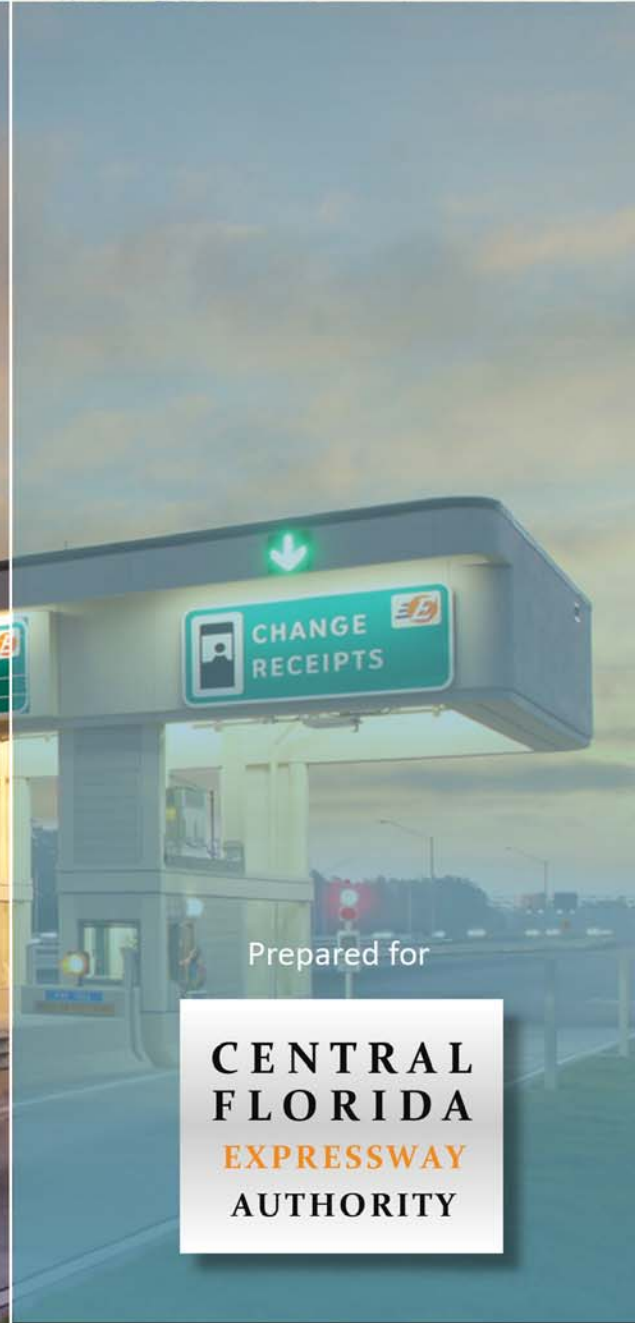
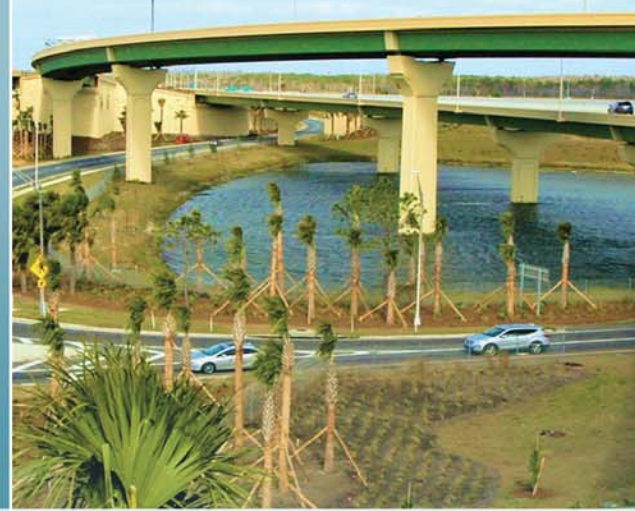


Central Florida Expressway Authority
FY 2017
General Traffic and Earnings
Consultant's Annual Report



Prepared for

**CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY**

**CDM
Smith**

May 2018

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Chapter 1
Introduction and
System Overview



INTRODUCTION AND SYSTEM OVERVIEW

1.1 Introduction

This Annual Report was prepared for the Central Florida Expressway Authority (CFX). The report contains a summary of the Fiscal Year (FY) 2017 traffic and revenue (T&R) performance characteristics and 30-year forecasts of T&R for the six toll facilities that constitute the CFX System (the "System"). This report also includes a brief discussion of the external factors that influence future T&R. Any changes in sources or methodologies that have occurred since the last report are noted in the text.

The purposes of this report are to describe current T&R trends for the System, to summarize the forecasting methodology used to develop the projections and to provide both short-term and long-term forecasts of T&R for the CFX System. This report contains a description of historical T&R from FY 1998 through FY 2017, along with projected T&R for FY 2018 through FY 2047. CFX's fiscal year ends on June 30th and begins on July 1st of the preceding calendar year. Future year traffic projections are also presented as Annual Average Daily Traffic (AADT), but on a calendar year basis.

This chapter is an overview of the CFX System, a description of the current toll rate schedule, a comparison of CFX toll rates with other toll facilities across the nation, a summary of historical annual transactions and revenue with percentages by facility, monthly transactions and revenue, historical electronic toll collection (ETC) usage and T&R forecasts for the System.

Chapter 2 contains a presentation of historical trends and current socioeconomic conditions. While economic conditions are always an important driver of T&R performance, the Great Recession from 2007 through 2009 and recent recovery deserve special attention. Florida, particularly the Orlando Metropolitan Area, was amongst the hardest hit in the nation, especially with respect to the real estate market and unemployment. Chapters 3 through 8 contain summaries of T&R performance and forecasts for each of CFX's toll facilities. Traffic profiles for each facility are included in the Appendix.

1.2 System Description

The current CFX System consists of five toll facilities:

- S.R. 528 – Martin B. Andersen Beachline Expressway
- S.R. 408 – Spessard Lindsay Holland East-West Expressway
- S.R. 417 – Central Florida GreeneWay
- S.R. 429 – Daniel Webster Western Beltway
- S.R. 414 – John Land Apopka Expressway

A location map of the five facilities and the region they serve can be found in **Figure 1-1**, Central Florida Expressway System. S.R. 451 is the Western Beltway Connector Road, and S.R. 453 will be a new part of the System, constructed as part of the Wekiva Parkway.

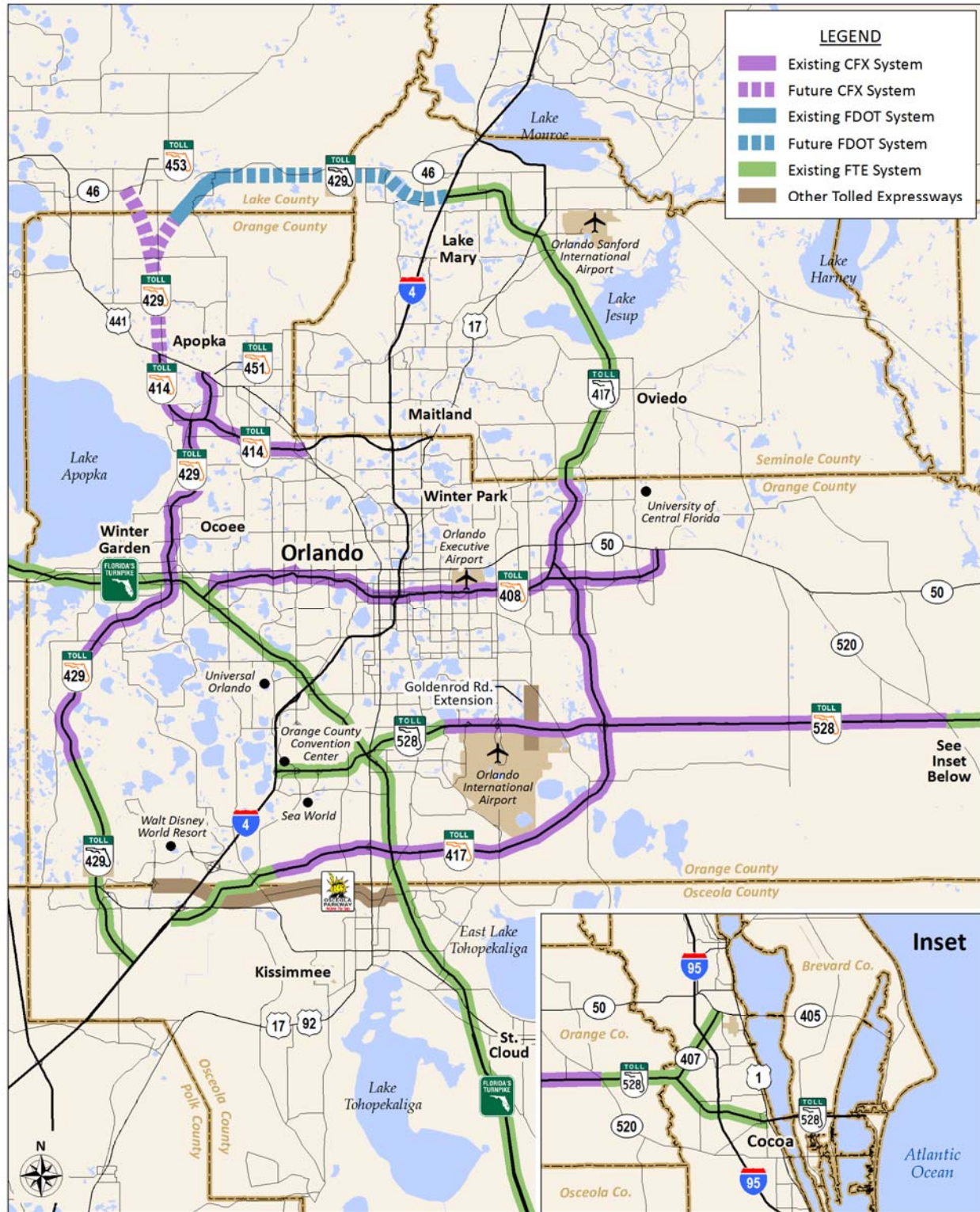
The System as it exists today is the result of many improvement and expansion projects, constructed over the 51-year period between 1963 and 2014. The first facility is the 23-mile S.R. 528 Beachline Expressway, which opened to traffic in 1967. The facility extends from the S.R. 482/Sand Lake Road/Boggy Creek Road interchange on the west end to S.R. 520 on the eastern end, connecting Orlando to the Space Coast. Until recently it had three mainline toll plazas: Airport Main, Beachline Main, and Dallas Main, and two pairs of ramp plazas. In March 2016, the Airport Main Plaza was removed, and toll collection was transferred to FTE's Beachline West Main Plaza. New ramp plazas were also installed at the Conway Road and Boggy Creek Road Interchanges with tolls collected to and from the east. Florida's Turnpike Enterprise (FTE) owns and operates the western 8 miles of S.R. 528 from Boggy Creek Road to Interstate 4 (I-4) and the eastern end from S.R. 520 to S.R. 407 and U.S. 1 in Brevard County.

The second facility is S.R. 408 East-West Expressway, which first opened to traffic in 1973. This facility currently runs 22 miles from the Florida's Turnpike/Old Winter Garden Road overpass on the western end to the S.R. 50/East Colonial Drive interchange on the eastern end. S.R. 50 is another main parallel highway. S.R. 408 has four mainline toll plazas: Hiawasse Main, Pine Hills Main, Conway Main, and Dean Main, along with 10 pairs of ramp plazas plus two single ramp plazas.

The next facility is S.R. 417 Central Florida GreeneWay, which first opened to traffic in 1988. S.R. 417 is the eastern beltway around Orlando with the CFX portion extending 33 miles from International Drive on the southern end to the Aloma Avenue/Seminole County Line on the northern end. It has four mainline plazas: John Young Main, Boggy Creek Main, Curry Ford Main, and University Main, along with 12 pairs of ramp plazas. FTE owns and operates toll facilities on S.R. 417 on either side of the CFX toll facility completing the beltway.

The fourth facility is S.R. 429 Western Beltway, which as its name suggests is the western beltway around Orlando. S.R. 429 first opened to traffic in 2000. The CFX portion of S.R. 429 extends 23 miles from Seidel Road in west Orange County on the southern end to U.S. 441 in the City of Apopka on the northern end. Of the 23 miles, three are part of a dual route with S.R. 414 (John Land Apopka Expressway). It has two mainline toll plazas: Forest Lake Main and Independence Main, along with five pairs of ramp plazas. The 2-mile Western Beltway Connector Road (S.R. 451) is the former S.R. 429 connection to U.S. 441 extending from the Apopka Expressway on the southern end to U.S. 441 on the northern end. FTE owns and operates the toll facility on S.R. 429 from Seidel Road to I-4 in Osceola County.

**Figure 1-1
Central Florida Expressway System**



The fifth facility, which opened to traffic in 2009, is the 9-mile S.R. 414 John Land Apopka Expressway. Of the nine miles, three are part of a dual route with S.R. 429. S.R. 414 extends Maitland Boulevard from U.S. 441 westerly to S.R. 429/Western Beltway, to relieve congestion on U.S. 441. The Apopka Expressway has one mainline plaza, Coral Hills Main, and two pairs of ramp plazas.

Goldenrod Road Extension is a 2-mile toll facility built and operated by CFX, but not part of the CFX System. Opened to traffic in 2003, this toll facility extends Goldenrod Road from S.R. 15/Narcoossee Road southerly to Heintzelman Boulevard and serves as a reliever to S.R. 15/Narcoossee Road. The facility has an interchange with S.R. 528 and one mainline toll plaza, the Goldenrod Main.

Table 1-1 is a summary of CFX System facilities with the corresponding lengths and opening years.

Table 1-1
CFX System Facilities

CFX System Current	Length (miles)	Year
S.R. 528 - Martin Andersen Beachline Expressway	23	1967
S.R. 408 - Spessard Holland East West Expressway	22	1973
S.R. 417 - Central Florida Greenway	32	1988
S.R. 429 - Daniel Webster Western Beltway	23	2000
S.R. 414 - John Land Apopka Expressway	9	2009
S.R. 451 - Western Beltway Connector Road	2	2012
Current System Total ^A	108	
CFX Proposed		
S.R. 429 Wekiva Parkway	8	2018
S.R. 453	2	2018
CFX Non-System		
Goldenrod Road Extension	2	2003

Notes:

A - Of the 23 miles on S.R. 429 and nine miles on S.R. 414, three are part of a dual route between the two expressways. The three miles are only included once in the calculation of CFX System total miles.

1.2.1 WEKIVA PARKWAY PROJECT

When complete, the Wekiva Parkway will be an extension of the existing S.R. 429 which currently terminates just north of U.S. 441 near Apopka. The new 27-mile facility will ultimately connect to S.R. 417 at I-4 near Sanford, thus completing the beltway around northwest metropolitan Orlando.

CFX and the Florida Department of Transportation (FDOT) collaborated on a Project Development and Environment (PD&E) Study for the Wekiva Parkway beginning in January 2005. Approved in May of 2012 by the Federal Highway Administration (FHWA), the PD&E study engaged state and local agencies and community members in developing and evaluating alternatives that meet the

region's transportation needs, while also seeking to minimize public and environmental impacts. The FHWA approval allowed the project to continue moving forward.

While providing alternatives to U.S. 441, S.R. 46 and many local roads in the greater Apopka, Mount Dora and Sanford areas, the Wekiva Parkway provides a much-needed connection through the Wekiva River protection areas. The CFX portion of the Wekiva Parkway is depicted in **Figure 1-2** with the proposed opening CFX toll rates for E-PASS and video transactions at the mainline gantries. The Wekiva Parkway includes will have three mainline toll gantries in an open road, all-electronic toll (AET) collection facility, with interchanges at U.S. 441 and Kelly Park Road in Orange County and S.R. 46 in Lake County.

Previously, T&R from the Wekiva Parkway had not been included in System totals, as it was only a planned project. The two new mainline plazas that will be reported with S.R. 429 are:

- Ponkan Main Plaza, opening July 27, 2017 (FY 2018)
- Mount Plymouth Main Plaza, opening April 1, 2018 (FY 2018)

The other new mainline plaza will be reported with a new facility, S.R. 453,

- Coronado Main Plaza, opening April 1, 2018 (FY 2018)

Toll collection on the Wekiva Parkway will utilize an all-electronic toll (AET) collection system, i.e., customers will not be able to pay cash on the roadway as there will be no toll booths, only toll gantries. On the CFX portion of the Wekiva Parkway, customers will either pay with E-PASS/SunPass or by Pay By Plate video billing. Video billing customers will pay the E-PASS toll amount plus a surcharge on each transaction, which is designed to cover the administrative cost of video billing. Customers on the FDOT portion of the Wekiva Parkway will pay either with E-PASS/SunPass or through TOLL-BY-PLATE, the video tolling system operated by FTE. Future tolls include toll rate increases based on the toll rate indexing policy of each agency (CFX and FDOT).

The Wekiva Parkway was broken into fourteen design sections, allowing for more manageable design and construction projects. The design sections are shown in **Figure 1-3**. The Wekiva Parkway is a partnership project, with portions being constructed by CFX and FDOT with the FDOT toll portions being operated by FTE. CFX's sections starting from the current terminus near S.R. 429 at U.S. 441, shown in purple, include:

- Section 1A from S.R. 429 to Ponkan Road
- Section 1B from Ponkan Road to North of Kelly Park Road
- Section 2B from North of Kelly Park Road to East of C.R. 437 (Plymouth Sorrento Road) and north to the boundary of Lake County
- Section 2A from East of C.R. 437 to C.R. 435 (Mt. Plymouth Road)
- Section 2C from boundary of Lake County to S.R. 46

**Figure 1-2
Wekiva Parkway Facilities and Toll Rates Map**

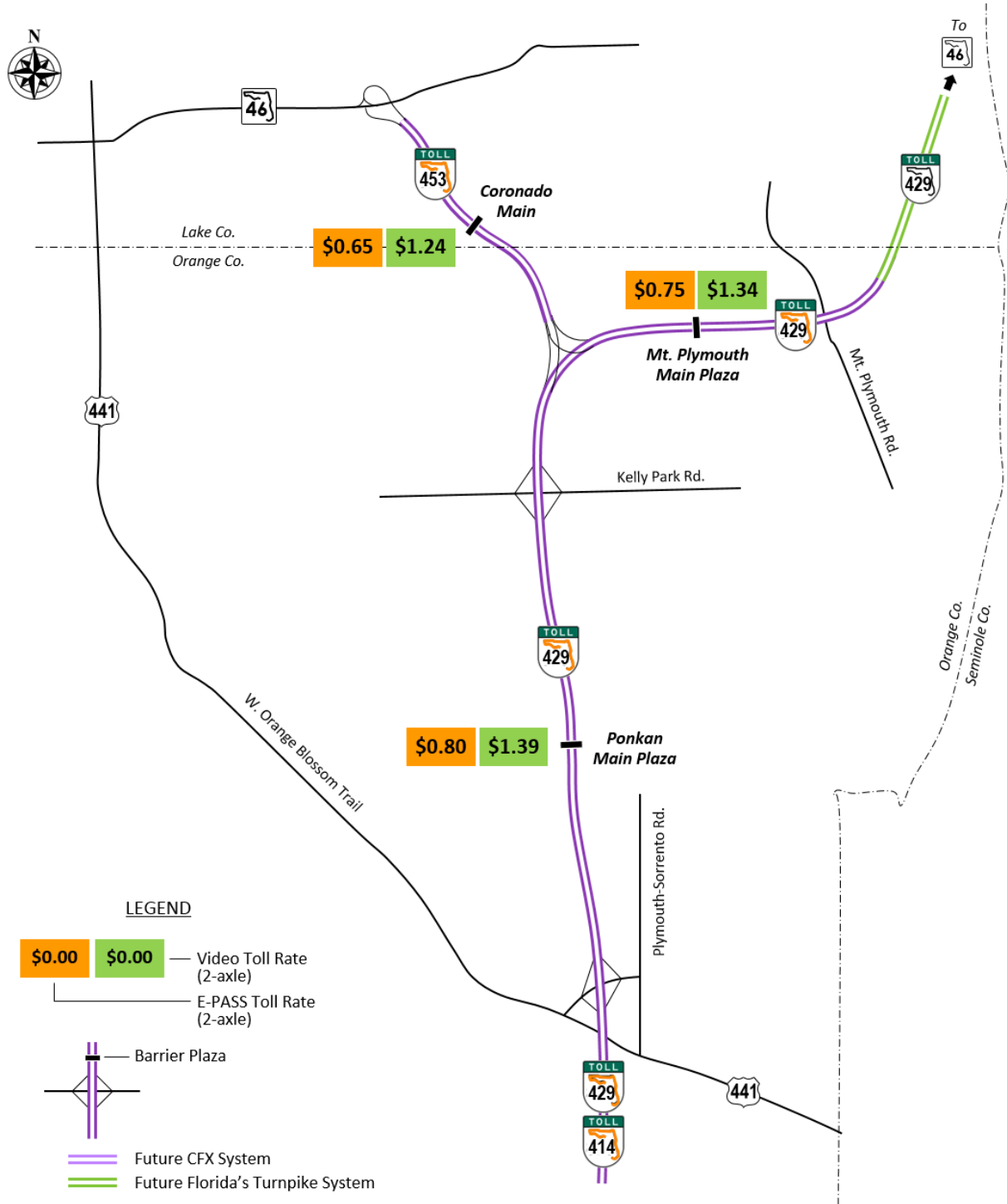
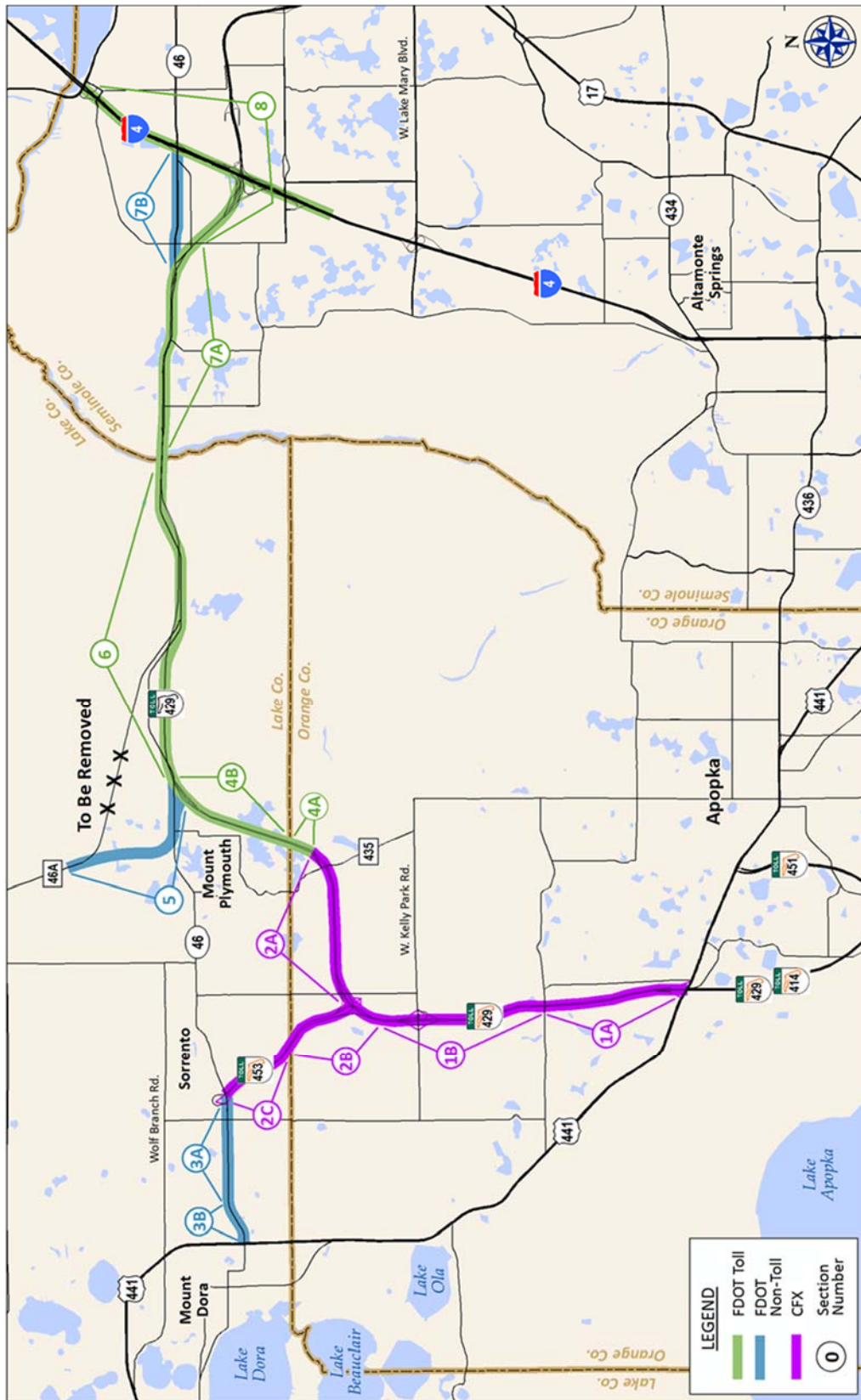


Figure 1-3
Wekiva Parkway Design Sections



The FDOT sections include tolled and non-tolled sections. The mainline sections that will be tolled include sections 4A, 4B, 6, 7A and 8. The non-tolled sections include improvements to existing sections of S.R. 46 on the eastern and western ends of the project and the realignment of C.R. 46A. The FDOT sections, shown in blue and green, include (from west to east):

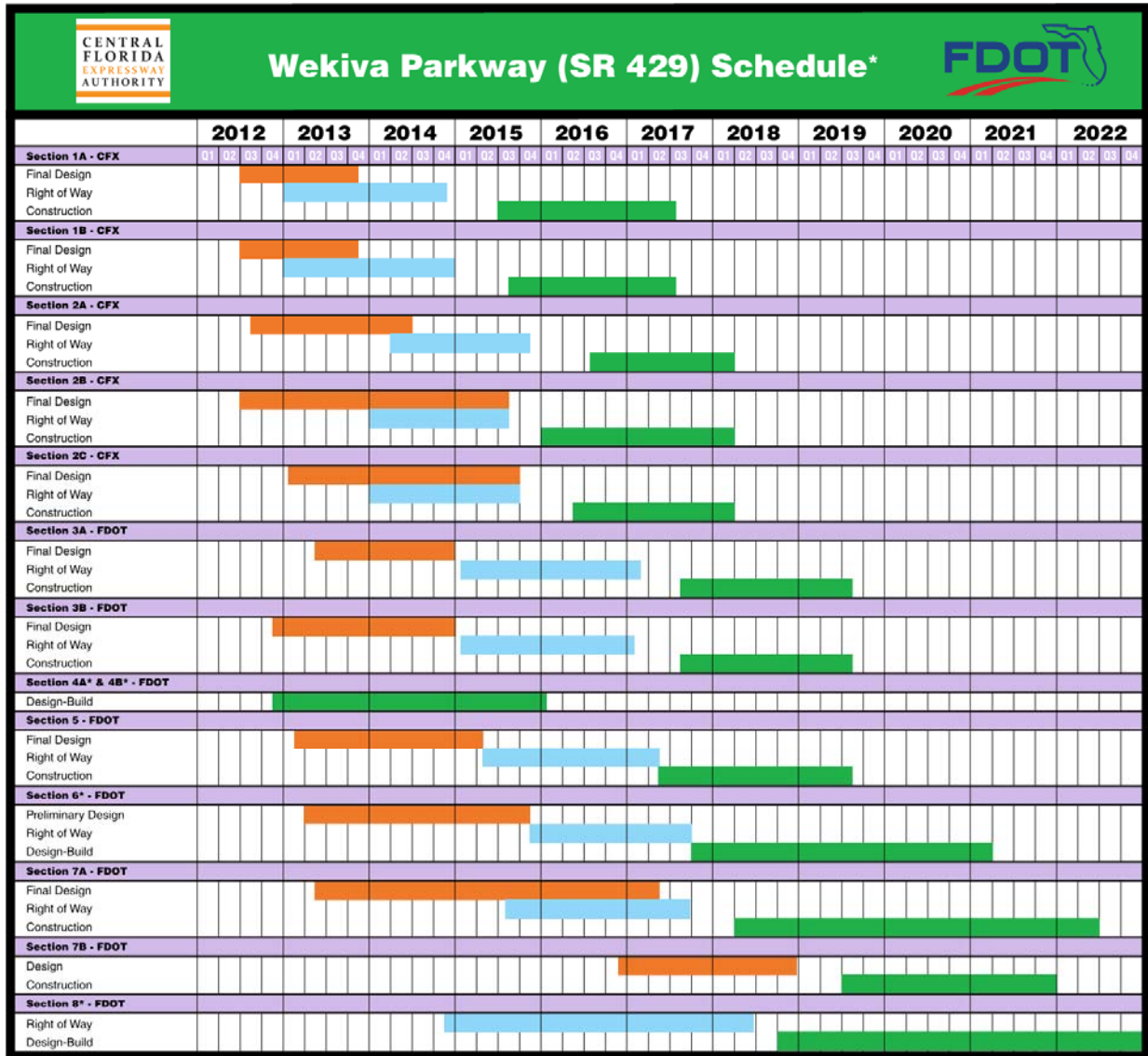
- Sections 3A and 3B - the improvements to S.R. 46 from Round Lake Road to U.S. 441 including improvements to the U.S. 441/S.R. 46 interchange (non-tolled)
- Sections 4A and 4B - the construction of S.R. 429 from Mt. Plymouth Road (C.R. 435) to the intersection of C.R. 46A and S.R. 46 (opened January 2016)
- Section 5 - the realignment of C.R. 46A
- Section 6 - the construction of S.R. 429 from C.R. 46A to east of the Wekiva River Bridge
- Section 7A - the construction of S.R. 429 from east of the Wekiva River Bridge to Orange Boulevard (C.R. 431)
- Section 7B - the improvement of S.R. 46 from Orange Boulevard to I-4 (non-tolled)
- Section 8 - the construction of S.R. 429 from Orange Boulevard to I-4, including the I-4 interchange and improvements along I-4

In spring 2015, CFX secured a \$194 million loan through the U.S. Department of Transportation's Transportation Infrastructure Finance and Innovation Act (TIFIA) program at the historically low interest rate of 1.23 percent, accelerating CFX's Wekiva Parkway construction schedule by up to 18 months. The latest schedule for design and construction activities is shown in **Table 1-2**. Sections 1A and 1B, from U.S. 441 north to Kelly Park Road, opened to traffic on July 27, 2017 (FY 2018).

For reporting purposes, toll plazas for the CFX sections of the Wekiva Parkway will have corresponding traffic and revenue reported in the respective chapters; Chapter 6 for S.R. 429 Western Beltway and Chapter 8 for S.R. 453.



**Table 1-2
Wekiva Parkway Development Schedule**



*Schedule Subject to Change
*For more information, visit www.wekivaparkway.com

*As of 4/18/2018

1.3 Toll Rates

On February 26, 2009, the CFX Board approved a series of System wide toll rate adjustments. The toll rate policy included a one-time adjustment and a series of increases to keep pace with inflation. The policy stated that all tolls be adjusted to reflect the higher of either the combined annual increases to the Consumer Price Index for All Urban Consumers (CPI-U) in the South or three percent per year (applied linearly, i.e., a 15 percent increase on the original toll every five years). The one-time adjustment occurred on April 5, 2009, in which toll rates at all mainline plazas (except the recently opened Coral Hills) and most toll ramp locations increased by \$0.25. The purpose of the rate increase was to counterbalance declining System revenues, to stabilize

the fiscal integrity of CFX, and to fortify the ability to improve and expand the System in the future. Since then, there were several changes to the tolls collected at main and ramp plazas, including the addition of the Dallas Main plaza and Dallas ramp plazas, the addition of C.R. 437A ramp plazas, and the removal of the Valencia College Lane ramp plazas, the removal of the Airport Main plaza and the addition of ramp plazas at Boggy Creek Road and Conway Road. The Schofield Road ramps on S.R. 429 opened in FY 2015 and were added to the table. The Airport Plaza was removed, and the Boggy Creek Road/McCoy Road and Conway Road/Tradeport Drive interchanges added in March 2016.

Then on July 1, 2012 (the beginning of FY 2013), CFX implemented a rate differential for the first time for cash and electronic customers. Customers who paid tolls with ETC now paid a lower toll rate than cash customers. The rate differential encouraged participation in the ETC program, thereby helping CFX maintain lower toll collection costs. Also, as previously explained, CFX implemented the first toll rate adjustment to keep pace with inflation.

On February 9, 2017, the Board voted unanimously to eliminate the 15 percent planned toll adjustment scheduled for July 1, 2017 (FY 2018). A new "Customer First" toll policy was adopted, which delayed the next toll rate adjustment until July 1, 2018 (FY 2019). The Board cited the agency's strong financial health in recent years as the primary reason for this decision. Customers will now see an annual increase in tolls based on CPI (with a floor of 1.5%), which is lower and more gradual than the original 15 percent increase every five years.

The FY 2017 toll rates are presented in **Table 1-3**. The rates shown in this table come from the FY 2013 toll rate adjustment with the addition of new plazas identified above. In accordance with CFX's Toll Policy, the next toll rate adjustment is scheduled for July 1, 2018 (FY 2019).

1.3.1 DISCOUNT PROGRAMS

In 1998, CFX began a frequent-user discount program for customers who utilize E-PASS transponders. The discount program helped CFX with a Florida Transportation Commission (FTC) performance measure that requires 75 percent of the total transactions to be completed utilizing ETC transponders. This performance measure was instituted by the FTC in 2007. The E-PASS discount program offered a five percent rebate to ETC customers with 40 or more CFX electronic transactions per month and a ten percent rebate to customers with 80 or more CFX electronic transactions per month. While E-PASS is compatible with SunPass (FDOT/Turnpike) and LeeWay (Lee County) ETC systems, transactions on those systems were not eligible for the frequent user discount. Only transactions on CFX facilities paid through ETC received this discount, including SunPass and LeeWay.

**Table 1-3
CFX System Toll Rates, FY 2017 (as of June 30, 2017)**

Roadway	Electronic Toll Schedule					Cash Toll Schedule				
	2 Axles ^A	3 Axles	4 Axles	5 Axles	6 Axles	2 Axles ^A	3 Axles	4 Axles	5 Axles	6 Axles
S.R. 528										
Boggy Creek Road/McCoy Road	\$1.09	\$1.09	\$1.09	\$1.09	\$1.09	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
Conway Road/Tradeport Drive	\$1.09	\$1.09	\$1.09	\$1.09	\$1.09	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
Beachline Main Plaza	\$0.87	\$1.71	\$2.00	\$2.55	\$2.55	\$1.00	\$1.75	\$2.00	\$2.75	\$2.75
International Corporate Park	\$0.59	\$0.59	\$0.59	\$0.59	\$0.59	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Dallas Blvd.	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
Dallas Main Plaza ^B	\$0.76	\$1.01	\$1.26	\$1.26	\$1.26	\$1.00	\$1.25	\$1.50	\$1.50	\$1.50
S.R. 408										
Good Homes Road	\$0.28	\$0.28	\$0.28	\$0.28	\$0.28	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
Hiawassee Main Plaza	\$0.82	\$1.64	\$1.91	\$2.46	\$2.46	\$1.00	\$1.75	\$2.00	\$2.50	\$2.50
Hiawassee Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Pine Hills Main Plaza	\$1.09	\$1.64	\$1.91	\$2.46	\$2.46	\$1.25	\$1.75	\$2.00	\$2.50	\$2.50
Old Winter Garden Road	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
John Young Parkway (S.R. 423)	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Orange Blossom Trail	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Mills Avenue	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Bumby Avenue	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Conway Road	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Andes/Semorán Blvd.	\$1.09	\$1.09	\$1.09	\$1.09	\$1.09	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
Conway Main Plaza	\$1.09	\$1.64	\$1.91	\$2.46	\$2.46	\$1.25	\$1.75	\$2.00	\$2.50	\$2.50
Semorán Blvd. (S.R. 436)	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Dean Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Dean Main Plaza	\$0.82	\$1.64	\$1.91	\$2.46	\$2.46	\$1.00	\$1.75	\$2.00	\$2.50	\$2.50
Rouse Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
S.R. 417										
John Young Main Plaza	\$1.37	\$1.91	\$2.46	\$3.00	\$3.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.00
John Young Parkway (S.R. 423)	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Orange Blossom Trail	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Landstar Blvd.	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
Boggy Creek Main Plaza	\$1.37	\$1.91	\$2.46	\$3.00	\$3.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.00
Boggy Creek Road	\$1.09	\$1.09	\$1.09	\$1.09	\$1.09	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
Lake Nona Blvd.	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Narcoossee Road	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Moss Park Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Innovation Way	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Lee Vista Blvd.	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Curry Ford Main Plaza	\$0.82	\$1.64	\$1.91	\$2.46	\$2.46	\$1.00	\$1.75	\$2.00	\$2.50	\$2.50
Curry Ford Road (S.R. 552)	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Colonial Drive (S.R. 50)	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
University Main Plaza	\$0.82	\$1.64	\$1.91	\$2.46	\$2.46	\$1.00	\$1.75	\$2.00	\$2.50	\$2.50
University Blvd.	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
S.R. 429										
Schofield Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
New Independence Parkway	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Independence Main Plaza	\$1.37	\$1.91	\$2.46	\$3.00	\$3.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.00
C.R. 535	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
S.R. 438	\$0.28	\$0.28	\$0.28	\$0.28	\$0.28	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
West Road	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Forest Lake Main Plaza	\$1.37	\$1.91	\$2.46	\$3.00	\$3.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.00
C.R. 437A	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
S.R. 414										
Coral Hills Main Plaza	\$1.09	\$1.64	\$2.18	\$2.73	\$2.73	\$1.25	\$1.75	\$2.25	\$2.75	\$2.75
Keene Road	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75
Hiawassee Road	\$0.28	\$0.28	\$0.28	\$0.28	\$0.28	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50

Notes:

A - Includes motorcycles.

B - The toll listed for this plaza includes the toll collected for FDOT, which is \$0.26 for transponder transactions or \$0.50 for cash transactions regardless of the number of axles.

In May 2016, CFX replaced the frequent-user discount program with a new Customer Loyalty Discount Program. The Customer Loyalty Discount Programs is exclusive to E-PASS customers and is a tiered program that provides toll discounts based on the number of transactions per transponder each month. All E-PASS customers are automatically eligible to participate in the program so there is no enrollment process or monthly fee. The program offers a ten percent rebate to E-PASS customers with 40 or more CFX electronic transactions per month and a 15 percent rebate to customers with 80 or more CFX electronic transactions per month. The discount will only be offered in months when actual toll revenue exceeds the revenue projections by more than 2.0 percent.

In the first fiscal year of implementation, the rebates totaled approximately \$0.7 million, or approximately 0.7 percent of the total System revenues. In FY 2017, the discount program has grown to \$16.6 million, or 4.0 percent of the total System revenues. This growth is indicative of the significant increase in transponder usage overall and the frequency of trips made by electronic toll customers. In FY 2017 the ETC participation rate reached 82.2 percent, exceeding the 75 percent goal.

Beginning in FY 2016 (July 2015), CFX implemented the I-4 Commuter Discount Program. This discount program will be offered for a six-year period, to provide relief for and options to customers during the planned construction activities on I-4. The program provides an additional 5.0 percent discount to customers with 20 or more transactions in a month on the CFX "beltway" facilities, which include S.R. 417, S.R. 429 and S.R. 414. The discount will only be offered in months when actual toll revenue exceeds the revenue projections by more than 2.0 percent. In FY 2017, this discount program provided \$5.4 million in rebates to customers.

Beginning February 1, 2016 (FY 2016), CFX launched a discount program offering rebates to school buses using CFX facilities. A 99.0 percent discount is now given to school buses equipped with special E-PASS transponders transporting students on official school business from school districts in Orange, Brevard, Lake, Osceola, Seminole, Polk and Volusia Counties. The discount is only offered in months when actual toll revenue exceeds the revenue projections by more than 2.0 percent. In FY 2017, this discount program provided \$0.3 million to Central Florida school districts.

1.3.2 TOLL RATE COMPARISON TO OTHER U.S. TOLL FACILITIES

As shown in **Table 1-4**, the FY 2017 average toll rates per mile on CFX's five facilities are comparable to the average toll rates on other toll facilities across the United States. The average toll rates on CFX facilities are comparable to the toll rates for other similar toll roads. The average rates per mile for CFX's facilities are between 12.0 and 20.3 cents per mile for cash rates, and 10.7 and 17.3 cents per mile for electronic toll rates. The average cash rate for the CFX System is 15.4 cents per mile and the average ETC rate is 13.5 cents per mile.

**Table 1-4
Toll Rate Comparison with Other U.S. Toll Facilities**

	Toll Facility	Initial Opening Year	Recent Toll Increase	Facility Type	Length (miles)	Passenger Cars			
						Toll Rates		Rate-Per-Mile (cents)	
						Base (Cash/Video)	Electronic	Base (Cash/Video)	Electronic
TX	TX DOT, Grand Parkway	2011	Jan-17	U	58	-	\$11.96	-	20.6
TX	Harris County Toll Road Authority - Westpark Tollway	2004	Sep-15	U	13	-	\$3.00	-	23.1
TX	Harris County Toll Road Authority - Sam Houston Tollway	1987	Jan-16	U	70	-	\$12.00	-	17.1
TX	Harris County Toll Road Authority - Hardy Toll Road	1988	Jul-16	U	21	-	\$3.00	-	14.2
PA	Pennsylvania Turnpike	1940	Jan-17	R	360	-	\$37.09	-	10.3
NY	New York State Thruway	1954	Apr-16	R/U	496	-	\$23.99	-	4.8
CA	San Joaquin Hills Corridor (SR 73)	1996	Jul-17	R/U	15	\$7.76	\$7.08	51.7	47.2
VA	Chesapeake Expressway (Route 168)	2001	May-16	R	16	\$8.00	\$8.00	50.0	50.0
CO	Northwest Parkway	2003	Jan-17	U	10	\$4.25	\$3.80	44.7	40.0
CA	Eastern Toll Road (SR 241)	1998	Jul-17	R/U	24	\$10.06	\$7.06	41.9	29.4
VA	Dulles Greenway	1995	Mar-17	R/U	14	\$5.50	\$5.50	39.3	39.3
CO	E-470	1991	Jan-17	R/U	47	\$18.20	\$14.50	39.0	31.1
FL	Miami Dade Expressway, Gratigny Parkway, SR 924	1992	Jul-13	U	5	\$2.00	\$1.00	37.0	18.5
DE	Delaware Turnpike (I-95)	1963	Oct-07	R/U	11	\$4.00	\$4.00	35.7	35.7
CA	South Bay Expressway	2007	Jun-12	C	10	\$3.50	\$2.75	35.0	27.5
FL	Miami Dade Expressway Authority - Dolphin Expressway (SR 836)	1965	Nov-14	U	14	\$4.80	\$2.40	34.3	17.1
FL	Miami Dade Expressway, Airport Expressway, SR 112	1961	Nov-14	U	4	\$1.40	\$0.70	33.3	16.7
MD	Maryland Inter County Connector	2011	Jul-15	P	18	\$5.78	\$3.86	32.3	21.6
FL	Miami Dade Expressway, Don Shula Expressway (SR 874)	1971	Jul-13	U	7	\$2.00	\$1.00	28.6	14.3
TX	North Texas Tollway Authority - President George Bush TPK	1998	Jul-17	U	40	\$10.77	\$7.17	26.9	17.9
VA	Dulles Toll Road	1984	Jan-14	C	13	\$3.50	\$3.50	26.1	26.1
TX	North Texas Tollway Authority - Dallas North Tollway	1968	Jul-17	U	32	\$8.16	\$5.44	25.5	17.0
IL	Veterans Memorial Tollway	1989	Jan-17	R/U	30	\$7.60	\$3.80	25.5	12.7
TX	North Texas Tollway Authority - Sam Rayburn Tollway	2006	Jul-17	U	26	\$6.37	\$4.24	24.5	16.3
FL	Lee Roy Selmon Crosstown Expressway (SR 618)	1976	Jul-17	U	15	\$3.40	\$2.90	22.7	19.3
SC	Greenville Southern Connector	2001	Jan-16	R/U	16	\$3.50	\$3.00	21.9	18.8
FL	CFX S.R. 408 (East-West Expressway)	1973	Jul-12	U	22	\$4.50	\$3.82	20.3	17.3
FL	Florida's Turnpike, Polk Parkway	1998	Oct-17	U	25	\$4.50	\$3.21	18.0	12.8
FL	Osceola Parkway (S.R. 522)	1995	Oct-14	U	12	\$2.00	\$2.00	16.1	16.1
FL	Florida's Turnpike, Veterans Expressway	1994	Oct-17	U	15	\$2.41	\$1.87	16.1	12.5
FL	CFX System (All Five Facilities) ^A	-	Jul-12	R/U	106	\$16.50	\$14.49	15.6	13.7
FL	CFX S.R. 417 (Central Florida Greenway)	1988	Jul-12	R/U	32	\$5.00	\$4.38	15.6	13.7
FL	Florida's Turnpike, Beachline West	1973	Oct-17	U	8	\$1.25	\$0.80	15.3	9.8
FL	CFX S.R. 414 (Apopka Expressway) ^B	2009	Jul-12	R/U	9	\$1.25	\$1.09	13.9	12.1
FL	Florida's Turnpike, Western Beltway	2005	Oct-17	R/U	11	\$1.50	\$1.07	13.6	9.7
FL	CFX S.R. 429 (Western Beltway) ^B	2000	Jul-12	R/U	23	\$3.00	\$2.74	13.0	11.9
NH	Blue Star Turnpike	1950	Jul-09	R	16	\$2.00	\$1.40	12.3	8.6
FL	CFX S.R. 528 (Beachline Expressway)	1967	Feb-16	R/U	23	\$2.75	\$2.46	12.0	10.7
NJ	New Jersey Turnpike	1951	Jan-12	R/U	118	\$13.85	\$13.85	11.7	11.7
DE	Korean War Veterans Memorial Highway (SR 1)	1991	Aug-14	R/U	51	\$6.00	\$6.00	11.7	11.7
FL	Florida's Turnpike, Sawgrass Expressway	1990	Oct-17	U	23	\$2.68	\$2.14	11.7	9.3
IL	Tri-State Tollway	1958	Jan-17	U	77	\$9.00	\$4.50	11.6	5.8
FL	Florida's Turnpike, Homestead Extension	1974	Oct-17	U	47	\$5.36	\$4.28	11.4	9.1
FL	Florida's Turnpike, Suncoast Parkway	2001	Oct-17	U	42	\$4.50	\$3.21	10.7	7.6
FL	Florida's Turnpike, Ticket System	1957	Oct-17	R	155	\$16.50	\$12.37	10.6	8.0
IL	Reagan Memorial Tollway	1958	Jan-17	C	96	\$10.20	\$5.10	10.6	5.3
IL	Jane Addams Memorial Tollway	1958	Jan-17	C	79	\$7.90	\$3.95	10.1	5.0
FL	Florida's Turnpike, Southern Coin System	1957	Oct-17	U	43	\$4.18	\$3.21	9.7	7.5
OH	Ohio Turnpike	1954	Jan-17	R	241	\$18.25	\$12.50	7.6	5.2
FL	Florida's Turnpike, Northern Coin System	1957	Oct-17	U	67	\$5.00	\$4.28	7.5	6.4
WV	West Virginia Turnpike	1954	Aug-09	R	88	\$6.00	\$3.90	6.8	4.4
IN	Indiana Toll Road	1956	Jul-17	R	157	\$10.70	\$10.75	6.8	6.8
MA	Massachusetts Turnpike ^C	1957	Oct-16	C	123	\$7.95	\$4.25	6.5	3.5
ME	Maine Turnpike	1947	Nov-12	R	110	\$7.00	\$6.45	6.4	5.9
KS	Kansas Turnpike	1956	May-16	R	236	\$13.25	\$10.60	5.6	4.5
NJ	Garden State Parkway ^D	1954	Jan-12	R/U	173	\$8.25	\$8.25	4.8	4.8
NH	Spaulding Turnpike	1957	Oct-07	R	33	\$1.50	\$1.06	4.5	3.2
FL	FDOT, Alligator Alley	1969	Oct-17	R	78	\$3.25	\$2.94	4.2	3.8

R:Rural, U:Urban, C:Commuter

Notes:

A - CFX System total length (miles) does not include the two miles for S.R. 451 (Wester Beltway Connector Road).

B - Of the 23 miles on S.R. 429 and nine miles on S.R. 414, three are part of a dual route between the two expressways. The three miles are only included once in the calculation of CFX System total miles.

C - Commuter rate of \$1.50 available with minimum purchase of 25 trips good for 45 days.

D - For passenger cars, no toll charged for 48-mile portion between interchanges 1 and 6.

1.3.3 ELASTICITY

The effect of a change in toll rates on T&R can be analyzed with the microeconomic concept of elasticity. Elasticity represents the relative change in traffic (or revenue) as a result of a relative change in toll rate with other factors held constant. Generally, a number of factors can affect elasticity, including diversion to competing facilities, changes in travel modes, trip consolidation/trip chaining, and/or adjustment in timeframe of travel. The effects of changes in toll rate on the various facilities of the CFX System depend on the availability of alternative parallel highways, local driver's knowledge of alternative/substitute routes and the level of congestion. Evaluating the degree of elasticity of a historic toll rate increase on the CFX facilities provides guidance in forecasting the elasticity of future toll rate increases.

Elasticity is calculated as the percentage change in traffic (or revenue) divided by the percentage change in toll rate. Traffic elasticity typically (and logically) has a negative algebraic sign, in that an increase in toll will result in a reduction in traffic. For traffic, the higher the absolute value of elasticity the greater the decline in traffic. Typically, but with limitations, revenue elasticity has a positive algebraic sign. An elasticity value of 1.0 would represent a case in which the response to a change in toll was unitary (perfectly elastic). That is, the relative change in revenue would be the same as the change in toll rate. Expected elasticity values are lower than 1.0, or relatively inelastic, which would yield smaller percentage decreases in traffic, and consequently smaller revenue increases.

The effect of the July 2012 toll rate increase on traffic was not profound for several reasons. This rate increase created a toll differential for the first time on CFX facilities. Electronic toll rates were increased by 9.0 percent, which equates to between \$0.03 and \$0.12 depending on the location. Cash toll rates were increased by \$0.25 at most locations, based on the policy to round the cash rate up to the next quarter. There was a shift in the method of payment from cash to E-PASS as a result of the rate increase. Customers wanted to take advantage of the toll rate differential. To determine elasticity of the FY 2013 toll rate increase, T&R from four months (July – October) in FY 2012 was compared against the T&R for the same four months in FY 2013. Comparing the traffic from the same timeframe of the prior year avoided seasonality issues but involved issues of growth in traffic. The impacts from the July 1, 2012 toll rate adjustment on T&R, including the calculated elasticity for a four-month period (July through October) are presented in **Table 1-5**.

Table 1-5
Elasticity of July 2012 Toll Rate Increase

Facility	Toll Increase	Traffic		Revenue	
		Impact	Elasticity	Impact	Elasticity
S.R. 528	11%	1.3%	N/A	12.5%	N/A
S.R. 408	13%	-1.8%	-0.14	10.8%	0.83
S.R. 417	14%	-1.9%	-0.14	12.1%	0.86
S.R. 429	15%	0.7%	N/A	15.3%	N/A
S.R. 414	17%	13.7%	N/A	33.6%	N/A

The traffic elasticity on both S.R. 408 and S.R. 417 were -0.14, with a very minor impact to the traffic. This elasticity is comparable to Florida's Turnpike Southern Connector Extension elasticity of -0.07 and Seminole Expressway elasticity of -0.21¹ for the toll rate adjustment that occurred in June of 2012. S.R. 528 was excluded from the elasticity calculation due to the recent opening of Dallas Boulevard Main Plaza and the reduction of the \$1.50 toll rate to \$0.75 at Beachline Main Plaza. S.R. 429 and S.R. 414 were excluded from the elasticity calculation since these facilities experienced increases in traffic over the period. Both facilities were just recently opened to traffic with higher initial annual growth rates and have influences beyond the toll rate change. These facilities also serve areas that are still experiencing development growth, as compared to S.R. 408 and S.R. 417 that serve developed urban areas of Orlando.

S.R. 408 and S.R. 417 show revenue elasticity of 0.83 and 0.86, respectively. This means that some customers responded to the toll rate increase by using alternative routes or switching from cash to E-PASS. For the entire CFX System, E-PASS participation increased approximately 4.0 percent over the prior year (July – October). The 4.0 percent increase is not entirely a result of the conversion of cash customers to E-PASS because normal growth is embedded in the T&R calculations and it is difficult to identify and remove.

1.3.4 WRONG-WAY DRIVING DETECTION AND PREVENTION PROGRAM

As part of CFX's mission to ensure the safety of their customers, the Authority began the Wrong-Way Driving Prevention and Detection Pilot Program in 2012 in partnership with the University of Central Florida. The program was broken out into three phases. Phase 1, which was completed in May 2013, included extensive research to determine the extent of the wrong-way driving problem and examine potential solutions. Through this research it was determined that current technology in use on the roadways did not adequately address wrong-way driving. Phase 2 of the program included the development of technology to help detect wrong-way drivers and take appropriate action. Testing began in January 2015 at the S.R. 528/S.R. 520 interchange and included data collection for a one-year period.

In January 2016, CFX installed the first wrong-way driving detection system at the S.R. 528/S.R. 520 interchange and has continued to install the devices throughout the expressway system at 34 locations. Preliminary results indicate that the system has been successful in detecting wrong-way drivers. In reported cases the driver turned around when the flashing wrong way beacons were activated. From 2015 through June 2017, this innovative technology detected 160 wrong-way incidents and 123 documented turnarounds. CFX was awarded the International Bridge, Tunnel and Turnpike Association (IBTTA) National Toll Excellence Award for the program. These awards recognize the very best projects the international tolling industry has to offer and allows IBTTA to celebrate members whose creative, innovative and positive programs set a new standard of excellence.

¹ October 2012 Traffic and Earnings Report for Florida's Turnpike System

1.4 System Historical Toll Transactions and Revenue

1.4.1 HISTORICAL ANNUAL TOLL TRANSACTIONS AND REVENUE

A history of annual transactions and revenues for the five facilities from FY 1998 to FY 2017 are presented in **Table 1-6**. The annual data is based on the CFX Monthly Statistical Reports and is not reconciled to the fiscal year end results. Also, more detailed information on history is presented in Chapters 3 through 8 of this report. For these reasons, the information presented in this section may differ slightly from the data presented in the FY 2017 Comprehensive Annual Financial Report (CAFR) and other information in this report.

S.R. 408 had the greatest number of annual transactions with 147.7 million and the greatest amount of toll revenue with \$141.0 million in FY 2017. In FY 2017 S.R. 417 had 138.1 million transactions and \$140.4 million in toll revenue, and S.R. 528 had 76.8 million transactions and \$71.8 million in toll revenue. With the northern section of S.R. 429 opened in 2000 and the southern section opened in 2006, transactions and revenue have steadily grown on S.R. 429 to 45.5 million transactions and \$51.7 million in toll revenue for FY 2017. Being the newest facility on the CFX System, S.R. 414 has been open to traffic for just eight full years and is still experiencing “ramp-up” with 12.8 million in transactions and also \$13.0 million in toll revenue for FY 2017.

As shown in the table, total System transactions in FY 2017 have increased by 22.6 million transactions or 5.7 percent over FY 2016. All facilities experienced growth in transactions in FY 2017 compared to FY 2016. Total System revenues in FY 2017 increased \$24.0 million or 6.1 percent over FY 2016. All facilities experienced increases in revenue.

Historical transactions for the CFX System since FY 1998 are displayed in **Figure 1-4**. The green line represents the number of transactions and shows how overall transactions have increased over the last 20 years. The bars represent the annual growth (percent change) of transactions. The same information for toll revenues is depicted in **Figure 1-5**. Transaction and toll revenue growth patterns exhibited on the System follow roughly the same growth pattern. This pattern does shift in times of toll rate increases, as shown in the revenue growth in FY 2009/2010 and FY 2013.

Transaction and revenue growth on the System was consistently strong up through FY 2007. Transactions and revenue exhibited double-digit growth from FY 1997 through FY 2000 and in FY 2004. The growth in transactions and revenue fell to below 5 percent in FY 2002, the first time annual growth rates fell below 5 percent since FY 1992. The downturn in growth was primarily due to a national economic slowdown in the first half of FY 2002, accompanied by the events of September 11, 2001. In FY 2005, System transaction and revenue growth was over 5 percent even though the State of Florida was impacted by four hurricanes that resulted in toll suspensions on all CFX plazas for 21 days in August and September of 2004. Then, in FY 2008 the first signs of the Great Recession appeared with transaction and revenue growth slowing down as the housing and construction industry across the State of Florida slowed down.

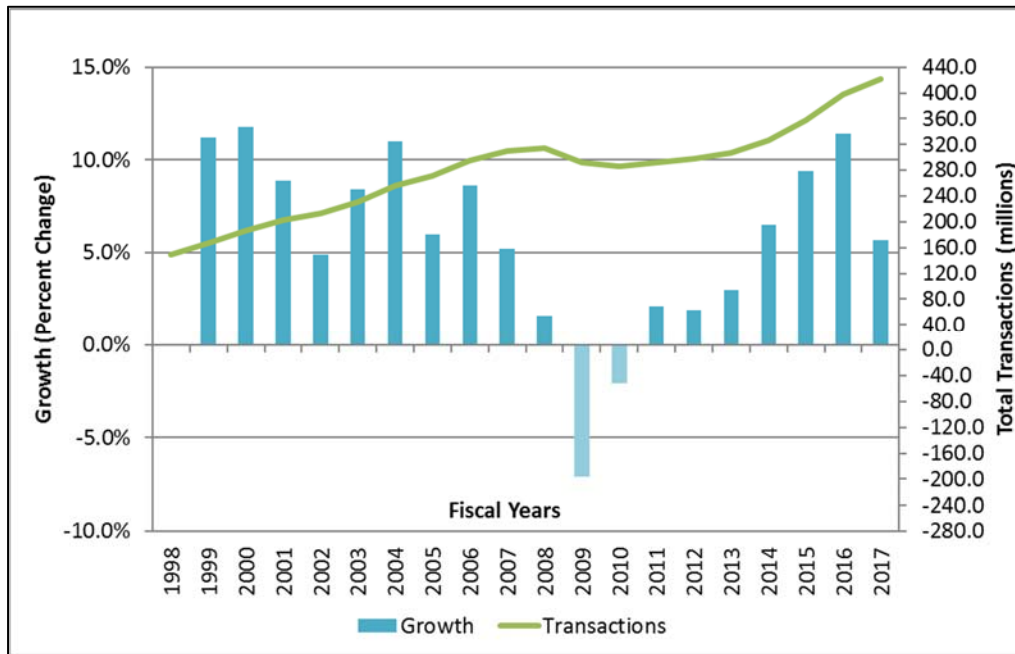
**Table 1-6
System Totals – Historical Transactions and Toll Revenues
FY 1998 – FY 2017**

Fiscal Year Ending	S.R. 528	S.R. 408	S.R. 417	S.R. 429	S.R. 414	TOTAL	Percent Change
TRANSACTIONS (millions)							
1998	25.2	79.4	45.1			149.7	
1999	27.3	88.2	50.9			166.4	11.2%
2000	30.8	97.6	57.9			186.3	12.0%
2001 ^A	32.4	104.4	62.3	3.5		202.6	8.7%
2002 ^{B,C}	31.6	110.1	64.9	5.8		212.4	4.8%
2003	33.7	116.1	71.3	9.5		230.6	8.6%
2004 ^D	37.5	124.7	79.6	13.8		255.6	10.8%
2005 ^{E,F}	39.7	127.8	87.2	16.4		271.1	6.1%
2006 ^G	42.4	135.4	96.2	20.2		294.2	8.5%
2007 ^H	44.5	138.3	102.4	24.4		309.6	5.2%
2008 ^{I,J}	44.8	139.0	104.5	26.6		314.9	1.7%
2009 ^{K,L}	40.7	131.3	94.8	25.1	0.6	292.5	-7.1%
2010 ^K	40.9	126.0	89.3	25.0	5.3	286.5	-2.1%
2011	42.5	126.7	90.9	25.9	6.5	292.5	2.1%
2012 ^M	47.5	126.2	90.7	26.4	7.3	298.1	1.9%
2013 ^N	57.6	123.5	90.3	27.2	8.3	306.9	3.0%
2014	59.7	129.7	97.2	30.7	9.5	326.8	6.5%
2015	64.3	138.2	109.3	35.2	10.6	357.6	9.4%
2016 ^O	71.5	146.2	127.4	41.2	12.0	398.3	11.4%
2017 ^P	76.8	147.7	138.1	45.5	12.8	420.9	5.7%
TOLL REVENUES (millions)							
1998	\$22.6	\$51.3	\$30.0			\$103.9	
1999	\$24.6	\$56.6	\$33.4			\$114.6	10.3%
2000	\$27.7	\$62.3	\$38.3			\$128.3	12.0%
2001 ^A	\$29.2	\$66.2	\$41.3	\$3.3		\$140.0	9.1%
2002 ^{B,C}	\$28.7	\$69.7	\$42.6	\$5.1		\$146.1	4.4%
2003	\$30.6	\$73.2	\$46.5	\$7.2		\$157.5	7.8%
2004 ^D	\$34.3	\$78.7	\$51.6	\$9.2		\$173.8	10.3%
2005 ^{E,F}	\$36.1	\$80.4	\$56.7	\$10.5		\$183.7	5.7%
2006 ^G	\$38.4	\$85.1	\$62.6	\$13.5		\$199.6	8.7%
2007 ^H	\$40.0	\$86.5	\$66.9	\$17.4		\$210.8	5.6%
2008 ^{I,J}	\$40.1	\$86.1	\$68.5	\$19.0		\$213.7	1.4%
2009 ^{K,L}	\$38.5	\$88.3	\$66.8	\$19.0	\$0.6	\$213.2	-0.2%
2010 ^K	\$46.6	\$107.7	\$79.0	\$23.5	\$4.2	\$261.0	22.4%
2011	\$48.4	\$108.3	\$80.1	\$24.4	\$5.1	\$266.3	2.0%
2012 ^M	\$48.7	\$107.7	\$80.5	\$24.9	\$5.7	\$267.5	0.5%
2013 ^N	\$54.5	\$119.3	\$91.2	\$29.4	\$7.7	\$302.1	12.9%
2014	\$56.3	\$125.2	\$98.3	\$33.5	\$9.1	\$322.4	6.7%
2015	\$60.4	\$133.0	\$110.4	\$38.9	\$10.4	\$353.1	9.5%
2016 ^O	\$66.7	\$140.1	\$129.0	\$46.1	\$12.0	\$393.9	11.6%
2017 ^P	\$71.8	\$141.0	\$140.4	\$51.7	\$13.0	\$417.9	6.1%

Notes:

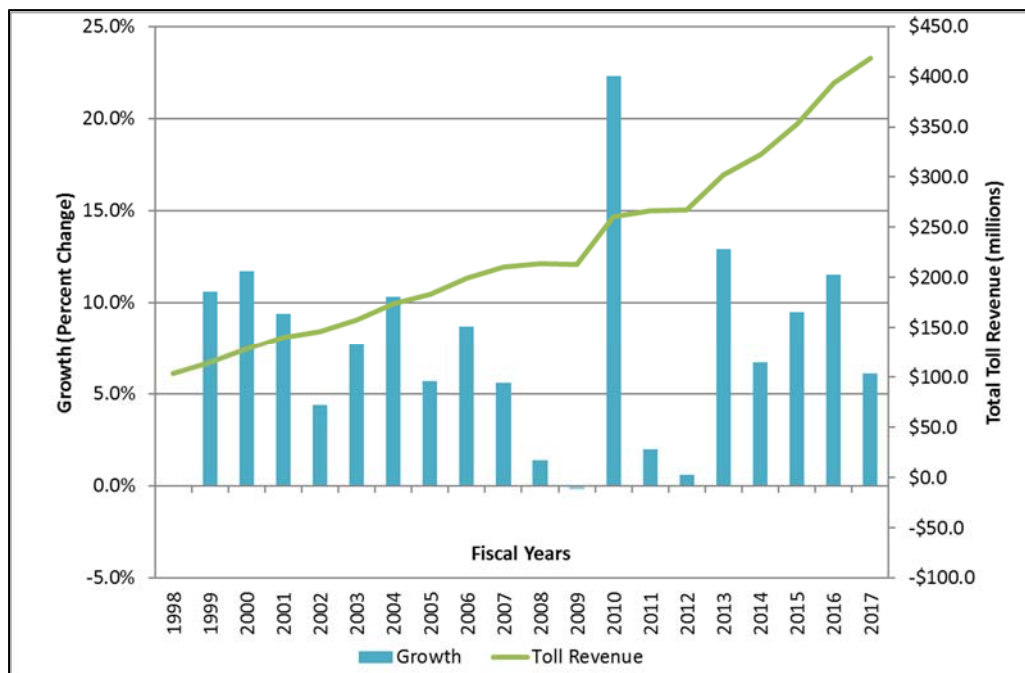
- A - Forest Lake Plaza on S.R. 429 opened in 2000.
- B - C.R. 535 ramps on S.R. 429 opened in 2002.
- C - Effects of the events on September 11, 2001.
- D - Express lanes opened at University Main plaza.
- E - Express lanes opened at Curry Ford and Dean Main plazas.
- F - Effects from 2004 hurricane season (4 storms with toll suspensions)
- G - Express lanes opened at Bogy Creek, John Young Parkway, and Hiawassee Main Plazas.
- H - Express lanes opened at Pine Hills main plaza.
- I - Express lanes opened at Conway Main plaza.
- J - First effects of national economic recession.
- K - Tolls increased Systemwide in April 2009.
- L - Coral Hills Plaza opened 2009.
- M - Dallas Main Plaza opened to traffic on March 19, 2012.
- N - Tolls increased Systemwide in July 2012.
- O - Beachline Airport Main plaza closed in March 2016.
- P - Effects from Hurricane Matthew in September 2016.

Figure 1-4
CFX System Historical Transactions and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

Figure 1-5
CFX System Historical Toll Revenue and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

In FY 2009, transactions actually decreased by 7.1 percent, which can be attributed to the economic recession and the Systemwide toll rate increase. Toll revenues only dipped into negative growth in FY 2009. The April 2009 toll rate increase slowed the negative revenue growth in FY 2009 to only -0.2 percent growth. The negative growth would have been worse without the toll rate increase, which included the last three months of FY 2009. The first nine months of FY 2010 were also impacted by the toll rate increase with revenues increasing 22.3 percent in FY 2010, while transactions still experienced a negative 2.1 percent annual growth. Also, during FY 2009, transactions were negatively impacted by two days of toll suspensions during Tropical Storm Fay. FY 2011 through FY 2017 has shown stable transaction growth with each year increasing 2 to 11 percent despite the toll rate increase at the beginning of FY 2013. Revenues have climbed to nearly \$418 million in FY 2017.

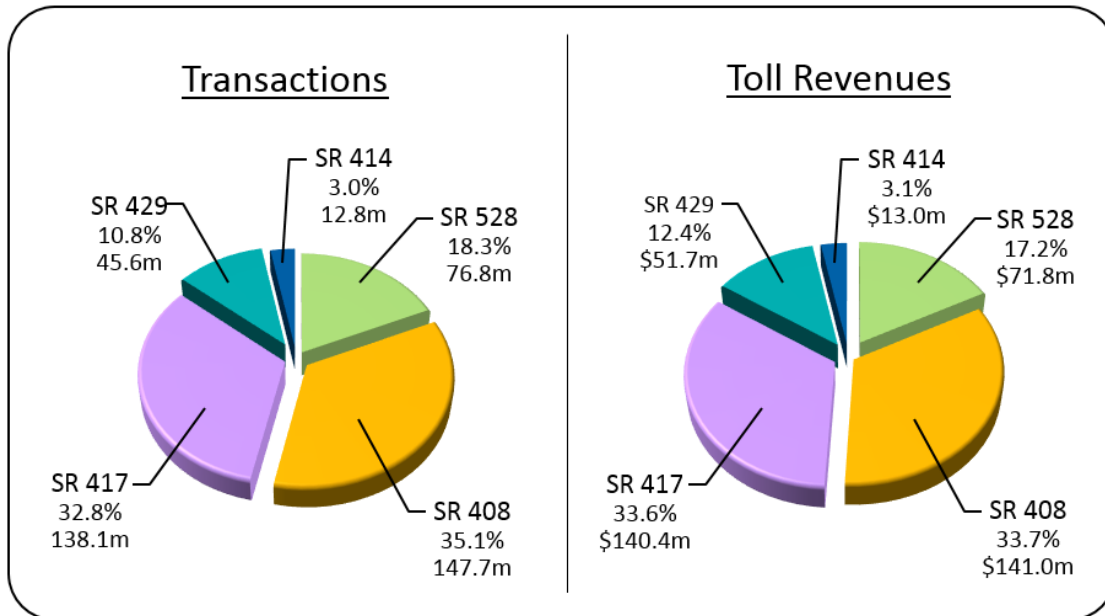
In October 2016 (FY 2017), Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. On October 3, Governor Scott declared a state of emergency and urged over 1.5 million residents to evacuate. Tolls were suspended on the CFX System beginning at 8:00 pm on October 5, 2016 through early on October 10, 2016. Besides the \$2.75 billion in damage caused by Hurricane Matthew through the state, normal traffic patterns and toll revenue collections were significantly disrupted.

1.4.2 ANNUAL TRANSACTIONS AND TOLL REVENUE BY FACILITY

Figure 1-6 contains a summary of the FY 2017 transactions and toll revenues by facility, both the number and as a percentage of the System. The largest portion of the transactions and revenue were reported on S.R. 408, with 35.1 percent, or 147.7 million of the transactions and 33.7 percent, or \$141.0 million of the revenues. Transactions on S.R. 417 are 32.8 percent of the System or 138.1 million and revenues are 33.6 percent of the System or \$140.4 million. S.R. 528 comprises 18.3 percent, or 76.8 million of the transactions and 17.2 percent, or \$71.8 million of the revenues. S.R. 429 transactions represent 10.8 percent, or 45.6 million of the System transactions and 12.4 percent, or \$51.7 million of the System revenues. S.R. 414 transactions were reported at 12.8 million or 3.0 percent, while revenues were reported at \$13.0 million or 3.1 percent of the System revenues for FY 2017.



Figure 1-6
CFX System Annual Transactions and Toll Revenues by Facility
FY 2017



Source: CFX Statistical Report June 2017

1.4.3 MONTHLY TRANSACTION SEASONAL VARIATION

The seasonal variation in transactions is presented in **Table 1-7**. The average number of transactions per day on the System in FY 2017 ranged from a high of 1,263,674 in March 2017 to a low of 1,097,490 in July of 2016. This data is presented in a graphical format in **Figure 1-7**. Each month’s average transactions per day appear as a percentage of the average for the fiscal year. As shown in the figure, March transactions were 8.4 percent above average and July transactions were 5.9 percent below the average. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

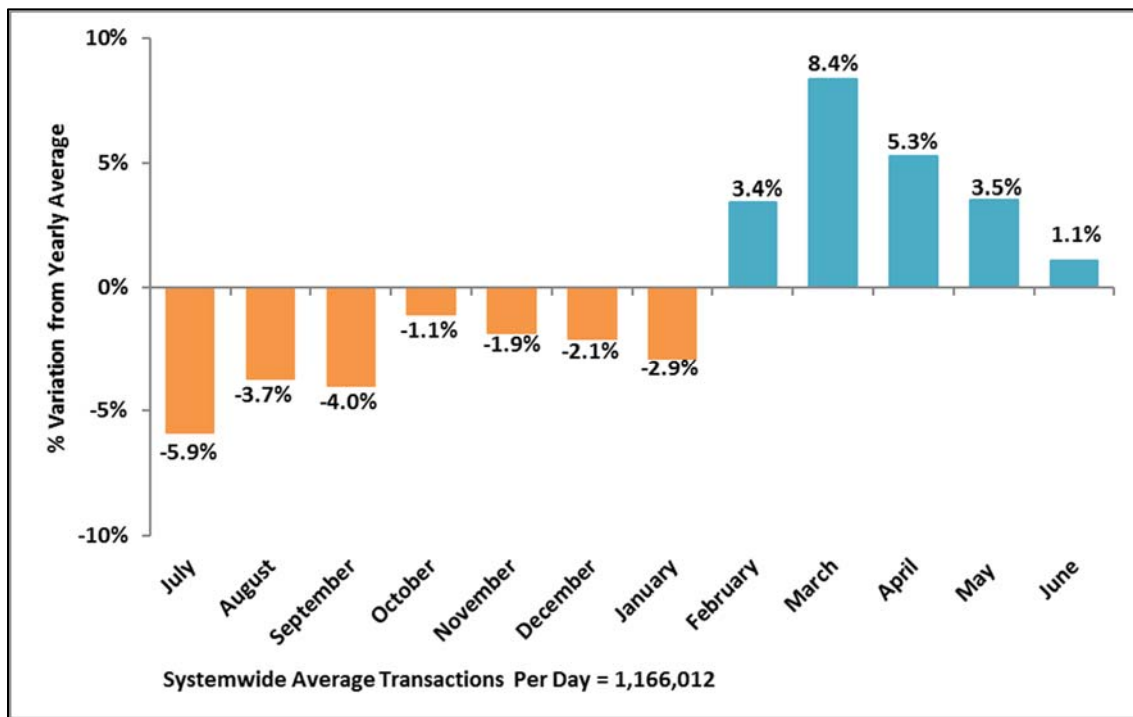
For FY 2017, the transactions were lower than average for the first half of the year and higher than average for the second half of the year. This is a normal pattern for seasonal variation, with the spring months being the peak season, due to an increase in the number of tourists and seasonal residents in the area. The seasonal patterns vary on different facilities, with the Beachline Expressway having the strongest seasonal variation due to its proximity to the Orlando International Airport (OIA) and the tourist attractions.

Table 1-7
CFX System - Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions Per Day	Seasonal Factor
July	31	34,022,194	1,097,490	0.941
August	31	34,798,197	1,122,522	0.963
September	30	33,580,703	1,119,357	0.960
October	27	31,138,971	1,153,295	0.989
November	30	34,329,985	1,144,333	0.981
December	31	35,403,456	1,142,047	0.979
January	31	35,111,826	1,132,640	0.971
February	28	33,764,578	1,205,878	1.034
March	31	39,173,889	1,263,674	1.084
April	30	36,828,559	1,227,619	1.053
May	31	37,422,059	1,207,163	1.035
June	30	35,355,789	1,178,526	1.011
Average		35,077,517	1,166,012	1.000
Total Year	361	420,930,206		

Source: CFX Statistical Report June 2017

Figure 1-7
CFX System Variation in Transactions Per Day, By Month
FY 2017



Source: CFX Statistical Report June 2017

1.5 ETC Usage

In 1994, CFX introduced the first ETC program in Florida, known as E-PASS. During that year there were approximately 2,300 E-PASS transponders in use on the System. As of FY 2017 the number has grown to 619,400 transponders and approximately 344,900 active E-PASS accounts. As shown in **Figure 1-8**, revenues collected through ETC during FY 2017 account for 82.2 percent of the total System revenues. The percent of toll revenues from ETC has grown steadily for the past 10 years, from only 67 percent in FY 2008. ETC transactions account for over 80% of daily revenue at several Mainline plazas. The percentage of revenues collected through ETC is over 75 percent at the remainder of the mainline toll plazas. Many customers purchased E-PASS in FY 2017 to take advantage of the lower electronic toll rate and pay on average 23 percent less in tolls. In FY 2013, E-PASS became interoperable with North Carolina Quick Pass. This means that Quick Pass transponders are accepted on CFX facilities and E-PASS transponders are accepted on the North Carolina Turnpike facilities.

Beginning May 11, 2016, CFX implemented a pilot program called The Reload Lane to encourage and increase E-PASS usage. CFX offered this drive-through lane on S.R. 408 at the Conway Main Plaza for customers to sign up for an E-PASS electronic transponder or replenish an existing E-PASS account from 6:00 a.m. to 8:00 p.m. daily. This program was the first of its kind in the continental United States and provided customer convenience and multiple payment options (cash, check, and debit/credit card). The program was expanded to S.R. 417 and S.R. 429 in FY 2017.

CFX continues to offer toll discount incentives to customers through various discount programs. The I-4 Commuter Discount Program, implemented in July 2015, offers discounts for transactions on S.R. 417, S.R. 429 and S.R. 414 during construction activities on I-4. Also, the Customer Loyalty Discount Program introduced in May 2016 offers discounts to frequent users of all facilities for E-PASS transactions. Both of these programs are discussed in more detail in Section 1.3.1 of this chapter. Recently, CFX began offering CollegePass in its first branded E-PASS partnership with the University of Central Florida (UCF), the University of Florida (UF) and Florida State University (FSU). These special sticker tags cost \$18.50 plus tax and an additional \$10 for customers to activate a prepaid toll account. CollegePass works the same way as regular sticker tag transponders and offer the same discounts and benefits exclusive to E-PASS customers.

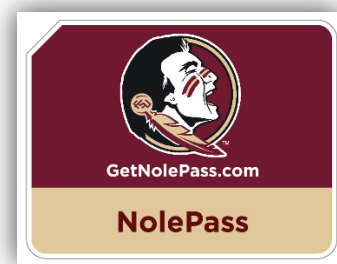


Figure 1-8
CFX System Percent of Toll Revenue from Electronic Toll Collection
FY 2008 – FY 2017



Source: CFX Statistical Report June 2017

1.6 Forecasting Methodology

The estimates of future annual T&R for the CFX System, contained in this annual report, were derived from a traditional four-step, travel demand model and a T&R model both designed specifically for this purpose. The travel demand model, known as the CFX Model 2.1, was completed in January 2017 by updating and improving the prior model. At the risk of oversimplification, the forecasts of future toll revenue were estimated as the sum of the product of the traffic forecasts (converted to the number of annual transactions) and the toll rate at each tolling point on the CFX System. This section of the report provides an overview of the forecasting methodology and general approach used to estimate T&R.

1.6.1 TRAVEL DEMAND MODEL

In general, the earlier version of the travel demand model was reviewed and updated with information from the recently-released 2009 Orlando Urban Area Transportation Study (OUATS) Model, developed by MetroPlan Orlando. Model features outside of the MetroPlan Orlando area (Orange, Seminole and Osceola Counties) are based on the 2005 Central Florida Regional Planning Model (CFRPM) produced by Florida Department of Transportation, District 5.

The CFX Model 2.0 was calibrated to 2010 conditions, including socioeconomic (SE) data from the US Census and Woods and Poole data in the new OUATS and traditional CFRPM zone systems. The calibration was based on the transportation networks taken from the two operational models. The networks and associated counts were reviewed using 2010 aerial photography and updated as necessary. Data from the National Highway Travel Survey (NHTS) Florida was acquired and used to calibrate the trip length distributions for five trip purposes (home-based work, home-based shopping, home-based social recreation, home-based other and non-home-based trips). The treatment of external trips was also carefully reviewed and improved, as was the use of time penalties and turn prohibitions.

In order to make the model more sensitive to network and tolling considerations, the CFX Model 2.0 was calibrated to match historical traffic counts on mainline and ramp segments on the CFX System. The calibration process utilized an approach called Origin-Destination Matrix Estimation (ODME) to enhance the replication of observed traffic patterns, especially on the CFX System. Technical documentation of the model development process is available under separate cover. At the conclusion, the CFX Model 2.0 provided a very close fit to travel patterns in general and especially close to travel on the CFX System.

Turning to the production of traffic forecasts, SE data forecasts were developed for the CFX Model 2.0 in six planning horizon years (2018, 2023, 2028, 2033, 2038 and 2043) corresponding to the planned future year toll rate adjustments. The SE data forecasts were developed from a combination of growth rates by county and the spatial pattern of development from the MPO plans. Population growth rates were developed from the Medium level population projections by county from the most recent publication by the Bureau of Economic and Business Research (BEBR), College of Business Administration at the University of Florida. Forecasts of employment were based on estimates of future employment by county produced by Woods and Poole. Control totals for each county by data set were developed and applied to the spatial distribution of growth by zone as adopted by the MPOs.

Future year transportation networks were created for each of the planning horizon years. The future year networks were updated to include the latest network improvements from the Long-Range Transportation Plans (LRTPs) and Transportation Improvement Programs (TIPs) for all MPOs covered by the CFX Model 2.0. These include MetroPlan Orlando, Lake-Sumter MPO, Space Coast TPO, River to Sea TPO and Polk County TPO. The future networks also include all network improvements identified in the CFX FY 2016 - 2020 Five-Year Work Plan and related 10-Year Outlook – Planned Alternative, as well as the adopted 2030 Expressway Master Plan. The future year networks also included improvement projects identified in the Florida DOT Strategic Intermodal System's (SIS) 1st and 2nd 5-year plans, and SIS Cost Feasible 2040 Plan, as well as Florida Turnpike Enterprise's 5-Year Work Program along with the 2010 Update of Florida's Turnpike Enterprise Master Plan.

Two toll conditions were modeled in each of the future years: toll amounts before the planned toll rate adjustments and the toll amounts with the planned toll rate adjustments. As part of the work preparing T&R estimates for the FY 2016 Annual Report, the travel demand model was used to forecast traffic under conditions of no future toll rate adjustments.

In this way, the CFX Model 2.0 provided direct estimates of the effect of the future SE data, network improvements and toll rate adjustments on CFX System traffic.

1.6.2 T&R MODEL

The T&R Model was built on an up to date history of transactions and revenue for each plaza group by month. This data was used to identify T&R growth trends by plaza group, distinguishing the impacts of the two recent weather events (Hurricane Matthew in FY 2017 and Hurricane Irma in FY 2018). The T&R estimates for FY 2018 come from an analysis of these impacts extended to the remainder of the year. The estimates for FY 2019 and beyond are first adjusted or “trued up” to reflect expectations for the next fiscal year. These estimates were based on growth rates from the travel demand model, under the assumption of no future toll rate adjustments, modified to reflect recent history of performance by plaza group. Beginning in FY 2019, the growth rates were adjusted to reflect the impacts of the indexed toll rates under the new toll policy. Compared to the assumption of no toll rate adjustments, the transaction growth rates under indexed toll rates would be small but lower. Growth in revenue would be higher than the growth in transactions by an amount nearly equal to the index (1.5%).

Since the FY 2017 T&R data includes the effect of vehicle class and violations, estimates of future T&R already include these effects. There is no need to prepare separate forecasts of the effects of vehicle class and violations. As reported by CFX, revenue recovered from Unpaid Toll Notices (UTNs) and Pay-By-Plate (PBP) are estimated separately as are the effects of the discount programs.

The effect of the combination of travel demand model and T&R model is such that the transaction and toll revenue estimates are controlled to match the details in base year values. The growth in transactions and toll revenue are primarily determined by changes from the travel demand model modified by recent experience. This includes the effects of changes in the spatial pattern of SE activity, changes in transportation network and changes in toll rate.

1.6.3 FORECASTING ASSUMPTIONS

T&R estimates for the CFX System are predicated on the following basic assumptions, all of which are considered reasonable for the purposes of this T&R study:

- Toll rates at each location are in nominal or future-year dollars, conforming to the recent toll rate policy. Toll rate adjustments (indexed tolls) are applied every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent each year thereafter.
- Inflation is assumed to be 2.5 percent annually which includes the adjustment for real income growth. The value of time is likewise expected to increase by 2.5 percent per year.
- Future transportation projects were assumed as defined in the locally adopted plans. The projects listed in the locally adopted Transportation Improvement Programs (TIP) and the 2040 Long Range Transportation Plans (LRTP) were reviewed and compared with the prior model and with the CFRPM. Most of the projects in the TIP were assumed to be built by FY 2018, but some occur later depending on the horizon year. The Cost Feasible LRTP projects were reviewed and included in the corresponding future-year networks. CFX

improvements were assumed and included based on projects identified in the 2040 Master Plan. Details on future projects that impact specific system components are provided in each chapter.

- The complete Wekiva Parkway was included in the models by the horizon year of 2023. T&R from the Wekiva Parkway are included in the System totals reported in this annual report. The new toll facility is reported as part of S.R. 429 and the new facility S.R. 453.
- The I-4 Ultimate project was included in the CFX Model by the horizon year of 2023.
- No local, regional or national emergency will arise which would abnormally restrict the use of motor vehicles, or substantially alter economic activity or freedom of mobility.
- Motor fuel will remain in adequate supply, and long-term increases in price will not significantly exceed the overall rate of inflation throughout the forecast period.
- The CFX System will be well-maintained, efficiently operated and effectively signed and promoted to encourage maximum usage.
- The forecasted traffic is revenue traffic and forecasted revenues are indicated toll revenues. The forecasts include variance due to toll violations as reflected in the T&R model. Allowances for the discount programs and revenue recaptured from UTNs and PBP are included separately on a System-wide basis.

Any significant departure from the above basic assumptions could materially affect estimated traffic and toll revenues for the CFX System.

1.7 System Forecasts

1.7.1 SYSTEM TRANSACTION AND TOLL REVENUE FORECASTS

Based on the recently adopted "Customer First Toll Policy," toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent every year thereafter.

The total transactions and toll revenue by facility and for the System as a whole are summarized in **Table 1-8** and **Table 1-9**. This information is presented for historical transactions and toll revenue since FY 2000 and estimates in a 30-year forecast. The forecasts were produced by mainline plaza groups, aggregated to toll facility and then to the CFX System.

**Table 1-8
CFX System Transaction Forecast (Millions)**

Fiscal Year	S.R. 528		S.R. 408		S.R. 417		S.R. 429		S.R. 414		S.R. 453		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual	Projected	Actual ^A	Projected	
2000	30.8		97.6		57.9								186.3		11.9%
2001	32.4		104.4		62.3		3.5						202.6		8.7%
2002 ^B	31.6		110.1		64.9		5.8						212.4		4.8%
2003	33.7		116.1		71.3		9.5						230.6		8.6%
2004	37.5		124.7		79.6		13.8						255.6		10.8%
2005 ^C	39.7		127.8		87.2		16.4						271.1		6.1%
2006	42.4		135.4		96.2		20.2						294.2		8.5%
2007	44.5		138.3		102.4		24.4						309.6		5.2%
2008 ^D	44.8		139.0		104.5		26.6						314.9		1.7%
2009 ^E	40.7		131.3		94.8		25.1		0.6				292.5		-7.1%
2010	40.9		126.0		89.3		25.0		5.3				286.5		-2.1%
2011	42.5		126.7		90.9		25.9		6.5				292.5		2.1%
2012	47.5		126.2		90.7		26.4		7.3				298.1		1.9%
2013 ^E	57.6		123.5		90.3		27.2		8.3				306.9		3.0%
2014	59.7		129.7		97.2		30.7		9.5				326.8		6.5%
2015	64.3		138.2		109.3		35.2		10.6				357.6		9.4%
2016 ^F	71.5		146.2		127.4		41.2		12.0				398.3		11.4%
2017 ^G	76.8		147.7		138.1		45.5		12.8				420.9		5.7%
2018 ^H		77.5		145.9		147.4		50.0		13.3		0.4		434.5	3.2%
2019 ^I		79.8		148.5		155.2		55.5		13.9		1.9		454.7	4.7%
2020		81.8		150.7		161.8		58.1		14.4		2.1		468.9	3.1%
2021 ^J		83.5		152.9		167.4		60.6		14.9		2.4		481.6	2.7%
2022		84.9		154.7		172.2		62.9		15.3		2.5		492.5	2.3%
2023		85.9		156.1		175.9		65.1		15.7		2.6		501.3	1.8%
2024		86.9		157.6		179.5		66.9		16.1		2.8		509.7	1.7%
2025		87.7		159.1		183.0		68.7		16.4		2.9		517.8	1.6%
2026		88.5		160.4		186.2		70.5		16.6		3.0		525.3	1.4%
2027		89.2		161.6		189.3		72.1		16.9		3.2		532.3	1.3%
2028		90.0		162.8		192.5		73.9		17.2		3.3		539.7	1.4%
2029		90.6		163.9		195.3		75.5		17.5		3.4		546.2	1.2%
2030		91.3		165.2		198.2		77.2		17.7		3.6		553.2	1.3%
2031		91.9		166.3		201.0		78.9		18.0		3.7		559.8	1.2%
2032		92.5		167.5		203.6		80.6		18.3		3.8		566.3	1.2%
2033		93.1		168.4		206.1		82.3		18.6		3.9		572.4	1.1%
2034		93.7		169.5		208.4		83.8		18.8		4.1		578.3	1.0%
2035		94.2		170.5		210.7		85.5		19.1		4.2		584.2	1.0%
2036		94.8		171.5		212.9		87.1		19.3		4.3		590.0	1.0%
2037		95.3		172.3		215.2		88.7		19.6		4.5		595.6	0.9%
2038		95.9		173.3		217.3		90.4		19.8		4.6		601.3	1.0%
2039		96.4		174.2		219.5		91.9		20.1		4.7		606.8	0.9%
2040		96.9		174.9		221.5		93.7		20.3		4.9		612.1	0.9%
2041		97.4		175.8		223.6		95.2		20.5		5.0		617.5	0.9%
2042		97.8		176.5		225.4		96.9		20.7		5.1		622.4	0.8%
2043		98.3		177.2		227.3		98.4		20.9		5.2		627.3	0.8%
2044		98.7		177.9		229.1		100.0		21.1		5.4		632.1	0.8%
2045		99.1		178.5		230.8		101.5		21.2		5.5		636.6	0.7%
2046		99.5		179.1		232.4		103.0		21.4		5.6		641.0	0.7%
2047		99.8		179.6		234.0		104.7		21.5		5.8		645.4	0.7%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)							
2000 - 2007	5.4%	5.1%	8.5%					7.5%
2007 - 2017	5.6%	0.7%	3.0%	6.4%				3.1%
2017 - 2027	1.5%	0.9%	3.2%	4.7%	2.8%			2.4%
2027 - 2037	0.7%	0.6%	1.3%	2.1%	1.5%	3.5%		1.1%
2037 - 2047	0.5%	0.4%	0.8%	1.7%	0.9%	2.6%		0.8%

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports, which are unaudited.
- B - Effects of the events of September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - First effects of national economic recession.
- E - Systemwide toll rate increase.
- F - Airport Main Plaza closes, new ramp plazas open at beginning of FY 2016. Transactions for tolls collected at the Turnpike plaza not included.
- G - Effects from Hurricane Matthew in October 2016.
- H - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018 (S.R. 429). Coronado Main plaza opened on April 1, 2018 (S.R. 453).
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 2.05% in FY 2019 and 1.5% assumed annually throughout forecast period.
- J - Completion of I-4 Ultimate project.

**Table 1-9
CFX System Toll Revenue Forecast - Before Discounts and UTN/PBP Collections (Millions)**

Fiscal Year	S.R. 528		S.R. 408		S.R. 417		S.R. 429		S.R. 414		S.R. 453		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual	Projected	Actual ^A	Projected	
2000	\$27.7		\$62.3		\$38.3								\$128.3		11.9%
2001	29.2		66.2		41.3		\$3.3						140.0		9.1%
2002 ^B	28.7		69.7		42.6		5.1						146.1		4.4%
2003	30.6		73.2		46.5		7.2						157.5		7.8%
2004	34.3		78.7		51.6		9.2						173.8		10.3%
2005 ^C	36.1		80.4		56.7		10.5						183.7		5.7%
2006	38.4		85.1		62.6		13.5						199.6		8.7%
2007	40.0		86.5		66.9		17.4						210.8		5.6%
2008 ^D	40.1		86.1		68.5		19.0						213.7		1.4%
2009 ^E	38.5		88.3		66.8		19.0		\$0.6				213.2		-0.2%
2010	46.6		107.7		79.0		23.5		4.2				261.0		22.4%
2011	48.4		108.3		80.1		24.4		5.1				266.3		2.0%
2012	48.7		107.7		80.5		24.9		5.7				267.5		0.5%
2013 ^E	54.5		119.3		91.2		29.4		7.7				302.1		12.9%
2014	56.3		125.2		98.3		33.5		9.1				322.4		6.7%
2015	60.4		133.0		110.4		38.9		10.4				353.1		9.5%
2016 ^F	66.7		140.1		129.0		46.0		12.0				393.8		11.5%
2017 ^G	71.8		141.0		140.4		51.7		13.0				417.9		6.1%
2018 ^H		\$73.4		\$138.9		\$150.5		\$56.9		\$13.7		\$0.3		\$433.7	3.8%
2019 ^I		77.0		141.9		160.2		62.3		14.6		1.2		457.2	5.4%
2020		80.3		145.0		169.8		67.0		15.3		1.4		478.9	4.7%
2021 ^J		83.4		148.1		179.3		71.2		16.1		1.6		499.7	4.4%
2022		85.9		151.5		188.1		75.7		16.8		1.8		519.8	4.0%
2023		88.0		154.8		196.5		79.8		17.5		1.9		538.5	3.6%
2024		90.3		158.2		203.9		83.8		18.2		2.1		556.4	3.3%
2025		92.2		161.5		210.6		87.4		18.7		2.2		572.6	2.9%
2026		94.1		165.0		216.1		90.8		19.3		2.3		587.6	2.6%
2027		96.1		168.4		221.6		94.1		19.8		2.5		602.5	2.5%
2028		98.1		171.9		227.4		97.5		20.4		2.6		617.9	2.6%
2029		100.0		175.4		233.3		100.9		21.0		2.8		633.4	2.5%
2030		102.0		179.0		239.1		104.3		21.6		2.9		648.9	2.5%
2031		104.1		182.7		245.1		107.5		22.1		3.1		664.6	2.4%
2032		106.1		186.5		251.4		110.9		22.7		3.2		680.9	2.4%
2033		108.1		190.2		257.6		114.3		23.3		3.4		696.9	2.4%
2034		110.1		194.0		264.0		117.6		23.9		3.5		713.2	2.3%
2035		112.2		198.0		270.4		120.9		24.6		3.7		729.7	2.3%
2036		114.2		201.8		277.0		124.2		25.2		3.8		746.2	2.3%
2037		116.4		205.7		283.7		127.5		25.8		4.0		763.0	2.3%
2038		118.4		209.8		290.4		130.9		26.4		4.1		780.0	2.2%
2039		120.5		213.7		297.1		134.3		27.0		4.3		796.8	2.2%
2040		122.6		217.7		303.9		137.5		27.6		4.4		813.7	2.1%
2041		124.8		221.8		310.8		140.8		28.2		4.5		830.9	2.1%
2042		126.9		225.9		317.8		144.0		28.8		4.7		848.1	2.1%
2043		129.1		230.0		324.8		147.3		29.4		4.8		865.4	2.0%
2044		131.3		234.1		332.0		150.6		29.9		5.0		882.9	2.0%
2045		133.5		238.1		339.2		153.7		30.5		5.1		900.1	1.9%
2046		135.6		242.2		346.3		156.9		31.1		5.3		917.3	1.9%
2047		137.8		246.4		353.6		160.1		31.6		5.4		934.9	1.9%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)									
2000 - 2007	5.4%		4.8%		8.3%					7.4%
2007 - 2017	6.0%		5.0%		7.7%		11.5%			7.1%
2017 - 2027	3.0%		1.8%		4.7%		6.2%		4.3%	3.7%
2027 - 2037	1.9%		2.0%		2.5%		3.1%		2.7%	2.4%
2037 - 2047	1.7%		1.8%		2.2%		2.3%		2.1%	2.1%

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports, which are unaudited.
- B - Effects of the events of September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - First effects of national economic recession.
- E - Systemwide toll rate increase.
- F - Airport Main Plaza closes, new ramp plazas open at beginning of FY 2016. Transactions for tolls collected at the Turnpike plaza not included.
- G - Effects from Hurricane Matthew in October 2016.
- H - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018 (S.R. 429). Coronado Main plaza opened on April 1, 2018 (S.R. 453).
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 2.05% in FY 2019 and 1.5% assumed annually throughout forecast period.
- J - Completion of I-4 Ultimate project.

1.7.2 SYSTEM AVAILABLE TOLL REVENUES

The System available toll revenue is defined as indicated revenue plus revenue from UTNs/PBP, less the discounts. The calculations are summarized in **Table 1-10**. The System toll revenue forecasts, previously shown in Table 1-9, do not include any of the recaptured toll revenue from these violations. Historically, the recaptured toll revenue from these violations was relatively minor. However, in recent years, changes in CFX's toll collection policy concerning violators have resulted in an increased recapture rate of the toll revenues. CFX instituted a more convenient method of payment for toll violations using UTNs in June 2009. CFX's toll collection policy was also modified to require all violations be paid in order for a customer to renew their Florida vehicle registration. A document fee of \$3.00 was added to the UTN in addition to a \$0.10 charge for each photograph (violation) on the monthly UTN. In August 2010, CFX approved a change to the violation threshold for issuance of the UTNs from three or more violations within a calendar month to two or more violations within a calendar month. The System Toll Revenues plus the Revenue Recaptured from UTN/PBP is expected to increase from the actual Total System Toll Revenues of \$440.3 million in FY 2017 to \$630 million in FY 2027, \$792.3 million in FY 2037 and \$963.9 million in FY 2047.

The System currently experiences a relatively low violation rate. In FY 2017, the unadjusted violations of all System transactions recorded as violations were 5.2 percent. This low violation rate is experienced despite providing open road tolling at all System mainline plazas.

In addition to the Total System Toll Revenues, Table 1-10 also shows the additional Revenue Recaptured from UTN/PBP less the discounts during the fiscal year. The discount programs are discussed in detail in Section 1.3.1 of this chapter. The resulting Available System Revenues can be used by CFX for their operating and maintenance budget and debt service. The Available System Revenues are projected to increase from the actual \$423.7 million in FY 2017 to estimated amounts of \$608.8 million in FY 2027, \$759 million in FY 2037 and \$915.9 million in FY 2047.

1.7.3 NON-SYSTEM REVENUES

The Goldenrod Road Extension is a toll facility operated by CFX. It was constructed as an extension of the existing Goldenrod Road (S.R. 551) to provide an additional north-south facility operated by CFX as a Non-System project in the vicinity of the OIA. Goldenrod Road was a four-lane state-maintained facility that terminated at Narcoossee Road. The Goldenrod Road Extension continues the roadway south from the terminus at Narcoossee Road to Cargo Road on the airport property. There is one interchange on the facility at S.R. 528, just east of the airport. The Greater Orlando Aviation Authority (GOAA) constructed Heintzelman Boulevard, a four-lane facility that connects with the Goldenrod Road Extension at Cargo Road and then extends south through the OIA. South of the existing terminal building, Heintzelman Boulevard interchanges with the Airport South Access Road. Heintzelman Boulevard is not currently signed for use by the general public and serves as an access road for airport employees.

**Table 1-10
CFX System Toll Revenues Available (Millions)**

Fiscal Year	System Toll Revenues	Revenue Recaptured from UTN/PBP ^C	Total System Toll Revenues	Discount Programs ^D	Available System Revenues	Percent Annual Change
2000 ^B	\$128.1		\$128.1	\$2.6	\$125.5	11.7%
2001 ^B	140.1		140.1	3.2	136.9	9.1%
2002 ^B	146.2		146.2	3.9	142.3	3.9%
2003 ^B	157.5		157.5	4.2	153.3	7.7%
2004 ^B	173.7		173.7	4.9	168.8	10.1%
2005 ^B	183.6		183.6	5.9	177.7	5.3%
2006 ^B	199.7		199.7	6.7	193.0	8.6%
2007 ^B	210.8		210.8	7.35	203.5	5.4%
2008 ^B	213.8		213.8	7.9	205.9	1.2%
2009 ^{A,B}	213.2		213.2	6.8	206.4	0.2%
2010	262.0	\$1.1	263.1	\$9.4	253.6	22.9%
2011	266.5	3.0	269.5	9.5	260.0	2.5%
2012	267.9	4.3	272.2	9.6	262.6	1.0%
2013 ^A	302.7	6.3	309.0	10.8	298.2	13.5%
2014	322.8	8.1	330.9	11.7	319.1	7.0%
2015	353.1	11.0	364.1	13.2	350.9	10.0%
2016	393.9	15.7	409.6	18.7	390.9	11.4%
2017	418.5	21.8	440.3	16.6	423.7	8.4%
2018	433.7	22.5	456.2	18.0	438.2	3.4%
2019 ^F	457.3	23.4	480.7	19.8	460.9	5.2%
2020	479.0	24.2	503.2	21.6	481.6	4.5%
2021	499.7	24.9	524.6	23.4	501.2	4.1%
2022	519.8	25.5	545.3	16.1	529.2	5.6%
2023	538.6	26.0	564.6	17.1	547.5	3.5%
2024	556.4	26.5	582.9	18.2	564.7	3.1%
2025	572.7	26.9	599.6	19.2	580.4	2.8%
2026	587.6	27.1	614.7	20.2	594.5	2.4%
2027	602.6	27.4	630.0	21.2	608.8	2.4%
2028	617.9	27.6	645.5	22.3	623.2	2.4%
2029	633.3	27.9	661.2	23.4	637.8	2.3%
2030	648.9	28.1	677.0	24.5	652.5	2.3%
2031	664.7	28.3	693.0	25.7	667.3	2.3%
2032	680.7	28.5	709.2	26.9	682.3	2.2%
2033	696.9	28.7	725.6	28.1	697.5	2.2%
2034	713.2	28.8	742.0	29.3	712.7	2.2%
2035	729.7	29.0	758.7	30.6	728.1	2.2%
2036	746.3	29.1	775.4	32.0	743.4	2.1%
2037	763.1	29.2	792.3	33.3	759.0	2.1%
2038	779.9	29.3	809.2	34.7	774.5	2.0%
2039	796.8	29.3	826.1	36.2	789.9	2.0%
2040	813.8	29.3	843.1	37.6	805.5	2.0%
2041	830.9	29.4	860.3	39.1	821.2	1.9%
2042	848.1	29.4	877.5	40.7	836.8	1.9%
2043	865.4	29.3	894.7	42.2	852.5	1.9%
2044	882.7	29.3	912.0	43.8	868.2	1.8%
2045	900.0	29.2	929.2	45.5	883.7	1.8%
2046	917.4	29.1	946.5	47.1	899.4	1.8%
2047	934.9	29.0	963.9	48.0	915.9	1.8%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2000 - 2007	7.4%		7.4%		7.1%	
2007 - 2017	7.1%		7.6%	8.5%	7.6%	
2017 - 2027	3.7%	2.3%	3.6%	2.5%	3.7%	
2027 - 2037	2.4%	0.6%	2.3%	4.6%	2.2%	
2037 - 2047	2.1%	-0.1%	2.0%	3.7%	1.9%	

Notes:
A - Systemwide toll rate increase.
B - Actual FY system toll revenues provided by the Authority and are audited. System toll revenues will not equal the sum of the system plaza group revenues presented in Table 1-9 due to recovered revenues from toll violations and account adjustments. These adjustments occur periodically throughout the FY but are not tied to the collected revenue at a particular plaza group. Since FY 2010 the recovered revenues have been reported separately.
C - Unpaid Toll Notice. The revenue recaptured from the UTNs comprised 4.0 percent and 5.2 percent of the System Revenues less E-PASS discount in FY 2016 and FY 2017, respectively. From FY 2018 through FY 2047, the estimated revenue recaptured from the UTN/PBP is assumed to comprise 5.5 percent declining to 3.1 percent of the System Toll Revenues Less the E-PASS Discount. Historical information comes from the 2017 CAFR.
D - Discount Programs. The E-PASS Discount Program, created to increase ETC participation, provides a 5 percent discount to customers with at least 40 transactions in a month and a 10 percent discount to customers with at least 80 transactions per month. As of May 2016, the E-PASS Discount Program was replaced by the Customer Loyalty Discount Program, which provides a 10 percent discount to E-PASS customers with at least 40 transactions in a month and a 15 percent discount to E-PASS customers with at least 80 transactions per month. The I-4 Ultimate Commuter Discount Program, instituted for a six-year period beginning in FY 2016, provides an additional 5 percent discount to customers with 20 or more transactions per month on the CFX "beltway" facilities (SR 417, SR 429 and SR 414). Historical information on the E-PASS discount comes from the 2017 CAFR. The Regional School Bus Discount Program, which began on February 1, 2016, provides a 99 percent discount to school buses from Orange, Brevard, Lake, Osceola, Polk, Seminole and Volusia Counties transporting students on official school business on CFX facilities. All discounts will only be offered during months when actual total revenue exceeds the current revenue projections by more than 2.0 percent.
E - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout the forecast period.

Source - System Toll Revenue - CAFR "Average Toll Rate" Table that reports Toll revenue before E-PASS discount.

Construction of the Goldenrod Road Extension began in January 2001 and was opened to traffic in March 2003. This project was jointly funded by CFX, Orange County, the City of Orlando, GOAA and private developers, with CFX serving as the lead agency on the project. The Goldenrod Road Extension is tolled at one location. A mainline plaza, with a toll of \$0.50 is located north of the interchange with S.R. 528. Revenues generated by the toll on the Goldenrod Road Extension are not included as part of CFX's System revenues. Revenues generated by this non-System roadway are not pledged as part of the System revenues available for debt service. Such revenues will be used to repay funds used by the partners for the construction of the roadway as well as the continued operations and maintenance expenses. According to the agreements between the project's partners, once toll revenues have paid for project costs (including toll operations and maintenance), the toll plaza will be removed, and the City of Orlando will assume ownership of the roadway.

1.8 Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of these traffic and revenue estimates. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by CFX. CDM Smith also relied upon the reasonable assurances of other independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including CFX. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to CFX and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to CFX with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to CFX. CFX should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

Chapter 2

Economic Indicators



ECONOMIC INDICATORS

Regional travel demand is driven by the levels, growth rates, and location of socioeconomic activity, such as population, housing, and employment. Economic activity is also reflected in measures of retail sales and tourism. Socioeconomic growth is a major factor in determining future use of toll roads and bridges. Other important growth factors specific to the Central Florida area include enplanement activity at the Orlando



International Airport (OIA), enrollment at the University of Central Florida (UCF) and attendance at area attractions. These factors can all be fundamentally traced to underlying socioeconomic variables, so it is important to understand the socioeconomic conditions in which the CFX facilities operated. This chapter contains a review of socioeconomic factors relevant to CFX and comparative data (historical and forecast) for the counties within the study area and the State of Florida.

2.1 Population

2.1.1 HISTORICAL TRENDS

The historical population trends for the seven counties in the study area and the State of Florida from 1980 through 2016 are included in **Table 2-1**. The corresponding population compound average annual growth rates (CAAGR) for the same years are included in **Table 2-2**. Population in the study area more than doubled since 1980 from approximately 1.7 million to over 4.2 million in 2016, or equivalent to a growth rate of 2.6 percent per year. Long-term historical population growth decelerated from 3.8 percent per year in the 1980s to 2.2 percent per year between 2000 and 2010. Since 1980, Osceola County was the fastest growing county in the study area, with average growth of 5.5 percent per year. Polk and Volusia Counties experienced the slowest relative growth of 2.0 percent per year from 1980 to 2016. Nearly one third of the study area population is in Orange County, which is home to over 1.3 million residents. The State's total population grew from 9.7 million in 1980 to 20.6 million in 2016, or an increase of 2.1 percent per year on average. Historically, population growth in the study area outpaced the State of Florida over the last three decades.

Table 2-1
Population – Historical Trend
1980 – 2016

County	1980	1990	2000	2010	2016
Brevard	272,959	398,978	476,230	543,376	579,130
Lake	104,870	152,104	210,528	297,052	335,396
Orange	470,865	677,491	896,344	1,145,956	1,314,367
Osceola	49,287	107,728	172,493	268,685	336,015
Polk	321,652	405,382	483,924	602,095	666,149
Seminole	179,752	287,529	365,196	422,718	455,479
Volusia	258,762	370,712	443,343	494,593	529,364
Area Total	1,658,147	2,399,924	3,048,058	3,774,475	4,215,900
Florida	9,746,961	12,937,926	15,982,378	18,801,310	20,612,439

Source: U.S. Census Bureau

Table 2-2
Population – Historical Growth Rates (CAAGR)
1980 – 2016

County	1980-'90	1990-'00	2000-'10	2010-'16	1980-'16
Brevard	3.9%	1.8%	1.3%	1.1%	2.1%
Lake	3.8%	3.3%	3.5%	2.0%	3.3%
Orange	3.7%	2.8%	2.5%	2.3%	2.9%
Osceola	8.1%	4.8%	4.5%	3.8%	5.5%
Polk	2.3%	1.8%	2.2%	1.7%	2.0%
Seminole	4.8%	2.4%	1.5%	1.3%	2.6%
Volusia	3.7%	1.8%	1.1%	1.1%	2.0%
Area Total	3.8%	2.4%	2.2%	1.9%	2.6%
Florida	2.9%	2.1%	1.6%	1.5%	2.1%

Source: U.S. Census Bureau

Regional school enrollment is an additional indicator of activity in Central Florida. **Table 2-3** summarizes school enrollment by year and county in the study area, including the total percent change and CAAGR. School enrollment in Osceola County experienced the most growth since 2008 at an average pace of 2.7 percent annually. School enrollment was essentially unchanged in the last decade in Brevard and Volusia Counties (0.1 and 0.0 percent, respectively). Overall, school enrollment in the study area grew 1.2 percent per year on average since 2008. These numbers are not directly comparable to total population due to the number of families in the study area without school-age children.

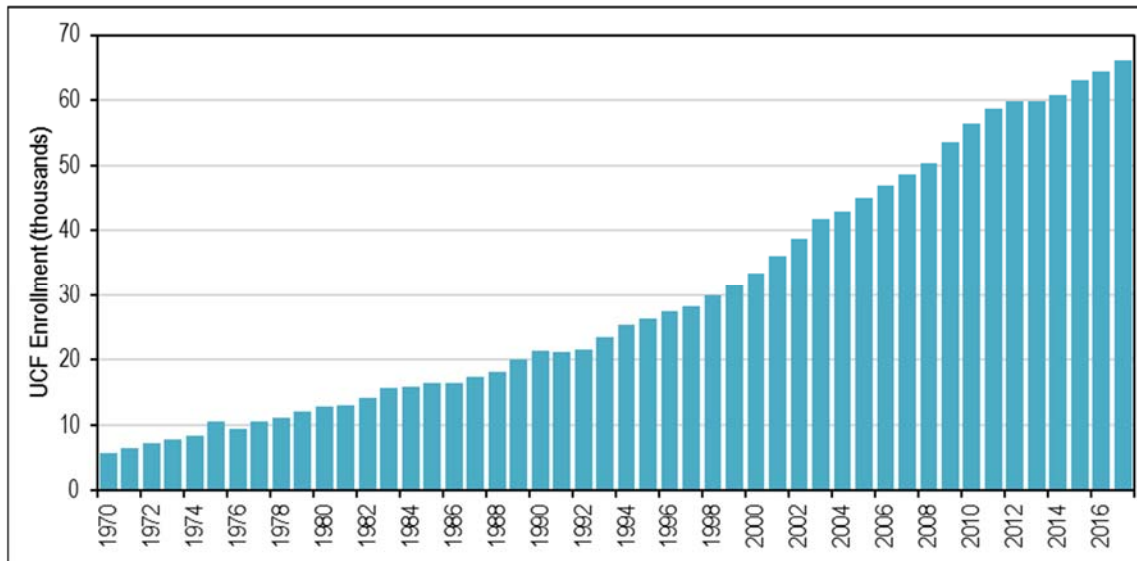
Table 2-3
Historical School Enrollment by County
2008 – 2017

County	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008-'17 % Δ	2008-17 CAAGR
Brevard	73,076	72,402	71,866	71,786	71,217	71,234	72,285	72,704	73,446	73,540	0.6%	0.1%
Lake	40,996	41,099	41,110	41,315	41,478	41,789	42,152	42,462	42,516	43,177	5.3%	0.6%
Orange	172,028	173,021	175,986	179,989	183,021	187,092	191,648	196,951	200,667	204,835	19.1%	2.0%
Osceola	51,955	52,142	53,466	54,776	56,369	58,203	59,320	61,893	63,023	66,014	27.1%	2.7%
Polk	94,716	94,577	95,178	96,034	96,943	97,957	99,723	101,635	102,318	104,141	10.0%	1.1%
Seminole	64,933	64,460	64,228	64,335	64,368	64,846	66,134	66,996	67,816	67,910	4.6%	0.5%
Volusia	63,065	62,329	61,559	61,524	61,054	61,237	61,777	62,928	63,100	62,988	-0.1%	0.0%
Area Total	560,769	560,030	563,393	569,759	574,450	582,358	593,039	605,569	612,886	622,605	11.0%	1.2%

Source: Florida Department of Education

UCF opened in 1968 with less than 2,000 enrolled students. As shown in **Figure 2-1**, annual enrollment increased over the years to become a large-scale university, with over 66,000 students in 2017. Long-term annual growth averaged 4.5 percent per year from 1980 to 2017, due to opening of new programs, campus facilities and the increasing number of transfer students. While the enrollment numbers are significant, many students only attend part-time. Part-time students typically attend classes on-line and do not travel to the main campus in Orlando. The increasing popularity of on-line classes and on-line degrees may eventually have an impact on CFX facilities.

**Figure 2-1
Historical UCF Enrollment
1980 – 2017**



Source: University of Central Florida (UCF)

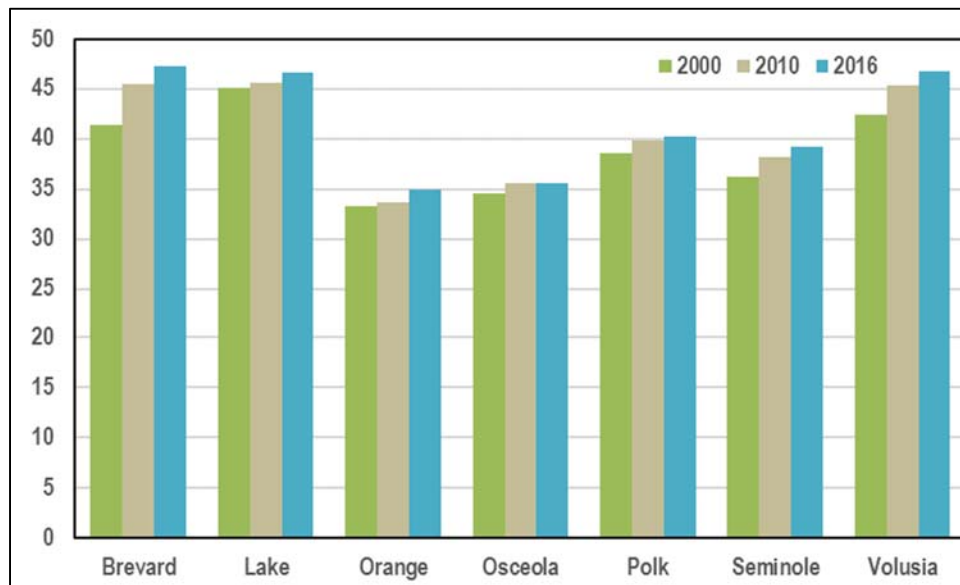
The age distribution comparison of the study area population for 2000 and 2010 is shown in **Table 2-4**. A majority of the 2010 population (59 percent) is made up of the working age group, ages 20 to 64, who typically make the majority of commuter and business-related trips. The 2000 population data reflects similar trends. The median ages for the study area counties in years 2000, 2010, and 2016 are shown in **Figure 2-2**. Lake County has the highest median age reflecting the presence of the retirement communities located there. Brevard and Volusia Counties both have had significant increases in median ages. All counties had higher median age in 2010 than in 2000, and 2016 over 2010, indicating a general aging of the population.

**Table 2-4
Historical Population by Age
2010 vs. 2000**

Age	2010 Census		2000 Census	
	Population	Percent	Population	Percent
0-4	221,562	5.9%	184,700	6.1%
5-19	732,041	19.4%	615,697	20.2%
20-24	264,847	7.0%	185,459	6.1%
25-34	473,023	12.5%	405,961	13.3%
35-44	490,323	13.0%	486,110	15.9%
45-54	552,868	14.6%	395,565	13.0%
55-64	453,437	12.0%	289,212	9.5%
65-74	318,580	8.4%	262,234	8.6%
75+	267,794	7.1%	223,120	7.3%
Total	3,774,475	100.0%	3,048,058	100.0%

Source: U.S. Census Bureau

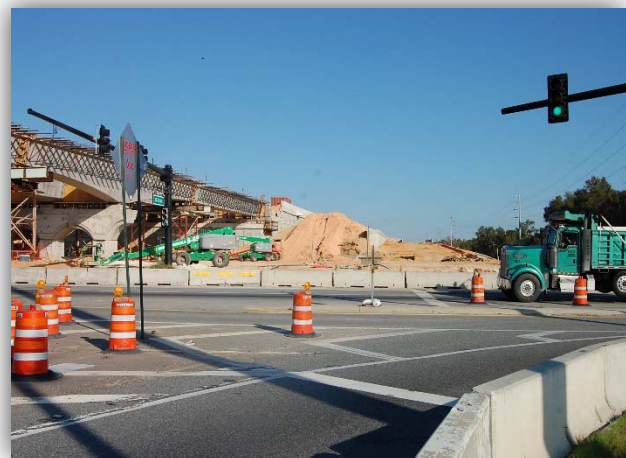
**Figure 2-2
Median Age by County
2000, 2010, 2016**



Source: U.S. Census Bureau

2.1.2 PROJECTIONS

The University of Florida’s Bureau of Economic and Business Research (BEBR) annually prepares forecasts of population within Florida. These population forecasts are presented as three scenarios: low, medium, and high projections. Medium-level BEBR population projections are typically used as a base point in the development of county-wide control totals. **Table 2-5** summarizes the recently released 2017 BEBR medium forecasts. Future long-term population growth for the study area is projected to average 1.4



percent per year, which is higher than the 1.1 percent per year projected growth for the State of Florida. Over the forecast period from 2016 through 2040, Osceola County is projected to experience the fastest population growth rate of 2.5 percent per year. Volusia and Brevard Counties are expected to have the lowest growth rate of only 0.8 percent per year through 2040. The growth rates decline over time.

Table 2-5
Population – Projected Growth Rates (CAAGR)
2016 – 2040

County	2016-'20	2020-'30	2030-'40	2016-'40
Brevard	1.2%	0.9%	0.5%	0.8%
Lake	2.3%	1.8%	1.2%	1.6%
Orange	2.3%	1.8%	1.2%	1.7%
Osceola	3.7%	2.8%	1.6%	2.5%
Polk	1.9%	1.5%	1.1%	1.4%
Seminole	1.4%	1.1%	0.8%	1.0%
Volusia	1.1%	0.8%	0.6%	0.8%
Area Total	2.0%	1.5%	1.0%	1.4%
Florida	1.6%	1.2%	0.9%	1.1%

Source: University of Florida Bureau of Economic and Business Research
2017

2.2 Housing Units

2.2.1 HISTORICAL TRENDS

The number of housing units is another key measure in the travel demand models. As indicated in **Table 2-6**, the number of housing units in the study area expanded over 2.6 times from 700 thousand in 1980 to over 1.8 million in 2016. Orange County has the largest concentration of housing units in the seven-county study area with over 525 thousand in 2016. The corresponding CAAGRs are shown in **Table 2-7** for the same years. Long-term, the number of housing units in the study area grew from 1980 to 2016 by an average of 2.7 percent per year. Historical housing unit growth slowed down from 4.4 percent per year in the 1980s to 0.7 percent per year from 2000 to 2016. This is the same deceleration trend seen in long-term population. Osceola County experienced the most growth in housing units with an average of 5.1 percent per year while Volusia County has been the slowest with only 2.0 percent annual growth between 1980 and 2016. Overall, the historical housing unit growth in the study area has outpaced the State of Florida.

Table 2-6
Housing Units – Historical Trend
1980 – 2016

County	1980	1990	2000	2010	2016
Brevard	113,900	185,150	222,072	269,864	274,540
Lake	50,511	75,707	102,829	144,996	151,051
Orange	184,701	282,686	361,349	487,839	525,243
Osceola	23,825	47,959	72,293	128,170	143,514
Polk	134,873	186,225	226,376	281,214	286,515
Seminole	68,154	117,841	147,080	181,307	187,713
Volusia	124,427	180,983	211,938	254,226	257,946
Area Total	700,391	1,076,551	1,343,937	1,747,616	1,826,522
Florida	4,378,867	6,100,250	7,303,108	8,989,580	9,301,642

Source: U.S. Census Bureau

Table 2-7
Housing Units – Historical Growth Rates (CAAGR)
1980 – 2016

County	1980-'90	1990-'00	2000-'10	2010-'16	1980-'16
Brevard	5.0%	1.8%	2.0%	0.3%	2.5%
Lake	4.1%	3.1%	3.5%	0.7%	3.1%
Orange	4.3%	2.5%	3.0%	1.2%	2.9%
Osceola	7.2%	4.2%	5.9%	1.9%	5.1%
Polk	3.3%	2.0%	2.2%	0.3%	2.1%
Seminole	5.6%	2.2%	2.1%	0.6%	2.9%
Volusia	3.8%	1.6%	1.8%	0.2%	2.0%
Area Total	4.4%	2.2%	2.7%	0.7%	2.7%
Florida	3.4%	1.8%	2.1%	0.6%	2.1%

Source: U.S. Census Bureau

2.2.2 PROJECTIONS

Table 2-8 summarizes the long-term housing growth forecasts as published by Moody's Analytics for 2016 through 2040. Future long-term housing growth for the study area is projected to average 2.0 percent per year through 2040. Osceola and Lake Counties are forecasted to experience the most growth in housing units with an average rate of 3.7 and 2.8 percent per year, respectively, while Seminole and Volusia Counties are expected to have the slowest growth of about 1.2 percent per year. The Moody's forecasts for housing units presented here are not consistent with the BEBR population forecasts for some counties. The BEBR forecasts were used in the development of the future year single-family and multi-family housing unit control totals in the travel demand model.

Table 2-8
Housing Units – Projected Growth Rates (CAAGR)
2016 – 2040

County	2016-'20	2020-'30	2030-'40	2016-'40
Brevard	1.1%	1.5%	1.1%	1.3%
Lake	2.6%	3.2%	2.4%	2.8%
Orange	1.9%	2.4%	1.9%	2.1%
Osceola	3.7%	4.3%	3.1%	3.7%
Polk	1.7%	2.1%	1.6%	1.8%
Seminole	0.9%	1.4%	1.1%	1.2%
Volusia	0.9%	1.4%	1.1%	1.2%
Area Total	1.7%	2.2%	1.8%	2.0%
Florida	1.4%	1.7%	1.4%	1.5%

Source: Moody's Analytics, December 2017

2.3 Employment

2.3.1 HISTORICAL TRENDS

The employment numbers presented below in **Table 2-9** and **Table 2-10** come from the Bureau of Economic Analysis (BEA). Orange County dominates the regional employment base with 43.7 percent of the seven-county total. Long-term employment growth in the study area averaged 3.0 percent per year since 1980. Growth was strong between 1980 and 1990 at 4.7 percent per year, but decelerated between 2000 and 2010 to only 1.4 percent per year, with strongest growth rates in Osceola and Lake Counties for those years. Since 2010 employment growth increased to 3.1 percent per year, with Osceola County averaging the strongest growth of 4.6 percent per year. Historically, the study area employment base growth outpaced the State of Florida by an average of approximately 0.4 percent per year.

Table 2-9
Total Employment – Historical Trend
1980 – 2016

County	1980	1990	2000	2010	2016
Brevard	129,188	202,232	242,242	256,565	280,968
Lake	46,281	58,326	86,262	113,240	136,315
Orange	291,166	516,943	735,778	823,242	1,036,656
Osceola	19,483	43,173	63,733	101,434	132,857
Polk	156,846	194,693	234,563	255,794	288,323
Seminole	61,621	121,188	186,045	217,245	258,179
Volusia	105,796	146,833	177,888	211,592	241,437
Area Total	810,381	1,283,388	1,726,511	1,979,112	2,374,735
Florida	4,687,521	6,740,289	8,880,711	9,813,712	11,708,333

Source: Bureau of Economic Analysis

Table 2-10
Total Employment – Historical Growth Rates (CAAGR)
1980 – 2016

County	1980-'90	1990-'00	2000-'10	2010-'16	1980-'16
Brevard	4.6%	1.8%	0.6%	1.5%	2.2%
Lake	2.3%	4.0%	2.8%	3.1%	3.0%
Orange	5.9%	3.6%	1.1%	3.9%	3.6%
Osceola	8.3%	4.0%	4.8%	4.6%	5.5%
Polk	2.2%	1.9%	0.9%	2.0%	1.7%
Seminole	7.0%	4.4%	1.6%	2.9%	4.1%
Volusia	3.3%	1.9%	1.8%	2.2%	2.3%
Area Total	4.7%	3.0%	1.4%	3.1%	3.0%
Florida	3.7%	2.8%	1.0%	3.0%	2.6%

Source: Bureau of Economic Analysis

2.3.2 PROJECTIONS

Employment in the study area is projected to grow by an average of 1.6 percent per year through 2040 as shown in **Table 2-11**, which is the same as forecast statewide growth. Osceola County's total employment is forecasted to increase the fastest at 2.4 percent per year while Brevard County is forecasted with the slowest annual growth of only 1.1 percent through 2040.

Table 2-11
Total Employment – Projected Growth Rates (CAAGR)
2016 – 2040

County	2016-'20	2020-'30	2030-'40	2016-'40
Brevard	1.3%	1.2%	1.0%	1.1%
Lake	2.3%	2.2%	1.9%	2.1%
Orange	2.0%	1.8%	1.5%	1.7%
Osceola	2.6%	2.5%	2.3%	2.4%
Polk	1.4%	1.4%	1.2%	1.3%
Seminole	2.2%	2.0%	1.7%	1.9%
Volusia	1.4%	1.3%	1.0%	1.2%
Area Total	1.8%	1.7%	1.5%	1.6%
Florida	1.8%	1.6%	1.4%	1.6%

Source: Woods & Poole Economics, Inc.¹, 2017

Table 2-12 shows the employment projections by major sector (industrial, commercial, and service industries). Future long-term employment growth for the study area is projected to average 1.1 percent per year for the industrial sector, 1.4 percent per year for the commercial sector and 1.7 percent per year for the service sector through 2040. Growth in jobs in the commercial and service sectors reflects the strength of the Central Florida tourism industry. The industrial sector is expected to experience slower short- and long-term growth.

Table 2-12
Employment by Sector – Projected Growth Rates (CAAGR)
2016 – 2040

Area	2016-'20	2020-'30	2030-'40	2016-'40
Industrial	1.6%	1.2%	0.9%	1.1%
Commercial	1.9%	1.4%	1.3%	1.4%
Service	1.9%	1.8%	1.6%	1.7%

Source: Woods & Poole Economics, Inc.¹, 2017

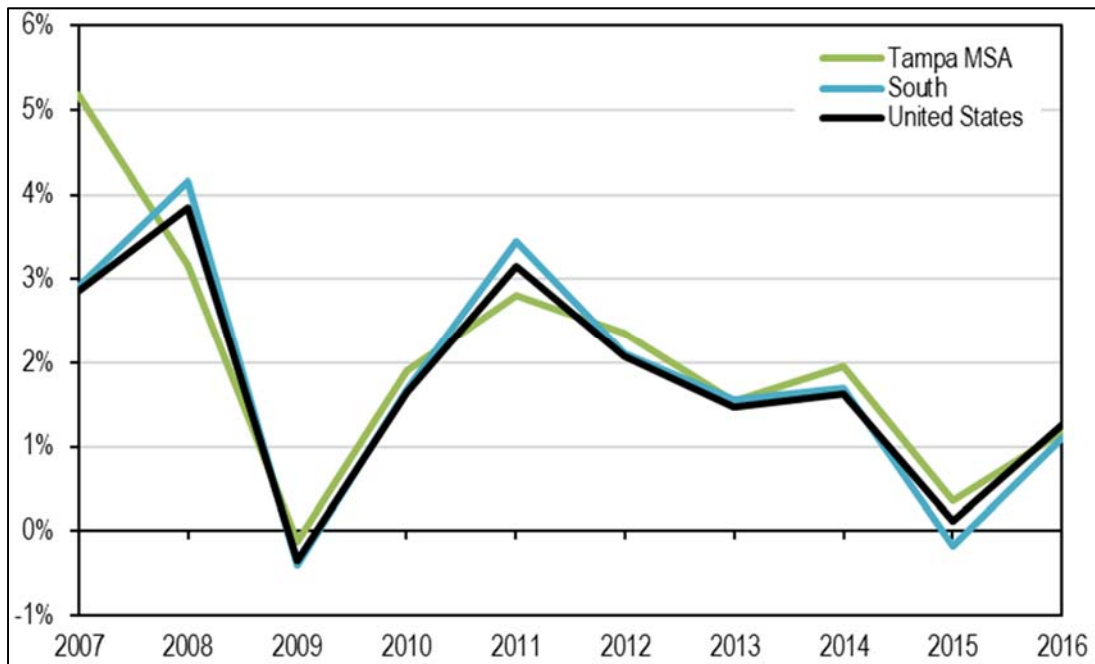
¹ Woods & Poole does not guarantee the accuracy of this data. The use of this data and the conclusions drawn from it are solely the responsibility of the Consulting Team.

2.4 Consumer Price Index and Income

2.4.1 CONSUMER PRICE INDEX

The Consumer Price Index (CPI) is used to measure the change in the cost of an average basket of goods and services compared to a fixed base period. The historical year-over-year change in the CPI for 2007 through 2016 is shown in **Figure 2-3**. The relatively sharp increase in CPI prior to the recession can be attributed to the high increases in the cost of gasoline prices. In 2009, the CPI declined for the first time since 1955 due to the start of the severe global recession. Since 2009, the CPI has increased, albeit at a slower pace than historically, hovering around 2.0 per year, including almost no price increases in 2015 over the prior year. The change in CPI, year over year, has been decelerating since 2011. Other indices reported are for the Tampa MSA (note that Orlando MSA is not separately tracked by the BLS) and the South Region (Southeastern U.S. States), which generally trend closely with national price changes.

Figure 2-3
Change in Consumer Price Index (CPI)



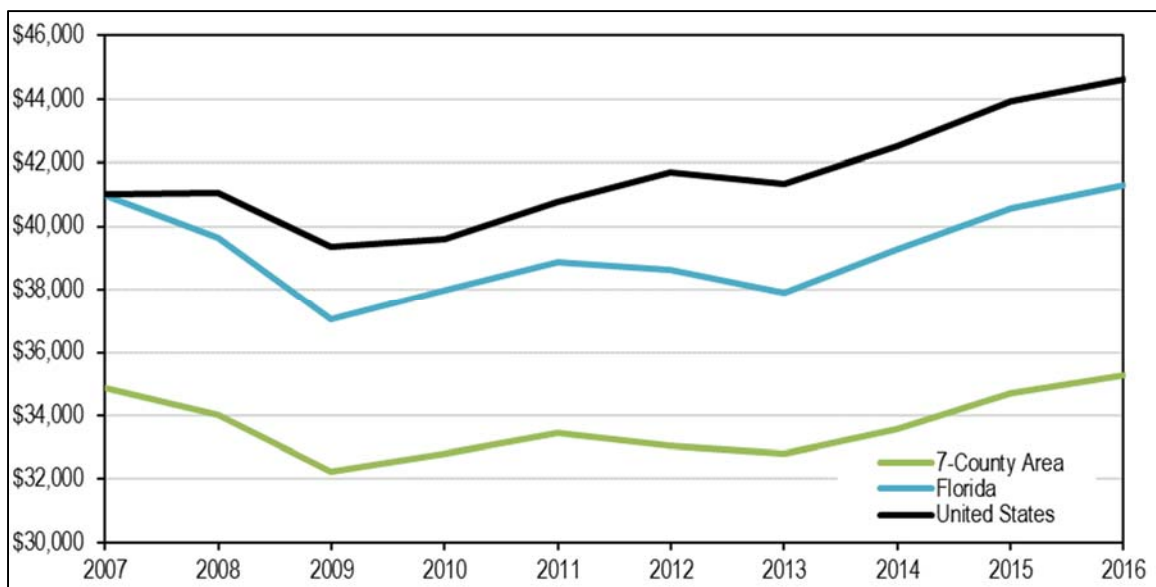
Source: Bureau of Labor Statistics

2.4.2 INCOME

Travel demand is sensitive to, among other things, the amount of disposable income available to households. A reliable indicator of an individual’s propensity to pay tolls in exchange for travel time savings on other toll-free alternatives is their personal income. This is a key input into the assessment of the value of time, as there are typically relationships between income, value of time and the motorists’ willingness to pay tolls.

The historical real per capita income trend since 2007 for the U.S., Florida, and the seven-county study area are shown in **Figure 2-4**. The levels of real personal income per capita for Florida and the seven-county study area are steadily rebounding from their recession decline in 2009. In the region, real personal per capita income remained essentially the same as pre-recession 2007 with a CAAGR from 2007 through 2016 of 0.1 percent per year. The levels of real personal income per capita for the U.S. has now exceeded the levels seen before the recession.

Figure 2-4
Total Real Personal Income Per Capita: 2007 - 2016
(2009 Dollars)

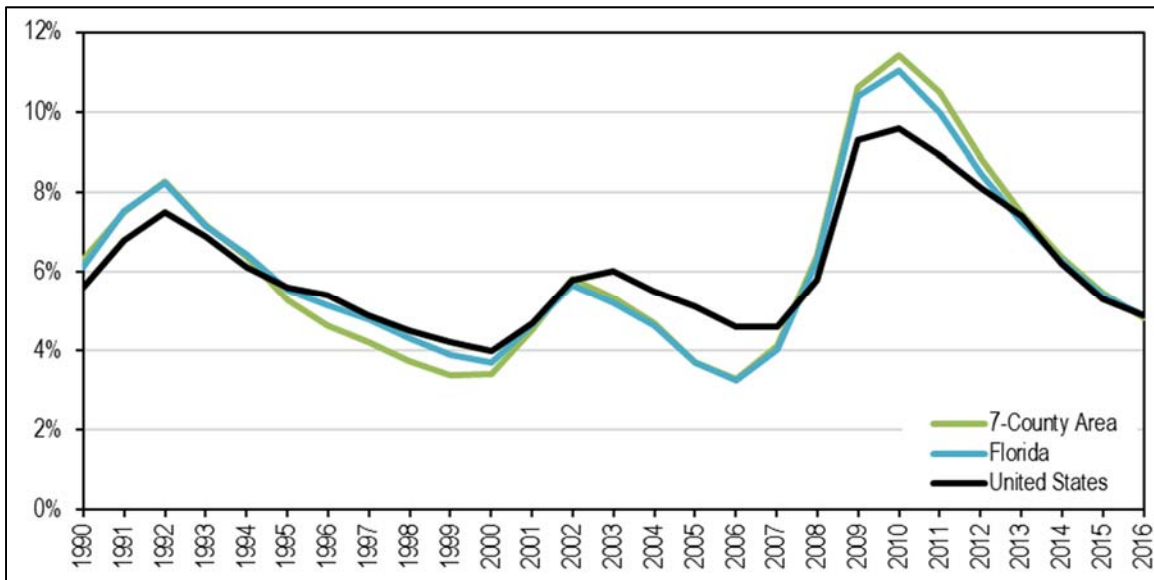


Source: Woods and Poole Economics, Inc., 2017

2.5 Unemployment

The unemployment rate in the study area had been traditionally lower than in other parts of the State and lower than the national rates since 1994. However, in 2008 the study area had an unemployment rate of 6.4 percent, which was higher than the United States rate for the first time in fifteen years. Between 2009 and 2012, the unemployment rate in the study area exceeded the unemployment rates in both Florida and the United States. **Figure 2-5** shows the historical unemployment rates for the study area, Florida, and the United States from 1990 through 2016. The study area's unemployment rate has ranged from a low of 3.3 percent in 2006 to a high of 11.4 percent in 2010. In 2016 the study area unemployment rate decreased again to an average of 4.8 percent, and once again lower than the national average of 4.9 percent. The study area's unemployment rate has historically been quite close to the Florida average, which also had an unemployment rate of 4.9 percent in 2016.

Figure 2-5
Historical Unemployment Rate Comparison
1990 – 2016



Source: Bureau of Labor Statistics

2.6 Regional Tourism

As shown in **Table 2-13**, Orlando hosted a record 68 million visitors in 2016, which was an increase of 2.3 percent over the 66.5 million visitors in 2015. Year 2010 was the first year that the total number of visitors to Orlando topped 50 million. Tourism had stagnated after the September 11th terrorist attacks, and tepid during the recession, but increased every year since 2009. International tourists historically grew faster than domestic tourists to the region, with an 8.0 and 3.5 percent CAAGR, respectively, since 2007.

Table 2-13
Tourism – Orlando Visitors (Millions)
2007 – 2016

Visitors	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-'16 CAAGR
Domestic	45.9	45.5	43.3	47.8	51.4	52.9	54.4	57.4	60.6	62.3	3.5%
International	2.8	3.3	3.3	3.7	3.8	4.3	4.9	5.4	5.9	5.7	8.0%
Total	48.7	48.9	46.6	51.5	55.2	57.2	59.3	62.8	66.5	68.0	3.8%

Source: Visit Orlando Market Research & Insights – D.K. Shifflet & Associates; National Travel & Tourism Office (NTTO)

In 2016, the Metro Orlando area hotel occupancy rate was 75.5 percent, a slight decrease of 1.5 percent from 2015. Data is shown in **Table 2-14**. The 2016 average daily room rate was \$116.00, which was a 3.6 percent increase over 2015. The majority of these lodging units are concentrated around Walt Disney World, International Drive (near Universal Studios, SeaWorld, and the Orange County Convention Center), and in the Kissimmee area.

Table 2-14
Metro Orlando Area Lodging
2007 – 2016

Metro Orlando	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Occupancy Rate	67.9%	65.8%	59.5%	63.9%	67.6%	68.8%	71.0%	71.9%	77.0%	75.5%
Average Daily Rate	\$105.84	\$105.83	\$93.34	\$90.76	\$94.11	\$96.88	\$101.53	\$107.26	\$112.00	\$116.00
Number of Rooms	111,348	111,551	114,109	115,199	115,413	117,396	116,499	118,118	117,371	121,802
Room-Night Demand (millions)	27.6	26.9	24.3	26.7	28.5	29.3	30.1	N/A*	33.0	33.0

*2014 room night demand not available at the time of report preparation.

Source: Visit Orlando Market Research & Insights.

The historical and projected enplanements, or boardings, for OIA are shown in **Table 2-15** and **Table 2-16**. The Orlando International Airport (OIA) saw an increase of over 6 million enplanements from 1990 to 2000, an increase of over 69 percent. Enplanements totaled 19.9 million for 2016, 35.5 percent above the 2000 total. Since 1990, total enplanements at OIA have more than doubled at 3.2 percent per year. The United States Department of Transportation Federal Aviation Administration (FAA) forecasts that OIA enplanements will grow by an average of 2.2 percent per year through 2040. Enplanements are an indicator of tourism and economic growth.

Table 2-15
Historical OIA Enplanements
1990 – 2016

	1990	2000	2010	2016
Enplanements	8,683,491	14,683,594	16,651,359	19,900,771

Source: Federal Aviation Administration Terminal Area Forecasts

Table 2-16
Projected OIA Enplanements
2016 - 2040

	2016-'20	2020-'30	2030-'40	2016-'40
Enplanements	3.0%	2.2%	2.0%	2.2%

Source: Federal Aviation Administration Terminal Area Forecasts

Metropolitan Orlando is home to seven of the ten largest theme parks in the nation, which will continue to contribute to the growth in Central Florida. This growth is due to new and future attractions these theme parks have planned to attract tourists to the area. Downtown Disney was also transformed into Disney Springs with new shopping, dining and entertainment choices which were opened in phases beginning in 2015. The grand opening of Disney Springs took place in July 2016; however, many new restaurants are being added in 2018. Disney also opened Pandora - the World of Avatar at Animal Kingdom in 2017 and will open Toy Story Land at Magic Kingdom in summer 2018. Universal opened Volcano Bay water theme park in 2017. Several new projects are planned for Universal Studios including a ride based on the Fast & Furious movies in spring 2018 and the new Aventura Hotel in August 2018.

As shown in **Table 2-17**, the Magic Kingdom attracted an estimated 20.4 million visitors in 2016, which had the highest attendance of all Orlando-area theme parks. Universal Studios at Universal Orlando had the highest recent growth with a 10.6 percent average annual increase in attendance compared to 2011, most likely due to the opening of The Wizarding World of Harry Potter attraction.

Table 2-17
Central Florida Attraction Attendance
2011- 2016 (Millions)

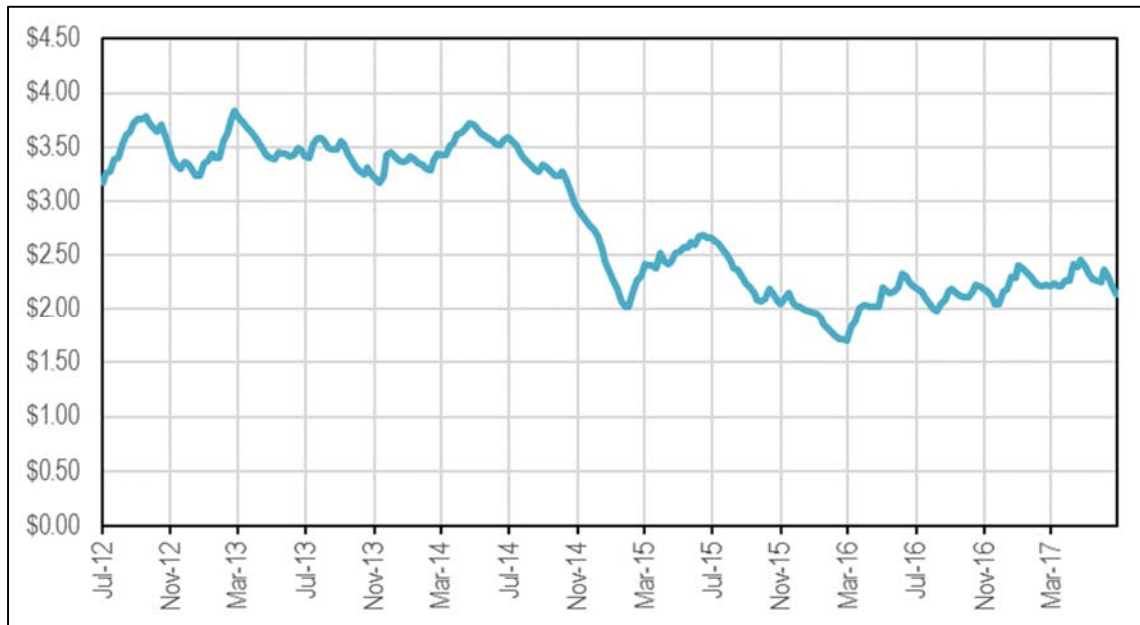
Theme Parks	2011	2016	CAAGR
Disney's Magic Kingdom	17.1	20.4	3.5%
Disney's Epcot Center	10.8	11.7	1.6%
Disney's Animal Kingdom	9.8	10.8	2.1%
Disney's Hollywood Studios	9.7	10.8	2.1%
Islands of Adventure at Universal Orlando	7.7	9.4	4.1%
Universal Studios at Universal Orlando	6.0	10.0	10.6%
Seaworld Orlando	5.2	4.4	-3.3%
Water Parks			
Typhoon Lagoon	2.1	2.3	2.0%
Blizzard Beach	1.9	2.1	2.0%
Aquatica	1.5	1.5	0.5%
Wet 'n Wild	1.2	1.3	1.4%

Source: Visit Orlando – Themed Entertainment Association (TEA) and AECOM.

2.7 Fuel Prices

Figure 2-6 includes regular grade weekly retail gasoline prices for Florida from July 2012 through June 2017 (FY 2013 – FY 2017). From July 2012 through June 2014, gasoline prices fluctuated within a relatively narrow range. Beginning around October 2014, however, motor fuel prices began a noticeable decline. Since March 2016, prices have started to increase slightly. Gasoline averaged \$2.14 per gallon by the end of FY 2017 in June. Based on current forecasts from the U.S. Energy Information Administration, underlying near term price forecasts are expected to remain low. This should prove positive to current trends in strong passenger car and commercial vehicle traffic growth on CFX facilities.

Figure 2-6
Average Retail Fuel Prices – Florida (Regular Grade/Gallon)
FY 2013– FY 2017



Source: U.S. Energy Information Administration

Chapter 3
S.R. 528
(Martin B. Andersen
Beachline Expressway)



S.R. 528 (MARTIN B. ANDERSEN BEACHLINE EXPRESSWAY)

3.1 Facility Description

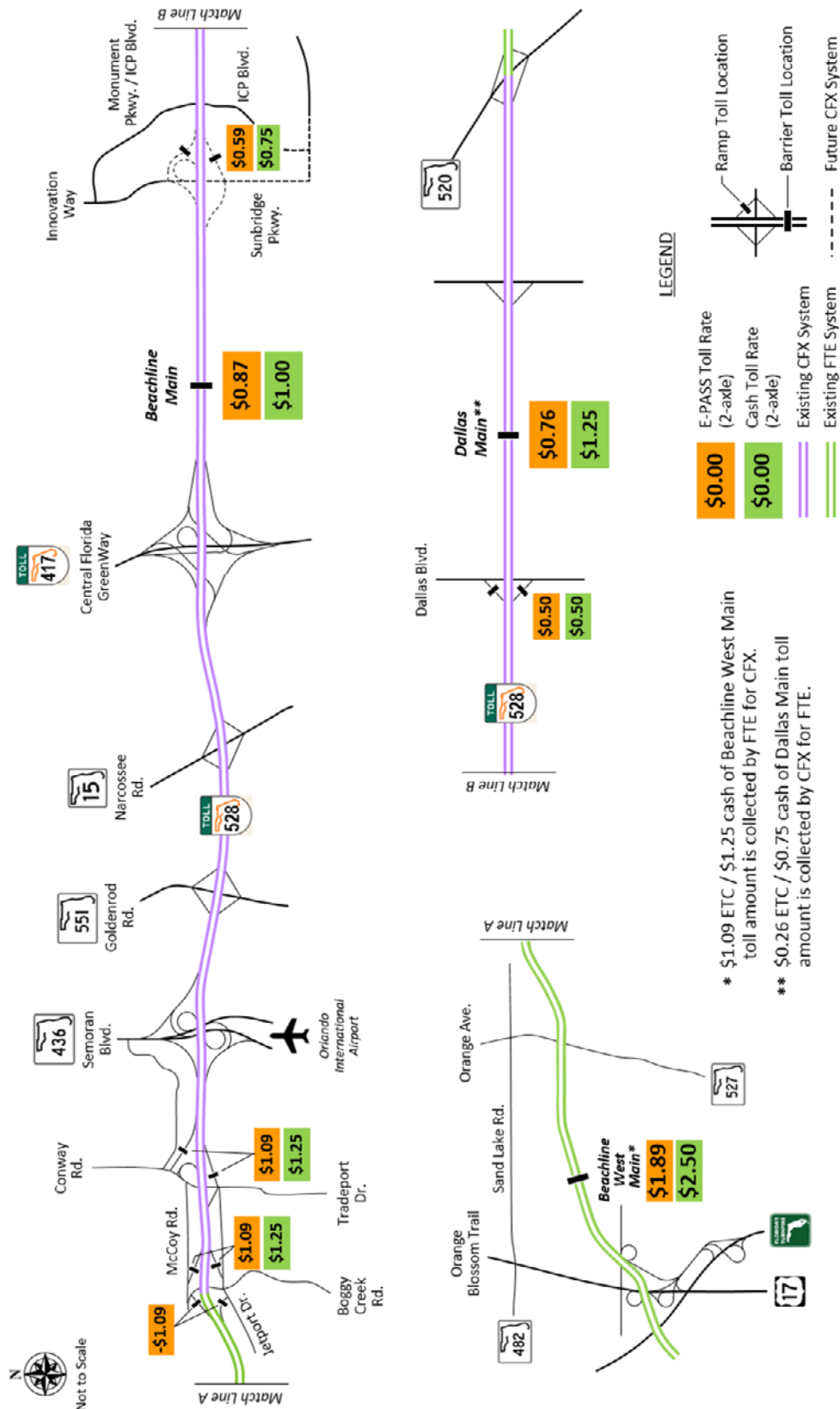
S. R. 528, also known as the Martin B. Andersen Beachline Expressway, is a 41-mile expressway that extends east from Interstate 4 (I-4) in the International Drive resort area to U.S. Highway 1 in the Brevard County coastal area near the Atlantic Ocean. The Beachline Expressway is owned, maintained and operated by two agencies, CFX and FTE. CFX is responsible for the 23-mile portion of S.R. 528 from Boggy Creek Road/Sand Lake Road east to S.R. 520 with three mainline plaza groups including the Airport Main, Beachline Main and Dallas Main. Ramp tolls are located at the International Corporate Park (ICP) interchange to/from the east, the Dallas Boulevard ramps to/from the west, the Conway Road/Tradeport Drive ramps to/from the east, and the Boggy Creek Road/McCoy Road ramps to/from the east. FTE is responsible for the 8-mile segment of S.R. 528 from I-4 east to Boggy Creek Road known as the Beachline West Expressway with one mainline toll plaza. FTE is also responsible for the 15-mile portion of S.R. 528 from S.R. 520 east to Interstate 95 known as the Beachline East Expressway. A map of the CFX portion of S.R. 528 including the FY 2017 toll rates for the mainline and ramp toll plazas is shown in **Figure 3-1**.



The original segment of S.R. 528 opened in 1967 as the Bee Line Expressway, providing a direct route from Orlando to the Space Coast. In July 1983, the segment of S.R. 528 from McCoy Road to S.R. 436/Semorán Boulevard was upgraded to a limited-access expressway, the Airport Main plaza was added and the Airport interchange was opened to traffic. The Airport interchange connects the Orlando International Airport (OIA) with S.R. 528 and with S.R. 436. This 2.6-mile segment is a six-lane, limited-access expressway with frontage roads extending from an interchange with Boggy Creek Road to the Airport interchange. S.R. 528 remained the only limited-access route into OIA until the south access road at Boggy Creek Road and John Young Parkway sections of S.R. 417 opened in July 1993.

In July 2009, the S.R. 528 Beachline Main plaza was converted to the express lane configuration. The express lanes allow electronic customers to continue through the mainline toll collection point at highway speeds without having to stop or slow down. This provides a more efficient means of toll collection, greatly reducing delays to customers and increasing throughput at the toll plaza. Automatic coin and manual cash customers are diverted off the roadway to an adjacent traditional toll plaza and are required to merge back into traffic after paying the toll.

**Figure 3-1
S.R. 528 Facilities and Toll Rates**



In May 2010, a roadway connection called Monument Parkway was completed between the S.R. 528/International Corporate Park (ICP) Interchange and the southern extension of Alafaya Trail/Innovation Way in east Orange County. This connection allowed traffic coming from Innovation Way to access S.R. 528 via the ICP interchange, which reduced travel times to S.R. 528.

Previously, traffic on Innovation Way wanting to go south or west had no choice but to access S.R. 417 at the Curry Ford Road interchange and head south. The opening of this connection resulted in traffic diversion from the S.R. 417 Curry Ford plaza group to the S.R. 528 Beachline Main plaza. In March 2012, the Dallas Main plaza and Dallas Boulevard ramp plazas were opened to create toll equity for the traffic movements between S.R. 417 and the ICP interchange resulting from the Monument Parkway connection with Innovation Way. CFX collects \$0.26 per ETC transaction and \$0.75 per cash transaction for FTE tolls at the Dallas Main plaza.

Starting in FY 2013, S.R. 528 was the center of discussions for creation of a super corridor with intercity passenger rail service, known as Brightline (formerly All Aboard Florida), future utility needs, future expansion of S.R. 528, and possibly commuter rail. These discussions culminated in the execution of a contract for sale and purchase of rail line easements between CFX and Brightline over existing CFX property and newly acquired properties. CFX has purchased all property for the corridor. Regarding the Contract for Sale and Purchase of property owned by Suburban Land Reserve or Farmland Reserve, Inc., the final closing of the Contract was completed in December 2015. CFX is now the record title owner of all properties comprising the Beachline super corridor and has conveyed the railroad easements necessary to accommodate Brightline's high speed passenger rail project for that stretch of their route.

Starting in November 2014, CFX began removal of the Airport Main Plaza. The removal was due to several factors including on-going concerns that S.R. 528 customers heading west from the Orlando International Airport encountered two mainline toll plazas, one being CFX's Airport Main Plaza and the other being FTE's Beachline West Main Plaza. In addition, the Airport Main Plaza was close to the S.R. 436 exit which caused operational issues for E-PASS customers having to weave across cash lanes to reach the exit. It was determined that an open road tolling plaza would not be a feasible option with the existing right-of-way at the same location. After all options were considered, CFX and FTE agreed that the best solution was to consolidate toll collection at the Beachline West Main Plaza. Beginning in March 2016, an "Interagency Toll Collection Agreement" with FTE facilitated the transfer of toll collections from the Airport Plaza to FTE's Beachline West Main Plaza. New ramp plazas were also installed at the Conway Road and Boggy Creek Road Interchanges with tolls collected to and from the east. These ramp plazas eliminated the option of using the Beachline Expressway without paying a toll. ETC customers with 2-axle vehicles now pay a combined toll of \$1.89 at the Beachline West Toll Plaza; \$0.80 represents the FTE toll amount and \$1.09 represents the CFX toll amount. With the combined toll structure, ETC customers using the Boggy Creek Road interchange are eligible for a \$1.09 rebate when entering S.R. 528 westbound at Boggy Creek Road and passing through the Beachline West Plaza, and also when traveling eastbound on S.R. 528 passing through the Beachline West Plaza then exiting at Boggy Creek Road, because customers pay the full price at the Beachline West Plaza, but do not use CFX facilities.

In July 2016, CFX began construction of a new interchange between S.R. 528 and Innovation Way to improve connectivity to S.R. 528 in east Orange County and to accommodate the development of the Innovation Way corridor. The project will include four ramps with two ramp plazas and the extension of Innovation Way to Aerospace Parkway with a connection to International Corporate Park Boulevard and the future Sunbridge Parkway. The ramp plazas will feature both exact coin and E-PASS only lanes. This project also involves removal of the existing S.R. 528/ICP Boulevard interchange. The entire project will be finished in 2018.

3.2 Historical Transactions and Toll Revenues

3.2.1 ANNUAL TRANSACTION AND TOLL REVENUE TRENDS

A history of annual transactions at the Beachline Main, Airport Main and Dallas Main plaza groups from FY 1998 to FY 2017 are presented in the top half of **Table 3-1**. Annual toll revenues are also summarized and totaled in the bottom half of the table. The S.R. 528 annual transaction and toll revenue trends including annual growth are also presented visually in **Figure 3-2** and **Figure 3-3**. As shown, total transactions on S.R. 528 in FY 2017 increased by 5.3 million, or 7.4 percent, over FY 2016. Toll revenues increased by \$5.1 million, or 7.6 percent, during the same period. Total facility transactions and toll revenues have increased annually over the past twenty years with only two exceptions in 2002 and 2009.

The FY 2002 decrease in transactions of 4.0 percent at the Airport Main plaza group was caused by the reduction of tourism travel in Florida as a result of the September 11th terrorist attack. Revenues also declined at this plaza group by 3.2 percent. The impact at the Beachline Main plaza group was less with no growth during the year.

In FY 2008, the Beachline Main plaza group experienced a decrease of 0.6 percent in transactions and a decrease of 1.1 percent in revenues. This was the first year of decline since the plaza opened and can be attributed to the start of the economic recession.

In FY 2009, transactions at the Airport Main and Beachline Main plaza groups decreased by 9.2 percent and 9.0 percent, respectively. Revenues also declined by 2.3 percent at the Airport Main plaza group and by 6.1 percent at the Beachline Main plaza group. FY 2009 transactions and revenues were affected by the economic recession and then by the Systemwide toll rate increase. The toll rate increase in April 2009 impacted the last three months of FY 2009. Also in FY 2009, tolls were suspended on the facility for nearly two days in August 2008 due to Tropical Storm Fay.

Transactions continued to decline on the Airport Main plaza group in FY 2010 by 0.8 percent due to the continued impacts of the economic recession and the toll rate increase. In FY 2010, revenues on the Airport Main and Beachline Main plaza groups increased significantly due to the additional revenue collected from the Systemwide toll rate increase. The toll rate increase impacted growth during the first nine months of the fiscal year. Transactions and revenue at the Beachline Main plaza group had a slightly higher growth rate than the Airport Main plaza group, caused by the opening of the Monument Parkway connection between Innovation Way and S.R. 528/ International Corporate Park interchange, which provided alternative access in this area of east Orange County.

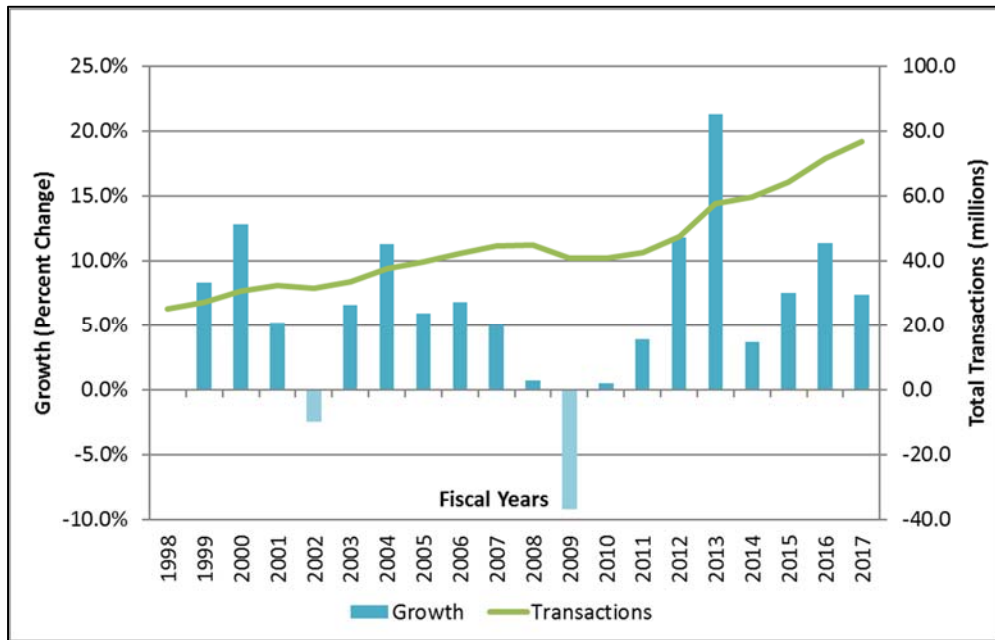
Table 3-1
S.R. 528 Plaza Groups – Historical Transactions and Toll Revenues
FY 1998 – FY 2017

Fiscal Year	Airport Main	Beachline Main	Dallas Main	TOTAL	Airport Main	Beachline Main	Dallas Main	TOTAL
	TRANSACTIONS (millions)				PERCENT CHANGE			
1998	15.4	9.8		25.2				
1999	16.7	10.6		27.3	8.4%	8.2%		8.3%
2000	18.9	11.9		30.8	13.2%	12.3%		12.8%
2001	19.8	12.6		32.4	4.8%	5.9%		5.2%
2002 ^A	19.0	12.6		31.6	-4.0%	0.0%		-2.5%
2003	20.0	13.7		33.7	5.3%	8.7%		6.6%
2004	22.6	14.9		37.5	13.0%	8.8%		11.3%
2005 ^B	24.6	15.1		39.7	8.8%	1.3%		5.9%
2006	26.5	15.9		42.4	7.7%	5.3%		6.8%
2007	27.8	16.7		44.5	4.9%	5.0%		5.0%
2008 ^C	28.2	16.6		44.8	1.4%	-0.6%		0.7%
2009 ^D	25.6	15.1		40.7	-9.2%	-9.0%		-9.2%
2010 ^E	25.4	15.5		40.9	-0.8%	2.6%		0.5%
2011	26.2	16.3		42.5	3.1%	5.2%		3.9%
2012 ^F	26.8	16.4	4.3	47.5	2.3%	0.6%		11.8%
2013 ^{F,G}	26.4	16.7	14.5	57.6	-1.4%	1.8%	237.2%	21.3%
2014	27.0	17.6	15.1	59.7	2.3%	5.4%	4.1%	3.6%
2015	28.8	19.0	16.4	64.2	6.7%	8.0%	8.6%	7.5%
2016 ^H	32.6	20.9	18.0	71.5	13.2%	10.0%	9.8%	11.4%
2017 ^I	36.6	21.7	18.5	76.8	12.3%	3.8%	2.8%	7.4%
	TOLL REVENUES (millions)				PERCENT CHANGE			
1998	\$12.1	\$10.5		\$22.6				
1999	\$13.1	\$11.5		\$24.6	8.3%	9.5%		8.8%
2000	\$14.8	\$12.9		\$27.7	13.0%	12.2%		12.6%
2001	\$15.5	\$13.7		\$29.2	4.7%	6.2%		5.4%
2002 ^A	\$15.0	\$13.7		\$28.7	-3.2%	0.0%		-1.7%
2003	\$15.7	\$14.9		\$30.6	4.7%	8.8%		6.6%
2004	\$17.9	\$16.4		\$34.3	14.0%	10.1%		12.1%
2005 ^B	\$19.4	\$16.7		\$36.1	8.4%	1.8%		5.2%
2006	\$20.9	\$17.5		\$38.4	7.7%	4.8%		6.4%
2007	\$21.8	\$18.2		\$40.0	4.3%	4.0%		4.2%
2008 ^C	\$22.1	\$18.0		\$40.1	1.4%	-1.1%		0.3%
2009 ^D	\$21.6	\$16.9		\$38.5	-2.3%	-6.1%		-4.0%
2010 ^E	\$26.2	\$20.4		\$46.6	21.3%	20.7%		21.0%
2011	\$27.0	\$21.4		\$48.4	3.1%	4.9%		3.9%
2012 ^F	\$27.5	\$19.0	\$2.2	\$48.7	1.9%	-11.2%		0.6%
2013 ^{F,G}	\$30.9	\$16.0	\$7.6	\$54.5	12.4%	-15.8%	243.9%	11.8%
2014	\$31.6	\$16.8	\$7.9	\$56.3	2.3%	5.1%	4.4%	3.4%
2015	\$33.6	\$18.2	\$8.6	\$60.4	6.3%	8.3%	8.9%	7.3%
2016 ^H	\$37.3	\$20.0	\$9.4	\$66.7	11.0%	9.9%	9.3%	10.4%
2017 ^I	\$41.4	\$20.7	\$9.7	\$71.8	11.0%	3.5%	3.2%	7.6%

Notes:

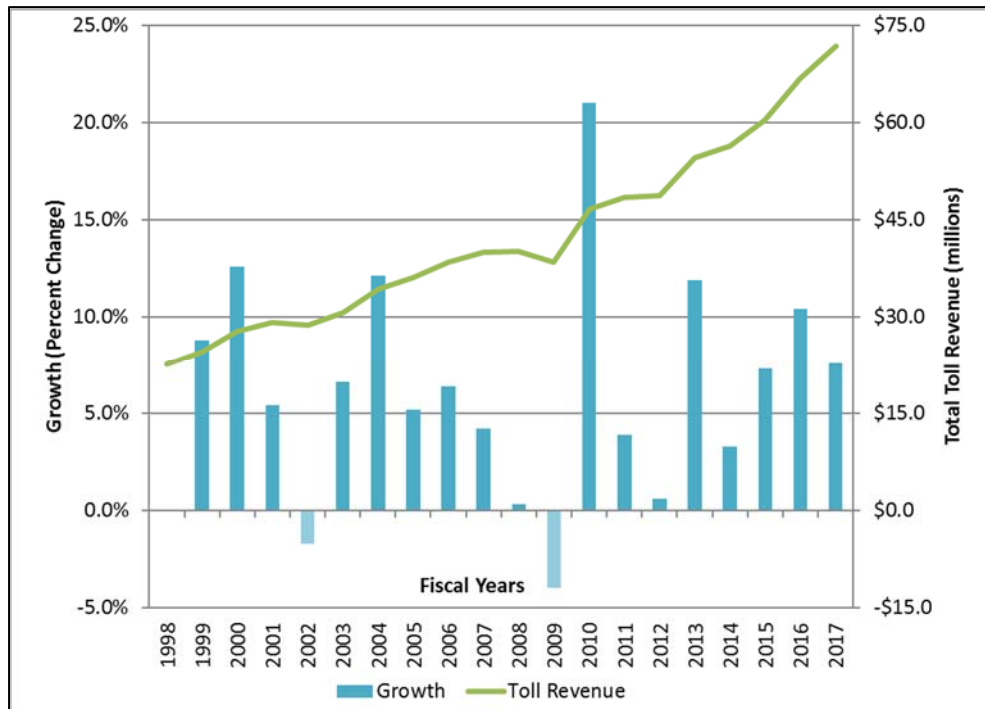
- A - Effects of the events on September 11, 2001.
 B - Effects from 2004 hurricane season (4 storms w with toll suspensions).
 C - First effects of national economic recession.
 D - Systemwide toll rate increase in April 2009. Beachline Main plaza converted to open road tolling in July of 2009.
 E - Monument Parkway connection to ICP ramps opened to traffic.
 F - Dallas Main Plaza opened to traffic on March 19, 2012. Beachline Main plaza toll reduced from \$1.50 to \$0.75.
 G - Systemwide toll rate increase in July 2013. Implementation of cash and electronic toll rate differential.
 H - Airport Main Plaza stopped collecting tolls on 1/31/16. All transactions and toll revenues are from ramps or the FTE plaza.
 I - Effects from Hurricane Matthew in October 2016.

Figure 3-2
S.R. 528 Historical Transactions and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

Figure 3-3
S.R. 528 Historical Toll Revenue and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

In FY 2011 and FY 2012, transactions at both the Airport Main and Beachline Main plaza group increased compared to the prior year. In FY 2012, the Dallas Main plaza opened to traffic to create toll equity for customers on S.R. 528 by collecting the toll at two locations. At this time, tolls for 2-axle vehicles at the Beachline Main plaza were reduced from \$1.50 to \$0.75. The decrease in tolls resulted in a revenue decline of 11.2 percent on the Beachline Main plaza group compared to the prior year. Revenues also declined in FY 2013 due to the decrease in tolls. The toll previously collected on behalf of FDOT at the Beachline Main plaza also shifted to the Dallas Main plaza. The Dallas Main plaza, which opened in March 2012, collected \$2.2 million in revenues and reported 4.3 million transactions during its first three months of operation in FY 2012. Overall, S.R. 528 transactions would have been relatively flat in FY 2012 compared to FY 2011 without the additional transactions from this new plaza.

In FY 2013, transactions at the Airport Main plaza group declined by 1.4 percent, while revenues increased by 12.4 percent over FY 2012. This was expected due to the recent systemwide toll rate increase that went into effect on July 1, 2012 (FY 2013). The Beachline Main plaza group experienced an increase of 1.8 percent in traffic and decrease of 15.8 percent in revenues in FY 2013. As previously mentioned, tolls at the Beachline Main plaza were reduced in March 2012 along with the opening of the Dallas Main plaza. The Beachline Main plaza was also included in the FY 2013 systemwide toll rate increase. In FY 2013, transactions at the Dallas Main plaza increased by 237.2 percent and revenues increased by 243.9 percent compared to FY 2012. This can be attributed to the first full year of toll collection at this new plaza.

In FY 2014, transactions at the Airport Main plaza group increased by 2.3 percent and toll revenues increased by 2.3 percent compared to FY 2013. The Beachline Main plaza group transactions increased by 5.4 percent and toll revenues increased by 5.1 percent over FY 2013. In FY 2014, Dallas Main plaza group transactions increased by 4.1 percent and toll revenues increased by 4.4 percent compared to FY 2013. This growth rate is significantly reduced compared to the growth observed in FY 2013, primarily due to the fact that FY 2013 was the first full year of transactions and toll revenues at the Dallas Main plaza group. All plaza groups experienced significant growth again in FY 2015.

In FY 2016, the Airport Main plaza group transactions increased by 13.2 percent, Beachline Main plaza group transactions increased by 10.0 percent and Dallas Main plaza group transactions increased by 9.8 percent over FY 2015. Over the same period, the Airport Main plaza toll revenues increased by 11.0 percent, Beachline Main plaza group toll revenues increased by 9.9 percent and Dallas Main plaza group toll revenues increased by 9.3 percent over FY 2015. 2016 was a leap year so February 2016 included an extra day of transactions and toll revenue collection compared to February 2015. Part of the increase at the Airport Main Plaza group is due to the change in the toll plan, or addition of the Boggy Creek Road and Conway Road ramp plazas, as a result of the mainline plaza removal. Transactions at the FTE Beachline West Main Plaza are included as part of the Airport Main Plaza group.

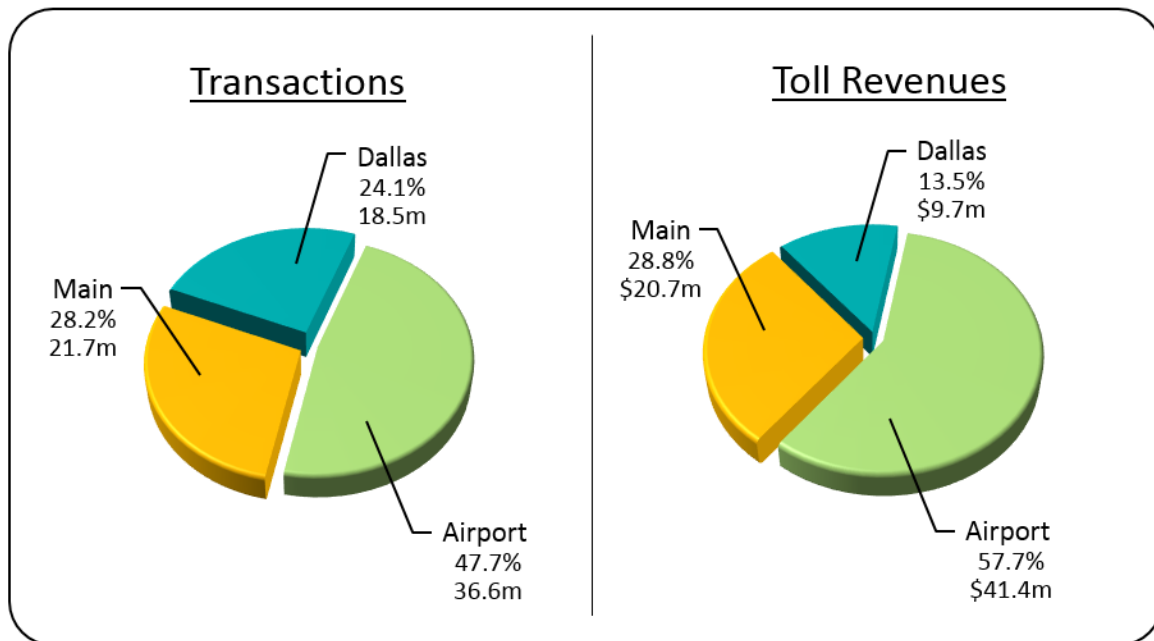
In October 2016, Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. On October 3, Governor Scott declared a state of emergency and urged over 1.5 million residents to evacuate. Tolls were suspended on the CFX System beginning at 8:00pm on October 5, 2016 through early on October 10, 2016. Besides

the \$2.75 billion in damage caused by Hurricane Matthew through the state, normal traffic patterns and toll revenue collections were significantly disrupted.

In FY 2017, the Airport Main plaza group transactions increased by 12.3 percent, Beachline Main plaza group transactions increased by 3.8 percent and Dallas Main plaza group transactions increased by 2.8 percent over FY 2016. Toll revenues for each plaza group followed the same trends compared to FY 2016. As previously mentioned in Chapter 1, October 2016 transactions and toll revenues were negatively impacted by toll suspensions during Hurricane Matthew. Also, February 2017 included one less day of transactions and toll revenue collection compared to February 2016 due to 2016 being a leap year.

The transactions and toll revenues by plaza group and as a percentage of total S.R. 528 transactions and toll revenues for FY 2017 are shown in **Figure 3-4**. The Airport Main plaza group represented 36.6 million transactions or 47.7 percent of total S.R. 528 transactions. The Beachline Main plaza group carried 21.7 million or 28.2 percent of total transactions on the facility. Finally, the Dallas Main plaza group represented 18.5 million or 24.1 percent of total S.R. 528 transactions in FY 2017.

Figure 3-4
S.R. 528 Transactions and Toll Revenues by Plaza Group
FY 2017



Source: CFX Statistical Report June 2017

The annual totals and percentages for toll revenues differ from those reported for annual transactions because of differences in toll rates. As shown, the Airport Main plaza group represented \$41.4 million in toll revenues or 57.7 percent of total S.R. 528 toll revenues. The Beachline Main plaza group carried \$20.7 million or 28.8 percent of toll revenues on the facility.

Finally, because of the lower toll, the Dallas Main plaza group represented \$9.7 million or 13.5 percent of total S.R. 528 transactions in FY 2017.

3.2.2 MONTHLY TRANSACTION SEASONAL VARIATION

In **Table 3-2**, monthly total traffic volumes are normalized to average number of transactions per day in each month. Using average number of transactions per day allows for an easy comparison of the variations in relative travel demand over the year. The pattern of seasonal usage changes slightly from year to year, based on the number of weekdays in each month. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

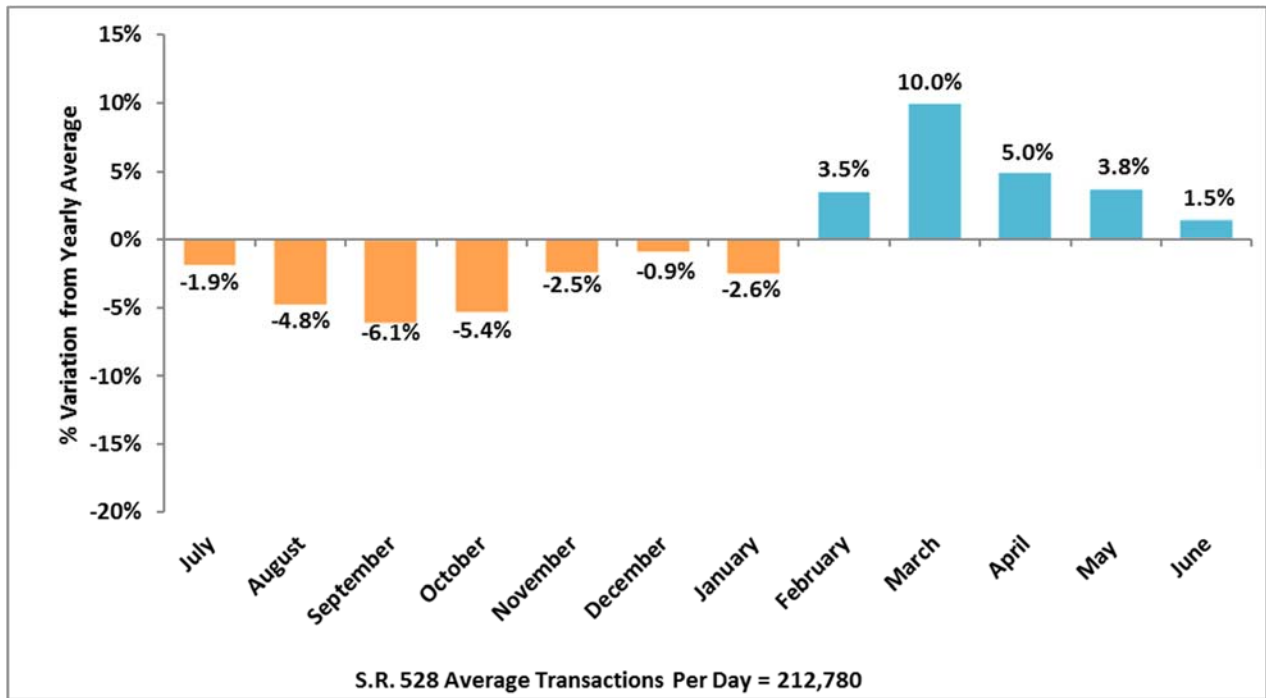
Table 3-2
S.R. 528 – Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions/day	Seasonal Factor
July	31	6,470,790	208,735	0.981
August	31	6,277,694	202,506	0.952
September	30	5,992,617	199,754	0.939
October	27	5,435,676	201,321	0.946
November	30	6,225,233	207,508	0.975
December	31	6,535,377	210,819	0.991
January	31	6,426,094	207,293	0.974
February	28	6,169,278	220,331	1.035
March	31	7,253,397	233,981	1.100
April	30	6,700,065	223,336	1.050
May	31	6,845,688	220,829	1.038
June	30	6,481,838	216,061	1.015
Average		6,401,146	212,780	1.000
Total Year	361	76,813,747		

Source: CFX Statistical Report June 2017

As presented in **Table 3-2**, average transactions per day in FY 2017 on S.R. 528 ranged from a high of 233,981 in March 2017 to a low of 199,754 in September 2016. March is typically the month with the highest average number of transactions per day due to a large number of tourists and seasonal residents in the area during the Spring. Historically, September has been the month with the lowest average number of transactions per day. This data is presented in a graphical format in **Figure 3-5**. The transactions for each month appear as a percentage of the average for the fiscal year. March transactions were 10 percent above average and September transactions were 6.1 percent below average for the facility.

Figure 3-5
S.R. 528 Variation in Transactions Per Day, By Month
FY 2017



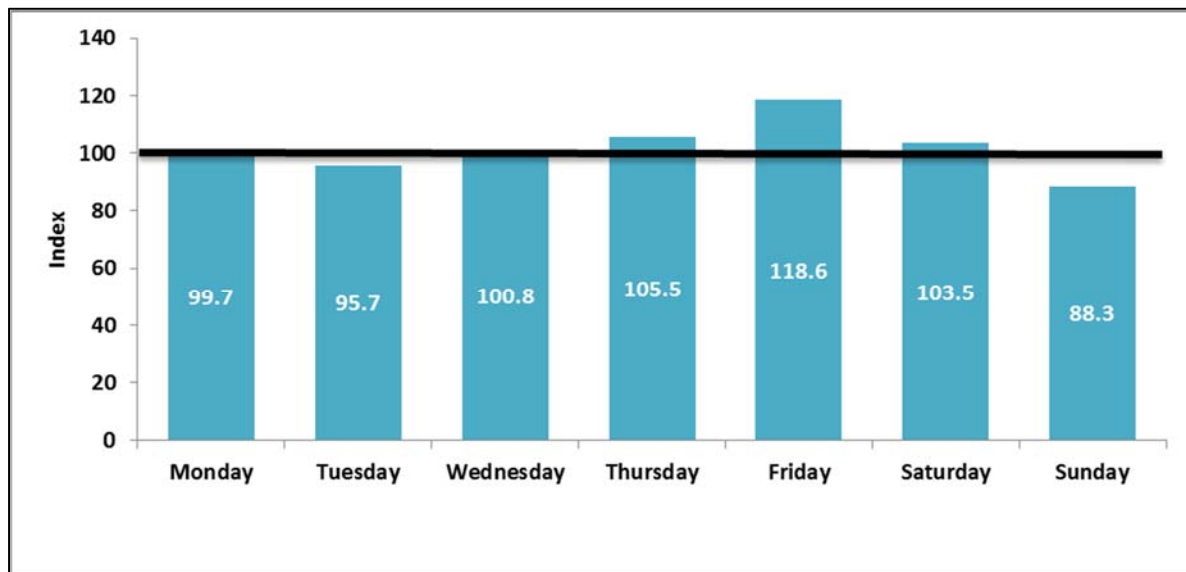
Source: CFX Statistical Report June 2017

3.2.3 DAY-OF-WEEK TOLL TRANSACTION VARIATION

Figure 3-6 contains a comparison of total toll transactions by day of the weeks against AADT. This data is presented as an index, where the AADT equals 100. An index value of 100 for a given day of the week would indicate that day’s transactions were precisely the same volume as the facility’s AADT. A value of 120 would indicate a day that has 20 percent greater volume than the AADT. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

FY 2017 weekday toll transactions on S.R. 528 fluctuated over the course of the five-day work week. Transactions were highest on Fridays, with an index value of 118.6 (18.6 percent higher than the average day), volumes on Thursdays had an index value of 105.5, and volumes on Monday through Wednesday ranged from index values of 95.7 to 100.8. Saturday volumes were similar to early weekday volumes with an index value of 103.5. Transactions decline on Sundays, which have an index value of 88.3, or 11.7 percent lower than the average day. The higher volumes on Friday and Saturday can be attributed to tourism and beach traffic using S.R. 528. It is unusual for a facility to have an index below average on a weekday.

Figure 3-6
S.R. 528 Variation in Day-of Week Toll Transactions, By Day
FY 2017



Source: Unaudited lane transaction data – January 2017

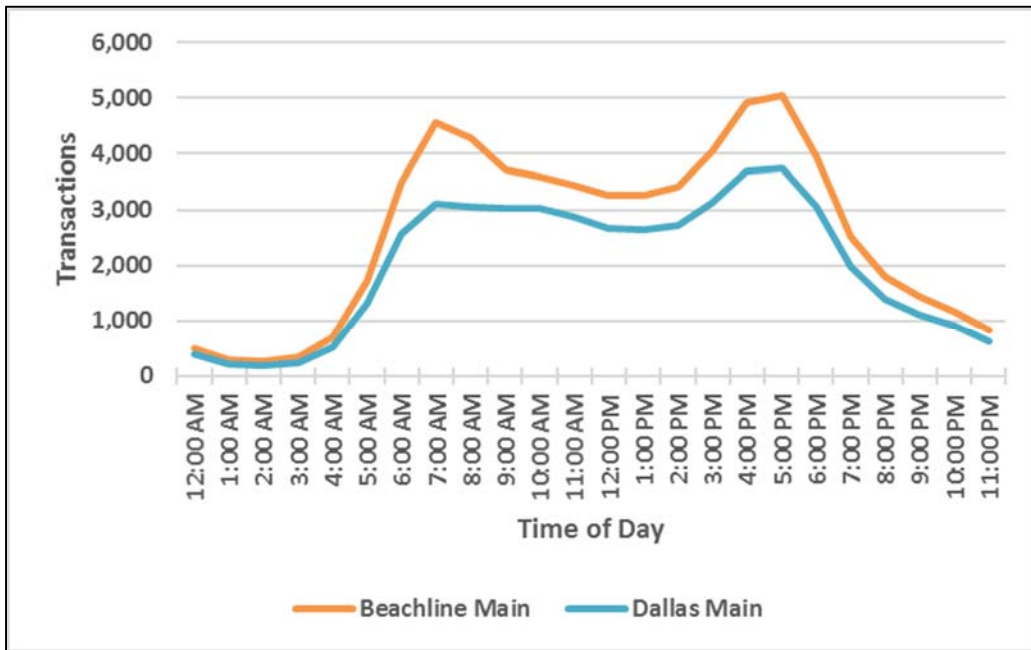
3.2.4 DAILY TRAFFIC DISTRIBUTION

The daily distribution of traffic includes information on the usage characteristics of the facility. The daily distributions represent counts taken during a typical week at the mainline toll plazas in the month of January. The typical weekday distribution is shown in **Figure 3-7** and the weekend distribution is shown in **Figure 3-8**. The figures contain the sum of traffic volumes in both directions.

The two mainline toll plaza locations on S.R. 528 exhibit similar hourly traffic patterns. On weekdays, demand for travel at both locations is bimodal, with both morning and evening peak hours. The Beachline and Dallas mainline plazas both experience higher peak volumes in the evening hours than in the morning hours. The highest peak hour volumes during the week were 5,000 per hour beginning at 5:00 P.M. at the Beachline mainline plaza and 3,700 per hour beginning at 5:00 P.M. at the Dallas mainline plaza. On weekends, there is a clear morning peak between 10:00 A.M. and 11:00 A.M. and afternoon at 5:00 P.M. indicating traffic heading to the beach for the day.

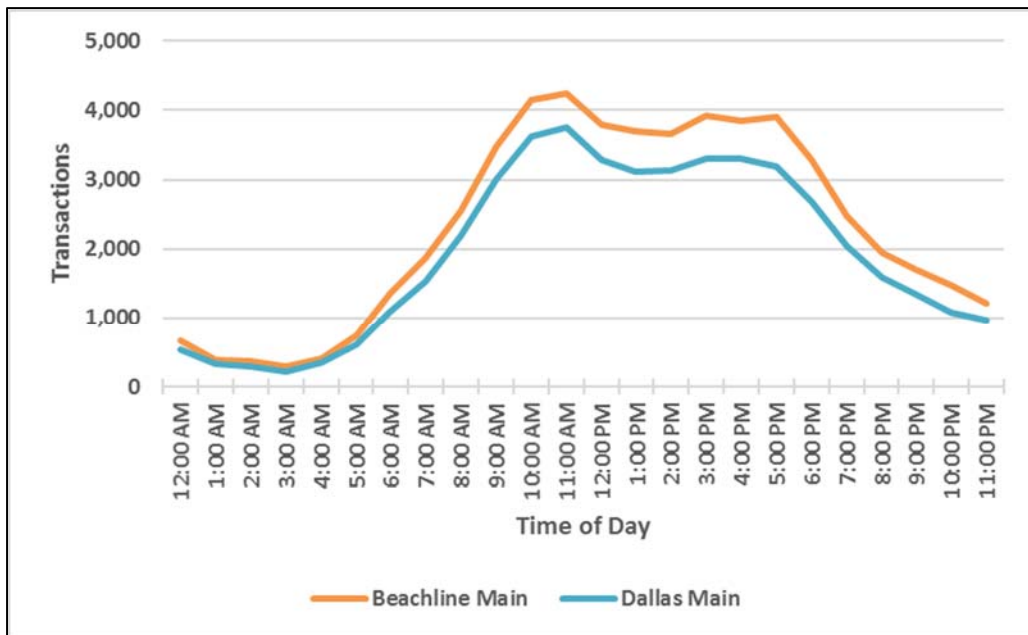


Figure 3-7
S.R. 528 Daily Traffic Variation (Weekday)
FY 2017 (January)



Source: Unaudited lane transaction data – January 2017

Figure 3-8
S.R. 528 Daily Traffic Variation (Weekend)
FY 2017 (January)

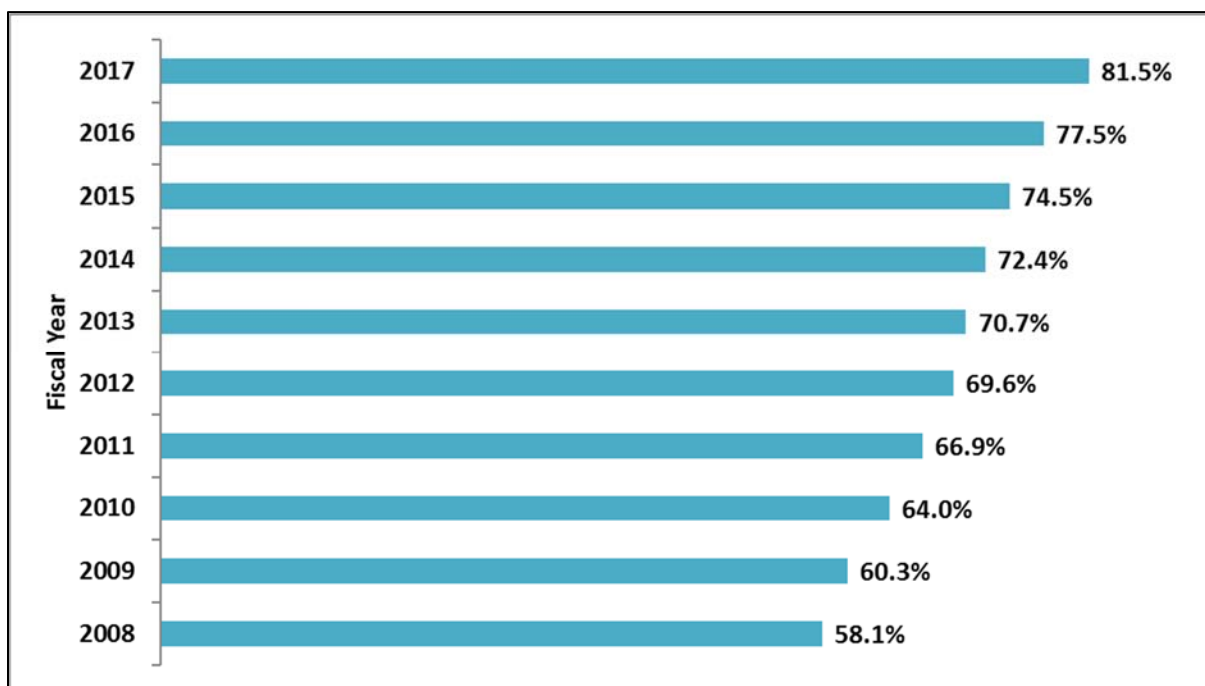


Source: Unaudited lane transaction data – January 2017

3.3 ETC Usage

The percent of revenues generated from ETC over the past ten fiscal years on S.R. 528 are shown in **Figure 3-9**. The proportion of ETC toll revenues collected by CFX has steadily increased on the facility. In FY 2008, ETC revenues represented 58.1 percent of total revenues on the facility. In FY 2017, ETC revenues reached 81.5 percent. S.R. 528 has the lowest ETC usage of all CFX toll facilities due to the high volume of tourists using the expressway. ETC usage is expected to increase as customers shift from cash to ETC to take advantage of the lower ETC toll rate and the convenience of paying tolls electronically.

Figure 3-9
S.R. 528 Percent of Toll Revenue from Electronic Toll Collection
FY 2008 – FY 2017



Source: CFX Statistical Report June 2017

3.4 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

Future transportation improvements that could influence the T&R forecasts for S.R. 528 include the projects listed in **Table 3-3**, assumed completed in each model horizon year. Facility improvements, such as the widening from S.R. 417 Curry Ford Road to Lake Underhill Road, positively impact the T&R growth on S.R. 528 in the near term.

Table 3-3
S.R. 528 - Key Transportation Improvements

Facility	From	To	Model Horizon Year	Jurisdiction	Improvement
S.R. 417/Greenway	Curry Ford Rd.	Lake Underhill Rd.	2018	CFX	Widen 4-6 lanes
Innovation Way Interchange			2018	CFX	Modified Interchange
S.R. 528/Beachline Expressway	Airport Plaza		2018	CFX	Plaza Demolition
S.R. 528/Beachline Expressway	I-4	Florida's Turnpike	2023	Turnpike	Widen 4-8 lanes
S.R. 528/Beachline Expressway	Florida's Turnpike	MP 8.421	2023	Turnpike	Widen 6-8 lanes
Conway Road	McCoy Road	Judge Road	2043	Orange County	Widen 4-6 lanes
Conway Road	Judge Road	Hoffner Avenue	2033	Orange County	Widen 4-6 lanes
Hoffner Ave.	Lee Vista Blvd.	Conway Road	2033	Orange County	Widen 2-4 lanes
Sand Lake Road	John Young Parkway	Turkey Lake Road	2033	Orange County	Widen 4-6 lanes
Central Florida Parkway	International Drive	John Young Parkway	2023	Orange County	Widen 4-6 lanes
International Drive	Hawaiian Court	SR 482 (Sand Lake Rd.)	2023	Orange County	Widen 4-6 lanes
Interstate 4	Kirkman Road	North of SR 434	2028	FDOT	Ultimate Managed Lanes
SR 528	I-95	Port Canaveral	2043	FDOT	Widen 4-6 lanes
Interstate 4	Kirkman Road	US 27	2043	FDOT	BtU South Managed Lanes

Historical and projected transactions and toll revenues for each of the S.R. 528 plaza groups and for all of S.R. 528 are summarized in **Table 3-4** and **Table 3-5**. The increase in transactions and revenue in FY 2016 over FY 2015 can partially be attributed to the opening of the two ramp plazas at Conway Road/Tradeport Drive and Boggy Creek Road/Sand Lake Road because of the relocation/removal of the Airport Main Plaza toll collection point to Beachline West.

The assumed completion of Brightline intercity passenger rail service in FY 2018 has a minor impact on S.R. 528 T&R forecasts. The Brightline Train will operate between Orlando International Airport and three stations in South Florida (West Palm Beach, Fort Lauderdale and Miami).

Total transactions on S.R. 528 are projected to increase during the forecast period from the actual of 76.8 million in FY 2017 to 99.8 million in FY 2047. During the FY 2018 through FY 2047 forecast period, S.R. 528 is expected to be the fourth-largest contributor to total revenues of the five existing expressways. Total revenues on S.R. 528 are projected to increase during the forecast period from the actual \$71.8 million in FY 2017 to \$137.8 million in FY 2047. Transactions are forecasted to increase an average of 1.5 percent per year from FY 2017 to FY 2027. Revenues during the same period are forecasted to increase an average of 3.0 percent per year. Transactions and revenues are forecasted to increase at an average of 0.7 and 1.9 percent per year from FY 2027 to FY 2037, and 0.5 and 1.7 percent per year from FY 2037 to FY 2047, respectively.

Table 3-4
S.R. 528 Plaza Groups – Transaction Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Airport Main		Beachline Main		Dallas Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	18.9		11.9				30.8		11.7%
2001	19.8		12.6				32.4		5.2%
2002 ^B	19.0		12.6				31.6		-2.5%
2003	20.0		13.7				33.7		6.6%
2004	22.6		14.9				37.5		11.3%
2005 ^C	24.6		15.1				39.7		5.9%
2006	26.5		15.9				42.4		6.8%
2007	27.8		16.7				44.5		5.0%
2008 ^D	28.2		16.6				44.8		0.7%
2009 ^E	25.6		15.1				40.7		-9.2%
2010	25.4		15.5				40.9		0.5%
2011	26.2		16.3				42.5		3.9%
2012 ^F	26.8		16.4		4.3		47.5		11.8%
2013 ^{F,E}	26.4		16.7		14.5		57.6		21.3%
2014	27.0		17.6		15.1		59.7		3.6%
2015	28.8		19.0		16.4		64.2		7.5%
2016 ^G	32.6		20.9		18.0		71.5		11.4%
2017 ^H	36.6		21.7		18.5		76.8		7.4%
2018		37.3		21.7		18.5		77.5	0.9%
2019 ^I		38.6		22.3		18.9		79.8	3.0%
2020		39.7		22.8		19.3		81.8	2.5%
2021 ^J		40.7		23.2		19.6		83.5	2.1%
2022		41.4		23.6		19.9		84.9	1.7%
2023		42.0		23.8		20.1		85.9	1.2%
2024		42.6		24.1		20.2		86.9	1.2%
2025		43.0		24.3		20.4		87.7	0.9%
2026		43.4		24.5		20.6		88.5	0.9%
2027		43.8		24.7		20.7		89.2	0.8%
2028		44.2		24.9		20.9		90.0	0.9%
2029		44.5		25.1		21.0		90.6	0.7%
2030		44.9		25.2		21.2		91.3	0.8%
2031		45.2		25.4		21.3		91.9	0.7%
2032		45.5		25.6		21.4		92.5	0.7%
2033		45.8		25.7		21.6		93.1	0.6%
2034		46.1		25.9		21.7		93.7	0.6%
2035		46.4		26.0		21.8		94.2	0.5%
2036		46.7		26.2		21.9		94.8	0.6%
2037		47.0		26.3		22.0		95.3	0.5%
2038		47.3		26.5		22.1		95.9	0.6%
2039		47.5		26.6		22.3		96.4	0.5%
2040		47.8		26.7		22.4		96.9	0.5%
2041		48.0		26.9		22.5		97.4	0.5%
2042		48.2		27.0		22.6		97.8	0.4%
2043		48.5		27.1		22.7		98.3	0.5%
2044		48.7		27.2		22.8		98.7	0.4%
2045		48.9		27.3		22.9		99.1	0.4%
2046		49.1		27.4		23.0		99.5	0.4%
2047		49.3		27.5		23.0		99.8	0.3%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)				
2000 - 2007	5.7%	5.0%			5.4%
2007 - 2017	2.8%	2.7%			5.6%
2017 - 2027	1.8%	1.3%	1.1%		1.5%
2027 - 2037	0.7%	0.6%	0.6%		0.7%
2037 - 2047	0.5%	0.4%	0.4%		0.5%

Notes:

- A - Actual revenue data provided by CFX from Monthly Statistical Reports.
- B - Effects of the events on September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - First effects of national economic recession.
- E - Systemwide toll rate increase.
- F - Dallas Main plaza opened to traffic on March 19, 2012.
- G - Airport Main Plaza closed and new ramp plazas opened in March 2016.
- H - Effects from Hurricane Matthew in October 2016.
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- J - Completion of I-4 Ultimate project.

Table 3-5
S.R. 528 Plaza Groups – Toll Revenue Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Airport Main		Beachline Main		Dallas Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	\$14.8		\$12.9				\$27.7		11.7%
2001	15.5		13.7				29.2		5.4%
2002 ^B	15.0		13.7				28.7		-1.7%
2003	15.7		14.9				30.6		6.6%
2004	17.9		16.4				34.3		12.1%
2005 ^C	19.4		16.7				36.1		5.2%
2006	20.9		17.5				38.4		6.4%
2007	21.8		18.2				40.0		4.2%
2008 ^D	22.1		18.0				40.1		0.3%
2009 ^E	21.6		16.9				38.5		-4.0%
2010	26.2		20.4				46.6		21.0%
2011	27.0		21.4				48.4		3.9%
2012 ^F	27.5		19.0		\$2.2		48.7		0.6%
2013 ^{F,E}	30.9		16.0		7.6		54.5		11.9%
2014	31.6		16.8		7.9		56.3		3.3%
2015	33.6		18.2		8.6		60.4		7.3%
2016 ^G	37.3		20.0		9.4		66.7		10.4%
2017 ^H	41.4		20.7		9.7		71.8		7.6%
2018		\$42.9		\$20.8		\$9.7		\$73.4	2.2%
2019 ^I		45.2		21.7		10.1		77.0	4.9%
2020		47.3		22.6		10.4		80.3	4.3%
2021 ^J		49.3		23.3		10.8		83.4	3.9%
2022		50.9		24.0		11.0		85.9	3.0%
2023		52.3		24.5		11.2		88.0	2.4%
2024		53.7		25.1		11.5		90.3	2.6%
2025		54.9		25.6		11.7		92.2	2.1%
2026		56.1		26.1		11.9		94.1	2.1%
2027		57.3		26.6		12.2		96.1	2.1%
2028		58.5		27.2		12.4		98.1	2.1%
2029		59.7		27.7		12.6		100.0	1.9%
2030		60.9		28.2		12.9		102.0	2.0%
2031		62.2		28.8		13.1		104.1	2.1%
2032		63.4		29.3		13.4		106.1	1.9%
2033		64.6		29.9		13.6		108.1	1.9%
2034		65.8		30.4		13.9		110.1	1.9%
2035		67.1		31.0		14.1		112.2	1.9%
2036		68.3		31.5		14.4		114.2	1.8%
2037		69.6		32.1		14.7		116.4	1.9%
2038		70.8		32.7		14.9		118.4	1.7%
2039		72.1		33.2		15.2		120.5	1.8%
2040		73.4		33.8		15.4		122.6	1.7%
2041		74.7		34.4		15.7		124.8	1.8%
2042		76.0		34.9		16.0		126.9	1.7%
2043		77.4		35.5		16.2		129.1	1.7%
2044		78.7		36.1		16.5		131.3	1.7%
2045		80.0		36.7		16.8		133.5	1.7%
2046		81.4		37.2		17.0		135.6	1.6%
2047		82.7		37.8		17.3		137.8	1.6%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)				
2000 - 2007	5.7%		5.0%		5.4%
2007 - 2017	6.6%		1.3%		6.0%
2017 - 2027	3.3%		2.5%	2.3%	3.0%
2027 - 2037	2.0%		1.9%	1.9%	1.9%
2037 - 2047	1.7%		1.6%	1.6%	1.7%

Notes:

- A - Actual revenue data provided by CFX from Monthly Statistical Reports.
- B - Effects of the events on September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - First effects of national economic recession.
- E - Systemwide toll rate increase.
- F - Dallas Main plaza opened to traffic on March 19, 2012.
- G - Airport Main Plaza closed and new ramp plazas opened in March 2016.
- H - Effects from Hurricane Matthew in October 2016.
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- J - Completion of I-4 Ultimate project.

Chapter 4
S.R. 408
(Spessard Lindsay Holland
East-west Expressway)



S.R. 408 (SPESSARD LINDSAY HOLLAND EAST-WEST EXPRESSWAY)

4.1 Facility Description

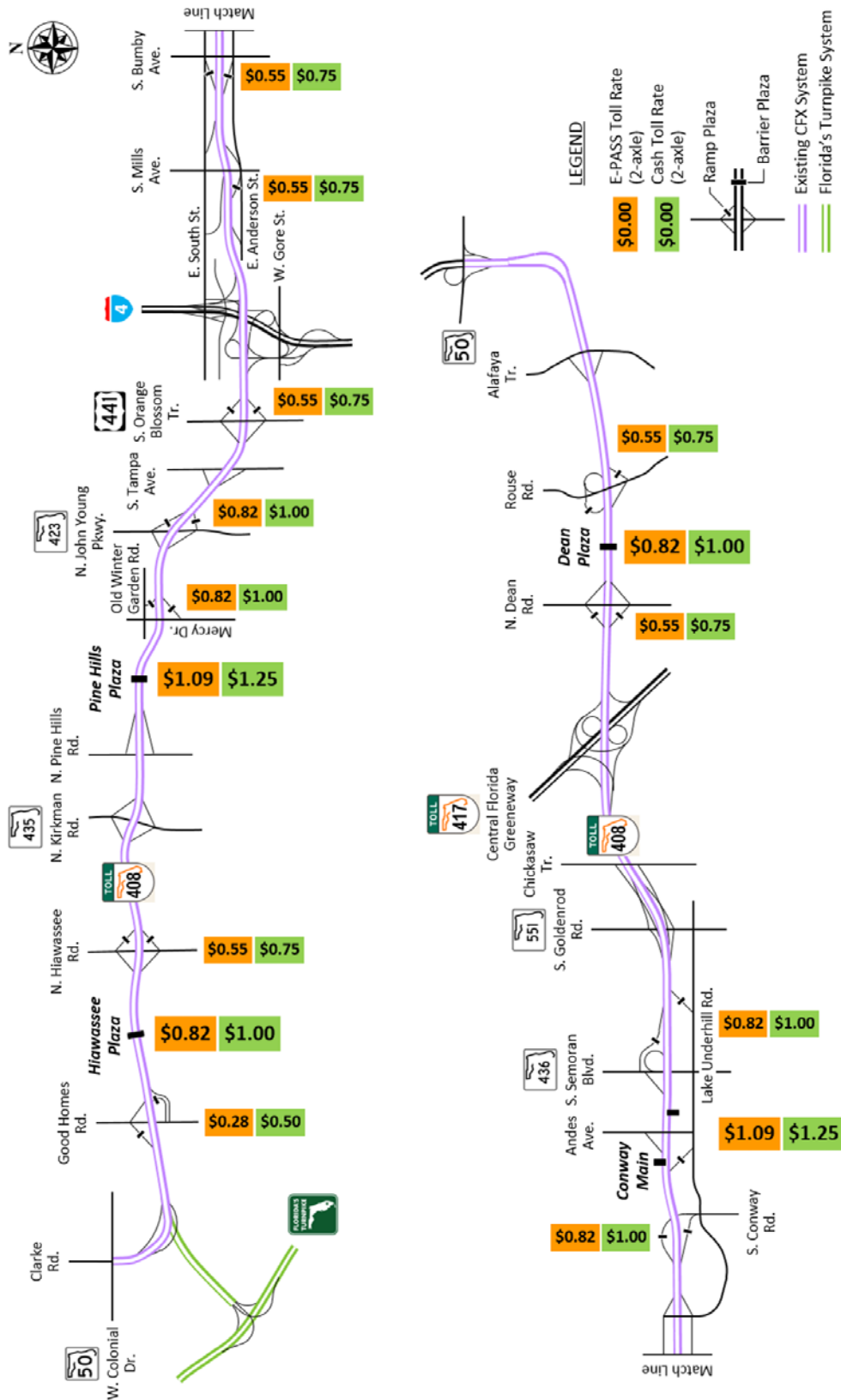
S.R. 408, also known as the Spessard Lindsay Holland East-West Expressway, is a 22-mile expressway that serves the east-west commuter traffic across the Orlando urban area and provides fast and efficient access to and from the Orlando central business district. The East-West Expressway provides direct access to Interstate 4 (I-4) with an interchange that provides customers with a direct route to other major employment centers in the Metro Orlando area. A map of S.R. 408 including the FY 2017 CFX toll rates for the mainline and ramp toll plazas is shown in **Figure 4-1**. S.R. 408 has four plaza groups: the Hiawassee Main plaza group (including tolled interchanges at Good Homes Road and Hiawassee Road); the Pine Hills Main plaza group (including tolled interchanges at Old Winter Garden Road, John Young Parkway, U.S. 92/441 and Mills Avenue); the Conway Main plaza group (including tolled interchanges at Bumby Avenue, Conway Road and Andes Avenue/Semorán Boulevard); and the Dean Main plaza group (including tolled interchanges at Dean Road and Rouse Road).



The original 13.8-mile section of S.R. 408 opened to traffic in 1973, beginning on the west side of Orlando at an intersection with S.R. 50, west of Kirkman Road, and ending at S.R. 50 west of Dean Road. This included the Holland West Main plaza (relocated and renamed Pine Hills in 2006) and Holland East Main plaza (reconstructed and renamed Conway in 2008).

CFX completed a major expansion project in 1989 that extended S.R. 408 six miles eastward from its existing terminus near S.R. 551 to a new interchange with S.R. 50, east of S.R. 434. The expansion also included interchanges at Dean Road, Rouse Road and Alafaya Trail. The Dean Mainline plaza was also added, which is located between Dean Road and Rouse Road. In 1990, CFX completed another expansion that extended the S.R. 408 westward five miles from its original western terminus to an interchange with Florida's Turnpike. A new connection with S.R. 50 was provided west of Good Homes Road at Clarke Road. This expansion included interchanges at Hiawassee Road, Good Homes Road and S.R. 50/Clarke Road. The Hiawassee Mainline plaza was added and located between Hiawassee Road and Good Homes Road. S.R. 408 currently extends from Florida's Turnpike on the west to S.R. 50 (east of S.R. 434) on the east.

Figure 4-1
S.R. 408 Facilities and Toll Rates



The S.R. 408 mainline plazas have all been converted to the express toll lane configuration. In 2005 and 2006, the Hiawassee, Pine Hills and Dean Mainline plazas were converted. The Conway Mainline plaza was converted and two express toll lanes were opened in each direction in 2008, with an additional lane added in each direction in 2009.

In August 2006, a full interchange with Florida's Turnpike was completed with two access ramps to connect Good Homes Road with S.R. 408 in each direction. CFX also widened the Good Homes Road bridge to accommodate Orange County's widening of Good Homes Road between S.R. 50 and Old Winter Garden Road.

In FY 2011, the widening of S.R. 408 began between Oxalis Avenue and S.R. 417 as well as the reconfiguration of the S.R. 408/S.R. 417 systems interchange. This widening was completed in March 2013. In January 2013, CFX completed the widening of S.R. 408 between Goldenrod Road and Chickasaw Trail from four to five lanes in each direction. This project also included new ramps at Chickasaw Trail for travel to and from downtown Orlando. In January 2013, a new frontage road was completed to improve access to and from downtown Orlando for the communities in the area of Valencia College Lane and Econlockhatchee Trail.

CFX is currently widening S.R. 408 from Good Homes Road to east of Hiawassee Road. This two-mile project will add a travel lane in each direction (from two to three lanes) and will widen the ramp from westbound S.R. 408 to Good Homes Road from one to two lanes. The project is scheduled for completion in July 2018.

As part of a partnership project, the FDOT is reconstructing the I-4/S.R. 408 interchange as part of their 21-mile I-4 Ultimate project. The reconstruction will improve transitions between S.R. 408 and I-4, including new flyover ramps, direct connection ramps from the eastbound and westbound I-4 Express Lanes to S.R. 408 and the reconstruction of the S.R. 408 travel lanes over I-4.

In June 2017, milling and resurfacing work began on SR. 408 in both directions from the Lake Underhill bridge to Yucatan Drive. This 1.7-mile project will also include an additional Express Lane at the Conway Road Main Plaza. The project is scheduled for completion in early 2018.

Beginning in the fall of 2017, CFX will widen S.R. 408 from east of S.R. 417 to east of Alafaya Trail. This 3.24-mile project will add a travel lane to S.R. 408 in each direction (two lanes to three lanes), widen the ramp from westbound S.R. 408 to northbound S.R. 417 (two lanes to three lanes), and add an additional Express Lane at the Dean Road Main Plaza. The project is scheduled for completion in 2019.

4.2 Historical Transactions and Toll Revenues

4.2.1 ANNUAL TRANSACTION AND TOLL REVENUE TRENDS

A comprehensive historical record of facility transactions and toll revenues on S.R. 408 at the Hiawassee Main, Pine Hills Main, Conway Main and Dean Main plaza groups from FY 1998 to FY 2017 is presented in **Table 4-1**. The facility data and annual growth are also presented visually in **Figure 4-2** and **Figure 4-3**.

Table 4-1
S.R. 408 Plaza Groups – Historical Transactions and Toll Revenues
FY 1998 – FY 2017

Fiscal Year	Hiawassee Main	Pine Hills Main	Conway Main	Dean Main	TOTAL	Hiawassee Main	Pine Hills Main	Conway Main	Dean Main	TOTAL
	TRANSACTIONS (millions)					PERCENT CHANGE				
1998	11.8	20.2	35.5	11.9	79.4					
1999	13.7	22.5	38.2	13.8	88.2	16.1%	11.4%	7.6%	16.0%	11.1%
2000	15.5	24.4	41.0	16.7	97.6	13.1%	8.4%	7.3%	21.0%	10.7%
2001	17.1	25.7	42.5	19.1	104.4	10.3%	5.3%	3.7%	14.4%	7.0%
2002 ^A	18.7	26.7	43.8	20.9	110.1	9.4%	3.9%	3.1%	9.4%	5.5%
2003	20.2	28.0	45.5	22.4	116.1	8.0%	4.9%	3.9%	7.2%	5.4%
2004	22.0	29.9	48.5	24.3	124.7	8.9%	6.8%	6.6%	8.5%	7.4%
2005 ^B	22.7	30.8	49.1	25.2	127.8	3.2%	3.0%	1.2%	3.7%	2.5%
2006 ^C	24.1	32.2	51.8	27.3	135.4	6.2%	4.5%	5.5%	8.3%	5.9%
2007 ^D	25.7	32.5	51.9	28.2	138.3	6.6%	0.9%	0.2%	3.3%	2.1%
2008 ^E	27.2	33.7	50.7	27.4	139.0	5.8%	3.7%	-2.3%	-2.8%	0.5%
2009 ^F	25.2	30.9	49.3	25.9	131.3	-7.4%	-8.3%	-2.8%	-5.5%	-5.5%
2010 ^F	23.3	28.4	49.0	25.3	126.0	-7.5%	-8.1%	-0.6%	-2.3%	-4.0%
2011	23.2	28.4	50.0	25.1	126.7	-0.4%	0.0%	2.0%	-0.8%	0.6%
2012	23.1	28.4	50.1	24.6	126.2	-0.4%	0.0%	0.2%	-2.0%	-0.4%
2013 ^F	22.5	27.6	48.9	24.5	123.5	-2.5%	-3.0%	-2.3%	-0.5%	-2.1%
2014	24.1	29.2	51.1	25.3	129.7	7.1%	5.8%	4.5%	3.3%	5.0%
2015	26.4	31.6	53.9	26.3	138.2	9.5%	8.2%	5.5%	4.0%	6.6%
2016	28.6	33.7	56.4	27.5	146.2	8.3%	6.6%	4.6%	4.6%	5.8%
2017 ^G	29.6	34.2	56.4	27.5	147.7	3.5%	1.5%	0.0%	0.0%	1.0%
	TOLL REVENUES (millions)					PERCENT CHANGE				
1998	\$5.6	\$14.8	\$25.4	\$5.5	\$51.3					
1999	\$6.5	\$16.4	\$27.3	\$6.4	\$56.6	16.1%	10.8%	7.5%	16.4%	10.3%
2000	\$7.4	\$17.8	\$29.3	\$7.8	\$62.3	13.8%	8.5%	7.3%	21.9%	10.1%
2001	\$8.2	\$18.7	\$30.4	\$8.9	\$66.2	10.8%	5.1%	3.8%	14.1%	6.3%
2002 ^A	\$9.1	\$19.5	\$31.3	\$9.8	\$69.7	11.0%	4.3%	3.0%	10.1%	5.3%
2003	\$9.9	\$20.3	\$32.5	\$10.5	\$73.2	8.8%	4.1%	3.8%	7.1%	5.0%
2004	\$10.8	\$21.8	\$34.7	\$11.4	\$78.7	9.1%	7.4%	6.8%	8.6%	7.5%
2005 ^B	\$11.2	\$22.5	\$35.0	\$11.7	\$80.4	3.7%	3.2%	0.9%	2.6%	2.2%
2006 ^C	\$11.8	\$23.6	\$36.9	\$12.8	\$85.1	5.4%	4.9%	5.4%	9.4%	5.8%
2007 ^D	\$12.7	\$23.5	\$37.0	\$13.3	\$86.5	7.6%	-0.4%	0.3%	3.9%	1.6%
2008 ^E	\$13.0	\$24.0	\$36.1	\$13.0	\$86.1	2.4%	2.1%	-2.4%	-2.3%	-0.5%
2009 ^F	\$13.3	\$23.7	\$37.6	\$13.7	\$88.3	2.3%	-1.3%	4.2%	5.4%	2.6%
2010 ^F	\$16.4	\$26.8	\$46.1	\$18.4	\$107.7	23.3%	13.1%	22.6%	34.3%	22.0%
2011	\$16.2	\$26.8	\$47.1	\$18.2	\$108.3	-1.2%	0.0%	2.2%	-1.1%	0.6%
2012	\$16.0	\$26.7	\$47.2	\$17.8	\$107.7	-1.2%	-0.4%	0.2%	-2.2%	-0.6%
2013 ^F	\$18.0	\$29.3	\$51.9	\$20.1	\$119.3	12.4%	9.6%	10.0%	13.2%	10.8%
2014	\$19.2	\$31.0	\$54.2	\$20.8	\$125.2	6.7%	5.9%	4.4%	3.3%	4.9%
2015	\$21.0	\$33.4	\$56.9	\$21.7	\$133.0	9.4%	7.7%	5.0%	4.3%	6.2%
2016	\$22.6	\$35.5	\$59.4	\$22.6	\$140.1	7.6%	6.3%	4.4%	4.1%	5.3%
2017 ^G	\$23.3	\$36.1	\$59.1	\$22.5	\$141.0	3.1%	1.7%	-0.5%	-0.4%	0.6%

Notes:

A - Effects of the events on September 11, 2001.

B - Effects from 2004 hurricane season (4 storms with toll suspensions).

C - Mills Avenue on-ramp to westbound S.R. 408 permanently closed. Dean Main plaza converted to open road tolling in August 2005.

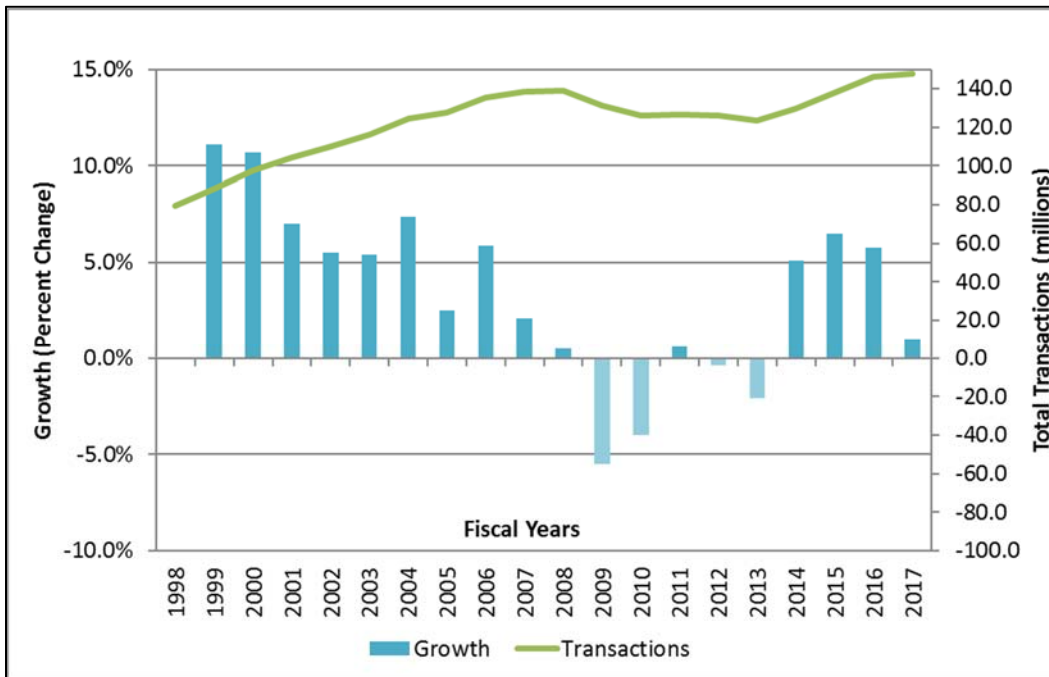
D - Holland West plaza relocated to Pine Hills plaza on November 10, 2006. Hiawassee and Pine Hills Main plazas converted to open road tolling in FY 2006.

E - First effects of national economic recession.

F - Systemwide toll rate increase. Conway Main plaza converted to open road tolling in Nov 2008.

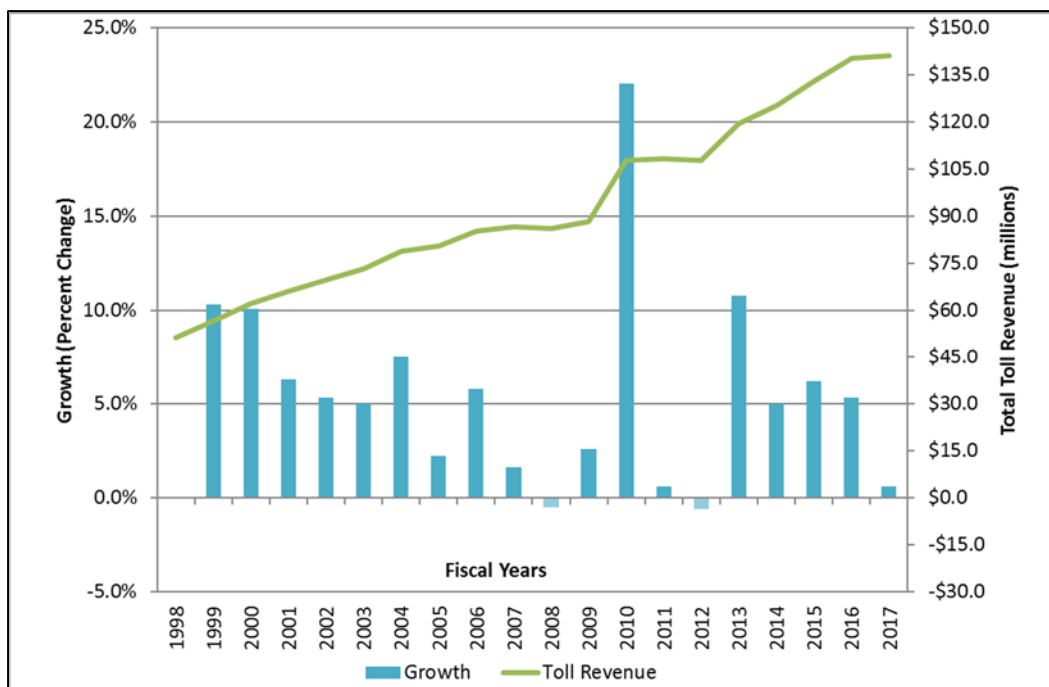
G - Effects from Hurricane Matthew in October 2016.

Figure 4-2
S.R. 408 Historical Transactions and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

Figure 4-3
S.R. 408 Historical Toll Revenue and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

As shown, transactions on S.R. 408 in FY 2017 increased by approximately 1.5 million, or 1.0 percent, compared to FY 2016. FY 2017 toll revenues increased by \$0.9 million, or 0.6 percent compared to FY 2016. Annual transaction and toll revenue trends by plaza group are also presented in the table.

FY 2007 was the first year with a revenue decline at any plaza group on S.R. 408. The decline of 0.4 percent at the Pine Hills Main plaza group can be attributed to construction at the mainline plaza when it was being relocated to its current location. The new plaza opened in November 2006 and included express lanes for E-PASS customers. Due to the relocation of the Pine Hills mainline plaza, the John Young Parkway ramp plazas to/from the west were demolished and new ramp plazas were constructed to/from the east. New ramp plazas were also constructed at the westbound Old Winter Garden Road exit ramp and at the eastbound Mercy Drive entrance ramp.

In FY 2008, transactions decreased at the Conway Main plaza group by 2.3 percent and revenues decreased by 2.4 percent. Transactions also decreased at the Dean Main plaza group by 2.8 percent while revenues decreased by 2.3 percent. These declines can be attributed to the beginning of the economic recession, and to construction and widening of the facility which included the addition of express lanes at the Conway mainline plaza. Transactions declined at all four S.R. 408 plaza groups in FY 2009 as a result of the continuing impacts of the economic recession and the implementation of a Systemwide toll rate increase. The toll rate increase impacted growth during the last three months of FY 2009. The largest transaction decline was seen at the Pine Hills Main plaza group which was 8.3 percent lower than the prior year with a corresponding revenue decline of 1.3 percent.

In FY 2010, annual transactions declined at all four plaza groups. Despite the decrease in transactions, revenues significantly increased at all plazas as a result of the first full year of revenue collection after the Systemwide toll rate increase, which impacted growth during the first nine months.

FY 2011 transactions decreased at the Hiawassee Main plaza group by 0.4 percent and at the Dean Main plaza group by 0.8 percent due to construction on S.R. 408. Revenues also declined at both facilities by approximately 1.0 percent. Transactions and revenues at the Pine Hills Main plaza group remained unchanged while the Conway Main plaza group showed very little growth compared to FY 2010. This slow growth continued in FY 2012 with all plaza groups experiencing transaction and revenue declines or no growth compared to the prior year.

Transactions declined while revenues increased at all four plaza groups in FY 2013, due to the toll rate adjustment that went into effect at the beginning of the fiscal year, on July 1, 2012. In FY 2014, transactions and toll revenues increased at all four plaza groups. The increase in transactions in FY 2014 was expected after the decline occurred in FY 2013 due to the toll rate increase, which impacted traffic for a short period.

In FY 2015, transactions and toll revenues increased over FY 2014 at all four plaza groups. The Hiawassee Main plaza group experienced the largest increase in both transactions and toll revenues. The same trend continued in FY 2016 during which transactions increased by 5.8 percent and toll revenues increased by 5.3 percent. The Hiawassee Main plaza group experienced the largest increase in transactions and toll revenues for the second consecutive year. This increase in transactions and toll revenues can be partially attributed to customers using S.R. 429 as an alternative to I-4 during construction activities and traveling between Florida's Turnpike and S.R. 408.

In October 2016, Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. On October 3, Governor Scott declared a state of emergency and urged over 1.5 million residents to evacuate. Tolls were suspended on the CFX System beginning at 8:00pm on October 5, 2016 through early on October 10, 2016. Besides the \$2.75 billion in damage caused by Hurricane Matthew through the state, normal traffic patterns and toll revenue collections were significantly disrupted.

In FY 2017, transactions and toll revenues increased at the Pine Hills Main and Hiawassee Main plaza groups over FY 2016. The Conway Main and Dean Main plaza groups experienced no growth in transactions and a decline in toll revenues over the same period. Toll revenues declined by 0.5 percent at the Conway Main plaza group and by 0.4 percent at the Dean Main plaza group. As previously mentioned in Chapter 1, October 2016 transactions and toll revenues were negatively impacted by toll suspensions during Hurricane Matthew. Also, February 2017 included one less day of transactions and toll revenue collection compared to February 2016 due to 2016 being a leap year.

The transactions and toll revenues by plaza groups and as a percentage of total S.R. 408 transactions and toll revenues for FY 2017 are presented in **Figure 4-4**. The largest portion of the transactions on S.R. 408 during FY 2017 were reported at the Conway Main plaza group, with 56.3 million or 38.1 percent. The Pine Hills Main, Hiawassee Main, and Dean Main plaza groups reported 34.2, 29.6 and 27.6 million transactions and each contributed approximately 20 percent of total S.R. 408 transactions for FY 2017.

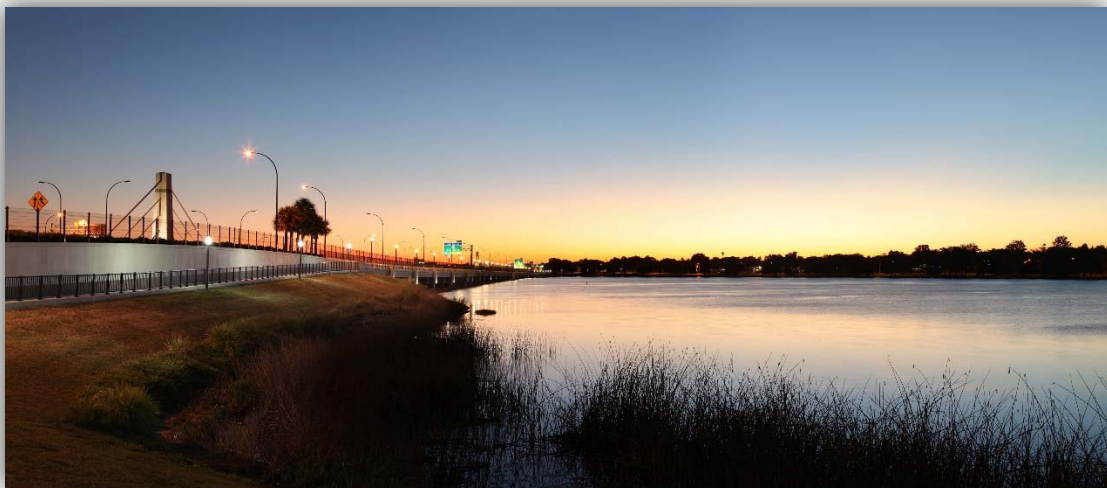
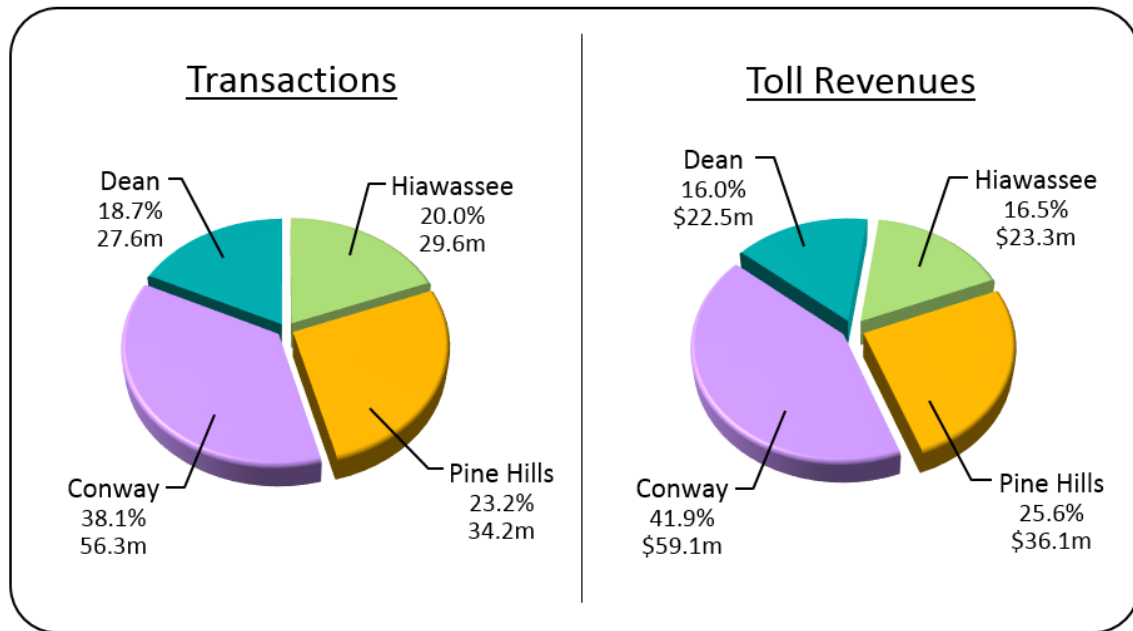


Figure 4-4
S.R. 408 Transactions and Toll Revenues by Plaza Group
FY 2017



Source: CFX Statistical Report June 2017

The annual totals and percentages for toll revenues are similar to the trends reported for annual transactions. As shown, the Conway Main plaza group represented \$59.1 million in toll revenues or 41.9 percent of total S.R. 408 toll revenues. The Pine Hills Main plaza group represented \$36.1 million or 25.6 percent of total revenues on the facility. The Hiwassee Main plaza group represented \$23.3 million or 16.5 percent and the Dean Main plaza group represented \$22.5 million or 16.0 percent of total revenues on the facility.

4.2.2 MONTHLY TRANSACTION SEASONAL VARIATION

In **Table 4-2**, monthly total traffic volumes are normalized to the average number of transactions per day in each month. Using average number of transactions per day allows for an easy comparison of the variations in relative travel demand over the year. The seasonal pattern of usage changes slightly from year to year based on the number of weekdays in a given month. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

The average number of transactions per day in FY 2017 on S.R. 408 ranged from a high of 435,090 in March 2017 to a low of 383,327 in July 2016. This data is presented in a graphical format in **Figure 4-5**. The transactions for each month appear as a percentage of the average for the fiscal year. As shown in the figure, March transactions were 6.4 percent above average and July transactions were 6.3 percent below average for the facility. S.R. 408 volumes do not fluctuate as much as other facilities due to the usage of the highway as a commuter facility with a lower level of use by tourists and seasonal residents.

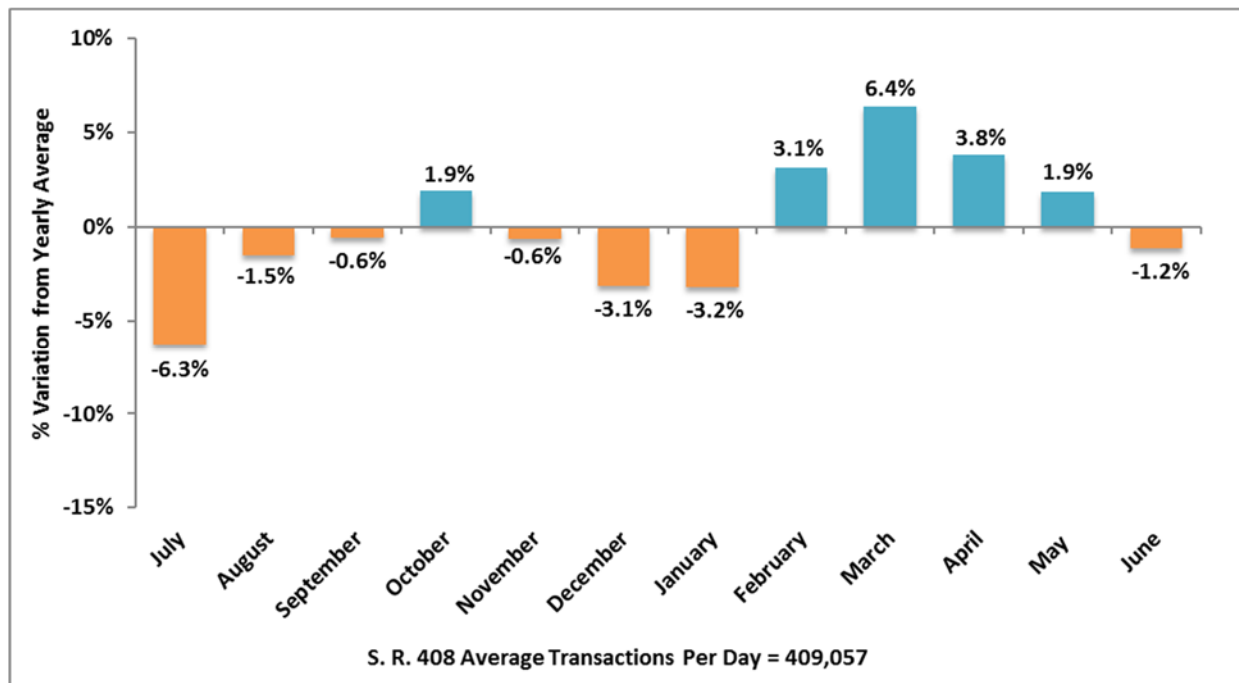
Table 4-2
S.R. 408 – Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions/day	Seasonal Factor
July	31	11,883,134	383,327	0.937
August	31	12,485,148	402,747	0.985
September	30	12,200,349	406,678	0.994
October	27	11,257,880	416,959	1.019
November	30	12,192,889	406,430	0.994
December	31	12,285,805	396,316	0.969
January	31	12,275,568	395,986	0.968
February	28	11,809,372	421,763	1.031
March	31	13,487,789	435,090	1.064
April	30	12,739,987	424,666	1.038
May	31	12,921,148	416,811	1.019
June	30	12,130,442	404,348	0.988
Average		12,305,793	409,057	1.000
Total Year	361	147,669,511		

Source: CFX Statistical Report June 2017



Figure 4-5
S.R. 408 Variation in Transactions per Day, by Month
FY 2017



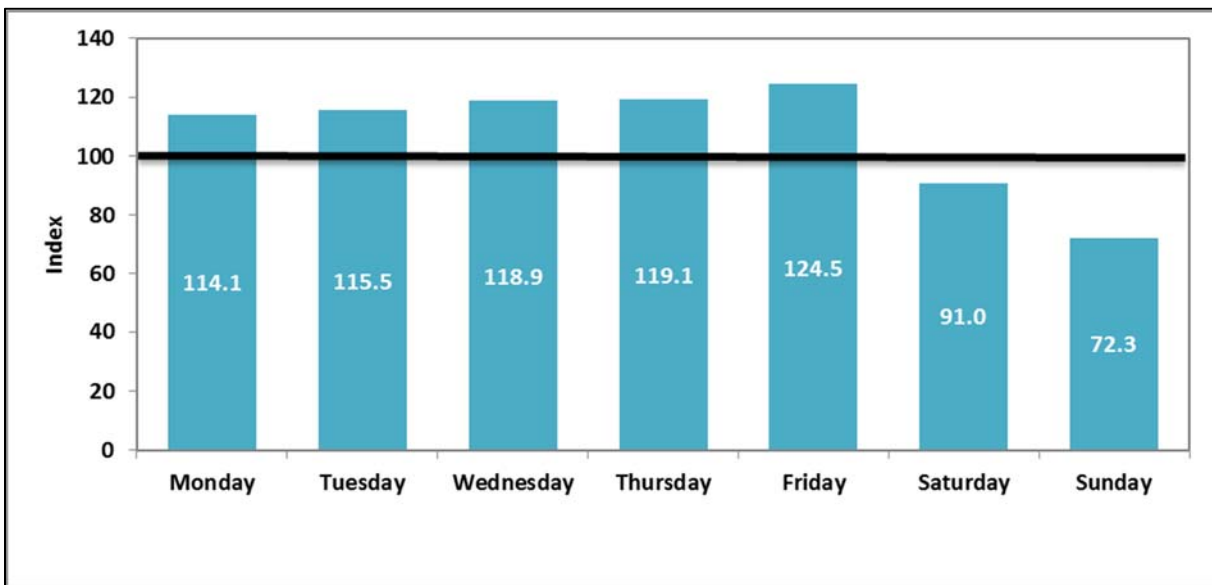
Source: CFX Statistical Report June 2017

4.2.3 DAY-OF-WEEK TOLL TRANSACTION VARIATION

Figure 4-6 contains a comparison between toll transactions by day of week against AADT. This data is presented as an index, where the AADT equals 100. An index value of 100 for a given day of the week would indicate that day’s transactions were precisely the same volume as the facility’s AADT. A value of 120 would indicate a day that has 20 percent greater volume than the AADT. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

During FY 2017, toll transactions on S.R. 408 fluctuated over the course of the five-day work week. Transactions were highest on Fridays, with an index value of 124.5 (24.5 percent higher than the average day), volumes on Monday through Thursday ranged from index values of 114.1 to 119.1. Transactions decline significantly on Saturdays and Sundays, which have an index values of 91.0 and 72.3, or 9.0 and 27.7 percent lower than the average day.

Figure 4-6
S.R. 408 Variation in Day-of Week Toll Transactions, By Day
FY 2017



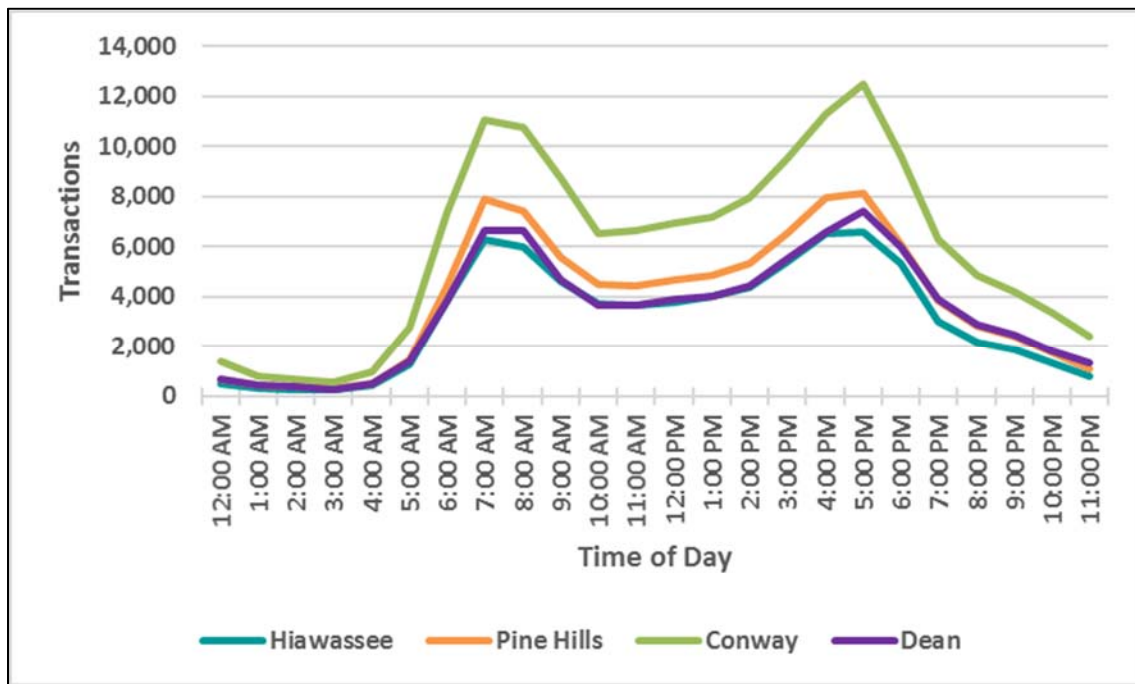
Source: Unaudited lane transaction data – January 2017

4.2.4 DAILY TRAFFIC DISTRIBUTION

The daily distribution of traffic includes information on the usage characteristics of travel on the facility. The daily distributions represent counts taken during a typical week at the mainline plazas in the month of January. The typical weekday distribution is shown in **Figure 4-7** and the weekend distribution is shown in **Figure 4-8**. The figures contain the sum of traffic volumes in both directions.

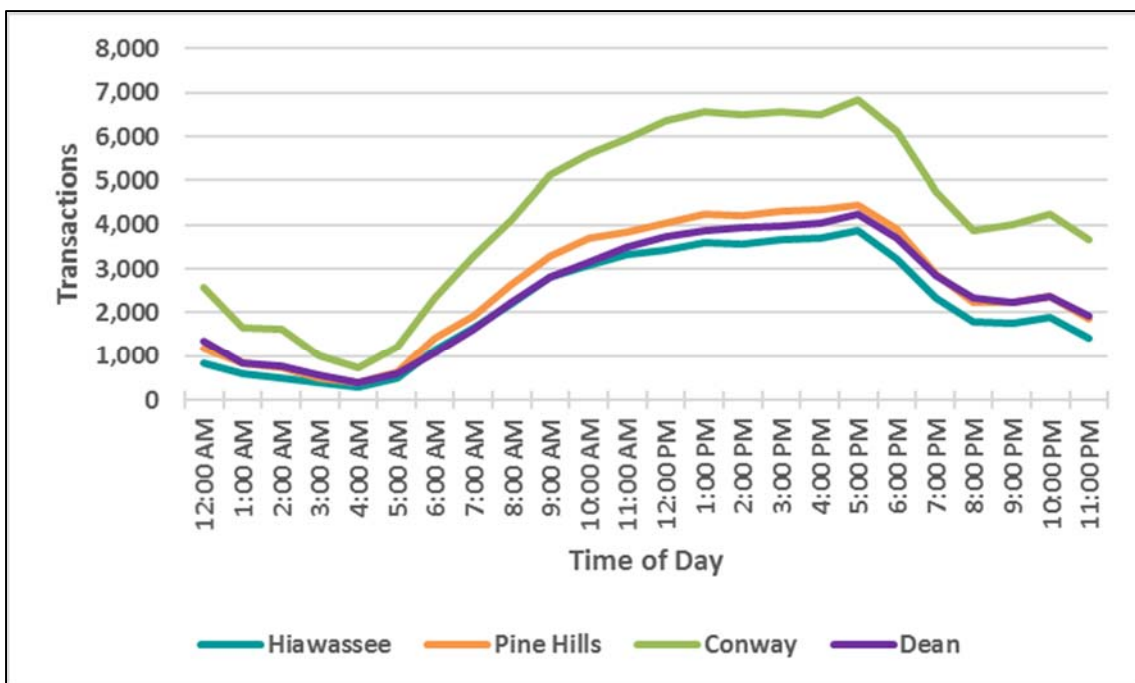
The four mainline locations on S.R. 408 exhibit similar hourly traffic patterns. On weekdays, demand for travel at all four locations is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours at all four mainline plazas are higher than in the morning peak hours. The highest peak hour volumes during the week were 12,500 per hour beginning at 5:00 P.M. at the Conway mainline plaza, 8,100 per hour beginning at 5:00 P.M. at the Pine Hills mainline plaza, 7,400 per hour beginning at 5:00 P.M. at the Dean mainline plaza and 6,500 per hour beginning at 5:00 P.M. at the Hiwassee mainline plaza. On weekends, there is no clear morning or evening peak periods, indicating that many customers use the facility for non-work trip purposes.

Figure 4-7
S.R. 408 Daily Traffic Variation (Weekday)
FY 2017 (January)



Source: Unaudited lane transaction data – January 2017

Figure 4-8
S.R. 408 Daily Traffic Variation (Weekend)
FY 2017 (January)



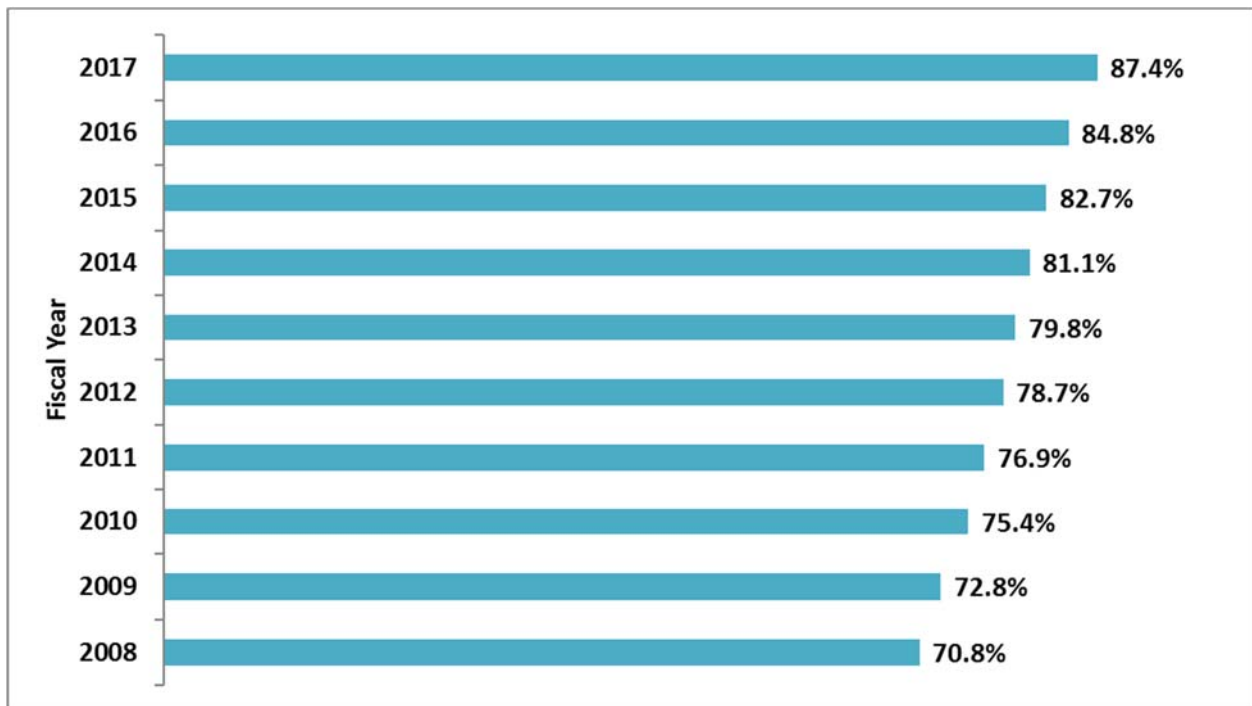
Source: Unaudited lane transaction data – January 2017

4.3 ETC Usage

The percent of revenues generated from ETC over the past ten fiscal years on S.R. 408 is shown in **Figure 4-9**. The share of toll revenue collected through ETC has steadily increased on the facility since. In FY 2008, ETC revenues totaled 70.8 percent of total revenues on the facility. By the end of FY 2017, ETC revenues reached 87.4 percent. ETC usage is expected to increase as customers shift from cash to ETC to take advantage of the lower toll rate and convenience of paying tolls electronically.

Beginning May 11, 2016, CFX implemented a pilot program called The Reload Lane to encourage and increase E-PASS usage. CFX now offers this drive-through lane on S.R. 408 at the Conway Main Plaza for customers to sign up for an E-PASS electronic transponder or replenish an existing E-PASS account from 6:00 a.m. to 8:00 p.m. daily. This program is the first of its kind in the continental United States and provides customer convenience and multiple payment options (cash, check, and debit/credit card). A second Reload Lane was opened at the John Young Main Plaza on S.R. 417 in March 2017. The program was expanded with the opening of a third location at the Forest Lake Main Plaza on S.R. 429 in May 2017.

Figure 4-9
S.R. 408 Percent of Toll Revenue from Electronic Toll Collection
FY 2008 – FY 2017



Source: CFX Statistical Report June 2017

4.4 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

Future transportation improvements that influence the T&R forecasts for S.R. 408 include the projects listed in **Table 4-3**, assumed completed in each model horizon year.

Even with major improvements to competing facilities, such as S.R. 50 in east and west Orange County, and Lake Underhill Road, growth rates in the near term are above 1.6% per year. System improvements, such as the S.R. 408 widening from S.R. 417 to Alafaya Trail, through the Hiwassee Road Interchange, and S.R. 417 widening from S.R. 408 to Curry Ford Road, as well as feeder road improvements, such as Alafaya Trail and John Young Parkway, positively impact the T&R growth on S.R. 408 throughout the forecast horizon.

Table 4-3
S.R. 408 - Key Transportation Improvements

Facility	From	To	Model Horizon Year	Jurisdiction	Improvement
S.R. 417/Greenway	Curry Ford	SR 408	2018	CFX	Widen 4-6 lanes
Lake Underhill Road	Goldenrod Road	Chickasaw Trail	2018	Orange County	Widen 2-4 lanes
S.R. 50	Dean Road	E. Old Cheney Hwy	2018	FDOT	Widen 4-6 lanes
S.R. 50	E Ramps of Florida's Turnpike	Avalon Road	2018	FDOT	Widen 4-6 lanes
S.R. 50	SR 429/Western Expressway	E of West Oaks Mall	2018	FDOT	Widen 4-6 lanes
S.R. 50	Lake/Orange Co. Line	Tubb St.	2018	FDOT	Widen 4-6 lanes
SR 408	@SR 417		2018	CFX	Interchange Modification
Alafaya Trail	Mark Twain Blvd.	Innovation Way	2018	Orange County	Widen 2-4 lanes
John Young Parkway	SR 50	Shader Rd.	2023	Orange County	Widen 4-6 lanes
S.R. 408/East-West Expressway	S.R. 417	Alafaya Trail	2023	CFX	Widen 4-6 lanes
S.R. 408/East-West Expressway	Good Homes	Hiwassee	2023	CFX	Widen 4-6 lanes
Interstate 4	at S.R. 408		2028	FDOT	Ultimate Interchange Improvement
Interstate 4	Kirkman Rd.	North of S.R. 434	2028	FDOT	Managed Lanes Ultimate
US 441	SR 50	John Young Parkway	2028	Orange County	Widen 4-6 Lanes
Alafaya Trail	Huckleberry Finn Drive	Lake Underhill Road	2033	Orange County	Widen 4-6 Lanes
Interstate 4	Kirkman Road	US 27	2043**	FDOT	BtU South Managed Lanes

Historical and projected transactions and toll revenues for each of the S.R. 408 plaza groups and for all of S.R. 408 are shown in Tables 4-4 and 4-5.

The forecasts are based on the completion of the Interstate 4 Ultimate, especially the completion of the I-4/S.R. 408 interchange improvements. While these improvements provide congestion relief on I-4, there are only moderate impacts to S.R. 408 T&R forecasts. The growth rates for the remainder of the forecast period are also moderate but steady. Transactions on S.R. 408 are expected to grow 0.9 percent per year through FY 2027 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. Total revenues on S.R. 408 are projected to increase significantly over the forecast period, from the FY 2017 actual of \$141.0 million to \$246.4 million in FY 2047. Currently the largest contributor to System revenue, S.R. 408 revenues are forecasted to increase an average of 1.8 percent per year through FY 2027, 2.0 percent per year from FY 2027 to FY 2037, and 1.8 percent per year from FY 2037 to FY 2047.

Table 4-4
S.R. 408 Plaza Groups – Transaction Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Hiawassee Main		Pine Hills Main		Conway Main		Dean Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	15.5		24.4		41.0		16.7		97.6		11.7%
2001	17.1		25.7		42.5		19.1		104.4		7.0%
2002 ^B	18.7		26.7		43.8		20.9		110.1		5.5%
2003	20.2		28.0		45.5		22.4		116.1		5.4%
2004	22.0		29.9		48.5		24.3		124.7		7.4%
2005 ^C	22.7		30.8		49.1		25.2		127.8		2.5%
2006 ^D	24.1		32.2		51.8		27.3		135.4		5.9%
2007 ^E	25.7		32.5		51.9		28.2		138.3		2.1%
2008 ^F	27.2		33.7		50.7		27.4		139.0		0.5%
2009 ^G	25.2		30.9		49.3		25.9		131.3		-5.5%
2010	23.3		28.4		49.0		25.3		126.0		-4.0%
2011	23.2		28.4		50.0		25.1		126.7		0.6%
2012	23.1		28.4		50.1		24.6		126.2		-0.4%
2013 ^G	22.5		27.6		48.9		24.5		123.5		-2.1%
2014	24.1		29.2		51.1		25.3		129.7		5.0%
2015	26.4		31.6		53.9		26.3		138.2		6.6%
2016	28.6		33.7		56.4		27.5		146.2		5.8%
2017 ^H	29.6		34.2		56.4		27.5		147.7		1.0%
2018		30.0		34.3		54.9		26.7		145.9	-1.2%
2019 ^I		31.0		35.2		55.3		27.0		148.5	1.8%
2020		31.8		35.9		55.7		27.3		150.7	1.5%
2021 ^J		32.6		36.6		56.1		27.6		152.9	1.5%
2022		33.2		37.1		56.5		27.9		154.7	1.2%
2023		33.7		37.5		56.8		28.1		156.1	0.9%
2024		34.1		37.9		57.2		28.4		157.6	1.0%
2025		34.5		38.4		57.5		28.7		159.1	1.0%
2026		34.8		38.8		57.8		29.0		160.4	0.8%
2027		35.1		39.2		58.0		29.3		161.6	0.7%
2028		35.4		39.6		58.3		29.5		162.8	0.7%
2029		35.7		39.9		58.5		29.8		163.9	0.7%
2030		36.0		40.3		58.8		30.1		165.2	0.8%
2031		36.3		40.6		59.0		30.4		166.3	0.7%
2032		36.6		41.0		59.3		30.6		167.5	0.7%
2033		36.8		41.2		59.5		30.9		168.4	0.5%
2034		37.1		41.5		59.7		31.2		169.5	0.7%
2035		37.4		41.8		59.9		31.4		170.5	0.6%
2036		37.6		42.1		60.1		31.7		171.5	0.6%
2037		37.9		42.3		60.2		31.9		172.3	0.5%
2038		38.2		42.6		60.4		32.1		173.3	0.6%
2039		38.4		42.9		60.6		32.3		174.2	0.5%
2040		38.7		43.1		60.7		32.4		174.9	0.4%
2041		38.9		43.4		60.9		32.6		175.8	0.5%
2042		39.1		43.7		61.0		32.7		176.5	0.4%
2043		39.4		43.9		61.1		32.8		177.2	0.4%
2044		39.6		44.2		61.2		32.9		177.9	0.4%
2045		39.8		44.4		61.3		33.0		178.5	0.3%
2046		40.0		44.7		61.4		33.0		179.1	0.3%
2047		40.2		44.9		61.5		33.0		179.6	0.3%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2000 - 2007	7.5%		4.2%		3.4%	7.8%	5.1%
2007 - 2017	1.4%		0.5%		0.8%	-0.3%	0.7%
2017 - 2027	1.7%		1.4%		0.3%	0.6%	0.9%
2027 - 2037	0.8%		0.8%		0.4%	0.9%	0.6%
2037 - 2047	0.6%		0.6%		0.2%	0.3%	0.4%

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports.
- B - Effects of the events on September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - Mills Avenue on-ramp to westbound S.R. 408 permanently closed.
- E - Holland West plaza was relocated and named Pine Hills plaza on November 10, 2006.
- F - First effects of national economic recession.
- G - Systemwide toll rate increase.
- H - Effects from Hurricane Matthew in October 2016.
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- J - Completion of I-4 Ultimate project.

Table 4-5
S.R. 408 Plaza Groups – Toll Revenue Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Hiawassee Main		Pine Hills Main		Conway Main		Dean Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	\$7.4		\$17.8		\$29.3		\$7.8		\$62.3		11.7%
2001	8.2		18.7		30.4		8.9		66.2		6.3%
2002 ^B	9.1		19.5		31.3		9.8		69.7		5.3%
2003	9.9		20.3		32.5		10.5		73.2		5.0%
2004	10.8		21.8		34.7		11.4		78.7		7.5%
2005 ^C	11.2		22.5		35.0		11.7		80.4		2.2%
2006 ^D	11.8		23.6		36.9		12.8		85.1		5.8%
2007 ^E	12.7		23.5		37.0		13.3		86.5		1.6%
2008 ^F	13.0		24.0		36.1		13.0		86.1		-0.5%
2009 ^G	13.3		23.7		37.6		13.7		88.3		2.6%
2010	16.4		26.8		46.1		18.4		107.7		22.0%
2011	16.2		26.8		47.1		18.2		108.3		0.6%
2012	16.0		26.7		47.2		17.8		107.7		-0.6%
2013 ^G	18.0		29.3		51.9		20.1		119.3		10.8%
2014	19.2		31.0		54.2		20.8		125.2		4.9%
2015	21.0		33.4		56.9		21.7		133.0		6.2%
2016	22.6		35.5		59.4		22.6		140.1		5.3%
2017 ^H	23.3		36.1		59.1		22.5		141.0		0.6%
2018		\$23.6		\$36.2		\$57.4		\$21.7		\$138.9	-1.5%
2019 ^I		24.6		37.3		58.0		22.0		141.9	2.2%
2020		25.5		38.4		58.8		22.3		145.0	2.2%
2021 ^J		26.4		39.4		59.6		22.7		148.1	2.1%
2022		27.2		40.4		60.7		23.2		151.5	2.3%
2023		28.0		41.2		61.8		23.8		154.8	2.2%
2024		28.7		42.2		63.0		24.3		158.2	2.2%
2025		29.4		43.1		64.1		24.9		161.5	2.1%
2026		30.1		44.1		65.3		25.5		165.0	2.2%
2027		30.7		45.1		66.5		26.1		168.4	2.1%
2028		31.4		46.1		67.7		26.7		171.9	2.1%
2029		32.1		47.1		68.9		27.3		175.4	2.0%
2030		32.7		48.2		70.2		27.9		179.0	2.1%
2031		33.4		49.3		71.4		28.6		182.7	2.1%
2032		34.2		50.4		72.7		29.2		186.5	2.1%
2033		34.9		51.5		73.9		29.9		190.2	2.0%
2034		35.6		52.6		75.2		30.6		194.0	2.0%
2035		36.4		53.8		76.5		31.3		198.0	2.1%
2036		37.1		54.9		77.8		32.0		201.8	1.9%
2037		37.9		56.1		79.1		32.6		205.7	1.9%
2038		38.7		57.3		80.5		33.3		209.8	2.0%
2039		39.4		58.5		81.8		34.0		213.7	1.9%
2040		40.2		59.7		83.2		34.6		217.7	1.9%
2041		41.0		60.9		84.6		35.3		221.8	1.9%
2042		41.8		62.2		86.0		35.9		225.9	1.8%
2043		42.6		63.4		87.4		36.6		230.0	1.8%
2044		43.4		64.7		88.8		37.2		234.1	1.8%
2045		44.2		65.9		90.2		37.8		238.1	1.7%
2046		45.0		67.2		91.6		38.4		242.2	1.7%
2047		45.8		68.5		93.1		39.0		246.4	1.7%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)							
2000 - 2007	8.0%		4.0%		3.4%		7.9%	4.8%
2007 - 2017	6.3%		4.4%		4.8%		5.4%	5.0%
2017 - 2027	2.8%		2.3%		1.2%		1.5%	1.8%
2027 - 2037	2.1%		2.2%		1.8%		2.2%	2.0%
2037 - 2047	1.9%		2.0%		1.6%		1.8%	1.8%

Notes:

- A - Actual revenue data provided by CFX from Monthly Statistical Reports.
- B - Effects of the events on September 11, 2001.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - Mills Avenue on-ramp to westbound S.R. 408 permanently closed.
- E - Holland West plaza was relocated and named Pine Hills plaza on November 10, 2006.
- F - First effects of national economic recession.
- G - Systemwide toll rate increase.
- H - Effects from Hurricane Matthew in October 2016.
- I - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- J - Completion of I-4 Ultimate project.

Chapter 5
S.R. 417
(Central Florida Greenway)



S.R. 417 (CENTRAL FLORIDA GREENEWAY)

5.1 Facility Description

S. R. 417, also known as the Central Florida GreeneWay, is a 55-mile expressway that serves as an eastern beltway around Orlando and provides a connection from the residential areas northeast, east and southeast of Orlando in Orange, Seminole and Osceola Counties to S.R. 408 and downtown Orlando. It also significantly enhances access to the Orlando International Airport (OIA) as an alternative to S.R. 528 and S.R. 436. CFX owns and operates the largest portion of S.R. 417 (32 miles) extending east and north from International Drive to the Orange-Seminole County line. FTE extended S.R. 417 north and west from the Orange-Seminole County line to I-4. FTE also extended S.R. 417 in a westerly direction from International Drive to provide a connection to I-4 in the vicinity of the attractions. A map of CFX's portion of S.R. 417 including the FY 2017 CFX toll rates for the mainline and ramp toll plazas is shown in **Figure 5-1**.

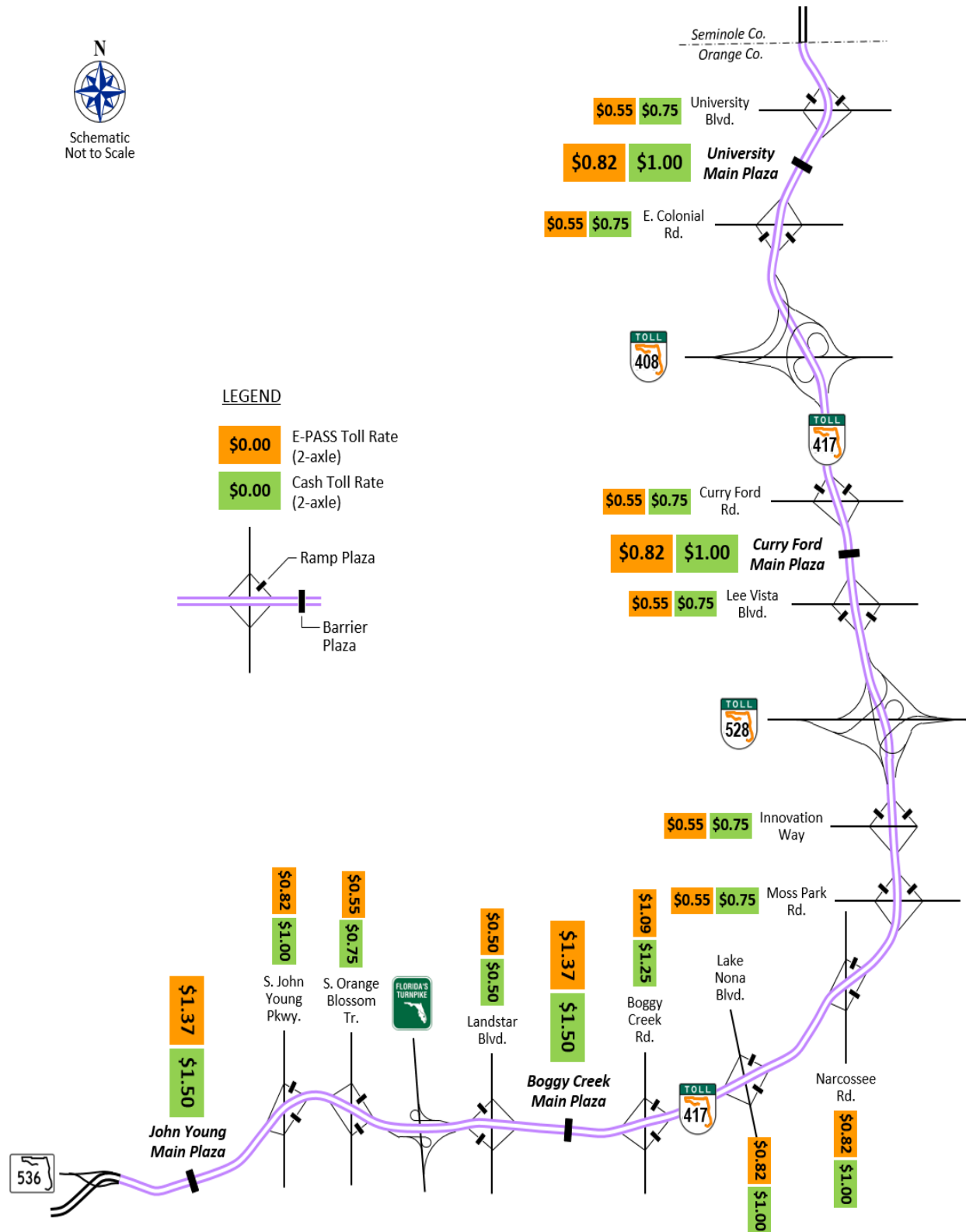


The first section of S.R. 417 to be constructed by CFX was from S.R. 408 to the Orange-Seminole County line including the University Mainline plaza. This section opened to traffic in December 1988 and toll collection began at the plaza in January 1989. The University Main plaza group included interchanges at S.R. 408, Valencia College Lane, S.R. 50 and University Boulevard. The next section extended from S.R. 528 to S.R. 408, was completed in June 1990 and toll collection began in July 1990. The interchanges associated with the Curry Ford Main plaza group are S.R. 528, Lee Vista Boulevard and Curry Ford Road. The Boggy Creek and John Young Mainline plaza sections of S.R. 417, extending from International Drive to S.R. 528 and opened to traffic with toll collection in July 1993. The Boggy Creek Main plaza group includes interchanges at Boggy Creek Road, Lake Nona Boulevard, Narcoossee Road, Moss Park Road and Innovation Way. The John Young Main plaza group includes interchanges at John Young Parkway, U.S. 441/Orange Blossom Trail and Landstar Boulevard. FTE opened the section of the limited-access expressway between International Drive and I-4 in June 1996 and the S.R. 417 connection to U.S. 17-92 in Seminole County in 1994 and from U.S. 17-92 to I-4 in Seminole County in September 2002.

In July 2003, the University Mainline toll plaza was the first plaza in Florida to be converted from conventional toll lanes to express lanes. CFX chose this plaza for the first conversion due to its heavy traffic and extensive E-PASS usage. Conversions followed at the Curry Ford Mainline plaza in July 2005 and the Boggy Creek and John Young Mainline plazas in March 2007.

In January 2012, CFX completed the widening of S.R. 417 from four to six lanes between S.R. 528 and Curry Ford Road to help reduce traffic congestion during peak periods. Also, in January 2013, CFX completed work on the modified S.R. 408/S.R. 417 Interchange project. As part of the

Figure 5-1
S.R. 417 Facilities and Toll Rates



interchange improvement project, Valencia College Lane ramps to and from the north were closed and ramps to and from the south were rerouted to a new access point at Chickasaw Trail on S.R. 408. This new interchange improved access and mobility to those living and working in east Orange County.

In January 2015, CFX opened a partial interchange between S.R. 417 and Florida's Turnpike, providing ramps from southbound S.R. 417 to southbound Florida's Turnpike and from northbound Florida's Turnpike to northbound S.R. 417. In May 2016, FTE opened an additional ramp for motorists traveling southbound on S.R. 417 to access Florida's Turnpike northbound toward Interstate 4. Also, two new ramps were opened for motorists traveling north on S.R. 417 from Hunter's Creek to access Florida's Turnpike in both the north and south directions. This completes five of eight ramps planned for the interchange. FTE is currently constructing the remainder of the ramps to complete the system to system interchange: northbound Turnpike to southbound S.R. 417, southbound Turnpike to northbound S.R. 417 and southbound Turnpike to southbound S.R. 417.

In May 2015, CFX completed the widening of S.R. 417 between Curry Ford Road and Lake Underhill Road from four to six lanes. The project also included improvements to the southbound off ramp to Curry Ford Road and the Curry Ford Road northbound on ramp.

In February 2016, CFX completed the interchange improvement at S.R. 417/Boggy Creek Road and opened the new airport ramps. This improvement provided better access to and from OIA for customers in South Orange and Osceola Counties.

CFX is currently redoing the S.R. 417/S.R. 408 interchange. Phase One of the project was the widening of S.R. 417 between Berry Dease Road and S.R. 408. This 1.6-mile project added travel lanes in both directions (from three to six lanes) and realigned the northbound S.R. 417 ramp to eastbound S.R. 408. Work also included three new sound walls and new highway lighting. This phase was completed in the fall of 2017. Phase Two includes building new and realigned ramps from westbound S.R. 408 to southbound S.R. 417, northbound S.R. 417 to westbound S.R. 408, and eastbound S.R. 408 to southbound S.R. 417. This phase will be completed by fall of 2019.

5.2 Historical Transactions and Toll Revenues

5.2.1 ANNUAL TRANSACTION AND TOLL REVENUE TRENDS

S.R. 417 annual transactions at the John Young Main, Boggy Creek Main, Curry Ford Main and University Main plaza groups from FY 1998 to FY 2017 are presented in the top half of **Table 5-1**. The history of annual toll revenues is also summarized and totaled in the bottom half of the table. The facility data and annual growth are also presented visually in **Figure 5-2** and **Figure 5-3**. Annual transaction and toll revenue trends by plaza group are presented in the table.

With the decreasing transactions and revenues across the System in FY 2008 and 2009, and the threat of an economic recession, CFX instituted a Systemwide toll rate increase. Transactions decreased at all four plaza groups in FY 2009 due to both the economic downturn and the Systemwide toll rate increase. The April 2009 toll rate increase impacted the last three months of FY 2009. During the same year, revenues at the John Young Main plaza group and Boggy Creek Main plaza group decreased by 3.6 and 5.7 percent, respectively. Revenues at the Curry Ford

Main and University Main plaza groups remained relatively unchanged from FY 2008. FY 2009 transactions and revenues were also impacted by Tropical Storm Fay in August 2008.

FY 2010 transactions continued to decline at all four plaza groups as a result of the economic downturn and the toll rate increase, which impacted the first nine months of the fiscal year. However, toll revenues increased significantly at all plaza groups due to the higher toll rates. The University Main plaza group reported the largest increase on S.R. 417 in revenues of 29.1 percent, or \$4.6 million and Curry Ford Main plaza group's revenue increased by 27.3 percent, or \$3.8 million.

As shown, Curry Ford Main was the only plaza group with a decline in transactions and revenues in FY 2011. The losses in transactions and revenues can be attributed to the S.R. 417 widening activities between Curry Ford and S.R. 528. This trend continued at the Curry Ford Main plaza group in FY 2012 with a decrease of 0.4 percent in transactions and no growth in revenues. Construction of the widening project was completed in FY 2013. Also in FY 2012, the University Main plaza group experienced a decline of 2.8 percent in transactions and a decline of 1.5 percent in revenues. This plaza group was impacted by the construction of the S.R. 408/S.R. 417 systems interchange. FY 2012 was also the first full year that the Valencia College Lane ramps had been permanently closed.

In FY 2013, University Main plaza group was the only one that experienced a decline in transactions, a decrease of 7.0 percent as compared to FY 2012. All other plaza groups experienced an increase in transactions despite the July 2012 toll rate adjustment. Revenues at all plaza groups increased in FY 2013, overall 13.3 percent.

In FY 2014, all plaza groups experienced growth in transactions and toll revenues. Overall, S.R. 417 transactions increased 7.6 percent and toll revenues increased 7.8 percent over FY 2013. The growth trend has slowed in FY 2017 compared to FY 2015 and FY 2016, which had double digit growth. In FY 2017, transactions increased 8.4 percent and toll revenues increased 8.8 percent compared to FY 2016. Boggy Creek Main, John Young Main and Curry Ford Main plaza groups' continued transaction and revenue growth can be attributed to Medical City and Lake Nona developments along these sections of S.R. 417, as well as the opening of the partial interchange at Florida's Turnpike.

In October 2016, Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. On October 3, Governor Scott declared a state of emergency and urged over 1.5 million residents to evacuate. Tolls were suspended on the CFX System beginning at 8:00pm on October 5, 2016 through early on October 10, 2016. Besides the \$2.75 billion in damage caused by Hurricane Matthew through the state, normal traffic patterns and toll revenue collections were significantly disrupted.

Table 5-1
S.R. 417 Plaza Groups – Historical Transactions and Toll Revenues
FY 1998 – FY 2017

Fiscal Year	John Young Main	Boggy Creek Main	Curry Ford Main	University Main	TOTAL	John Young Main	Boggy Creek Main	Curry Ford Main	University Main	TOTAL
	TRANSACTIONS (millions)					PERCENT CHANGE				
1998	10.4	8.0	10.1	16.6	45.1					
1999	11.6	8.9	11.7	18.7	50.9	11.5%	11.3%	15.8%	12.7%	12.9%
2000	13.4	10.1	13.6	20.8	57.9	15.5%	13.5%	16.2%	11.2%	13.8%
2001	14.5	10.8	14.8	22.2	62.3	8.2%	6.9%	8.8%	6.7%	7.6%
2002 ^A	14.5	11.0	15.7	23.7	64.9	0.0%	1.9%	6.1%	6.8%	4.2%
2003	15.7	12.3	17.9	25.4	71.3	8.3%	11.8%	14.0%	7.2%	9.9%
2004 ^B	17.1	13.5	20.4	28.6	79.6	8.9%	9.8%	14.0%	12.6%	11.6%
2005 ^C	18.9	15.2	22.9	30.2	87.2	10.5%	12.6%	12.3%	5.6%	9.5%
2006 ^D	20.8	17.3	25.7	32.4	96.2	10.1%	13.8%	12.2%	7.3%	10.3%
2007 ^E	22.3	19.1	27.5	33.5	102.4	7.2%	10.4%	7.0%	3.4%	6.4%
2008	23.6	20.3	27.6	33.0	104.5	5.8%	6.3%	0.4%	-1.5%	2.1%
2009 ^F	21.5	18.4	24.9	30.0	94.8	-8.9%	-9.4%	-9.8%	-9.1%	-9.3%
2010 ^F	19.6	17.5	23.6	28.6	89.3	-8.8%	-4.9%	-5.2%	-4.7%	-5.8%
2011	20.1	18.6	23.2	29.0	90.9	2.6%	6.3%	-1.7%	1.4%	1.8%
2012 ^G	20.6	18.8	23.1	28.2	90.7	2.5%	1.1%	-0.4%	-2.8%	-0.2%
2013 ^H	21.0	19.7	23.4	26.2	90.3	1.8%	4.6%	1.3%	-7.0%	-0.5%
2014	22.6	21.9	25.2	27.5	97.2	7.6%	11.2%	7.7%	5.0%	7.6%
2015	25.7	25.3	28.3	30.0	109.3	13.7%	15.5%	12.3%	9.1%	12.4%
2016	30.6	31.0	32.5	33.3	127.4	19.1%	22.5%	14.8%	11.0%	16.6%
2017 ^I	34.8	34.6	34.2	34.5	138.1	13.7%	11.6%	5.2%	3.6%	8.4%
	TOLL REVENUE (millions)					PERCENT CHANGE				
1998	\$9.1	\$7.9	\$5.3	\$7.7	\$30.0					
1999	\$10.0	\$8.7	\$6.1	\$8.6	\$33.4	9.9%	10.1%	15.1%	11.7%	11.3%
2000	\$11.6	\$9.9	\$7.1	\$9.7	\$38.3	16.0%	13.8%	16.4%	12.8%	14.7%
2001	\$12.7	\$10.6	\$7.7	\$10.3	\$41.3	9.5%	7.1%	8.5%	6.2%	7.8%
2002 ^A	\$12.7	\$10.8	\$8.1	\$11.0	\$42.6	0.0%	1.9%	5.2%	6.8%	3.1%
2003	\$13.6	\$12.0	\$9.2	\$11.7	\$46.5	7.1%	11.1%	13.6%	6.4%	9.2%
2004 ^B	\$14.6	\$13.1	\$10.5	\$13.4	\$51.6	7.4%	9.2%	14.1%	14.5%	11.0%
2005 ^C	\$16.0	\$14.7	\$11.7	\$14.3	\$56.7	9.6%	12.2%	11.4%	6.7%	9.9%
2006 ^D	\$17.4	\$16.6	\$13.2	\$15.4	\$62.6	8.7%	12.9%	12.8%	7.7%	10.4%
2007 ^E	\$18.7	\$18.2	\$14.0	\$16.0	\$66.9	7.5%	9.6%	6.1%	3.9%	6.9%
2008	\$19.7	\$19.2	\$13.9	\$15.7	\$68.5	5.3%	5.5%	-0.7%	-1.9%	2.4%
2009 ^F	\$19.0	\$18.1	\$13.9	\$15.8	\$66.8	-3.6%	-5.7%	0.0%	0.6%	-2.5%
2010 ^F	\$21.0	\$19.9	\$17.7	\$20.4	\$79.0	10.5%	9.9%	27.3%	29.1%	18.3%
2011	\$21.6	\$20.6	\$17.3	\$20.6	\$80.1	2.9%	3.5%	-2.3%	1.0%	1.4%
2012 ^G	\$22.1	\$20.8	\$17.3	\$20.3	\$80.5	2.3%	1.0%	0.0%	-1.5%	0.5%
2013 ^H	\$25.3	\$24.3	\$19.8	\$21.8	\$91.2	14.3%	16.9%	14.5%	7.5%	13.3%
2014	\$27.2	\$26.9	\$21.3	\$22.9	\$98.3	7.7%	10.7%	7.5%	5.0%	7.8%
2015	\$30.6	\$30.8	\$24.0	\$25.0	\$110.4	12.5%	14.5%	12.7%	9.2%	12.3%
2016	\$35.9	\$37.7	\$27.6	\$27.8	\$129.0	17.3%	22.4%	15.0%	11.2%	16.8%
2017 ^I	\$40.4	\$42.0	\$29.1	\$28.9	\$140.4	12.5%	11.4%	5.4%	4.0%	8.8%

Notes:

A - Effects of the events on September 11, 2001.

B - University Main plaza converted to open road tolling plaza in July 2003.

C - Effects from 2004 hurricane season (4 storms with toll suspensions).

D - Curry Ford Main plaza converted to open road tolling plaza in July 2005.

E - Boggy Creek Main and John Young Main plazas converted to open road tolling plazas in March 2007.

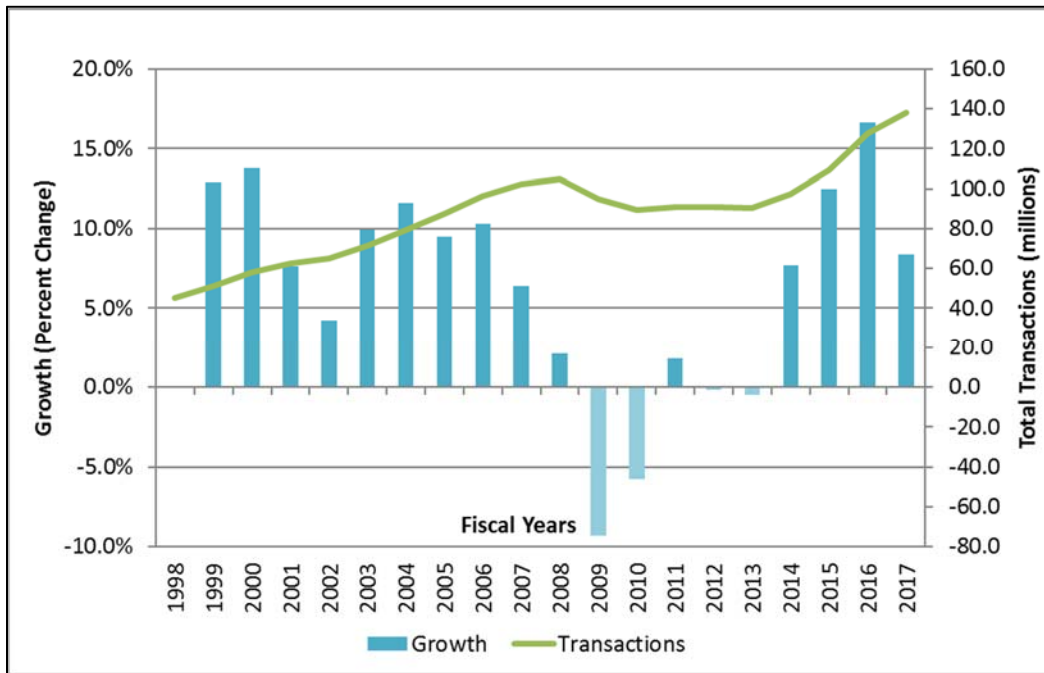
F - Systemwide toll rate increase in April 2009.

G - Widening of S.R. 417 between S.R. 408 and S.R. 528. Valencia College Lane ramps closed.

H - Systemwide toll rate increase in July 2013. Implementation of cash and electronic toll rate differential.

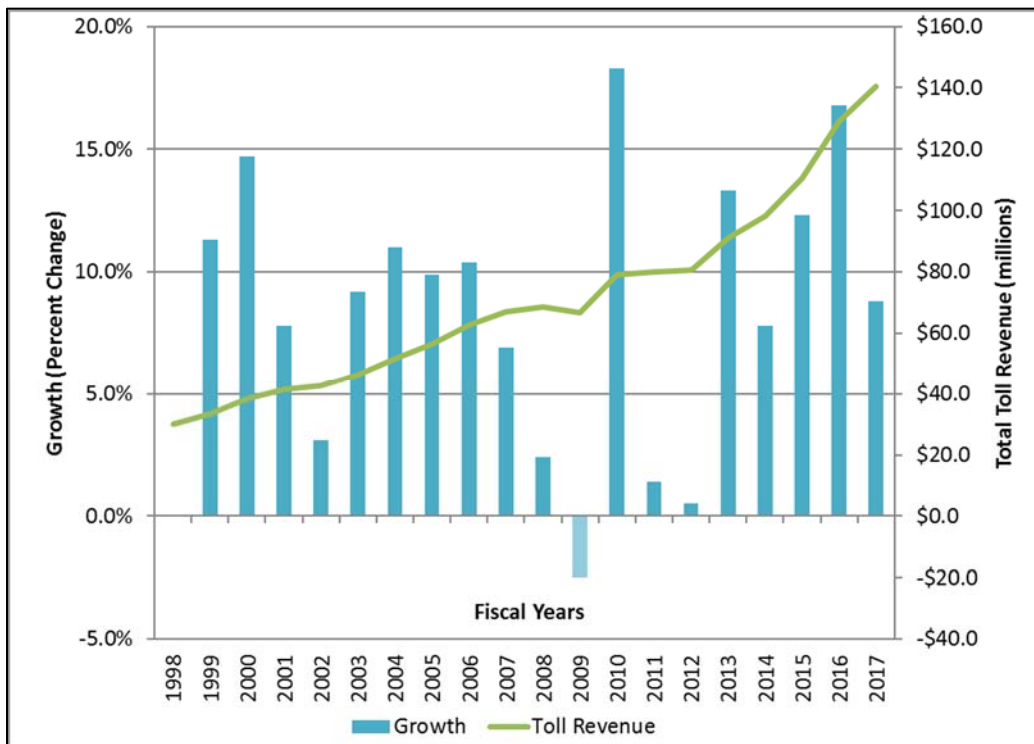
I - Effects from Hurricane Matthew in October 2016.

Figure 5-2
S.R. 417 Historical Transactions and Annual Growth
FY 1998 – FY 2017



Source: CFX Statistical Report June 2017

Figure 5-3
S.R. 417 Historical Toll Revenue and Annual Growth
FY 1998 – FY 2017

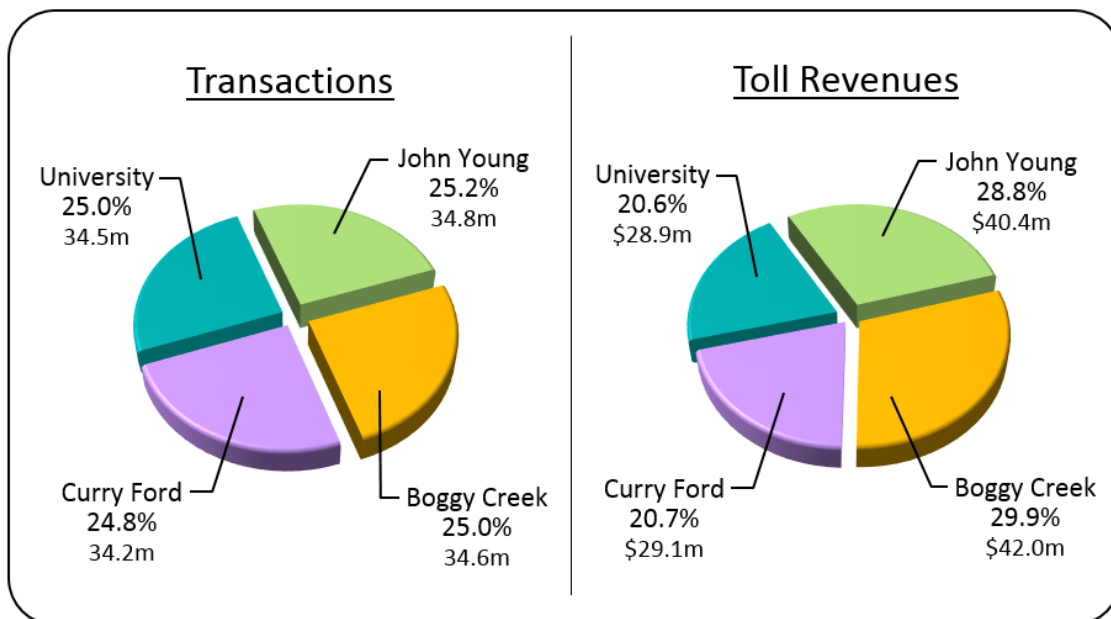


Source: CFX Statistical Report June 2017

The transactions and toll revenues by plaza group and as a percentage of total S.R. 417 transactions and toll revenues for FY 2017 are presented in **Figure 5-4**. As shown, the John Young Main plaza group represented 34.8 million transactions or 25.2 percent of total S.R. 417 transactions. The Boggy Creek Main plaza group had the second highest amount of transactions at 34.6 million or 25.0 percent. The University Main and Curry Ford Main plaza groups followed close behind with 34.5 and 34.2 million transactions, respectively. In prior years, the University Main plaza group always had the highest number of transactions, however it was surpassed for the first time by both the John Young Main and Boggy Creek Main plaza groups.

The annual totals and percentages for toll revenues are also presented below. The John Young Main and Boggy Creek Main plaza groups had the highest amounts of revenue. This is due to the fact that these two plaza groups have longer distances between mainline plazas resulting in higher toll amounts. The Boggy Creek Main plaza group reported the highest revenues of \$42.0 million or 29.9 percent of total S.R. 417 revenues. The University Main plaza group represented the lowest amount of revenues on S.R. 417 with \$28.9 million or 20.6 percent of total revenues.

Figure 5-4
S.R. 417 Transactions and Toll Revenues by Plaza Group
FY 2017



Source: CFX Statistical Report June 2017

5.2.2 MONTHLY TRANSACTION SEASONAL VARIATION

In **Table 5-2**, monthly total traffic volumes are normalized to average number of transactions per day in each month. Using average number of transactions per day allows for an easy comparison of the variations in relative travel demand over the year. The seasonal pattern of usage will change from year to year based on the number of weekdays in a given month. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

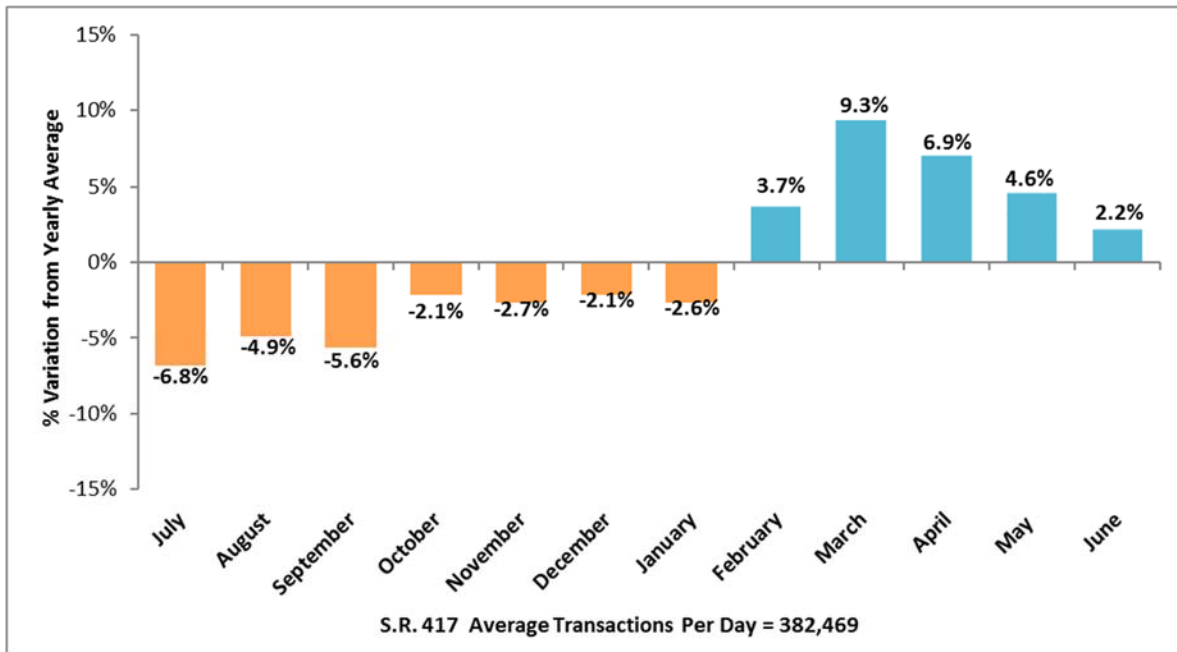
Average number of transactions per day in FY 2017 on S.R. 417 ranged from a high of 418,058 in March 2017 to a low of 356,580 in July 2016. This data is presented in a graphical format in **Figure 5-5**. The transactions for each month appear as a percentage of the average for the fiscal year. March transactions were 9.3 percent above average and July transactions were 6.8 percent below average for the facility. The S.R. 417 transactions remained below the average for the first two quarters of FY 2017 through January. February through June the transactions were above average for the facility.

Table 5-2
S.R. 417 – Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions/day	Seasonal Factor
July	31	11,053,975	356,580	0.932
August	31	11,281,385	363,916	0.951
September	30	10,835,159	361,172	0.944
October	27	10,105,253	374,269	0.979
November	30	11,168,007	372,267	0.973
December	31	11,608,136	374,456	0.979
January	31	11,547,241	372,492	0.974
February	28	11,106,927	396,676	1.037
March	31	12,959,788	418,058	1.093
April	30	12,270,128	409,004	1.069
May	31	12,403,446	400,111	1.046
June	30	11,731,687	391,056	1.022
Average		11,505,928	382,469	1.000
Total Year	361	138,071,132		

Source: CFX Statistical Report June 2017

Figure 5-5
S.R. 417 Variation in Transactions Per Day, By Month
FY 2017



Source: CFX Statistical Report June 2017

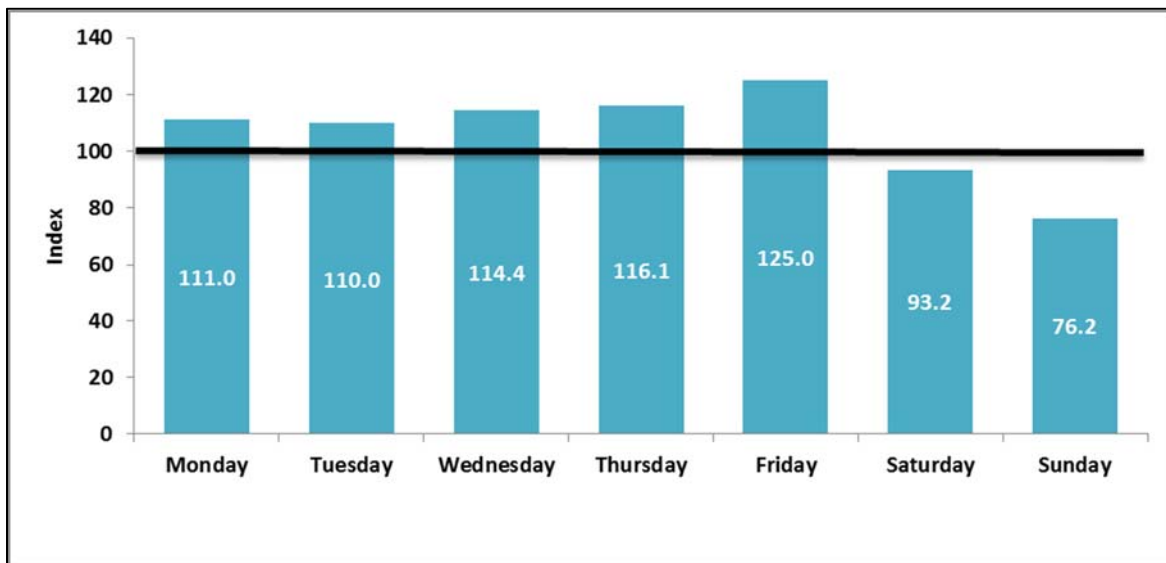
5.2.3 DAY-OF-WEEK TOLL TRANSACTION VARIATION

Figure 5-6 contains a comparison of toll transactions by day of week against AADT in FY 2017. This data is presented as an index, where the AADT equals 100. An index value of 100 for a given day of the week would indicate that day’s transactions were precisely the same volume as the facility’s AADT. A value of 120 would indicate a day that has 20 percent greater volume than the AADT. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

As shown, daily toll transactions on S.R. 417 fluctuated over the course of the week. Transactions were highest on Fridays, with an index value of 125.0 (25.0 percent higher than the average day). Volumes on Monday through Thursday ranged from index values of 111.0 to 116.1. Saturday volumes were closer to early weekday volumes with an index value of 93.2. Transactions decline significantly on Sundays, which have an index value of 76.2, or 23.8 percent lower than the average day.



Figure 5-6
S.R. 417 Variation in Day-of Week Toll Transactions, By Day
FY 2017



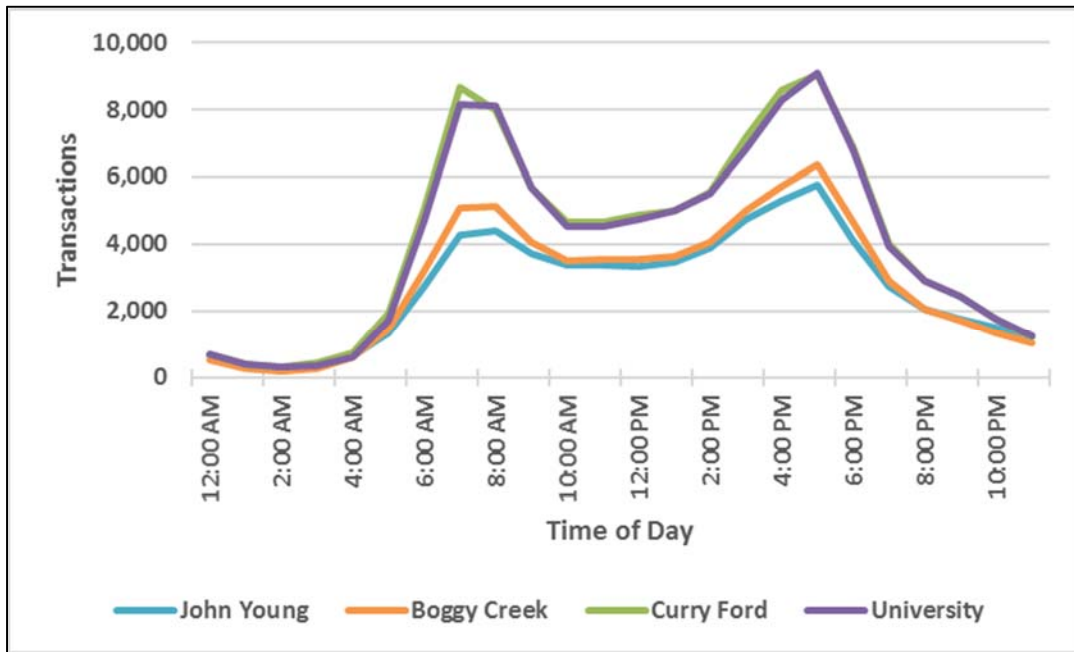
Source: Unaudited lane transaction data – January 2017

5.2.4 DAILY TRAFFIC DISTRIBUTION

The daily distribution of traffic includes information on the usage characteristics of travel on the facility. The daily distributions represent counts taken during a typical week at the mainline plazas in the month of January. The typical weekday distribution is shown in **Figure 5-7** and the weekend distribution is shown in **Figure 5-8**. The figures contain the sum of traffic volumes in both directions.

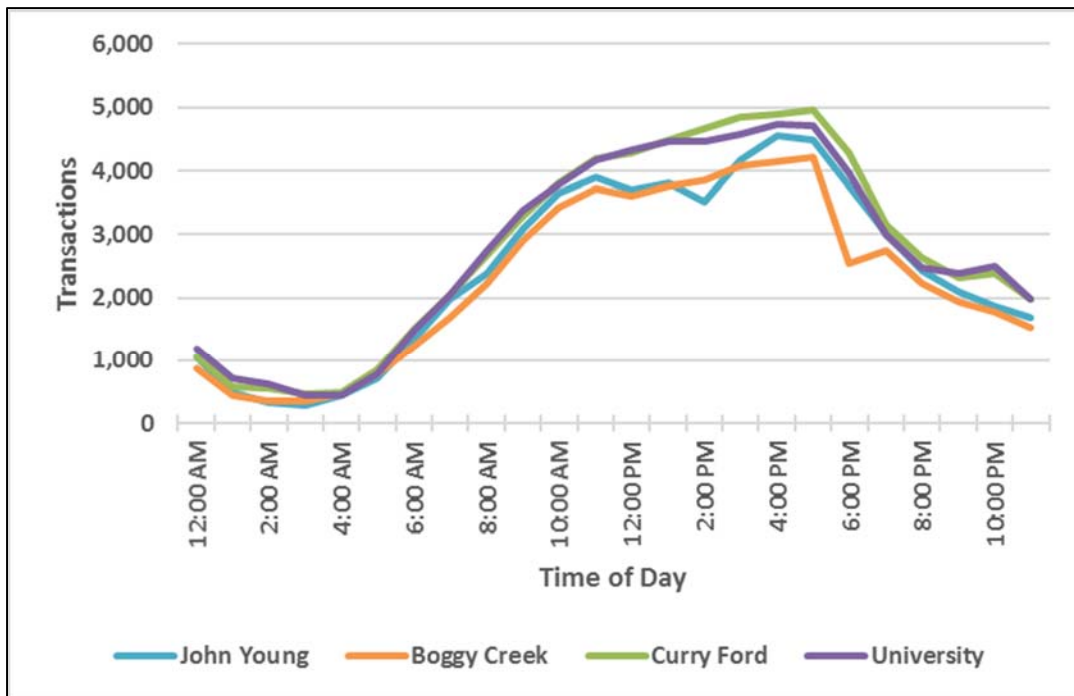
The four mainline locations on S.R. 417 exhibit similar hourly traffic patterns. On weekdays, demand for travel at all four locations is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours at all four mainline plazas are higher than in the morning peak hours. The highest peak hour volumes during the week were 9,100 per hour beginning at 5:00 P.M. at the University mainline plaza, 9,000 per hour beginning at 5:00 P.M. at the Curry Ford mainline plaza, and 6,300 per hour beginning at 5:00 P.M. at the Boggy Creek mainline plaza and 5,800 per hour beginning at 5:00 P.M. at the John Young mainline plaza. The University and Curry Ford mainline plazas serve a relatively higher portion of trips in peak hours. On weekends, the volumes are lower and there is no clear morning or evening peak periods, indicating that many customers use the facility for non-work trip purposes. The Boggy Creek Main and John Young Main plaza groups both have lower transaction volumes at the mainline plazas than at ramp plazas, which are not included in the daily traffic distribution analysis. The daily traffic distribution at all plaza groups would be at similar levels if ramp transactions were included.

Figure 5-7
S.R. 417 Daily Traffic Variation (Weekday)
FY 2017 (January)



Source: Unaudited lane transaction data – January 2017

Figure 5-8
S.R. 417 Daily Traffic Variation (Weekend)
FY 2017 (January)

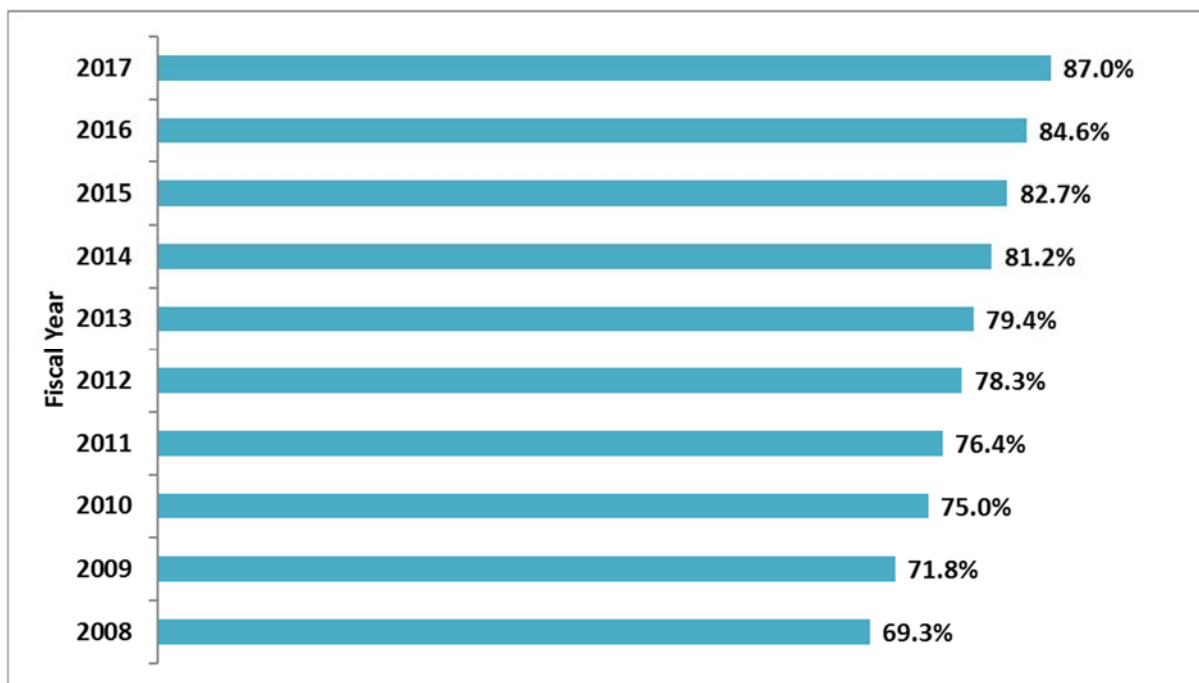


Source: Unaudited lane transaction data – January 2017

5.3 ETC Usage

The percent of revenues generated from ETC over the past ten fiscal years on S.R. 417 is shown in **Figure 5-9**. Over this time, ETC revenues have steadily increased on the facility. In FY 2008, ETC revenues totaled 69.3 percent of total revenues on the facility. In FY 2017, ETC revenues reached 87.0 percent. ETC usage is expected to increase as customers shift from cash to ETC to take advantage of the lower ETC toll rate and the convenience of paying tolls electronically, as well as the opening of the “Reload” Lane at the John Young Parkway Main Plaza. CFX also continues to offer toll discount incentives to customers through various discount programs. The I-4 Commuter Discount Program, implemented in July 2015, offers discounts for transactions on S.R. 417, S.R. 429 and S.R. 414 during construction activities on I-4.

Figure 5-9
S.R. 417 Percent of Toll Revenue from Electronic Toll Collection
FY 2008 – FY 2017



Source: CFX Statistical Report June 2017

5.4 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

Future transportation improvements that influence the T&R forecasts for S.R. 417 include the projects listed in **Table 5-3**, assumed completed in each model horizon year. In the near term, major improvements to S.R. 417 (including the widening from S.R. 408 to Curry Ford Road) contribute greatly to the growth in transactions and revenue. Even with improvements to competing facilities, such as Econlockhatchee Trail, growth rates are expected to remain high on

S.R. 417. Growth rates remain above 2.1% per year through 2022 due to additional system improvements on S.R. 417 between Econlockhatchee Trail and the Seminole County Line and modifications to the interchange with Boggy Creek Rd.

Table 5-3
S.R. 417 - Key Transportation Improvements

Facility	From	To	Model Horizon Year	Jurisdiction	Improvement
S.R. 417/Greenway	Curry Ford	S.R. 408	2018	CFX	Widen 4-6 lanes
S.R. 417/Greenway	At Florida's Turnpike		2018	CFX	New Partial Interchange
Boggy Creek Road	Osceola Pkwy	E Boggy Creek Road	2018	Osceola County	Widen 2-4 lanes
Boggy Creek Road	Orange County Line	Narcoossee Rd.	2018	Osceola County	Widen 2-4 lanes
Econlockhatchee Trail	SR 408	S.R. 50	2018	Orange County	Widen 2-4 lanes
Apopka Vineland Rd.	Osceola County Line	SR 536	2023	Orange County	Widen 4-6 lanes
Apopka Vineland Rd.	SR 536	Interstate 4	2023	Orange County	Widen 6-8 lanes
S.R. 417/Greenway	Aloma Ave	SR 434	2028	Turnpike	Widen 4-6 lanes
Landstar Boulevard	Osceola County Line	SR 417	2028	Orange County	Widen 4-6 lanes
International Drive South	Osceola County Line	S.R. 535/Vineland Road	2028	Orange County	Widen 6-8 lanes
Osceola Parkway	Interstate 4	S.R. 417/ Greenway	2028	Osceola County	Widen 6-8 lanes
Osceola Parkway (toll)	S.R. 417/Greenway	John Young Parkway	2028	Osceola County	Widen 4-6 lanes
Osceola Parkway	John Young Parkway	U.S. 441/Orange Blossom Trail	2028	Osceola County	Widen 6-8 lanes
Boggy Creek Road/C.R. 530	Osceola Parkway	Orange County Line	2033	Osceola County	Widen 4-6 lanes
Boggy Creek Road/C.R. 530	Orange County Line	Narcoossee Road	2033	Osceola County	Widen 2-4 lanes
Tuskawilla Road	Red Bug Lake Rd	Eagle Blvd	2043	Seminole County	Widen 4-6 lanes
Tuskawilla Road	Eagle Blvd	Lake Dr	2043	Seminole County	Widen 4-6 lanes
Interstate 4	Kirkman Road	US 27	2043	FDOT	BtU South Managed Lanes

Transaction and toll revenue projections for each toll plaza group and for all of S.R. 417 are summarized in **Table 5-4** and **Table 5-5**.

Feeder road improvements, such as Landstar Boulevard, also positively impact the forecasted T&R growth on S.R. 417 through 2028. The growth rates for the remainder of the forecast period are moderate and steady. Continued investment and growth in the Medical City area and Lee Vista DRI area lead to positive transaction and revenue growth on S.R. 417.

Total transactions on S.R. 417 are projected to increase during the forecast period from the actual of 138.1 million in FY 2017 to 234.0 million in FY 2047. Total revenues on S.R. 417 are projected to increase during the forecast period from the actual \$140.4 million in FY 2017 to \$353.6 million in FY 2047. Transactions and revenues are forecasted to increase an average of 3.2 and 4.7 percent per year through FY 2027, 1.3 and 2.5 percent per year from FY 2027 to FY 2037, and 0.8 and 2.2 percent per year from FY 2037 to FY 2047, respectively.

**Table 5-4
S.R. 417 Plaza Groups – Transaction Projections (Millions)
FY 2018 – FY 2047**

Fiscal Year	John Young Main		Boggy Creek Main		Curry Ford Main		University Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	13.4		10.1		13.6		20.8		57.9		11.7%
2001	14.5		10.8		14.8		22.2		62.3		7.6%
2002 ^B	14.5		11.0		15.7		23.7		64.9		4.2%
2003	15.7		12.3		17.9		25.4		71.3		9.9%
2004	17.1		13.5		20.4		28.6		79.6		11.6%
2005 ^C	18.9		15.2		22.9		30.2		87.2		9.5%
2006	20.8		17.3		25.7		32.4		96.2		10.3%
2007	22.3		19.1		27.5		33.5		102.4		6.4%
2008	23.6		20.3		27.6		33.0		104.5		2.1%
2009 ^D	21.5		18.4		24.9		30.0		94.8		-9.3%
2010 ^D	19.6		17.5		23.6		28.6		89.3		-5.8%
2011	20.1		18.6		23.2		29.0		90.9		1.8%
2012 ^E	20.6		18.8		23.1		28.2		90.7		-0.2%
2013 ^D	21.0		19.7		23.4		26.2		90.3		-0.4%
2014	22.6		21.9		25.2		27.5		97.2		7.6%
2015	25.7		25.3		28.3		30.0		109.3		12.4%
2016	30.6		31.0		32.5		33.3		127.4		16.6%
2017 ^F	34.8		34.6		34.2		34.5		138.1		8.4%
2018		38.0		38.7		35.8		34.9	147.4		6.7%
2019 ^G		40.5		41.7		37.3		35.7	155.2		5.3%
2020		42.6		44.3		38.5		36.4	161.8		4.3%
2021 ^H		44.5		46.5		39.5		36.9	167.4		3.5%
2022		46.0		48.4		40.4		37.4	172.2		2.9%
2023		47.2		49.9		41.1		37.7	175.9		2.1%
2024		48.4		51.3		41.7		38.1	179.5		2.0%
2025		49.5		52.6		42.4		38.5	183.0		1.9%
2026		50.5		53.8		43.1		38.8	186.2		1.7%
2027		51.5		54.9		43.7		39.2	189.3		1.7%
2028		52.5		56.0		44.4		39.6	192.5		1.7%
2029		53.4		57.0		45.0		39.9	195.3		1.5%
2030		54.3		58.0		45.6		40.3	198.2		1.5%
2031		55.2		58.9		46.3		40.6	201.0		1.4%
2032		56.0		59.8		46.9		40.9	203.6		1.3%
2033		56.8		60.6		47.5		41.2	206.1		1.2%
2034		57.5		61.3		48.1		41.5	208.4		1.1%
2035		58.2		62.0		48.7		41.8	210.7		1.1%
2036		58.9		62.7		49.2		42.1	212.9		1.0%
2037		59.6		63.4		49.8		42.4	215.2		1.1%
2038		60.2		64.1		50.4		42.6	217.3		1.0%
2039		60.9		64.8		50.9		42.9	219.5		1.0%
2040		61.5		65.4		51.5		43.1	221.5		0.9%
2041		62.1		66.0		52.1		43.4	223.6		0.9%
2042		62.6		66.6		52.6		43.6	225.4		0.8%
2043		63.2		67.2		53.1		43.8	227.3		0.8%
2044		63.7		67.7		53.7		44.0	229.1		0.8%
2045		64.2		68.2		54.2		44.2	230.8		0.7%
2046		64.6		68.7		54.7		44.4	232.4		0.7%
2047		65.1		69.2		55.2		44.5	234.0		0.7%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2000 - 2007	7.5%	9.5%	10.6%	7.0%	8.5%	
2007 - 2017	4.6%	6.1%	2.2%	0.3%	3.0%	
2017 - 2027	4.0%	4.7%	2.5%	1.3%	3.2%	
2027 - 2037	1.5%	1.4%	1.3%	0.8%	1.3%	
2037 - 2047	0.9%	0.9%	1.0%	0.5%	0.8%	

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Report.
- B - Effects of the events on September 11, 2011.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - Systemwide toll rate increase.
- E - Widening of S.R. 417 between S.R. 408 and S.R. 528. Valencia College Lane ramps closed.
- F - Effects from Hurricane Matthew in October 2016.
- G - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- H - Completion of I-4 Ultimate project.

**Table 5-5
S.R. 417 Plaza Groups – Toll Revenue Projections (Millions)
FY 2018 – FY 2047**

Fiscal Year	John Young Main		Boggy Creek Main		Curry Ford Main		University Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2000	\$11.6		\$9.9		\$7.1		\$9.7		\$38.3		11.7%
2001	12.7		10.6		7.7		10.3		41.3		7.8%
2002 ^B	12.7		10.8		8.1		11.0		42.6		3.1%
2003	13.6		12.0		9.2		11.7		46.5		9.2%
2004	14.6		13.1		10.5		13.4		51.6		11.0%
2005 ^C	16.0		14.7		11.7		14.3		56.7		9.9%
2006	17.4		16.6		13.2		15.4		62.6		10.4%
2007	18.7		18.2		14.0		16.0		66.9		6.9%
2008	19.7		19.2		13.9		15.7		68.5		2.4%
2009 ^D	19.0		18.1		13.9		15.8		66.8		-2.5%
2010 ^D	21.0		19.9		17.7		20.4		79.0		18.3%
2011	21.6		20.6		17.3		20.6		80.1		1.4%
2012 ^E	22.1		20.8		17.3		20.3		80.5		0.5%
2013 ^D	25.3		24.3		19.8		21.8		91.2		13.3%
2014	27.2		26.9		21.3		22.9		98.3		7.8%
2015	30.6		30.8		24.0		25.0		110.4		12.3%
2016	35.9		37.7		27.6		27.8		129.0		16.8%
2017 ^F	40.4		42.0		29.1		28.9		140.4		8.8%
2018		\$44.0		\$46.7		\$30.5		\$29.3		\$150.5	7.2%
2019 ^G		47.3		50.7		32.0		30.2		160.2	6.4%
2020		50.5		54.8		33.4		31.1		169.8	6.0%
2021 ^H		53.7		58.8		34.8		32.0		179.3	5.6%
2022		56.7		62.6		36.1		32.7		188.1	4.9%
2023		59.5		66.3		37.3		33.4		196.5	4.5%
2024		62.0		69.4		38.4		34.1		203.9	3.8%
2025		64.2		72.1		39.5		34.8		210.6	3.3%
2026		66.0		74.0		40.5		35.6		216.1	2.6%
2027		67.8		76.0		41.5		36.3		221.6	2.5%
2028		69.7		78.1		42.6		37.0		227.4	2.6%
2029		71.6		80.2		43.7		37.8		233.3	2.6%
2030		73.5		82.3		44.8		38.5		239.1	2.5%
2031		75.4		84.5		45.9		39.3		245.1	2.5%
2032		77.4		86.8		47.1		40.1		251.4	2.6%
2033		79.4		89.0		48.3		40.9		257.6	2.5%
2034		81.4		91.4		49.5		41.7		264.0	2.5%
2035		83.5		93.7		50.7		42.5		270.4	2.4%
2036		85.6		96.1		52.0		43.3		277.0	2.4%
2037		87.7		98.5		53.3		44.2		283.7	2.4%
2038		89.8		100.9		54.7		45.0		290.4	2.4%
2039		91.9		103.3		56.0		45.9		297.1	2.3%
2040		94.1		105.6		57.4		46.8		303.9	2.3%
2041		96.3		108.0		58.8		47.7		310.8	2.3%
2042		98.5		110.4		60.3		48.6		317.8	2.3%
2043		100.7		112.8		61.8		49.5		324.8	2.2%
2044		103.0		115.2		63.3		50.5		332.0	2.2%
2045		105.2		117.6		64.9		51.5		339.2	2.2%
2046		107.5		119.9		66.5		52.4		346.3	2.1%
2047		109.8		122.3		68.1		53.4		353.6	2.1%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2000 - 2007	7.1%	9.1%	10.2%	7.4%	8.3%	
2007 - 2017	8.0%	8.7%	7.6%	6.1%	7.7%	
2017 - 2027	5.3%	6.1%	3.6%	2.3%	4.7%	
2027 - 2037	2.6%	2.6%	2.5%	2.0%	2.5%	
2037 - 2047	2.3%	2.2%	2.5%	1.9%	2.2%	

Notes:

- A - Actual revenue data provided by CFX from Monthly Statistical Report.
- B - Effects of the events on September 11, 2011.
- C - Effects from 2004 hurricane season (4 storms with toll suspensions).
- D - Systemwide toll rate increase.
- E - Widening of S.R. 417 between S.R. 408 and S.R. 528. Valencia College Lane ramps closed.
- F - Effects from Hurricane Matthew in October 2016.
- G - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- H - Completion of I-4 Ultimate project.

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Chapter 6
S.R. 429
(Daniel Webster
Western Beltway)



S.R. 429 (DANIEL WEBSTER WESTERN BELTWAY)

6.1 Facility Description

S.R. 429, also known as the Daniel Webster Western Beltway, is a 34-mile expressway that extends north from I-4 in Osceola County to U.S. Highway 441 in Apopka. As its name suggests, it comprises a majority of the western beltway around Orlando. The Western Beltway is owned and operated by two agencies, CFX and FTE. CFX is responsible for the 23-mile portion of S.R. 429 from Seidel Road north to U.S. 441 and FTE is responsible for the 11-mile segment of S.R. 429 from I-4 north to Seidel Road. On the CFX portion there are two mainline toll plazas: the Independence Main Plaza and the Forest Lake Main Plaza. Ramp toll plazas associated with the Independence Main plaza group are located at New Independence Parkway, Winter Garden Vineland Road and Schofield Road interchanges. Ramp toll plazas associated with the Forest Lake Main plaza group are located at the East Plant Street (S.R. 438), the West Road and the Ocoee-Apopka Road interchanges. Of the 23 miles on S.R. 429, three are part of a dual route with S.R. 414. A map of CFX's portion of S.R. 429 including the FY 2017 CFX toll rates for the mainline and ramp toll plazas is shown in **Figure 6-1**.

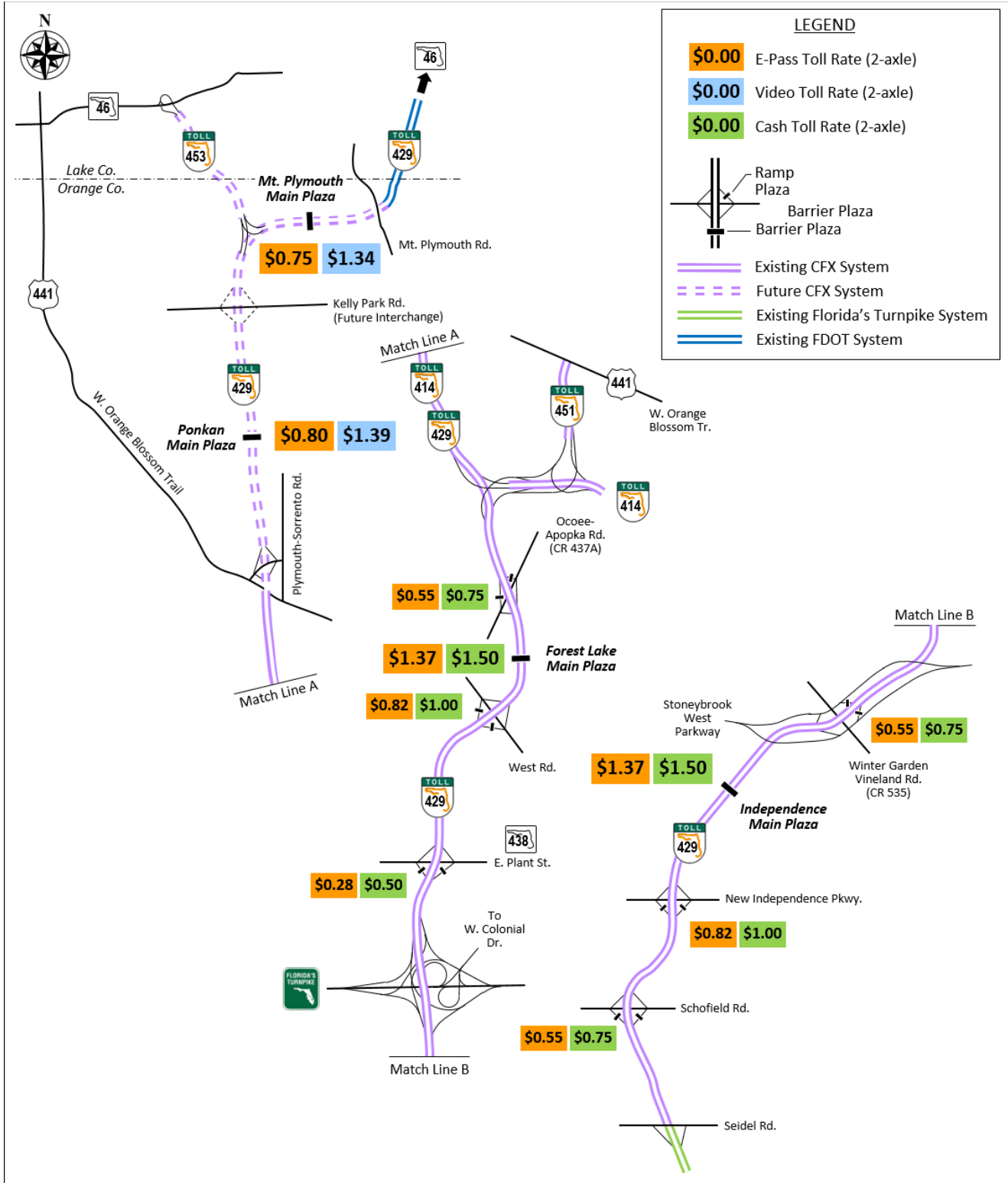


The original 10-mile segment of S.R. 429, known as Part A, opened to traffic in July of 2000 from S.R. 50 to U.S. 441, with the connection to Florida's Turnpike opening in November 2001. It was the first expressway on the CFX System to have an open road tolling style toll plaza for E-PASS customers, providing a direct route from the Turnpike to Apopka and much needed access to West Orange County. The next segment, a 4.5-mile segment of S.R. 429, Part C, opened to traffic in December 2002 and connected to Winter Garden Vineland Road. CFX's segment from Winter Garden Vineland to Seidel Road was opened to traffic in December of 2005, in conjunction with FTE's first segment from Seidel Road to U.S. 192. FTE opened its segment of S.R. 429 Part C in December of 2006.

In June of 2010, construction work began on the westward extension of S.R. 414, the Apopka Expressway. The new connection of S.R. 414 and S.R. 429 required that approximately 1 mile of current S.R. 429 roadway be removed and in May of 2012 a new interchange opened from S.R. 429 northbound to S.R. 414 eastbound and from S.R. 414 westbound to S.R. 429 southbound. The old segment of S.R. 429 north of the current S.R. 414 interchange was designated as S.R. 451. The Ocoee-Apopka Road Interchange was also relocated south of the S.R. 414/S.R. 429 Interchange with new tolled ramps added to and from the north. S.R. 429 serves as an alternative route to I-4 and provides a direct connection from Florida's Turnpike to Walt Disney World and Tampa for travelers from the northern and western portions of the Orlando urban area. In May

2015, CFX opened the new full interchange between S.R. 429 and Schofield Road to provide additional access to this rapidly growing area of West Orange County.

Figure 6-1
S.R. 429 Facilities and Toll Rates



The extension of S.R. 429, locally known as the Wekiva Parkway, will be a 27-mile expressway that extends S.R. 429 into northwest Orange, southeast Lake, and east Seminole counties. From a CFX vision in the *Year 2000 Long Range Expressway Plan*, completed in 1983, the Wekiva Parkway – then known as the Western Bypass and later as the Western Beltway, Part B, is under design and construction. CFX started construction of its first segments in January of 2015. This long-awaited expressway will complete the Western Beltway around the Orlando metropolitan region. The project will also add two additional plaza groups to S.R. 429 along CFX's section of the Wekiva Parkway: the Ponkan Main Plaza, about 3.2 miles north of the current S.R. 429 terminus which opened July 1, 2017 (FY 2018); and the Mt. Plymouth Main Plaza, about 3.6 miles from the Ponkan Main Plaza which opened April 1, 2018 (FY 2018). The Wekiva Parkway also includes construction of S.R. 453, discussed in Chapter 8. Detailed information about the Wekiva Parkway is included in Chapter 1 of this report.

In March 2016, CFX completed the improvements at the S.R. 429/Winter Garden Vineland Road (C.R. 535) interchange in west Orange County, which began in August 2015. This project extended the southbound S.R. 429 off ramp to C.R. 535/Stoneybrook West Parkway and included the resurfacing of approximately one-half mile of southbound S.R. 429 near the interchange. The improvement helped with afternoon traffic backups on the S.R. 429 mainline from the off ramp.

In January 2017, CFX began milling and resurfacing S.R. 429 from Seidel Road to C.R. 535. The project also includes repairing and upgrading the roadway and ramps, as well as upgrading signs in the area. The project is scheduled for completion in early 2018.

6.2 Historical Transactions and Toll Revenues

6.2.1 ANNUAL TRANSACTION AND TOLL REVENUE TRENDS

The history of S.R. 429 annual transactions for the Forest Lake Main and the Independence Main plaza groups from opening to FY 2017 are presented in the top half of **Table 6-1**. Annual toll revenues are also summarized and totaled in the bottom half of the table. In FY 2017, S. R. 429 transactions increased by 10.4 percent over FY 2016 and revenues increased by 12.4 percent.

Since its opening, S.R. 429 had only two years of negative growth in transactions, which occurred in FY 2009 and FY 2010 as a result of the recession and the toll rate increase in April 2009. Revenues, on the other hand, have never had a year of negative growth, except for FY 2009 where revenues had a year of no growth. That year, Forest Lake Main plaza group had negative growth of 4.2 percent, but Independence Main plaza group had positive growth of 7.0 percent. Much of the fluctuations in FY 2009 and FY 2010 can be attributed to the slowdown in the economy and the FY 2009 toll rate increase. The toll rate increase impacted transactions during the last three months of FY 2009 and the first nine months of FY 2010. With the toll rate increase, revenues in FY 2010 recovered with a growth of 23.7 percent, or \$4.5 million for the facility, while transactions only decreased by 0.4 percent.

Table 6-1
S.R. 429 Plaza Groups – Historical Transactions and Toll Revenues
FY 2001 – FY 2017

Fiscal Year	Forest Lake Main ^A	Independence Main	TOTAL	Forest Lake Main ^A	Independence Main	TOTAL
	TRANSACTIONS (millions)			PERCENT CHANGE		
2001	3.5		3.5			
2002 ^B	5.8		5.8	65.7%		65.7%
2003 ^C	8.0	1.5	9.5	37.9%		63.8%
2004	9.5	4.3	13.8	18.8%	186.7%	45.3%
2005 ^D	10.8	5.6	16.4	13.7%	30.2%	18.8%
2006 ^E	12.8	7.4	20.2	18.5%	32.1%	23.2%
2007 ^F	14.1	10.3	24.4	10.2%	39.2%	20.8%
2008 ^G	14.2	12.4	26.6	0.7%	20.4%	9.0%
2009 ^H	12.9	12.2	25.1	-9.2%	-1.6%	-5.6%
2010	13.0	12.0	25.0	0.8%	-1.6%	-0.4%
2011	13.4	12.5	25.9	3.1%	4.2%	3.6%
2012	13.6	12.8	26.4	1.5%	2.4%	1.9%
2013 ^I	14.2	13.0	27.2	4.7%	1.6%	3.2%
2014	16.1	14.6	30.7	13.4%	12.3%	12.9%
2015	18.3	16.9	35.2	13.7%	15.8%	14.7%
2016	21.4	19.8	41.2	16.9%	17.2%	17.0%
2017 ^J	23.4	22.1	45.5	9.3%	11.6%	10.4%
	TOLL REVENUE (millions)			PERCENT CHANGE		
2001	\$3.3		\$3.3			
2002 ^B	\$5.1		\$5.1	54.5%		54.5%
2003 ^C	\$6.8	\$0.4	\$7.2	33.3%		41.2%
2004	\$8.1	\$1.1	\$9.2	19.1%	175.0%	27.8%
2005 ^D	\$9.1	\$1.4	\$10.5	12.3%	27.3%	14.1%
2006 ^E	\$10.7	\$2.8	\$13.5	17.6%	100.0%	28.6%
2007 ^F	\$11.8	\$5.6	\$17.4	10.3%	100.0%	28.9%
2008 ^G	\$11.9	\$7.1	\$19.0	0.8%	26.8%	9.2%
2009 ^H	\$11.4	\$7.6	\$19.0	-4.2%	7.0%	0.0%
2010	\$13.7	\$9.8	\$23.5	20.2%	28.9%	23.7%
2011	\$14.1	\$10.3	\$24.4	2.9%	5.1%	3.8%
2012	\$14.2	\$10.7	\$24.9	0.7%	3.9%	2.0%
2013 ^I	\$17.1	\$12.3	\$29.4	20.6%	14.6%	18.1%
2014	\$19.5	\$14.0	\$33.5	13.8%	14.1%	14.0%
2015	\$22.1	\$16.8	\$38.9	13.3%	20.0%	16.1%
2016	\$25.9	\$20.1	\$46.0	17.2%	19.6%	18.3%
2017 ^J	\$28.4	\$23.3	\$51.7	9.7%	15.9%	12.4%

Notes:

- A - Opened to traffic on July 8, 2000. Toll collection began one week after facility opened to traffic.
B - Interchange ramps to/from existing S.R. 429 at Florida's Turnpike opened in November 2001.
C - Interchange ramps to/from C.R. 535 opened in December 2002.
D - Effects from 2004 hurricane season (4 storms with toll suspensions).
E - Independence Main plaza opened in December 2005. FTE opened section to U.S. 192.
F - FTE opened section from U.S. 192 to I-4 in December 2006.
G - First effects of national economic recession.
H - Systemwide toll rate increase in April 2009.
I - Systemwide toll rate increase in July 2012. Implementation of cash and electronic toll rate differential.
J - Effects from Hurricane Matthew in October 2016.

In FY 2012, the growth in transactions and revenue at Independence Main plaza group outpaced those at Forest Lake Main plaza group, with transaction growth at 2.4 percent and revenue growth at 3.9 percent for the Independence Main plaza group. Forest Lake Main plaza group had a slower growth year with only a 1.5 percent increase in transactions and a 0.7 percent increase in revenue. This changed again in FY 2013 with Forest Lake Main transactions increasing by 4.7 percent to Independence Main's increase of 1.6 percent over FY 2012 despite the toll rate adjustment. Annual revenue growth was also higher at Forest Lake Main plaza group than at Independence Main plaza group with 20.6 percent and 14.6 percent respectively.

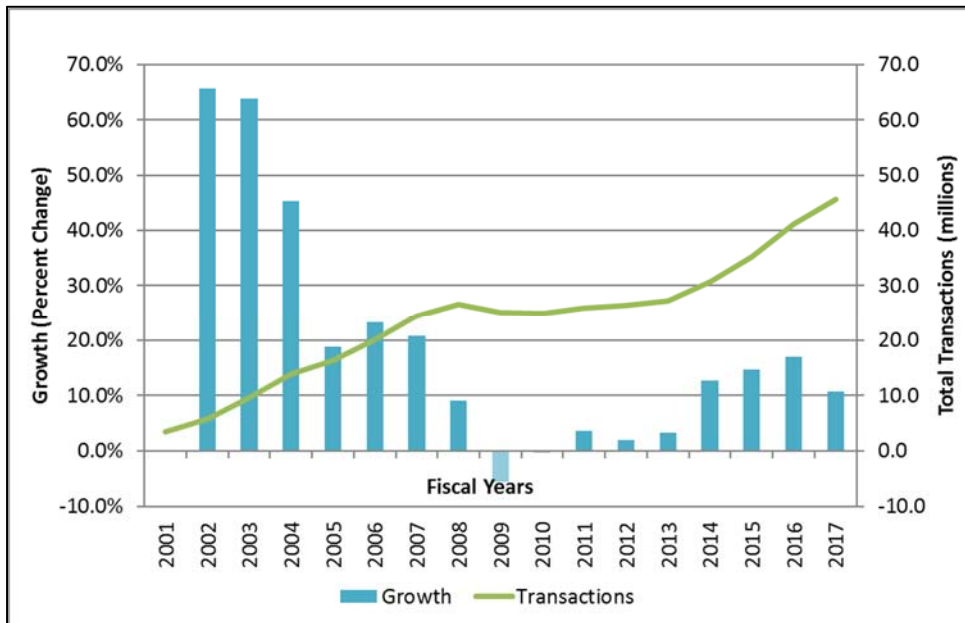
In FY 2014, transactions at the Forest Lake Main plaza group increased by 13.4 percent and toll revenues increased by 13.8 percent. Transactions during the same period at the Independence Main plaza group by 12.3 percent and toll revenues increased by 14.1 percent. In FY 2015, transactions at the Forest Lake Main plaza group and Independence Main plaza group increased by 13.7 percent and 15.8 percent, respectively, over FY 2014. During the same period, toll revenues at the Forest Lake Main plaza group and Independence Main plaza group increased by 13.3 percent and 20.0 percent. The same trend continued in FY 2016 and FY 2017. In FY 2017, transactions at the Forest Lake Main plaza group increased by 9.3 percent and revenues increased by 9.7 percent. Transactions increased by 11.6 percent at the Independence Main plaza and revenues increased by 15.9 percent during the same period.

In October 2016, Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. On October 3, Governor Scott declared a state of emergency and urged over 1.5 million residents to evacuate. Tolls were suspended on the CFX System beginning at 8:00pm on October 5, 2016 through early on October 10, 2016. Besides the \$2.75 billion in damage caused by Hurricane Matthew through the state, normal traffic patterns and toll revenue collections were significantly disrupted.

The facility data and annual growth are also presented visually in **Figure 6-2** and **Figure 6-3**. As shown, transactions and revenue have increased rapidly between FY 2001 and FY 2009, with ramp-up growth rates in the first three years. The economic downturn is also represented with a dip in the annual transactions and revenue, but it also shows that over the last five years the facility has recovered and continues to grow at extraordinary rates. In Figure 6-3, the total toll revenue chart has the distinct step-up pattern as expected of toll rate increases.

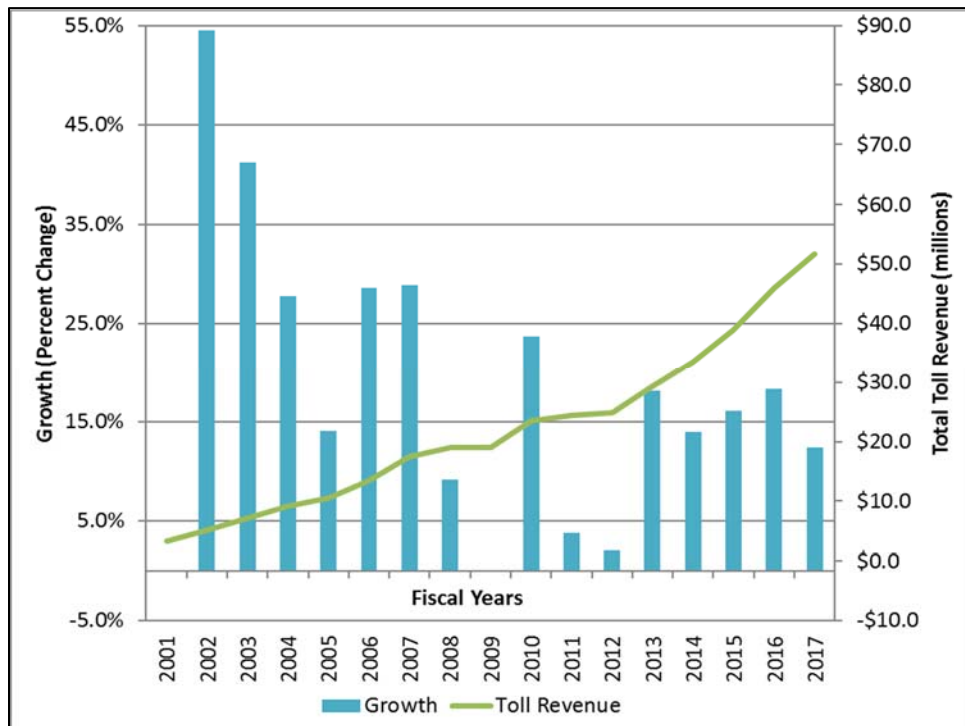


Figure 6-2
S.R. 429 Historical Transactions and Annual Growth
FY 2001 – FY 2017



Source: CFX Statistical Report June 2017

Figure 6-3
S.R. 429 Historical Toll Revenue and Annual Growth
FY 2001 – FY 2017

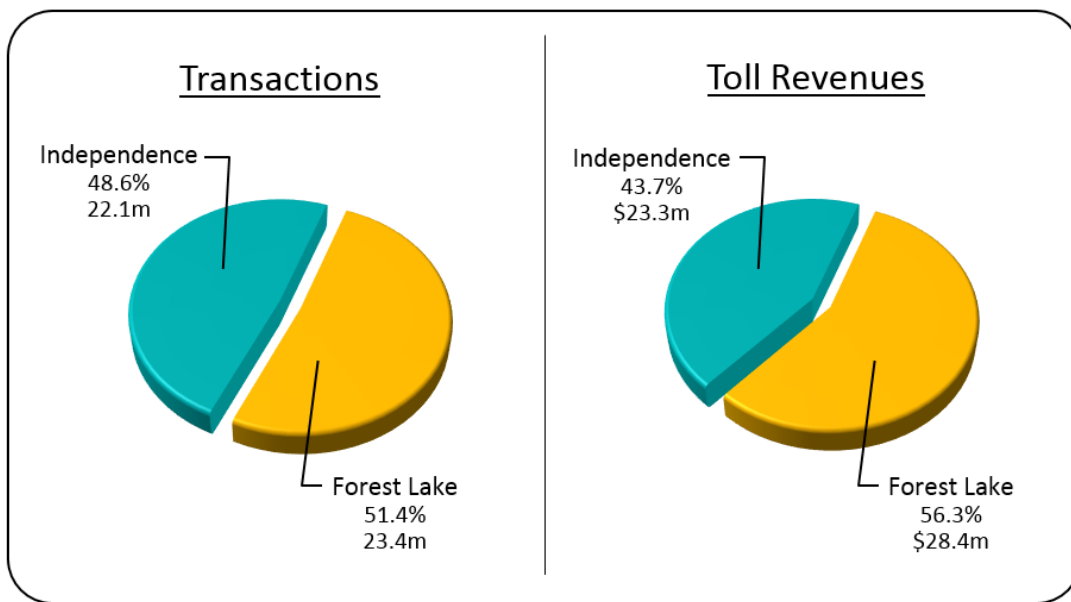


Source: CFX Statistical Report June 2017

The transactions and toll revenues by plaza group and as a percentage of total S.R. 429 transactions and toll revenues for FY 2017 are presented in **Figure 6-4**. As shown, the Forest Lake Main plaza group represented 23.4 million transactions or 51.4 percent of total S.R. 429 transactions. Independence Main plaza group carried the remaining 22.1 million or 48.6 percent of total transactions on the facility.

The annual totals and percentages for toll revenues are similar to the trends reported for annual transactions. Having more ramp toll plazas and a higher mainline toll rate, the Forest Lake Main plaza group represented \$28.4 million in toll revenues or 56.3 percent of total S.R. 429 toll revenues. Independence Main plaza group carried the remaining \$23.3 million or 43.7 percent of total revenue on the facility.

Figure 6-4
S.R. 429 Transactions and Toll Revenues by Plaza Group
FY 2017



Source: CFX Statistical Report June 2017

6.2.2 MONTHLY TRANSACTION SEASONAL VARIATION

In **Table 6-2**, monthly total traffic volumes are normalized to average number of transactions per day in each month. Using average number of transactions per day allows for an easy comparison of the variations in relative travel demand over the year. The pattern of seasonal usage changes slightly from year to year, based on the number of weekdays in each month. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

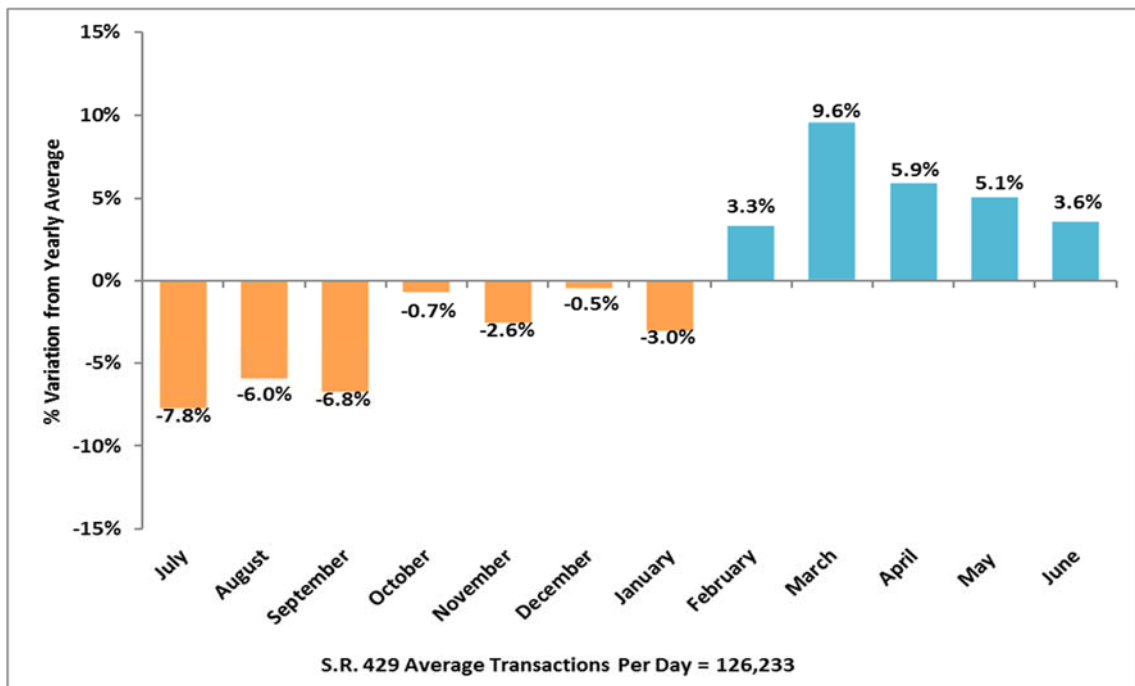
As presented in Table 6-2, average transactions per day in FY 2017 on S.R. 429 ranged from a high of 138,375 in March 2017 to a low of 116,416 in July 2016. This data is presented in a graphical format in **Figure 6-5**. Each month's average daily transactions appear as a percentage of the average for the fiscal year. Transactions in March were 9.6 percent above average and transactions in July were 7.8 percent below average for the facility. For FY 2017, the transactions were lower than average for the first half of the FY and higher than average for the second half of the FY. This is a normal pattern for seasonal variation, with the spring months being the peak season, due to an extra number of tourists and seasonal residents in the area. The seasonal pattern of usage will change slightly from year to year based on the number of weekdays in a given month.

Table 6-2
S.R. 429 – Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions/day	Seasonal Factor
July	31	3,608,884	116,416	0.922
August	31	3,680,037	118,711	0.940
September	30	3,530,005	117,667	0.932
October	27	3,384,648	125,357	0.993
November	30	3,690,147	123,005	0.974
December	31	3,894,016	125,613	0.995
January	31	3,794,160	122,392	0.970
February	28	3,652,756	130,456	1.033
March	31	4,289,620	138,375	1.096
April	30	4,011,267	133,709	1.059
May	31	4,111,142	132,617	1.051
June	30	3,923,346	130,778	1.036
Average		3,797,502	126,233	1.000
Total Year	361	45,570,028		

Source: CFX Statistical Report June 2017

Figure 6-5
S.R. 429 Variation in Transactions Per Day, By Month
FY 2017



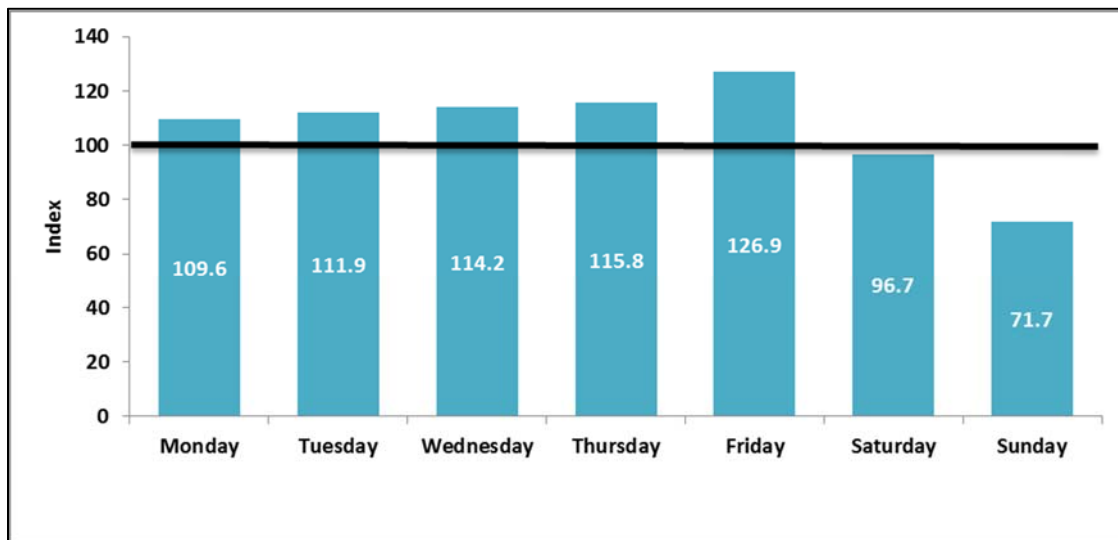
Source: CFX Statistical Report June 2017

6.2.3 DAY-OF-WEEK TOLL TRANSACTION VARIATION

Figure 6-6 contains a comparison of toll transactions by day of week against AADT in FY 2017. This data is presented as an index, where the AADT equals 100. An index value of 100 for a given day of the week would indicate that day’s transactions were precisely the same volume as the facility’s AADT. A value of 120 would indicate a day that has 20 percent greater volume than the AADT. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

As shown, weekday toll transaction volumes on S.R. 429 fluctuated over the course of the week. Transactions were highest on Fridays, with an index value of 126.9 (26.9 percent higher than the average day), volumes on Thursdays had an index value of 115.8, and volumes on Monday through Wednesday ranged from index values of 109.6 to 114.2. Saturday volumes were lower than early weekday volumes with an index value of 96.7. Transactions decline significantly on Sundays, which have an index value of 71.7, or 28.3 percent lower than the average day.

Figure 6-6
S.R. 429 Variation in Day-of Week Toll Transactions, By Day
FY 2017



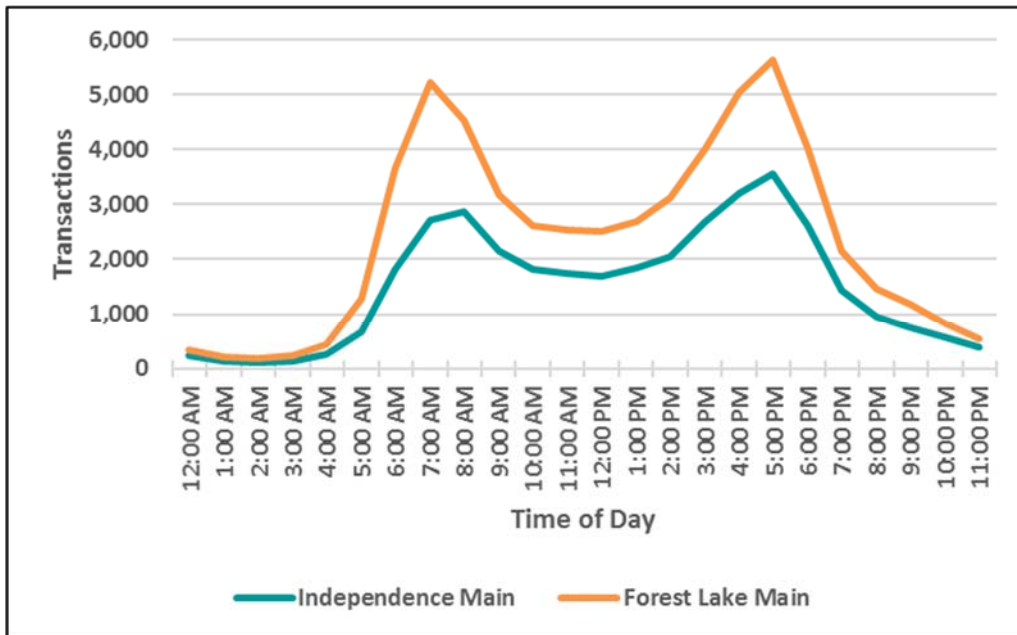
Source: Unaudited lane transaction data – January 2017

6.2.4 DAILY TRAFFIC DISTRIBUTION

The daily distribution of traffic includes information on the usage characteristics of travel on the facility. The daily distributions represent counts taken during a typical week at the mainline plazas in the month of January. The typical weekday distribution is shown in **Figure 6-7** and the weekend distribution is shown in **Figure 6-8**. The figures contain the sum of traffic volumes in both directions.

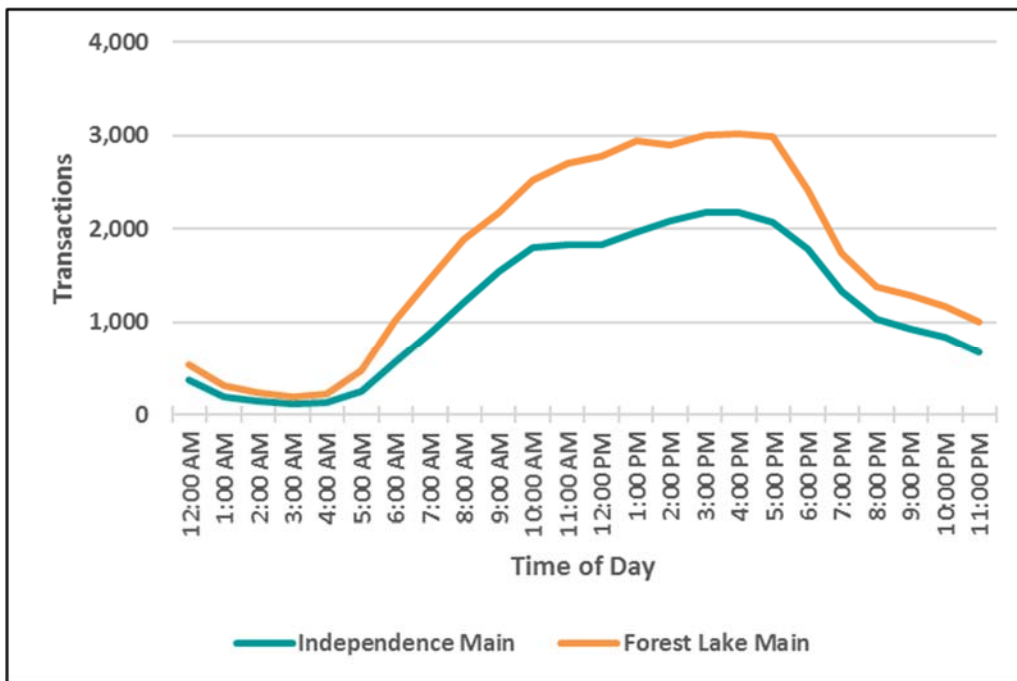
The four mainline locations on S.R. 429 exhibit similar hourly traffic patterns. On weekdays, demand for travel at all both locations is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours at both mainline plazas are higher than in the morning peak hours. The highest peak hour volumes during the week were 3,500 per hour beginning at 5:00 P.M. at the Independence mainline plaza and 5,600 per hour beginning at 5:00 P.M. at the Forest Lake mainline plaza. On weekends, the volumes are lower and there is no clear morning or evening peak periods, indicating that many customers use the facility for non-work trip purposes.

Figure 6-7
S.R. 429 Daily Traffic Variation (Weekday)
FY 2017 (January)



Source: Unaudited lane transaction data – January 2017

Figure 6-8
S.R. 429 Daily Traffic Variation (Weekend)
FY 2017 (January)

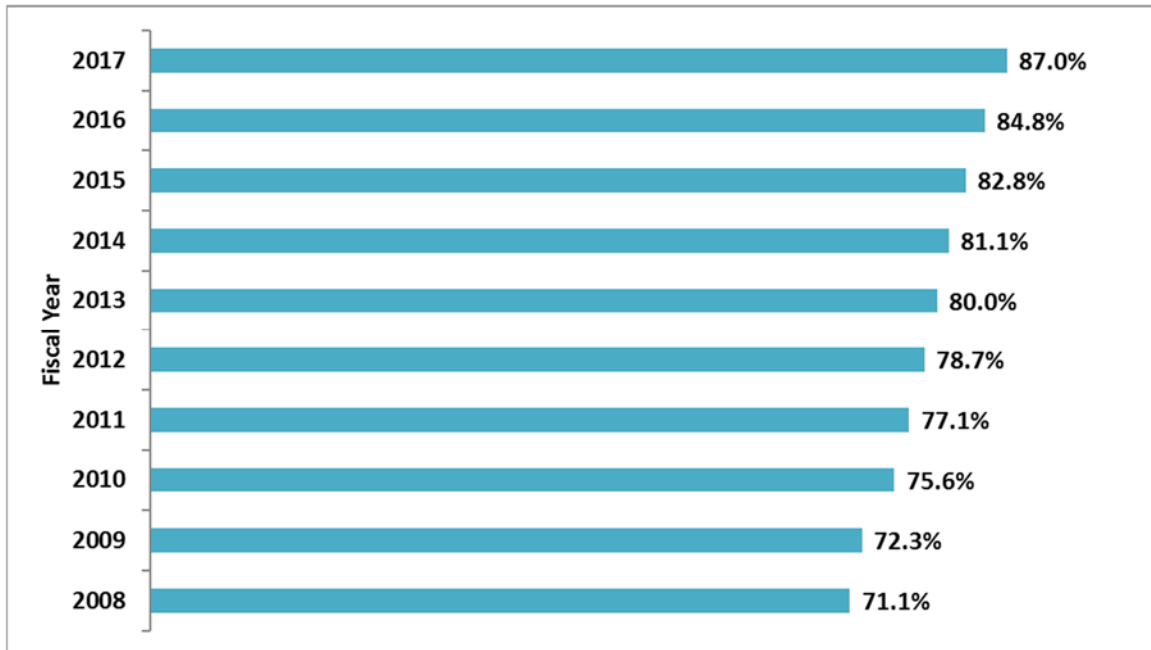


Source: Unaudited lane transaction data – January 2017

6.3 ETC Usage

The percent of revenues collected from ETC over the past ten fiscal years on S.R. 429 are shown in **Figure 6-9**. Over this time, ETC revenues have steadily increased on the facility. In FY 2008, ETC revenues totaled 71.1 percent of total revenues. By the end of FY 2017, ETC revenues reached 87.0 percent. ETC usage is expected to increase as customers shift from cash to ETC to take advantage of the lower ETC rate and the convenience of paying tolls electronically, as well as the newly opened “Reload” Lane at the Forest Lake Main Plaza so customers can conveniently obtain and replenish E-PASS transponders. CFX also continues to offer toll discount incentives to customers through various discount programs. The I-4 Commuter Discount Program, implemented in July 2015, offers discounts for transactions on S.R. 417, S.R. 429 and S.R. 414 during construction activities on I-4.

Figure 6-9
S.R. 429 Percent of Toll Revenue from Electronic Toll Collection
FY 2008 – FY 2017



Source: CFX Statistical Report June 2017

6.4 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

In addition to the Wekiva Parkway, future transportation improvements that could influence the T&R forecasts for S.R. 429 include the projects listed in **Table 6-3**. Completion of these projects was assumed in each model horizon year.

Several important growth areas in the Orlando metropolitan areas are along S.R. 429. Developments in Horizon West in SW Orange County slowed down during the recession, but housing construction activity has picked back up again. Roadway improvements in this area, included in the travel demand model (year 2023), include the 4-lane widening projects to county roads including Avalon Road (C.R. 545), Roberson Road, Warrior Road, Tilden Road, and Windermere Road. Avalon Road is a competing facility, but the other facilities serve as feeder roads and positively impact T&R in the near term. The new interchange at Schofield Road will also contribute positively to the T&R forecasts. Growth in SW Orange County is reflected in the T&R forecast for the Independence Main Plaza Group.

Table 6-3
S.R. 429 - Key Transportation Improvements

Facility	From	To	Model Horizon Year	Jurisdiction	Improvement
S.R. 451/U.S. 441	U.S. 441	Vick Road	2018	CFX	Intersection Improvements
Avalon Road/C.R. 545	Tilden Road	S.R. 50/Colonial Drive	2023	Orange County	Widen 2-4 lanes
Avalon Road/C.R. 545	U.S. 192	Tilden Road	2023	Orange County	Widen 2-4 lanes
McCormick Road	Ocoee-Apopka Road	Ingram Road	2023	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	West Road	Binion Road	2023	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	Fullers Cross Road	West Road	2023	Orange County	Widen 4-6 lanes
Plymouth-Sorrento Road/ C.R. 437	Kelly Park Road	U.S. 441/Orange Blossom Trail	2023	Orange County	Widen 2-4 lanes
Roberson Road	Windermere Road	Maguire Road	2023	Orange County	Widen 2-4 lanes
S.R. 429/Western Beltway	Schofield Road		2023	CFX	New Interchange
Tilden Road	Avalon Road	Winter Garden-Vineland Road	2023	Orange County	Widen 2-4 lanes
Warrior Road	Windermere Road West	Windermere Road East	2023	Orange County	Widen 2-4 lanes
Windemere Road	Marshall Farms Road	Warrior Road	2023	Orange County	Widen 2-4 lanes
Windermere Road/Tomyn Road	Roberson Road	Maguire Road	2023	Orange County	Widen 2-4 lanes
Binion Road	Ocoee-Apopka Road	Lust Road	2028	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	Binion Road	Bradshaw Road	2028	Orange County	Widen 2-4 lanes
Rock Springs Road/Park Avenue - Apopka	U.S. 441/Orange Blossom Trail	Welch Road	2028	Orange County	Widen 4-6 lanes
Seidel Road	Avalon Road	Lake Hancock Road	2028	Orange County	Widen 2-4 lanes
Clarcona-Ocoee Road	West Road	Adair Street	2033	Orange County	Widen 4-6 lanes
Mt. Plymouth Road	Kelly Park Road	Lake County Line	2033	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	S.R. 438/Silver Star Road	Fullers Cross Road	2033	Orange County	Widen 4-6 lanes
Interstate 4	Kirkman Road	US 27	2043	FDOT	BtU South Managed Lanes

CFX System improvements including the Apopka Expressway and S.R. 414/S.R. 429 interchange and the Ocoee-Apopka Road Interchange reconstructions have improved access and the potential for growth in NW Orange County. The growth potential is also demonstrated by the planned improvements to the local street system. Many planned improvements to facilities including Ocoee-Apopka Road, Clarcona-Ocoee Road, Plymouth-Sorrento Road, Rock Springs Road and Binion Road, serve as feeder roads to S.R. 429 and positively impact T&R in the near term and long-term forecasts. The opening of the Wekiva Parkway is also a positive sign for the growth potential along S.R. 429.

Transaction and toll revenue forecasts for S.R. 429 are summarized in **Table 6-4** and **Table 6-5**.

Total transactions on S.R. 429 are projected to increase during the forecast period from the actual of 45.5 million in FY 2017 to 104.7 million in FY 2047. Total revenues are projected to increase over the forecast period from the actual of \$51.7 million in FY 2017 to \$160.1 million in FY 2047. Of this increase, a total of \$1.2 million in FY 2018 increasing to \$31.9 million in FY 2047 is expected to be collected at the two Wekiva Parkway toll plazas. Overall revenues are forecasted to increase an average of 6.2 percent per year through FY 2027, 3.1 percent per year from FY 2027 to FY 2037, and 2.3 percent per year from FY 2037 to FY 2047.



S.R. 429 – Wekiva Parkway Construction (Photo Courtesy of Aerial Innovations)

Table 6-4
S.R. 429 Plaza Groups – Transaction Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Forest Lake Main		Independence Main		Ponkan Main		Mount Plymouth Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2001 ^B	3.5								3.5		
2002 ^C	5.8								5.8		65.7%
2003 ^D	8.0		1.5						9.5		63.8%
2004	9.5		4.3						13.8		45.3%
2005 ^E	10.8		5.6						16.4		18.8%
2006 ^F	12.8		7.4						20.2		23.2%
2007	14.1		10.3						24.4		20.8%
2008 ^G	14.2		12.4						26.6		9.0%
2009 ^H	12.9		12.2						25.1		-5.6%
2010	13.0		12.0						25.0		-0.4%
2011	13.4		12.5						25.9		3.6%
2012	13.6		12.8						26.4		1.9%
2013 ^H	14.2		13.0						27.2		3.0%
2014	16.1		14.6						30.7		12.9%
2015	18.3		16.9						35.2		14.7%
2016	21.4		19.8						41.2		17.0%
2017 ^I	23.4		22.1						45.5		10.4%
2018 ^J		24.4		24.2		1.0		0.4		50.0	9.9%
2019 ^K		25.3		25.7		2.7		1.8		55.5	11.0%
2020		26.0		27.0		3.1		2.0		58.1	4.7%
2021 ^L		26.6		28.2		3.6		2.2		60.6	4.3%
2022		27.2		29.1		4.0		2.6		62.9	3.8%
2023		27.6		29.9		4.5		3.1		65.1	3.5%
2024		27.9		30.5		5.0		3.5		66.9	2.8%
2025		28.3		31.1		5.4		3.9		68.7	2.7%
2026		28.7		31.6		5.9		4.3		70.5	2.6%
2027		29.1		32.0		6.3		4.7		72.1	2.3%
2028		29.5		32.5		6.8		5.1		73.9	2.5%
2029		29.9		32.9		7.2		5.5		75.5	2.2%
2030		30.3		33.3		7.7		5.9		77.2	2.3%
2031		30.6		33.8		8.2		6.3		78.9	2.2%
2032		31.0		34.2		8.6		6.8		80.6	2.2%
2033		31.4		34.6		9.1		7.2		82.3	2.1%
2034		31.7		35.0		9.5		7.6		83.8	1.8%
2035		32.1		35.4		10.0		8.0		85.5	2.0%
2036		32.5		35.8		10.4		8.4		87.1	1.9%
2037		32.8		36.2		10.9		8.8		88.7	1.8%
2038		33.2		36.6		11.4		9.2		90.4	1.9%
2039		33.5		37.0		11.8		9.6		91.9	1.7%
2040		33.9		37.4		12.3		10.1		93.7	2.0%
2041		34.2		37.8		12.7		10.5		95.2	1.6%
2042		34.6		38.2		13.2		10.9		96.9	1.8%
2043		34.9		38.6		13.6		11.3		98.4	1.5%
2044		35.2		39.0		14.1		11.7		100.0	1.6%
2045		35.5		39.3		14.6		12.1		101.5	1.5%
2046		35.8		39.7		15.0		12.5		103.0	1.5%
2047		36.2		40.1		15.5		12.9		104.7	1.7%

Fiscal Year						
2001 - 2007	26.1%		52.6%			38.2%
2007 - 2017	5.2%		7.9%			6.4%
2017 - 2027	2.2%		3.8%			4.7%
2027 - 2037	1.2%		1.2%	5.6%	6.5%	2.1%
2037 - 2047	1.0%		1.0%	3.6%	3.9%	1.7%

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports.
- B - Forest Lake Main plaza opened to traffic on July 8, 2000. Toll collection began one week after facility opened to traffic.
- C - Interchange ramps to/from existing S.R. 429 at Florida's Turnpike opened in November 2001.
- D - Interchange ramps to/from C.R. 535 opened in December 2002.
- E - Effects from 2004 hurricane season (4 storms with toll suspensions).
- F - Independence Main plaza opened in December 2005.
- G - First effects of national recession.
- H - Systemwide toll rate increase.
- I - Effects from Hurricane Matthew in October 2016.
- J - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018.
- K - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- L - Completion of I-4 Ultimate project.

Table 6-5
S.R. 429 Plaza Groups – Toll Revenue Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Forest Lake Main		Independence Main		Ponkan Main		Mount Plymouth Main		TOTAL		Percent Annual Change
	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	Actual ^A	Projected	
2001 ^B	\$3.3								\$3.3		
2002 ^C	5.1								5.1		54.5%
2003 ^D	6.8		\$0.4						7.2		41.2%
2004	8.1		1.1						9.2		27.8%
2005 ^E	9.1		1.4						10.5		14.1%
2006 ^F	10.7		2.8						13.5		28.6%
2007	11.8		5.6						17.4		28.9%
2008 ^G	11.9		7.1						19.0		9.2%
2009 ^H	11.4		7.6						19.0		0.0%
2010	13.7		9.8						23.5		23.7%
2011	14.1		10.3						24.4		3.8%
2012	14.2		10.7						24.9		2.0%
2013 ^H	17.1		12.3						29.4		18.1%
2014	19.5		14.0						33.5		13.9%
2015	22.1		16.8						38.9		16.1%
2016	25.9		20.1						46.0		18.3%
2017 ^I	28.4		23.3						51.7		12.4%
2018 ^J		\$29.5		\$26.2		\$0.9		\$0.3		\$56.9	10.1%
2019 ^K		30.8		28.6		\$1.7		1.2		62.3	9.5%
2020		32.1		30.9		2.6		1.4		67.0	7.5%
2021 ^L		33.2		33.2		3.1		\$1.7		71.2	6.3%
2022		34.3		35.5		3.7		2.2		75.7	6.3%
2023		35.3		37.6		4.3		2.6		79.8	5.4%
2024		36.4		39.5		4.8		3.1		83.8	5.0%
2025		37.4		41.0		5.4		3.6		87.4	4.3%
2026		38.5		42.3		5.9		4.1		90.8	3.9%
2027		39.6		43.5		6.5		4.5		94.1	3.6%
2028		40.7		44.7		7.1		5.0		97.5	3.6%
2029		41.9		45.9		7.6		5.5		100.9	3.5%
2030		43.0		47.1		8.2		6.0		104.3	3.4%
2031		44.1		48.2		8.8		6.4		107.5	3.1%
2032		45.3		49.4		9.3		6.9		110.9	3.2%
2033		46.4		50.6		9.9		7.4		114.3	3.1%
2034		47.6		51.7		10.4		7.9		117.6	2.9%
2035		48.8		52.8		11.0		8.3		120.9	2.8%
2036		49.9		53.9		11.6		8.8		124.2	2.7%
2037		51.1		55.0		12.1		9.3		127.5	2.7%
2038		52.3		56.1		12.7		9.8		130.9	2.7%
2039		53.5		57.2		13.3		10.3		134.3	2.6%
2040		54.7		58.3		13.8		10.7		137.5	2.4%
2041		55.8		59.4		14.4		11.2		140.8	2.4%
2042		57.0		60.4		14.9		11.7		144.0	2.3%
2043		58.2		61.4		15.5		12.2		147.3	2.3%
2044		59.4		62.5		16.1		12.6		150.6	2.2%
2045		60.5		63.5		16.6		13.1		153.7	2.1%
2046		61.7		64.4		17.2		13.6		156.9	2.1%
2047		62.8		65.4		17.8		14.1		160.1	2.0%

Fiscal Year						
2001 - 2007	23.7%		77.8%			31.9%
2007 - 2017	9.2%		15.3%			11.5%
2017 - 2027	3.4%		6.4%			6.2%
2027 - 2037	2.6%		2.4%	6.4%	7.5%	3.1%
2037 - 2047	2.1%		1.7%	3.9%	4.2%	2.3%

Notes:

- A - Actual revenue data provided by CFX from Monthly Statistical Reports.
- B - Forest Lake Main plaza opened to traffic on July 8, 2000. Toll collection began one week after facility opened to traffic.
- C - Interchange ramps to/from existing S.R. 429 at Florida's Turnpike opened in November 2001.
- D - Interchange ramps to/from C.R. 535 opened in December 2002.
- E - Effects from 2004 hurricane season (4 storms with toll suspensions).
- F - Independence Main plaza opened in December 2005.
- G - First effects of national recession.
- H - Systemwide toll rate increase.
- I - Effects from Hurricane Matthew in October 2016.
- J - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018.
- K - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- L - Completion of I-4 Ultimate project.

Chapter 7
S.R. 414
(John Land Apopka
Expressway)



S.R. 414 (JOHN LAND APOPKA EXPRESSWAY)

7.1 Facility Description

S.R. 414, also known as the John Land Apopka Expressway, is a 9-mile expressway that extends east from S.R. 429 to Maitland Boulevard at U.S. 441. Three of these miles are part of a dual route with S.R. 429. This long-awaited expressway improved access between S.R. 429, I-4 and employment centers such as Maitland Center. While relieving congestion on U.S. 441 and many local roads in the greater Apopka area, it was the first new, major east-west corridor built in Central Florida in many years. S.R. 414 includes one mainline toll plaza, Coral Hills Main plaza. The plaza group has two interchange ramp toll plazas at the Keene Road and the Hiawassee Road interchanges. All three toll locations are included in the Coral Hills Main plaza group. Other existing interchanges include S.R. 429 and U.S. 441/Orange Blossom Trail. A map of S.R. 414 including the FY 2017 CFX toll rates for the mainline and ramp toll plazas is shown in **Figure 7-1**.

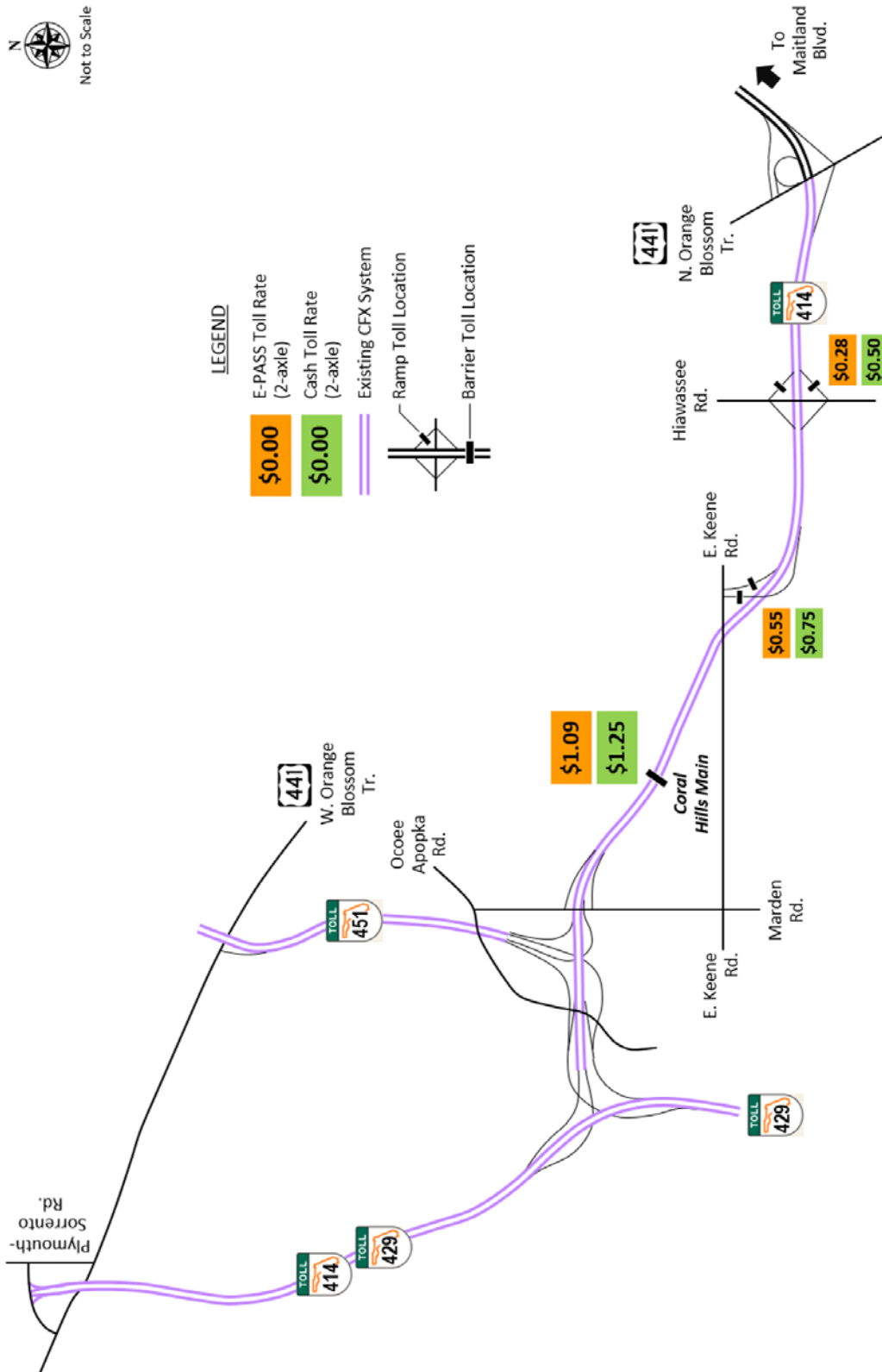


CFX began construction on Phase I of the S.R. 414 in January 2007. CFX was able to partially open the new expressway to electronic toll collection customers from S.R. 429 to Hiawassee Road on February 14, 2009, because construction was ahead of schedule. The entire length of Phase I was opened to all traffic on May 15, 2009, earlier than originally scheduled.

In June 2010, construction began on Phase II of S.R. 414, which included a new interchange between S.R. 414 and S.R. 429 and an extension of S.R. 429/S.R. 414 northwest to U.S. 441 near Plymouth Sorrento Road. This interchange, which was completed in October 2012, helped improve traffic flow between S.R. 429 and S.R. 414, accommodated for future growth in west Orange County and provided improved access to I-4 and the attractions. The extension of S.R. 429/S.R. 414 to U.S. 441 near Plymouth Sorrento Road opened in January 2013. This expressway featured sections with up to six travel lanes (three in each direction) and a new connector road that allows access between S.R. 429 and U.S. 441 near Plymouth Sorrento Road. In addition, the section of S.R. 429 from north of S.R. 414 to U.S. 441 was re-designated S.R. 451.

In June 2017, a partial interchange opened on S.R. 414 at Marden Road, which allows traffic traveling west on S.R. 414 to exit at Marden Road while traffic on Marden Road can enter on to eastbound S.R. 414. This interchange provides additional local access from S.R. 414, specifically to the new Florida Hospital Apopka.

Figure 7-1
S.R. 414 Facilities and Toll Rates



7.2 Historical Transactions and Toll Revenues

7.2.1 ANNUAL TRANSACTION AND TOLL REVENUE TRENDS

A history of S.R. 414 annual transactions for the Coral Hills Main plaza group through FY 2017 is presented in the top half of **Table 7-1**. Annual historical toll revenues are also summarized and totaled in the bottom half of the table. The facility data and annual growth are also presented visually in **Figure 7-2** and **Figure 7-3**. Total transactions on S.R. 414 in FY 2017 increased by 0.8 million transactions, or 6.7 percent, over FY 2016. Toll revenues increased by \$1.0 million, or 8.3 percent, in FY 2017. The facility has only been open for eight years with the first full year of operation in FY 2010. There was no toll rate increase at the Coral Hills Main plaza in FY 2009 since the road was not fully opened until after the toll increase went into effect, however tolls did increase during the FY 2013 Systemwide toll rate increase. This facility is expected to continue experiencing growth due to the opening of the Wekiva Parkway (S.R. 429) in next fiscal year.

Table 7-1
S.R. 414 Plaza Groups – Historical Transactions and Toll Revenues
FY 2009 – FY 2017

Fiscal Year	Coral Hills Main	
	TRANSACTIONS (millions)	PERCENT CHANGE
2009 ^A	0.6	
2010	5.3	783.3%
2011	6.5	22.6%
2012	7.3	12.3%
2013 ^B	8.3	13.1%
2014	9.5	14.5%
2015	10.6	11.6%
2016	12.0	13.2%
2017 ^C	12.8	6.7%
	TOLL REVENUE (millions)	PERCENT CHANGE
2009 ^A	\$0.6	
2010	\$4.2	600.0%
2011	\$5.1	21.4%
2012	\$5.7	11.8%
2013 ^B	\$7.7	35.4%
2014	\$9.1	18.2%
2015	\$10.4	14.3%
2016	\$12.0	15.4%
2017 ^C	\$13.0	8.3%

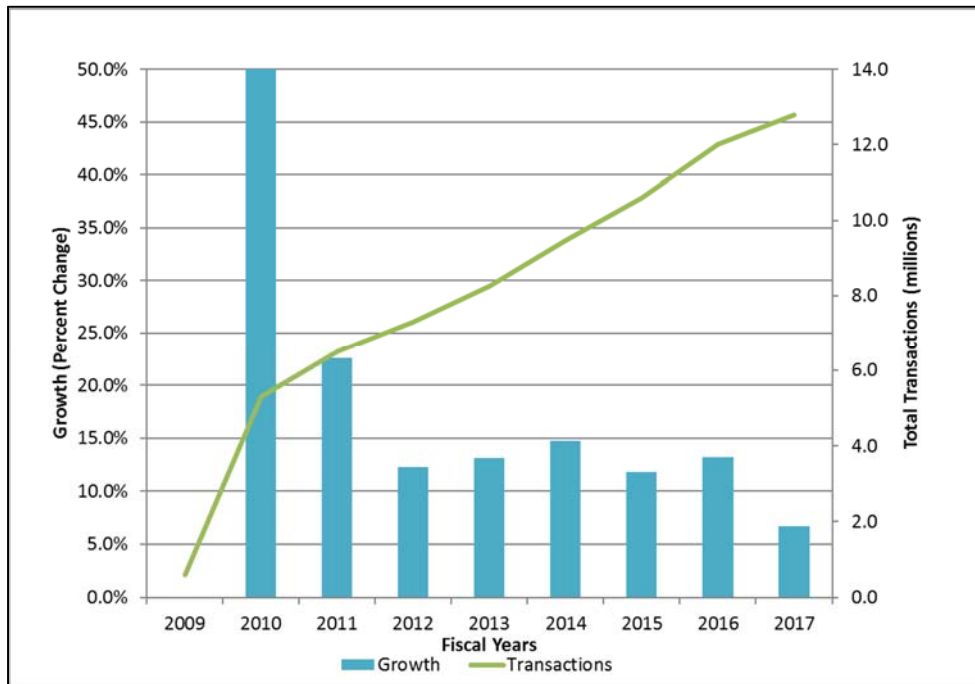
Notes:

A - Opened to electronic traffic on February 14, 2009 and all traffic on May 15, 2009.

B - Systemwide toll rate increase in July 2013. Implementation of cash and electronic toll rate differential. Extension of S.R. 414 to U.S. 441 opened in January 2013.

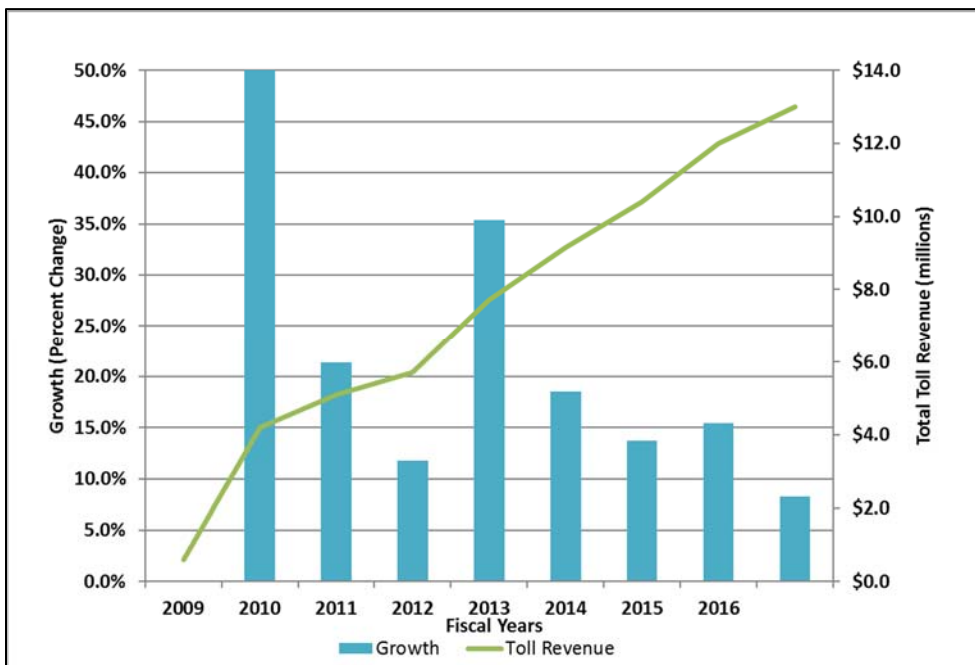
C - Effects from Hurricane Matthew in October 2016. Marden Rd. interchange opened in June 2017.

Figure 7-2
S.R. 414 Historical Transactions and Annual Growth
FY 2009 – FY 2017



Source: CFX Statistical Report June 2017

Figure 7-3
S.R. 414 Historical Toll Revenue and Annual Growth
FY 2009 – FY 2017



Source: CFX Statistical Report June 2017

7.2.2 MONTHLY TRANSACTION SEASONAL VARIATION

In **Table 7-2**, monthly total traffic volumes are normalized to average number of transactions per day in each month. Using average number of transactions per day allows for an easy comparison of the variations in relative travel demand over the year. The pattern of seasonal usage changes slightly from year to year, based on the number of weekdays in each month. October average daily transactions were adjusted to only include 27 days of toll collection during the month. Tolls were suspended the remaining 4 days due to Hurricane Matthew.

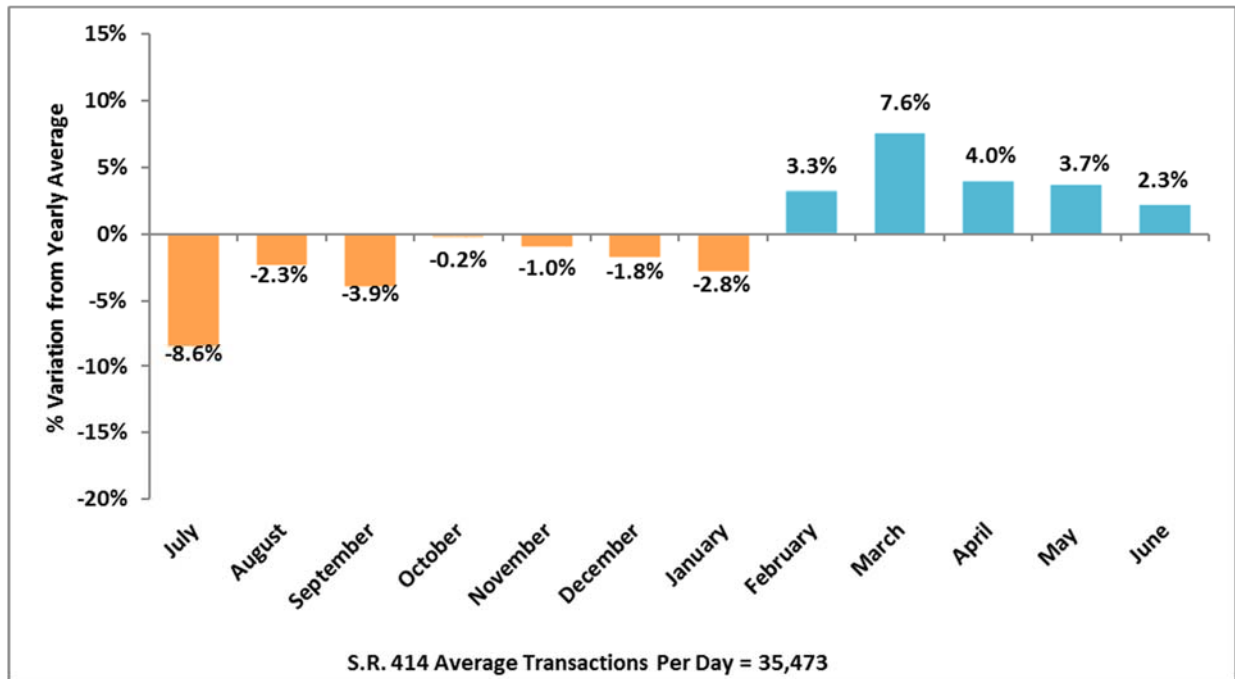
As presented, average transactions per day in FY 2017 on S.R. 414 ranged from a high of 38,171 in March 2017 to a low of 32,433 in July 2016. It is difficult to determine a seasonal traffic pattern on this facility since it is still experiencing significant growth as a result of the facility only being open for a few years. Also, more tourists in the area (possibly snowbirds) during the second half of the fiscal year could also be the reason for higher number of transactions per day during those months. This data is presented in a graphical format in **Figure 7-4**. Each month's average transactions per day appear as a percentage of the average for the fiscal year. March transactions were 7.6 percent above average and July transactions were 8.6 percent below average for the facility. These numbers reflect a combination of continued growth and seasonal variation.

Table 7-2
S.R. 414 – Monthly Seasonal Variation in Toll-Paying Traffic
FY 2017

Month	Number of Days in Month	Total Toll Paying Transactions	Average Transactions/day	Seasonal Factor
July	31	1,005,411	32,433	0.914
August	31	1,073,933	34,643	0.977
September	30	1,022,573	34,086	0.961
October	27	955,514	35,389	0.998
November	30	1,053,709	35,124	0.990
December	31	1,080,122	34,843	0.982
January	31	1,068,763	34,476	0.972
February	28	1,026,245	36,652	1.033
March	31	1,183,295	38,171	1.076
April	30	1,107,112	36,904	1.040
May	31	1,140,635	36,795	1.037
June	30	1,088,476	36,283	1.023
Average		1,067,149	35,473	1.000
Total Year	361	12,805,788		

Source: CFX Statistical Report June 2017

Figure 7-4
S.R. 414 Variation in Transactions Per Day, by Month
FY 2017



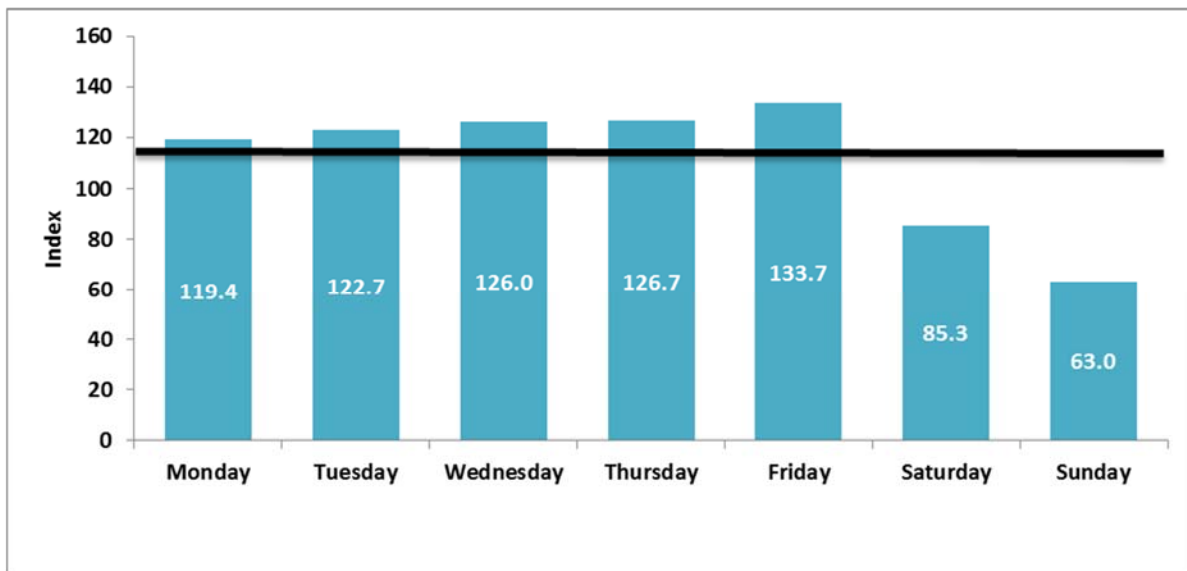
Source: CFX Statistical Report June 2017

7.2.3 DAY-OF-WEEK TOLL TRANSACTION VARIATION

Figure 7-5 contains a comparison of toll transactions by day of week against AADT. This data is presented as an index, where the AADT equals 100. An index value of 100 for a given day of the week would indicate that day’s transactions were precisely the same volume as the facility’s AADT. A value of 120 would indicate a day that has 20 percent greater volume than the AADT. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

As shown, weekday transactions on S.R. 414 fluctuated over the course of the week. Transactions were highest on Fridays, with an index value of 133.7 (33.7 percent higher than the average day), volumes on Thursdays had an index value of 126.7, and volumes on Monday through Wednesday ranged from index values of 119.4 to 126.0. Transactions decline significantly on Saturdays and Sundays, which have index values of 85.3 and 63.0, or 14.7 and 37.0 percent lower than the average day.

Figure 7-5
S.R. 414 Variation in Day-of Week Toll Transactions, By Day
FY 2017



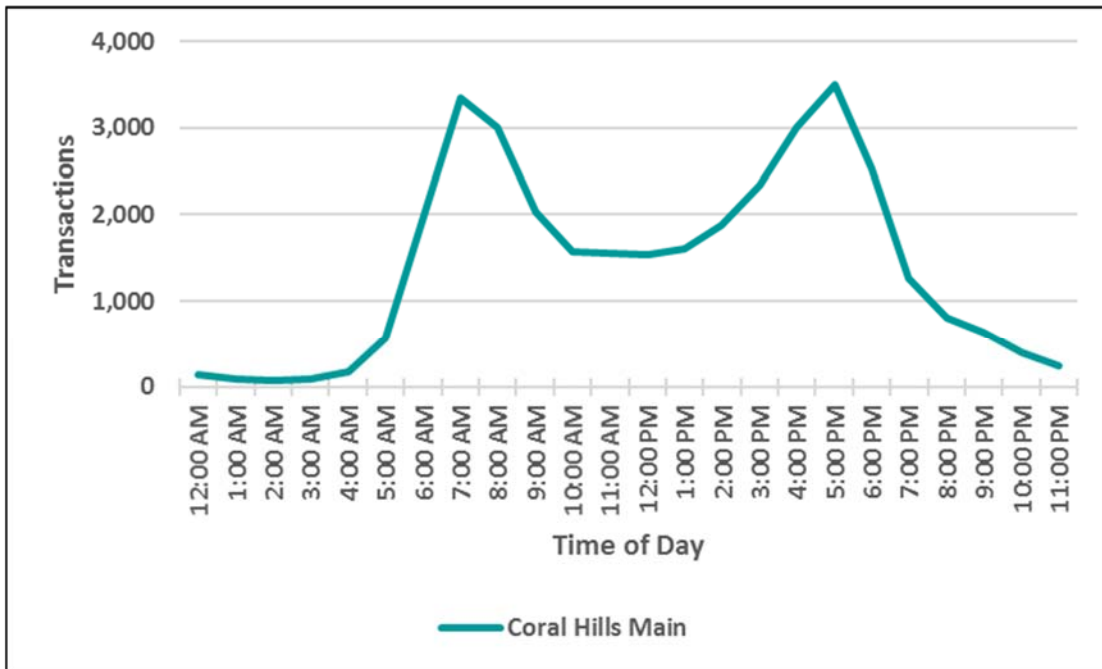
Source: Unaudited lane transaction data – January 2017

7.2.4 DAILY TRAFFIC DISTRIBUTION

The daily distribution of traffic includes information on the usage characteristics of travel on the facility. The daily distributions represent counts taken during a typical week at the mainline plaza in the month of January. The typical weekday distribution is shown in **Figure 7-6** and the weekend distribution is shown in **Figure 7-7**. The figures contain the sum of traffic volumes in both directions.

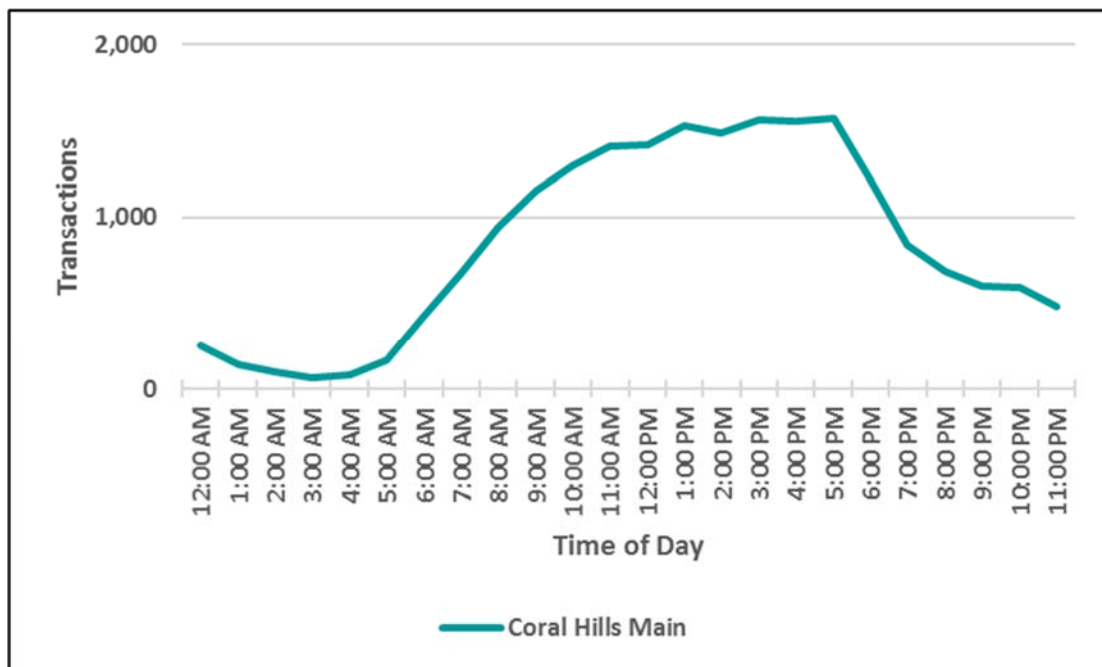
On weekdays, demand for travel at the Coral Hills plaza is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours are higher than in the morning peak hours. The highest peak hour volumes during the week were 3,500 per hour beginning at 5:00 P.M. On weekends, traffic volumes are lower and there is no clear morning or evening peak periods, indicating that many customers use the facility for non-work trip purposes. This weekend pattern is typical of the weekend usage of CFX facilities.

Figure 7-6
S.R. 414 Daily Traffic Variation (Weekday)
FY 2017 (January)



Source: Unaudited lane transaction data – January 2017

Figure 7-7
S.R. 414 Daily Traffic Variation (Weekend)
FY 2017 (January)

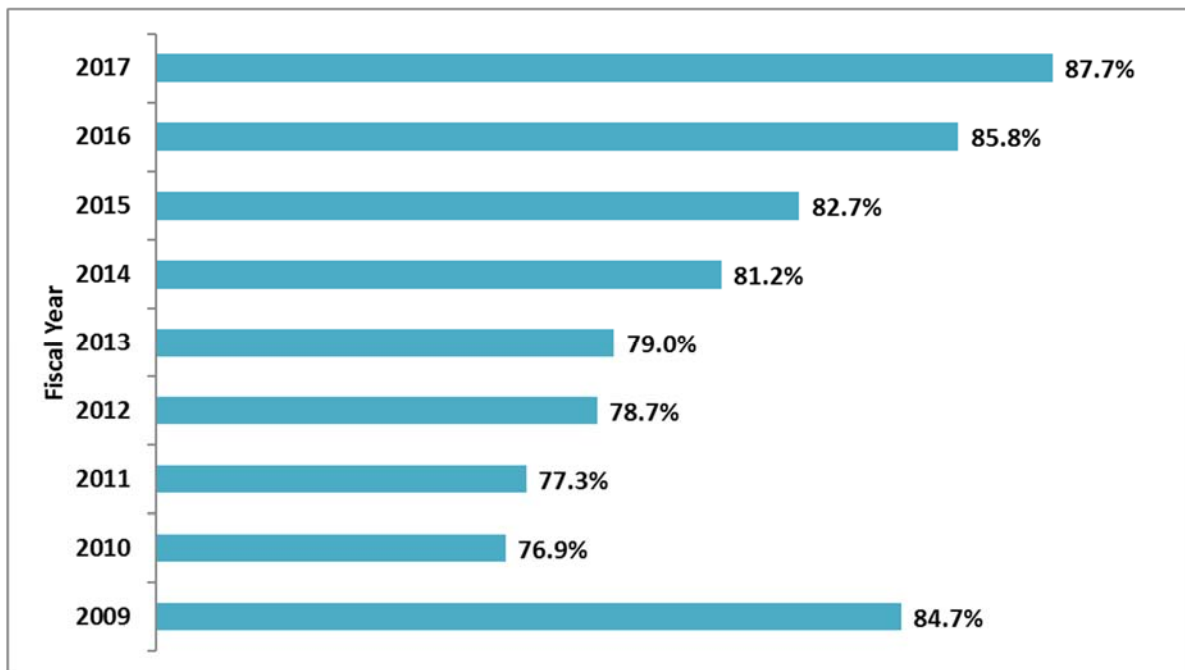


Source: Unaudited lane transaction data – January 2017

7.3 ETC Usage

The percent of revenues generated from ETC over the past nine fiscal years on S.R. 414 is shown in **Figure 7-8**. ETC revenues were 84.7 percent during FY 2009. This was an anomaly since the facility opened to electronic customers only until May 2009. By the end of FY 2017, ETC revenues have reached 87.7 percent of facility revenues. ETC usage is expected to increase with opening of the Wekiva Parkway (S.R. 429), an all-electronic facility in the next fiscal year.

Figure 7-8
S.R. 414 Percent of Toll Revenue from Electronic Toll Collection
FY 2009 – FY 2017



Source: CFX Statistical Report June 2017

7.4 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

Future transportation improvements that could influence the T&R forecasts for S.R. 414, are similar to those that could influence S.R. 429 and include the projects listed in **Table 7-3**, assumed to be completed in each horizon year.

In addition to the Wekiva Parkway, the intersection improvements at S.R. 451 and U.S. 441 are important to T&R estimates in the early years. This feeder road improvement, completed in 2013, extends Vick Road to U.S 441 and the interchange with S.R. 451, to provide a direct connection onto the expressway system.

Table 7-3
S.R. 414 - Key Transportation Improvements

Facility	From	To	Horizon Year	Jurisdiction	Improvement
S.R. 451/U.S. 441	U.S. 441	Vick Road	2018	CFX	Intersection Improvements
Clarcona - Ocoee Road	Clarke Road	Hiawassee Road	2023	Orange County	Widen 4-6 lanes
Clarcona Road	Clarcona-Ocoee Road	Keene Street	2023	Orange County	Widen 4-6 lanes
McCormick Road	Ocoee-Apopka Road	Ingram Road	2023	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	West Road	Binion Road	2023	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	Fullers Cross Road	West Road	2023	Orange County	Widen 4-6 lanes
Plymouth-Sorrento Road/ C.R. 437	Kelly Park Road	U.S. 441/Orange Blossom Trail	2023	Orange County	Widen 2-4 lanes
Roberson Road	Windermere Road	Maguire Road	2023	Orange County	Widen 2-4 lanes
Binion Road	Ocoee-Apopka Road	Lust Road	2028	Orange County	Widen 2-4 lanes
Ocoee-Apopka Road	Binion Road	Bradshaw Road	2028	Orange County	Widen 2-4 lanes
Rock Springs Road/Park Avenue - Apopka	U.S. 441/Orange Blossom Trail	Welch Road	2028	Orange County	Widen 4-6 lanes
Hiawassee Road	Clarcona-Ocoee Road	Apopka Boulevard	2028	Orange County	Widen 4-6 lanes
Pine Hills Road	Clarcona-Ocoee Road	Beggs Road	2028	Orange County	Widen 4-6 lanes
Clarcona-Ocoee Road	West Road	Adair Street	2033	Orange County	Widen 4-6 lanes
Ocoee-Apopka Road	S.R. 438/Silver Star Road	Fullers Cross Road	2033	Orange County	Widen 4-6 lanes
Thompson Road	Semorán Boulevard	Welch Road	2033	Orange County	Widen 2-4 lanes

Other CFX System improvements including the Marden Road interchange have improved the potential for growth in NW Orange County and S.R. 414. The growth potential is also demonstrated by the planned improvements to the local street system in the forecast model. Many facilities including Hiawassee Road, Pine Hills Road, Clarcona Road, Ocoee-Apopka Road, Clarcona-Ocoee Road, Plymouth-Sorrento Road, Rock Springs Road and Binion Road, serve as feeder roads to S.R. 414 and positively impact T&R in the near term and long-term forecasts. The future construction of the Wekiva Parkway is also a positive sign for the growth potential along S.R. 414.

Historical and projected transactions and toll revenues for S.R. 414 are summarized in **Table 7-4** and **Table 7-5**.

Total transactions on S.R. 414 are projected to increase during the forecast period from the actual of 12.8 million in FY 2017 to 21.5 million in FY 2047. Total revenues on S.R. 414 are projected to increase during the forecast period from the actual \$13.0 million in FY 2017 to \$31.6 million in FY 2047. S.R. 414 is expected to be the smallest contributor to total revenues of the five existing expressways. Transactions and revenues are forecasted to increase an average of 2.8 and 4.3 percent per year through FY 2027, 1.5 and 2.7 percent per year from FY 2027 to FY 2037, and 0.9 and 2.1 percent per year from FY 2037 to FY 2047, respectively.

Table 7-4
S.R. 414 Plaza Groups – Transaction Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Coral Hills Main		Percent Annual Change
	Actual ^A	Projected	
2009 ^B	0.6		
2010	5.3		783.3%
2011	6.5		22.6%
2012	7.3		12.3%
2013 ^C	8.3		13.7%
2014	9.5		14.5%
2015	10.6		11.6%
2016	12.0		13.2%
2017 ^D	12.8		6.7%
2018 ^E		13.3	4.1%
2019 ^F		13.9	4.1%
2020		14.4	3.7%
2021 ^G		14.9	3.3%
2022		15.3	3.0%
2023		15.7	2.6%
2024		16.1	2.3%
2025		16.4	1.9%
2026		16.6	1.6%
2027		16.9	1.6%
2028		17.2	1.7%
2029		17.5	1.6%
2030		17.7	1.5%
2031		18.0	1.5%
2032		18.3	1.6%
2033		18.6	1.5%
2034		18.8	1.5%
2035		19.1	1.4%
2036		19.3	1.4%
2037		19.6	1.3%
2038		19.8	1.2%
2039		20.1	1.2%
2040		20.3	1.0%
2041		20.5	1.0%
2042		20.7	1.0%
2043		20.9	0.9%
2044		21.1	0.9%
2045		21.2	0.8%
2046		21.4	0.8%
2047		21.5	0.7%

Fiscal Year		
2009 - 2017	46.6%	
2017 - 2027	2.8%	
2027 - 2037	1.5%	
2037 - 2047	0.9%	

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports.
- B - Opened to electronic traffic on February 14, 2009 and to all traffic on May 15, 2009.
- C - Systemwide toll rate increase.
- D - Effects from Hurricane Matthew in October 2016.
- E - Wekiva Parkway opening in FY 2018.
- F - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- G - Completion of I-4 Ultimate project.

**Table 7-5
S.R. 414 Plaza Groups – Toll Revenue Projections (Millions)
FY 2018 – FY 2047**

Fiscal Year	Coral Hills Main		Percent Annual Change
	Actual ^A	Projected	
2009 ^B	\$0.6		
2010	4.2		600.0%
2011	5.1		21.4%
2012	5.7		11.8%
2013 ^C	7.7		35.1%
2014	9.1		18.2%
2015	10.4		14.3%
2016	12.0		15.4%
2017 ^D	13.0		8.3%
2018 ^E		\$13.7	5.4%
2019 ^F		14.6	6.3%
2020		15.3	5.4%
2021 ^G		16.1	5.0%
2022		16.8	4.5%
2023		17.5	4.0%
2024		18.2	3.7%
2025		18.7	3.3%
2026		19.3	2.9%
2027		19.8	2.9%
2028		20.4	2.8%
2029		21.0	2.8%
2030		21.6	2.8%
2031		22.1	2.7%
2032		22.7	2.7%
2033		23.3	2.6%
2034		23.9	2.6%
2035		24.6	2.5%
2036		25.2	2.5%
2037		25.8	2.4%
2038		26.4	2.3%
2039		27.0	2.3%
2040		27.6	2.2%
2041		28.2	2.2%
2042		28.8	2.1%
2043		29.4	2.0%
2044		29.9	2.0%
2045		30.5	1.9%
2046		31.1	1.8%
2047		31.6	1.8%

Fiscal Year		
2009 - 2017	46.9%	
2017 - 2027	4.3%	
2027 - 2037	2.7%	
2037 - 2047	2.1%	

Notes:

- A - Actual transaction data provided by CFX from Monthly Statistical Reports.
- B - Opened to electronic traffic on February 14, 2009 and to all traffic on May 15, 2009.
- C - Systemwide toll rate increase.
- D - Effects from Hurricane Matthew in October 2016.
- E - Wekiva Parkway opening in FY 2018.
- F - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.
- G - Completion of I-4 Ultimate project.

Chapter 8
S.R. 453



S.R. 453

8.1 Facility Description

S.R. 453 is a 2.0 mile portion of the project locally known as the Wekiva Parkway, which will be a new 27-mile expressway that extends S.R. 429 into northwest Orange, southeast Lake, and east Seminole counties. From a CFX vision in the *Year 2000 Long Range Expressway Plan*, completed in 1983, the Wekiva Parkway is now under design and construction. This long-awaited expressway will complete the Western Beltway around the Orlando metropolitan region. S.R. 453 will provide connection from the Wekiva Parkway northwest to Mount Dora via S.R. 46 in Lake County. S.R. 453 has one mainline toll plaza, the Coronado Main plaza, which is scheduled to open on March 1, 2018 (FY 2018). A map of the future S.R. 453 including the proposed opening toll rates for the plaza is shown in **Figure 8-1**.

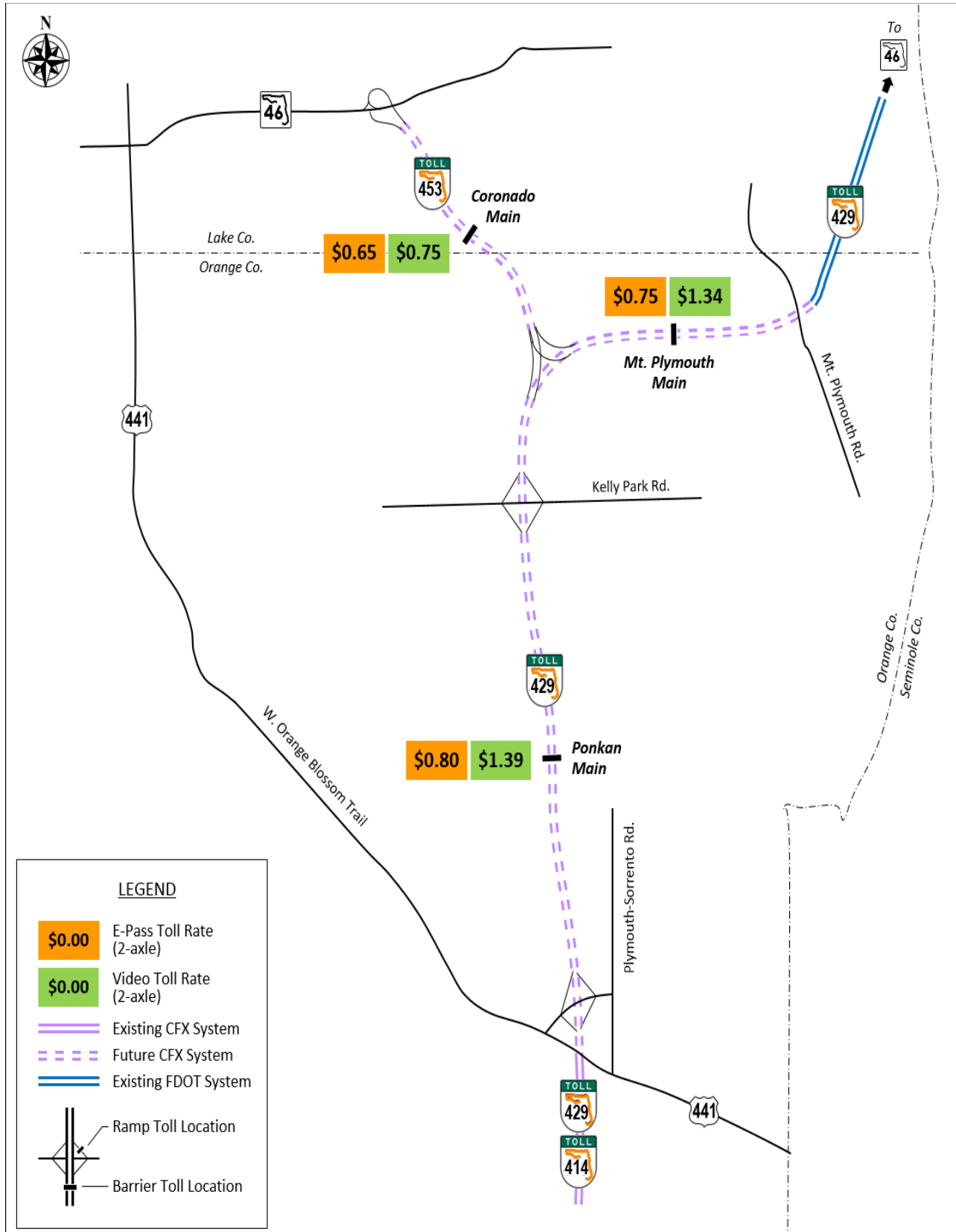


S.R. 453 will be a spur of the extension of S.R. 429, which currently terminates just north of U.S. 441 near Apopka. The new S.R. 429 extension would ultimately connect to S.R. 417 at I-4 near Sanford, thus completing the beltway around the northwest section of the Orlando metropolitan region. S.R. 453 will run about 2.2 miles from the planned Wekiva Parkway, across the Lake County Line to connect to S.R. 46.

Toll collection on the Wekiva Parkway will utilize an all-electronic toll (AET) collection system, i.e., customers will not be able to pay cash on the roadway as there will be no toll booths, only toll gantries. On the CFX portion of the Wekiva Parkway, customers will either pay with E-PASS/SunPass or by Pay-by-Plate video billing. Video billing customers will pay the E-PASS toll amount plus a surcharge on each transaction, which is designed to cover the administrative cost of video billing. Future tolls include toll rate increases based on the toll rate indexing policy of each agency (CFX and FDOT). A detailed description of the entire Wekiva Parkway project is included in Chapter 1 of this report.



**Figure 8-1
S.R. 453 Facilities and Toll Rates**



8.2 Forecasted Transactions and Toll Revenues

Based on the recently adopted “Customer First Toll Policy,” toll rate adjustments (indexed tolls) were applied to the T&R forecasts every year based on the net change in CPI of 2.05 percent in FY 2019 and 1.5 percent per year thereafter.

Future transportation improvements that influence the T&R forecasts for S.R. 453, are similar to those that could influence S.R. 429, which include the projects listed in **Table 8-1**, assumed to be completed in each model horizon year.

Table 8-1
S.R. 453 - Key Transportation Improvements

Facility	From	To	Horizon Year	Jurisdiction	Improvement
S.R. 451/U.S. 441	U.S. 441	Vick Road	2018	CFX	Intersection Upgrade
SR 46	U.S. 441	Round Lake Road	2018	Lake County	Widen 2 to 4 Lanes
Plymouth-Sorrento Road/C.R. 437	Kelly Park Road	U.S. 441	2023	Orange County	Widen 2 to 4 Lanes
SR 500/U.S. 441	S.R. 46	Perkins Street	2023	Lake County	Widen 4 to 6 Lanes
Binion Road	Ocoee-Apopka Road	Lust Road	2028	Orange County	Widen 2 to 4 Lanes
Rock Springs Road/Park Avenue	U.S. 441	Welch Road	2028	Orange County	Widen 4 to 6 Lanes
Mt. Plymouth Road	Kelly Park Road	Lake County Line	2033	Orange County	Widen 2 to 4 Lanes
Round Lake Road	Wolf Branch Road	SR 44	2038	Lake County	New 4 Lane Road
Round Lake Road	SR 44	SR 46	2038	Lake County	Widen 2 to 4 Lanes
SR 44	Orange Avenue	US 441	2038	Lake County	Widen 2 to 4 Lanes

A majority of the planned improvements provide a needed upgrade to the transportation system to NW Orange County. These projects improve connectivity and capacity needs that will link this part of Orange County to S.R. 429. Many facilities including Kelly Park Road, Rock Springs Road, Sadler Road and Round Lake Road, serve as feeder roads to S.R. 429 and positively impact T&R in the near term and long term forecasts. Virtually any improvement which provides additional connectivity to S.R. 429 from the south and east will inherently benefit S.R. 453 as well. The construction of the Wekiva Parkway may also delay the need to improve some of the parallel facilities such as Plymouth–Sorrento Road, Round Lake Road and Rock Springs Road.

Projected transactions and toll revenues for S.R. 453 are summarized in **Table 8-2** and **Table 8-3**. The Coronado Main plaza opened on April 1, 2018 (FY 2018).

The forecasts expect that total transactions start at 0.4 million in FY 2018, and increase to 1.9 million in FY 2019, given the partial opening and system “ramp-up.” Total revenues on S.R. 453 are projected to start at \$0.3 million in FY 2018 and increase to \$1.2 million in FY 2019. During the FY 2018 through FY 2047 forecast period, S.R. 453 traffic is expected to increase an average of 25.8 percent per year from FY 2018 to FY 2027 (due to ramp-up), 3.5 percent per year from FY 2027 to FY 2037 and 2.6 percent per year from FY 2037 to FY 2047. Revenue is expected to increase an average of 28.5 percent per year from FY 2018 to FY 2027 (again due to ramp-up), 4.7 percent per year from FY 2027 to FY 2037 and 3.2 percent per year from FY 2037 to FY 2047.

Table 8-2
S.R. 453 Plaza Group – Transaction Projections (Millions)
FY 2018 – FY 2047

Fiscal Year	Coronado Main		Percent Annual Change
	Actual	Projected	
2018 ^A		0.4	
2019 ^B		1.9	367.5%
2020		2.1	13.4%
2021 ^C		2.4	12.3%
2022		2.5	5.5%
2023		2.6	5.2%
2024		2.8	4.9%
2025		2.9	4.7%
2026		3.0	4.5%
2027		3.2	4.3%
2028		3.3	4.1%
2029		3.4	4.0%
2030		3.6	3.8%
2031		3.7	3.7%
2032		3.8	3.5%
2033		3.9	3.4%
2034		4.1	3.3%
2035		4.2	3.2%
2036		4.3	3.1%
2037		4.5	3.0%
2038		4.6	2.9%
2039		4.7	2.8%
2040		4.9	2.8%
2041		5.0	2.7%
2042		5.1	2.6%
2043		5.2	2.5%
2044		5.4	2.5%
2045		5.5	2.4%
2046		5.6	2.4%
2047		5.8	2.1%

Fiscal Year		
2018 - 2027	25.8%	
2027 - 2037	3.5%	
2037 - 2047	2.6%	

Notes:

A - Coronado Main opened on April 1, 2018 (FY 2018).

B - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.

C - Completion of I-4 Ultimate project.

**Table 8-3
S.R. 453 Plaza Group – Toll Revenue Projections (Millions)
FY 2018 – FY 2047**

Fiscal Year	Coronado Main		Percent Annual Change
	Actual	Projected	
2018 ^A		\$0.3	
2019 ^B		1.2	365.4%
2020		1.4	16.5%
2021 ^C		1.6	14.2%
2022		1.8	9.3%
2023		1.9	8.0%
2024		2.1	7.9%
2025		2.2	7.3%
2026		2.3	6.4%
2027		2.5	6.4%
2028		2.6	6.0%
2029		2.8	5.3%
2030		2.9	5.4%
2031		3.1	4.8%
2032		3.2	4.9%
2033		3.4	4.7%
2034		3.5	4.2%
2035		3.7	4.3%
2036		3.8	4.1%
2037		4.0	3.7%
2038		4.1	3.8%
2039		4.3	3.7%
2040		4.4	3.3%
2041		4.5	3.4%
2042		4.7	3.1%
2043		4.8	3.2%
2044		5.0	3.1%
2045		5.1	2.8%
2046		5.3	2.9%
2047		5.4	2.8%

Fiscal Year		
2018 - 2027	28.5%	
2027 - 2037	4.7%	
2037 - 2047	3.2%	

Notes:

A - Coronado Main opened on April 1, 2018 (FY 2018).

B - First year of implementation of "Customer First" toll rate policy and assumed toll rate increase of 2.05% in FY 2019. Annual toll rate increase of 1.5% assumed throughout forecast period.

C - Completion of I-4 Ultimate project.

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Appendix A
Traffic Profiles
CY 2017 - CY 2047



S.R. 528 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
	To S.R. 528 (FL Turnpike)				
	↑				
		86,300	98,000	104,600	109,500
Boggy Creek Road	▬	7,200	8,400	9,000	9,400
	↔	18,600	21,800	23,400	24,500
	▬	97,700	111,400	119,000	124,600
Tradeport Drive / Conway Road	▬	7,200	8,400	9,000	9,400
	↔	6,700	7,900	8,500	8,900
	▬	97,200	110,900	118,500	124,100
Semoran Boulevard	▬	47,400	55,600	59,700	62,600
	↔	33,800	39,700	42,600	44,600
	▬	83,600	95,000	101,400	106,100
Goldenrod Road	▬	6,600	7,700	8,300	8,700
	↔	8,600	10,100	10,800	11,300
	▬	85,600	97,400	103,900	108,700
Narcoossee Road	▬	24,200	28,400	30,500	32,000
	↔	6,400	7,500	8,000	8,400
	▬	67,800	76,500	81,400	85,100
S.R. 417	▬	33,500	40,800	46,200	50,900
	↔	27,000	33,100	38,000	42,400
<i>Beachline Main</i>	▬	61,300	68,800	73,200	76,600
International Corporate Park	▬	10,200	11,600	12,400	13,000
	↔	1,900	2,200	2,300	2,400
	▬	53,000	59,400	63,100	66,000
Dallas Boulevard	▬	4,800	5,400	5,700	6,000
	↔	-	-	-	-
<i>Dallas Main</i>	▬	48,200	54,000	57,400	60,000
S.R. 520	▬	8,900	10,000	10,600	11,100
	↔	3,000	3,400	3,600	3,800
	▬	42,300	47,400	50,400	52,700
	↓				
	To S.R. 528 (FL Turnpike)				

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 408 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
Turnpike Spur		59,400	67,900	74,300	79,200
		59,400	67,900	74,300	79,200
S.R. 50 West		7,900	9,200	9,900	10,500
		67,300	77,100	84,200	89,700
Good Homes Road		10,300	12,100	13,100	13,900
		9,300	10,900	11,800	12,500
<i>Hiawassee Main</i>		66,300	75,900	82,900	88,300
Hiawassee Road		3,200	4,200	5,000	5,800
		10,000	11,700	12,600	13,400
		73,100	83,400	90,500	95,900
Kirkman Road		7,500	9,300	10,500	11,600
		11,000	12,600	13,600	14,400
		76,600	86,700	93,600	98,700
Pine Hills Road		5,200	5,900	6,400	6,800
<i>Pine Hills Main</i>		81,800	92,600	100,000	105,500
Old Winter Garden Rd		4,500	5,100	5,500	5,800
		86,300	97,700	105,500	111,300
John Young Parkway		7,000	8,000	8,600	9,600
		8,100	9,300	10,100	10,700
		87,400	99,000	107,000	112,400
Tampa Avenue		3,000	3,400	3,700	4,400
		84,400	95,600	103,300	108,000
Orange Blossom Trail		6,100	7,000	7,600	8,600
		8,100	9,300	10,100	10,700
		86,400	97,900	105,800	110,100
Interstate-4		20,300	25,200	29,200	33,000
		65,000	68,700	71,300	72,800
		131,100	141,400	147,900	149,900
Orange Avenue/ Rosalind Avenue		10,400	11,000	11,400	11,600
		10,500	11,100	11,500	11,700
		131,200	141,500	148,000	150,000

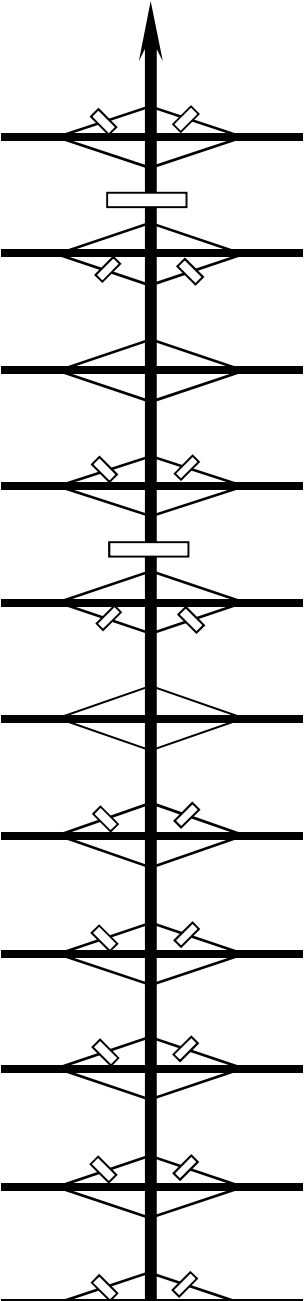
Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 408 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
Mills Avenue		1,300	1,400	1,500	1,500
		10,300	10,900	11,300	11,500
		140,200	151,000	157,800	160,000
Bumby Avenue/ Crystal Lake Drive		12,600	13,300	13,800	14,100
		13,100	13,900	14,400	14,700
		140,700	151,600	158,400	160,600
Conway Road		11,500	12,200	12,700	13,000
		129,200	139,400	145,700	147,600
Yucatan Drive		10,400	11,000	11,400	11,600
Conway Main		118,800	128,400	134,300	136,000
Semorán Boulevard		11,600	12,300	12,800	13,100
		9,100	9,600	10,000	10,200
		116,300	125,700	131,500	133,100
Goldenrod Road		13,700	14,500	15,100	15,400
		12,000	12,700	13,200	13,500
		114,600	123,900	129,600	131,200
Chickasaw Trail		11,400	12,100	12,600	12,900
		103,200	111,800	117,000	118,300
S.R. 417		48,300	52,800	54,800	55,900
		21,700	24,800	29,000	32,100
		76,600	83,800	91,200	94,500
Dean Road		11,600	12,700	13,800	14,300
		2,700	3,000	3,300	3,400
Dean Main		67,700	74,100	80,700	83,600
Rouse Road		9,900	10,800	11,800	12,200
		1,100	1,200	1,300	1,300
		58,900	64,500	70,200	72,700
Alafaya Trail		26,400	28,900	31,500	32,600
		32,500	35,600	38,700	40,100
S.R. 50		23,900	26,200	28,500	29,500
		8,600	9,400	10,200	10,600
	To Challenger Parkway				

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 417 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
	To S.R. 417 (FL Turnpike)				
					
		70,800	83,300	92,600	97,900
University Boulevard		6,400	7,200	7,800	8,200
		20,700	23,200	25,100	26,400
<i>University Main</i>		85,100	99,300	109,900	116,100
S.R. 50		5,900	6,100	6,100	5,900
		8,100	9,600	10,900	12,000
		87,300	102,800	114,700	122,200
S.R. 408		36,500	40,000	42,200	43,300
		32,600	37,600	41,600	44,700
		83,400	100,400	114,100	123,600
Curry Ford Road		7,800	8,500	9,200	9,700
		9,200	12,200	14,900	17,500
<i>Curry Ford Main</i>		84,800	104,100	119,800	131,400
Lee Vista Boulevard		4,800	5,400	6,200	6,900
		3,600	4,400	5,000	5,500
		83,600	103,100	118,600	130,000
S.R. 528		42,500	51,900	59,100	65,500
		18,000	22,000	25,100	27,800
		59,100	73,200	84,600	92,300
Dowden Road		3,300	4,700	5,400	5,900
		1,700	3,400	3,900	4,300
		57,500	71,900	83,100	90,700
Moss Park Road		7,100	10,100	11,700	12,800
		2,300	4,300	5,000	5,500
		52,700	66,100	76,400	83,400
Narcoossee Road		11,700	16,600	19,200	20,900
		7,100	11,100	12,800	14,000
		48,100	60,600	70,000	76,500
Lake Nona Road		5,100	7,200	8,300	9,100
		5,900	9,400	10,900	11,900
		48,900	62,800	72,600	79,300
Boggy Creek Road		6,700	9,500	11,000	12,000

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 417 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
		21,500	32,500	37,600	41,000
<i>Boggy Creek Main</i>		63,700	85,800	99,200	108,300
Landstar Boulevard		6,800	9,200	10,600	11,600
		14,700	19,900	23,000	25,100
		71,600	96,500	111,600	121,800
Florida's Turnpike		13,200	17,900	20,700	22,600
		7,000	9,500	11,000	12,000
		65,400	88,100	101,900	111,200
Orange Blossom Trail		8,400	11,400	13,200	14,400
		9,400	12,200	14,100	15,400
		66,400	88,900	102,800	112,200
John Young Parkway		11,400	15,400	17,800	19,400
		8,800	11,400	13,200	14,400
<i>John Young Main</i>		63,800	84,900	98,200	107,200
International Drive		33,700	45,600	52,800	57,600
		30,100	39,300	45,400	49,600
	To S.R. 417 (FL Turnpike)				

*S.R. 417 full interchange with Florida's Turnpike is scheduled to open in 2018.

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 429 - Two-Way Daily Revenue Traffic

Cross Street






FY 2017 FY 2027 FY 2037 FY 2047

Cross Street	FY 2017	FY 2027	FY 2037	FY 2047
To FDOT Section of S.R. 429 (Wekiva Parkway)				
<i>*Mount Plymouth Main</i>	-	15,000	26,100	31,300
<i>*S.R. 453 Coronado Main (To S.R. 46/Mt. Dora)</i>	-	1,700	3,900	3,200
	-	6,900	8,300	12,600
	-	20,200	30,500	40,700
Kelly Park Road	-	2,000	3,800	5,100
	-	1,500	2,100	2,700
<i>*Ponkan Main</i>	-	19,700	28,800	38,300
U.S. 441	-	3,000	5,200	7,700
	-	15,000	16,400	17,600
	24,300	31,700	40,000	48,200
S.R. 414	8,300	10,300	13,600	16,500
	28,400	33,200	35,400	36,600
	44,400	54,600	61,800	68,300
C.R. 437A	1,300	1,600	1,800	2,000
	4,400	5,400	6,100	6,700
<i>Forest Lake Main</i>	47,500	58,400	66,100	73,000
West Road	1,900	2,400	2,700	3,000
	8,600	10,600	11,900	13,100
	54,200	66,600	75,300	83,100
S.R. 438/ Plant Street	3,500	4,300	4,800	5,300
	8,500	10,500	11,800	13,000
	59,200	72,800	82,300	90,800
S.R. 50	6,900	8,500	9,600	10,600
	4,500	5,600	6,300	7,000
	56,800	69,900	79,000	87,200
Florida's Turnpike	35,300	43,700	49,300	54,400
	33,300	48,200	54,500	60,400
	54,800	74,400	84,200	93,200

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 429 - Two-Way Daily Revenue Traffic









Cross Street

		FY 2017	FY 2027	FY 2037	FY 2047
C.R. 535		26,700	33,700	38,100	42,200
		6,000	8,700	9,800	10,900
<i>Independence Main</i>		34,100	49,400	55,900	61,900
New Independence Parkway		6,800	9,800	11,100	12,300
		2,100	3,500	4,000	4,400
		29,400	43,100	48,800	54,000
Schofield Road		7,400	10,700	12,100	13,400
		500	1,200	1,400	1,600
		22,500	33,600	38,100	42,200
					
	To S.R. 429 (FL Turnpike)				

* Ponkan Main opening date of July 27, 2017 (FY 2018). Mount Plymouth Main and Coronado Main opening date of April 1, 2018 (FY 2018).

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

S.R. 414 - Two-Way Daily Revenue Traffic

Cross Street		FY 2017	FY 2027	FY 2037	FY 2047
S.R. 429		36,700	43,500	49,000	53,800
		36,700	43,500	49,000	53,800
US 441 via SR 451		11,600	12,700	14,200	15,600
		2,000	3,100	4,000	4,400
		27,100	33,900	38,800	42,600
Marden Road		400	1,000	1,600	1,800
Coral Hills Main		27,500	34,900	40,400	44,400
Keene Road / C.R. 435		3,900	5,000	5,800	6,400
		31,400	39,900	46,200	50,800
Hiawasse Road		4,800	6,100	7,100	7,800
		4,000	5,100	5,900	6,500
		30,600	38,900	45,000	49,500
U.S. 441		7,500	9,500	11,000	12,100
		10,000	12,700	14,700	16,100
		33,100	42,100	48,700	53,500
					
	To Maitland Blvd.				

Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.



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