,800**	**$0**
Passenger Loading Bridge Projects						
Reactivate Gates C29 and C30 (bldg, 2 new boarding bridges w/footings)	$2,755,376	$0	$2,755,376	$0	$0	$0
3 Loading Bridges, Terminal 1	3,204,000	-	2,119,520	1,084,480	-	-
Passenger Loading Bridge Total	**$5,959,376**	**$0**	**$4,874,896**	**$1,084,480**	**$0**	**$0**
Parking Projects						
Other Parking						
Engineering Building Project	$54,224	$0	$0	$54,224	$0	$0
Electric Shop Projects	1,179,328	331,520	847,808	-	-	-
GTC (site work and refresh Bus Port, signage, lighting)	2,119,520	-	2,119,520	-	-	-
Other Parking Total	$3,353,072	$331,520	$2,967,328	$54,224	$0	$0
Parking Facilities						
T1/T2 Parking Garage Structural Assessment	$423,904	$0	$423,904	$0	$0	$0
Rehabilitate Concrete T1/T2 in Parking Garages	2,168,960	-	-	2,168,960	-	-
Rehab Asphalt Surface Lots A B C D and Cell - Phase 1 and 2	3,191,984	-	1,059,760	108,448	664,800	1,358,976
T2 Surface Parking at Cargo City	2,770,000	-	-	-	2,770,000	-
Parking Facilities Total	$8,554,848	$0	$1,483,664	$2,277,408	$3,434,800	$1,358,976
Parking Total	**$11,907,920**	**$331,520**	**$4,450,992**	**$2,331,632**	**$3,434,800**	**$1,358,976**
Roads Projects:						
Other Asphalt Projects	$572,768	$0	$317,928	$0	$254,840	$0
Spot Slab removal & replacement	982,728	-	317,928	-	664,800	-
Airfield Roadway						
Reconstruct LIB bridge over Coldwater Creek	2,119,520	-	2,119,520	-	-	-
Other Roadway Project	529,880	-	529,880	-	-	-
Airfield Roadway Total	$2,649,400	$0	$2,649,400	$0	$0	$0
Roads Total	**$4,204,896**	**$0**	**$3,285,256**	**$0**	**$919,640**	**$0**
Other CIP Project Total	**$2,674,320**	**$0**	**$635,856**	**$0**	**$0**	**$2,038,464**
Grand Total 5-Year CIP	**$170,253,095**	**$23,423,960**	**$53,083,378**	**$34,212,633**	**$27,483,940**	**$32,049,184**

1.2.2 Funding Plan for FY 2017 – 2021 CIP

The financing plan for the FY 2017 – FY 2021 CIP shown on Table 1-2 anticipates using the following funding sources:

- Airport Development Fund (ADF)
- Passenger Facility Charges (PFCs)
- General Airport Revenue Bonds (GARBs)
- Federal Grants
- Airport Improvement Program (AIP)
- Transportation Security Administration (TSA) (none shown in current funding)

Each funding source is briefly described below.

Airport Development Fund

The ADF represents funds that are generated from the Airport's excess operating revenues each year. The excess operating revenues represent money on hand after payment of operation and maintenance (O&M) expenses, aggregate debt service on outstanding bonds, and the replenishment of certain reserves. This money is then available to be appropriated for capital projects or for any other Airport purpose. As of April 30, 2017 the Airport had an unaudited balance of approximately $12.5 million in the unappropriated ADF account. It is projected that the Airport will continue to generate excess operating revenues that will flow into the ADF as discussed in more detail in Section 4 of this Report. The current funding plan for the FY 2017 – 2021 CIP anticipates using $16.0 million.

Passenger Facility Charges

In 1990, Congress authorized public airport operators to impose PFCs up to $3.00 per eligible enplaned passenger and use the proceeds of such charges to fund airport capital improvements—primarily projects that improve airport capacity, mitigate noise, or enhance airline competition. The PFC rate has subsequently been increased to provide for the collection of up to $4.50 per eligible enplaned passenger. The Airport currently collects a $4.50 PFC. The revenue generated from PFC fees has become a major source of equity capital for financing airport projects. In fact, PFC fees are currently being imposed at most of the major airports in the United States.

The PFC revenues and the interest income earned thereon (collectively referred to as "PFC resources") may be used in two ways: (1) to pay direct costs of FAA approved projects (referred to as "pay-as-you-go" funding) and (2) to pay debt service on bonds issued for approved PFC projects (referred to as "leveraging" the PFC revenue stream).

The FY 2017-2021 CIP anticipates the use of approximately $25.6 million of PFC resources for various improvements throughout the Airport, except parking and other CIP projects. All PFC resources are currently anticipated on a Pay-As-You Go basis, with none being leveraged against

the Series 2017 Project Bonds. The Airport is currently in the process of applying for the necessary approvals to use PFC revenues for the purposes intended.

Table 1-2: Funding Plan

Project Name	Estimated Project Funding	AIP Grants Entitlement	AIP Grants Discretionary	PFCs	ADF	GARB
Airfield Projects:						
Airfield Maintenance Projects	$2,119,520	$0	$0	$0	$0	$2,119,520
Planning Projects	11,504,872	-	8,628,654	-	64,750	2,811,468
Airfield Vehicles	23,315,343	-	-	16,343,789	170,940	6,800,614
Runway Construction/Rehab, Taxiway and Apron Projects	70,249,840	12,286,523	21,371,346	-	2,694,150	33,897,821
Other Airfield Projects	2,363,265	-	-	635,856	359,009	1,368,400
Airfield Total	**$109,552,840**	**$12,286,523**	**$30,000,000**	**$16,979,645**	**$3,288,849**	**$46,997,823**
Terminal 1 Projects:						
Properties Projects	$158,964	$0	$0	$0	$0	$158,964
Operations Projects	647,453	0	0	0	647,453	0
Arc Flash Study - Breaker Coordination and Code Compliance	1,059,760	0	0	0	0	1,059,760
Engineering Building Projects	2,138,056	0	0	0	1,502,200	635,856
Building Maintenance Projects	6,169,176	0	0	0	529,880	5,639,296
Climate Control Projects	$13,470,799	-	-	4,226,500	1,102,764	8,141,535
Terminal 1 Total	**$23,644,208**	**$0**	**$0**	**$4,226,500**	**$3,782,297**	**$15,635,411**
Terminal 1 and 2 Shared Projects:						
Operations Projects	$959,922	$0	$0	$269,507	$690,415	$0
Climate Control Project	1,036,000	0	0	0	1,036,000	0
Information Technology Projects	1,796,148	0	0	0	958,938	837,210
Terminals 1 and 2 Shared Total	**$3,792,070**	**$0**	**$0**	**$269,507**	**$2,685,353**	**$837,210**
Terminal 2 Projects:						
Operations Projects	$249,452		$0	$0	$249,452	$0
T2 Replace Inbound Make-Up Carrousels	2,168,960	0	0	451,609	0	1,717,351
Climate Control Projects	6,099,053	0	0	1,191,400	387,800	4,519,853
Terminal 2 Total	**$8,517,465**	**$0**	**$0**	**$1,643,009**	**$637,252**	**$6,237,204**
Passenger Loading Bridge Projects:						
Reactivate Gates C29 and C30 (bldg, 2 new boarding bridges w/footings)	$2,755,376	-	-	409,067	-	2,346,309
3 Loading Bridges, Terminal 1	3,204,000	0	0	0	0	3,204,000
Passenger Loading Bridge Total	**$5,959,376**	**$0**	**$0**	**$409,067**	**$0**	**$5,550,309**
Parking Projects:						
Engineering Building Project	$54,224	$0	$0	$0	$0	$54,224
Electric Shop Projects	1,179,328	0	0	0	331,520	847,808
GTC (site work and refresh Bus Port, signage, lighting)	2,119,520	0	0	0	0	2,119,520
Parking Facilities Projects	8,554,848	0	0	0	1,538,471	7,016,377
Parking Total	**$11,907,920**	**$0**	**$0**	**$0**	**$1,869,991**	**$10,037,929**
Roads Projects:						
Other Asphalt Projects	$572,768	$0	$0	$0	$572,768	$0
Spot Slab removal & replacement	982,728	0	0	0	982,728	0
Airfield Roadway Projects	2,649,400	0	0	2,119,520	529,880	0
Roads Total	**$4,204,896**	**$0**	**$0**	**$2,119,520**	**$2,085,376**	**$0**
Other CIP Total	**$2,674,320**	**$0**	**$0**	**$0**	**$1,681,480**	**$992,840**
Grand Total 5 Year CIP FY 2017 - 2021	**$170,253,095**	**$12,286,523**	**$30,000,000**	**$25,647,248**	**$16,030,598**	**$86,288,726**

Table 1-3 shows the calculation and anticipated application of projected PFC resources during FY 2017–2022. The projection of PFC revenues is based on the assumption that approximately 88% of Airport passenger enplanements are PFC eligible—which is supported by recent PFC revenue data collected by the Airport. The projections shown on Table 1-3 assumes a base case enplanement forecast developed in May 2017, using the $4.50 PFC rate, which beginning in FY 2017 is projected to generate approximately $28.1 million in annual net PFC revenues, excluding the administrative charge. The projected net PFC revenues are based on the passenger enplanement forecasts and are projected to be approximately $43.4 million by the end of FY 2022.

General Airport Revenue Bonds

The GARBs (which includes the Series 2017 Project Bonds) represent bonds issued by the City that are payable solely from the Revenues of the Airport as further defined in the Indenture. The City can issue additional GARBs for additional projects under the Indenture as long as the proposed GARBs can meet the Additional Bonds Test and the aggregate amount of GARBs and other applicable obligations, if any, does not exceed the City's current authorization limit of $3.5 billion. The Additional Bonds Test requires; 1) Accountant's Certificate setting forth (a) the Net Revenues of the Airport for any 12-consecutive months out of the 18 months preceding the authentication and delivery of such Additional Bonds, (b) the Aggregate Adjusted Debt Service for such 12-month period, and demonstrating that for such 12-month period Net Revenues equaled at least 1.25 times the Aggregate Adjusted Debt Service; and 2) certificate of an authorized officer of the City demonstrating that, among other things, the estimated Net Revenues of the Airport for each of the three Fiscal Years following the Fiscal Year in which the Additional Project will be completed is projected to be at least equal to 1.25 times the Aggregate Adjusted Debt Service for each of such three Fiscal Years. The total par value of the Series 2017 Bonds planned to be issued is approximately $270.6 million including the Series 2017 Refunding Bonds. The projects being funded with the Series 2017 Project Bonds are scheduled to be completed by the end of FY 2020.

Table 1-3: Passenger Facility Charge Sources & Uses

	Projected					
	2017	**2018**	**2019**	**2020**	**2021**	**2022**
Projected PFC revenues						
Total enplaned passengers [1]	7,155	7,521	7,739	7,832	7,905	8,018
Assumed percentage of enplaned passengers eligible	89%	89%	89%	89%	89%	89%
PFC-eligible enplaned passengers	6,400	6,700	6,900	7,000	7,000	7,100
Amount of PFC charge	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50
Less airline retention	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Net PFC charge	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39
Computed Net PFC revenue to Airport	**$28,096**	**$29,413**	**$30,291**	**$30,730**	**$30,730**	**$31,169**
Available PFC Resources						
Previous year's unused balance	$22,772	$19,921	$23,392	$28,639	$32,136	$34,442
Current year collections	28,096	29,413	30,291	30,730	30,730	31,169
plus: interest earned	212	215	259	302	331	387
New PFC Bond Proceeds						
Interest on New PFC Bond						
Repayment of Interim Financing						
PFC Bonds						
PFC Bonds Interest						
Cumulative unliquidated PFC resources - Beginning Balance	**$51,080**	**$49,550**	**$53,942**	**$59,672**	**$63,197**	**$65,998**
PFC # 4 (debt service on PFC-enhanced Airport Rev Bonds)	20,804	20,805	20,805	20,806	20,802	20,804
less: debt service restructured (Series 2005 Bonds)	(15,855)	(16,229)	(16,229)	(5,730)	(5,771)	(4,697)
plus: new debt service (Series 2005 Bonds)	15,855	16,229	16,229	5,730	5,771	4,697
less: debt service restructured (Series 2007A Bonds)	(4,949)	(4,576)	(4,576)	(15,076)	(15,031)	(16,107)
plus: new debt service (Series 2007A Bonds)	4,945	4,572	4,571	15,071	15,026	16,102
less: debt service restructured (Series 2015 Bonds)	(98)	(98)	(98)	(854)	(582)	(452)
plus: new debt service (Series 2015 Bonds)	95	95	95	836	564	434
25% Coverage Requirement	5,200	5,200	5,200	5,200	5,199	5,200
less: return of coverage to PFC account	(5,200)	(5,200)	(5,200)	(5,200)	(5,199)	(5,200)
Future Pay-As-You-Go - FY 2017 - 2021 CIP	8,500	3,500	2,647	4,885	6,115	0
AEP -PFC #9 bond	1,862	1,859	1,859	1,867	1,862	1,863
25% Coverage Requirement	466	465	465	467	465	466
less: return of coverage to PFC account	(466)	(465)	(465)	(467)	(465)	(466)
Annual incremental PFC resources	(2,851)	3,471	5,247	3,497	2,306	8,912
Cumulative unliquidated PFC resources - Ending Balance	**$19,921**	**$23,392**	**$28,639**	**$32,136**	**$34,442**	**$43,354**

AIP Grants

The Airport is anticipating receiving both entitlement and discretionary AIP grants to provide funding for a portion of the FY 2017 – 2021 CIP.

The AIP was established by the Airport and Airway Improvement Act of 1982, as amended. This Act authorized funding for the AIP from the Airport and Airway Trust Fund for airport development and planning and noise compatibility planning programs. The AIP grant is awarded to airports in two ways: (1) entitlement grants, which are awarded annually based on a formula applied to estimated enplanements reduced by 50% if the Airport collects a $3.00 PFC or 75% if the Airport collects a $4.50 PFC; (2) discretionary grants, which are awarded for capital projects that enhance safety, security and noise compatibility. While doing so, the Airport must preserve the existing infrastructure, meet critical expansion needs, and attain compatibility with neighboring communities. During FY 2017, the Airport was awarded approximately $8.6 million in AIP grants, which consisted of 2.0 million entitlement and the balance from discretionary, which shows the Airport's ability to continue to receive those grants. The total amount of grants estimated to be available to finance a portion of the FY 2017–FY 2021 CIP is approximately $42.3 million all in Airfield projects.

1.2.3 Funding Plan for Series 2017 Project

Table 1-4 shows the financing plan for the Series 2017 Project which totals $78.9 million, of which approximately $58.0 million will be funded from a portion of the proceeds of the Series 2017 Project Bonds. The sources of the Series 2017 Project Bonds include proceeds from the sale that will fund approximately $58 million of the Series 2017 Project. The balance of the Series 2017 Project will be funded from PFCs totaling $1.3 million, ADF totaling $1.9 million and the remainder from AIP grants totaling $17.8 million.

The Series 2017 Project Bond sources and uses is summarized on Table 1-5. The sources and uses was developed by Wells Fargo and assumes a bond interest rate of 4.25% and includes cost of issuance and capitalized interest on the Series 2017 Project Bonds of 18 months.

Table 1-4: Series 2017 Projects

	Total Project Cost	Other Funding PFC PAYGO	ADF	AIP	Series 2017 Bonds
Airfield Projects:					
Airfield Maintenance					
Fire Suppression Bldgs A,B,C,D	$1,271,712				$1,271,712
Electrical Upgrades Bldg A,B	847,808				847,808
Sub-Total Airfield Maintenance Projects	$2,119,520	$0	$0	$0	$2,119,520
Airfield Vehicles					
Snow Plow/Broom	$847,808	$335,557			$512,251
Loader	174,860				174,860
Deicer Truck, 5000 gal	397,410				397,410
Deicer Truck, 5000 gal	428,370	80,903			347,467
Snow Plow/Broom	900,796				900,796
ARFF Oshkosh Truck	1,192,928				1,192,928
Rubber and Paint Remove Vehicle	529,880				529,880
Street Sweeper	317,928				317,928
ARFF Aerial Ladder Truck	1,589,640				1,589,640
FAA Transponders	138,271				138,271
ARFF Ford 450	189,784				189,784
Sub-Total Airfield Vehicles	$6,707,675	$416,460	$0	$0	$6,291,215
Replace North ARFF HVAC Equipment	$847,808		$221,240		$626,568
Airfield Runway and Apron Projects					
Design TLC,P to L and Phs 2 Apron	$1,377,688			$1,033,266	$344,422
Const. TL C,R to P and Phs 1 Apron	12,929,072			5,143,245	7,785,827
Update Pavement Plan	317,928				317,928
Design TL C,S to R Phs 3 Apron	1,409,824			1,057,368	352,456
Const TL C,P to L and Phs 2 Apron	13,230,656			7,236,775	5,993,981
Sub-Total Runway and Apron Projects	$29,265,168	$0	$0	$14,470,654	$14,794,614
Environmental Health					
Vehicle Wash Bay	$529,880				$529,880
Deicing Runoff Tanks	211,952				211,952
Sub-Total Environmental Projects	$741,832	$0	$0	$0	$741,832
Master Plan update w/eALP	$4,450,992	$0	$0	$3,338,244	$1,112,748
Total Airfield Projects	**$44,132,995**	**$416,460**	**$221,240**	**$17,808,898**	**$25,686,497**

Table 1-4: Series 2017 Projects (continued

Terminal 1 Projects:					
Building Maintenance Projects - T1					
Repair ceiling Conc C bridge	$216,896				$216,896
Sanitary Lateral Replacement	3,253,440				3,253,440
T1 Storm Sewers	2,380,912		211,952		2,168,960
Sub-Total Building Maintenance Projects	5,851,248		211,952		$5,639,296
Climate Control - T1					
Replace Cooling Towers	1,165,736				$1,165,736
Deaerators West and East Plants	556,374		149,264		407,110
Replace T1 Air Hand Units 12,16,17	4,662,944				4,662,944
Replace Boiler Controls West and East	243,745				243,745
Sub-Total Climate Control T1	6,628,799		149,264		$6,479,535
Arc Flash Study	1,059,760				1,059,760
Engineering Projects T1					
Expansion Joint Structure	317,928				$317,928
Air Lock Doors T1 Entries 2,3,4,5,6	317,928				317,928
Sub-Total Engineering Projects	635,856				$635,856
Airline Holdroom T1 Charging Stations	158,964				158,964
Total Terminal 1 Projects	**$14,334,627**	**$0**	**$361,216**	**$0**	**$13,973,411**
Terminal 1 and 2 Shared Projects					
Upgrade MUFIDS T1/T2	837,210				837,210
Total Terminal 1 and 2 Shared Projects	**$837,210**				**$837,210**
Terminal 2 Projects:					
Climate Control Projects T2					
Deaerators West and East Plants	$556,374				$556,374
Replace Chiller 3 (Design and Const)	3,783,320				3,783,320
Replace Boiler Controls	180,159				180,159
Sub-Total Climate Controls T2	4,519,853				$4,519,853
Replace Inbound Baggage Makeup T2	2,168,960	451,609			1,717,351
Total Terminal 2 Projects	**$6,688,813**	**$451,609**	**$0**	**$0**	**$6,237,204**
Passenger Loading Bridges Projects					
Passenger Loading Bridges					
Reactivate C29 and 30 incl 2 bridges	2,755,376	409,067			$2,346,309
Three (3) loading bridges	3,204,000				3,204,000
Sub-Total Loading Bridges	5,959,376	409,067			$5,550,309
Total Passenger Loading Bridge Projects	**$5,959,376**	**$409,067**	**$0**	**$0**	**$5,550,309**
Parking Projects:					
Parking Improvements					
LED Fixtures - Lots A,B,C,D	423,904				$423,904
T1 Ramp Heaters	423,904				423,904
Roofs at Garage Elevator and Pump Hse	54,224				54,224
Ground Trans Center - refresh signage	2,119,520				2,119,520
Rehab Concrete T1/T2 Parking Garage	2,168,960		1,170,491		998,469
Rehab Asphalt Surfaces Lots A,B,C,D, Cell Phase 1	1,168,208		108,448		1,695,616
Sub-Total Parking Improvements	6,358,720		1,278,939		$5,715,637
Total Parking Projects	**$6,358,720**	**$0**	**$1,278,939**	**$0**	$5,715,637
Total Series 2017 Bond Projects	**$78,311,741**	**$1,277,136**	**$1,861,395**	**$17,808,898**	**$58,000,268**

Table 1-5: Series 2017 Project Bond Financing

Sources	**Amount**
Par Value - Series 2017 Project Bonds	
Net Discount/Premium	
Total Sources of Funds	
Uses	
Project Fund Deposit	
Other Fund Deposits	
Debt Service Reserve Fund	
Capitalized Interest	
Sub-Total Other Deposits	
Costs of Issuance	
Underwriter's Discount	
Total Uses	

Section 2 Economic Base

Demographic and economic trends influence the demand for air travel through STL, serving largely origin and destination (O&D) passenger traffic.[4] Trends in the Airport's air service area and Missouri contribute to the area's potential to generate local demand for air travel and draw visitors. National trends contribute to the growth in the Airport's passenger traffic in two ways: (1) they determine demand for air travel nationwide; and (2) they influence regional demographic and economic trends. This section discusses relevant demographic and economic trends in the Airport service area, the St. Louis, MO-IL, metropolitan statistical area (MSA), in comparison with trends in the state of Missouri and the United States. This section also provides an assessment of the outlook for the air service area, Missouri and national economies.

2.1 Air Service Area

Based on the current MSA delineations made by the Office of Management and Budget (OMB),[5] the St. Louis MSA comprises eight counties in southern Illinois, six counties in eastern Missouri, and the city of St. Louis (Table 2-1).

Table 2-1: Counties in the St. Louis MSA

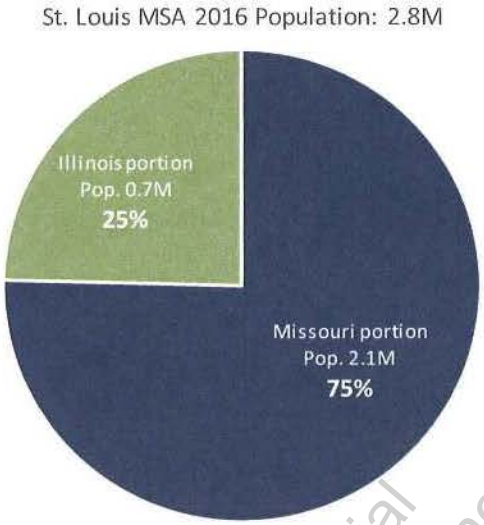
Illinois		Missouri	
• Bond County	• Macoupin County	• Franklin County	• St. Louis City
• Calhoun County	• Madison County	• Jefferson County	• St. Louis County
• Clinton County	• Monroe County	• Lincoln County	• Warren County
• Jersey County	• St. Clair County	• St. Charles County	

The Missouri portion of the St. Louis MSA accounts for more than 75 percent of the MSA population, and almost 35 percent of the Missouri state population (Figure 2-1). Although the MSA covers approximately the same geographic area across the two states, the MSA's counties in Missouri are more densely populated compared with its counties in Illinois (Figure 2-2).

[4] O&D passenger traffic refers to passenger trips originating or ending in the area.

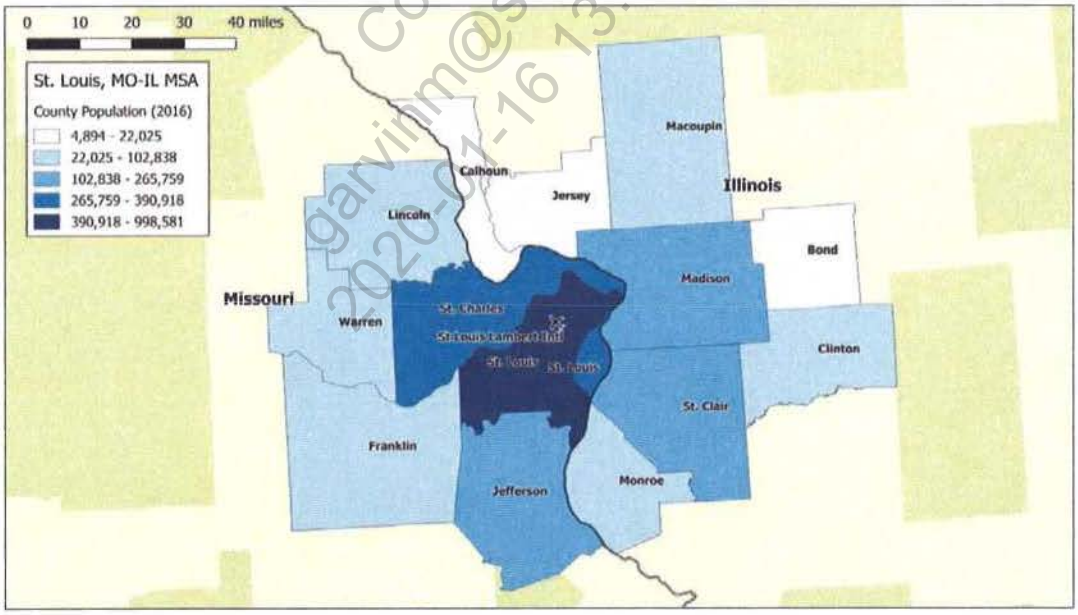
[5] Office of Management and Budget, "Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations in These Areas," OMB Bulletin No. 13-01, February 28, 2013, <http://www.whitehouse.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf>.

Figure 2-1: Distribution of the St. Louis MSA Population by State



Sources: U.S. Census Bureau, Unison Consulting, Inc.

Figure 2-2: St. Louis, MO-IL MSA County 2016 Population

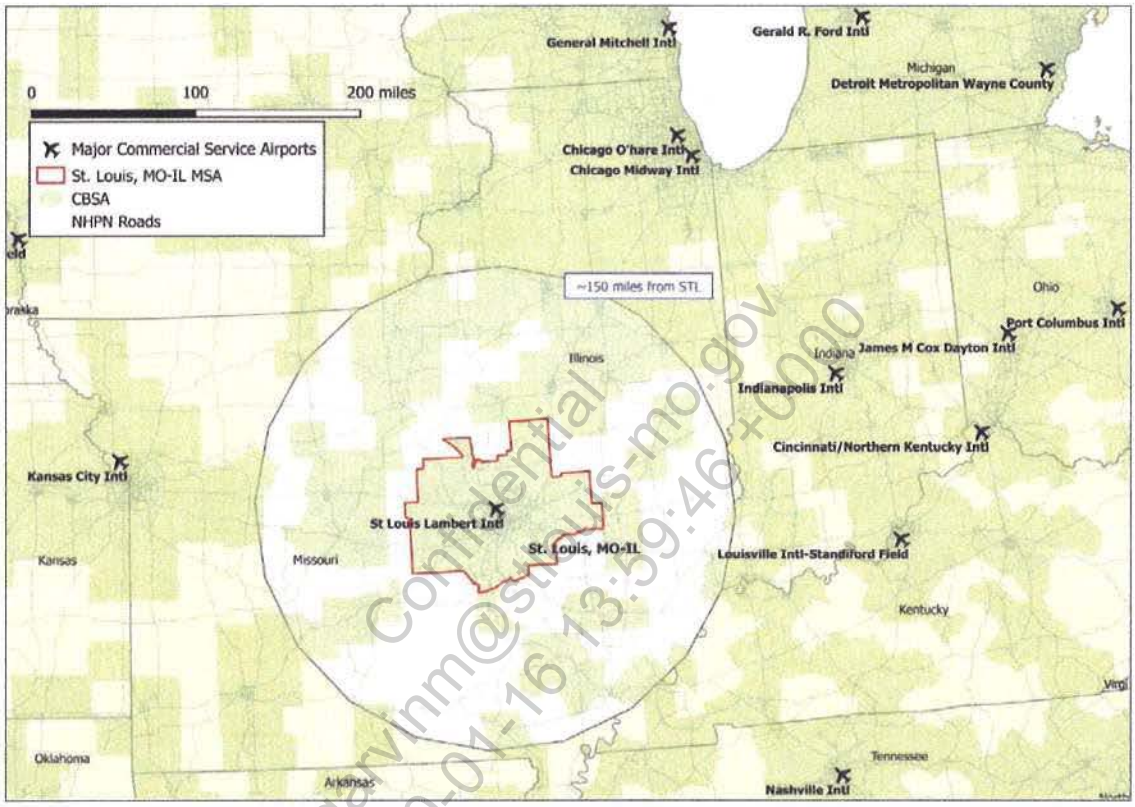


Sources: U.S. Census Bureau, Unison Consulting, Inc.

STL is the only major commercial service airport within the St. Louis MSA. As shown in Figure 2-3, the nearest alternative airport with substantial passenger air services is more than 200 miles (at

least a 3 ½ hour drive) away. Commercial airports that enplaned more than 1 million passengers in CY2015 are shown in the figure below.

Figure 2-3: Commercial Service Airports Nearest STL



NHPN: National Highway Plan Network.
Sources: U.S. Department of Transportation National Transportation Atlas Database (NTAD) 2016, and Unison Consulting, Inc.

2.2 Population

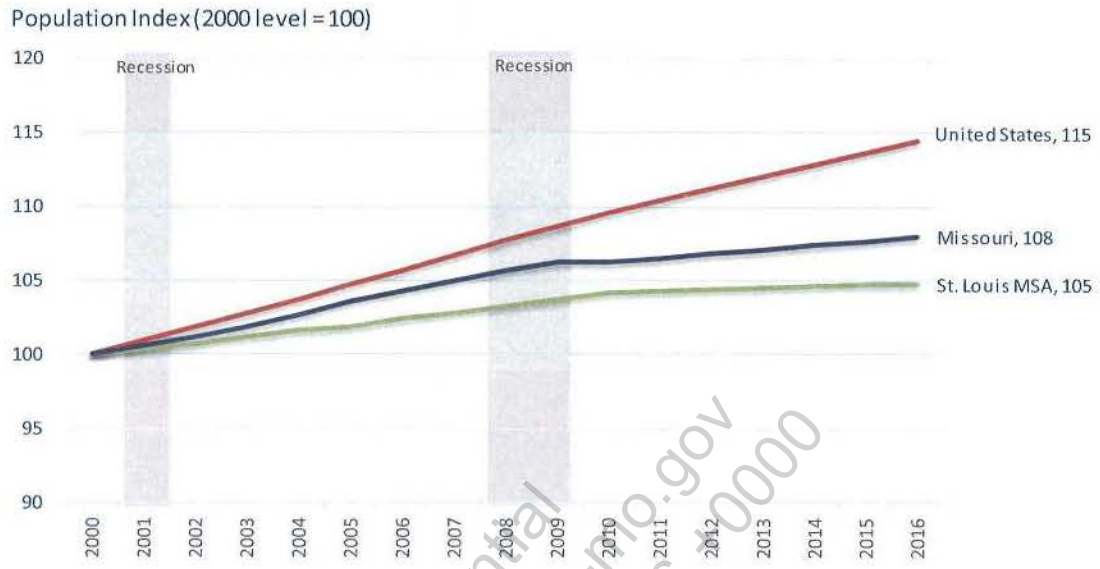
The St. Louis MSA population offers a large, stable market for air travel. With a population of 2.8 million in 2016, St. Louis is the 20th largest metropolitan area in the country—following the metropolitan areas of Tampa, Denver and San Diego (Figure 2-4).

Figure 2-4: Top 20 U.S. Metropolitan Areas by Population - 2016

Source: U.S. Census Bureau.

The St. Louis MSA population has been slow-growing. Since 2000, it has grown only 5 percent (an average of 0.3 percent a year), slower than both the Missouri state population growth of 8 percent (an average of 0.5 percent a year) and the national population growth of 15 percent (an average of 0.9 percent per year) (Figure 2-2-5).

Figure 2-2-5: Population Growth Trends Since 2000



Source: U.S. Census Bureau.

The pace of population growth in the St. Louis MSA has also been slowing, from an average of 0.4 percent a year between 2000 and 2010 to an average of 0.1 percent a year between 2010 and 2016 (Table 2-2). Population losses in nearly all of the MSA's Illinois counties and in the City are responsible for the slowing of the MSA's population growth since 2010. The Missouri counties, with the exception of St. Louis County, are gaining population, with St. Charles County posting the highest population growth rate from 2010 to 2016. The population of St. Louis County held steady from 2010.

Table 2-2: Population

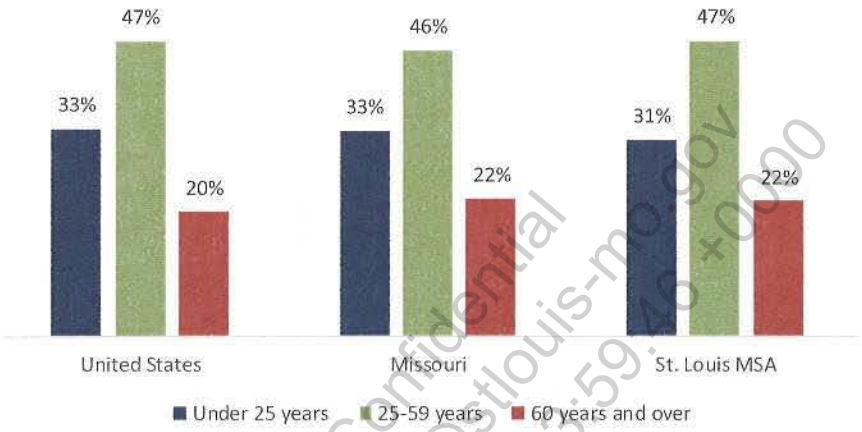
Area	2000	2010	2016	CAGR 2000-2010	CAGR 2010-2016	CAGR 2000-2016
St. Louis, MO-IL MSA						
Bond County, IL	17,659	17,771	16,824	0.1%	-0.9%	-0.3%
Calhoun County, IL	5,086	5,081	4,894	0.0%	-0.6%	-0.2%
Clinton, County, IL	35,565	37,827	37,729	0.6%	0.0%	0.4%
Jersey County, IL	21,642	22,966	22,025	0.6%	-0.7%	0.1%
Macoupin County, IL	48,972	47,791	45,908	-0.2%	-0.7%	-0.4%
Madison County, IL	259,204	269,384	265,759	0.4%	-0.2%	0.2%
Monroe County, IL	27,764	33,010	34,068	1.7%	0.5%	1.3%
St. Clair County, IL	256,462	270,370	262,759	0.5%	-0.5%	0.2%
Franklin County, MO	94,050	101,502	102,838	0.8%	0.2%	0.6%
Jefferson County, MO	198,937	219,129	224,226	1.0%	0.4%	0.8%
Lincoln County, MO	39,196	52,700	55,267	3.0%	0.8%	2.2%
St. Charles County, MO	286,218	361,840	390,918	2.4%	1.3%	2.0%
St. Louis County, MO	1,016,178	998,833	998,581	-0.2%	0.0%	-0.1%
Warren County, MO	24,745	32,583	33,802	2.8%	0.6%	2.0%
St. Louis City, MO	347,144	319,305	311,404	-0.8%	-0.4%	-0.7%
Total - St. Louis, MO-IL MSA	2,678,822	2,790,092	2,807,002	0.4%	0.1%	0.3%
Missouri	5,607,285	5,996,118	6,093,000	0.7%	0.3%	0.5%
United States	282,162,411	309,348,193	323,127,513	0.9%	0.7%	0.9%

Source: U.S. Census Bureau mid-year population estimates.

2.3 Age Characteristics

The MSA has a slightly older population than the entire state of Missouri and the nation. The MSA has a greater proportion of population aged 60 and older, and a smaller proportion of population under 25 years old (Figure 2-6). Population aging is a major concern for the nation. An increase in the elderly population could slow economic growth, because it would decrease the labor force and increase government spending on elderly support and health care.

Figure 2-6: Population Age Distribution, 2011-2015



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

2.4 Educational Attainment

A well-educated work force is important for economic diversification and long-term growth. Well-educated people adapt better to changing skill requirements. They drive innovation and productivity.[6] One study shows that areas with higher education attainment have higher productivity.[7] Areas with higher educational attainment also tend to have higher income and employment levels.[8] They attract fast-growing knowledge-based industries that bring high-income jobs—in turn, attracting highly educated workers.

Overall the St. Louis MSA population has a higher level of educational attainment than the Missouri and U.S. populations. Compared to the state and the nation, the MSA has greater shares of residents

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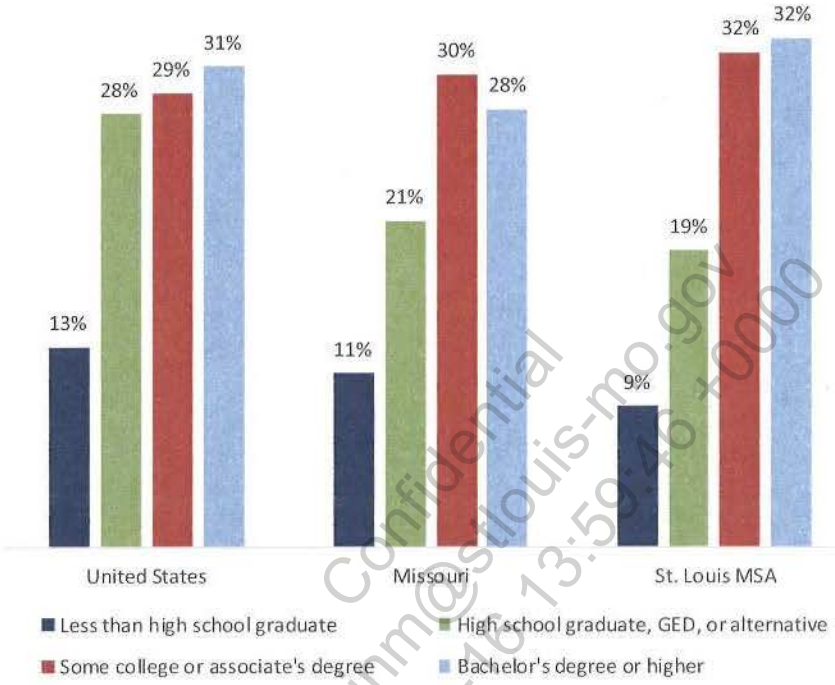
[6] Enrico Moretti, *The New Geography of Jobs*, Houghton Mifflin Harcourt, 2012.

[7] J.R. Abel and T.M. Gabe, "Human capital and economic activity in urban America," *Regional Studies* 45(8), 2011, page 1079-1090.

[8] L. Wolf-Powers, *Predictors of Employment Growth and Unemployment in US Central Cities*, W.E. Upjohn Institute, 2013, <http://research.upjohn.org/up_workingpapers/199/>.

with some college education and with college or graduate degrees within its adult population (Figure 2-7).

Figure 2-7: Educational Attainment of Population 25 Years and Older, 2011-2015



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

2.5 Labor Market

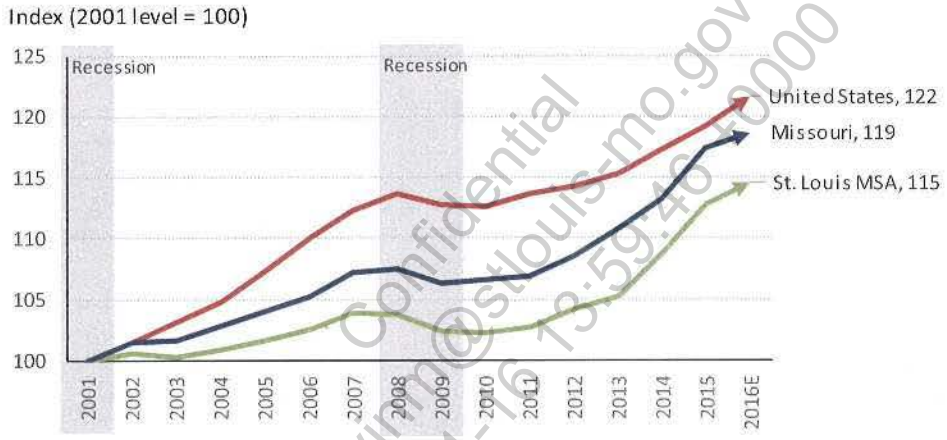
Trends in the labor market reflect business conditions and overall economic well-being—factors that influence the demand for air travel. Employment growth reflects the pace of economic growth. Employment tends to decrease during an economic recession, and increase during recovery and expansion. Employment needs to grow to raise living standards, boost consumer confidence, and increase consumer spending.

This section looks at several key labor market indicators—number of business establishments, employment in all business establishments, civilian labor force, employed civilian labor force, and unemployment rate. All of these indicators support the St. Louis Federal Reserve Bank's assessment

that the St. Louis MSA economy is improving. Labor market conditions in the MSA are strong and continue to tighten.[9]

Job creation begins with business development, which has been progressing at a healthy pace in the St. Louis MSA. The number of business establishments in the MSA has increased by 15 percent since 2000 (Figure 2-8). The overall increase from 2000 to 2016 may be smaller than the overall increases in the entire state of Missouri (19 percent) and the United States (22 percent) over the same period, but since 2010 the number of business establishments has been increasing at a much faster rate in the St. Louis MSA (1.9 percent per year), especially relative to the entire nation (1.3 percent per year).

Figure 2-8: Growth of Business Establishments



	Compound Annual Growth Rate		
Period	St. Louis MSA	Missouri	United States
2001-2010	0.2%	0.7%	1.3%
2010-2016	1.9%	1.8%	1.3%

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages. For the St. Louis MSA and Missouri, the 2016 estimates are based on preliminary data for the first three quarters of 2016.

An economic commentary published online referred to St. Louis as "the new startup frontier", because the St. Louis MSA was second among metro areas with the fastest growth rate of new startups from 2009 to 2014. According to the U.S. Census Bureau data used in the article, startups, defined as businesses under a year old, increased in share of all businesses in the St. Louis MSA from 6.7 percent in 2009 to 9.7 percent in 2014. [10]

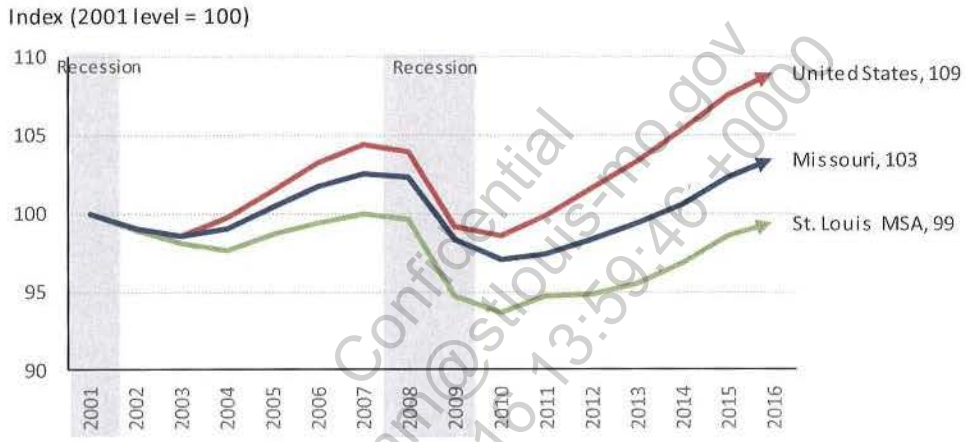
[9] St. Louis Federal Reserve Bank Burgundy Book, A Report on Economic Conditions in the St. Louis Zone, 2016 quarterly issues.

[10] Ben Casselman, "St Louis is the New Startup Frontier," *FiveThirtyEight*, September 12, 2016, in https://fivethirtyeight.com/features/st-louis-is-the-new-startup-frontier/ .

Figure 2-9 shows the trends in job creation. Jobs are vulnerable to economic downturns. Nationwide, jobs decreased following the two recessions since 2001. In the 2008-2009 recession, jobs decreased more sharply and took much longer to recover than they did following the mild recession in 2001.

Overall since 2001, the St. Louis MSA lagged in job creation, especially when compared to the entire nation, because, in the St. Louis MSA, the number of jobs recovered more slowly following the 2001 recession and decreased more sharply following the 2008-2009 recession. Since 2010, however, job recovery in the St. Louis MSA has picked up pace, averaging a 1 percent growth each year.

Figure 2-9: Growth in Number of Employees in All Business Establishments



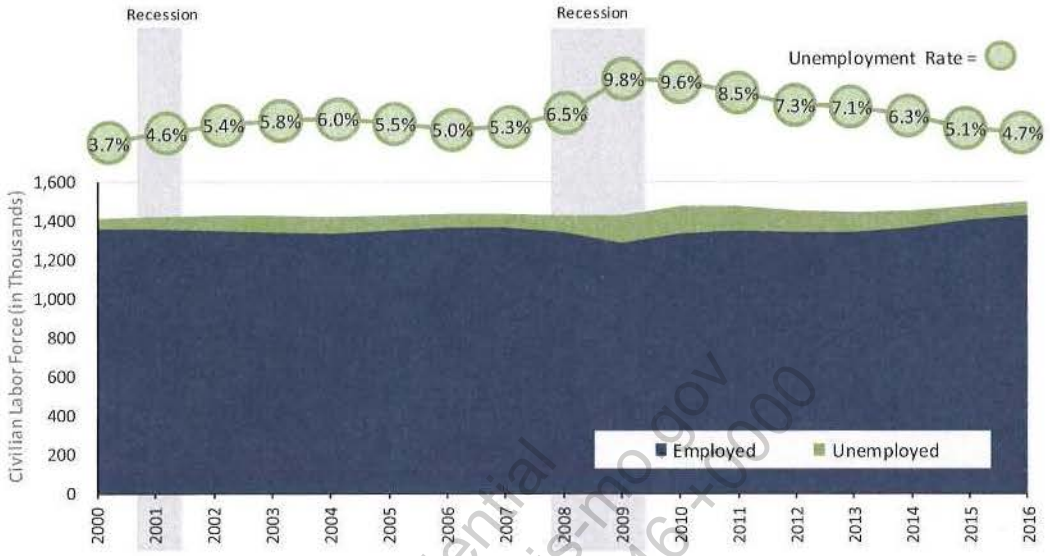
	Compound Annual Growth Rate		
Period	St. Louis MSA	Missouri	United States
2001-2010	-0.7%	-0.3%	-0.2%
2010-2016	1.0%	1.1%	1.7%

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages. For the St. Louis MSA and Missouri, the 2016 estimates are based on preliminary data for the first three quarters of 2016.

Trends in the civilian labor force, shown in Figure 2-10, reflect the improvements in the St. Louis MSA labor market. The civilian labor force consists of residents of working age (16 years and older), who are either employed, or unemployed but actively seeking employment. Employment counts include all types of civilian employment, including agricultural, non-agricultural, and self-employment. The unemployment rate refers to the unemployed as a percentage of the labor force.

In the St. Louis MSA, the growth in employment (averaging 1.1 percent a year) has outpaced the growth in the civilian labor force (averaging 0.3 percent a year) since 2010. The MSA's unemployment rate has fallen from a peak 9.8 percent in 2010 to 4.7 percent in 2016, lower than the U.S. unemployment rate of 4.9 percent in the same year.

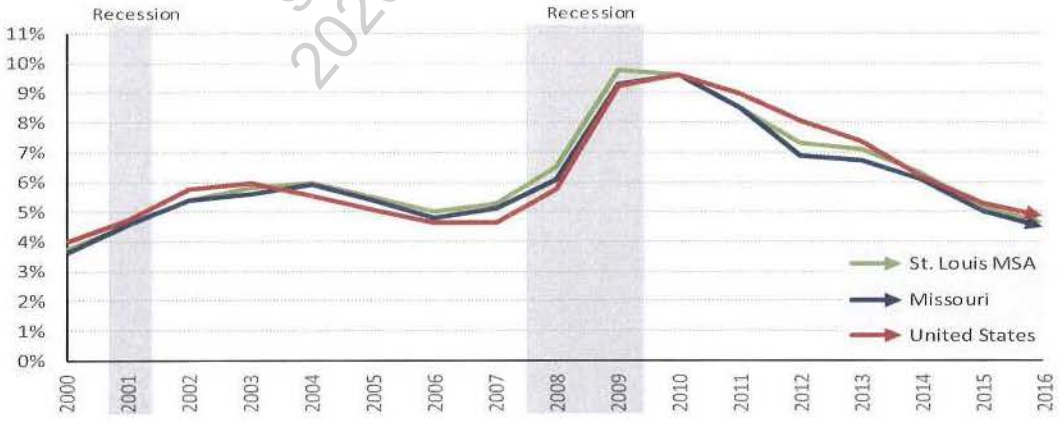
Figure 2-10: St. Louis MSA Civilian Labor Force Trends



Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics.

Overall, the St. Louis MSA and the Missouri state unemployment rates have followed national trends—rising during economic recessions and falling during economic expansions (Figure 2-11). Since 2010, both the St. Louis MSA and the state of Missouri have had lower unemployment rates than the entire nation in most years.

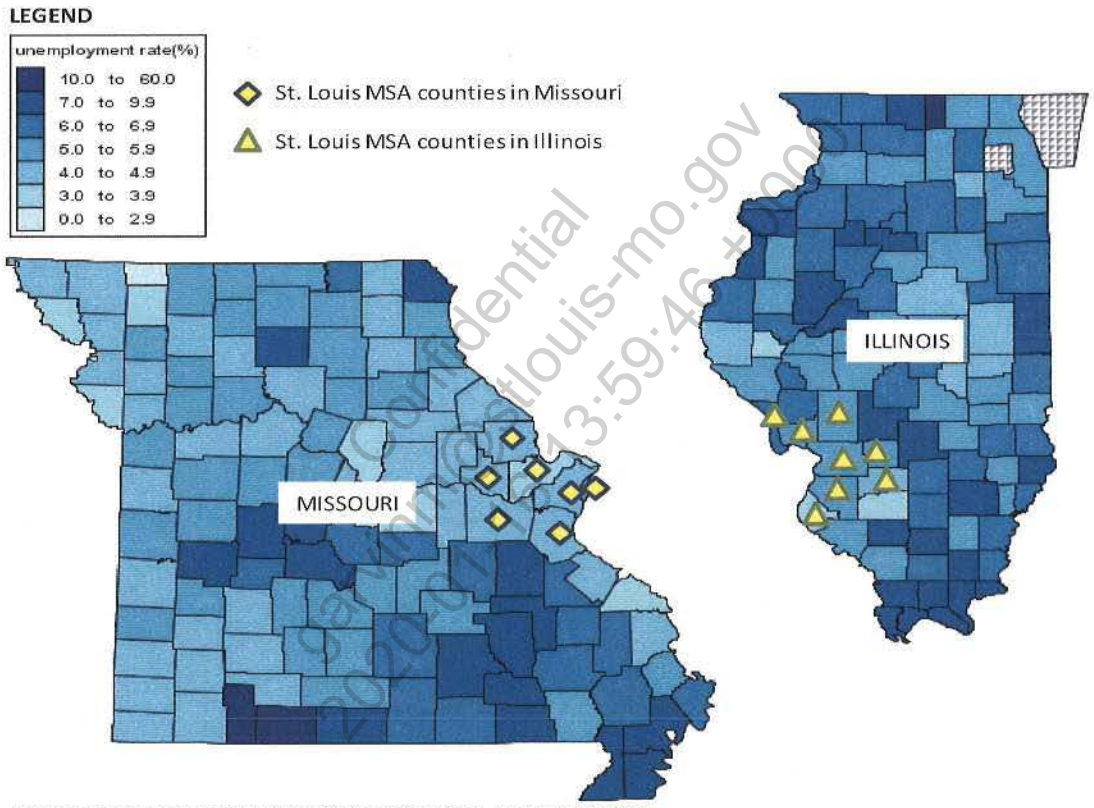
Figure 2-11: Unemployment Rate



Source: U.S. Bureau of Labor Statistics, Current Population Survey and Local Area Unemployment Statistics.

The MSA's unemployment rate continued to fall slightly to 4.6 percent in February 2017, still lower than the national unemployment rate of 4.7 percent in the same month. The county unemployment rate maps for the states of Missouri and Illinois in Figure 2-12 show that, in February 2017, the counties in the St. Louis MSA, in both Missouri and Illinois, had lower unemployment rates than most other counties in Missouri and Illinois. The MSA's counties in Missouri had lower unemployment rates than the MSA's counties in Illinois.

Figure 2-12: Missouri and Illinois County Unemployment Rate Maps, February 2017



ST. LOUIS MSA COUNTY UNEMPLOYMENT RATES, FEBRUARY 2017

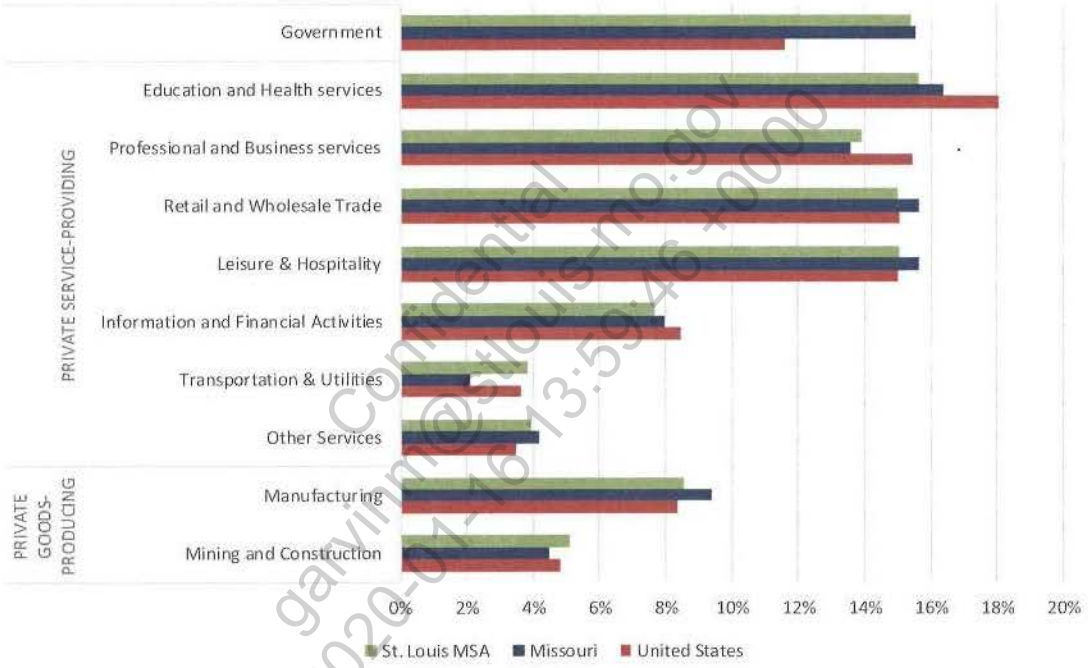
St. Charles County, MO	3.7%	Monroe County	3.7%
Warren County, MO	4.2%	Clinton, County, IL	4.3%
St. Louis County, MO	4.2%	Madison County, IL	5.2%
Franklin County, MO	4.7%	St. Clair County, IL	5.3%
Jefferson County, MO	4.7%	Bond County, IL	5.4%
Lincoln County, MO	4.8%	Macoupin County, IL	5.7%
St. Louis City, MO	5.3%	Jersey County, IL	5.8%
		Calhoun County, IL	6.5%

Source: U.S. Bureau of Labor Statistics, *Unemployment Rate by State*, not seasonally adjusted, February 2017.

2.6 Employment by Industry

Figure 2-13 shows that the MSA has a diversified economy. Compared to the nation, however, the MSA has higher employment concentrations in *government, transportation and utilities, other services, manufacturing*, and *mining and construction*, and lower employment concentrations in the other industry sectors, especially *professional and business services* and *education and health services.*

Figure 2-13: Employment Share by Industry



Source: U.S. Bureau of Labor Statistics.

The St. Louis MSA's five largest industry sectors are *government*, and the four private service-providing sectors, namely, *education and health services, professional and business services, retail and wholesale trade*, and *leisure and hospitality*. These five industry sectors are also the largest in the state and the nation. In 2016, they accounted for a combined share of 75 percent of nonfarm employment in the MSA and the nation, and 77 percent of nonfarm employment in the state.

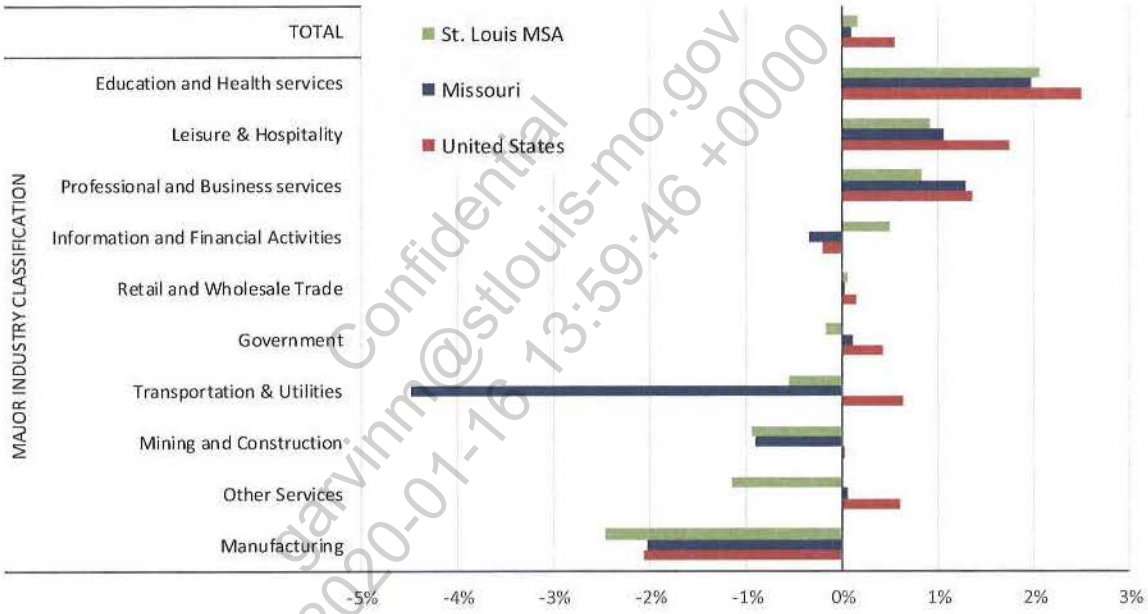
As in the state and the nation, the three fastest growing industry sectors in the MSA since 2000 have been *education and health services, leisure and hospitality*, and *professional and business services* (Figure 2-14). In contrast, the following industry sectors recorded the largest proportional losses in employment in the MSA: *manufacturing, other services*, and *mining and construction*

between 2000 and 2016. Since 2010, however, these industry sectors have turned around, posting employment gains along with other private industry sectors in the MSA (Figure 2-15).

Manufacturing jobs have been moving to other countries where labor and other business costs are lower—a trend that began shortly after the North American Free Trade Agreement (NAFTA) of 1994 and has continued with global trade liberalization. The MSA is not an exception to this trend, as manufacturing employment declined at a slightly higher rate in the MSA than in the state and the nation.

Figure 2-14: Employment Growth by Industry, 2000-2016

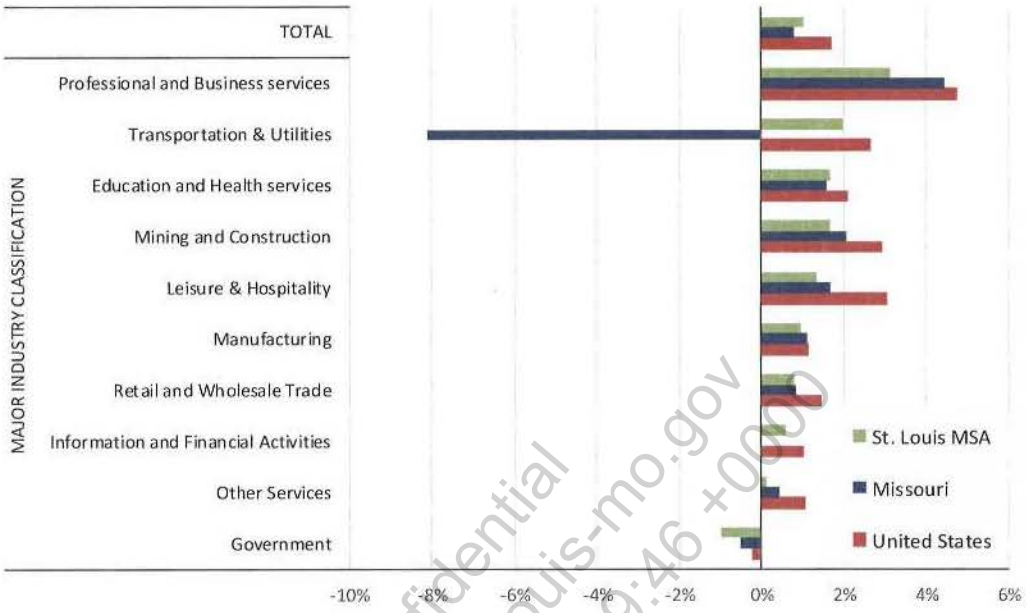
Compound Average Growth Rate, 2000-2016



Source: U.S. Bureau of Labor Statistics.

Figure 2-15: Employment Growth by Industry, 2010-2016

Compound Average Growth Rate, 2000-2016



Source: U.S. Bureau of Labor Statistics.

2.7 Major Employers and Large Company Headquarters

Table 2-3 lists the major employers in the MSA and Table 2-5 lists other large companies with headquarters in the area.

Table 2-3: Major Employers in the St. Louis MSA

Company	Industry Description	Local Employment	Headquarters
BJC HealthCare	Health Care & Social Assistance	24,182	St. Louis MSA
Wal-Mart Stores Inc.	Retail Trade	22,006	Bentonville, AR
SSM Health Care	Health Care & Social Assistance	15,949	St. Louis MSA
Washington University in St. Louis	Educational Services	14,692	St. Louis MSA
Boeing Defense, Space & Security	Manufacturing	14,617	Washington, DC
Mercy Health	Health Care & Social Assistance	13,715	St. Louis MSA
Scott Air Force Base	Public Administration	13,000	St. Louis MSA
U.S. Postal Service	Public Administration	11,693	Washington, DC
Schnuck Markets Inc.	Retail Trade	10,897	St. Louis MSA
Archdiocese of St. Louis	Educational Services	10,460	St. Louis MSA
AT&T Communications Inc.	Information	10,015	Dallas, TX
McDonald's	Accommodation & Food Services	7,550	Oak Brook, IL
Saint Louis University	Educational Services	7,311	St. Louis MSA
City of Saint Louis	Public Administration	7,085	St. Louis MSA
Washington University Physcians	Health Care & Social Assistance	7,004	St. Louis MSA
Special School District of St. Louis County	Educational Services	6,382	St. Louis MSA
Express Scripts Inc.	Wholesale Trade	5,788	St. Louis MSA
Edward Jones	Finance & Insurance	5,525	St. Louis MSA
Imo's Pizza	Accommodation & Food Services	5,455	St. Louis MSA
Enterprise Holdings, Inc.	Real Estate & Rental & Leasing	5,100	St. Louis MSA
Wells Fargo Advisors	Finance & Insurance	5,000	St. Louis MSA
Walgreens	Retail Trade	4,740	Springfield, IL
Target Corp	Retail Trade	4,675	Minneapolis, MN
General Motors	Manufacturing	4,600	Detroit, MI
Ameren Corporation	Utilities	4,374	St. Louis MSA

Source: State of Missouri, Employment Development Department, 2017.

Table 2-4: Fortune 500 Headquarters in the St. Louis, MO-IL MSA

Fortune 500	Industry	2016 Revenue	Rank in 2016
Express Scripts	Pharmaceutical Benefits Management and Distribution	$101.8 B	22
Centene	Health Insurance	$22.8 B	124
Emerson Electric	Electrical Engineering	$22.3 B	128
Monsanto	Manufacturing	$15.0 B	189
Graybar Electric	Media	$6.1 B	423
Ameren	Electric and Gas Utilities	$6.1 B	425
Peabody Energy	Coal Energy	$5.6 B	458

Source: Forbes Fortune 500, 2016.

Table 2-5: Other Large Companies Headquartered in the St. Louis, MO-IL MSA

Company	Industry	Location
Enterprise Holdings Inc.	Transportation	St. Louis, MO
World Wide Technology Holding Company, Inc.	Information Technology	Maryland Heights, MO
Edward Jones	Financial Services	St. Louis, MO
Apex Oil Co. Inc.	Oil & Natural Gas	St. Louis, MO
McCarthy Holdings, Inc.	Construction	St. Louis, MO
Prarie Farms Dairy, Inc.	Dairy Products	St. Louis, MO
Schnuck Markets, Inc.	Retail	St. Louis, MO
Alberici Corp.	Construction	St. Louis, MO
Barry-Wehmiller Group	Manufacturing Technology and Services	St. Louis, MO

Source: Forbes, America's Largest Private Companies, 2016.

2.8 Industry Concentrations

Across Missouri, concentrations of industries have developed over the years. They have created specialized workforces that continue to attract expansion and relocation of firms in those industries. Some of these industry concentrations are found in the MSA (Table 2-6). The analysis compares the portion of the county's workforce employed in a certain industry with the portion of the entire U.S. workforce employed in that section, in the form of the location quotient (LQ). The location quotient describes how concentrated the industry is within the region, with 1 being the national average. [11]

[11] Missouri Department of Economic Development, *2016 Missouri Economic Report*, January 2017, page 45.

Table 2-6: Top Industry Concentrations in the St. Louis, MO-IL MSA

NAICS	Industry Title	Jobs	Average Annual Wage	Industry LQ	Job Growth 2014-2015
3334	HVAC & Commercial Refrigeration Equipment	8,508	$47,718	3.40	-1.7%
3359	Other Electrical Equip. & Component Manufacturing	5,337	$48,896	2.11	4.0%
3116	Animal Slaughtering & Processing	17,260	$38,672	1.82	3.6%
3364	Aerospace Product & Parts Manufacturing	16,778	$108,755	1.79	-5.6%
5619	Other Support Services	9,707	$42,296	1.64	-0.1%
5182	Data Processing, Hosting, Related Services	9,362	$121,154	1.62	-8.5%
4251	Electronic Markets, Agents, Brokers	27,574	$87,544	1.55	3.5%
5511	Management of Companies & Enterprises	65,475	$97,925	1.53	-0.9%
3335	Metalworking Machinery Manufacturing	5,247	$51,469	1.48	2.6%
6231	Nursing Care Facilities	45,479	$25,083	1.42	0.0%

Source: Missouri Economic Research and Information Center, Missouri Industry Brief: Industry Concentration 2015, August 2016.

The St. Louis MSA is also evolving into a high-tech hub. Boeing, Unisys and Hudson's Bay Company are among the many companies that expanded their tech operations in St. Louis in recent years. [12] Microsoft is moving its Creve Coeur office to be the anchor tenant for the newest expansion of St. Louis' Cortex tech hub in mid-2018. The new St. Louis office, which will have 150 Microsoft employees including the 60 currently in the Creve Coeur office, will serve as Microsoft's regional headquarters for states such as Missouri, Kansas and Tennessee. [13]

2.9 Tourism

Tourism not only drives demand for air transportation, but it also contributes to economic growth. Tourism is one of St. Louis' most important industries, and a key source of business establishments and employees in the MSA. St. Louis' premier attraction, the 630-foot Gateway Arch attracts millions of domestic and international visitors annually. Museums such as the Magic House, the St. Louis Museum of Transportation, the City Museum, and the Saint Louis Science Center also attract millions of visitors throughout the year. Moreover, visitors enjoy live theater and music at the Fabulous Fox, the Repertory Theater and the Opera Theatre of St. Louis.[14]

Other tourist attractions in St. Louis MSA include:

- Outdoor recreation within parks such as City Gardens and Forest Park
- Amusement parks such as Six Flags St. Louis

[12] Joe Yogerst, "St. Louis and Kansas City Bounces Back," *CNN Travel*, February 16, 2017, in http://www.cnn.com/2017/02/16/travel/st-louis-kansas-city-missouri-revitalization/index. html.

[13] Jacob Barker, "Microsoft adding jobs in move from Creve Coeur to Cortex," *St. Louis Post-Dispatch*, March 8, 2017, in http://www.stltoday.com/business/local/microsoft-adding-jobs-in-move-from-creve-coeur-to-cortex/article bae386ef-f33d-50ao-90d9-b997177fc12b.html

[14] The Explore St. Louis website, 25 Things to Do, 2017.

- Sporting events featuring the St. Louis Cardinals and the Saint Louis Blues
- Dozens of museums and several contemporary art galleries

Figure 2-16 shows the trends in the volume of visitors in the MSA and Missouri. In the past three years, the MSA had nearly 25 million visitors a year. These accounted for the majority—approximately 63 percent—of the annual visitors in the entire state. Total visitors to the MSA increased, slightly, each year from 21.6 million in 2014 to 25.9 million in 2016.

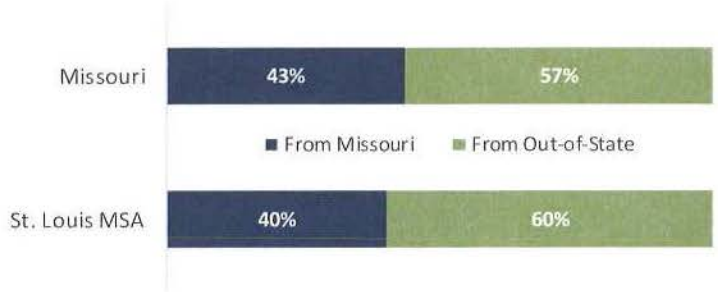
Figure 2-16: Annual Volume of Visitors (in Million Person-Trips)

Source: Explore St. Louis and the Missouri Division of Tourism.

The MSA receives more visitors from outside Missouri (60 percent), compared with the entire state (57 percent) (

Figure 2-17).

Figure 2-17: Origin of Visitors (2015)



Source: Explore St. Louis and the Missouri Division of Tourism.

Visitor spending generates revenues for local businesses that, in turn, provide local jobs. Figure 2-18 shows steady increases in visitor spending in the MSA and the rest of the state. Visitor spending in the MSA, which increased from $4.8 billion in 2014 to $5.4 billion in 2016, accounts for 41 percent of visitor spending in the entire state.

Figure 2-18: Visitor Spending

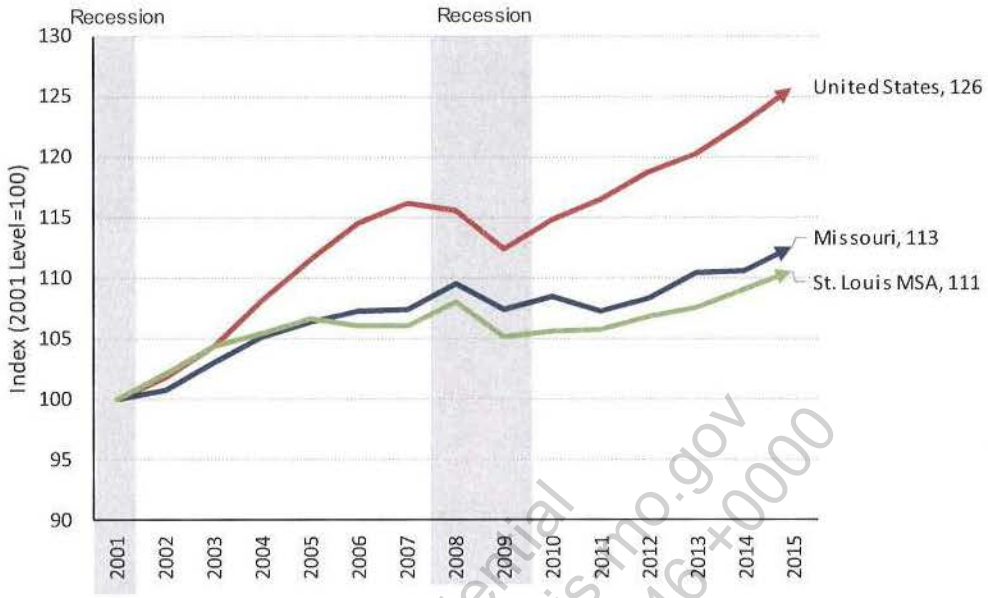
Source: Explore St. Louis and the Missouri Division of Tourism.

2.10 Economic Output

Airport passenger traffic tracks economic growth. The most comprehensive indicator of economic growth is gross domestic product (GDP), which measures the value of all goods and services produced in an area. Growth in inflation-adjusted (real) GDP indicates an economic expansion, while a steady decline over two or more quarters indicates a recession.

The St. Louis MSA's real GDP has grown to new record levels, despite the setback from the Great Recession (Figure 2-19). It has grown at least 11 percent from its level in 2001. This rate of growth, however, lagged behind the growth in real GDP in the entire state of Missouri (13 percent) and nationwide (26 percent).

Figure 2-19: Growth in Real Gross Domestic Product



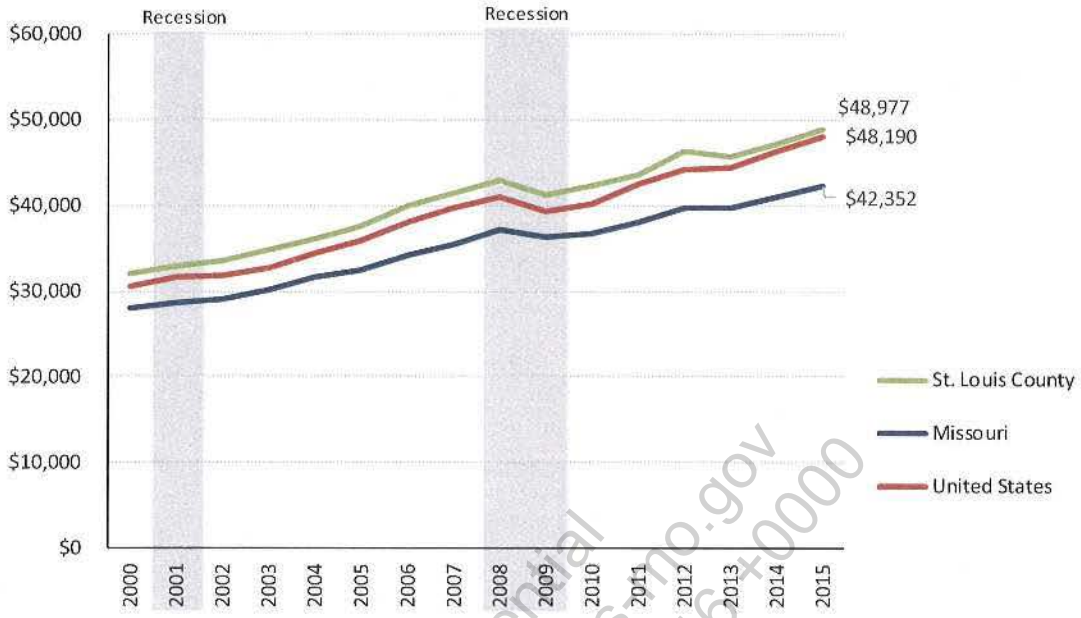
Source: U.S. Bureau of Economic Analysis, Regional Economic Accounts.

2.11 Income

Personal income measures the income people receive from all sources—employment, proprietorship, government transfers, rental properties, and other assets. Consumers' ability to spend and build wealth depends on their personal income. Growth in personal income boosts demand for air travel. A component of GDP, personal income follows the same cyclical pattern: increasing during economic expansion and decreasing during economic recession.

The MSA had a higher per capita income and income growth than that of the state and the nation from 2000 to 2016 (Figure 2-20). Annual growth in per capita income averaged 2.9 percent in the MSA, 2.8 percent in Missouri, and 3.1 percent in the nation.

Figure 2-20: Per Capita Personal Income (Current Dollars)



Source: U.S. Bureau of Economic Analysis, Regional Economic Accounts.

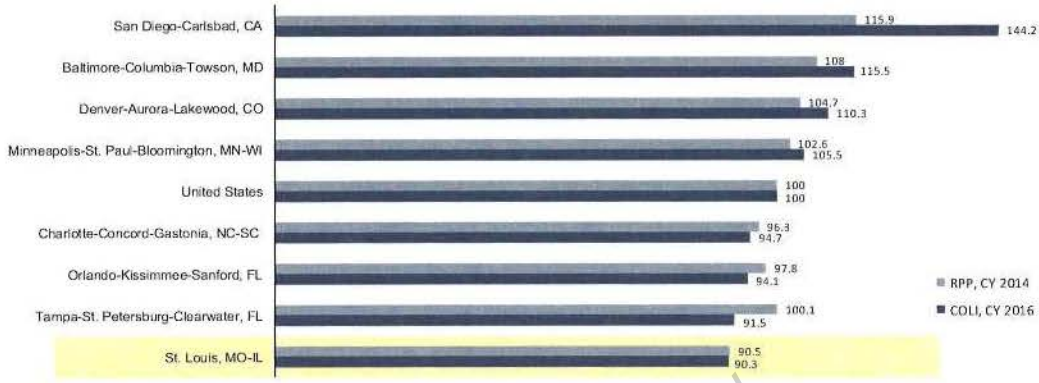
2.12 Cost of Living

A low cost of living attracts new workers and businesses into the area. The St. Louis MSA has a moderate cost of living as indicated by the two measures shown in Figure 2-21: (1) the Cost of Living Index (COLI) published by the Council for Community and Economic Research (C2ER) and (2) the Regional Price Parity (RPP) published by the U.S. Bureau of Economic Analysis (BEA).

COLI measures regional differences in the cost of consumer goods and services, excluding taxes and non-consumer expenditures, for professional and managerial households in the top income quintile. In 2016, the cost of living in the MSA was 8.5 percent lower than the U.S. average and was ranked the least costly among metropolitan areas of a similar population size.

Like COLI, RPP measures price differences across metropolitan areas relative to the national level. Based on RPP, the cost of living in the MSA in 2014 was 8.7 percent less than the national average and also the lowest of the areas observed.

Figure 2-21: Cost of Living in Select Urban Areas



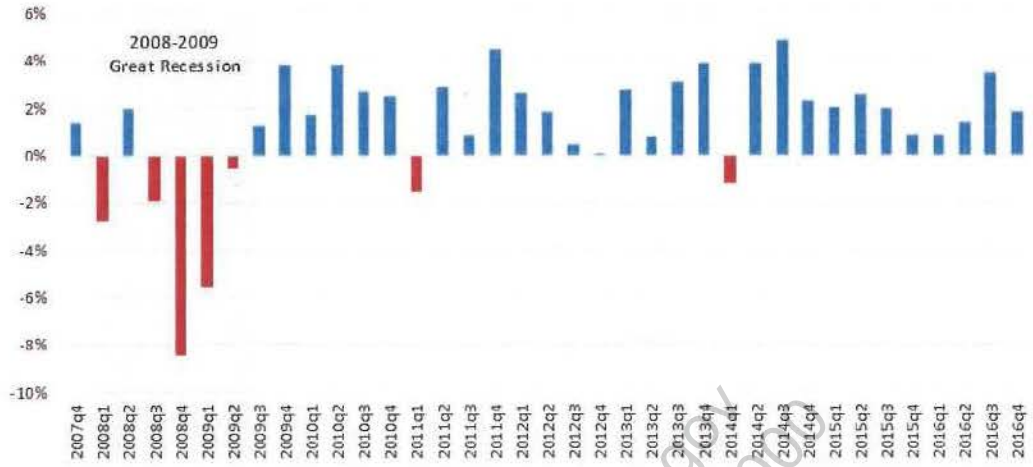
Sources: Council for Community and Economic Research and U.S. Bureau of Economic Analysis.

2.13 National Economy

Since 2000, the U.S. economy has experienced two recessions. The most recent recession, the 2008-2009 Great Recession, was the longest and deepest U.S. recession after World War II. It lasted six quarters (Figure 2-22). At the depth of the Great Recession in the second quarter of 2009, U.S. real GDP decreased to a level more than 4 percent below its previous peak in the fourth quarter of 2007. Within two years of the start of the recession, the economy lost 8.7 million jobs—jobs that had been created over five years before the recession.

The recovery from the Great Recession has been the slowest in post-World War II history. Economic output, measured by U.S. real GDP, took nearly four years to return to its pre-recession peak, compared with the average two years it took to recover from the previous 10 recessions. The U.S. nonfarm employment level took nearly 6 ½ years to return to its previous peak, compared with only 2 to 2½ years from previous recessions.

Figure 2-22: Growth in U.S. Real Gross Domestic Product



Source: U.S. Bureau of Economic Analysis.

The U.S. economy has continued its slow expansion, with consumer spending, making up two-thirds of GDP, as the economy's major driver. Now entering its eighth year, the current U.S. economic expansion is expected to continue over the next few years, according to several sources (Table 2-8). Economic growth forecasts average 2.3 percent in 2017, 2.4 percent in 2018, and 2 percent in 2019.

Table 2-8: U.S. Economic Growth Forecasts (Year-Over-Year Change in Real U.S. GDP)

	Actual		Forecast				
Source	**2015**	**2016**	**2017F**	**2018F**	**2019F**	**2020F**	**2021F**
Moody's Analytics, December 2016	2.6	1.6	2.8	3.0	2.2	1.4	1.6
Economist Intelligence Unit, April 2017	2.6	1.6	2.2	2.1			
International Monetary Fund, April 2017	2.6	1.6	2.3	2.5	2.1	1.8	1.7
World Bank, January 2017	2.6	1.6	2.2	2.1	1.9		
Federal Reserve Board, December 2016	2.6	1.6	2.1	2.0	1.9		
Wall Street Journal Economic Forecasting Survey, April 2017	2.6	1.6	2.3	2.5	2.1		
OECD, March 2017	2.6	1.6	2.4	2.8			
Wells Fargo, April 2017	2.6	1.6	2.1	2.5			
Average	**2.6**	**1.6**	**2.3**	**2.4**	**2.0**	**1.6**	**1.6**

Source: U.S. Bureau of Economic Analysis for historical data and listed sources for forecasts.

The April 2017 Wall Street Journal economic forecasting survey estimates the probability of a recession in the next 12 months at less than 16 percent. But the U.S. economy faces risks from within and from abroad. Within the country, the prospect of significant economic policy changes increases economic uncertainty. In addition, the following factors continue to raise concern: (1) the

high level of U.S. government and private debt, (2) tightening monetary policy, (3) the dollar appreciation, (4) the disconnect between trends in financial markets and economic fundamentals, and (5) the adverse effects of declining oil prices on the U.S. energy and manufacturing sectors. On the upside, the new administration's proposed tax cuts, infrastructure spending, and reduction in government regulation could prove beneficial to the U.S. economy. Since the 2016 election, consumer confidence has risen to its highest point in 15 years, signaling high economic expectations under a Trump presidency. Abroad the following developments add to the uncertainties facing the U.S. economy: (1) the United Kingdom's withdrawal from the European Union, (2) ongoing political conflicts in the Middle East, (3) the threat of terrorism, and (4) an enduring global oil glut.

2.14 Outlook for the Missouri Economy

The Missouri state economy should continue to perform well, as measured by growth in economic output, decrease in unemployment, and growth in business establishments. Missouri's economic diversity should help sustain growth in the state economy in the next few years. The state is well balanced by its agricultural region in the North, health care, educational services and government zones within the Central Region, a vibrant tourism industry within the Ozarks, and economic and financial service centers within the St. Louis and Kansas City metropolitan areas. Across the entire state there is growing demand for employees within health care and business/sales, and within St. Louis and Kansas City, there is growing demand for workers within science and technology. Missouri's low cost of living and high wages will also aid the state in attracting quality workers to fulfill the needs of various industries and increase economic output within the state and the MSA.[15]

2.15 Outlook for the St. Louis MSA Economy

While analysis of the labor market presents a mixed picture of the economic situation in the St. Louis MSA, labor market conditions are expected to continue improving. The MSA should continue to outperform Missouri and the United States in per capita income and unemployment.

According to the St. Louis Federal Reserve, the business outlook remains positive within the MSA, despite slow growth. The demand for labor is increasing within the MSA, and the scarcity of skilled labor could put upward pressure on wages. While manufacturing conditions have weakened, the transportation industry has strengthened and saw an increase in employment in 2016—in spite of a nationwide slowdown within the sector.[16]

2.16 Summary

Demographic and economic trends in the St. Louis MSA, Missouri, and the United States influence passenger traffic trends at STL. Trends in key demographic and economic indicators in the MSA and Missouri show rapid expansion that is expected to continue over the next few years at least.

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[15] Missouri Department of Economic Development, *2016 Missouri Economic Report,* January 2017, page 1.

[16] St. Louis Federal Reserve, Burgundy Book: A Report on Economic Conditions within the St. Louis Zone, Fourth Quarter of 2016.

Below are the major highlights of the analysis of the demographic and economic attributes of the St. Louis MSA:

- Having the twentieth largest metropolitan area population in the country and the largest within the state of Missouri, the MSA offers a large market for air transportation.
- The MSA has an older, but highly educated population, relative to the state of Missouri and the nation. A highly educated population will aid economic growth within the MSA.
- The St. Louis MSA economy is improving. Labor market conditions in the MSA are strong and continue to tighten. Business development and job creation are progressing at a healthy pace. Since 2010, the unemployment rate in the MSA has fallen to levels below the national unemployment rate levels.
- The St. Louis MSA has a diversified economy. Consistent with patterns observed nationwide, the largest employment concentrations within the MSA are found in the following sectors: *government*, *education and health services*, *professional and business services*, *retail and wholesale trade*, and *leisure and hospitality*.
- Tourism is one of the biggest drivers of the MSA and Missouri economies; and the MSA is a popular destination for leisure travelers.
- The St. Louis MSA's real GDP has grown to new record levels, despite losses during the Great Recession.
- The MSA has very low living costs, which should combine strategically with higher wages and salaries in attracting more workers and businesses.
- Although growing slower than the nation, the St. Louis MSA's economy enjoys broad-based job growth and should continue to grow in the coming years.

Section 3 Aviation Activity Analysis and Forecasts

This section reviews the historical trends in passenger traffic and aircraft operations at St. Louis Lambert International Airport, and presents forecasts of enplanements, aircraft departures and landed weight through Fiscal Year (FY) 2022. Historical data are generally provided on a calendar year (CY) basis, unless they are noted to be on a fiscal year basis. The forecasts are presented on a fiscal year basis.

STL is a medium hub airport—FAA's category of airports serving at least .25 percent, but less than 1 percent of annual U.S. enplanements. Based on 2015 traffic data compiled by the Airports Council International-North America (ACI-NA), STL ranked 32nd among U.S. airports in total passengers, just behind Dallas Love Field International Airport and ahead of William P. Hobby International Airport. By total aircraft operations, STL ranked 44th in total aircraft operations for 2015—down from 41st in 2014. In 2016, STL enplaned 6.7 million passengers with more than 84,000 aircraft departures.

3.1 Current Air Service

The Airport currently has scheduled passenger service from seven signatory air carriers: Air Canada, Alaska Airlines (Alaska), American Airlines (American), Delta Air Lines (Delta), Frontier Airlines (Frontier), Southwest Airlines (Southwest), and United Airlines (United). Southwest currently has preferential use of 13 gates and uses one gate on a per-turn, as needed, basis. Southwest will add 4 additional gates effective June 1, 2017. American has preferential use of 7 gates, while Delta and United have preferential use of 6 and 5 gates, respectively.

Table 3-1 shows the current commercial airlines providing scheduled service at STL.

Table 3-1: Scheduled Passenger and Cargo Airlines (as of April 2017)

Passenger Carriers			
Mainline	Regional/Commuter		All-Cargo Carriers
Air Canada	Air Choice One	GoJet Airlines[3,4]	FedEx Express
Alaska Airlines	Air Georgian[1]	Horizon Air Industries[5]	Southern Air
American Airlines	Air Wisconsin Airlines[2]	Mesa Airlines[2,4]	UPS Airlines
Delta Air Lines	Atlantic Southeast Airlines[3]	PSA Airlines[2]	
Frontier Airlines	Cape Air	Republic Airlines[2,4]	
Southwest Airlines	Compass Airlines[3]	Shuttle America[3,4]	
United Airlines	Endeavor Air[3]	Skywest Airlines[3,4,5]	
	Envoy Air[2]	XTRA Airways	
	ExpressJet Airlines[3,4]	Trans States Airlines[2,4]	

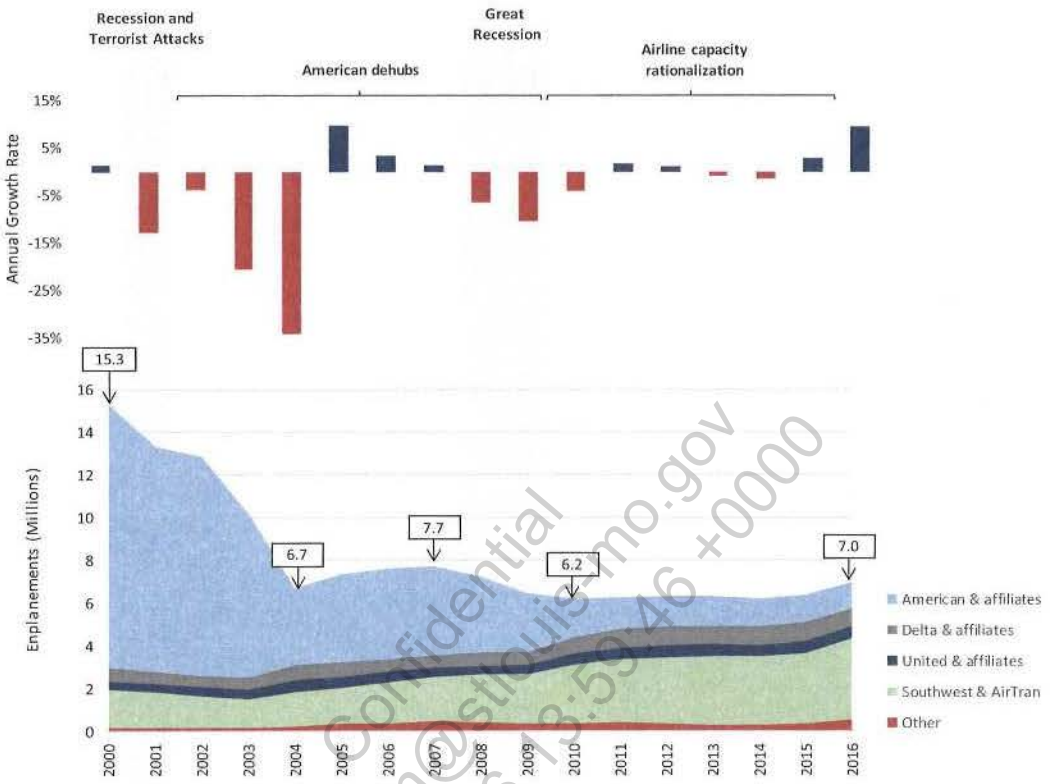
1 Operates as Air Canada.
2 Operates as American Connection.
3 Operates as Delta Connection.
4 Operates as United Connection.
5 Operates as Alaska Airlines.
Source: Airport records and U.S. Department of Transportation.

3.2 Historical Passenger Traffic Trends

Over the years, the Airport's passenger traffic has grown and declined with U.S. economic cycles (Figure 3-1). In addition, in the 2000's, the Airport suffered significant service cuts by American — beginning not long after the crash of two American flights during the terrorist attacks in September 2001—to end hub operations at the Airport. STL's enplanements were more than halved from their all-time peak of 15.3 million in 2000 to 6.7 million in 2004. American continued to cut service at STL through the Great Recession, and the Airport's enplanements decreased further to 6.2 million in 2010, their lowest level since 1982.

As American reduced capacity, Southwest gradually emerged as the Airport's largest carrier. Southwest's expansion aided traffic recovery, which progressed slowly until the past year. In 2016, traffic growth at STL picked up—enplanements grew nearly 10 percent from the previous year to almost 7 million.

Figure 3-1: Historical Enplanement Trends at STL by Calendar Year



Source: Airport records.

Since 2000 the Airport—along with the U.S. aviation industry—has faced many challenges, prompting lasting changes in consumer air travel behavior and airline business practices:

- A recession, lasting from March to November 2001, ended a 10-year U.S. economic expansion. On September 11, 2001, while the U.S. economy was in recession, terrorists attacked U.S. aviation. Passenger traffic plummeted, and airport security tightened.
- Jet fuel prices rose to record high levels, causing airline operating costs to escalate.
- Amid record fuel prices, in 2008-2009, the U.S. economy entered Great Recession, so called because it is the longest and deepest recession since the Great Depression. The Great Recession again weakened demand for both passenger and cargo air services.
- To improve financial results, airlines cut domestic seat capacity to increase load factors, retired fuel-inefficient aircraft, added seats to aircraft, and implemented other cost-cutting measures. They optimized their networks, transferred routes between mainline and regional service, and changed their pricing structures. Mounting financial difficulties eventually led to bankruptcies, mergers, and business restructuring.

- Bad weather, natural disasters, disease outbreaks, and geopolitical conflicts also hurt the aviation industry in various ways—by disrupting air service, decreasing traffic, and hampering economic recovery.

The Airport's passenger traffic recovered gradually after 2004. Annual enplanements increased 9.8 percent in 2005, 3.3 percent in 2006, and by 1.5 percent in 2007. However, enplanements declined by 6.6 percent in 2008, as the U.S. economy entered another recession period and airlines responded with a new round of capacity adjustments. STL's passenger enplanements decreased by 20 percent over the course of the recession, from 7.7 million in 2007 to less than 6.2 million in 2010. Enplanement levels in 2010 were the lowest recorded for the Airport since the early 1980s.

Even after the Great Recession ended, American and other airlines continued to limit system capacity to keep air fares from falling, contain costs, and turn profits. Airline capacity restraint amid slow demand recovery has kept annual enplanement levels at the Airport flat—6.3 million on average—between 2009 and 2014. Boosted by air service expansion, STL's enplanements increased 2.8 percent in 2015 and 9.6 percent in 2016. The momentum in STL's enplanement growth continues in 2017. Through March, enplanements have grown 6.8 percent over enplanements through March in the previous year, on track to surpass 7 million for the entire year and approach pre-Great Recession levels.

3.2.1 Comparison of Enplanement Trends at STL and the United States

Figure 3-2 compares the passenger enplanement trends at STL with changes in U.S. total enplanements between 2006 and 2016. The following points provide some highlights of the comparison of enplanement trends:

- Relative to the U.S. system, STL's passenger traffic suffered a deeper and longer decline during the Great Recession.
- STL's enplanement recovery began in 2011, but was slower than the national trend, and was set back by more decreases in 2013 and 2015.
- STL's enplanement recovery accelerated in 2016. The Airport's passenger enplanements grew nearly 10 percent between 2015 and 2016, more than triple the rate of growth in national enplanements.
- Despite increasing 10 percent in 2016, STL's enplanements in 2016 were still 8 percent lower than their level in 2006. In contrast, U.S. system enplanements in 2016 were already 12 percent above their level in 2006.

Before the Great Recession, STL enplaned 7.6 million passengers in 2006 and 7.7 million in 2007, accounting for just over 1 percent of total U.S. enplanements during those years. Since 2008, however, STL has accounted for less than 1 percent of U.S. total enplanements, moving from a large hub to a medium hub in FAA's classification of airports. The Airport accounted for 0.85 percent of national enplanements in 2016. It is the second largest medium hub airport, behind Dallas Love Field.

Figure 3-2: STL and U.S. Total Enplanement Growth by Calendar Year

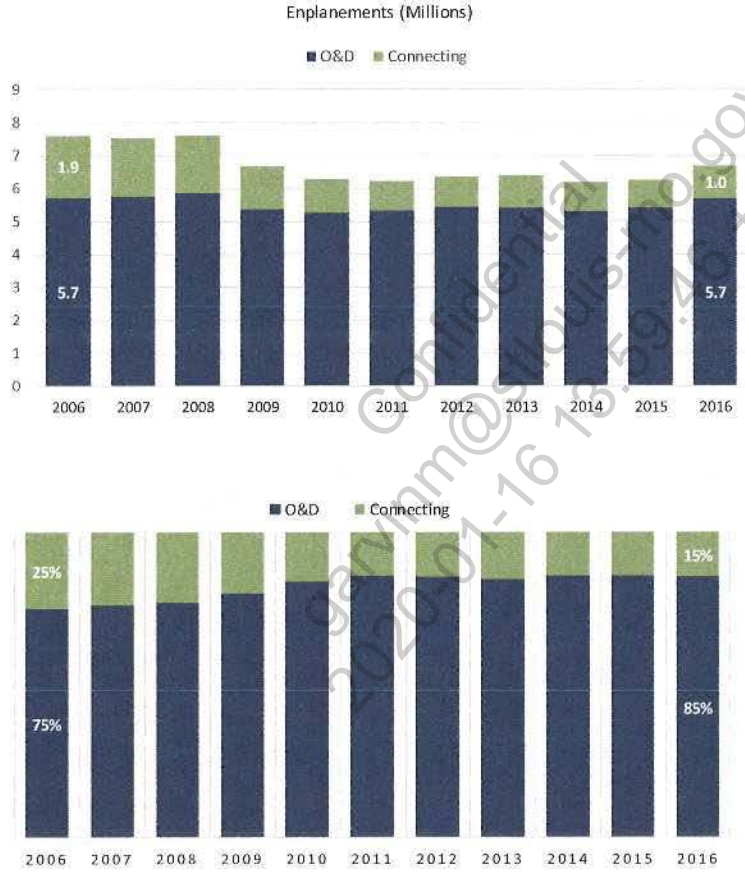
CAGR: Compound annual growth rate.
Sources: Airport records and U.S. Bureau of Transportation Statistics.

3.2.2 Composition of Passenger Traffic at STL

The mix of O&D and connecting traffic at STL has changed with the closing of American's hub operations. Since 2003, O&D has accounted for the majority share of passenger traffic, which increased from 46 percent in 2003 to 85 percent in 2016 (Figure 3-3). Conversely, the connecting traffic share decreased from over 50 percent before 2003 to 15 percent in 2016.

In 2016, the Airport experienced a resurgence in connecting traffic, mostly owing to Southwest's expansion. Southwest accounted for 97 percent of the Airport's connecting traffic in 2016.

Figure 3-3: O&D and Connecting Traffic Shares by Fiscal Year



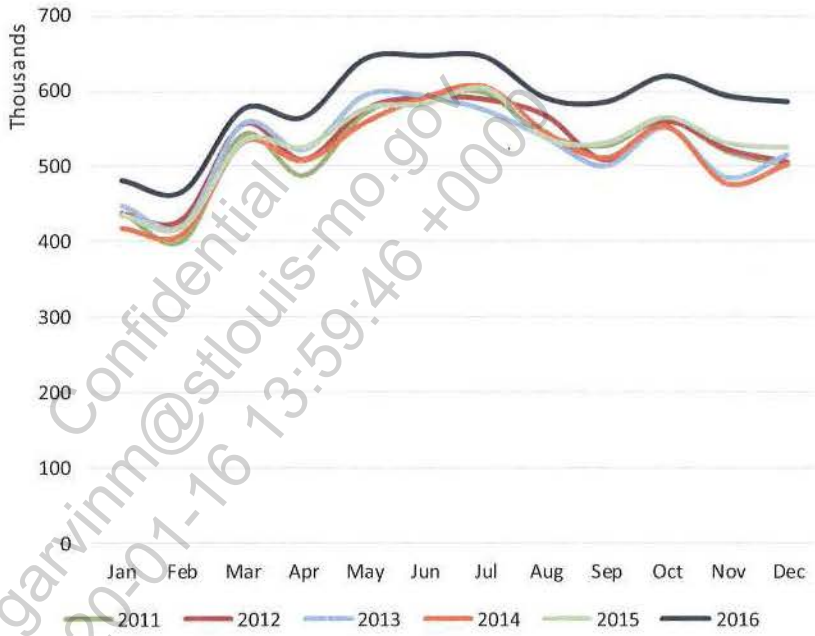
Source: Airport records.

3.2.3 Monthly Enplanements

Figure 3-4 presents the recent enplanement trends at the Airport on a monthly basis. STL's enplanements peak slightly in the summer months of June and July, consistent with patterns of air travel demand observed nationwide. Between 2011 and 2016, on average, the month of July had the highest enplanement levels. The figure also shows that year-over-year enplanement changes were significantly higher for almost every month in 2016 compared with preceding years.

Figure 3-4: STL Monthly Enplanements by Calendar Year

Month	2011-2016 Avg. Share of CY Total
Jan	6.9%
Feb	6.6%
Mar	8.6%
Apr	8.1%
May	9.1%
Jun	9.3%
Jul	9.4%
Aug	8.6%
Sep	8.2%
Oct	8.9%
Nov	8.1%
Dec	8.1%



Source: Airport records.

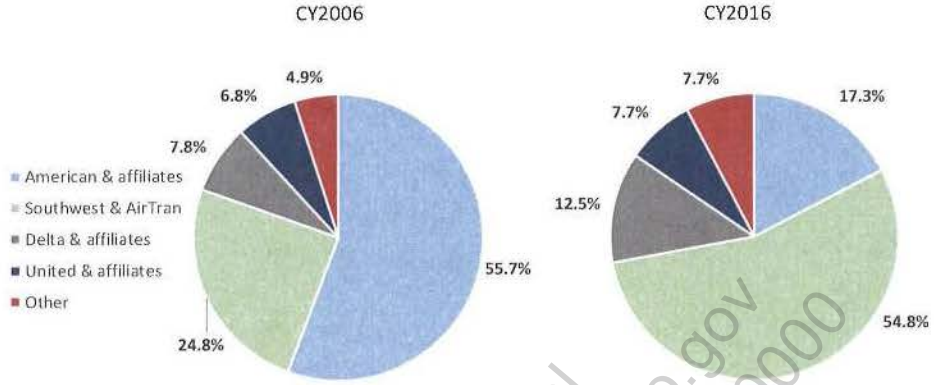
3.2.4 Enplanements by Airline

Through 2003, American and its affiliate carriers accounted for over 70 percent of enplanements at the STL, leaving the Airport vulnerable to minor service cuts or traffic declines by American. Today, the Airport's largest carrier is Southwest, which enplaned 55 percent of scheduled passengers in 2016 (Figure 3-5 and Table 3-2). The bulk of the remaining 45 percent of STL's 2016 enplanements were distributed between American (17 percent), Delta Airlines (13 percent), and United Airlines (8 percent).

Southwest has been largely responsible for the recent increases in enplanements at STL, growing at an average annual rate of 7.3 percent between 2006 and 2016. To a lesser extent, the air service expansion by Alaska Air and Air Choice One also contributed to passenger traffic growth in the last

two years. The carriers—grouped as "Other" below—experienced traffic growth annually by approximately 3.7 percent between 2006 and 2016.

Figure 3-5: STL Enplanements by Airline



Source: Airport records.

Table 3-2: STL Enplanements and Market Share by Airline

Calendar Year	Enplanements (Thousands)					Enplanement Share				
	American & affiliates[1]	Southwest & AirTran	Delta & affiliates	United & affiliates	Other	American & affiliates[1]	Southwest & AirTran	Delta & affiliates	United & affiliates	Other
2006	4,234	1,887	591	521	373	55.7%	24.8%	7.8%	6.8%	4.9%
2007	4,130	2,060	601	462	463	53.5%	26.7%	7.8%	6.0%	6.0%
2008	3,493	2,236	635	431	412	48.5%	31.0%	8.8%	6.0%	5.7%
2009	2,728	2,315	602	426	374	42.3%	35.9%	9.3%	6.6%	5.8%
2010	1,760	2,754	815	482	367	28.5%	44.6%	13.2%	7.8%	5.9%
2011	1,484	2,957	925	504	411	23.6%	47.1%	14.7%	8.0%	6.5%
2012	1,435	3,099	902	566	350	22.6%	48.8%	14.2%	8.9%	5.5%
2013	1,368	3,213	875	551	291	21.7%	51.0%	13.9%	8.8%	4.6%
2014	1,305	3,194	861	531	310	21.0%	51.5%	13.9%	8.6%	5.0%
2015	1,295	3,298	865	554	363	20.3%	51.7%	13.6%	8.7%	5.7%
2016	1,210	3,828	873	539	538	17.3%	54.8%	12.5%	7.7%	7.7%
	Compound Annual Growth Rate									
2006-2016	-11.8%	7.3%	4.0%	0.3%	3.7%					
2012-2016	-4.2%	5.4%	-0.8%	-1.2%	11.3%					

Fiscal Year	Enplanements (Thousands)					Enplanement Share				
	American & affiliates[1]	Southwest & AirTran	Delta & affiliates	United & affiliates	Other	American & affiliates[1]	Southwest & AirTran	Delta & affiliates	United & affiliates	Other
2012	1,486	3,024	924	566	352	23.4%	47.6%	14.5%	8.9%	5.5%
2013	1,400	3,212	885	561	328	21.9%	50.3%	13.9%	8.8%	5.1%
2014	1,332	3,170	863	537	275	21.6%	51.3%	14.0%	8.7%	4.5%
2015	1,291	3,241	852	542	343	20.6%	51.7%	13.6%	8.6%	5.5%
2016	1,272	3,504	893	541	462	19.1%	52.5%	13.4%	8.1%	6.9%
	Compound Annual Growth Rate									
2012-2016	-3.8%	3.8%	-0.8%	-1.1%	7.1%					

[1] Includes US Airways' enplanements.

Source: Airport records.

3.2.5 Top O&D Markets

O&D enplanements account for approximately 83 percent of STL's passenger traffic. Table 3-3 lists the Airport's top 25 O&D city markets in 2016, ranked by share of O&D enplanements. The table shows the airports served in each market, the number of daily nonstop departures to each market from STL, and the airlines serving each market from the Airport in 2016.

Table 3-3: STL's Top O&D Markets (Calendar Year 2016)

CY2016 Rank[1]	Destination	Airports[2]	O&D Market Share[3]	Daily Nonstop Departures[4]	Airlines Serving Market from STL[5]
1	New York City, NY	LGA, EWR, JFK	6.11%	17	DL, WN, UA, AA
2	Washington, DC	DCA, BWI IAD	5.23%	10	UA, AA, WN
3	Los Angeles, CA	LAX, SNA, ONT, BUR	5.13%	5	WN, AA
4	Chicago, IL	MDW, ORD	4.71%	22	UA, AA, WN
5	Denver, CO	DEN	4.70%	10	UA, WN, F9
6	Dallas/Fort Worth, TX	DAL, DFW	4.64%	13	AA, WN
7	Orlando, FL	MCO	4.20%	5	WN, F9
8	Las Vegas, NV	LAS	3.94%	5	WN, F9
9	Atlanta, GA	ATL	3.66%	11	DL, WN, F9
10	San Francisco, CA	SFO, OAK, SJC	3.30%	3	UA, WN
11	Phoenix, AZ	PHX	2.96%	6	WN, AA, F9
12	Houston, TX	HOU, IAH	2.60%	8	UA, WN
13	Minneapolis/St. Paul, MN	MSP	2.59%	8	DL, WN
14	Boston, MA	BOS, PVD, MHT	2.58%	2	WN
15	Miami, FL	FLL, MIA	2.47%	2	AA
16	Seattle, WA	SEA	2.25%	2	AS, WN
17	Tampa, FL	TPA	2.17%	2	WN, F9
18	Philadelphia, PA	PHL	1.90%	6	AA, WN
19	Detroit, MI	DTW	1.83%	7	DL, WN, G7
20	San Diego, CA	SAN	1.73%	1	WN
21	Fort Myers, FL	RSW	1.63%	2	WN, F9
22	San Antonio, TX	SAT	1.20%	2	WN
23	Austin, TX	AUS	1.18%	1	WN
24	Raleigh/Durham, NC	RDU	1.12%	2	WN
25	Portland, OR	PDX	1.10%	2	AS, WN
	DESTINATIONS LISTED	-	**74.9%**	**154**	
	OTHER DESTINATIONS	-	**25.1%**	**76**	
	TOTAL	-	**100.0%**	**230**	

[1] Ranking is based on share of STL O&D passengers in CY2016.
[2] Airports served with at least 500 flights in CY2016.
[3] U.S. Department of Transportation DB1B.
[4] OAG Schedules Analyzer (accessed April 2017). Daily nonstop departures: annual nonstop departures divided by 365.
[5] Airline codes: AA-American, AS-Alaska, DL-Delta, F9-Frontier, G7-GoJet, UA-United, and WN-Southwest.

The top 25 destination cities listed, consisting of large urban areas across the country, were served by 154 of the 230 daily nonstop departures from STL. Together, service to these markets accounted for approximately 75 percent of O&D enplanements at the Airport in 2016.

Figure 3-6 shows that STL's top 25 O&D markets are spread across the United States.

Figure 3-6: STL's Top 25 O&D Markets (Calendar Year 2016)

Sources: Unison Consulting, Inc., and U.S. Department of Transportation DB1B.

3.2.6 Enplanement Trends at STL Select Medium Hub Airports

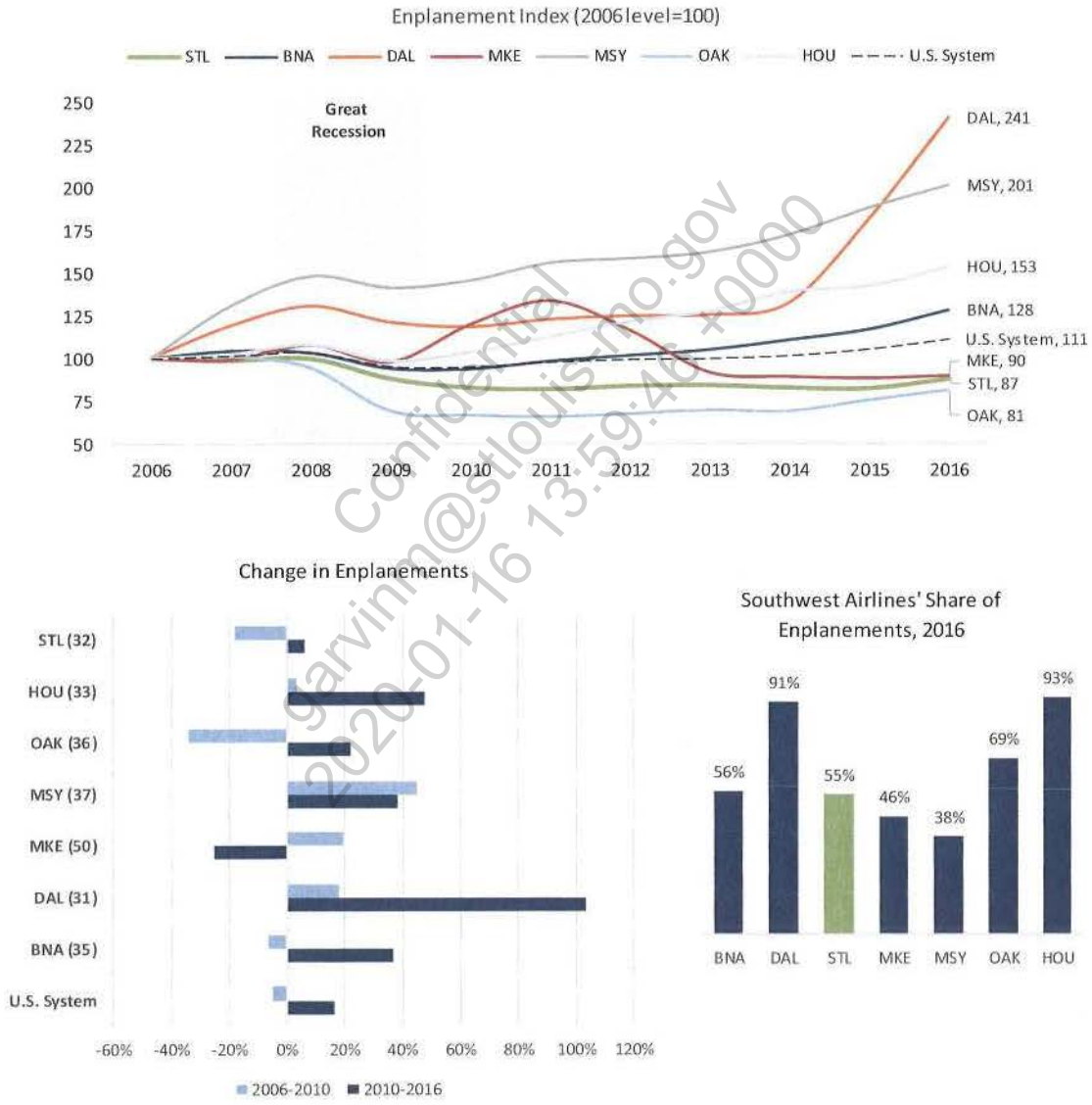
Figure 3-7 compares the trends in enplanements at STL and six other medium hub airports, from FY2006 through FY2016. The FAA designates medium hubs as commercial airports that enplane at least 0.25 percent but less than 1 percent of total U.S. commercial passengers in a given year. The medium hub airports selected for comparison are in focus cities for Southwest, currently STL's largest carrier. The selected medium hub airports include Dallas Love Field (DAL), William P. Hobby Airport (HOU), Louis Armstrong New Orleans International Airport (MSY), Nashville International Airport (BNA), Oakland International Airport (OAK), and Milwaukee's General Mitchell International Airport (MKE).

Along with STL, MKE and OAK suffered decreases in enplanements between FY2006 and FY2016. OAK's 19 percent enplanement decrease surpassed STL's 13 enplanement decrease over that period. The other four airports posted enplanement increases proportionally greater than the overall increase in U.S. enplanements.

Since FY2010, the Airport's passenger traffic has also grown slower than most of the comparison airports. STL's enplanements grew by only 6 percent between FYs 2010 and 2016, while OAK's traffic increased by 22 percent. With the exceptions of MKE, where traffic fell by 25 percent,

enplanements grew by 37 percent and higher at the other hubs over the last six fiscal years. The highest growth rates were posted at airports where Southwest accounted for over 90 percent of enplanements (DAL and HOU). DAL enplanements more than doubled between FYs 2010 and 2016, while enplanements at HOU increased by 48 percent over the same period.

Figure 3-7: Enplanement Trends at STL and Select Medium-Hub Airports by Calendar Year



The numbers in parentheses indicate enplanement ranking among U.S. commercial service airports, based on ACI North American Airport Traffic Summary for CY2015.
Sources: Airport records and U.S. Bureau of Transportation Statistics T-100 Market data.

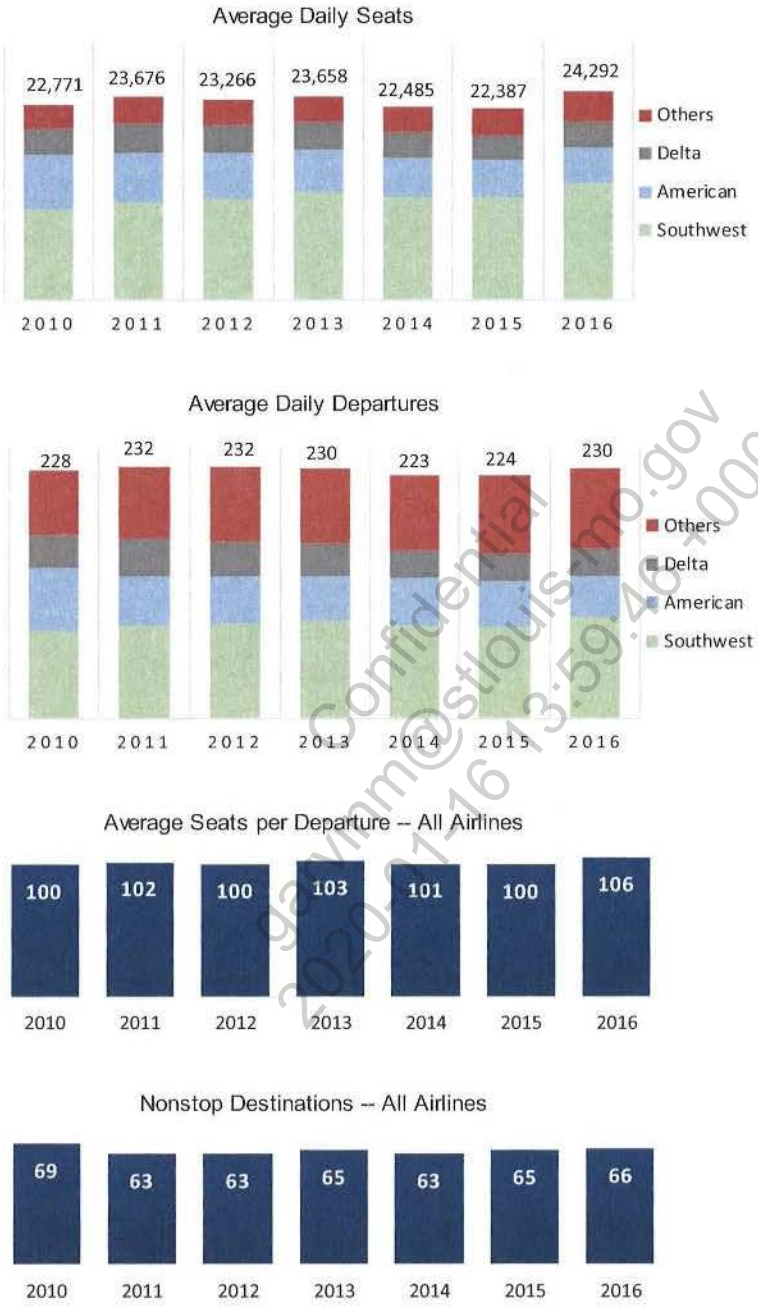
3.2.7 Scheduled Nonstop Passenger Airline Service

Figure 3-8 presents the trends since 2010 in scheduled passenger service at STL by the following measures: seats, departures, seats per departure, and nonstop destinations. The trends show the upturn in scheduled seats and flights in 2016, the overall increase in seats on each flight in 2016, and the small increase in nonstop destinations served from STL over the past two years.

The number of seats per day—the most important measure of service capacity—increased to more than 24,000 in 2016, from an average of about 23,000 in the previous six years. The number of departures per day rebounded to 230 in 2016, after falling to 223 in 2014 and 224 in 2015. The number of seats per flight increased slightly from an average of 101 in 2010-2015 to 106 in 2016. The number of nonstop destinations served increased to 66 from the period's low of 63.

In 2016, Southwest accounted for 56 percent of scheduled seats and 40 percent of scheduled aircraft departures at STL. Southwest operated an average of 93 flight departures per day out of 13 leased gates and one City gate on a per-turn basis. American accounted for 17 percent of scheduled seats and 17 percent of scheduled flight departures, averaging 38 flight departures per day on seven gates. Delta accounted for 12 percent of scheduled seats and 11 percent of scheduled flight departures, averaging 25 flight departures per day on 6 gates. All other mainline and regional carriers accounted for the remaining 15 percent of scheduled seats and 32 percent of scheduled flight departures, for an average of 74 flight departures per day on 13 gates.

Figure 3-8: Trends in Scheduled Air Service at STL by Calendar Year

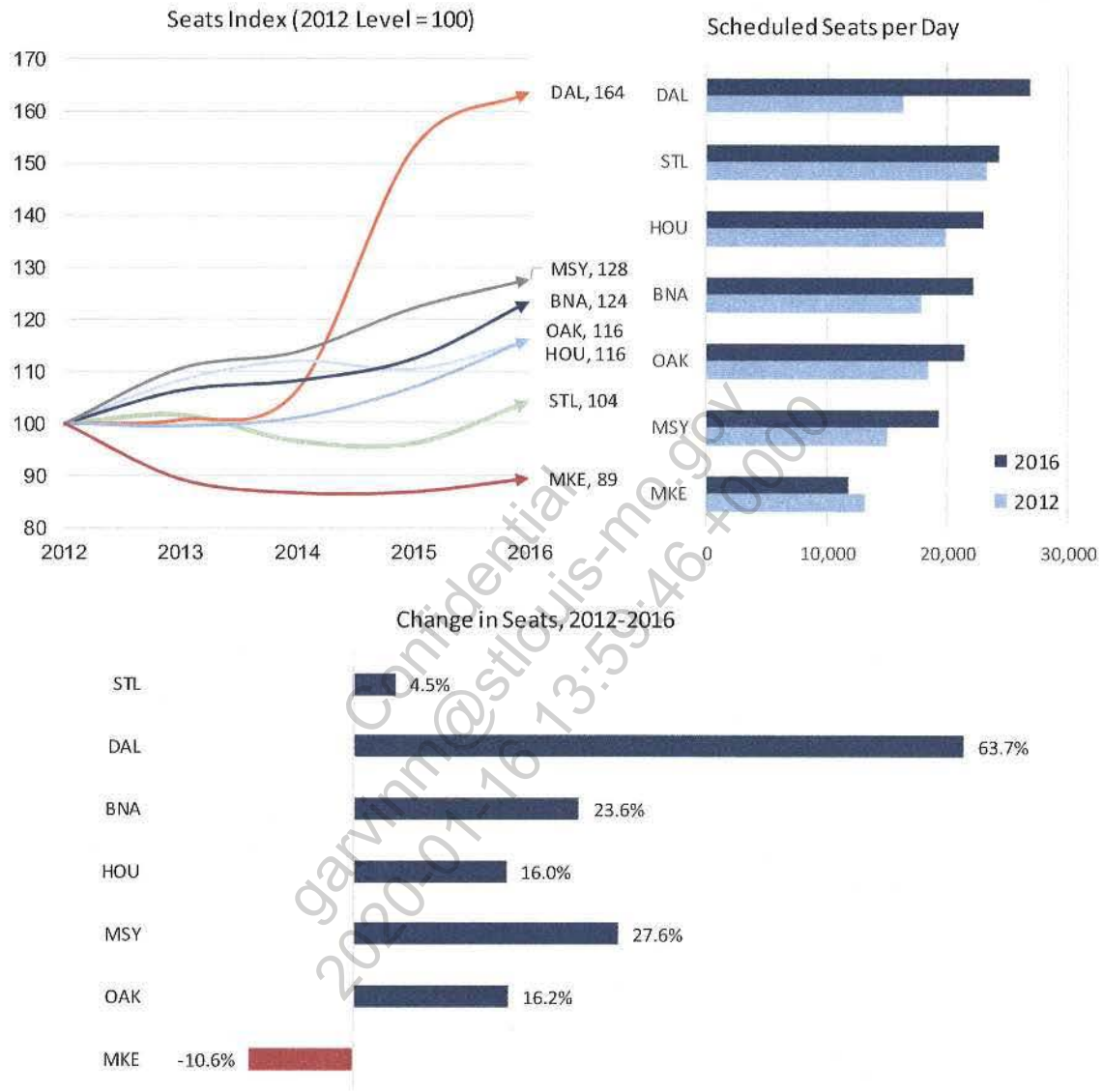


The average daily departures and seats were calculated by dividing the annual total by 365.
Source: OAG Schedules Analyzer (accessed April 2017).

3.2.8 Trends in Scheduled Seats at STL and Select Medium Hub Airports

Figure 3-9 compares the trends in scheduled seats at STL and the six other medium hub airports in Southwest's focus cities from 2012 through 2016. The 8.6 percent increase in seats at STL in 2016, was among the highest rates of increase in seats at these airports. STL, however, lagged behind in overall increase in seats from 2012 behind all the other airports but MKE.

Figure 3-9: Scheduled Daily Seats at STL and Select Medium Hub Airports by Calendar Year

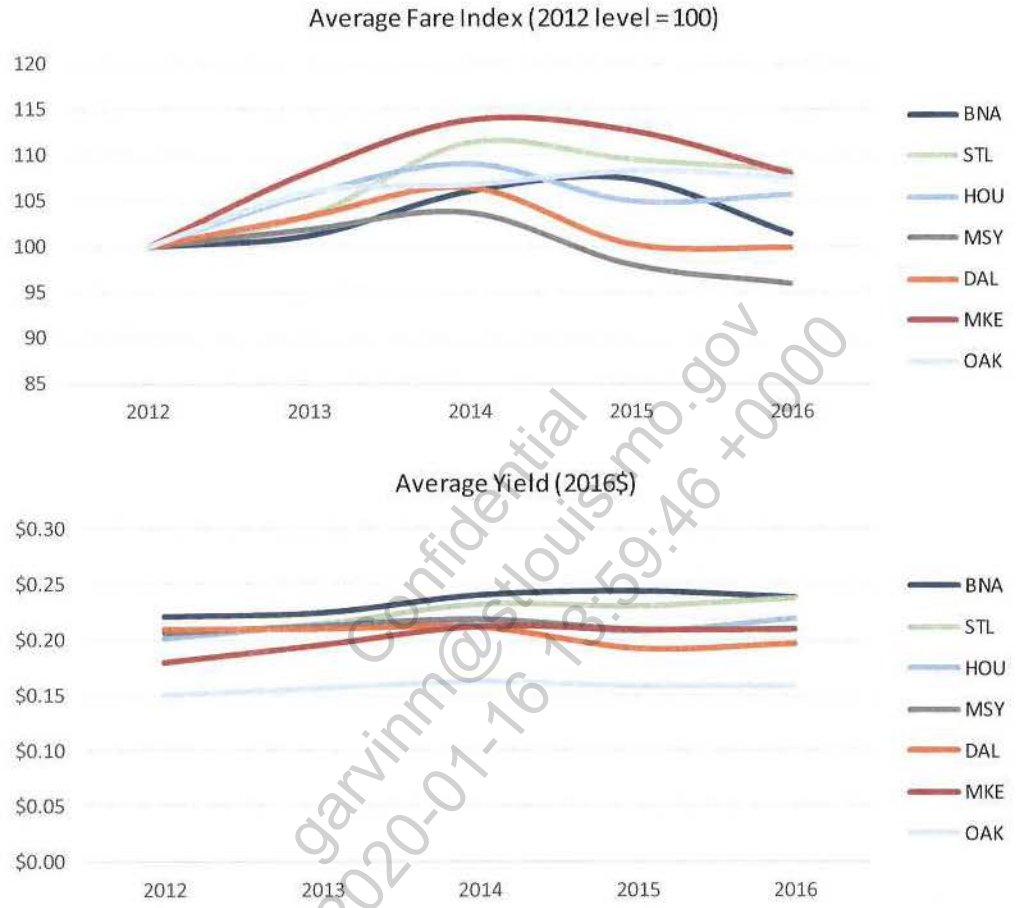


Source: OAG Schedules Analyzer.

3.2.9 Trends in Fares and Yields at STL and Select Medium Hub Airports

Passengers consider airfares when choosing airlines and airports (when they have access to more than one airport). Airlines consider yields (revenue per passenger mile) when choosing which airports to serve. On average, fares and yields have increased faster at STL than at most other airports from CY2012 to CY2016. In CY2016, STL had the highest average fare and average yield (tied with BNA) among medium hub airports in Southwest's focus cities (Figure 3-10).

Figure 3-10: Average Fare and Average Yield at STL and Select Medium Hub Airports by Calendar Year



Average fares are in constant 2016$ (before indexing).
Fares below $50 are dropped from the sample to exclude frequent flier, nonrevenue and other discounted fare tickets.
Source: U.S. Department of Transportation 10%-sample airline ticket survey, accessed through Database Products, Inc.

3.2.10 Commercial Aircraft Landings and Landed Weight

Table 3-4 shows aircraft landings (departures) at STL by airline over the past five fiscal years. Scheduled passenger aircraft landings, which account for nearly all commercial aircraft operations at STL, show growth trends similar to enplanement growth trends. In the past two years, scheduled passenger aircraft landings increased with enplanements, but at slower pace, because improvements in boarding load factors and increases in seats on each flight allowed airlines to accommodate more passengers on each flight.

Charter and all-cargo aircraft account for the remainder of commercial aircraft operations. Charter landings do not show a consistent pattern, and all-cargo aircraft landings have increased steadily since FY2013.

Table 3-4: Aircraft Landings at STL by Airline by Fiscal Year

	Landings					Share				
	Fiscal Year					Fiscal Year				
Airline	**2012**	**2013**	**2014**	**2015**	**2016**	**2012**	**2013**	**2014**	**2015**	**2016**
American & affiliates	10,446	9,534	9,387	10,714	11,165	12.1%	11.0%	11.4%	12.9%	13.2%
Southwest & AirTran	30,990	32,541	31,389	30,669	31,474	35.8%	37.7%	38.1%	36.8%	37.2%
Delta & affiliates	12,362	10,988	9,807	9,219	9,161	14.3%	12.7%	11.9%	11.1%	10.8%
United & affiliates	11,821	12,008	11,475	11,331	10,701	13.7%	13.9%	13.9%	13.6%	12.6%
Other	19,293	19,950	18,807	19,837	20,372	22.3%	23.1%	22.9%	23.8%	24.1%
Subtotal	**84,912**	**85,021**	**80,865**	**81,770**	**82,873**	98.1%	98.4%	98.3%	98.2%	97.9%
Charter	293	77	82	40	209	0.3%	0.1%	0.1%	0.0%	0.2%
Cargo	1,369	1,303	1,350	1,475	1,527	1.6%	1.5%	1.6%	1.8%	1.8%
Total	**86,574**	**86,401**	**82,297**	**83,285**	**84,609**					
Annual Change		-0.2%	-4.7%	1.2%	1.6%					

Source: Airport records.

Table 3-5 shows aircraft landed weight by carrier at STL. Landed weight decreased from FY2012 through FY2015, before growing by 2.4 percent in FY2016.

Table 3-5: Aircraft Landed Weight at STL by Airline by Fiscal Year

	Landed Weight (Thousand Pounds)					Share				
	Fiscal Year					Fiscal Year				
Airline	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
American & affiliates	1,399	1,238	1,096	1,079	1,160	16.9%	15.0%	14.0%	13.9%	14.6%
Southwest & AirTran	3,746	3,990	3,871	3,816	3,997	45.3%	48.3%	49.4%	49.0%	50.1%
Delta & affiliates	663	608	481	485	483	8.0%	7.4%	6.1%	6.2%	6.1%
United & affiliates	669	637	606	608	605	8.1%	7.7%	7.7%	7.8%	7.6%
Other	1,379	1,339	1,358	1,420	1,348	16.7%	16.2%	17.3%	18.2%	16.9%
Subtotal	**7,856**	**7,811**	**7,413**	**7,409**	**7,594**	95.0%	94.6%	94.5%	95.1%	95.3%
Charter	43	43	26	11	17	0.5%	0.5%	0.3%	0.1%	0.2%
Cargo	374	401	405	370	362	4.5%	4.9%	5.2%	4.7%	4.5%
Total	**8,273**	**8,255**	**7,844**	**7,789**	**7,972**					
Annual Change		-0.2%	-5.0%	-0.7%	2.4%					

Source: Airport records.

3.3 Forecast Commercial Aviation Activity

Forecasts are presented for three key measures of commercial aviation activity—enplanements, aircraft landings, and landed weight—for the period FYs 2017-2022. Forecast enplanement levels, in turn, determine the number of aircraft operations and corresponding landed weight, along with assumptions regarding trends in boarding load factors.

3.3.1 Hybrid Regression Forecast

For the first year, FY2017, the forecast reflects actual performance through March 2017. For the remainder of the year, forecast enplanements are supply-driven, based on published airline flight schedules. Airlines plan their schedules based on passenger bookings, and the schedules therefore reflect near-term market demand.

Beyond the first year, forecasts are demand-driven. Economic growth and other market demand factors drive growth in enplanements. Forecast enplanements determine aircraft operations and landed weight. Multivariate time series regression analysis links enplanement growth to trends in market demand drivers. This econometric modeling technique combines elements of multiple regression and time series regression methods. This technique provides the ability to incorporate many explanatory variables, quantify the contribution of each explanatory variable to aviation activity trends, and account for time trends and any serial correlation in time series data. The model estimation process using the least squares method is designed to minimize forecast errors.

The regression model specification for STL's passenger traffic is based on the underlying theory of consumer demand and the dynamics of traffic growth at the Airport. The regression coefficients that measure contributions of market demand drivers (explanatory variables) to STL enplanement growth trends are estimated using historical annual data from FY1991, controlling for the effects of any structural changes in air service and extra-ordinary events like the 2001 terrorist attacks. The estimated regression coefficients are then used to generate forecasts of STL enplanements based on projected trends of the model explanatory variables.

For the regression model, O&D enplanements serve as the dependent variable, as they now account for more than 80 percent of traffic. Using O&D enplanements also effectively controls for the sharp decrease in connecting traffic resulting from the closing of American Airlines' hub, allowing for a more precise measurement of the contributions of demand drivers to enplanement growth in St. Louis.

The key explanatory variables (independent variables) in the regression model of passenger traffic are as follows:

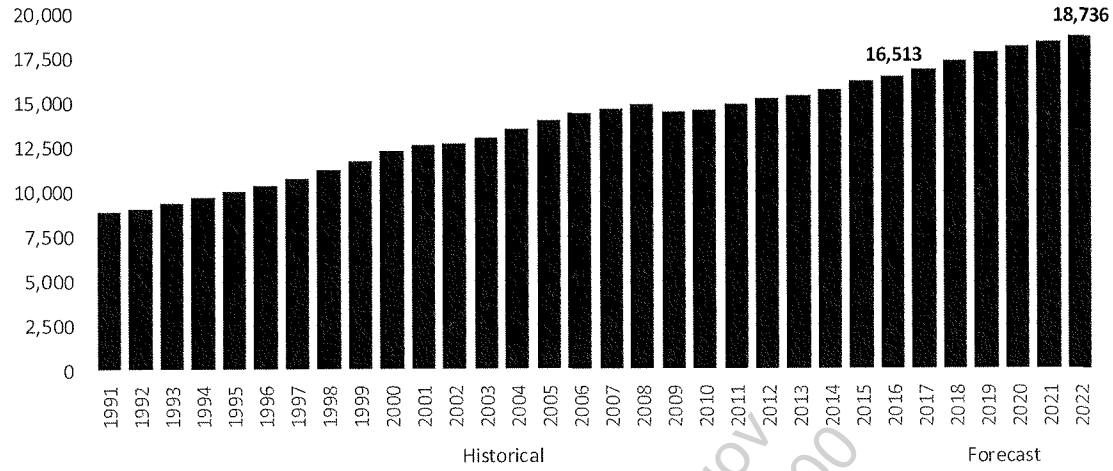
- Economic trends: U.S. real gross domestic product (GDP) is used to capture national economic trends. The regression coefficient estimate for this variable confirms its expected effects on STL enplanement trends. Holding all other factors constant, economic growth promotes growth in enplanements. Conversely, economic downturns decrease enplanements.
- Airline yield trends: Consumer demand is inversely related to price. Demand increases when price decreases and decreases when price increases, holding all other things equal. The regression model uses the average real passenger yield at STL as the indicator for the price of air travel. Passenger yield, which is the average revenue per passenger mile, is a better price indicator than the average fare, because it controls for trip distance.

The regression model also includes an explanatory variable to account for a number of events that precipitated certain structural changes in the entire industry and in the Airport market. These include: (1) the temporary transfer of certain flights by TWA from St. Louis to Atlanta in 1993; (2) the terrorist attacks on the U.S. aviation system on September 11, 2001; and (3) American Airlines' service cuts beginning in November 2003 that culminated in the closing of the airline's connecting hub at STL.

Figure 3-11 and Figure 3-12 exhibit the historical and six-year projections of key explanatory variables (demand drivers) used in the regression model.

- National economic trends: Since the end of the Great Recession, improving economic conditions in the U.S. are captured by the steady increase in the national GDP. Real GDP, which controls for inflation, grew at an average rate of 1.8 percent between FYs 2010 and 2016, reaching pre-recession levels in FY2012. According to Moody's Analytics, real GDP will continue to grow at an annual average rate of 2.2 percent through FY2023. The long-term forecast does not anticipate any deep downturns in the national economy.

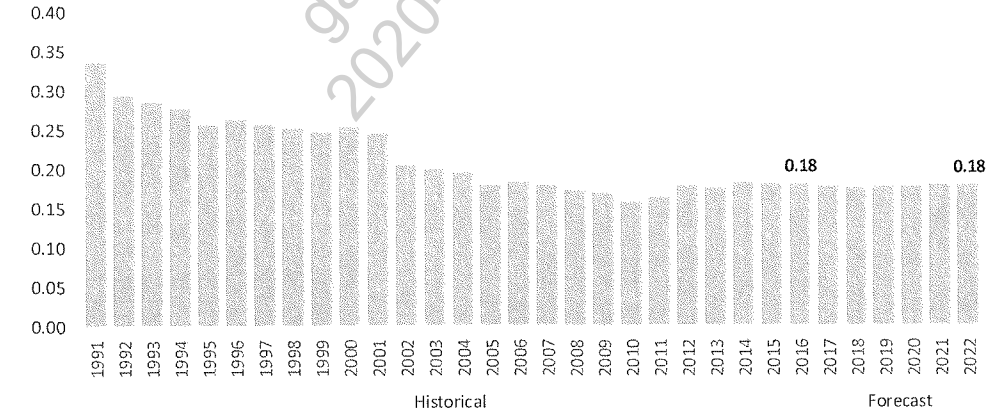
Figure 3-11: Real Gross Domestic Product (Billion Chained 2009$) by Fiscal Year – United States



Sources: U.S. Bureau of Economic Analysis and Moody's Analytics.

- Airline yield trends: The average real passenger yield at STL was on a long-term decreasing trend through FY2010. The declines particularly coincide with the reduction of American's hub services at the Airport in the early 2000's. After increasing to around 18 cents per mile in FY2012, airline yields appear to have levelled off. The FAA's most recent forecasts for mainline passenger yields do not anticipate significant changes over the forecast period (see Figure 3-12).

Figure 3-12: STL Real Fared Yield (2009$) by Fiscal Year



The fare data exclude frequent flier, nonrevenue and other discounted fare tickets.
Source: U.S. Department of Transportation 10%-sample airline ticket survey, accessed through Database Products, Inc.

Figure 3-13 shows the annual growth trends in real national GDP and in real passenger yield at STL. These two explanatory variables explain the variation in historical enplanement trends at STL, and drive the forecast trends in the Airport's enplanements beyond 2017.

Figure 3-13: Changes in Key Explanatory Variables by Fiscal Year

Sources: Database Products, Inc. and Federal Aviation Administration for STL real passenger yield; U.S. Bureau of Economic Analysis and Moody's Analytics for real GDP.

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.

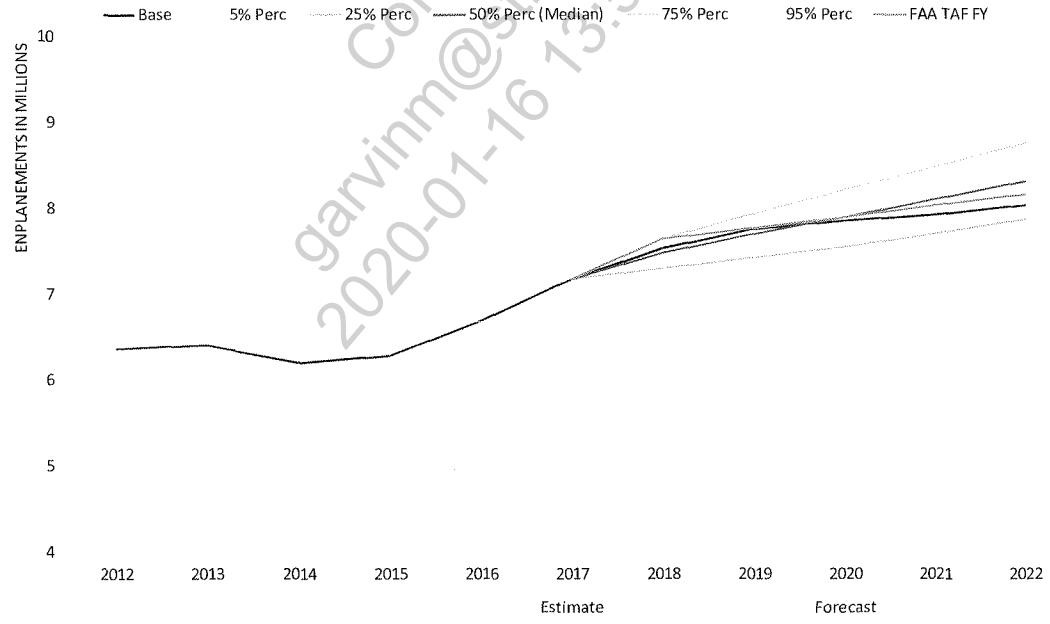
The base forecast enplanements are lower than FAA's TAF through FY2022, but they get closer to the TAF in later years. The base forecast enplanements for FY2022 are only 1.6 percent lower than the TAF. According to the TAF, annual enplanements will grow at an average rate of 2.6 percent, reaching 8.1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

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

	Actual	Forecast						CAGR
Activity	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**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

	Actual		Forecast					CAGR
Activity	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**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

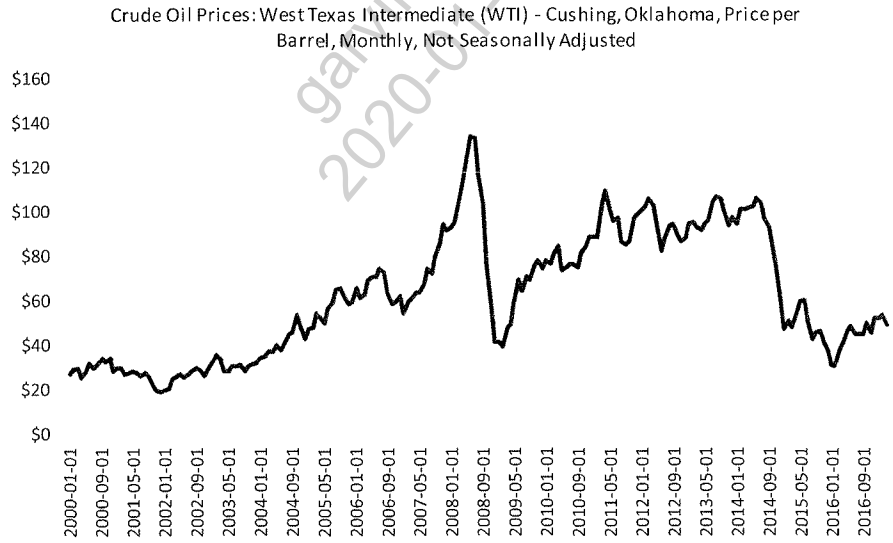
within the country and abroad present economic risks. The forecasts are based on specific assumptions about future economic growth. If the regional and national economy were to grow at a slower pace than projected, or experience another recession, the Airport's air traffic could fall short of forecasts.

3.4.2 Trends in Oil Prices and Jet Fuel Prices

Oil prices affect one of the largest components of airline costs—jet fuel. The sharp increase in oil prices in the past decade, shown in Figure 3-15, Figure 3-15: Crude Oil Pricesresulted in huge financial losses in the U.S. airline industry, pushing many airlines into bankruptcy and prompting significant changes in airlines' operations and business practices.

World oil prices have been declining since mid-2014 (Figure 3-15). From a June 2014 peak near $106 per barrel, West Texas Intermediate (WTI) spot oil prices fell to their lowest level of around $30 per barrel in February 2016, before climbing to just under $47 in October 2016, as shown in Figure 3-15. Oil prices have recovered to over $52 as of January 2017, and the U.S. Energy Information Administration projects oil prices to average $52 per barrel this year. The U.S. Energy Information Administration does not anticipate oil prices to rise in 2017; however, upward price pressures are expected to emerge in 2018 as inventories decrease to match demand more closely. Ultimately, there is considerable ambiguity surrounding oil prices for the next few years. Geopolitical events, Organization of the Petroleum Exporting Countries (OPEC) production cuts, whether individual OPEC members adhere to those production cuts, and continuing technological improvements in U.S. oil production can push oil prices in either direction.

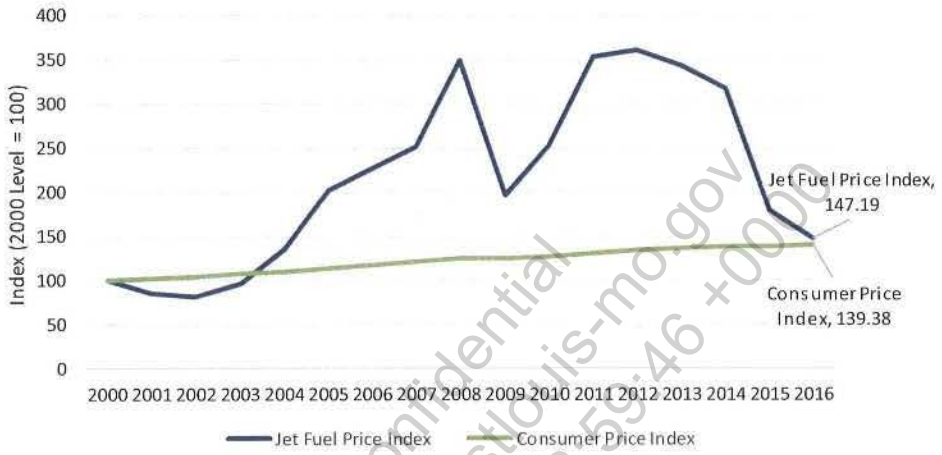
Figure 3-15: Crude Oil Prices by Calendar Year



Sources: U.S. Energy Information Administration and Unison Consulting, Inc.

Jet fuel prices increased—reaching their highest levels in 2012—and decreased along with oil prices. Despite recent decreases, the overall increase in jet fuel prices (nearly 47 percent) from 2000 to 2016 was still greater than the general price increase (39 percent) over the same period (Figure 3-16). The sharp decrease in jet fuel prices since 2014 has produced windfall profits for airlines.

Figure 3-16: U.S. Jet Fuel and Consumer Price Indexes by Calendar Year



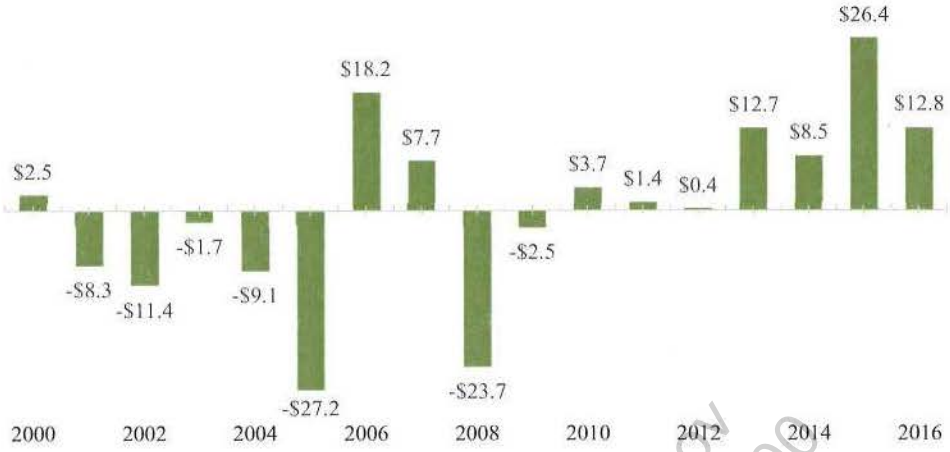
Sources: U.S. Bureau of Transportation Statistics, U.S. Bureau of Labor Statistics, and Unison Consulting, Inc.

3.4.3 Financial Health of the U.S. Airline Industry

Airports benefit from stable and growing air service when airlines are profitable. They risk losing service when airlines suffer financial hardship. The business of airlines is highly cyclical, intensely competitive, and capital intensive. Over the years, the U.S. airline industry has struggled to sustain profits. Today, the U.S. airline industry is finally reaping the benefits of business restructuring, capacity restraint, cost-cutting measures, and productivity improvements, helped by the recent decline in oil prices.

As shown in Figure 3-17, from 2000 to 2016, the U.S. airline industry incurred losses amounting to $83.9 billion in seven years, and made profits amounting to $94.3 billion in the other ten years. The period since 2010 has been one of the industry's most profitable, with industry profits averaging $9.4 billion each year. Airports have benefitted by seeing increases in airline service. Since 2015, STL has enjoyed annual increases of at least 9 percent in scheduled airline seats.

Figure 3-17: Annual Net Profit of U.S. Passenger and Cargo Airlines by Calendar Year



Sources: U.S. Bureau of Transportation Statistics and Unison Consulting, Inc.

3.4.4 Performance of the Airport's Largest Carrier

The Airport's largest carrier is Southwest Airlines, which accounted for 55 percent of the Airport's 2016 enplanements. Southwest's operating performance and business decisions have implications for the stability and growth of the Airport's traffic.

Southwest operates a network of 101 destinations in the United States and eight other countries with more than 3,900 departures a day during peak travel season. Based on the U.S. DOT's most recent airline traffic data, Southwest is the nation's largest carrier in terms of O&D passengers boarded. Southwest also holds the record of being the only U.S. airline that has been consistently profitable. In 2016, Southwest reported its 44th profitable year in less than 46 years of service. In 2016, Southwest earned a net income of $2.4 billion, a 10 percent increase from its net income in 2015, and more than double its net income in 2014.[17]

In the last 10 years, Southwest experienced a number of milestones: (1) the repeal of the Wright amendment, lifting restrictions in air service at Southwest's home base Dallas Love Field beginning in October 2006; (2) the acquisition of AirTran Airways, Inc., in May 2011; and (3) access to gates at key U.S. airports (Ronald Reagan National, La Guardia, and Boston Logan) given up by American Airlines and US Airways a condition of the Department of Justice approval of their merger in December 2013. These milestones allowed Southwest to expand its domestic network and also begin international service. In 2013, Southwest broke ground on its five-gate, international facility at Houston's William P. Hobby Airport. This international facility was completed in late 2015 to serve destinations in the Caribbean, Mexico, Central America, and the northern cities of South America.

[17] Southwest Airlines Investor Relations at http://www.southwestairlinesinvestorrelations.com.

To increase and introduce service at those other airports, Southwest had to cut capacity elsewhere, working within the constraints of its fleet and crew. However, unlike some airports that suffered cuts in Southwest seats between 2009-2013, the carrier's traffic at STL has increased every year over the past decade. As Southwest increases its fleet and crew size, it is also scheduling more seats at STL through the first quarter of FY2018.[18]

3.4.5 Airline Mergers

Airline mergers affect service and traffic at airports, when the merging airlines consolidate facilities, optimize route networks, and route connecting traffic through other hubs. The impact on affected airports is often immediate. The extent of the impact depends upon a number of considerations, including whether the merging airlines have a large market share at the Airport, whether they carry significant connecting traffic through the Airport, and whether they serve the same markets from the Airport.

Recent mergers include United and Continental in 2010, Southwest and AirTran in 2011, American and US Airways in 2013, and Alaska and Virgin America in 2016. After the United-Continental merger, the combined enplanements of the two airlines at the Airport reversed a six-year decline and grew annually through 2012. Following the American-US Airways merger, their combined enplanements at the Airport continued the long-term decline observed for American. The increase in Southwest's enplanements at the Airport following Southwest's acquisition of AirTran could not be clearly attributed to the merger, because of other developments affecting Southwest's network decisions at the time. The effects of the Alaska-Virgin America merger have yet to be developed.

3.4.6 Aviation Security, Health and Safety Concerns

Concerns about security, health, and safety influence consumer travel behavior. Even with tightened security measures implemented by the Department of Homeland Security, terrorism remains a serious threat to the aviation industry. Additionally, the stringent screening process and long waits at security screening lines discourage air travel particularly to destinations that can be reached by ground transportation within a reasonable amount of time. Health and safety concerns can also cause temporary dips in traffic in affected routes.

3.4.7 Structural Changes in Travel Demand

Consumers alter their travel patterns in response to changes at airports, changes in airline business practices, and changes in technology. For example, the stringent airport security screening and long wait times at the airports after the 2001 terrorist attacks decreased the demand for air travel for short-haul trips. Intense fare competition and the ease of comparison shopping allowed by the internet have made consumers more price-sensitive. Moreover, the widespread use of tele- and videoconferencing has decreased the need for business travel.

[18] Based on OAG airline schedules data.

3.5 Summary

Passenger enplanements at STL have generally tracked with the national business cycle, growing during economic expansions and declining during recessions. During the longest U.S. economic expansion of the 1990s, STL's enplanements grew steadily and reached 15.3 million in CY1999. The Airport's passenger traffic then plummeted through CY2004, as a consequence of a short economic recession and the September 11, 2001 terrorist attacks, which led to American's retirement of its STL hub operations.

The Airport then enjoyed three consecutive years of growth until CY2007, reaching 7.7 million enplanements that year. Demand weakened and airlines reduced capacity during the Great Recession and through the early years of recovery, causing STL's traffic to decrease to 6.2 million enplanements by CY2010. As the economy continued to grow, and as airlines added more capacity, annual enplanements at the Airport recovered slightly and levelled of around 6.3 million passengers through CY2015. STL's passenger traffic grew nearly 10 percent in CY2016, and scheduled seats for the Airport seem to indicate enplanements may reach their pre-recession levels in the short run.

To develop forecasts of commercial aviation activity, a hybrid modeling approach was taken. This approach provides a systematic framework for incorporating both scheduled air service supply and market demand drivers. The near-term forecast is capacity-driven, as it uses published airline schedules to project airport activity. The long-term forecast is demand-driven, where a multivariate time series regression model is developed to quantify the relationship between enplanement trends and market demand drivers: national economic growth trends, changes in the price of air travel, and structural changes at the airport and in the industry. Recognizing uncertainty in the key drivers of the enplanement regression model, risk analysis is performed using a sampling method known as Monte Carlo simulation.

A base forecast is provided, where the forecast enplanements result from the regression model specification and assumptions. Other potential enplanement outcomes generated by the Monte Carlo simulation are compared with forecast results from the regression model and with projections provided by the FAA's Terminal Area Forecast (TAF).

Under the base forecast, enplanements are projected to grow by an annual average rate of 3.1 percent, from 6.8 million in FY2017 to 8.0 million in FY2022. The FAA's TAF estimates higher enplanements than the base forecast through FY2022, showing that annual enplanements will grow at an annual average rate of 2.6 percent and reach 8.1 million in FY2022. Departures (landings) are projected to increase by 7 percent from current levels and level off around 91,000 per year in FY2020. Similar to enplanement growth projections, landed weight is expected to increase by an average annual rate of 3.1 percent between FYs 2016 and 2022.

Section 4 Financial Analysis

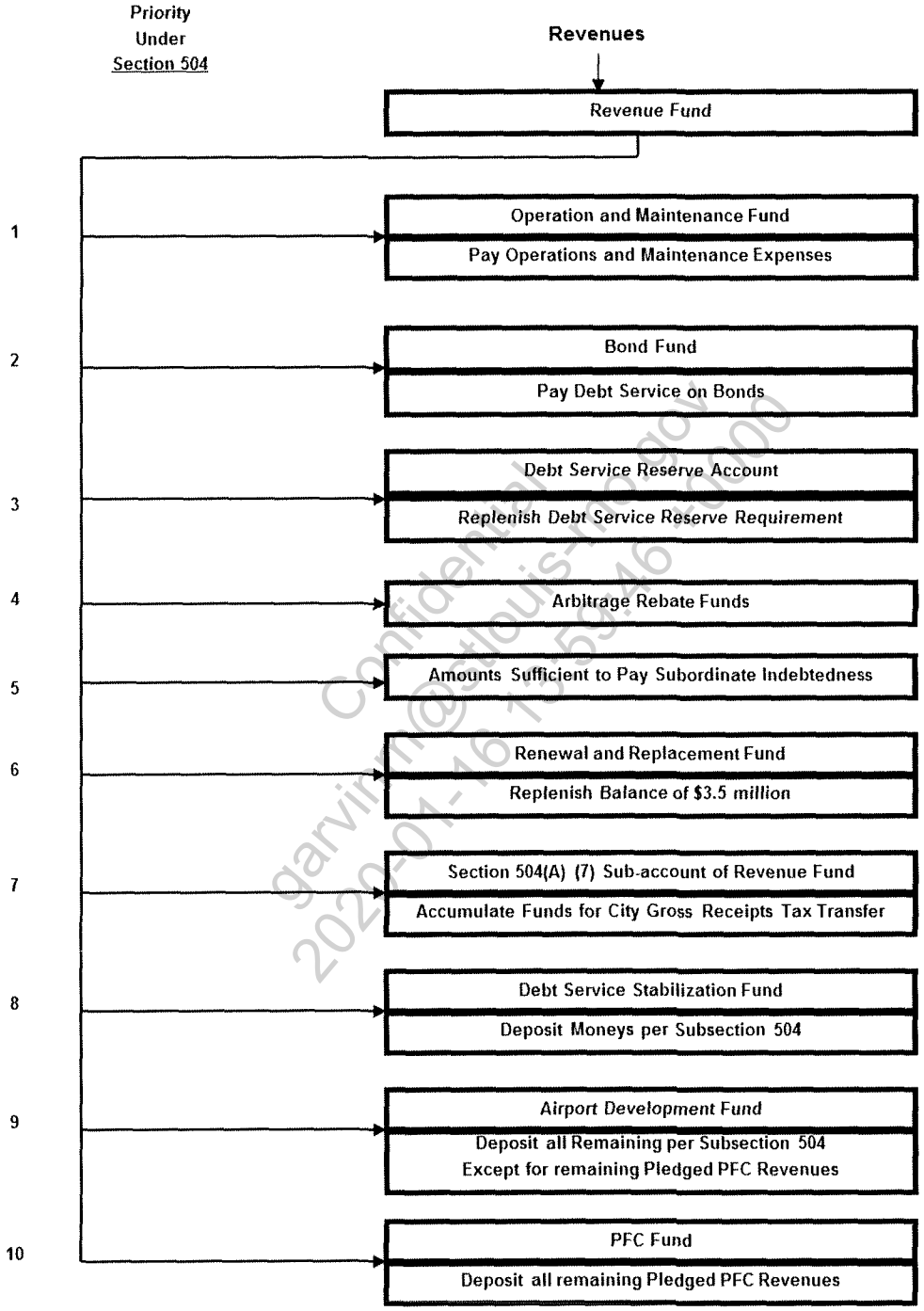
This section presents a discussion of the framework for the financial operation of the Airport including: key provisions of the Indenture and the AUA, review of the Airport's recent historical financial performance, and projection of the ability to generate sufficient Revenues during the forecast period FY 2018 -2022 to (1) pay Operation and Maintenance (O&M) Expenses, (2) meet all of the funding requirements of the Indenture and (3) satisfy the relevant provisions of the Additional Bonds Test. This section also discusses the information and assumptions underlying the financial projections.

4.1 Framework for Airport System Financial Operations

4.1.1 Indenture

The Series 2017 Bonds are being issued pursuant to the Indenture and are limited obligations of the City payable solely from Airport Revenues (as defined in the Indenture). The Indenture establishes priorities for the application of Airport Revenues to various funds and accounts as shown on Figure 4-1. Airport Revenues are to first be deposited into the Revenue Fund, which then flows to the O&M Fund to pay those expenses. The remaining Airport Revenues are available for deposit, in the following order of priority: in the Bond Fund (for payment of Debt Service); in the Debt Service Reserve Account (to restore any deficiency and maintain a balance equal to the Debt Service Reserve Requirement); in the Arbitrage Rebate Fund (to fund Rebate Amount); amounts sufficient to pay Subordinate Indebtedness in accordance with the authorizing and implementing documents of such Subordinate Indebtedness; in the Renewal and Replacement Fund (to maintain a balance of $3.5 million); in the City's General Fund (to pay the 5% gross receipts tax required under Section 504.B); to the Debt Service Stabilization Fund pursuant to the calculations set forth in subsection 504 (A); and the remainder to the ADF, except for remaining Pledged PFC Revenues that are deposited in the PFC Account.

Figure 4-1: Flow of Funds Airport Use and Lease Agreement



4.1.2 Airport Use and Lease Agreement

The City and the airlines executed a new AUA during early 2016 for a five-year term beginning July 1, 2016 through June 30, 2021. The new AUA preserved the underlying rate methodology (Hybrid Compensatory) and rate-making procedures of the previous AUA, which expired June 30, 2016. The AUA sets forth the procedures for calculating landing fees and terminal building space rentals, as well as certain other fees and charges that are briefly summarized below.

Landing Fees. Under the terms of the AUA under Section 606, the Signatory Airlines are charged landing fees calculated based on the total annual costs of the Airfield, which are comprised of the items listed below:

- direct and indirect O&M Expenses allocable to the Airfield Cost Center;
- amortization of Capital Improvements made in, or allocable to, the Airfield Cost Center and put into service before July 1, 2011;
- annual Debt Service associated with Capital Improvements made in, or allocable to, the Airfield Cost Center, and put into service on or after July 1, 2016 in accordance with Section 702;
- annual Debt Service associated with Capital Improvements made in, or allocated to, the Airfield Cost Center, put into service on or after July 1, 2011, and approved by a Majority-In-Interest pursuant to Subsection 703(B);
- annual Depreciation Charges or annual Debt Service, as the case may be, related to Capital Improvements undertaken pursuant to Subsection 705(A)(i)-(vii), and made in, or allocated to, the Airfield Cost Center, if any;
- any replenishment or rebate of the Debt Service Reserve Account required by the Indenture and allocated to the Airfield Cost Center based on the Allocation of Amortization and Debt Service;
- any replenishment of the Renewal and Replacement Fund required by the Indenture as a result of an expenditure made in, or allocable to, the Airfield Cost Center; and
- the share of the Debt Service Stabilization Fund Contribution allocated to the Airfield Cost Center.

The items listed below shall then be subtracted from the total airfield costs above to establish the Initial Airfield Requirement:

- non-signatory Airline landing fees;
- general aviation landing fees;
- military use fees;
- fuel flowage fees;
- remote parking fees;

- rent paid by to the City by the airline consortium leasing the fuel farm; and
- Rate Mitigation Program credits available for that Fiscal Year, as allocated to the Airfield Cost Center.

The landing fee rate will then be calculated by dividing the sum of the Initial Airfield Requirement and the Additional Airline Requirement (defined below), allocable to the Airfield Cost Center by the aggregate landed weight of all signatory airlines and their affiliates for the particular fiscal year.

The City will establish annually a landing fee rate applicable to non-signatory airlines that have signed an airline operating agreement equal to 125% of the landing fee rate calculated in accordance with the AUA, excluding designated affiliates

Terminal Rental Rate. Under Section 605 of the AUA, the terminal rate is calculated based on total annual costs attributable to each Terminal Building, which are comprised of the items listed below in order to establish the Initial Terminal Requirement:

- direct and indirect Operating and Maintenance Expenses allocable to each of the Terminal Cost Centers;
- 50% of the Terminal Roadways Cost Center costs allocated to each Terminal Cost Center based on the percentage that results from dividing the Useable Space in each of the respective Terminal Buildings by the aggregate Useable Space in both Terminal Buildings;
- Amortization of Capital Improvements made in, or allocable to, each Terminal Cost Center and put into service before July 1, 2011;
- annual Debt Service associated with Capital Improvements made in, or allocable to, each of the Terminal Cost Centers, and put into service on or after July 1, 2016 in accordance with Section 702;
- annual Debt Service associated with Capital Improvements made in, or allocable to, each of the Terminal Cost Centers, put into service on or after July 1, 2011, and approved by a Majority-In-Interest in accordance with Subsection 703(B);
- annual Depreciation Charges or annual Debt Service, as the case may be, related to Capital Improvements undertaken pursuant to Subsection 705(A)(i)-(vii), and made in, or allocated to, each of the Terminal Cost Centers, if any;
- any replenishment or rebate of the Debt Service Reserve Account required by the Indenture and allocated between each of the Terminal Cost Centers based on the Allocation of Amortization and Debt Service;
- any replenishment of the Renewal and Replacement Fund required by the Indenture as a result of an expenditure made in, or allocable to, each of the Terminal Cost Centers; and
- the share of the Debt Service Stabilization Fund Contribution allocated to each Terminal Cost Center.

The net costs attributable to each Terminal cost center shall then be calculated by subtracting the following amounts from the total cost attributable to each:

- the amount of aggregate rent payable for Apron-Level Unenclosed Space in accordance with Subsection 502(D) by all Signatory Airlines at each Terminal Building;
- non-signatory Terminal Rents from each Terminal Building; and
- Rate Mitigation Program credits available for that fiscal year, as allocated to each Terminal Cost Center.

The Initial Terminal Rental Rate applicable to each of the Terminal Buildings will then be calculated by dividing the net costs attributable to each Cost Center by the Usable Space in each of the respective Terminal Buildings. The corresponding Initial Terminal Requirement will be calculated by multiplying the Initial Terminal Rental Rate for each Terminal Building by the Rented Space in each of the respective Terminal Buildings.

The Additional Terminal Rental Rate applicable to each of the Terminal Buildings will be calculated by dividing the Additional Airline Requirement allocated to each Terminal Cost Center by the Rented Space in each of the respective Terminal Buildings. The Total Terminal Rental Rate applicable to each of the Terminal Buildings will be the sum of the Initial Terminal Rental Rate and the Additional Terminal Rental Rate for each.

The City will establish annually a terminal rental rate at each Terminal Building and applicable to non-signatory Airlines equal to the respective Total Terminal Rental Rates calculated in accordance with the AUA.

The City will establish annually fair and reasonable charges for the use of the International Facilities.

Additional Airline Requirement. Under the terms of the AUA, the Airport is allowed to add an Additional Requirement, when applicable, to the respective signatory airline rates (airfield and terminal) in order to meet all requirements in a particular fiscal year. The Additional Airline Requirement is calculated by taking the difference between: (1) the sum of the annual Operating and Maintenance Expenses, annual Debt Service, the annual amount of the Debt Service Stabilization Fund Contribution, and the annual Airport Development Fund Deposit; and subtracting (2) the sum of the Initial Requirement, the annual Non-Airline Revenues, Other Airline Revenues, the annual Interest Income, the annual Pledged PFC Revenues, and the annual amount of Rate Mitigation Program credits.

The Additional Airline Requirement may be a positive or a negative number, and will be allocated as follows: for fiscal year 2017, 50% to the Airfield Cost Center, and the remainder to each Terminal Cost Center, and thereafter 100% to the Terminal Cost Centers. The Terminal Cost Centers allocations are proportionate to rented space.

Rate Mitigation Program. The Rate Mitigation program is structured to provide a continuing incentive for growth in air service at the Airport. Subject to the availability of funds and annual appropriations, the City will make credits from the Debt Service Stabilization Fund in an amount not to exceed $13.7 million each fiscal year for the purpose of mitigating the amount of the then

current Rents, Fees, and Charges; provided, however, that the Debt Service Stabilization Fund shall be replenished annually by an amount equal to the amount appropriated for use in the Rate Mitigation Program during such Fiscal Year. Rate Mitigation Program credits shall be allocated among each of the Airline Cost Centers based on the Allocation of Amortization and Debt Service.

Passenger Loading Bridge Charge. Under Section 604 of the AUA, new cost centers were established (Terminal 1 Loading Bridges and Terminal 2 Loading Bridges) to account for all operating and capital costs associated with the loading bridges owned by the City. The Loading Bridge Charge to recover all the associated costs is computed by first adding together the following costs:

- Direct and indirect Operating and Maintenance Expenses, if any, allocable to the Passenger Loading Bridges Cost Center; and
- The Depreciation Charge or Debt Service, as the case may be, of each new passenger loading bridge acquired by the City on or after July 1, 2011.

The total costs allocable to the Passenger Loading Bridges Cost Center is then divided by the total number of passenger loading bridges acquired by the City on or after July 1, 2011. The monthly Passenger Loading Bridge Charge shall be 1/12 of the annual Passenger Loading Bridge Charge.

Unless otherwise provided for in one or more separate agreements, airlines will pay the City $2,500 each month for use of each assigned City-owned passenger loading bridge that was acquired prior to July 1, 2011.

4.1.3 Airport Accounting

The City operates the Airport as an Enterprise Fund in accordance with generally accepted accounting principles (GAAP) applicable to governmental entities. Financial statements for the Airport are prepared each fiscal year based on GAAP and audited by independent certified public accountants. The Airport also maintains internal financial statements, which contain more detailed itemization of revenues and expenses. The audited financial statements of the Airport for fiscal year ended June 30, 2016 are included in Appendix B of the Official Statement.

4.1.4 Airport Cost Accounting

Airport management has implemented a cost/revenue accounting system to facilitate the monitoring of revenue and O&M expenses and the calculation of Airport rates and charges. The cost/revenue centers include:

- Airfield
- Terminals (1 and 2)
- Passenger Loading Bridges
- Other Building and Areas
- Parking
- Terminal Roadways

4.2 Revenues

Under the Indenture, Revenues are comprised of GARB Revenues, Pledged PFC Revenues, and any other available moneys deposited in the Revenue Fund, including investment income. GARB Revenues include Signatory Airline fees, concession fees, other operating revenues, and interest income as further defined in the Indenture.

Table 4-1 provides a historical summary of audited actual revenues for FY 2012 – 2016. During this period total Revenues increased $8.3 million, which was primarily due to GARB Revenues that grew at an average annual rate of 0.7%, or $3.9million. The increase primarily resulted from total Concession Revenues increasing $8.3 million during the period offset by a decrease of $4.5 million in total Other-Operating Revenues. The change in GARB Revenues was attributed to increases in Public Parking and Terminal Concessions. The Terminal Concessions and parking revenues are discussed in more detail later in this section. The other component of the increase in total Revenues was Pledged PFC Revenues increase from $23.9 million in FY 2012 to $28.3 million in FY 2016. This increase was due to scheduled changes in the portion of the annual debt service obligations paid with PFC revenues.

Table 4-2 presents the projection of Revenues for the period FY 2017 through FY 2022. Total Airport Revenues are projected to increase from $180.8 million in FY 2016 to $200.3 million in FY 2022 or at an average annual growth rate of 1.7%. The components of the major revenue accounts and the underlying assumptions for the financial projections are discussed below.

4.2.1 Signatory Airline Rates and Charges

Signatory Airline fees consist of landing fees and terminal building space rentals received from the Signatory Airlines in accordance with the rates and charges provisions outlined in the AUA.

As shown in Table 4-1, Signatory Airline fees fluctuated during the period FY 2012-2016, resulting in an average annual decline of -0.1%. In FY 2013, airfield landing fees increased by 10.3% primarily due to an increase in airfield expenses comprised of: (1) a $4.4 million increase in the FY 2013 debt service obligation; and (2) an increase in O&M expenses allocated to the airfield, mainly attributed to increase in Deicer fluid costs (up $1.1 million) and Snow Removal services costs (up $1.2 million). Similarly, terminal rents increased 17.6% in FY 2013 primarily due to higher terminal expenses primarily due to $4.4 million increase in the debt service obligation. Beginning in FY 2015, both the airfield landing fees and terminal rents began to decrease by approximately 6.0% due to reduced debt service obligations from the Series 2015 refunding bond and the 1998 bonds becoming fully matured.

Table 4-1: Historical Revenues (in Thousands)

AIRPORT REVENUES	Avg. Annual Growth Rate FY '12-'16	For Fiscal Years Ended June 30 Historical [1] 2012	2013	2014	2015	2016
Signatory Airlines						
Airfield Landing Fees	-0.3%	$61,269	$67,574	$67,931	$64,019	$60,431
Terminal Rents	0.8%	$18,670	$21,964	$19,828	$20,998	$19,248
Total	-0.1%	$79,939	$89,538	$87,759	$85,017	$79,679
Concession Fees						
Terminal Concessions	9.0%	$8,028	$9,504	$11,572	$11,375	$11,326
Public Parking	6.8%	$16,940	$17,938	$18,885	$18,936	$22,043
Car Rentals	1.3%	$11,110	$11,311	$11,667	$11,985	$11,713
Space Rental	-4.0%	$1,539	$1,626	$1,534	$1,384	$1,309
In-Flight Catering	-2.5%	$325	$301	$287	$303	$294
Other	-19.3%	$687	$354	$293	$192	$292
Total	5.0%	$38,629	$41,034	$44,238	$44,175	$46,977
Other						
Non-Signatory Landing Fees	-5.8%	$2,008	$1,779	$1,778	$1,074	$1,584
Non-Signatory Airlines-Terminal	-26.7%	$256	$204	$186	$20	$74
Total	-7.5%	$2,265	$1,983	$1,964	$1,094	$1,658
Airline Revenue Mitigation [2]		$13,728	$13,728	$13,728	$13,728	$13,728
Cargo	-20.5%	$956	$730	$480	$344	$382
Hangars and Other Buildings	6.0%	$503	$572	$649	$658	$635
Tenant Improvement Surcharge	-29.7%	$1,519	$642	$389	$498	$371
Other Miscellaneous	-7.0%	$9,364	$6,314	$11,639	$8,463	$6,993
Total Other-Operating	-4.3%	$28,335	$23,969	$28,849	$24,785	$23,767
Total Operating Revenue	0.6%	$146,903	$154,541	$160,846	$153,976	$150,422
Interest Income [3]	5.2%	$1,696	$2,222	$2,089	$2,284	$2,080
Total GARB Revenues	0.7%	$148,599	$156,763	$162,935	$156,260	$152,502
Pledged PFC Revenue	4.4%	$23,863	$27,578	$27,578	$27,577	$28,320
Total Revenues	1.2%	$172,461	$184,341	$190,513	$183,837	$180,823

[1] Based on audited financial statements and Airport records.
[2] Reflects amounts scheduled to be transferred from the Debt Service Stabilization Fund per the Airline Use and Lease Agreement.
[3] Operating Interest income only.

The forecast of Signatory Airline revenues for the period FY 2017- 2022 in Table 4 is comprised of two revenue categories – Airfield Landing Fees and Terminal Rents. The projection for each are developed based on the rate methodology discussed earlier in this section. As a result, Signatory Airline Revenues are projected to decrease slightly from $79.7 million in FY 2016 to $76.6 million in FY 2022, or an average annual decline rate of -0.7%. During the forecast period, the average annual growth in Airfield Landing Fees averages 1.2%. In contrast, the Terminal Rents average annual decline rate during the period averages -8.8%, which is due to lower debt service obligations resulting from the Series 2017 Refunding Bonds and increase in non-airline revenues to the Terminals starting FY 2018 and for the remainder of the forecast period.

Table 4-2: Projected Revenues (in Thousands)

AIRPORT REVENUES	Avg. Annual Growth Rate 2016-2022	For Fiscal Years Ending June 30						
		Actual	Projected					
		2016 [1]	2017	2018	2019	2020	2021	2022
Signatory Airlines								
Airfield Landing Fees	1.2%	$60,431	$64,525	$59,042	$60,669	$61,597	$62,634	$65,089
Terminal Rents	-8.8%	19,248	19,736	11,300	10,631	10,519	11,387	11,095
Passenger Loading Bridges	n/a			208	334	439	442	409
Total	-0.7%	$79,679	$84,260	$70,550	$71,633	$72,555	$74,463	$76,594
Concession Fees								
Terminal Concessions	5.4%	$11,326	$12,528	$13,418	$14,090	$14,565	$15,016	$15,556
Public Parking	4.3%	22,043	23,302	24,819	25,632	27,959	28,089	28,424
Car Rentals	4.7%	11,713	12,374	13,294	13,981	14,461	14,915	15,462
Space Rental	2.2%	1,309	1,338	1,367	1,397	1,428	1,460	1,492
In-Flight Catering	2.2%	294	300	307	314	321	328	335
Other	1.7%	291	296	301	306	311	317	322
Total	4.6%	$46,977	$50,138	$53,506	$55,720	$59,045	$60,124	$61,590
Other								
Non-Signatory Landing Fees	2.1%	$1,584	$1,807	$1,685	$1,701	$1,722	$1,748	$1,792
Non-Signatory Airlines-Terminal	0.0%	74	74	74	74	74	74	74
Total	2.0%	$1,658	$1,881	$1,759	$1,775	$1,796	$1,822	$1,866
Airline Revenue Mitigation [2]	0.0%	13,728	13,728	13,728	13,729	13,729	13,729	13,729
Cargo	19.1%	$382	$391	$649	$775	$900	$995	$1,091
Hangars and Other Buildings	16.0%	635	639	1,387	1,471	1,475	1,479	1,549
Tenant Improvement Surcharge	0.0%	371	371	371	371	371	371	371
Terminal EDS Surcharges	n/a	0	2,800	2,864	2,930	2,998	3,067	3,137
Other Miscellaneous	7.5%	6,992	7,573	8,279	9,534	10,386	10,570	10,767
Total Other-Operating	5.4%	$23,767	$27,383	$29,038	$30,586	$31,655	$32,032	$32,511
Total Operating Revenue	2.1%	$150,422	$161,781	$153,094	$157,939	$163,256	$166,619	$170,696
Interest Income [3]	-7.4%	$2,080	$1,477	$1,396	$1,432	$1,260	$1,283	$1,314
Total GARB Revenues	2.0%	$152,503	$163,258	$154,490	$159,372	$164,515	$167,903	$172,009
Pledged PFC Revenue	0.0%	28,320	28,325	28,322	28,321	28,318	28,305	28,309
Total Revenues	1.7%	180,823	191,583	182,812	187,693	192,833	196,208	200,319

[1] Based on audited financial statements and Airport records.

[2] Reflects amounts scheduled to be transferred from the Debt Service Stabilization Fund per the Airline Use and Lease Agreement.

[3] Operating interest income only.

Table 4-3, summarizes future Signatory Airline landing fees and Terminal Rental rates for FY 2017-2022. The projected landing fee rates fluctuate from $7.68 in FY 2016 to $6.91 in FY 2022. The landing fee rate changes during FY 2016-2021 are a result of projected annual growth in signatory landed weights and reduced Airfield costs. The Terminal 1 rental rates are projected to decline from $56.23 in FY 2016 to $31.73 in FY 2022, and the Terminal 2 rental rates are projected to decline from $64.72 in FY 2016 to $39.01 in FY 2022. The Terminal 1 and 2 projected declines are primarily due to the lower debt service obligations and higher non-airline revenues offset by increases in the annual ADF contribution. The cost per enplanement (CPE) is projected to decrease from $11.99 in FY 2016 to $9.59 in FY 2022 due to lower debt service and higher non-airline revenues and continued efforts by Airport management to control costs.

Based on our knowledge of comparable airports and our experience in providing financial consulting services to a variety of airports, we believe the projected airline CPE is reasonable in comparison with other major airports that have recently completed or are currently implementing major capital improvement programs. In addition, Airport management continues to seek measures to ensure the CPE at the Airport remains as low as possible.

Table 4-3: Projected Signatory Landing Fee Rates and Terminal Rental Rates (in Thousands)

	For Fiscal Years Ending June 30						
	Actual	Projected					
	2016[1]	2017	2018	2019	2020	2021	2022
INITIAL AIRLINE REQUIREMENTS							
Landing Fees	$53,442	$57,750	$59,042	$60,669	$61,597	$62,634	$65,089
Terminal 1	8,555	8,998	8,823	9,004	9,247	9,399	9,613
Terminal 2	3,704	3,963	3,614	3,726	3,838	3,905	3,984
Passenger Loading Bridges		0	208	334	439	442	409
	$65,701	$70,712	$71,686	$73,732	$75,120	$76,379	$79,095
TOTAL SIGNATORY AIRLINE REQUIREMENTS							
Initial Requirement	$65,701	$70,712	$71,686	$73,732	$75,120	$76,379	$79,095
Additional Airline Requirement	13,978	13,549	(1,136)	(2,099)	(2,566)	(1,916)	(2,501)
	$79,679	$84,260	$70,550	$71,633	$72,555	$74,463	$76,594
Signatory airline enplaned passengers	6,648	7,127	7,492	7,709	7,802	7,874	7,987
Signatory Airline CPE post Mitigation	**$11.99**	**$11.82**	**$9.42**	**$9.29**	**$9.30**	**$9.46**	**$9.59**
SIGNATORY AIRLINE RATES (including Additional Requirement)							
Landing Fee Rate (per 1,000 pounds)	**$7.68**	**$7.60**	**$6.58**	**$6.60**	**$6.65**	**$6.72**	**$6.91**
Airlines' Terminal Building Rental Rates							
Terminal 1	**$56.23**	**$57.35**	**$32.64**	**$30.46**	**$30.04**	**$32.63**	**$31.73**
Terminal 2	**$64.72**	**$66.79**	**$38.81**	**$37.21**	**$37.11**	**$39.86**	**$39.01**

[1] Based on audited financial statements and Airport records.

4.2.2 Concession Fees

Concession fees include terminal concessions (food and beverage, news and gifts, and coin devices), public parking, car rentals, ground transportation, space rental, in-flight catering, as well as utility reimbursements and advertising.

During the FY 2012 - 2016 period, total concession fees increased approximately $8.4 million at an average annual rate of 5.0%. The increase was primarily due to growth in public parking and terminal concessions. Public parking increase was approximately $5.1 million, primarily due to an increase in parking durations and a parking rate increase initiated in April 2013. The remainder of the increase for concession fees resulted from terminal concessions generating higher revenues as a result of Hudson's increased minimum annual guarantee (MAG) by nearly $3 million by FY 2014. This growth was partially offset by a decline in in-flight catering and a reduction in other concession fees, which consists of declines in Fixed Base Operator (FBO) per passenger fees, and customs rentals.

Concession fees are projected to increase from $47.0 million in FY 2016 to $61.6 million by FY 2022, which represents an average annual growth rate of 4.6%. This growth is supported by the following assumptions:

- Projected parking increases in short-term and long-term parking daily rates in FY 2020.
- A projected increase in various food and beverage concession revenues due to higher O&D enplanements.
- An applied inflation/consumption factor rate of 2.2% during the forecast period.

The major concession categories are:

a) Terminal Concessions. The food and beverage component of terminal concessions is scheduled to add one new concept during the forecast period beginning in FY 2017, which is expected to increase food and beverage revenues by approximately $1.5 million over the forecast period. Merchandising concessions is the second largest category in terminal concessions and comprised an estimated 41.1% or $4.3 million of terminal concession revenues in FY 2016. The forecast period does not assume any new merchandising concepts are added. Both merchandising and food and beverage revenues are projected based on O&D passenger traffic activity during the forecast period and the annual inflationary rate. Terminal concessions are projected to increase from $11.3 million in FY 2016 to $15.6 in FY 2022, an average annual growth of 5.4%..

   Some of the terminal concession concepts are scheduled to expire during the forecast period, however the financial projection anticipates the current MAGs will remain in place.

b) Public Parking. ABM Parking Services (ABM) is the Airport's public parking management company. Under the current agreement, ABM is responsible for operating the public parking facilities, including operating the shuttle bus service connecting the terminals to the intermediate and remote lots. Additionally, the Airport collects all parking revenues, and

reimburses ABM for approved operating and administrative expenses and any expenditures made for capital improvements. The public parking revenues also include taxicab fee revenues, which generate revenues of approximately $1 million during the forecast period. Taxicab fees are projected to increase from $0.9 million in FY 2017 to $1.1 million in FY 2022. Net public parking revenues are projected to increase from $22.0 million in FY 2016 to $28.4 million in FY 2022. The forecast growth anticipates an increase in short-term and long-term rates in FY 2020, providing additional parking revenues of approximately $2.1 million in that year. Parking revenue averages 1.1% annual growth for the remainder of the forecast period. In addition, the moderate rise in O&D passenger activity during the forecast period is also expected to have a favorable impact on this important concession component at the Airport.

c) Car Rentals. There are seven car rental companies that currently operate at the Airport. They are: Avis, Budget, Hertz, Enterprise, Thrifty, Alamo, and National. The car rental revenues paid to the city are based on 10% of the car rental company's gross revenues or their annual MAGs, whichever is greater. During the FY 2012-2016 period, rental car revenues increased at an average annual rate of 1.3% or $0.6 million. The increase is a result of demand generated by passenger growth at the Airport, primarily. Car rental revenues are forecast to increase from $11.7 million in FY 2016 to $15.5 million in 2022, which is primarily based on the anticipated increases in O&D passenger enplanements and an annual escalation factor. The rental car concession agreements will expire on December 31, 2019. The financial projection assumes such agreements will be renewed under the same terms as the current agreements.

d) In-Flight catering. This category over-time has experienced a slow decline in revenues resulting from the continued trend of airlines reducing service offering on flights. In-Flight catering revenues now hover around $0.3 million throughout the period FY 2012 – FY 2016. The forecast assumes the category will remain relatively flat at the FY 2016 actual level ($0.3 million).

e) Other Concession Revenues. Other Concession Revenues include utility reimbursements, and other miscellaneous concession revenues, which consist of customs rentals and per passenger fees for the international area. During the FY 2012 – FY 2016 period, this category decreased at an average annual growth rate of 19.3%, partially due to USA 3000 ceasing operations and no longer paying per passenger fees. The estimated projected revenues assume the category will remain relatively flat at the FY 2016 level ($0.3 million).

4.2.3 Other Operating Revenues

Other Operating Revenues consist of non-signatory airline fees, cargo area rentals and fees, tenant improvement surcharges, charges for the use of the employee parking lot, and other miscellaneous revenues. During the FY 2012-2016 period, Other Operating Revenues decreased $4.5 million or at an average annual rate of -4.3%. The decline was primarily due to reductions in tenant improvement surcharges and other miscellaneous revenue as further discussed below.

a) *Non-signatory Airline* revenues consist of landing fees and terminal rents paid by non-signatory airlines. Landing fee rates for non-signatory airline revenues are set at 125%.

Revenues in this category are declining from $2.3 million in FY 2012 to $1.6 million in FY 2016, primarily due to the high rate of conversion of non-signatory airlines to signatory airlines, resulting in fewer airlines paying the non-signatory rates.

b) *Cargo Revenues* include ground rent, building rent, and tenant improvement charges. Cargo revenues are forecast to increase from $0.4 million in FY 2016 to $1.1 million in FY 2022, or an average annual growth of 19.1%, resulting from anticipated new cargo initiatives beginning in FY 2018.

c) *Hangar and Other Building Area* revenues include building and ground rent for various support facilities and land rental payments. Revenues are forecast to increase from $0.6 million in FY 2016 to $1.5 million in FY 2022 as a result of anticipated new hangar rentals and building rents in FY 2018 and FY 2019.

d) *Tenant Improvement Surcharges* are declining during the FY 2012-2016 period due to the American Airline bankruptcy and Southwest Airlines tenant improvements fully amortizing in FY 2013. The forecast estimates the tenant surcharges staying level at the $0.4 million budgeted level for the forecast period.

e) *Other Miscellaneous Revenues* include U.S. government rental revenues, American ramp charges (associated with their hangar), air cargo services, land rents, utility reimbursements, ground transportation fees, rental revenues from inside advertising billboards and other miscellaneous revenues. During the period FY 2012 – 2016 this category fluctuated due to one-time receipts of insurance reimbursements and proceeds from the American Airlines stock sale. The forecast period is projected to increase at an average annual growth of 7.5% due to the start of Remain Overnight (RON) parking fees in FY 2017 and anticipated new land lease opportunities beginning in FY 2019.

4.2.4 Interest Income

Interest income on all operating funds and accounts, other than the Construction Fund (bond proceeds) and the PFC Fund, are classified as Revenues under the Indenture. Interest income is estimated to decrease from $2.1 million for FY 2016 to $1.3 million in FY 2022 due to lower investable debt service account balances, resulting from the Series 2017 Refunding bonds and lower debt service reserves as certain bonds fully mature. The interest income forecast is based on projected balances in each fund and account assuming average annual interest yields of 1.5% on the Debt Service and Debt Service Reserve Accounts and less than 1% for all other funds held during the forecast period.

4.2.5 Pledged PFC Revenues

The Pledged PFC Revenues are projected to remain relatively flat during the projection period, at approximately $28.3 million annually. The annual amount shown for PFC Pledged Revenues follows the requirements as further defined in the Indenture.

4.3 Operation and Maintenance (O&M) Expenses

Table 4-4 summarizes historical O&M Expenses for the period FY 2012-2016 by major expense category. These categories include: personnel services, which are comprised of salaries, fringe benefits; supplies, materials and equipment; and contractual services. During this period, O&M Expenses increased $6.6 million or an average annual growth rate of 2.2%. The growth was primarily due to an increase in contractual services of approximately $6.4 million, along with an increase in personnel services totaling $1.4 million, offset by a decrease in supplies, materials and equipment of almost $1.3 million, as further described below.

Personnel services expenses represent salaries and wages, and fringe benefits paid to individuals employed by the Airport to maintain and operate the terminal, airfield, roadways and other facilities. Personnel services increased from $40.4 million in FY 2012 to $41.8 million in FY 2016, for an average annual growth of 1%, which is lower than the average annual inflation rate for this period primarily due to on-going efforts by Airport management to contain O&M spending as shown by the decrease of salaries and wages primarily through attrition. This decrease was offset by growth in fringe benefits of $5.0 million in FY 2016, which was primarily due to the enactment of GASB Statement No. 68, which now requires recognition of pension liabilities that previously did not require financial reporting.

Supplies, Materials and Equipment expenses consist of de-icing fluids, office supplies, laundry and cleaning materials, gasoline, tools and other miscellaneous supplies. The average annual increase for this category during FY 2012-2016 was 5.4%. The average annual growth rate for de-icing fluid and the Other supplies and material expenses was -7.6% and -5.0%, respectively. The decreases were mainly due to fluctuations in annual weather conditions during the historical period.

Contractual Services expenses represent the cost of services provided to the Airport by such as utilities and various other specialized services by companies that expertise in those areas. The primary services include utilities, rental and lease of equipment, snow removal services, airport security, cleaning services, reimbursement for City-provided services, repair and maintenance of equipment (such as elevators and escalators, communications equipment, etc.) and other miscellaneous services. The average annual growth rate for this category during the period FY 2012 –2016 was 5.6% or an increase of $6.4 million. The growth was primarily due to increases in utilities, snow removal services, and other contractual services. The higher utilities costs are associated with rising gas and electricity prices, while the fluctuations in snow removal was due to the heavy snow and ice conditions during fiscal years FY 2014 and FY 2015. Over 50% of the total change was due to Other contractual services costs increasing at an average annual growth rate of 15.0%, primarily due to reimbursements for the major storm damage in the FY 2012 and FY 2013. The Airport received over $4 million in reimbursements in FY 2012 versus $1.2 million in FY 2013. The legal services decreased from $0.6 million in FY 2012 to $0.2 million in FY 2016 at an average annual growth rate of -25.1%, due to insurance claims and internal services costs included in the legal services category for FY 2012, being re-classified to in FY 2013 and subsequent years.

Table 4-4: Historical O&M Expenses (in Thousands)

	Avg. Annual Growth Rate	For Fiscal Years Ending June 30 Historical [1]				
	FY '12-'16	2012	2013	2014	2015	2016 [2]
Personnel Services						
Salaries & Wages	-1.8%	$27,203	$27,263	$26,943	$27,174	$25,284
Fringe Benefits	5.8%	$13,187	$12,890	$13,883	$11,477	$16,507
	0.9%	$40,389	$40,153	$40,826	$38,651	$41,790
Supplies, Materials & Equipment						
Deicing & Misc. Supplies	-7.6%	$937	$1,980	$937	$1,592	$684
Other	-5.0%	$5,549	$4,351	$7,669	$6,829	$4,517
	-5.4%	$6,486	$6,331	$8,606	$8,421	$5,201
Contractual Services						
Utilities	1.4%	$6,338	$6,692	$7,009	$6,050	$6,703
Rental Equipment - Snow Removal	9.1%	$489	$1,694	$2,910	$1,000	$692
Rental Equipment - Land Maintenance	1.4%	$109	$195	$166	$67	$115
Cleaning Services	-2.4%	$2,596	$2,749	$2,956	$2,287	$2,358
Reimbursement for City Services	2.7%	$1,328	$1,355	$1,613	$1,451	$1,478
Shuttle, Misc., Acoustical	-0.3%	$161	$161	$161	$161	$159
Legal	-25.1%	$628	$350	$167	$192	$198
Security Service	1.7%	$4,528	$4,682	$4,324	$4,912	$4,851
Insurance	-1.2%	$1,951	$1,801	$2,199	$2,507	$1,862
Other	15.0%	$8,274	$11,176	$13,469	$15,015	$14,463
	5.6%	$26,402	$30,855	$34,974	$33,641	$32,880
Total Operation & Maintenance Expenses [3]	2.2%	$73,277	$77,340	$84,406	$80,713	$79,871

[1] Based on the FY 2016 Settlement and airport records.

[2] The Operating and Maintenance Expenses reported above are $5.2 million higher than that reflected in the FY 2016 audit due to a prior year adjustment.

[3] Excludes 5% gross receipts tax, which is excluded from calculation of debt service coverage.

4.3.1 Projections of O&M Expenses

Table 4-5 presents the O&M Expenses projection for the period FY 2017- 2022. The projected O&M Expenses are based on the FY 2017 operating budget provided by Airport management, and historical trends in O&M expense growth and inflation factors between 2.3% and 4% used to develop the remaining forecast period of FY 2018 through 2022. As shown Table 4-5, total O&M Expenses are forecast to increase from $79.9 million in FY 2016 to $97.4 million in FY 2022, which represents an average annual growth of 3.4%. The increase over the forecast period is higher than the historical average and CPI due to (1) snow removal services budgeted in FY 2017 at a higher rate than FY 2016, which was a mild winter, and (2) the building repairs & maintenance, and miscellaneous contractual services categories within Other contractual services being budgeted at a higher rate than FY 2016. The O&M Expense forecast does not consider the estimated impact of certain capital projects planned to be completed within the forecast period. In addition, certain parts of the forecast were developed based on judgments from Airport management and industry trends. The main factors underlying the significant increases in various categories of O&M Expenses are summarized below:

Personnel Services

Salaries and wages are forecast to increase from $25.3 million in FY 2016 to $30.6 million in FY 2022, for an average annual growth of 3.2%. The growth during the forecast period is primarily a result of the FY 2017 budget increasing 8.5% from FY 2016, due to planned salary increases and one additional pay period. The remainder of the forecast period FY 2018 – 2022 assumes no additional staff will be hired, and that salaries and wages will generally escalate in line with future inflationary increases averaging 3.0%. Fringe benefits are forecast to decrease in FY 2017, then remain relatively flat for the remainder of the forecast period. The decline in FY 2017 fringe benefits is a result of the Airport realizing a higher pension expense of approximately $5.0 million in FY 2016 due to the enactment of GASB Statement No. 68.

Contractual Services

Contractual Services are projected to increase from $32.9 million in FY 2016 to $40.2 million by FY 2022, for an average annual growth of 3.4%. The major contractual services categories contributing to this growth are Utilities, Snow Removal Equipment, and Other Contractual services. Utilities are forecast based on the FY 2017 budget and the inflationary growth factor and are projected to increase from $6.7 million in FY 2016 to $7.8 million in FY 2022, at an average annual growth of 2.6%. Snow removal equipment rentals are projected to increase from $0.7 million in FY 2016 to $2.2 million by FY 2022, at an average annual growth of 21.1%. The significant increase in snow removal services is a result of Airport management budgeting snow removal services at a higher rate than FY 2016, which was a mild winter. The Other Contractual services grew at an average annual rate of 2.6% during the forecast period, primarily due to expected increases to building repairs & maintenance.

Supplies, Materials & Equipment

This expense category is showing an average annual increase of 8.7%, which is a result of FY 2016 actual De-icing expenses being unusually low due to a mild winter. The FY 2017 De-icing costs are budgeted significantly higher to account for expected normal weather conditions.

Table 4-5: Projected O&M Expenses (in Thousands)

	Avg. Annual Growth Rate	For Fiscal Years Ending June 30						
		Actual	Budget	Projected				
	FY '16-'22	2016 [2]	2017	2018	2019	2020	2021	2022
Personnel Services								
Salaries & Wages	3.2%	$25,284	$27,426	$27,208	$28,025	$28,865	$29,731	$30,623
Fringe Benefits	1.4%	$16,507	$15,491	$15,956	$16,434	$16,927	$17,435	$17,958
	2.5%	$41,790	$42,917	$43,164	$44,459	$45,793	$47,167	$48,582
Supplies, Materials & Equipment								
Deicing & Misc. Supplies	25.5%	$684	$2,384	$2,438	$2,494	$2,552	$2,611	$2,671
Other	4.6%	$4,517	$5,293	$5,415	$5,540	$5,667	$5,797	$5,931
	8.7%	$5,201	$7,677	$7,853	$8,034	$8,219	$8,408	$8,601
Contractual Services								
Utilities	2.6%	$6,703	$6,965	$7,125	$7,289	$7,456	$7,628	$7,803
Rental Equipment - Snow Removal	21.1%	$692	$1,944	$1,989	$2,034	$2,081	$2,129	$2,178
Rental Equipment - Land Maintenance	6.6%	$115	$151	$155	$158	$162	$165	$169
Cleaning Services	1.8%	$2,358	$2,342	$2,396	$2,451	$2,507	$2,565	$2,624
Reimbursement for City Services	4.9%	$1,478	$1,760	$1,800	$1,841	$1,884	$1,927	$1,971
Shuttle, Misc., Acoustical	-4.8%	$159	$105	$108	$110	$113	$115	$118
Legal	19.8%	$198	$523	$535	$547	$559	$572	$585
Security Service	3.0%	$4,851	$5,164	$5,283	$5,404	$5,529	$5,656	$5,786
Insurance	1.7%	$1,862	$1,842	$1,884	$1,928	$1,972	$2,017	$2,064
Other	2.6%	$14,463	$15,989	$15,447	$15,802	$16,165	$16,537	$16,918
	3.4%	$32,880	$36,784	$36,720	$37,565	$38,429	$39,312	$40,217
Total Operation & Maintenance Expenses [1]	3.4%	$79,871	$87,378	$87,738	$90,058	$92,440	$94,887	$97,400

[1] Excludes 5% gross receipts tax, which is not included in the calculation of Net Revenues.

[2] Based on audited financial statements and airport records. The Operating and Maintenance Expenses reported in FY 2016 are $5.2 million higher than that reflected in the FY 2016 audit due to a prior year adjustment.

4.4 Application of Revenues

Table 4-6 shows the Application of Revenues forecast to fund accounts under provisions of the Indenture for the FYs 2017–2022.

Revenues consist of GARB Revenues, Pledged PFC Revenues and Interest Income deposited in the Revenue Fund as presented earlier in Table 4-4. Pursuant to the Indenture, Pledged PFC Revenues equal 125% of the anticipated annual debt service on the portion of the bonds that have been issued to finance PFC-Eligible Projects.

As further described in the Indenture and as depicted in Figure 4-1, shown earlier in this section, Revenues will first be applied to all of the designated funds in their stipulated amounts as further described in the Indenture.. All remaining Revenues are then deposited in the ADF or the PFC Account, if there are unused PFC moneys after meeting all requirements of the PFC eligible debt service. Table 4-6 shows the projected deposits available for transfer to the ADF during forecast period of FY 2016 -2022.

As of April 30, 2017, the unaudited unappropriated balance in the Airport's ADF was approximately $12.5 million. This balance, coupled with the projected transfers to the ADF indicated in Table 4-6, should provide adequate resources to meet various obligations of the Airport, such as equipment replacement, major maintenance and small capital projects, during the forecast period.

Table 4-6: Projected Application of Revenues (in Thousands)

	For Fiscal Years Ended June 30						
	Actual	Projected					
	2016 [1]	2017	2018	2019	2020	2021	2022
Revenues							
GARB Revenues							
Airline revenues (Initial Requirement)	$65,701	$70,712	$71,686	$73,732	$75,120	$76,379	$79,095
Additional Airline Requirement [2]	13,978	13,549	(1,136)	(2,099)	(2,566)	(1,916)	(2,501)
Rate Mitigation Program proceeds	13,728	13,728	13,728	13,728	13,728	13,728	13,728
Airline Incentives Program transfer							
Non-airline revenues and Other Airline Charges	57,015	63,793	68,816	72,577	76,972	78,428	80,373
Interest income	2,080	1,477	1,396	1,432	1,260	1,283	1,314
Pledged PFC Revenues	28,320	28,325	28,322	28,321	28,318	28,305	28,309
	$180,823	$191,583	$182,812	$187,692	$192,832	$196,207	$200,318
Application of Revenues							
Operating and Maintenance Expenses [3]	$79,871	$87,378	$87,738	$90,058	$92,440	$94,887	$97,400
Debt Service Account (Annual Debt Service)							
Outstanding Bonds	$74,946	$74,988	$63,751	$64,220	$64,097	$64,197	$64,090
Future Bonds	0	0	0	1,522	3,044	3,717	5,065
Total Debt Service	$74,946	$74,988	$63,751	$65,742	$67,140	$67,915	$69,155
PFC Debt Service Coverage	5,664	5,666	5,665	5,665	5,667	5,665	5,666
Payment to City (5% of Revenues))	6,398	6,398	6,545	6,695	6,849	7,007	7,168
Subtotal net of Contribution from DSSF	$166,879	$174,429	$163,699	$168,160	$172,097	$175,473	$179,388
Amount Available for Deposit to ADF	**$13,943**	**$17,154**	**$19,113**	**$19,532**	**$20,735**	**$20,734**	**$20,930**
Amount due Airlines at Settlement	**(13,728)**	**(13,728)**	**(13,728)**	**(13,728)**	**(13,728)**	**(13,728)**	**(13,728)**
Amount Available for Deposit to ADF post Settlement	**$215**	**$3,426**	**$5,385**	**$5,804**	**$7,007**	**$7,006**	**$7,202**

[1] *Based on audited financial statements and Airport records.*

[2] Includes Airport Development Fund Deposits.

[3] The Operating and Maintenance Expenses reported for FY 2016 are $5.2 million higher than that reflected in the FY 2016 audit due to a prior year adjustment.

4.5 Debt Service Coverage/Additional Bonds Test

Table 4-7 shows the projected debt service during the forecast period. The results of the Additional Bonds Test for the base case scenario using the financial projection presented in this Report for FY 2017 – 2022 is shown on Table 4-8. Debt Service Coverage (DSC) is projected to range from 1.38 to 1.50 during the forecast period, showing that the Airport anticipates to continue meeting the DSC requirement of 1.25 under this scenario in all years. The Additional Bonds Test states, in part, that Net Revenues must be at least 1.25 times Aggregate Debt Service; 1) in any 12 consecutive calendar months out of the 18 calendar months preceding the authentication and delivery of the Series 2017 Bonds, and 2) as set forth in the Airport Consultant's certificate, for each of the three Airport fiscal years following the Airport fiscal year in which the project is expected to be completed.

The financial projections presented in this section are based on information and assumptions that have been provided by Airport management, or developed by Unison and reviewed with and confirmed by Airport management. Based upon our review, we believe the information to be accurate and that the assumptions made provide a reasonable basis for the forecasts. However, due to unforeseen events and circumstances actual results may vary from the forecasts.

Table 4-7: Projected Debt Service (in Thousands)

	For Fiscal Years Ending June 30						
	Actual			Projected			
	2016	2017	2018	2019	2020	2021	2022
OUTSTANDING BONDS							
General Airport Revenue Bonds:							
Series 2005 Refunding Bonds	$31,490	$31,610	$32,386	$30,929	$8,030	$8,030	$8,030
Series 2007A Refunding Bonds	$11,874	$11,805	$11,437	$11,437	$27,431	$30,024	$31,102
Seres 2007B Refunding Bonds	$11,469	$11,447	$11,014	$11,021	$11,021	$11,018	$11,016
Series 2009A-1 Bonds	$9,914	$9,910	$9,914	$9,909	$9,911	$9,909	$9,913
Series 2012 Refunding Bonds	$2,100	$2,119	$2,119	$2,117	$2,124	$2,123	$2,119
Series 2013 Refunding Bonds	$7,219	$7,232	$3,745	$0	$0	$0	$0
Series 2015 Refunding Bonds	$880	$866	$866	$866	$7,641	$5,152	$3,966
Subtotal Debt Service (prior to Series 2017 Bonds)	$74,946	$74,988	$71,481	$66,278	$66,157	$66,256	$66,146
PROPOSED BONDS							
Series 2017A+B Debt service refunded		$0	($20,661)	($20,667)	($36,661)	($39,252)	($40,328)
Series 2017A+B Refunding Debt service		$0	$12,931	$18,610	$34,601	$37,194	$38,273
Subtotal - Series 2017A+B Refunding Bonds		$0	($7,730)	($2,058)	($2,060)	($2,058)	($2,055)
Series 2017C Bonds [1]				$748	$1,497	$1,497	$1,497
Series 2017D Bonds [1]				$774	$1,547	$1,547	$1,547
Proposed Series 2020 Bond [1]						$674	$2,021
Total Debt Service	$74,946	$74,988	$63,751	$65,742	$67,140	$67,915	$69,155

[1] The Series 2017C and 2017D (Series 2017 Project Bonds) and the future 2020 bond issue assume 18 months of capitalized interest.

Table 4-8: Projected Debt Service Coverage (in Thousands)

	Actual	Projected					
	2016 [1]	2017	2018	2019	2020	2021	2022
Total Revenues (including DSSF Contribution and Additional Requirement)	$180,823	$191,583	$182,812	$187,692	$192,832	$196,207	$200,318
less: Operation and Maintenance Expenses [2]	79,871	87,378	87,738	90,058	92,440	94,887	97,400
Net Revenues	$100,951	$104,205	$95,074	$97,634	$100,392	$101,320	$102,918
Debt Service							
Outstanding Bonds	74,946	74,988	63,751	64,220	64,097	64,197	64,090
Future Bonds [3]	0	0	0	1,522	3,044	3,717	5,065
	$74,946	$74,988	$63,751	$65,742	$67,140	$67,915	$69,155
Debt service coverage ratio	**1.35**	**1.39**	**1.49**	**1.49**	**1.50**	**1.49**	**1.49**

[1] Based on audited financial statements and Airport records.

[2] *The Operating and Maintenance Expenses for FY 2016 reported on this table are $5.2 million higher than that reflected in the FY 2016 audit due to a prior year adjustment.*

[3] The Series 2017 Project Bonds and the future 2020 bond issue both assume 18 months of capitalized interest.

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