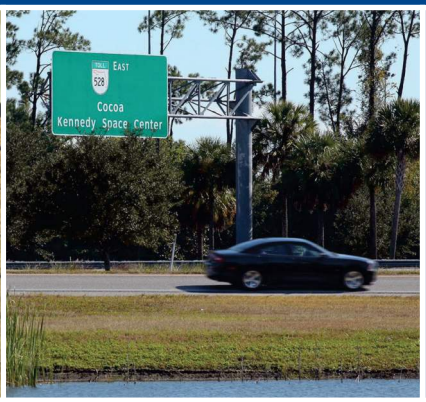
CENTRAL FLORIDA EXPRESSWAY AUTHORITY



PREPARED FOR

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

FY 2019

General Traffic and Earnings Consultant's Annual Report

with Revised T&R Forecasts due to COVID-19 Impacts

March 2020 updated June 2020

CDM Smith

CDM Smith
101 Southhall Lane, Suite 200
Maitland, FL 32751
tel: 407 660-2552
fax: 407 875-1161

June 15, 2020

Ms. Laura Kelley
Executive Director
Central Florida Expressway Authority
4974 ORL Tower Road
Orlando, FL 32807

RE: Impacts of COVID-19 Pandemic on CFX Traffic and Revenue

Dear Ms. Kelley:

As you know, the coronavirus disease has impacted the lives of most Americans and people across the world. The deadly disease has disrupted almost every aspect of our way of life, including customer use of the CFX System. In February, before we were fully aware of the risks from COVID-19, CDM Smith submitted traffic and revenue (T&R) estimates for use in financial planning by CFX. These estimates, documented in the **FY 2019 General Traffic and Earnings Consultant's Annual Report**, did not include impacts from COVID-19. CDM Smith has since prepared an analysis of these impacts and submitted estimates of the impacts on toll revenue under several scenarios concerning the progression of the disease and related economic impacts. We developed revised revenue estimates by applying the revenue impacts to the original estimates. These were submitted on April 2, 2020, and then updated on April 22, 2020. The results were presented to the CFX Governing Board as part of Budget Workshops, held on May 14, 2020 and May 28, 2020. Two additional scenarios were developed in response to Board Member comments and presented at the second Workshop. The purpose of this letter report is to document the revised revenue estimates and the information and methods used to produce them.

The events surrounding the COVID-19 pandemic have been highly unusual, unique in modern experience. As a result, there is a higher than normal degree of uncertainty in the T&R estimates. Our strategy has been to test a wide range of potential impacts from optimistic to pessimistic. Circumstances have changed quickly, which has dictated the need to refresh the estimates frequently.

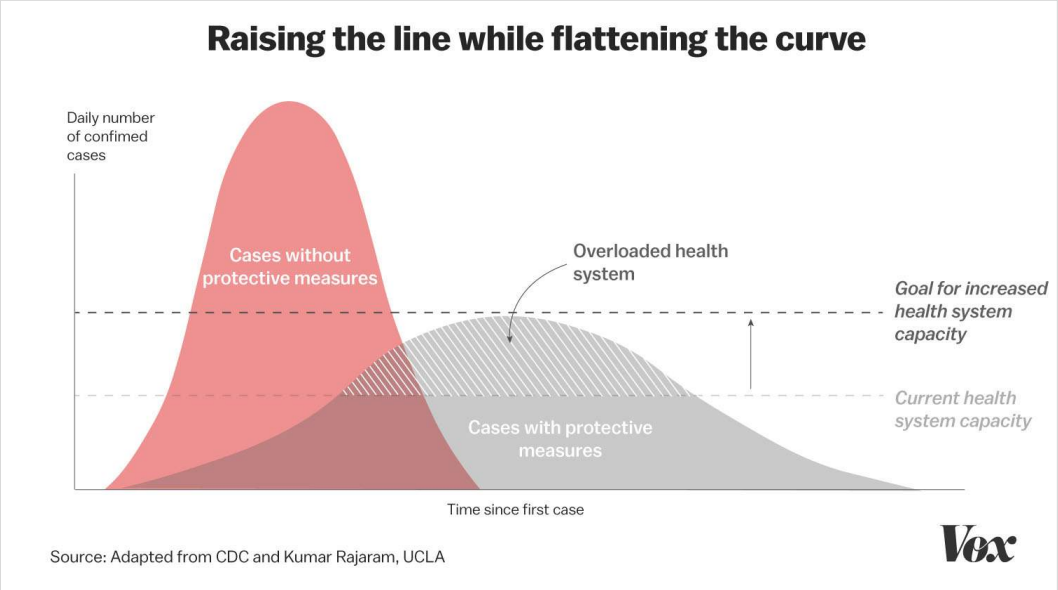
1. COVID-19

The coronavirus disease is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), identified in December 2019, hence the name COVID-19. Since the first appearance of the disease in China, it has spread across the world. The World Health Organization declared the outbreak a pandemic on March 11, 2020. In the majority of cases the symptoms are mild. In some cases, however, the symptoms advance to pneumonia, organ failure and death. More recently, COVID-19 has been reported as the cause of deaths from both heart failure and stroke. The mortality rates are higher with elderly people and people with pre-existing conditions such as cardiovascular disease and diabetes.

The primary way the virus spreads is through direct, close contact between people, via airborne droplets from coughing, sneezing and talking. The virus may also be communicated when someone touches a contaminated surface and then touches their face (mouth, nose or eyes). Guidance provided to prevent infection includes frequent hand washing, use of face masks and social distancing. This has led to restrictions such as stay at home orders. At present there is no vaccine for COVID-19. It may take a year, if not longer, before a vaccine is ready.

As part of the public health strategy responding to COVID-19, all levels of government have talked about "flattening the curve" and more recently "raising the line." **Figure 1** is an illustration of how protective measures, like social distancing, can lower the peak number of cases. This combined with increases in the capacity of the health care system would eliminate the possibility of an overload of the healthcare system.

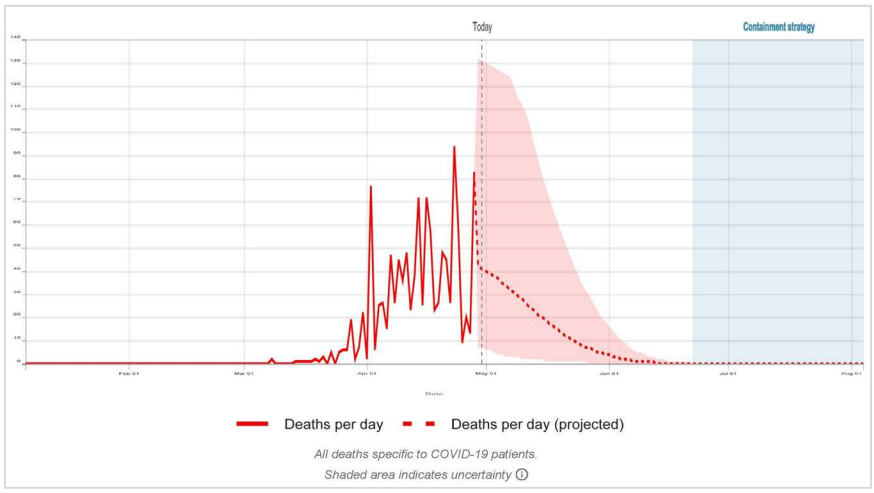
Figure 1: Public Health Strategies



There are a number of statistical models that describe the spread of the COVID-19 pandemic. The focus of the models has been on predicting the need for critical equipment and ICU beds. Based on assumptions about the rates of infection and mortality and about future levels of contact between people, each of these models comes with its own range of estimates. The continuation of various social distancing policies is far from certain, given public concerns about restarting the economy.

The Institute for Health Metrics and Evaluation (IHME) has developed forecasts for many countries, including the United States and Canada. There are separate forecasts for every state including Florida. Early on, the national forecasts have been used in briefings by President Donald Trump. On May 10, 2020, Christopher Murray, M.D., Executive Director of IHME, appeared on "Face the Nation" by CBS News, and explained their forecasts. As of April 29, 2020, the IHME forecasts for Florida indicated that the disease was 7 days past the projected peak in the number of deaths per day, with mortality projections extending through the first two weeks of June, shown in **Figure 2**. These fore

Figure 2: IHME History and Forecasts for Florida

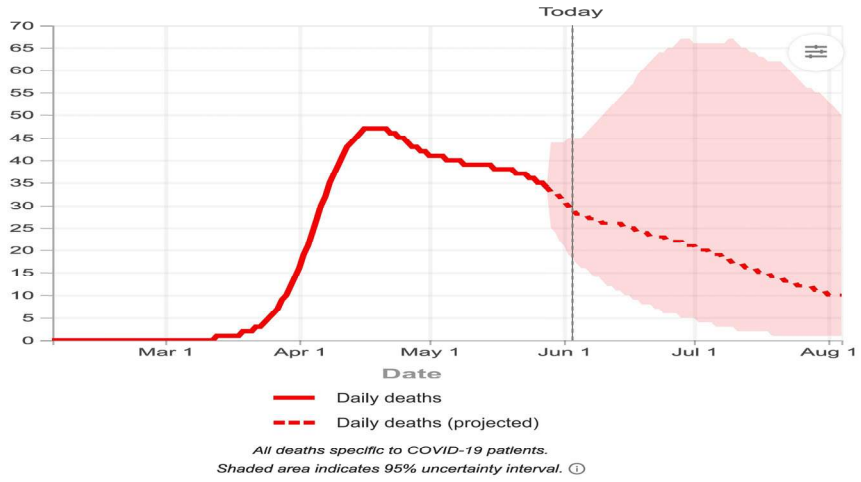


Source: Institute for Health Metrics and Evaluation, Updated April 29, 2020

casts were based on continuation of social distancing restrictions then in effect until the infections are minimized and containment achieved.

More recently, IHME improved their model, smoothing variability in the inputs. They also included in the model information about the effects of temperature, the percentage of population living in dense areas, testing per capita and human mobility. IHME continued to release updated forecasts with the latest results published on May 29, 2020. **Figure 3** contains a summary of these updated forecasts, which show continued mortality through August, which is the end of the forecast period. The changes are due in part to the introduction of the new variables and the phased relaxation of social distancing policies and behaviors. These are substantive changes in the forecasts in only a month, presenting a different perspective for the near-term future. The change in outlook has an effect on travel behavior.

Figure 3: IHME Updated Forecasts for Florida



Source: Institute for Health Metrics and Evaluation, Updated May 29, 2020

2. Recent Events

The primary way of combating the spread of COVID-19 has been recommendations for social distancing and stay at home orders. This has resulted in the closings of schools, restaurants, malls, sporting events and other public venues. As a result, many people have lost their jobs resulting in an unprecedented increase in unemployment claims. There has also been an escalation in the number of people working from home. The combined result has been a dramatic effect on people's travel behavior, leading to a reduction in travel. To some extent, because CFX roadways are tolled, they are likely to experience more severe reductions as congestion clears on other, competitive, non-tolled roads.

Federal, state and local governments have responded to COVID-19 with advice and orders as events progressed. **Table 1** contains a chronology of events most relevant to Central Florida. The following is a summary of key events, from orders to close through to more recent permissions to reopen:

- On March 1, 2020, the Florida Department of Health declared a public health emergency, as the Centers for Disease Control and Prevention (CDC) confirmed cases of coronavirus in Florida.
- On March 9, 2020, Governor Ron DeSantis declared a state of emergency in responding to COVID-19; and then on March 12, 2020, he announced school closings.
- On March 12, 2020, Orlando-area attractions closed indefinitely, including Walt Disney World (WDW), Universal Studies and Sea World.
- CFX closed the customer service center on March 18, 2020, suspended cash toll collection by collectors on March 19, 2020 and closed the Headquarters building on March 23, 2020.
- Orange County introduced a curfew on March 20. Osceola and Orange Counties instituted a stay at home order on March 25, 2020.
- Seminole County issued a social distancing mandate on March 27, 2020.
- Governor DeSantis issued a statewide stay at home order on April 1, 2020.
- On April 18, 2020, Governor DeSantis announced that schools will be closed through the end of the year.
- Governor DeSantis announced the reopening plan on April 29, 2020, to start on May 4, 2020.
- Governor DeSantis allows reopening of select industries with "enhanced safety protocols" on May 9, 2020.
- On May 12, 2020, WDW began accepting reservations for July 2020.
- Florida's Full Phase 1 Reopening began on May 18, 2020, with all 67 counties allowed to start reopening.
- On May 21, 2020, Universal Studios announces phased reopening to begin on June 5.
- On May 21, 2020, University of Central Florida (UCF) announces reopening for Fall classes with face masks required and smaller class sizes.
- Gatorland and Funspot reopened on May 22, 2020.
- On May 27, 2020, Governor DeSantis considers plan for reopening of WDW and SeaWorld.
- Kennedy Space Center visitor Complex reopened with new measures on May 28, 2020.

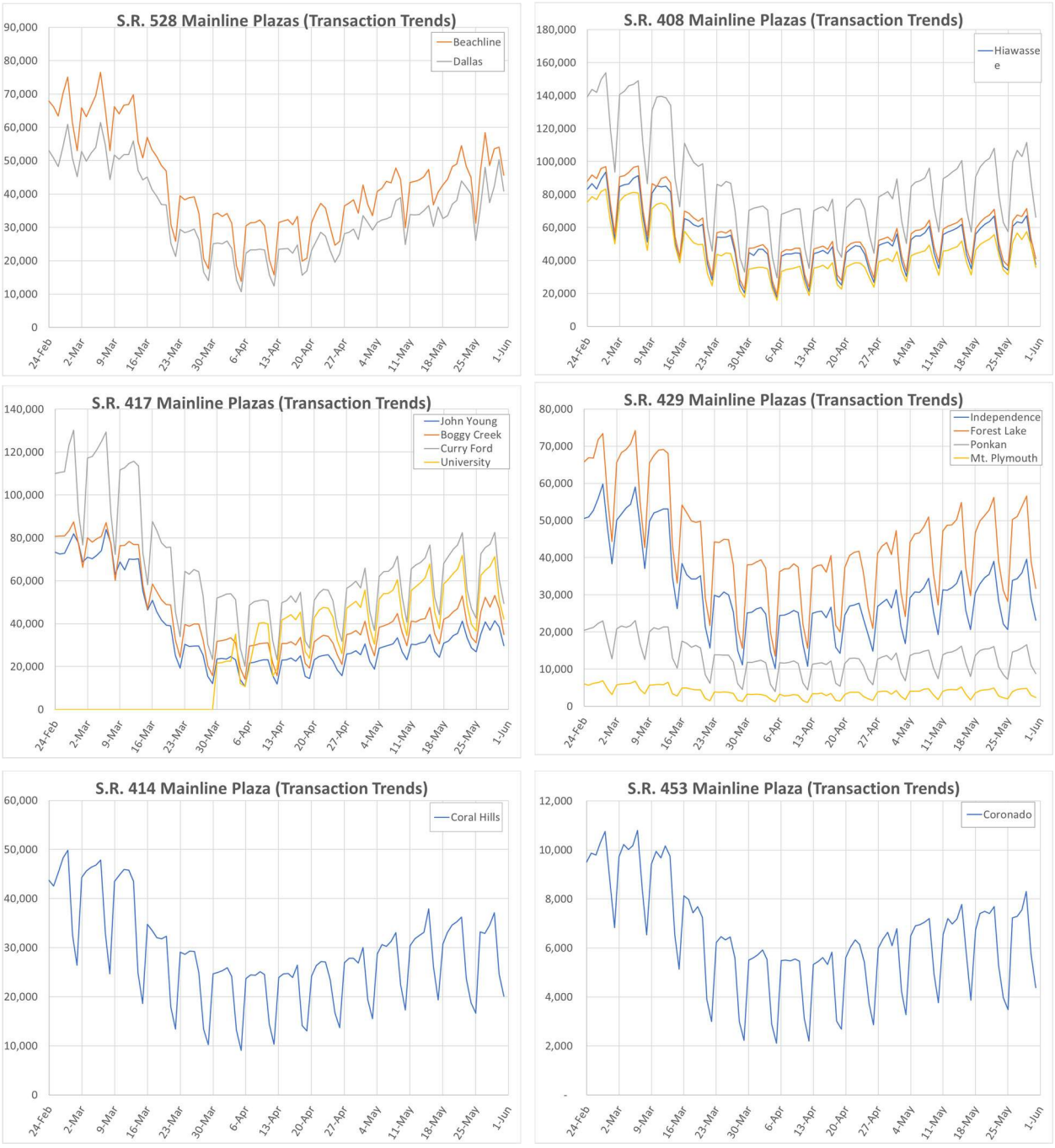
Table 1: Chronology of Events

Date	Action	Duration	Type	Additional Comment
1/31/2020	President Trump announces travel ban from China		Travel ban	First Mandatory travel ban in the U.S. in 50 years
3/1/2020	Florida DOH declares Public Health Emergency		Emergency	CDC confirms cases of coronavirus in Florida
3/8/2020	CDC forces Regal Princess to remain offshore near South Florida		Emergency	
3/9/2020	Executive Order- Florida Declared State of Emergency by Governor DeSantis	Until 4/8 unless extended	Emergency	The state of emergency covers all of Florida and gives broad powers to state and local government agencies in responding to COVID-19. The move makes the state eligible for federal funding for emergency protective measures and crisis counseling. executive order allows state and local agencies to close any public buildings.
3/11/2020	Trump expands travel ban from Europe	3/11 - 30 days	Travel ban	30 day restriction on travel from Europe
3/12/2020	Orlando's Disney World, Sea World, Disneyland Paris and Disney Cruise lines closed	03/12 to potentially 03/31	Services closure	
3/13/2020	President Trump Declares National Emergency	3/13/2020 - indefinitely	Emergency	Frees up disaster relief dollars and mobilizes FEMA
3/14/2020	School, colleges closings In Response to COVID-19	03/14 to 04/15	Institutions closure	Governor DeSantis announced that all schools will be closed to students until April 15. Remote or "distance learning" instruction will begin. State testing has also been cancelled this school year.
3/15/2020	Magic Kingdom, Epcot, Disney's Hollywood Studios and Disney's Animal Kingdom	03/15 to end of month	Services closure	
3/16/2020	NCAA cancels spring sports, basketball nationals amid coronavirus outbreak	3/16/2020		
3/18/2020	CFX Closes Customer Service Center			
3/18/2020	Disney World transportation will be temporarily suspended	3/18/2020	Services closure	
3/18/2020	Brevard zoo	3/18/2020 to end of month	Services closure	
3/19/2020	Cash tolling suspended	3/19/2020 8:00	Toll/ Revenue	Shifting to license plate tolling, known as Pay by Plate. The "Exact Coin Lanes" are still operating normally and can still be used.
3/19/2020	Emergency order by County Mayor- Miami-Dade County Closes All "Non-Essential" Businesses	3/19/2020	Services closure	
3/19/2020	City of Coconut Creek Imposes Curfew	3/20/2020	Curfew	The curfew will run nightly from the hours of 11 p.m. to 5 a.m.
3/20/2020	Curfew for Orange County	3/20/2020 11 pm to 5am	Curfew	
3/17/2020	Florida mandates all bars and gyms to shut down	3/17/2020	Services closure	All bars and nightclubs to close, limited restaurants to 50 percent capacity and mandated that groups no bigger than 10 people congregate on beaches.
3/17/2020	Bars, restaurants & other entertainment venues have been ordered to shut down			
3/21/2020	Orlando Health temporarily suspends routine visitation at its hospitals.			
3/22/2020	Downtown Orlando free bus service hours reduced	3/22/2020 until further notice	Services closure	Lymmo, the free bus service with routes around downtown Orlando, is reducing ours until further notice, Lynx said all other Lynx services are operating as scheduled.
3/23/2020	Executive order- Domestic visitors from NY/NJ to quarantine (NOLA may be added too)	3/23/2020	Quarantine	Two week self quarantine
3/23/2020	Florida DEP announced all state parks will be closed	3/23/2020	Closure	Includes popular beaches and natural springs
3/23/2020	CFX Closes Headquarters building			
3/24/2020	Leon county- Overnight curfew 11 pm-5am	3/24/2020 11 pm-5am	Curfew	
3/25/2020	Brightline suspends South Florida service	3/25/2020	Services closure	
3/25/2020	Residents Osceola, Orange County	3/26/2020 to 4/9/2020	Quarantine-Stay at home	Parks still open minus the amenities. Public transit working violators can face a $50 fine or even jail time
3/27/2020	Miami imposes city curfew	3/27/2020 10 pm to 5am	Curfew	All non-essential travel within the City of Miami, including by automobile, public transit, motorcycle, etc., is prohibited until further notice
3/27/2020	Seminole County issues a social-distancing mandate			This is not the same as a stay-at-home order like the ones in effect in Orange and Osceola counties.
3/30/2020	DeSantis asks retired first responders and medical personnel to return to the workforce			
3/30/2020	Department of Education announces that in-person classes won't resume at Florida schools untilt May 1.	Until at least May 1	Closure	
4/1/2020	Florida governor issues statewide stay-at-home order	midnight 04/02/2020-05/02/2020 Thirty days	Stay at home order	Executive order requiring the state's residents to limit their movement outside of their homes
4/18/2020	Florida Governor announces schools remain closed though end of school year.	April 19 - June 3	Stay at home order	Students continue distance learning
4/29/2020	Florida Govenor announced reopening plan	4-May	Reopening	Governor adopts step-by-step approach to reopening in three phases. Stay-at-home order ends April 30
5/8/2020	SunRail to resume regular service	5/11/2020	Reopening	
5/9/2020	Gov. Ron DeSantis said barbershops and hair and nail salons can open with "enhanced safety protocols	5/11/2020	Reopening	
5/18/2020	Florida's Full Phase 1 begins Monday, May 18. All 67 counties may now begin re-opening	5/18/2020	Full Phase 1 Reopening	That includes allowing gyms and restaurants to operate at 50% capacity.
5/12/2020	Walt Disney World to begin accepting resort reservations in July	Starting 07/1/2020	Reopening	Disney said that taking reservations doesn't necessarily mean things will be open by then.
5/21/2020	Universal would begin a phased reopening of its Florida theme parks on June 1, open to public June 5	Starting 06/5/2020	Reopening	Theme parks on June 1, initially only for its own team members. On June 3 and 4, Universal hopes to invite guests such as annual pass holders, before welcoming the public back on June 5.
5/20/2020	Kennedy Space Center Visitor Complex to reopen May 28 with new measures	5/28/2020	Reopening	
5/20/2020	Disney Springs reopen, Disney hopes late July	5/20/2020	Reopening	Disney Springs reopens May 20, analyst predict Disney Parks in Late July
5/21/2020	UCF prepares for fall reopening by requiring masks and downsizing classes	Fall 2020	Reopening	UCF must submit reopening plan to Board of Govenors
5/22/2020	Gatorland and Funspot reopen	5/22/2020	Reopening	Funspot opens Friday 22nd and Gatorland Sat 23rd
5/27/202	No word from Gov Desantis on permission to open WDW and SeaWorld			Gov gave clearance to several smaller attractions to open

3. Recent Impacts

COVID-19 has had a negative impact on T&R across the CFX System. The graphs in **Figure 4** show recent daily transactions at mainline toll plazas, beginning on Monday, February 24, 2020, through Sunday, May 31, 2020. These are raw transactions from the Infinity toll collection system. It is clear that the number of transactions dropped at all mainline toll plazas. The declines started during the

Figure 4: Recent Daily Transactions (using 2020 dates)



second week of March and bottomed out during the second week of April. March has normally been the peak season on CFX facilities.

Figure 5 contains a graph showing the aggregate daily transactions at mainline toll plazas during FY 2020 and the transactions that occurred on the same day of week during FY 2019. Tolls at the former Airport toll plaza on S.R. 528 are now collected by FTE and not included. **Figure 6** has the variance (difference expressed as a percent) in aggregate daily transactions, FY 2020 over FY 2019.

Figure 5: Aggregate Daily Transactions at Mainline Plazas

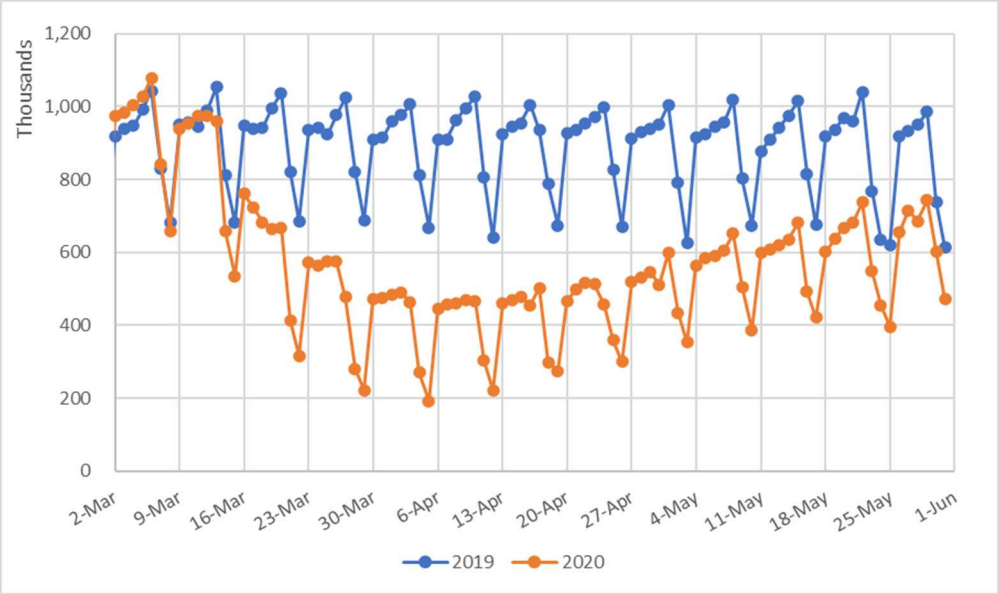


Figure 6: Variance in Aggregate Daily Transactions (FY 2020 over FY 2019)

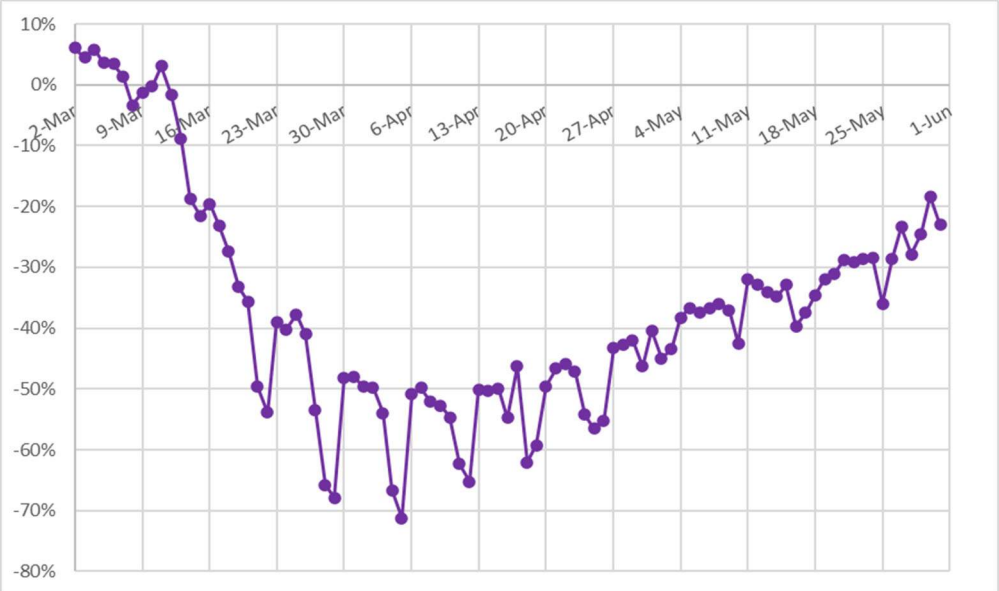


Table 2 contains a summary of the weekly variance in transactions at mainline toll plazas and the aggregate or sum of all plazas, except the University toll plaza for which the data was incomplete. During the week ending Sunday, April 12, 2020, the aggregate number of transactions was 55% lower than it was during FY 2019. Since then the impacts have steadily lessened during the last seven weeks. Last week the variance in transactions had improved to a 26% reduction. From this chart, the main event featured a 55% reduction and lasted five weeks.

Table 2: Recent Weekly Transaction Impacts

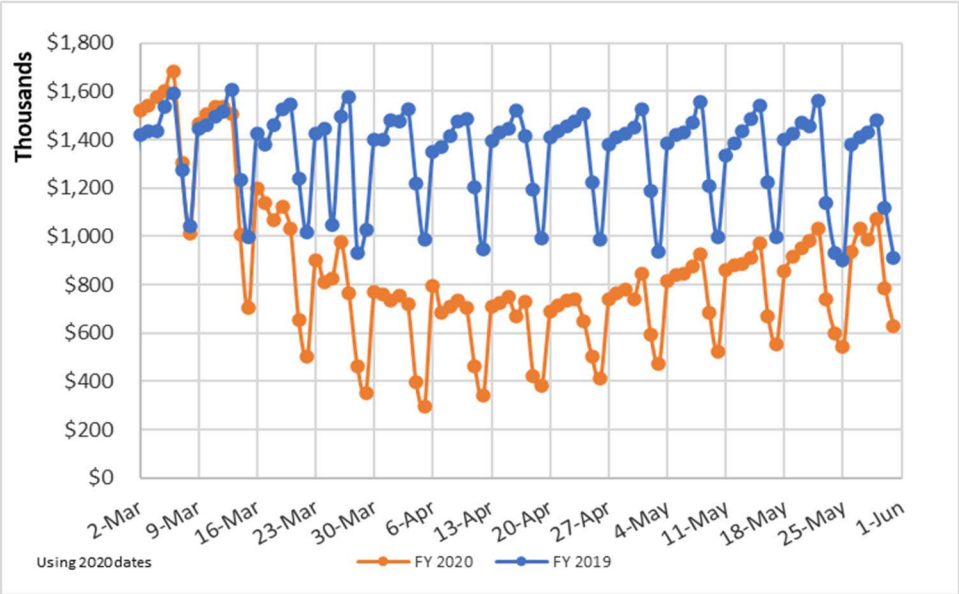
		Week Ending Sunday												
Mainline Plaza		3/8/2020	3/15/2020	3/22/2020	3/29/2020	4/5/2020	4/12/2020	4/19/2020	4/26/2020	5/3/2020	5/10/2020	5/17/2020	5/24/2020	5/31/2020
Beachline	SR 528	4%	-5%	-32%	-49%	-54%	-57%	-54%	-51%	-40%	-35%	-32%	-27%	-22%
Dallas		7%	0%	-30%	-51%	-56%	-59%	-56%	-52%	-38%	-34%	-30%	-25%	-18%
Hiawassee	SR 408	2%	-6%	-29%	-43%	-50%	-50%	-48%	-45%	-38%	-33%	-30%	-26%	-21%
Pine Hills		2%	-6%	-29%	-43%	-50%	-50%	-47%	-45%	-37%	-33%	-30%	-26%	-21%
Conway		2%	-6%	-32%	-46%	-52%	-52%	-50%	-47%	-41%	-34%	-32%	-27%	-22%
Dean		4%	-9%	-36%	-50%	-56%	-56%	-53%	-52%	-46%	-37%	-35%	-31%	-23%
John Young Pkwy	SR 417	-3%	-16%	-52%	-66%	-71%	-72%	-71%	-70%	-64%	-60%	-58%	-54%	-48%
Boggy Creek		1%	-12%	-42%	-57%	-63%	-63%	-63%	-61%	-54%	-50%	-47%	-43%	-37%
Curry Ford		4%	-5%	-35%	-51%	-57%	-58%	-56%	-54%	-48%	-42%	-39%	-34%	-31%
University						-76%	-66%	-56%	-53%	-47%	-40%	-36%	-31%	-28%
Independence	SR 429	5%	-6%	-37%	-49%	-54%	-53%	-52%	-50%	-44%	-39%	-34%	-29%	-28%
Forest Lake		6%	-2%	-26%	-39%	-45%	-45%	-43%	-40%	-33%	-27%	-24%	-20%	-18%
Ponkan		9%	1%	-21%	-37%	-43%	-43%	-43%	-39%	-33%	-28%	-25%	-24%	-23%
Mt Plymouth		-4%	-9%	-30%	-44%	-49%	-53%	-47%	-45%	-34%	-30%	-29%	-27%	-26%
Coral Hills	SR 414	11%	4%	-20%	-36%	-42%	-42%	-40%	-38%	-31%	-24%	-17%	-16%	-13%
Coronado	SR 453	22%	10%	-15%	-34%	-38%	-39%	-38%	-33%	-28%	-23%	-19%	-17%	-15%
Aggregate (w/o Univ)		3%	-6%	-34%	-48%	-54%	-55%	-53%	-50%	-43%	-38%	-35%	-30%	-26%
Rate of Change in Aggregate			-10%	-27%	-15%	-6%	0%	2%	2%	7%	6%	3%	4%	5%

The mainline toll plazas most severely impacted have been those located near tourist destinations (John Young Parkway and Boggy Creek on S.R. 417). The impacts to the transactions at these plazas have been consistently more severe than the average. Transactions at plazas serving UCF (University on S.R. 417 and Dean on S.R. 408) were also more impacted initially. This makes sense given the impacts of COVID-19 on the theme parks and UCF. The toll plazas with a lesser degree of impact have been those located along S.R. 429 (Forest Lake and Ponkan), S.R. 414 (Coral Hills) and S.R. 453 (Coronado). This analysis, comparing current year versus prior year, has annual growth embedded (or hidden) in the estimates. These are relatively new facilities, experiencing higher growth, in the form of ramp-up, than other toll locations. The main plazas on S.R. 408 (Hiawassee, Pine Hills and Conway) have been impacted just below the average. The variance at all toll locations has improved during the last four weeks.

Some items to note are that the transactions data for University plaza is incomplete; the Easter holiday was late in 2019 (April 21) and early in 2020 (April 12); and since tolls that were collected at the former Airport plaza are now collected by FTE, these transactions are not included.

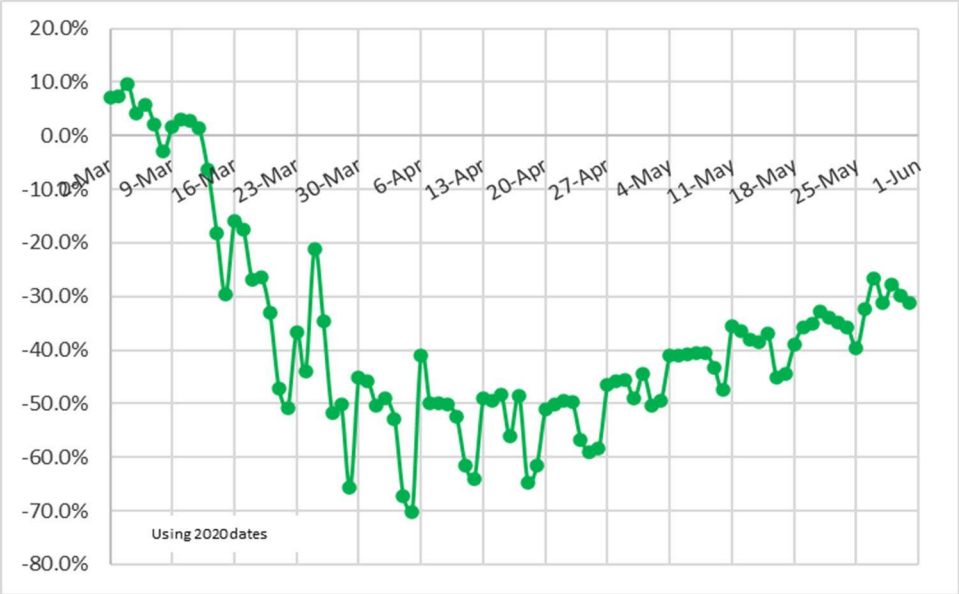
Figure 7 contains a summary of daily systemwide toll revenue, between March 2 and May 29, 2020, along with toll revenue from the prior year. The current values are estimates and not from the audited revenue report. **Figure 8** has the variances in daily toll revenue, FY 2020 over FY 2019. As expected, the pattern of impacts on toll revenue is very similar to the impacts on transactions, declines starting during the second week of March, reaching the maximum impact during the

Figure 7: Estimated Daily Toll Revenue



Not a full audited revenue report, Cash and AVI are daily, PBP, Reclaimed Revenue and VTOLLS are allocated over the days with some month end adjustments left out.

Figure 8: Variance in Daily Toll Revenue
(FY 2020 over FY 2019)



second week of April and impacts lessening since then. During the initial three months of the COVID-19 impacts, CFX revenue was 19.0% lower in March, 52.6% lower in April and 37.8% lower in May.

4. Historical Events

This is not the first time that CFX T&R has been influenced by an external event. **Figure 9** contains a graph summarizing monthly systemwide transactions, beginning in FY 2000. This graphic identifies major weather and socio-economic events that influenced T&R in the past. Before considering these events, there were a number of things that happened over this twenty-year period. These included physical changes which facilitated growth, such as the completion of several expansion projects (S.R. 429, S.R. 414 and S.R. 453), extensions of existing roadways (S.R. 429), widenings (virtually all roadways) and new interchanges (such as the interchange between S.R. 417 and Florida's Turnpike). Improvements in toll collection, such as open road tolling (ORT) and the introduction of Pay By Plate (PBP), tended to encourage transaction growth. Also, during this time there were two systemwide toll rate adjustments, the first in April 2009 at the beginning of the Great Recession and the second three years later in July 2012. These toll rate adjustments had a strong positive effect on revenue, but a smaller negative effect on transactions. In addition, indexed toll rate adjustments at inflationary rates occurred at the beginning of FY 2018, FY 2019 and FY 2020. These rate adjustments had relatively small impacts on transaction growth.

Over the twenty-year period shown in Figure 9, there were impacts from hurricanes in six seasons. The impacts all tended to be short-lived with a full and quick recovery, i.e., "V" shaped.

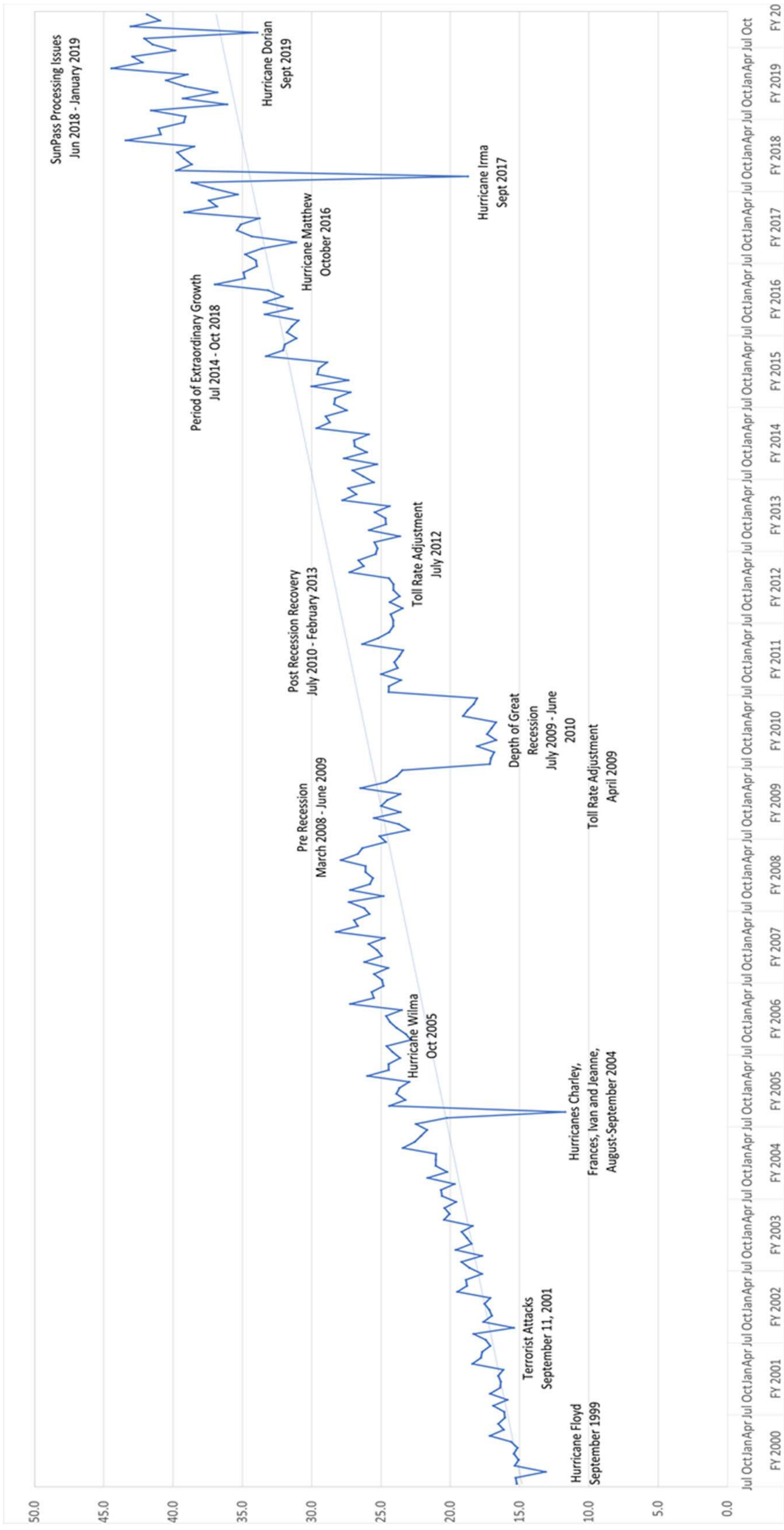
- In September 1999, Hurricane Floyd paralleled the east coast of Florida. The impacts on CFX transactions were visible for one month.
- Hurricanes Charley, Frances, Ivan and Jeanne came in quick order during the months of August and September 2004. There were both reductions in travel and toll suspensions. The accumulated effect of these hurricanes is quite visible in the graph as a deep "V" shape spanning the two months.
- Hurricane Wilma occurred in September 2005, with minimal and short-lasting impacts.
- Hurricane Matthew came through Central Florida in October 2016. The reductions in travel and toll suspensions for 4 days, produced a noticeable impact on transactions.
- In September 2107, Hurricane Irma produced severe impacts on CFX, as tolls were suspended for 15.8 days. Reductions in travel and evacuations also influenced results.
- Hurricane Dorian hit Florida in September 2019. Toll suspensions for 4.5 days produced a very clear impact on CFX transactions.

The terrorist attacks on September 11, 2001 are also noticeable. The impacts varied by toll location and were most severe at locations near Orlando International Airport (OIA). The impact on overall transactions were, however, relatively minor and short-lived, once again showing a "V" shape.

The Great Recession had substantial and lasting effects on CFX transactions. For this discussion there were three periods, with a total duration of nearly five years:

- Pre-recession lasted one year and two months, with a 10% reduction by the end of that time
- Recession had a "U" shape, beginning with a dramatic step down and ending with equally dramatic step up, lasting one year, with a reduction of 55%

Figure 9: Historical Monthly Transactions



- Recovery persisted for two years and nine months with slow but steady growth
  - Began with a 12% reduction the first year
  - Then finished with a 7% reduction during the remaining time

The Great Recession was followed by a period of extraordinary growth (with double digit annual growth rates in many years) that lasted nearly five years, from July 2014 through October 2018. This was interrupted by customer processing issues with SunPass/Conduent. These resulted in both lost transactions and perhaps loss of confidence in toll operations.

For completeness, there are two other events to consider. The number of CFX systemwide transactions increased on July 1, 2012 because the Dallas mainline toll plaza was opened, essentially doubling the number of transactions that had occurred at the Beachline mainline toll plaza. The number of CFX systemwide transactions then decreased on March 1, 2016 because the Airport mainline toll plaza was closed, and tolls were collected by Florida's Turnpike Enterprise (FTE) at the Beachline West main toll plaza. It is difficult to recognize the impacts of these two events. At the start of the twenty-year period, there were eleven mainline toll plazas and the end of the period, because of System expansion, there were sixteen.

5. Methodology

The T&R estimates produced and reported earlier in the year were the starting point for this analysis or the base estimates. These contain the relevant background with all the factors influencing future T&R, such as population/employment growth, land development, network improvements and toll policies. The estimates of the potential impacts from the COVID-19 pandemic, developed here, were then applied to the original estimates. The revised estimates are the base estimates less the impacts from COVID-19.

Summary of the Base Estimates – The base forecasts for this analysis were described in considerable detail within the recently produced **Annual Report**. **Table 3** contains a summary of the revenue estimates. Paid In-Lane revenue consists of toll revenue paid by customers as they drive through the toll locations, using either electronic toll collection (E-PASS and other interoperable transponders) or cash. PBP revenue is the toll revenue paid by customers through the CFX video billing process. Paid In-Lane and PBP revenue appear in the table for the entire CFX System, except for the revenue collected on the Poinciana Parkway, which were estimated separately. The Poinciana Parkway was added to the CFX System in December 2019, only a portion of the first-year revenue appears in FY 2020. The System Total is the sum of Paid In-Lane, PBP and Poinciana Parkway revenue. CFX offers customers several discounts through the Customer Loyalty Discount Program (frequent user), the Beltway Discount Program (relief during construction of the I-4 Ultimate Improvement) and the School Bus Discount Program. The Available Revenue (available for debt service payment) is the System Total less the Discounts. Once again, these estimates do not envision the dislocations that have and will occur because of COVID-19. These estimates are the foundation upon which the revisions are based.

Table 3: Available Revenue (Millions)

Fiscal Year		Paid In-Lane Revenue	PBP Revenue	Poinciana Parkway	System Total	Discounts	Available Revenue	Percent Annual Change
2010	Actual	$262.0	$1.1		$263.1	$9.4	$253.7	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		$302.7	$6.3		$309.0	$10.8	$298.2	13.6%
2014		$322.8	$8.1		$330.9	$11.7	$319.2	7.0%
2015		$353.1	$11.0		$364.1	$13.2	$350.9	9.9%
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		$430.8	$27.3		$458.1	$16.3	$441.8	4.3%
2019		$445.6	$38.0		$483.6	$20.4	$463.2	4.8%
2020	Forecast	$463.0	$59.1	$4.4	$526.5	$24.8	$501.7	8.3%
2021		$495.1	$63.9	$8.3	$567.3	$27.5	$539.8	7.6%
2022		$521.1	$48.3	$9.4	$578.8	$29.5	$549.3	1.8%
2023		$538.2	$49.7	$10.4	$598.3	$20.4	$577.9	5.2%
2024		$555.7	$51.7	$11.5	$618.9	$21.3	$597.6	3.4%
2025		$572.6	$53.5	$12.5	$638.6	$22.3	$616.3	3.1%
2026		$589.9	$55.1	$12.9	$657.9	$23.3	$634.6	3.0%
2027		$607.4	$56.9	$13.2	$677.5	$24.2	$653.3	2.9%
2028		$624.5	$58.7	$13.6	$696.8	$25.2	$671.6	2.8%
2029		$642.3	$60.5	$13.9	$716.7	$26.3	$690.4	2.8%
2030		$659.4	$62.5	$14.3	$736.2	$27.3	$708.9	2.7%
2031		$677.2	$64.3	$14.7	$756.2	$28.4	$727.8	2.7%
2032		$694.7	$65.9	$15.0	$775.6	$29.5	$746.1	2.5%
2033		$712.3	$67.6	$15.4	$795.3	$30.6	$764.7	2.5%
2034		$729.8	$69.5	$15.7	$815.0	$31.7	$783.3	2.4%
2035		$747.8	$71.4	$16.1	$835.3	$32.8	$802.5	2.5%
2036		$765.9	$73.2	$16.5	$855.6	$34.0	$821.6	2.4%
2037		$784.1	$75.2	$16.9	$876.2	$35.2	$841.0	2.4%
2038		$802.8	$77.0	$17.4	$897.2	$36.5	$860.7	2.3%
2039		$821.5	$79.1	$17.8	$918.4	$37.7	$880.7	2.3%
2040		$840.3	$80.8	$18.2	$939.3	$39.0	$900.3	2.2%
2041		$859.6	$83.1	$18.6	$961.3	$40.3	$921.0	2.3%
2042		$879.0	$85.0	$19.0	$983.0	$41.7	$941.3	2.2%
2043		$898.5	$86.9	$19.5	$1,004.9	$43.1	$961.8	2.2%
2044		$918.5	$89.1	$19.9	$1,027.5	$44.5	$983.0	2.2%
2045		$938.6	$91.5	$20.3	$1,050.4	$45.9	$1,004.5	2.2%
2046		$958.7	$93.7	$20.7	$1,073.1	$47.4	$1,025.7	2.1%
2047		$978.9	$95.8	$21.1	$1,095.8	$48.9	$1,046.9	2.1%
2048		$999.7	$97.9	$21.6	$1,119.2	$50.4	$1,068.8	2.1%
2049		$1,020.2	$100.1	$22.0	$1,142.3	$51.9	$1,090.4	2.0%

Fiscal Year	Compound Avg Annual Growth Rate (CAAGR)					
2000 - 2010	7.4%			7.5%	13.8%	7.3%
2010 - 2019	6.1%	49.0%		7.0%	8.9%	6.9%
2019 - 2029	3.7%	4.8%		4.0%	2.6%	4.1%
2029 - 2039	2.5%	2.7%	2.5%	2.5%	3.7%	2.5%
2039 - 2049	2.2%	2.4%	2.1%	2.2%	3.2%	2.2%

The primary impacts from COVID-19 will be in the current and next fiscal years, i.e., FY 2020 and FY 2021. As shown in Table 3, these years have relatively high rates of growth. The impacts from COVID-19 will result in lower growth, but the underlying reasons for the growth still apply and are included in the base. **Table 4** contains a summary of three main reasons for growth from FY 2020 to FY 2021. The impacts of Hurricane Dorian, which appeared in September 2019 (FY 2020) are not included in the forecasts for the following year. The incremental increase in revenue from the

Table 4: Sources of Growth in Early Years

Fiscal Year	Annual Increase (Million)	Factors		
		Hurricane Dorian	Poinciana Parkway	Rate Adj
2020	$38.5		$4.4	$10.6
2021	$38.1	$5.4	$3.9	$24.1
	Percent Annual Change			
2020	8.3%		0.9%	
2021	7.6%	1.1%	0.8%	4.8%

Poinciana Parkway appears in both fiscal years. The rate adjustments also occur in both fiscal years. The estimate in FY 2021 includes both the annual or indexed adjustment and the effect of the new PBP toll rates. As shown in the bottom of Table 4, most of the anticipated increase in revenue during FY 2021 comes from these sources. Depending on the source, all or a large portion of these effects will be realized through the impacts of COVID-19.

Scenario Development – CDM Smith developed a number of scenarios that deal with both the progress of the disease and effects on the social and economic life of the residents and visitors to Central Florida and their travel behavior. Simply stated, these scenarios were constructed from assumptions about four characteristics: the depth and duration of the initial disease, the recovery from the disease/economic dislocation and any lasting effects.

In this analysis, the depth of the impacts is the greatest variance from the base (the proportion reduced). The duration is the length of time over which the main impacts apply. Early scenario tests envisioned both a "V" shaped event (like the hurricanes) and a "U" shaped event (like the Great Recession). There is also the possibility of a second wave of the disease during the winter, producing a "W" shaped event.

The recovery is defined as the time it takes for CFX T&R to revert back to prior conditions, allowing for the presence of certain lasting effects. There are reasons to expect that the recovery will happen as a relatively quick, short-term recovery, followed by a slower, long-term recovery (as happened with the Great Recession). There is also the possibility of a second wave of the disease during the winter, producing a "W" shaped event. The maintenance and adherence to social distancing policies and guidelines will have a strong influence on the recovery. The date when an effective vaccine becomes available in an appropriate quantity is obviously another critical moment in the recovery.

The pace at which the economy recovers is uncertain. Some sectors of the economy have been lightly affected and have the prospect of a quick and nearly complete recovery. Other sectors have been harshly impacted, such as retail (malls, shops and non-essential businesses), services (restaurants, bars, barbers and hair salons) and tourism (theme parks, airlines and cruise lines). The recovery in these sectors will almost certainly take longer with phased openings depending on customer perceptions about the need for social distancing. In addition, the high unemployment rate will leave many people with less disposable income to devote to purchases, entertainment and tourist trips.

There are several types of lasting effects associated with the current COVID-19. The work from home mandates have accelerated the trend toward more telecommuting and the industry has come to realize the benefits. There is also a potential for a slow recovery in the tourist industry.

Depth and Duration – This portion of each scenario involves specifying the depth of the impacts and duration of the main event. An initial set of scenarios were created with a 60% reduction lasting 3 or 4 months. The scenarios used in this analysis were established on April 29, 2020. At that time, it was apparent that the main event would not be that severe. All of the scenarios presented here have the maximum reduction set at 58% and set to last either 3 or 4 months.

Recovery – This portion of each scenario concerns the impacts after the main event. The recovery is described by the length of time until the impacts have ceased. Some of the scenarios developed here have a complete recovery. Other scenarios do not envision a complete recovery but have lasting effects. The shape of the recovery also varies. The scenarios with longer lasting impacts have one or two plateaus after the main event and look like the recovery from the Great Recession (five years long). Within the recovery period, some scenarios include a second wave, or recurrence, of the disease occurring in the late Fall or Winter, with infections and impacts at half the level that occurred during the initial wave. Thoughts on the likelihood of a second wave have changed over time and vary widely depending on source.

Lasting Effects – While many people expect that COVID-19 will change just about everything, it seems more reasonable to expect that once a vaccine is found and readily available and the economic dislocation has passed, life will eventually return to normal with some changes. In order to help set the magnitude of these lasting effects, CDM Smith has evaluated two commonly discussed changes in travel behavior: an increase in telecommuting and a decline in travel to the tourist destinations in Central Florida.

Due to the importance of social distancing in containing COVID-19, many more people started to work from home. Several surveys from 2018 indicated that 5.3% of commuters in America "usually" work from home; 8% of commuters work from home at least once per week; and 2% of commuters work from home full time.[1] More recent, surveys indicated that between 40% and 62% of American commuters are working from home during the COVID-19 pandemic.[2]

Not all commuters have the same opportunity to work at home. **Table 5** contains a summary of the number of Central Florida employees by industry type. CDM Smith developed low and high side estimates of the proportion of employees that would opt to continue working from home as a permanent or lasting effect. Running these numbers through, the result is that the proportion of all employees who will work at home will increase by between 6.6% and 15.1%.

[1] Patricia L. Mokhtarian, "The Adoption and Travel Impacts of Teleworking: Will it be Different This Time?", Eno Center for Transportation webinar, May 14, 2020.
[2] Ibid.

Table 5: Potential Increase in Telecommuting

NAICS2 Industry	2018	2018%	Telecommuting Low	Telecommuting High	New Telecommuters Low	New Telecommuters High
11 Ag, Forestry, Fish & Hunting	8,536	0.5%	1.0%	2.0%	85	171
21 Mining	1,522	0.1%	1.0%	2.0%	15	30
22 Utilities	2,125	0.1%	1.0%	2.0%	21	43
23 Construction	109,149	6.4%	1.0%	2.0%	1,091	2,183
31-33 Manufacturing	51,846	3.0%	1.0%	5.0%	518	2,592
42 Wholesale Trade	49,043	2.9%	1.0%	5.0%	490	2,452
44-45 Retail Trade	176,050	10.3%	2.0%	5.0%	3,521	8,803
48-49 Transportation & Warehousing	89,542	5.2%	1.0%	2.0%	895	1,791
51 Information	31,604	1.8%	10.0%	50.0%	3,160	15,802
52 Finance & Insurance	80,790	4.7%	25.0%	50.0%	20,198	40,395
53 Real Estate & Rental	97,240	5.7%	5.0%	10.0%	4,862	9,724
54 Professional- Scientific & Tech Svcs	123,875	7.2%	25.0%	50.0%	30,969	61,938
55 Management Of Companies	23,266	1.4%	10.0%	25.0%	2,327	5,817
56 Administrative & Waste Services	162,242	9.5%	10.0%	25.0%	16,224	40,561
61 Educational Svcs	29,412	1.7%	10.0%	25.0%	2,941	7,353
62 Health & Social Services	156,527	9.1%	5.0%	10.0%	7,826	15,653
71 Arts- Entertainment & Recreation	105,681	6.2%	5.0%	10.0%	5,284	10,568
72 Accommodation & Food Services	189,884	11.1%	1.0%	5.0%	1,899	9,494
81 Other Services	93,508	5.5%	5.0%	10.0%	4,675	9,351
92 Government	130,283	7.6%	5.0%	10.0%	6,514	13,028
Total	1,712,125	100.0%	6.6%	15.1%	113,518	257,747

Bureau of Economic Analysis, Orlando-Kissimmee-Sanford, FL (Metropolitan Statistical Area)

Not all trips are commuting trips, i.e., trips between home and work. **Table 6** contains a summary of the number of daily trips by trip purpose, taken from the travel demand model used to plan transportation improvements in Central Florida. Home-based work trips represent only 11.1% of all trips.

Table 6: Trip Purposes

Trip Purpose	Trip Purpose	Number of Trips	%
Home-Based Work	HBW	2,293,280	11.8%
Home-Based Shop	HBSH	1,456,751	7.5%
Home-Based Social Recreation	HBSR	1,376,334	7.1%
Home-Based Other	HBO	3,523,414	18.1%
Home-Based Non-Work	HBNW	6,356,499	32.7%
Non-Home Based	NHB	4,456,584	22.9%
Total	Total	19,462,862	100.0%

District-Wide Trip Generation (CFRPM 6.1)

Table 7 contains the final part of this calculation. Assuming that the new telecommuters will do so 3 days per week, the increase in telecommuting might represent a long-term reduction in travel between 0.5% and 1.1%.

Table 7: Trip Reduction from Telecommuting

	Low	High
Proportion of Employees	6.6%	15.1%
Reduction in Trips	60%	60%
Proportion of Total Trips	11.8%	11.8%
Reduction in Trips	0.5%	1.1%

A reduction in travel to tourist destinations is another potential effect from COVID-19. But not all CFX toll facilities serve these destinations and the toll facilities that do, also serve other trips. The John Young Parkway and Boggy Creek toll plazas are located on the southern end of S.R. 417, Central Florida Greeneway, between OIA and WDW. Transactions at John Young Parkway and Boggy Creek have been consistently lower than the average since the theme parks closed. The variance in transactions at John Young Parkway has been between 20% and 25% lower than the average impact of all CFX mainline toll plazas. The variance at Boggy Creek has been 10% to 12% lower than the average. S.R. 528, Beachline Expressway, also serves travelers between OIA and Universal Studios, SeaWorld, I-Drive and the Orange County Convention Center. Tolls at the former Airport toll plaza on S.R. 528 are now collected at FTE's Beachline West toll plaza, so estimates of recent impacts are not available. The southern portion of S.R. 429, specifically the Independence toll plaza, also serves as a kind of "back door" to WDW. Recently the variance in transactions at the Independence toll plaza are very close to the System average.

Table 8 contains a simple calculation providing some guidance about the magnitude of these effects. The top portion of the table contains the base toll revenue forecast, by plaza group, for the first three years of the forecast period, FY 2020, FY 2021 and FY 2022. The middle portion of the table provides estimates of the impacts. In the first year they were set to -30% at John Young Parkway, -20% at Boggy Creek, -10% at Airport and -10% at Independence. These impacts are then halved in FY 2021 and halved again in FY 2022. The overall impacts at the four toll locations represent a 6.7% reduction Systemwide revenue in FY 2020, a 3.3% reduction in FY 2021 and a 1.7% reduction in FY 2022. The bottom portion of the table contains estimates of revenue impacts from this potential long-term effect from COVID-19.

Table 8: Revenue Impacts on Tourist Destinations

Fiscal Year		SR 528			SR 408				SR 417			SR 429				SR 414	SR 453	CFX System	SR 538	System Total
		Airport	Beachline Main	Dallas	Hiawassee	Pine Hills	Conway	Dean	John Young	Boggy Creek	Curry Ford	University	Forest Lake	Independence	Ponkan	Mt Plymouth	Coral Hills	Coronado		Marigold	
Annual Revenue (History and Forecast)																					
2020		$46.8	$25.6	$12.2	$27.9	$42.0	$63.4	$23.6	$52.1	$57.5	$36.7	$32.8	$39.3	$35.3	$5.7	$1.7	$17.6	$1.9	$522.1	$4.4	$526.5
2021		$49.0	$28.0	$12.4	$29.6	$44.5	$66.6	$25.3	$56.4	$61.8	$38.7	$34.6	$43.3	$38.2	$6.5	$2.4	$19.6	$2.1	$559.0	$8.3	$567.3
2022		$50.3	$28.7	$12.5	$29.7	$44.9	$66.8	$25.5	$57.5	$63.3	$39.2	$34.7	$45.0	$39.1	$6.9	$2.8	$20.2	$2.3	$569.4	$9.4	$578.8
Impacts																					
		-10%	0%	0%	0%	0%	0%	0%	**-30%**	**-20%**	0%	0%	0%	**-10%**	0%	0%	0%	0%		0%	
2020[E]	100%	-10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-30.0%	-20.0%	0.0%	0.0%	0.0%	-10.0%	0.0%	0.0%	0.0%	0.0%		0.0%	**-6.7%**
2021[F]	50%	-5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-15.0%	-10.0%	0.0%	0.0%	0.0%	-5.0%	0.0%	0.0%	0.0%	0.0%		0.0%	**-3.3%**
2022[G]	25%	-2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.5%	-5.0%	0.0%	0.0%	0.0%	-2.5%	0.0%	0.0%	0.0%	0.0%		0.0%	**-1.7%**
Revenue Impacts																					
2020[E]		($4.7)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	($15.6)	($11.5)	$0.0	$0.0	$0.0	($3.5)	$0.0	$0.0	$0.0	$0.0	($35.3)	$0.0	($35.3)
2021[F]		($2.5)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	($8.5)	($6.2)	$0.0	$0.0	$0.0	($1.9)	$0.0	$0.0	$0.0	$0.0	($19.0)	$0.0	($19.0)
2022[G]		($1.3)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	($4.3)	($3.2)	$0.0	$0.0	$0.0	($1.0)	$0.0	$0.0	$0.0	$0.0	($9.7)	$0.0	($9.7)

6. Scenarios

CDM Smith developed a number of scenarios, seven of which are reported here. Scenarios A, B and C were developed and provide to CFX on April 22, 2020. Scenarios D and E were developed subsequently and presented in an earlier draft of this report. In addition, based on direction from the CFX Governing Board, CDM Smith developed two modifications, Scenarios C' and D'. All seven scenarios are described below. In general, the duration and level of the impacts increase from Scenario A to Scenario E, illustrating the range of potential impacts from an optimistic to a more pessimistic position. **Table 9** contains a summary of the impacts postulated for the five original scenarios, plus the two modified variations of Scenarios C and D. The original scenarios were created early in April when the maximal impacts were unknown. It has turned out that actual results for April and May were better than the impacts defined in Table 9. The model of COVID-19 impacts operates with assumptions of impacts by week. In order to present these assumptions, the impacts in Table 9 are listed by month during FY 2020 and FY 2021 and by quarter during the next four fiscal years.

Scenario A involves a maximum reduction of 58%, lasting for three months coming up to a reduction of 54% in the last month (April, May and June). The recovery occurs over a five-month period (July through November) and the recovery is complete. The total length of time with impacts is nine months, including March 2020.

Scenario B is the same as Scenario A up through November 2020. The recovery is then extended with a 5% reduction for seven additional months (December 2020 through June 2021) followed by a 2.5% reduction for two quarters or six months (July through December 2021). The total length of time with impacts is twenty-two months, including March 2020.

Scenario C features a longer duration of the main impacts lasting four months (April through July). The reduction of 58% comes up to a reduction of 54% for the last 6 weeks of this period. The main recovery occurs over a four-month period (August through November 2020). The reduction of 10% reached in December is continued seven months (through June 2021), then improved to a 5% reduction for another twelve months (July 2021 through June 2022). In addition, there are lasting effects which amount to a 2.5% reduction from that time to the end of the forecast. The total length of recovery time is twenty-eight months (two years and four months), including March 2020. The recovery is incomplete, in that there are lasting effects.

Scenario C' has the same impacts as Scenario C, except that the impacts during FY 2021 were increased so as to have no growth in revenue from FY 2020 to FY 2021. The months with higher impacts are November 2020 through February 2021, identified in Table 9 in bold-face type.

Scenario D begins like Scenarios A and B, with a two-month reduction of 58% improving slightly to a 54% reduction for one month (April, May and June). The transaction impacts indicate a recovery proceeding through November 2020, followed by a second wave of the virus. This recurrence of the disease results in a reduction of 30% that lasts for two months (December 2020 and January 2021). The recovery from the second wave takes two more months (February through March 2021), which is followed first by an eleven-month period with a 10% reduction (April 2021 through February

Table 9: Impacts During First Five Years

			Percent COVID Impact by Month							
Year	FY	Month /Quarter	A	B	C	C'	D	D'	E	
CY 2020	FY 2020	March	-17	-17	-17	-17	-17	-17	-17	
		April	-56.25	-56.25	-56.25	-56.25	-56.25	-56.25	-56.25	
		May	-58	-58	-58	-58	-58	-58	-58	
		June	-54	-54	-56.4	-56.4	-54	-54	-56.4	
	FY 2021	July	-50	-50	-54	-54	-50	-50	-54	
		August	-40	-40	-50	-50	-40	-40	-50	
		September	-30	-30	-40	-40	-30	-30	-40	
		October	-20	-20	-30	-30	-20	**-25**	-30	
		November	-10	-10	-20	**-25**	-20	-20	-20	
		December	0	-5	-10	**-20**	-30	-30	-30	
CY 2021		January	0	-5	-10	**-20**	-30	-30	-30	
		February	0	-5	-10	**-15**	-20	**-30**	-30	
		March	0	-5	-10	-10	-20	-20	-20	1 year
		April	0	-5	-10	-10	-10	**-15**	-20	
		May	0	-5	-10	-10	-10	-10	-10	
		June	0	-5	-10	-10	-10	-10	-10	
CY 2022	FY 2022	Q1	0	-2.5	-5	-5	-10	-10	-10	
		Q2	0	-2.5	-5	-5	-10	-10	-10	
		Q3	0	0	-5	-5	-10	-10	-10	2 years
		Q4	0	0	-5	-5	-9.2	-9.2	-10	
CY 2023	FY 2023	Q1	0	0	-2.5	-2.5	-8	-8	-10	
		Q2	0	0	-2.5	-2.5	-6.8	-6.8	-10	
		Q3	0	0	-2.5	-2.5	-5.4	-5.4	-10	3 years
		Q4	0	0	-2.5	-2.5	-5	-5	-10	
CY 2024	FY 2024	Q1	0	0	-2.5	-2.5	-5	-5	-10	
		Q2	0	0	-2.5	-2.5	-5	-5	-10	
		Q3	0	0	-2.5	-2.5	-5	-5	-10	4 years
		Q4	0	0	-2.5	-2.5	-5	-5	-9.2	
CY 2025	FY 2025	Q1	0	0	-2.5	-2.5	-5	-5	-7.9	
		Q2	0	0	-2.5	-2.5	-4.2	-4.2	-6.7	
		Q3	0	0	-2.5	-2.5	-2.9	-2.9	-5.4	5 years
		Q4	0	0	-2.5	-2.5	-2.5	-2.5	-5	

2022). Then this scenario has a twelve-month period with a gradual improvement to a 5% reduction (March 2022 through February 2023). The reduction of 5% lasts another eighteen months (March 2023 through August 2024). Finally, there is a six-month period of gradual change to a 2.5% reduction (September 2024 through February 2025). In this scenario, there are lasting effects which are set to a 2.5% reduction from that time onward. The total length of recovery time is sixty months (five years), including March 2020, but recovery is incomplete. i.e., there are lasting effects. The length of time to recovery is similar to the time it took to recover from the Great Recession.

Scenario D' has the same impacts as Scenario D, except that the impacts during FY 2021 were increased so as to produce a -2.5% growth in revenue from FY 2020 to FY 2021. The months with higher impacts are October 2020, February 2021 and April 2021, identified in bold-face type.

Scenario E begins like Scenario C, with the main impacts lasting four months (April through July). The initial reduction of 58% improves slightly to a 54% reduction during the last six weeks. Then the recovery from the main event occurs over a four-month period (August through November 2020) when a second wave of the virus occurs. This second wave results in a reduction of 30% that lasts for three months (December 2020 through February 2021). In this scenario, the initial recovery from the second wave takes two months (March and April 2021). Then there is a 10% reduction lasting thirty-four months (May 2021 through February 2024). This is followed by a gradual improvement to a 5% reduction that occurs over twelve months (March 2024 through February 2025). In this scenario, the lasting effects are amount to be a 5% reduction from that time onward. The total length of recovery time is sixty months (five years). Once again, recovery is incomplete.

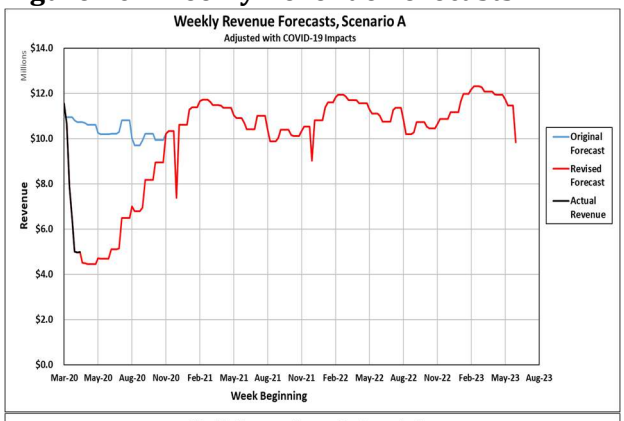
7. Revenue Impacts

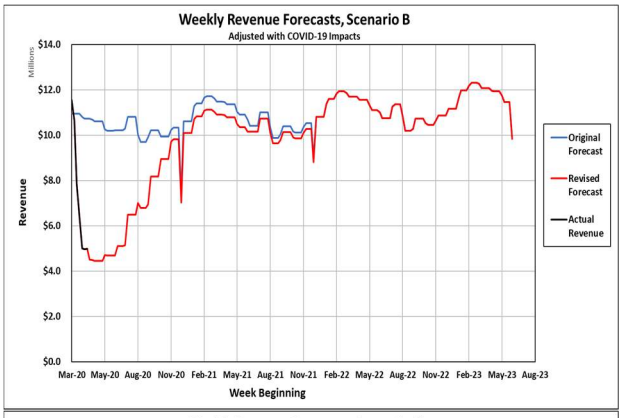
CDM Smith developed a spreadsheet model to quickly apply weekly impacts, in the form of percent reductions. The model was seeded with the actual conditions from the beginning of March through the week ending April 12, 2020. This model covers the last four months of FY 2020 and the next three fiscal years, i.e., through the end of FY 2023. **Figure 10** contains seven graphs with weekly revenue forecasts for each scenario. Each graph has a line with the original (or base) weekly revenue forecast shown in blue and another with the revised weekly revenue forecast shown in red. The actual toll revenue collected during March and first two weeks of April is shown in black line. The impacts from COVID-19 are more substantial and last longer, moving from Scenario A to Scenario E. Beyond the period in these graphs, there is a full recovery to the base forecasts under Scenarios A and B. The other scenarios have lasting effects from the virus: Scenarios C, C', D and D' have a 2.5% reduction and Scenario E has a 5% reduction.

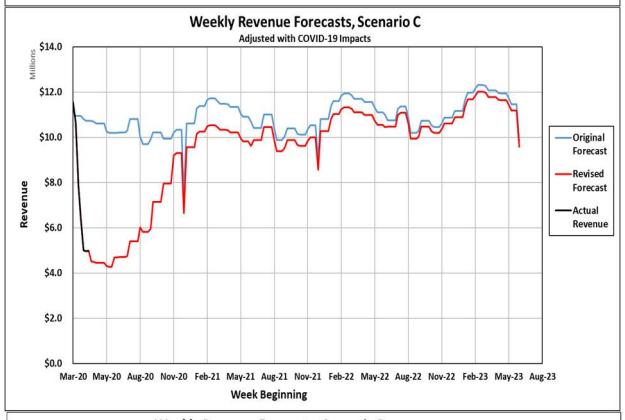
The annual impacts on toll revenue from COVID-19 for the seven scenarios are shown in **Table 10**. The impacts in Scenario A occur only in FY 2020 and FY 2021. Under Scenario B, the impacts occur only during the first three fiscal years. The main impacts under Scenarios C and C' occur during the first three fiscal years, but with lasting impacts of -2.5% in all remaining years in the forecast period. The primary impacts under Scenarios D and D' occur over six fiscal years, FY 2020 through FY 2025, with lasting impacts of -2.5% per year thereafter. Under Scenario E, the main impacts appear over six fiscal years. The impacts are more substantial than those in the other scenarios. The lasting effects under Scenario E are set at -5% per year over the remainder of the forecast period.

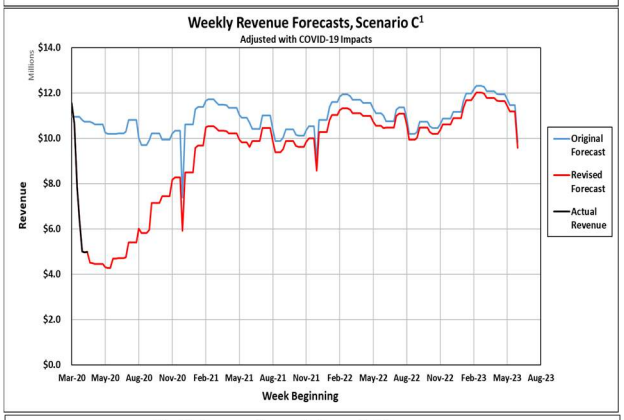
Looking at the scenarios with more lasting impacts, Scenarios C through E, it is interesting to note that while the impacts during FY 2020 are substantial (a reduction of approximately 17% in all cases), the impacts during FY 2021are greater. The impacts during the current year occur during parts of March and all of the months of April through June. The first eight months were unaffected by COVID-19. The impacts during the upcoming fiscal year are generally less during each month but occur in all months.

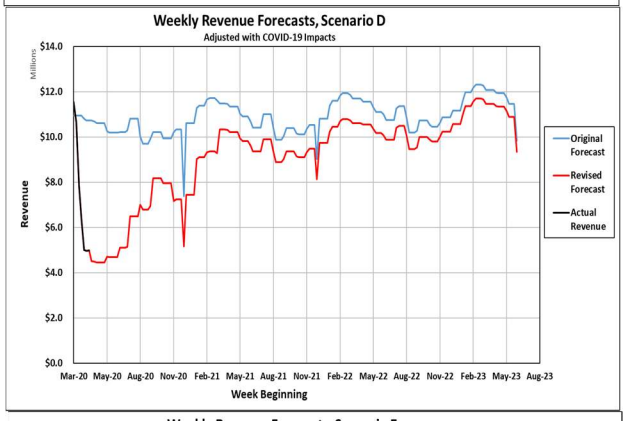
Figure 10: Weekly Revenue Forecasts

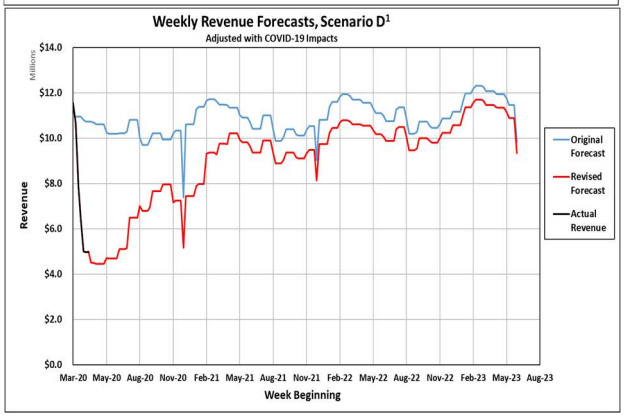












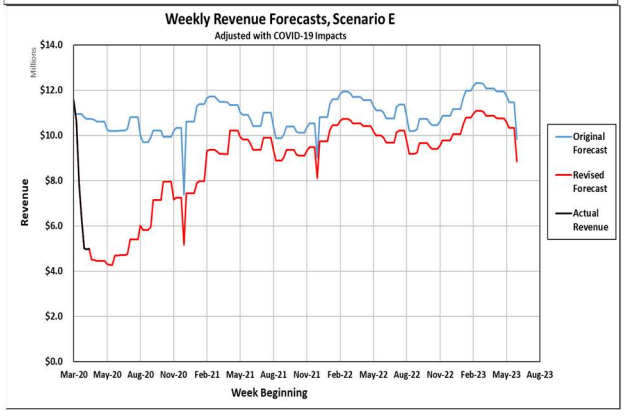


Table 10: Revenue Impacts

Fiscal Year	Scenario A	Scenario B	Scenario C	Scenario C'	Scenario D	Scenario D'	Scenario E
2020	-16.9%	-16.9%	-17.2%	-17.2%	-16.9%	-16.9%	-17.2%
2021	-11.4%	-14.4%	-20.7%	-23.1%	-23.1%	-24.7%	-27.4%
2022	0.0%	-1.2%	-4.9%	-4.9%	-9.4%	-9.4%	-9.8%
2023	0.0%	0.0%	-2.4%	-2.4%	-5.8%	-5.8%	-9.8%
2024	0.0%	0.0%	-2.5%	-2.5%	-5.0%	-5.0%	-9.6%
2025	0.0%	0.0%	-2.5%	-2.5%	-3.4%	-3.4%	-6.0%
2026	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2027	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2028	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2029	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2030	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2031	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2032	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2033	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2034	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2035	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2036	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2037	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2038	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2039	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2040	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2041	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2042	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2043	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2044	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2045	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2046	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2047	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2048	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%
2049	0.0%	0.0%	-2.5%	-2.5%	-2.5%	-2.5%	-5.0%

The two recently developed scenarios were prepared to address Board member questions about growth rates between FY 2020 and FY 2021. Scenario C' was created from Scenario C so as to have zero growth. Scenario D' was created from Scenario D to produce a -2.5% growth rate. The larger impacts during FY 2021, highlighted in Table10, are the only change from the original assumptions, i.e., Scenario C' is otherwise identical Scenario C and Scenario D' is the same as Scenario D.

8. Revenue Estimates

The revised revenue estimates were developed using the original revenue forecast as the base and adjusting for the revenue impacts of COVID-19. **Table 11** contains the base forecast of Available Revenue and estimates for each of the seven scenarios. The annual growth rates are presented beside each revenue stream. These estimates of available revenue include a reduction in the annual discounts, proportional to the annual impacts from COVID-19 developed for each scenario.

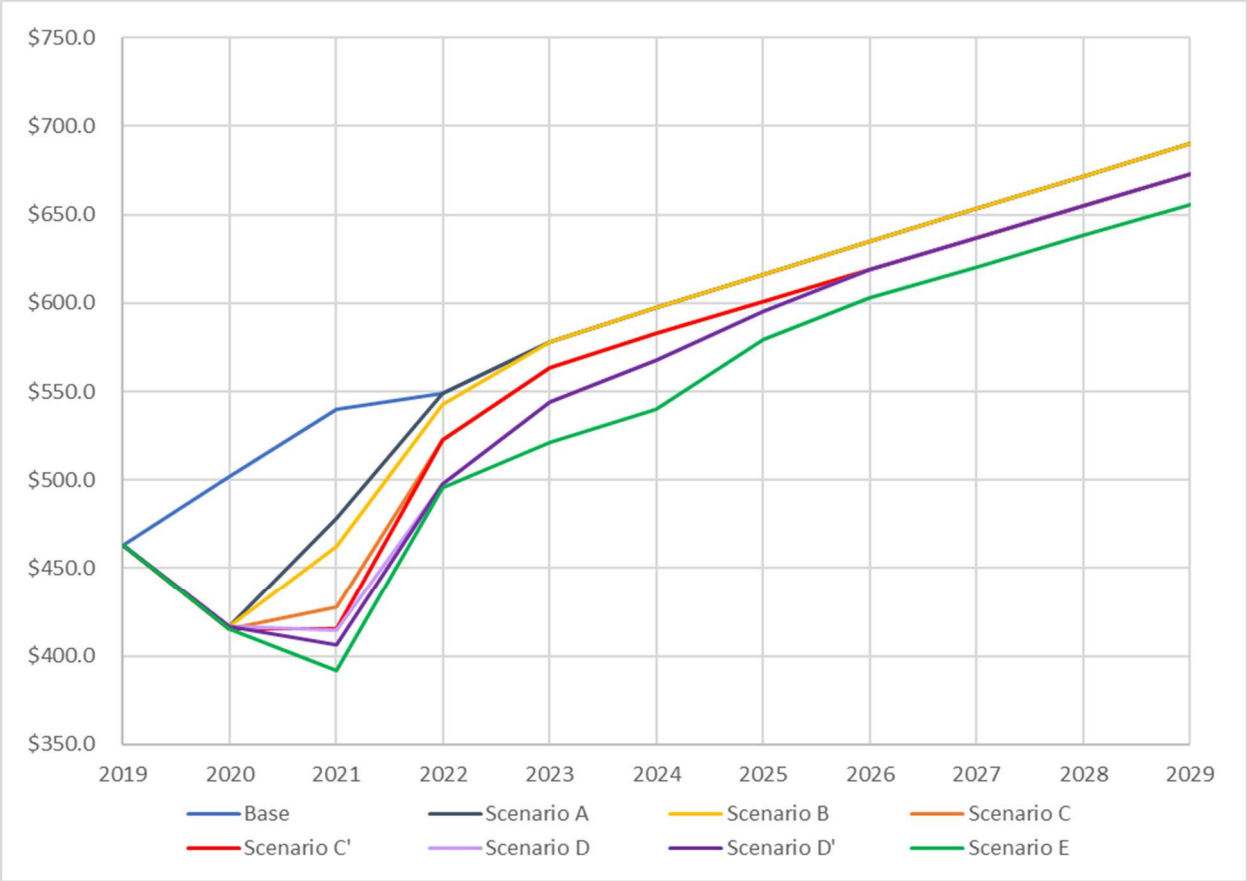
By their nature, the revenue streams for the scenarios with impacts begin with decreases in annual revenue, i.e., negative growth rates. These are inevitably followed by substantial positive growth rates as annual revenues return over time to be closer to the pre-COVID-19 values.

Table 11: Revised Annual Revenue Estimates (Millions)

Fiscal Year		Base		Scenario A		Scenario B		Scenario C		Scenario C'		Scenario D		Scenario D'		Scenario E	
2017	Actual	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%	$423.7	8.4%
2018		$441.8	4.3%	$441.8	4.3%	$441.8	4.3%	$441.8	4.3%	$441.8	4.3%	$441.8	4.3%	$441.8	4.3%	$441.8	4.3%
2019		$463.2	4.8%	$463.2	4.8%	$463.2	4.8%	$463.2	4.8%	$463.2	4.8%	$463.2	4.8%	$463.2	4.8%	$463.2	4.8%
2020	Forecast	$501.7	8.3%	$416.8	-10.0%	$416.8	-10.0%	$415.6	-10.3%	$415.6	-10.3%	$416.8	-10.0%	$416.8	-10.0%	$415.6	-10.3%
2021		$539.8	7.6%	$478.3	14.8%	$462.1	10.9%	$427.9	3.0%	$415.2	-0.1%	$414.9	-0.5%	$406.4	-2.5%	$391.9	-5.7%
2022		$549.3	1.8%	$549.3	14.8%	$543.0	17.5%	$522.4	22.1%	$522.4	25.8%	$497.5	19.9%	$497.5	22.4%	$495.6	26.5%
2023		$577.9	5.2%	$577.9	5.2%	$577.9	6.4%	$563.8	7.9%	$563.8	7.9%	$544.3	9.4%	$544.3	9.4%	$521.4	5.2%
2024		$597.6	3.4%	$597.6	3.4%	$597.6	3.4%	$582.6	3.3%	$582.6	3.3%	$567.8	4.3%	$567.8	4.3%	$539.9	3.5%
2025		$616.3	3.1%	$616.3	3.1%	$616.3	3.1%	$600.9	3.1%	$600.9	3.1%	$595.1	4.8%	$595.1	4.8%	$579.4	7.3%
2026		$634.6	3.0%	$634.6	3.0%	$634.6	3.0%	$618.8	3.0%	$618.8	3.0%	$618.8	4.0%	$618.8	4.0%	$602.9	4.1%
2027		$653.3	2.9%	$653.3	2.9%	$653.3	2.9%	$637.0	2.9%	$637.0	2.9%	$637.0	2.9%	$637.0	2.9%	$620.6	2.9%
2028		$671.6	2.8%	$671.6	2.8%	$671.6	2.8%	$654.8	2.8%	$654.8	2.8%	$654.8	2.8%	$654.8	2.8%	$638.1	2.8%
2029		$690.4	2.8%	$690.4	2.8%	$690.4	2.8%	$673.2	2.8%	$673.2	2.8%	$673.2	2.8%	$673.2	2.8%	$655.9	2.8%
2030		$708.9	2.7%	$708.9	2.7%	$708.9	2.7%	$691.2	2.7%	$691.2	2.7%	$691.2	2.7%	$691.2	2.7%	$673.5	2.7%
2031		$727.8	2.7%	$727.8	2.7%	$727.8	2.7%	$709.6	2.7%	$709.6	2.7%	$709.6	2.7%	$709.6	2.7%	$691.4	2.7%
2032		$746.1	2.5%	$746.1	2.5%	$746.1	2.5%	$727.4	2.5%	$727.4	2.5%	$727.4	2.5%	$727.4	2.5%	$708.8	2.5%
2033		$764.7	2.5%	$764.7	2.5%	$764.7	2.5%	$745.6	2.5%	$745.6	2.5%	$745.6	2.5%	$745.6	2.5%	$726.4	2.5%
2034		$783.3	2.4%	$783.3	2.4%	$783.3	2.4%	$763.7	2.4%	$763.7	2.4%	$763.7	2.4%	$763.7	2.4%	$744.2	2.5%
2035		$802.5	2.5%	$802.5	2.5%	$802.5	2.5%	$782.4	2.4%	$782.4	2.4%	$782.4	2.4%	$782.4	2.4%	$762.3	2.4%
2036		$821.6	2.4%	$821.6	2.4%	$821.6	2.4%	$801.0	2.4%	$801.0	2.4%	$801.0	2.4%	$801.0	2.4%	$780.5	2.4%
2037		$841.0	2.4%	$841.0	2.4%	$841.0	2.4%	$820.0	2.4%	$820.0	2.4%	$820.0	2.4%	$820.0	2.4%	$799.0	2.4%
2038		$860.7	2.3%	$860.7	2.3%	$860.7	2.3%	$839.2	2.3%	$839.2	2.3%	$839.2	2.3%	$839.2	2.3%	$817.6	2.3%
2039		$880.7	2.3%	$880.7	2.3%	$880.7	2.3%	$858.6	2.3%	$858.6	2.3%	$858.6	2.3%	$858.6	2.3%	$836.7	2.3%
2040		$900.3	2.2%	$900.3	2.2%	$900.3	2.2%	$877.8	2.2%	$877.8	2.2%	$877.8	2.2%	$877.8	2.2%	$855.2	2.2%
2041		$921.0	2.3%	$921.0	2.3%	$921.0	2.3%	$898.0	2.3%	$898.0	2.3%	$898.0	2.3%	$898.0	2.3%	$874.9	2.3%
2042		$941.3	2.2%	$941.3	2.2%	$941.3	2.2%	$917.7	2.2%	$917.7	2.2%	$917.7	2.2%	$917.7	2.2%	$894.3	2.2%
2043		$961.8	2.2%	$961.8	2.2%	$961.8	2.2%	$937.8	2.2%	$937.8	2.2%	$937.8	2.2%	$937.8	2.2%	$913.8	2.2%
2044		$983.0	2.2%	$983.0	2.2%	$983.0	2.2%	$958.4	2.2%	$958.4	2.2%	$958.4	2.2%	$958.4	2.2%	$933.8	2.2%
2045		$1,004.5	2.2%	$1,004.5	2.2%	$1,004.5	2.2%	$979.3	2.2%	$979.3	2.2%	$979.3	2.2%	$979.3	2.2%	$954.3	2.2%
2046		$1,025.7	2.1%	$1,025.7	2.1%	$1,025.7	2.1%	$1,000.1	2.1%	$1,000.1	2.1%	$1,000.1	2.1%	$1,000.1	2.1%	$974.4	2.1%
2047		$1,046.9	2.1%	$1,046.9	2.1%	$1,046.9	2.1%	$1,020.7	2.1%	$1,020.7	2.1%	$1,020.7	2.1%	$1,020.7	2.1%	$994.5	2.1%
2048		$1,068.8	2.1%	$1,068.8	2.1%	$1,068.8	2.1%	$1,042.1	2.1%	$1,042.1	2.1%	$1,042.1	2.1%	$1,042.1	2.1%	$1,015.3	2.1%
2049		$1,090.4	2.0%	$1,090.4	2.0%	$1,090.4	2.0%	$1,063.1	2.0%	$1,063.1	2.0%	$1,063.1	2.0%	$1,063.1	2.0%	$1,035.9	2.0%

Figure 11 contains a graphical summary of annual available revenue contained in the base forecast and the seven scenarios. In this graph, the impacts from COVD-19 are the vertical distances between the Base forecast and the scenario estimates. The first year in the graph is FY 2019 with historic results. For all but Scenarios A and B, the impacts are greater in FY 2021 and then in FY 2020. Yet of the forecasts increase. This is due to the expected growth in revenue over these two years.

Figure 11: Annual Available Revenue (Millions)



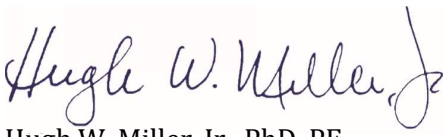
9. Conclusions

As you know, CDM Smith provided revenue streams for all seven scenarios to be used in developing CFX's financial plan. We have recommended that CFX utilize Scenario C for financial planning.

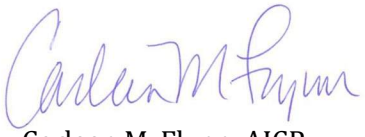
The circumstances surrounding the outbreak and progress of COVID-19 are unprecedented. The path forward is at times unclear. From a forecasting perspective, the sound approach is to recognize the inherent uncertainties and develop scenarios wide enough apart to cover extreme outcomes, which we have done. Also, we expect to update the forecasts at a more frequent interval. We expect to update the forecasts quarterly and help you reset the financial plan as necessary.

CDM Smith will continue to closely monitor T&R conditions over time. We will pay attention to the announcements and actions of both the public and private sectors. We will, of course, advise you should conditions change. Please let us know if you have any questions or require further information. Respectfully submitted,

CDM Smith



Hugh W. Miller, Jr., PhD, PE
Vice President and Project Manager



Carleen M. Flynn, AICP
Deputy Project Manager

cc: Lisa Lumbard, Chief Financial Officer, CFX
Glenn Pressimone, PE, Chief of Infrastructure, CFX

Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of these traffic and revenue estimates. However, as with any forecast, differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. The impacts of the Coronavirus, government policies protecting the public from the virus and the economic consequences (if unintended) have been changing almost daily. For these reasons, these estimates have a high degree of uncertainty. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by CFX and Fishkind & Associates. 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; 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.

TABLE OF CONTENTS

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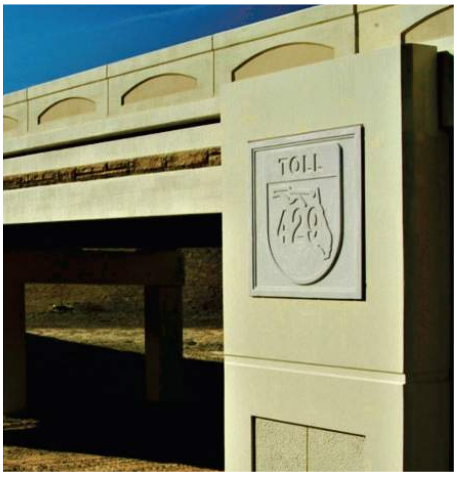
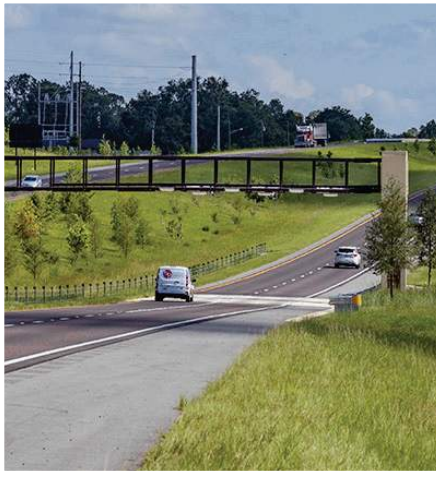
CHAPTER 1

INTRODUCTION AND SYSTEM OVERVIEW





INTRODUCTION AND SYSTEM OVERVIEW

1.1 Introduction

This Annual Report, which was prepared for the Central Florida Expressway Authority (CFX), contains a summary of the Fiscal Year (FY) 2019 traffic and revenue (T&R) performance characteristics and 30-year forecasts of traffic and revenue (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 future estimates 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 2000 through FY 2019, along with projected T&R for FY 2020 through FY 2049. 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, recent events that have an impact on system T&R, a summary of the forecasting methodology and the T&R estimates over the next 30 years for the System.

Chapter 2 contains a presentation of historical trends and current socioeconomic conditions. 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 six 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
- S.R. 453

A location map of the six 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.

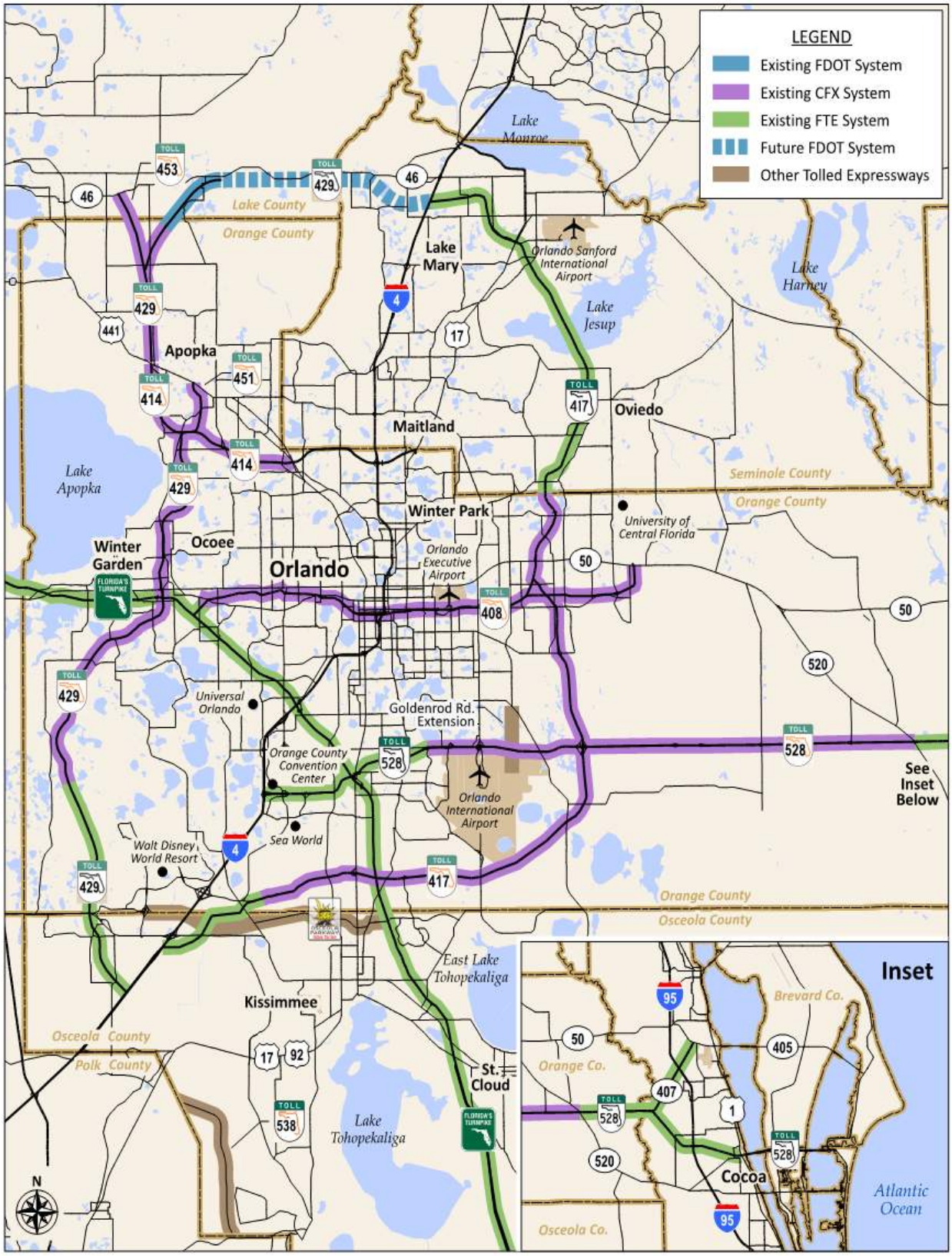
The System as it exists today is the result of many improvement and expansion projects, constructed over the 56-year period between 1963 and 2019. The first facility was the 23-mile S.R. 528 Beachline Expressway, which opened to traffic in 1967. Presently, the facility extends from the S.R. 482/Sand 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 Florida Turnpike Enterprise's 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. 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 was 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: Hiawassee Main, Pine Hills Main, Conway Main, and Dean Main, along with 10 pairs of ramp plazas plus two single ramp plazas.

The next facility was 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 31 miles from Seidel Road in west Orange County on the southern end to Mt. Plymouth Road on the northern end. Of the 31 miles, three are part of a dual route with S.R. 414 (John Land Apopka Expressway). Until recently it had two mainline toll plazas: Forest Lake Main and Independence Main, along with five pairs of ramp plazas. In July 2017, the Ponkan Main Plaza opened to traffic as an all-electronic toll (AET) collection facility. In April 2018, the Mt. Plymouth Main Plaza also opened to traffic as an AET facility. The portion of S.R. 429 with the Ponkan and Mt. Plymouth Main Plazas was developed and constructed as the Wekiva Parkway. The 2-mile Western Beltway Connector Road (S.R. 451) is the former S.R. 429 connection to U.S. 441 extending from S.R. 414 on the southern end to U.S. 441 on the northern end. FTE owns and operates toll facilities on S.R. 429 from Seidel Road to I-4 in Osceola County and operates the portion from Mt. Plymouth north into Seminole County. Eventually, this Western Beltway will be completed with a connection in the north to I-4 and S.R. 417.

Figure 1-1
Central Florida Expressway System



The fifth facility, which opened to traffic in 2009, was 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.

The sixth facility, which opened to traffic in 2018, was the 2-mile portion of the S.R. 453 project locally known as the Wekiva Parkway. S.R. 453 provides a connection from S.R. 429 northwest to Mount Dora via S.R. 46 in Lake County. S.R. 453 has one mainline plaza, Coronado Main, and no ramp plazas.

Goldenrod Road Extension was 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.

S.R. 538, the Poinciana Parkway, was a 7-mile toll facility built by the Osceola County Expressway Authority (OCX) and operated by CFX as a non-system facility in FY 2019. The Poinciana Parkway opened to traffic in April of 2016 and in December of 2018 the CFX Board unanimously supported transitioning control of the facility from OCX to CFX. S.R. 538 commences at Cypress Parkway in the south and extends 7 miles north to the end of the bridge at Ronald Reagan Parkway/Kinney Harmon Road. It has two mainline toll plazas, Marigold Main and Koa 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 Greeneway	32	1988
S.R. 429 - Daniel Webster Western Beltway	31	2000
S.R. 414 - John Land Apopka Expressway	9	2009
S.R. 451 - Western Beltway Connector Road	2	2012
S.R. 453	2	2018
Current System Total[A]	118	
CFX Non-System		
Goldenrod Road Extension	2	2003
Poinciana Parkway	7	2016

Notes:

A - Of the 31 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 POINCIANA PARKWAY (S.R. 538)

The Poinciana Parkway is a is a 7.2 mile-long, two-lane, two-way, limited access toll road extending from the Cypress Parkway in Poinciana north to the Polk-Osceola County line. The Poinciana Parkway was developed by the Osceola County Expressway Authority (OCX) and opened to traffic in April of 2016. The facility is operated by CFX. The Florida Legislature required that CFX consider acquiring the Poinciana Parkway as part of the legislation creating and expanding the geographic base of CFX. The Parkway has two mainline toll plazas, the Marigold Main and Koa Main, with no associated ramp plazas.

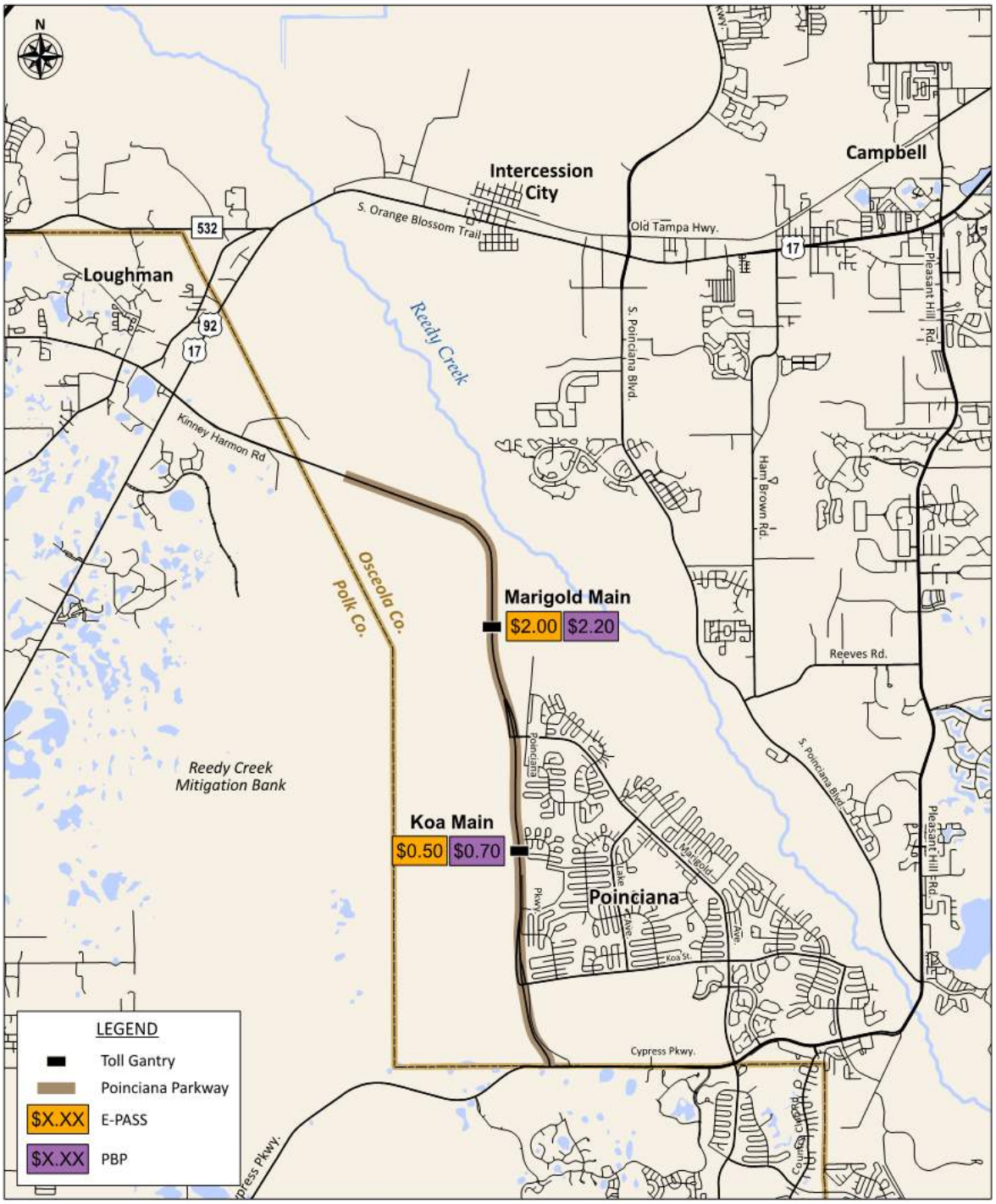
The highway is contiguous with Kinney Harmon Road in Polk County and connects the Poinciana Parkway to US 17/92 in Loughman. The construction of the Poinciana Parkway included rebuilding Kinney Harmon Road as a two-lane arterial, building a new two-lane bridge over the Reedy Creek Mitigation Bank (RCMB), and constructing a two-lane, limited access roadway from the bridge to Cypress Parkway. From the northwest, the Poinciana Parkway passes through the RCMB, over the bridge, and then makes a turn south. South of the bridge, the Poinciana Parkway has grade-separated, half intersections to and from the north (i.e., southbound exit ramps and northbound entrance ramps) with Marigold Avenue and KOA Street and terminates in an at-grade T-intersection with Cypress Parkway. The existing Poinciana Parkway is shown in **Figure 1-2.**

The Poinciana Parkway provides a critical north-south connection to US 17-92 for the residents of the Poinciana community in Osceola and Polk Counties, facilitating access to regional transportation networks, theme parks and the Orlando metropolitan area. Toll collection of the facility is AET at the Marigold Main and Koa Main toll plazas. Customers can pay the toll with either E-PASS and other interoperable transponders or by Pay by Plate (PBP) video billing. The FY 2019 toll rate is $2.00 at Marigold Main and $0.50 at Koa Main, with an additional fee of $0.20 for PBP transactions.

In November of 2018, CDM Smith completed Preliminary T&R forecasts for the potential acquisition of the Poinciana Parkway by CFX. This study evaluated the current two-lane facility as well as an improvement to four lanes which included a new extension to US 17-92 and assumed the toll rate policy implemented by OCX for the existing segment of Poinciana Parkway and $0.18 per mile for the extension segment increased at 1.5% per year, per the CFX Customer First Toll Policy. The forecast considered the transactions and revenues collected since starting revenue collections in August of 2016 as well as travel demand forecasts using an updated version of the regional travel demand model, CFX Model 3.2. This model incorporated socioeconomic forecasts developed by an independent economist for Osceola County and portions of Orange County, as well as network updates and assumptions of road improvements.

Marigold Main Plaza

Figure 1-2
Poinciana Parkway – Existing Conditions



At their October 2019 Board Meeting, the CFX Board unanimously accepted The Poinciana Parkway Extension Project Development and Environment (PD&E) study which extends the Parkway from its current terminus at the end of the bridge over the Reedy Creek Mitigation Bank to CR 532.

At their December 2019 Board meeting, the CFX Board unanimously approved the acquisition of the Poinciana Parkway, effective December 31, 2019, CFX assumed all governance, control, and maintenance of the Poinciana Parkway. Starting in FY 2020, the revenue forecasts from the Poinciana Parkway Acquisition T&R Study (up to US 17-92) are included in the forecasts of Total System Revenues at the end of this chapter.

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, 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. Going forward customers will 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 2019 toll rates are presented in **Table 1-2**. The rates shown in this table come from the first toll rate adjustment under the new toll policy at a CPI adjustment of 2.05%. In accordance with CFX's Toll Policy, the next toll rate adjustment will be implemented on July 1, 2019 (FY 2020) and will be reflected in next year's annual report.

Table 1-2
CFX System Toll Rates, FY 2019 (as of July 1, 2018)

Roadway	Electronic Toll Schedule					Cash Toll Schedule					PAY BY PLATE Toll Schedule				
	2 Axles [A]	3 Axles	4 Axles	5 Axles	6 Axles	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	$1.11	$1.11	$1.11	$1.11	$1.11	$1.25	$1.25	$1.25	$1.25	$1.25					
Conway Road/Tradeport Drive	$1.11	$1.11	$1.11	$1.11	$1.11	$1.25	$1.25	$1.25	$1.25	$1.25					
Beachline Main Plaza	$0.89	$1.75	$2.04	$2.60	$2.60	$1.00	$2.00	$2.25	$3.00	$3.00					
Innovation Way	$0.60	$0.60	$0.60	$0.60	$0.60	$0.75	$0.75	$0.75	$0.75	$0.75					
Dallas Blvd.	$0.51	$0.51	$0.51	$0.51	$0.51	$0.75	$0.75	$0.75	$0.75	$0.75					
Dallas Main Plaza [B]	$0.77	$1.03	$1.28	$1.28	$1.28	$1.50	$1.75	$2.00	$2.00	$2.00					
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	$0.84	$1.67	$1.95	$2.51	$2.51	$1.00	$2.00	$2.25	$3.00	$3.00					
Hiawassee Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Pine Hills Main Plaza	$1.11	$1.67	$1.95	$2.51	$2.51	$1.25	$2.00	$2.25	$3.00	$3.00					
Old Winter Garden Road	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
John Young Parkway (S.R. 423)	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Orange Blossom Trail	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Mills Avenue	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Bumby Avenue	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Conway Road	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Andes/Semoran Blvd.	$1.11	$1.11	$1.11	$1.11	$1.11	$1.25	$1.25	$1.25	$1.25	$1.25					
Conway Main Plaza	$1.11	$1.67	$1.95	$2.51	$2.51	$1.25	$2.00	$2.25	$3.00	$3.00					
Semoran Blvd. (S.R. 436)	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Dean Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Dean Main Plaza	$0.84	$1.67	$1.95	$2.51	$2.51	$1.00	$2.00	$2.25	$3.00	$3.00					
Rouse Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
S.R. 417															
John Young Main Plaza	$1.40	$1.95	$2.51	$3.06	$3.06	$1.75	$2.25	$3.00	$3.50	$3.50					
John Young Parkway (S.R. 423)	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Orange Blossom Trail	$0.56	$0.56	$0.56	$0.56	$0.56	$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	$1.40	$1.95	$2.51	$3.06	$3.06	$1.75	$2.25	$3.00	$3.50	$3.50					
Boggy Creek Road	$1.11	$1.11	$1.11	$1.11	$1.11	$1.25	$1.25	$1.25	$1.25	$1.25					
Lake Nona Blvd.	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Narcoossee Road	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Moss Park Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Innovation Way	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Lee Vista Blvd.	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Curry Ford Main Plaza	$0.84	$1.67	$1.95	$2.51	$2.51	$1.00	$2.00	$2.25	$3.00	$3.00					
Curry Ford Road (S.R. 552)	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Colonial Drive (S.R. 50)	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
University Main Plaza	$0.84	$1.67	$1.95	$2.51	$2.51	$1.00	$2.00	$2.25	$3.00	$3.00					
University Blvd.	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
S.R. 429															
Schofield Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
New Independence Parkway	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Independence Main Plaza	$1.40	$1.95	$2.51	$3.06	$3.06	$1.75	$2.25	$3.00	$3.50	$3.50					
C.R. 535	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
S.R. 438	$0.29	$0.29	$0.29	$0.29	$0.29	$0.50	$0.50	$0.50	$0.50	$0.50					
West Road	$0.84	$0.84	$0.84	$0.84	$0.84	$1.00	$1.00	$1.00	$1.00	$1.00					
Forest Lake Main Plaza	$1.40	$1.95	$2.51	$3.06	$3.06	$1.75	$2.25	$3.00	$3.50	$3.50					
C.R. 437A	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Ponkan Main Plaza	$0.80	$1.20	$1.60	$2.00	$2.00	N/A	N/A	N/A	N/A	N/A	$1.39	$1.79	$2.19	$2.59	$2.59
Mt. Plymouth Main Plaza	$0.75	$1.13	$1.50	$1.88	$1.88	N/A	N/A	N/A	N/A	N/A	$1.34	$1.72	$2.09	$2.47	$2.47
S.R. 453															
Coronado Main Plaza	$0.65	$0.98	$1.30	$1.63	$1.63	N/A	N/A	N/A	N/A	N/A	$1.24	$1.57	$1.89	$2.22	$2.22
S.R. 414															
Coral Hills Main Plaza	$1.11	$1.67	$2.22	$2.79	$2.79	$1.25	$2.00	$2.50	$3.25	$3.25					
Keene Road	$0.56	$0.56	$0.56	$0.56	$0.56	$0.75	$0.75	$0.75	$0.75	$0.75					
Hiawassee Road	$0.29	$0.29	$0.29	$0.29	$0.29	$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 $0.75 for cash transactions regardless of the number of axles.

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 required 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 other interoperable transponders, transactions on those systems were not eligible for the frequent user discount. Only transactions on CFX facilities that were paid through ETC received this discount, including SunPass and LeeWay.

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 (FY 1998), the rebates totaled approximately $0.7 million, or approximately 0.7 percent of the total System revenues. In FY 2019, the discount program has grown to $20.4 million, or approximately 4.1 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 2019 the paid in-lane revenues collected through ETC reached 85.0 percent.

Beginning in FY 2016 (July 2015), CFX implemented the Beltway 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 2019, this discount program provided $7.1 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 rebate 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 rebate is only offered in months when actual toll revenue exceeds the revenue projections by more than 2.0 percent. In FY 2019, this discount program provided $0.3 million in rebates to Central Florida school districts.

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

As shown in **Table 1-3**, the FY 2019 average toll rates per mile on CFX's six facilities are comparable to the average toll rates on other toll facilities across the United States. The average rates per mile for CFX's facilities are between 13.0 and 35.4 cents per mile for cash/video rates, and 11.1 and 18.6 cents per mile for electronic toll rates. The average cash rate for the CFX System is 18.5 cents per mile and the average ETC rate is 14.5 cents per mile. Toll rates on CFX facilities vary depending on the opening year of the facility and the initial toll rate, and the relative toll adjustments that have taken place since the opening of the facility.

Table 1-3
Toll Rate Comparison with Other U.S. Toll Facilities

State	Toll Facility	Notes	Initial Opening Year	Most 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-19	U	58	-	$12.54	-	21.6
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
NY	New York State Thruway		1954	Apr-16	R/U	496	-	$23.99	-	4.8
CA	San Joaquin Hills Corridor (SR 73)		1996	Jul-18	R/U	15	$8.48	$7.48	56.5	49.9
CO	Northwest Parkway		2003	Jan-19	U	10	$5.00	$4.00	52.6	42.1
VA	Chesapeake Expressway (Route 168)		2001	May-16	R	16	$8.00	$8.00	50.0	50.0
CO	E-470		1991	Jan-19	R/U	47	$22.55	$14.25	48.3	30.5
CA	Eastern Toll Road (SR 241)		1998	Jul-18	R/U	24	$10.57	$7.57	44.0	31.5
VA	Dulles Greenway		1995	Mar-18	R/U	14	$5.65	$5.65	40.4	40.4
DE	Delaware Turnpike (I-95)		1963	Oct-07	R/U	11	$4.00	$4.00	35.7	35.7
VA	Dulles Toll Road		1984	Jan-19	C	13	$4.75	$4.75	35.4	35.4
FL	CFX S.R. 453	E	2018	Apr-18	R/U	4	$1.24	$0.65	35.4	18.6
CA	South Bay Expressway		2007	Jun-12	C	10	$3.50	$2.75	35.0	27.5
FL	Miami Dade Expressway, Gratigny Parkway, SR 924		1992	Jul-18	U	5	$1.88	$0.94	34.8	17.4
MD	Maryland Inter County Connector		2011	Jul-15	P	18	$5.78	$3.86	32.3	21.6
FL	Miami Dade Expressway Authority - Dolphin Expressway (SR 836)		1965	Jul-18	U	14	$4.52	$2.26	32.3	16.1
FL	Miami Dade Expressway, Airport Expressway, SR 112		1961	Jul-18	U	4	$1.32	$0.66	31.4	15.7
TX	North Texas Tollway Authority - President George Bush TPK		1998	Oct-17	U	51	$13.98	$9.31	27.2	18.1
FL	Miami Dade Expressway, Don Shula Expressway (SR 874)		1971	Jul-18	U	7	$1.86	$0.92	26.6	13.1
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-19	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-18	U	15	$3.47	$2.97	23.1	19.8
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-18	U	22	$4.50	$3.90	20.3	17.6
FL	CFX S.R. 429 (Western Beltway)	B	2000	Jul-18	R/U	31	$6.23	$4.35	20.1	14.0
FL	CFX System (All Facilities)	A	-	Jul-18	R/U	118	$21.72	$17.05	18.5	14.5
FL	Florida's Turnpike, Polk Parkway		1998	Oct-17	U	25	$4.50	$3.21	18.0	12.8
FL	CFX S.R. 417 (Central Florida Greeneway)		1988	Jul-18	R/U	32	$5.50	$4.48	17.2	14.0
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	Florida's Turnpike, Beachline West		1973	Oct-17	U	8	$1.25	$0.80	15.3	9.8
PA	Pennsylvania Turnpike		1940	Jan-19	R	360	$54.35	$38.95	15.1	10.8
FL	CFX S.R. 414 (Apopka Expressway)	B	2009	Jul-18	R/U	9	$1.25	$1.11	13.9	12.3
FL	Florida's Turnpike, Western Beltway		2005	Oct-17	R/U	11	$1.50	$1.07	13.6	9.7
WV	West Virginia Turnpike		1954	Jan-19	R	88	$12.00	$7.80	13.6	8.9
FL	CFX S.R. 528 (Beachline Expressway)		1967	Jul-18	R/U	23	$3.00	$2.56	13.0	11.1
NH	Blue Star Turnpike		1950	Jul-09	R	16	$2.00	$1.40	12.3	8.6
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-19	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-19	C	96	$10.20	$5.10	10.6	5.3
IL	Jane Addams Memorial Tollway		1958	Jan-19	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-19	R	241	$19.25	$13.25	8.0	5.5
FL	Florida's Turnpike, Northern Coin System		1957	Oct-17	U	67	$5.00	$4.28	7.5	6.4
IN	Indiana Toll Road		1956	Oct-18	R	157	$11.10	$11.12	7.1	7.1
MA	Massachusetts Turnpike	C	1957	Oct-16	C	123	$7.95	$4.25	6.5	3.5
KS	Kansas Turnpike		1956	Oct-18	R	236	$15.00	$11.15	6.4	4.7
ME	Maine Turnpike		1947	Nov-12	R	111	$7.00	$6.45	6.3	5.8
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.

E - S.R. 453 is 2-miles, toll is for 2 miles plus 1.5 miles of SR 429 to Kelly Park Road.

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 results 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 2018 toll rate increase on traffic was not profound for several reasons. This rate increase was the first indexing of toll rates to the Consumer Price Index. For calendar year 2018 the change in CPI was calculated at 2.05%, which calculated to a few pennies at most locations. To determine elasticity of the FY 2019 toll rate increase, T&R from two months (May and June) in FY 2018 was compared against the T&R for the two months after the increase in FY 2019 and adjusted for seasonality. The overall growth on the facilities overshadowed the effect of the toll rate increase, which resulted in no traffic elasticity.

The second most recent toll rate adjustment was in July 2012. 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 ETC as a result of the rate increase, as customers took 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 1-4**.

Table 1-4
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

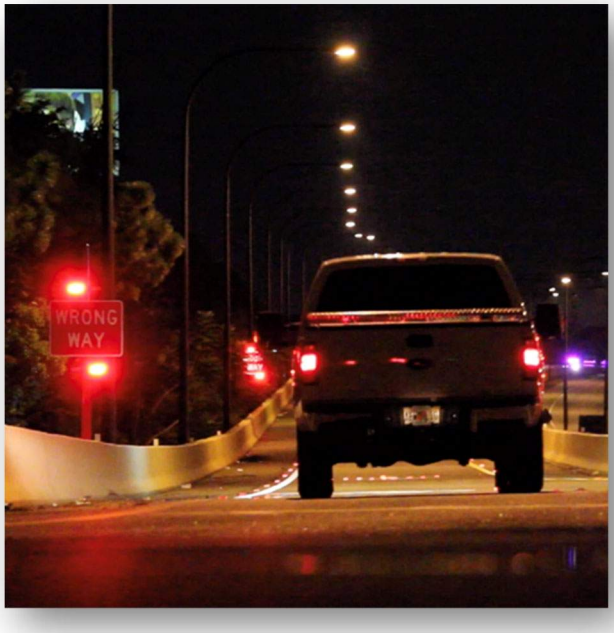
The traffic elasticity on both S.R. 408 and S.R. 417 were -0.14, with a very minor impact to the traffic. S.R. 528 was excluded from the elasticity calculation due to the recent opening of Dallas Boulevard Main Plaza and the reduction of the $1.50 toll rate to $0.75 at Beachline Main Plaza. S.R. 429 and S.R. 414 were excluded from the elasticity calculation since these facilities experienced increases in traffic over the period. Both facilities had just recently opened to traffic with higher initial annual growth rates and had influences beyond the toll rate change. These facilities also serve areas that were still experiencing development growth, as compared to S.R 408 and S.R. 417 that served developed urban areas of Orlando.

S.R. 408 and S.R. 417 had 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 ETC. For the entire CFX System, ETC participation increased approximately 4.0 percent over the prior year (July – October). The 4.0 percent increase was not entirely a result of the conversion of cash customers to ETC 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. A Phase 3 Study will evaluate the detection equipment and countermeasures at the different sites since the first installation.

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, with detection equipment located at 35 exit ramps. Programmed improvement projects include installation of detection equipment at additional exit ramp locations. In reported cases the driver turned around when the flashing wrong way beacons were activated. From 2015 through June 2019, this innovative technology detected 527 wrong-way incidents and 441 documented turnarounds. Recent trends show that the equipment has detected an 88% turnaround rate which helps in keeping the CFX system safer.



1.4 System Historical Transactions and Toll Revenues

1.4.1 DEFINITIONS

When a customer drives through a CFX toll location and pays the toll, the transaction and revenue is classified as "Paid In-Lane." The customer has the option to pay the toll in the lane with cash or through ETC. When a customer drives through a CFX toll location and does not pay the toll while passing through, the transaction and revenue is classified as "Unpaid In-Lane." Non-revenue producing transactions are another very small portion of Unpaid In-Lane transactions. The only way for the customer to pay the toll afterwards is through a process known as Pay By Plate (PBP). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount.

PBP toll invoicing is an option for customers that do not pay the toll in the lane and choose to forgo the benefits of ETC toll rates. With PBP, an image of the customer's license plate is captured when the vehicle passes through the toll plaza location. During processing, the cash toll rate for

that particular plaza plus a 20-cent processing fee is assessed to the vehicle's owner. A monthly toll invoice is generated and mailed to the registered owner of the vehicle. Payment is due within 30 days to avoid toll violations and fines. The following section includes a breakdown of transactions and revenues by paid in-lane and PBP.

1.4.2 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

A history of annual paid in-lane transactions and revenues for the six facilities from FY 2000 to FY 2019 are presented in **Table 1-5**. The annual data is based on the CFX Monthly Statistical Reports and is not reconciled to the audited fiscal year end results. Also, more detailed information on history is presented in Chapters 3 through 8 of this report. These historical tables do not include PBP transactions and revenues, only those that are paid in-lane. For this and other reasons, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report.

S.R. 417 had the greatest number of annual paid in-lane transactions with 145.5 million and the greatest amount of paid in-lane revenue with $152.6 million in FY 2019, which for the second time surpassed paid in-lane transactions and revenues on S.R. 408. In FY 2019, S.R. 408 had 141.1 million paid in-lane transactions and $136.6 million in paid in-lane revenue. S.R. 528 had 77.1 million paid in-lane transactions and $73.8 million in paid in-lane revenue. With the northern section of S.R. 429 opened in 2000 and the southern section opened in 2006, paid in-lane transactions and revenue have steadily grown to 57.6 million transactions and $66.7 million in revenue for FY 2019. The recently opened Ponkan Main and Mt. Plymouth Main Plazas in FY 2019 also contributed to the growth on S.R. 429. S.R. 414 has been open to traffic for ten full years and experienced 13.9 million in paid in-lane transactions and $14.6 million in paid in-lane revenue for FY 2019. S.R. 453, the newest facility on the CFX System, had 2.2 million paid in-lane transactions and $1.3 million in paid in-lane revenues in its first full year of operation.

As shown in the table, total System paid in-lane transactions in FY 2019 have increased by 4.0 million transactions or 0.9 percent over FY 2018. All facilities experienced growth in paid in-lane transactions in FY 2019 compared to FY 2018 except S.R. 408 and S.R. 417. Total System paid in-lane revenues in FY 2019 increased $14.7 million or 3.4 percent over FY 2018. All facilities experienced increases in revenue except S.R. 408. One reason for the slower rate of growth is the change in payment method from paid in-lane to PBP.

Historical paid in-lane transactions for the CFX System since FY 2000 are displayed in **Figure 1-3**. The green line represents the number of paid in-lane 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 paid in-lane revenues is depicted in **Figure 1-4**. Paid in-lane transaction and 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, FY 2013 and FY 2019.

System growth in paid in-lane transactions and revenue was consistently strong up through FY 2007. Transactions and revenue exhibited double-digit growth in FY 2000 and in FY 2004. The growth in paid in-lane 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

Table 1-5
System Totals – Historical Paid In-Lane Transactions and Revenue
FY 2000 – FY 2019

Fiscal Year Ending	S.R. 528	S.R. 408	S.R. 417	S.R. 429	S.R. 414	S.R. 453	TOTAL	Percent Change
TRANSACTIONS (millions)								
2000	30.8	97.6	57.9				186.3	
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%
2018 [Q,R,S]	76.7	145.2	145.9	51.7	13.4	0.5	433.4	3.0%
2019 [T]	77.1	141.1	145.5	57.6	13.9	2.2	437.4	0.9%
TOLL REVENUES (millions)								
2000	$27.7	$62.3	$38.3				$128.3	
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%
2018 [Q,R,S]	$71.8	$138.3	$148.4	$58.3	$13.8	$0.3	$430.9	3.1%
2019 [T]	$73.8	$136.6	$152.6	$66.7	$14.6	$1.3	$445.6	3.4%

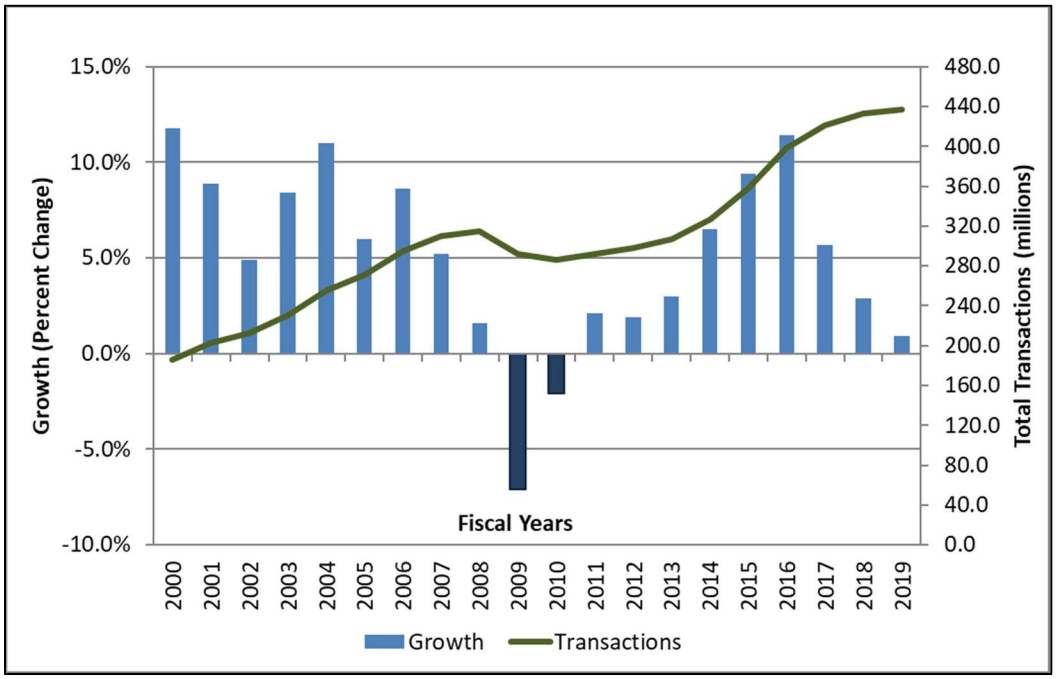
Notes:
A - Forest Lake Plaza on S.R. 429 opened in 2000.
B - C.R. 535 ramps on S.R. 429 opened in 2002.
C - Effects of the events on September 11, 2001.
D - Express lanes opened at University Main plaza.
E - Express lanes opened at Curry Ford and Dean Main plazas.
F - Effects from 2004 hurricane season (4 storms with toll suspensions).
G - Express lanes opened at Boggy 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 October 2016.
Q - Effects from Hurricane Irma in September 2017.
R - Ponkan Main Plaza opened in July 2017.
S - Mt. Plymouth Main Plaza and Coronado Main Plaza opened in April 2018.
T - Tolls increased Systemwide in July 2018.

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 paid in-lane 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 paid in-lane transaction and revenue growth slowing down as the housing and construction industry across the State of Florida slowed down.

In FY 2009, paid in-lane transactions actually decreased by 7.1 percent, which can be attributed to the economic recession and the Systemwide toll rate increase. Paid in-lane 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 paid in-lane revenues increasing 22.4 percent in FY 2010, while paid in-lane transactions still experienced a negative 2.1 percent annual growth. Also, during FY 2009, paid in-lane transactions were negatively impacted by two days of toll suspensions during Tropical Storm Fay. FY 2011 through FY 2013 showed stable paid in-lane transaction growth with each year increasing 2 to 3 percent despite the toll rate increase at the beginning of FY 2013. From FY 2014 through FY 2016, or the period of extraordinary growth, paid in-lane transactions on CFX facilities grew at faster rates than those seen prior to the Great Recession. Since FY 2016, paid in-lane transactions increased over prior years, but growth has tapered off, in part due to the migration from paid in-lane to PBP. Paid in-lane revenues have climbed to nearly $431 million in FY 2018.

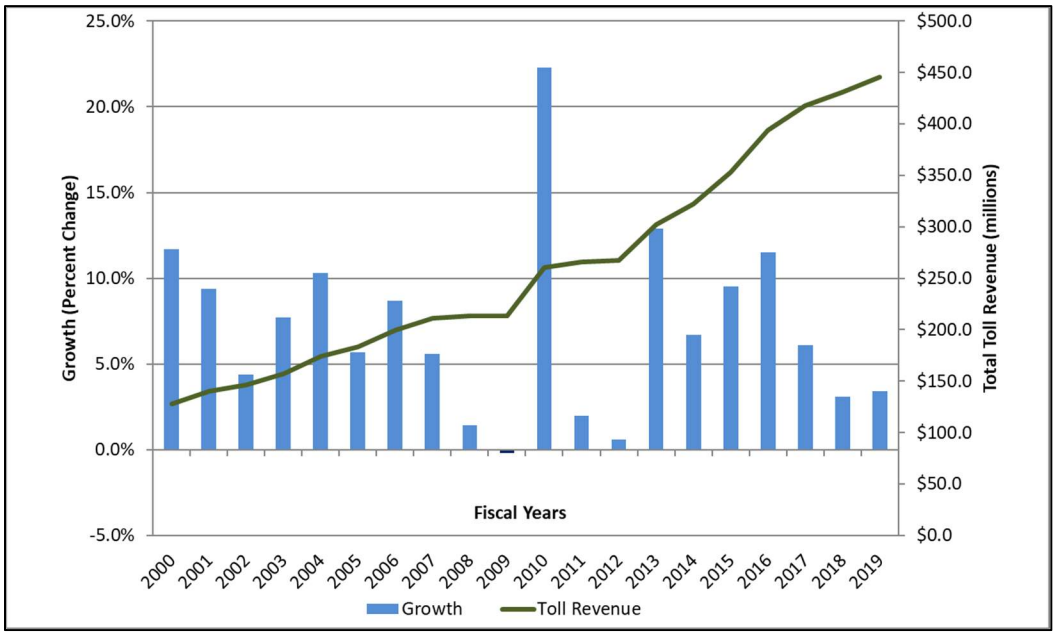
In October 2016 (FY 2017), Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. Tolls were suspended on the CFX System beginning at 8:00 pm on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 4.6 million transactions and $4.5 million in toll revenues on the CFX System. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 19.3 million and a toll revenue loss of $19.2 million on the CFX System. In FY 2019, both transactions and revenue increased over FY 2018, due in part to Hurricane Irma, and the increase in transactions and revenue that were lost in FY 2018, but also in part to natural growth on these facilities. Paid in-lane transactions and revenue were 0.9 percent higher and 3.4 percent higher, respectively, than FY 2018. The slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed in part to an increase in customers utilizing the PBP program.

Figure 1-3
CFX System Historical Paid In-Lane Transactions and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

Figure 1-4
CFX System Historical Paid In-Lane Revenue and Annual Growth
FY 2000 – FY 2019

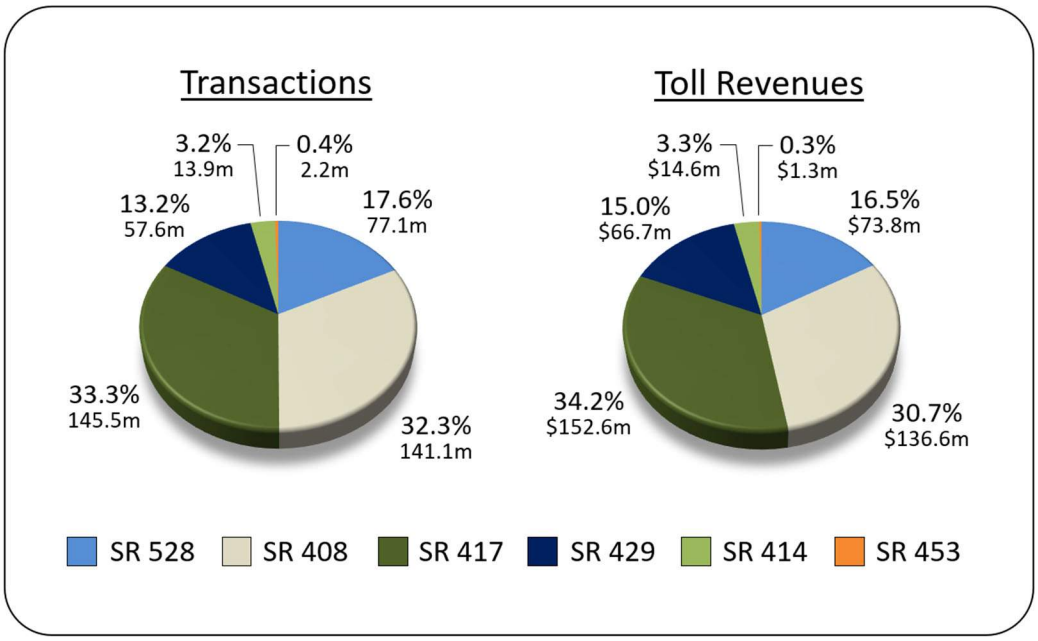


Source: CFX Statistical Report June 2019

1.4.3 ANNUAL PAID IN-LANE TRANSACTIONS AND REVENUE BY FACILITY

Figure 1-5 contains a summary of the FY 2019 paid in-lane transactions and revenues by facility, both the number and as a percentage of the System. The largest portion of the paid in-lane transactions and revenue were reported on S.R. 417, with 33.3 percent, or 145.5 million of the paid in-lane transactions and 34.2 percent, or $152.6 million of the revenues. Paid in-lane transactions on S.R. 408 were 32.3 percent of the System or 141.1 million and paid in-lane revenues were 30.7 percent of the System or $136.6 million. S.R. 528 comprised 17.6 percent, or 77.1 million of the paid in-lane transactions and 16.5 percent, or $73.8 million of the paid in-lane revenues. S.R. 429 paid in-lane transactions represented 13.2 percent, or 57.6 million of the System paid in-lane transactions and 15.0 percent, or $66.7 million of the System paid in-lane revenues. S.R. 414 paid in-lane transactions were reported at 13.9 million or 3.2 percent, while paid in-lane revenues were reported at $14.6 million or 3.3 percent of the System paid in-lane revenues. Paid in-lane transactions on S.R. 453 were 2.2 million or 0.4 percent of the System and paid in-lane revenues were $1.3 million or 0.3 percent of the System for FY 2019.

Figure 1-5
CFX System Paid In-Lane Transactions and Revenue by Facility
FY 2019



Source: CFX Statistical Report June 2019

1.4.4 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on the total CFX System from FY 2010 to FY 2019 are presented in **Table 1-6**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 1-6 shows the annual totals for the CFX System as reported at year end.

Table 1-6
CFX System – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	1.8		$2.2	
2011	3.1	72.2%	$3.3	50.0%
2012	4.4	41.9%	$4.6	39.4%
2013	5.4	22.7%	$6.9	50.0%
2014	6.8	25.9%	$8.4	21.7%
2015	8.8	29.4%	$11.0	31.0%
2016	12.2	38.6%	$15.7	42.7%
2017	14.6	19.7%	$22.4	42.7%
2018	21.6	47.9%	$24.4	8.9%
2019	43.6	101.9%	$49.9	104.5%

Source: Unaudited data provided by CFX

PBP transactions have increased from 1.8 million in FY 2010 to 43.6 million in FY 2019, while PBP revenues have increased from $2.2 million to $49.9 million over the same period. In FY 2019, PBP transactions increased 101.9 percent and PBP revenues increased 104.5 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 has contributed to the slower growth and/or decline in paid in-lane transactions and revenues compared to FY 2018. More customers are choosing the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020. At that time, the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers currently paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

1.4.5 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

The seasonal variation in paid in-lane transactions is presented in **Table 1-7**. The average number of paid in-lane transactions per day on the System in FY 2019 ranged from a high of 1,278,047 in March 2019 to a low of 1,076,649 in December of 2018. This data is presented in a graphical format in **Figure 1-6**. Each month's average paid in-lane transactions per day appear as a percentage of the average for the fiscal year. As shown in the figure, March paid in-lane

transactions were 6.7 percent above average and December paid in-lane transactions were 10.2 percent below the average.

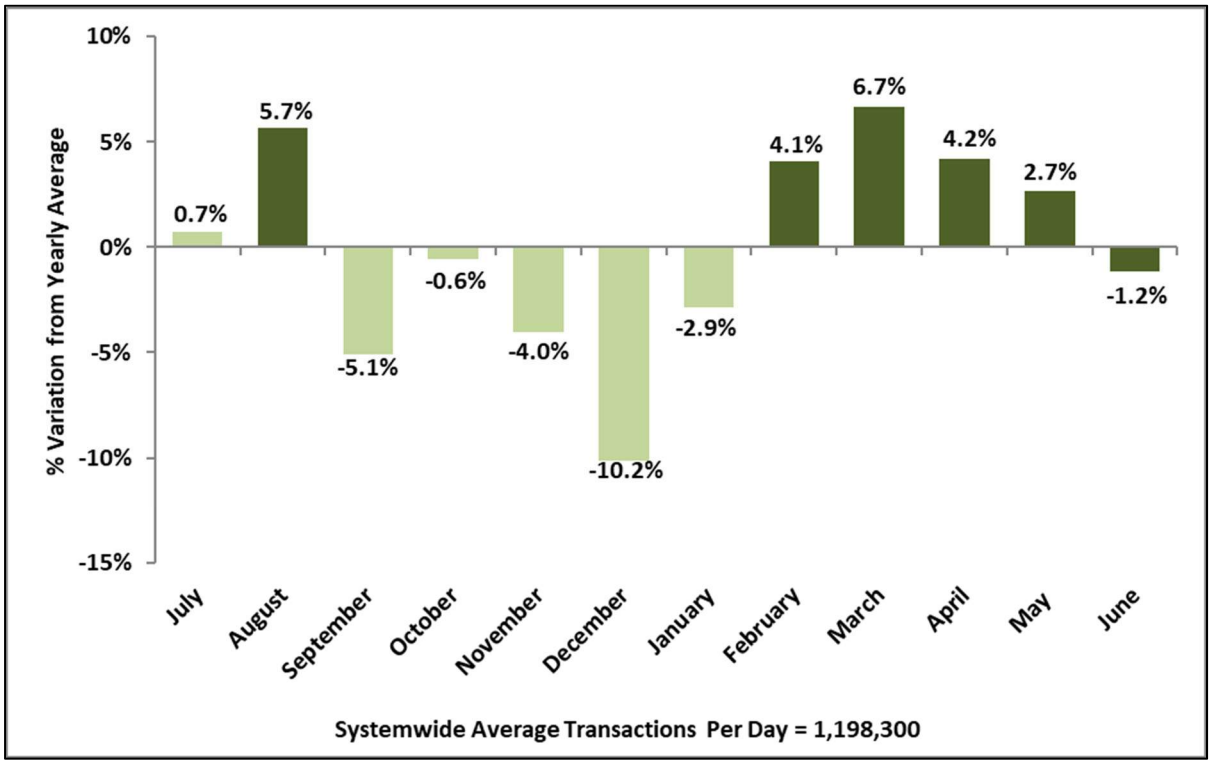
For FY 2019, the paid in-lane transactions were lower than average for the first half of the year and higher than average for the second half of the year. This is a normal pattern for seasonal variation, with the spring months being the peak season, due to an increase in the number of tourists and seasonal 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 Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions Per Day	Seasonal Factor
July	31	37,420,708	1,207,120	1.007
August	31	39,252,855	1,266,221	1.057
September	30	34,124,706	1,137,490	0.949
October	31	36,931,065	1,191,325	0.994
November	30	34,496,920	1,149,897	0.960
December	31	33,376,134	1,076,649	0.898
January	31	36,082,162	1,163,941	0.971
February	28	34,925,318	1,247,333	1.041
March	31	39,619,451	1,278,047	1.067
April	30	37,466,340	1,248,878	1.042
May	31	38,147,027	1,230,549	1.027
June	30	35,531,184	1,184,373	0.988
Average		***36,447,823***	***1,198,285***	***1.000***
Total Year	**365**	**437,373,870**		

Source: CFX Statistical Report June 2019

Figure 1-6
CFX System Variation in Paid In-Lane Transactions Per Day, By Month
FY 2019



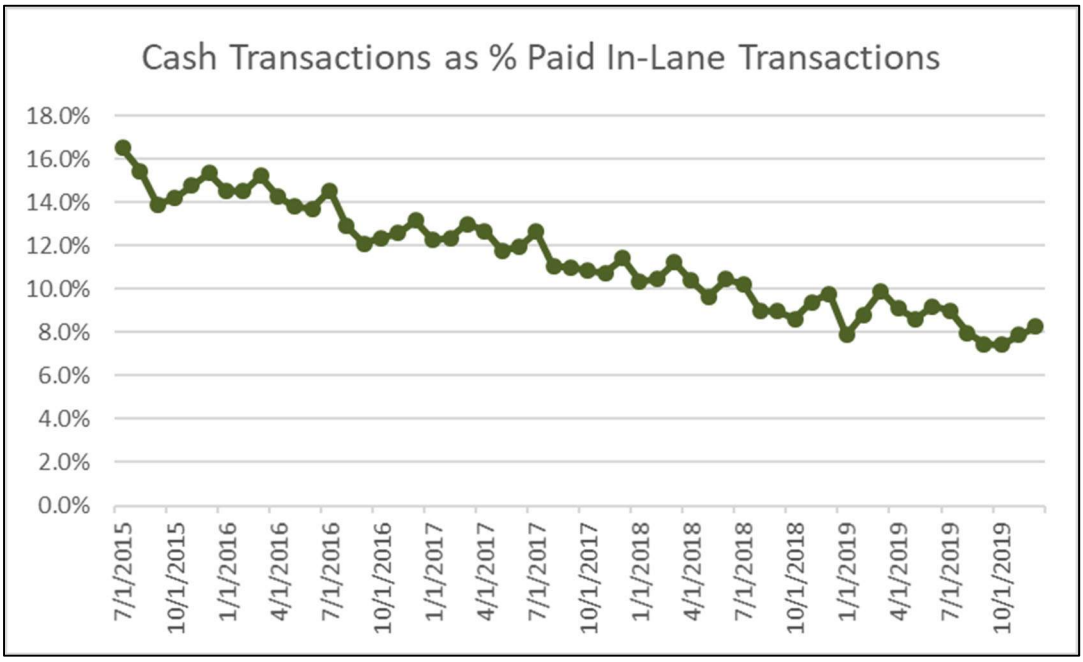
Source: CFX Statistical Report June 2019

1.4.6 RECENT TRENDS

Several trends in transaction and revenue conditions influence recent and future results. Some of these are long-term trends and others have been developing over the past few years. We have used the latest information from the first half of FY 2020.

The proportion of paid in-lane transactions that were paid with cash has been declining. **Figure 1-7** contains a graph of the proportion paid with cash by month. At the beginning of FY 2016, approximately 15% of paid in-lane transactions were paid with cash. During the first half of FY 2020, only 8% of these paid in-lane revenue transactions were paid with cash. An increasing share of the customers who pay in the lane are paying with ETC.

Figure 1-7
Proportion Paid In-Lane Transactions Paid with Cash
By Month, July 2015 to December 2019

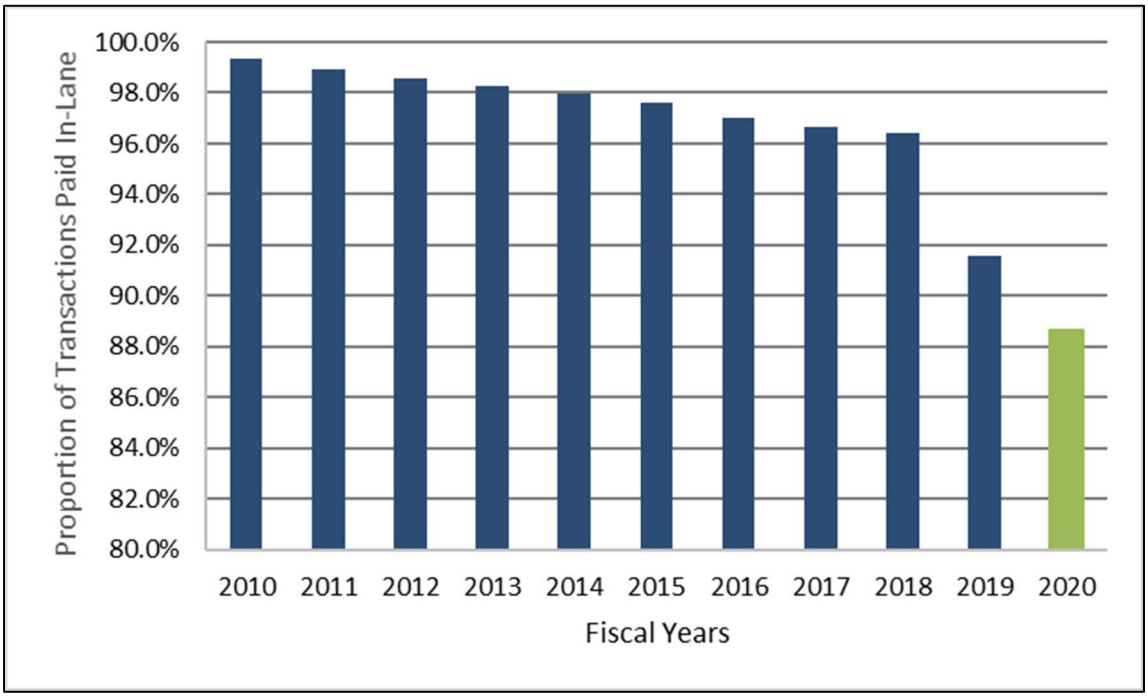


Source: CFX Monthly T&R Analysis

The proportion of transactions that are paid in-lane has also been declining for some time. **Figure 1-8** is a graph with the proportion of all transactions that were paid in-lane since FY 2010. In FY 2010, 99 percent of all paid in-lane transactions were paid with cash or ETC. In FY 2019, this number dropped to less than 92 percent. Expectations are that this value will decline further in FY 2020 to 89 percent. A similar pattern occurs on all CFX expressways. This means that an increasing number of customers are using the PBP process.

This trend is difficult to explain, since CFX has taken many steps to incentivize customers to pay tolls in the lane. Customers can pay with cash at every toll location except the three toll locations associated with the recently opened Wekiva Parkway. CFX offers convenient ways for customers to obtain transponders (including free sticker tags) and provides easy ways to put funds into their accounts (including the ability use cash in the reload lanes at several mainline toll plazas).

Figure 1-8
Proportion of Transactions Paid In-Lane
FY 2010 – FY 2020



Source: CFX Monthly T&R Analysis

The increase in the number and proportion of customers choosing PBP means that it takes CFX a longer time and costs more to collect the toll. Furthermore, CFX is not able to collect all toll revenue owed by PBP customers. Like the private sector, CFX now has an accounts receivable (AR). The December 2019 aging report is provided in **Table 1-8**. A portion of the initial unpaid in-lane transactions are recognized and reclassified as transactions by ETC account holders. CFX now accrues revenue for unpaid in-lane transactions at approximately 61 percent of the initial billed amount.

Table 1-8
CFX Pay By Plate Aging Report
As of December 31, 2019

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
PAY BY PLATE AGING REPORT
AS OF DECEMBER 31, 2019

Month UTN/PBP was Created	Total Transactions Associated with an UTN/PBP(1)	Toll Revenue Billed	Toll Revenue Paid-to-Date	Toll Revenue M-Tolled-to-Date(2)	Total Toll Revenue Collected-to-Date	Percentage of Billed Revenue Collected-to-Date
Dec-17	2,865,816	$3,279,908.43	$2,239,436.90	$289,286.01	$2,528,722.91	77.10%
Jan-18	3,022,244	$3,455,365.60	$2,336,887.27	$313,608.92	$2,650,496.19	76.71%
Feb-18	3,178,122	$3,630,692.17	$2,412,711.49	$330,740.56	$2,743,452.05	75.56%
Mar-18	2,680,845	$3,063,533.63	$2,036,637.88	$266,050.84	$2,302,688.72	75.16%
Apr-18	2,681,927	$3,073,298.83	$1,994,483.76	$262,490.22	$2,256,973.98	73.44%
May-18	2,811,413	$3,226,110.55	$2,090,316.20	$288,383.80	$2,378,700.00	73.73%
Jun-18	2,442,134	$2,818,413.80	$1,842,851.38	$220,988.99	$2,063,840.37	73.23%
Jul-18	4,552,201	$5,215,698.39	$3,401,786.33	$426,146.47	$3,827,932.80	73.39%
Aug-18	2,887,957	$3,397,749.17	$2,358,276.24	$175,470.53	$2,533,746.77	74.57%
Sep-18	3,080,107	$3,714,191.75	$2,733,014.25	$146,587.52	$2,879,601.77	77.53%
Oct-18	3,539,827	$4,256,584.51	$3,147,587.93	$175,948.68	$3,323,536.61	78.08%
Nov-18	3,473,140	$4,067,453.95	$2,955,849.03	$181,865.40	$3,137,714.43	77.14%
Dec-18	2,103,211	$2,512,093.99	$1,771,105.74	$147,114.50	$1,918,220.24	76.36%
Jan-19	5,109,472	$6,154,818.14	$4,201,793.85	$428,424.12	$4,630,217.97	75.23%
Feb-19	6,126,952	$7,551,176.68	$4,941,906.27	$545,834.30	$5,487,740.57	72.67%
Mar-19	4,912,381	$5,888,459.43	$3,672,549.05	$400,747.64	$4,073,296.69	69.17%
Apr-19	5,109,028	$5,973,670.26	$3,509,528.31	$406,753.55	$3,916,281.86	65.56%
May-19	4,243,152	$5,424,858.80	$3,020,980.67	$362,691.10	$3,383,671.77	62.37%
Jun-19	4,804,660	$5,978,697.06	$3,087,988.31	$402,932.89	$3,490,921.20	58.39%
Jul-19	5,332,720	$6,534,580.24	$3,097,611.78	$494,453.65	$3,592,065.43	54.97%
Aug-19	6,260,606	$7,581,858.70	$3,303,182.91	$496,258.89	$3,799,441.80	50.11%
Sep-19	5,332,685	$6,482,173.99	$2,727,298.16	$375,438.71	$3,102,736.87	47.87%
Oct-19	6,371,641	$7,713,379.96	$2,603,368.16	$367,764.97	$2,971,133.13	38.52%
Nov-19	6,055,534	$7,448,412.08	$2,004,766.76	$254,045.87	$2,258,812.63	30.33%
Dec-19	6,178,315	$7,702,838.60	$923,911.64	$165,129.11	$1,089,040.75	14.14%
TOTALS	**105,156,090**	**$126,146,018.71**	**$68,415,830.27**	**$7,925,157.24**	**$76,340,987.51**	**60.52%**

(1) Transactions associated with an PBP could have occurred up to one year prior to PBP creation.
(2) M-tolls are paid from an E-PASS account after the PBP is created.

Source: CFX Statistical Report December 2019

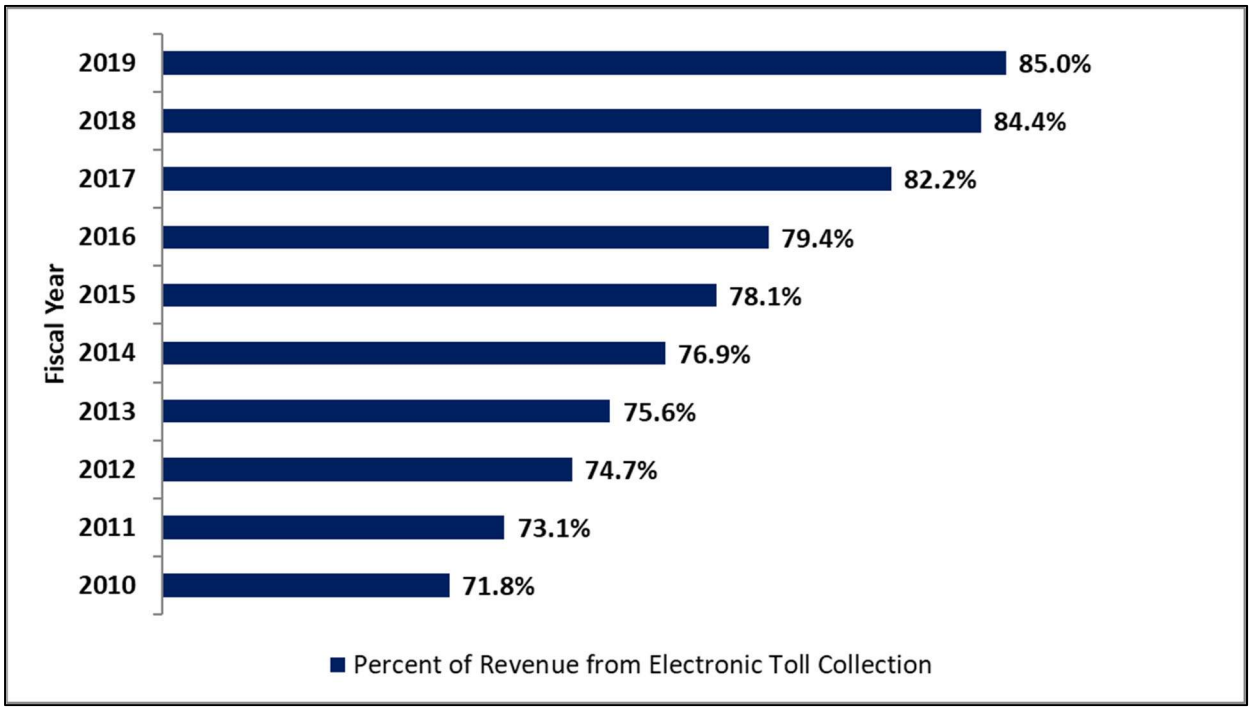
1.5 ETC Usage

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 2019 the number has grown to 794,220 transponders and approximately 429,700 active E-PASS accounts. As shown in **Figure 1-9**, paid in-lane revenues collected through ETC during FY 2019 accounted for 85.0 percent. PBP revenues are not included. The percent of paid in-lane revenues from ETC has grown steadily for the past 10 years, from only 71.8 percent in FY 2010. ETC transactions account for over 80% of daily paid in-lane revenue at several Mainline plazas. The percentage of paid in-lane revenues collected through ETC is over 75 percent at the remainder of the mainline toll plazas. Many customers purchase E-PASS 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 and Georgia Peach Pass. This means that Quick Pass and Peach Pass transponders are accepted on CFX facilities and E-PASS transponders are accepted on the North Carolina and Georgia facilities. ETC usage is still expected to increase as customers shift to ETC to take advantage of the lower ETC toll rate and the convenience of paying tolls electronically,

especially with the implementation of the PBP toll rates that will be twice the ETC toll rate starting on July 1, 2020 (FY 2021).

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.

Figure 1-9
CFX System Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

CFX continues to offer toll discount incentives to customers through various discount programs. The Beltway 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 offers the same discounts and benefits exclusive to E-PASS customers. Regular sticker tags are still available at no cost to the customer.

In November 2017, CFX announced the development of a interoperability agreement with the E-ZPass group, the largest group of toll road operators in the United States. The agreement made CFX the first expressway system in Florida to accept E-ZPass, which is a network of toll road agencies operating from Maine to North Carolina and west through Illinois. Following the announcement of the new agreement, CFX unveiled a new portable transponder that would be accepted on facilities that use both E-PASS and E-ZPass, called the E-PASS Xtra.

1.6 Forecasting Methodology

The estimates of future annual T&R for the CFX System, contained in this annual report, were derived from a complex process involving both a traditional four-step, travel demand model and a series of T&R models both designed specifically for this purpose. The overall approach was to develop estimates of future paid in-lane transactions and then separate estimates of future unpaid in-lane transactions. The forecasts of paid in-lane transactions were obtained through the application of annual growth rates by plaza group. The early-year growth rates came from recent experience and trends and the outer-year growth rates reflect results from the travel demand model. With estimates of both types of transactions, the final step was to prepare estimates of future toll revenue and the effects of the discount programs. At the risk of over simplification, the forecasts of future toll revenues 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

The long-term growth rates are based on results from the travel demand model known as the CFX Model 2.1. This model was completed in January 2017 by updating and improving the prior model. The more recent model CFX Model 3.x was not used because of time constraints. The foundation for the model used was the 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 model 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 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.

To make the model more sensitive to network and tolling considerations, it was calibrated to match historical traffic counts on mainline and ramp segments on the CFX System. In the validation year, almost all transactions were Paid In-Lane transactions. 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 separately. At the conclusion, the model 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 in six planning horizon years (2018, 2023, 2028, 2033, 2038 and 2043) corresponding to the then planned future year toll rate adjustments from the previous toll rate policy. 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 model. These included MetroPlan Orlando, Lake-Sumter MPO, Space Coast TPO, River to Sea TPO and Polk County TPO. The future networks included all improvements identified in the CFX Work Program and 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.

While several toll conditions were modeled in each of the future years, the clear focus for this work was the toll amounts envisioned in the "Customer First Toll Policy" (adopted by the CFX Board). In this way, the model provided direct estimates of the effect of future SE data, network improvements and toll rate adjustments on CFX System traffic.

1.6.2 HISTORIC TRANSACTIONS AND REVENUE

The T&R Model was built on an up to date history of transactions and revenue for each plaza group by month, found in the CFX Monthly Statistical Report. The data, which describes the paid in-lane transactions and revenue, has been used in the past as the basis for development of the travel demand model and for the T&R estimates. In prior forecasts, the impacts of Uniform Toll Notices (UTNs) and PBP were handled separately at a system level. Given recent changes, these are now separately forecast by plaza group. Since the historic data includes the effect of vehicle class on T&R, the forecasts of future T&R already also include these effects.

Data on unpaid in-lane transactions and revenue also comes from the CFX Monthly Statistical Report and the **2019 Comprehensive Annual Financial Report** (2019 CAFR). The separate analysis and forecasts of unpaid in-lane (PBP) transactions and revenue necessarily includes violations and leakage.

The revenue impacts of the discount programs are based on information contained in the 2019 CAFR and handled separately at a system level.

1.6.3 PAID IN-LANE TRANSACTIONS

The T&R Model is a spreadsheet that includes a combination of history and prior forecasts, along with the new forecasts.

Recent paid in-lane transaction data was used to assess the impacts of the three recent weather events (Hurricane Matthew in FY 2017, Hurricane Irma in FY 2018 and Hurricane Dorian in FY 2020). This data was then used to identify growth trends by plaza group with and without the hurricanes. The transaction estimates for FY 2020, the first year in the forecast, were developed from the first half year of actual results extended to the remainder of the year. The estimates for FY 2021 and beyond were adjusted or "trued up" to reflect achievable expectations for the first fiscal year in the new forecast.

Then, mid-term growth rates were developed from the combination of recent growth and the growth rates derived from the travel demand model. The long-term growth rates come from the travel demand model with some adjustment.

The effect of the combination of travel demand model and the T&R model is such that the paid in-lane transaction estimates are controlled to match base year values. Growth in the paid in-lane transaction estimates is 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.

1.6.4 PAY BY PLATE (PBP) TRANSACTIONS

The estimates of PBP transactions utilize preliminary transaction results by plaza group from FY 2019 and the first six months of FY 2020. PBP transactions are described as the unpaid in-lane transactions as a proportion of the paid in-lane transactions with an applied accrual rate. With the new PBP toll rate adopted by the CFX Board in October 2019, that goes into effect on July 1, 2020 (FY 2021), it is anticipated that a portion of the PBP transactions will move back to paid in-lane transactions, ETC, and a portion will stay. The forecast includes an assumption that 70% of the forecasted unpaid in-lane transactions will remain in FY 2021 and 50% of forecasted unpaid in-lane transaction will remain in FY 2022 and beyond. **Table 1-9** contains the proportions of paid in-lane transactions used to determine the PBP transactions.

For FY 2020, the average proportion of the first six months was used to estimate the unpaid in-lane transactions with an accrual rate of 58%. For FY 2021 the proportion was calculated as the difference in proportion of paid in-lane transactions from FY 2019 and FY 2020 added to the prior year with an accrual rate of 51%. For FY 2022 and beyond the proportion was calculated as the difference in proportion of paid in-lane transactions from the two prior years added to the most recent prior year with an accrual rate of 48%. Over time as the number of PBP customers shrinks, it will be more difficult to collect tolls from those remaining in PBP, hence the lower accrual rate.

Table 1-9
Unpaid In-Lane Transactions as Proportion of Paid In-Lane Transactions

Plaza Group		FY 2019	FY 2020	FY 2021	FY 2022 and Beyond
Airport	SR 528	12.1%	10.8%	9.5%	8.9%
Beachline Main		17.6%	19.2%	20.8%	21.6%
Dallas		18.7%	14.6%	10.5%	8.5%
Hiawassee	SR 408	20.2%	20.2%	20.2%	20.2%
Pine Hills		24.2%	23.1%	22.0%	21.5%
Conway		22.7%	21.7%	20.7%	20.2%
Dean		21.8%	22.6%	23.4%	23.8%
John Young	SR 417	22.0%	21.6%	21.2%	21.0%
Boggy Creek		20.0%	19.6%	19.2%	19.0%
Curry Ford		22.1%	18.5%	14.9%	13.1%
University		20.1%	20.6%	21.1%	21.4%
Forest Lake	SR 429	17.9%	19.0%	20.1%	20.7%
Independence		17.0%	16.9%	16.8%	16.8%
Ponkan		19.6%	21.6%	23.6%	24.6%
My Plymouth		21.5%	20.5%	19.5%	19.0%
Coral Hills	SR 414	17.7%	20.4%	23.1%	24.5%
Coranado	SR 453	19.9%	21.8%	23.7%	24.7%

Source: CFX Monthly T&R Analysis

1.6.5 TOLL REVENUE

Just like the process with transactions, recent paid in-lane revenue data was used to assess the impacts of the three recent hurricanes. This data was then used to identify growth trends by plaza group. The transaction estimates for FY 2020 were developed from the first half year of actual results extended to the remainder of the year. The estimates for FY 2021 and beyond were adjusted or "trued up" to reflect achievable expectations for the first fiscal year in the new forecast.

Then, once again, mid-term growth rates were developed from the combination of recent growth and the growth rates derived from the travel demand model. The long-term growth rates from the travel demand model with some adjustment.

The effect of the combination of travel demand model and the T&R model is such that the paid in-lane revenue estimates are controlled to match base year values. Growth in the paid in-lane revenue estimates is 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. Because of the indexed toll rates, the growth rates in revenue are higher than the growth rates in transactions. The traffic and revenue forecasts, while pursued independently, are related through the effective toll rate. The planned toll rate increases are visible in future effective toll rates.

The revenue collected from the PBP process in each plaza group is determined by calculating the initial billed amount of revenue. For FY 2020, the initial billed amount was calculated as the PBP transactions times effective cash toll rate with no surcharge because the surcharge is considered a fee and accounted for separately. The only exception is the PBP revenue from the three Wekiva Parkway plazas which is the PBP transactions times the escalated PBP toll rate. For FY 2021 and beyond, the initial billed amount was calculated as the PBP transactions times twice the ETC toll

rate, escalated according to the Customer First toll policy (1.5% per year). This change is due to a new PBP toll rate that goes into effect on July 1, 2020 (FY 2021). **Table 1-10** contains a summary of the effective toll rates by plaza group. The total revenue is the sum of the revenue from paid in-lane transactions and the revenue collected from the PBP process.

Table 1-10
Effective Toll Rates (FY 2019)

Plaza Group		ETC	Cash	PBP
Airport	SR 528	$1.14	$1.17	$1.28
Beachline Main		$0.96	$1.04	$1.05
Dallas		$0.54	$0.75	$0.66
Hiawassee	SR 408	$0.80	$0.92	$0.93
Pine Hills		$1.06	$1.19	$1.17
Conway		$1.05	$1.17	$1.18
Dean		$0.82	$0.97	$0.96
John Young	SR 417	$1.17	$1.45	$1.26
Boggy Creek		$1.20	$0.00	$1.43
Curry Ford		$0.86	$0.99	$0.99
University		$0.85	$0.98	$0.97
Forest Lake	SR 429	$1.23	$1.47	$1.46
Independence		$1.10	$1.55	$1.34
Ponkan		$0.85	$0.00	$1.22
My Plymouth		$0.90	$0.00	$1.20
Coral Hills	SR 414	$1.05	$1.05	$1.16
Coranado	SR 453	$0.61	$0.00	$1.00

Source: CFX Monthly T&R Analysis

1.6.6 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 2.22 percent in FY 2020 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, from US 441 to I-4, was included in the models by the horizon year of 2023. T&R from the CFX portion of 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 estimates assume that the I-4 Ultimate project will be completed and opened to traffic in FY 2022.
- 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.
- Forecasted transactions are the sum of paid in-lane and unpaid in-lane transactions. Forecasted revenue is the sum of paid in-lane revenue and revenue accrued for unpaid in-lane transactions. Allowances for the discount programs 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

The total transactions and toll revenue by facility and for the System as a whole are summarized in **Table 1-11** and **Table 1-12**. The tables are divided into paid in-lane transactions and revenue and PBP transactions and revenue. This information is presented for historical transactions and toll revenue since FY 2010 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 1-11
CFX System Transaction Forecast (Millions)

Fiscal Year		Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	286.5	1.8	288.3	
2011		292.5	3.1	295.6	2.5%
2012		298.1	4.4	302.5	2.3%
2013[A]		306.9	5.4	312.3	3.2%
2014		326.8	6.8	333.6	6.8%
2015		357.6	8.8	366.4	9.8%
2016[B]		398.3	12.2	410.5	12.0%
2017[C]		420.9	14.6	435.5	6.1%
2018[D,E]		433.4	21.6	455.0	4.5%
2019[F]		437.4	43.6	481.0	5.7%
2020	Forecast	446.0	49.9	495.9	3.1%
2021[G]		469.9	30.3	500.2	0.9%
2022[H]		487.5	22.6	510.1	2.0%
2023		497.3	23.3	520.6	2.1%
2024		506.7	23.7	530.4	1.9%
2025		516.2	24.0	540.2	1.8%
2026		525.4	24.4	549.8	1.8%
2027		534.5	24.8	559.3	1.7%
2028		543.6	25.3	568.9	1.7%
2029		551.7	25.6	577.3	1.5%
2030		559.9	26.0	585.9	1.5%
2031		567.6	26.3	593.9	1.4%
2032		575.0	26.8	601.8	1.3%
2033		582.1	27.1	609.2	1.2%
2034		588.8	27.3	616.1	1.1%
2035		595.3	27.5	622.8	1.1%
2036		601.8	28.0	629.8	1.1%
2037		608.2	28.2	636.4	1.0%
2038		614.5	28.5	643.0	1.0%
2039		620.7	28.7	649.4	1.0%
2040		626.9	29.0	655.9	1.0%
2041		633.0	29.4	662.4	1.0%
2042		639.1	29.6	668.7	1.0%
2043		644.7	30.1	674.8	0.9%
2044		650.7	30.5	681.2	0.9%
2045		656.3	30.8	687.1	0.9%
2046		661.9	30.8	692.7	0.8%
2047		667.6	31.1	698.7	0.9%
2048		672.9	31.4	704.3	0.8%
2049		678.1	31.6	709.7	0.8%

Fiscal Year	Compound Annual Average Growth Rates (CAAGR)		
2010 - 2019	4.8%	42.5%	5.9%
2019 - 2029	2.3%	-5.2%	1.8%
2029 - 2039	1.2%	1.1%	1.2%
2039 - 2049	0.9%	1.0%	0.9%

Notes:

Actual transaction data provided by CFX from Monthly Statistical Reports.

A - Systemw ide toll rate increase.

B - Airport Main Plaza closes, new ramp plazas open at beginning of FY 2016.

Transactions for tolls collected at the Turnpike plaza not included.

C - Effects from Hurricane Matthew in October 2016.

D - 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).

E - Effects from Hurricane Irma in September 2017.

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 2.05% in FY 2019 and 1.5% assumed annually throughout forecast period.

G - New toll rates for PBP customers, set at 2.0 times the ETC rate.

H - Completion of I-4 Ultimate project.

Table 1-12
CFX System Toll Revenue Forecast - Before Discounts (Millions)

Fiscal Year		Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	$261.0	$2.2	$263.2	
2011		$266.3	$3.3	$269.6	2.4%
2012		$267.5	$4.6	$272.1	0.9%
2013[A]		$302.1	$6.9	$309.0	13.6%
2014		$322.4	$8.4	$330.8	7.1%
2015		$353.1	$11.0	$364.1	10.1%
2016[B]		$393.9	$15.7	$409.6	12.5%
2017[C]		$417.9	$22.4	$440.3	7.5%
2018[D,E]		$430.9	$24.4	$455.3	3.4%
2019[F]		$445.6	$49.9	$495.5	8.8%
2020	Forecast	$463.0	$59.1	$522.1	5.4%
2021[G]		$495.1	$63.9	$559.0	7.1%
2022[H]		$521.1	$48.3	$569.4	1.9%
2023		$538.2	$49.7	$587.9	3.2%
2024		$555.7	$51.7	$607.4	3.3%
2025		$572.6	$53.5	$626.1	3.1%
2026		$589.9	$55.1	$645.0	3.0%
2027		$607.4	$56.9	$664.3	3.0%
2028		$624.5	$58.7	$683.2	2.8%
2029		$642.3	$60.5	$702.8	2.9%
2030		$659.4	$62.5	$721.9	2.7%
2031		$677.2	$64.3	$741.5	2.7%
2032		$694.7	$65.9	$760.6	2.6%
2033		$712.3	$67.6	$779.9	2.5%
2034		$729.8	$69.5	$799.3	2.5%
2035		$747.8	$71.4	$819.2	2.5%
2036		$765.9	$73.2	$839.1	2.4%
2037		$784.1	$75.2	$859.3	2.4%
2038		$802.8	$77.0	$879.8	2.4%
2039		$821.5	$79.1	$900.6	2.4%
2040		$840.3	$80.8	$921.1	2.3%
2041		$859.6	$83.1	$942.7	2.3%
2042		$879.0	$85.0	$964.0	2.3%
2043		$898.5	$86.9	$985.4	2.2%
2044		$918.5	$89.1	$1,007.6	2.3%
2045		$938.6	$91.5	$1,030.1	2.2%
2046		$958.7	$93.7	$1,052.4	2.2%
2047		$978.9	$95.8	$1,074.7	2.1%
2048		$999.7	$97.9	$1,097.6	2.1%
2049		$1,020.2	$100.1	$1,120.3	2.1%

Fiscal Year	Compound Annual Average Growth Rates (CAAGR)		
2010 - 2019	6.1%	41.5%	7.3%
2019 - 2029	3.7%	1.9%	3.6%
2029 - 2039	2.5%	2.7%	2.5%
2039 - 2049	2.2%	2.4%	2.2%

Notes:

Actual transaction data provided by CFX from Monthly Statistical Reports.

A - Systemw ide toll rate increase.

B - Airport Main Plaza closes, new ramp plazas open at beginning of FY 2016.

Transactions for tolls collected at the Turnpike plaza not included.

C - Effects from Hurricane Matthew in October 2016.

D - 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).

E - Effects from Hurricane Irma in September 2017.

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 2.05% in FY 2019 and 1.5% assumed annually throughout forecast period.

G - New toll rates for PBP customers, set at 2.0 times the ETC rate.

H - Completion of I-4 Ultimate project.

1.7.2 SYSTEM AVAILABLE REVENUES

The System available revenue is defined as paid in-lane revenue plus revenue from PBP, less the discounts. This year the available revenue includes the revenue forecast for the Poinciana Parkway starting in FY 2020. The calculations are summarized in **Table 1-13**. CFX instituted a more convenient method of payment for PBP tolls in June 2009. CFX's PBP business rules were also modified in 2010 to require all outstanding tolls be paid in order for a customer to renew their Florida vehicle registration. The paid in-lane revenues plus the revenue from PBP is expected to increase from the actual $483.6 million collected in FY 2019 to $716.7 million in FY 2029, $918.4 million in FY 2039 and $1,142.3 million in FY 2049. It's important to keep in mind that these estimates include revenue collected on the Poinciana Parkway.

Table 1-13 also shows total revenue less the discounts during the fiscal year to equal Available Revenue. The discount programs are discussed in detail in Section 1.3.1 of this chapter. The resulting Available System Revenue can be used by CFX for their operating and maintenance budget and debt service. The Available Revenues are projected to increase from the actual $463.2 million in FY 2019 to estimated amounts of $690.4 million in FY 2029, $880.7 million in FY 2039 and $1,090.4 million in FY 2049.

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 Orlando International Airport (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. Heintzelman Boulevard is not currently signed for use by the general public and serves as an access road for airport employees.

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.

Table 1-13
CFX System Toll Revenues Available (Millions)

Fiscal Year	Paid In-Lane Revenue[E]	PBP Revenue[F]	Poinciana Parkway[G]	Total Revenue	Discounts[H]	Available Revenue	Percent Annual Change
2010	$262.0	$1.1		$263.1	$9.4	$253.6	
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	$430.8	$27.3		$458.1	$16.3	$441.8	4.3%
2019[B]	$445.6	$38.0		$483.6	$20.4	$463.2	4.8%
2020	$463.0	$59.1	$4.4	$526.5	$24.8	$501.7	8.3%
2021[C]	$495.1	$63.9	$8.3	$567.3	$27.5	$539.8	7.6%
2022[D]	$521.1	$48.3	$9.4	$578.8	$29.5	$549.3	1.8%
2023	$538.2	$49.7	$10.4	$598.3	$20.4	$577.9	5.2%
2024	$555.7	$51.7	$11.5	$618.9	$21.3	$597.6	3.4%
2025	$572.6	$53.5	$12.5	$638.6	$22.3	$616.3	3.1%
2026	$589.9	$55.1	$12.9	$657.9	$23.3	$634.6	3.0%
2027	$607.4	$56.9	$13.2	$677.5	$24.2	$653.3	2.9%
2028	$624.5	$58.7	$13.6	$696.8	$25.2	$671.6	2.8%
2029	$642.3	$60.5	$13.9	$716.7	$26.3	$690.4	2.8%
2030	$659.4	$62.5	$14.3	$736.2	$27.3	$708.9	2.7%
2031	$677.2	$64.3	$14.7	$756.2	$28.4	$727.8	2.7%
2032	$694.7	$65.9	$15.0	$775.6	$29.5	$746.1	2.5%
2033	$712.3	$67.6	$15.4	$795.3	$30.6	$764.7	2.5%
2034	$729.8	$69.5	$15.7	$815.0	$31.7	$783.3	2.4%
2035	$747.8	$71.4	$16.1	$835.3	$32.8	$802.5	2.5%
2036	$765.9	$73.2	$16.5	$855.6	$34.0	$821.6	2.4%
2037	$784.1	$75.2	$16.9	$876.2	$35.2	$841.0	2.4%
2038	$802.8	$77.0	$17.4	$897.2	$36.5	$860.7	2.3%
2039	$821.5	$79.1	$17.8	$918.4	$37.7	$880.7	2.3%
2040	$840.3	$80.8	$18.2	$939.3	$39.0	$900.3	2.2%
2041	$859.6	$83.1	$18.6	$961.3	$40.3	$921.0	2.3%
2042	$879.0	$85.0	$19.0	$983.0	$41.7	$941.3	2.2%
2043	$898.5	$86.9	$19.5	$1,004.9	$43.1	$961.8	2.2%
2044	$918.5	$89.1	$19.9	$1,027.5	$44.5	$983.0	2.2%
2045	$938.6	$91.5	$20.3	$1,050.4	$45.9	$1,004.5	2.2%
2046	$958.7	$93.7	$20.7	$1,073.1	$47.4	$1,025.7	2.1%
2047	$978.9	$95.8	$21.1	$1,095.8	$48.9	$1,046.9	2.1%
2048	$999.7	$97.9	$21.6	$1,119.2	$50.4	$1,068.8	2.1%
2049	$1,020.2	$100.1	$22.0	$1,142.3	$51.9	$1,090.4	2.0%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2010 - 2019	6.1%	49.0%		7.0%	8.9%	6.9%
2019 - 2029	3.7%	4.8%		4.0%	2.6%	4.1%
2029 - 2039	2.5%	2.7%		2.5%	3.7%	2.5%
2039 - 2049	2.2%	2.4%		2.2%	3.2%	2.2%

Notes:

A - Systemwide toll rate adjustments.

B - CFX Board adopted "Customer First" toll policy on February 9, 2017, implemented with Systemwide increase of 2.05% on July 1, 2018 (FY 2019) and 2.20% on July 1, 2019 (FY 2020). Further adjustments (estimated at 1.5%) are included at the beginning of all subsequent fiscal years.

C - New toll rates for customers paying toll through the Pay By Plate (PBP) process, set at 2.0 times the ETC rate

D - Adjustment for completion of I-4 Ultimate.

E - **Paid In-Lane Revenue** is provided and audited by CFX. System paid in-lane revenue may not equal the sum of paid in-lane revenue by plaza group, presented in Table 1-12 due to rounding and end-of-year adjustments. The adjustments occur periodically thorughout the fiscal year and are not tied to the collected revenue of any particular plaza group.

F - PBP Revenue is provided and audited by CFX. System PBP revenue may not equal the sum of PBP revenue in Table 1-12 due to rounding and end-of-year adjustments. **PBP Revenue** is the revenue collected through the "Pay By Plate" process, which involves identifying the customer license plate and mailing an invoice to their home. This revenue is not collected in the toll lanes. There has been a dramatic increase in the proportion of revenue collected through PBP. In FY 2010, PBP revenue was less than 1% of the revenue collected in-lane; in FY 2018, PBP revenue was 5.7% of the in-lane revenue; in FY 2019, the PBP revenue is forecasted to be nearly 10% of the in-lane revenue; these long-term forecasts maintain PBP revenue as just under 9% of the in-lane revenue.

G - Toll revenue estimates taken from **Poinciana Parkway Traffic and Revenue Study Report**, November 30, 2018. FY 2020 estimate adjusted for partial year.

H - CFX operates three Discount Programs. On May 2016 CFX replaced an earlier frequent-user discount program with 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 **Beltway Discount Program**, instituted in FY 2016 for the six-year period coinciding with construction of the I-4 Ultimate, 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). This discount program has been extended one more year in these estimates. 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. Historical information on the E-PASS discount comes from the 2018 CAFR.

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.

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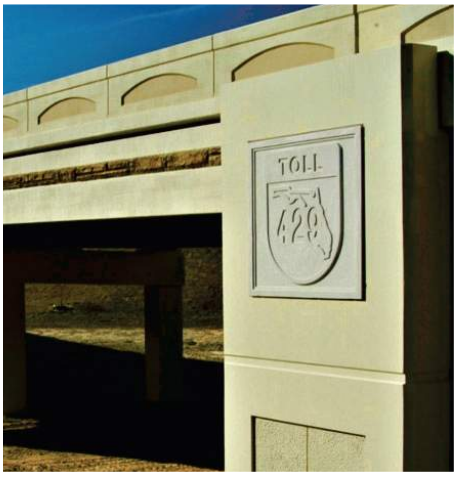
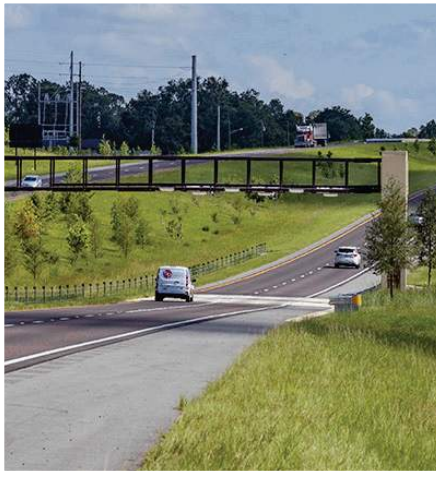
CHAPTER 2

ECONOMIC INDICATORS





ECONOMIC INDICATORS

Regional travel demand is driven in part by the levels, growth rates, and location of socioeconomic activity, such as population, housing, employment, retail sales and tourism. Socioeconomic growth is a major factor in determining future use of toll roads. Other important 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 operate. 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

Historical population trends for the seven counties in the study area and the State of Florida from 1980 through 2018 are included in **Table 2-1**. The corresponding compound average annual growth rates (CAAGR) for population in 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 4.4 million in 2018, 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, and 2.0 percent since 2010. Since 1980, Osceola County was the fastest growing county in the study area, with average growth of 5.4 percent per year. Volusia County experienced the slowest relative growth of 2.0 percent per year from 1980 to 2018. Nearly one third of the study area population is in Orange County, which is home to almost 1.4 million residents. The State's total population grew from 9.7 million in 1980 to 21.3 million in 2018, or an increase of 2.1 percent per year on average. Historically, population growth in the study area has outpaced the State of Florida over the last three decades. The rates of growth in each county and for the State have gradually declined over this period.

Table 2-1
Population – Historical Trend
1980 – 2018

County	1980	1990	2000	2010	2018
Brevard	272,959	398,978	476,230	543,376	596,849
Lake	104,870	152,104	210,528	297,052	356,495
Orange	470,865	677,491	896,344	1,145,956	1,380,645
Osceola	49,287	107,728	172,493	268,685	367,990
Polk	321,652	405,382	483,924	602,095	708,009
Seminole	179,752	287,529	365,196	422,718	467,832
Volusia	258,762	370,712	443,343	494,593	547,538
Area Total	1,658,147	2,399,924	3,048,058	3,774,475	4,425,358
Florida	9,746,961	12,937,926	15,982,378	18,801,310	21,299,325

Source: U.S. Census Bureau

Table 2-2
Population – Historical Growth Rates (CAAGR)
1980 – 2018

County	1980-'90	1990-'00	2000-'10	2010-'18	1980-'18
Brevard	3.9%	1.8%	1.3%	1.2%	2.1%
Lake	3.8%	3.3%	3.5%	2.3%	3.3%
Orange	3.7%	2.8%	2.5%	2.4%	2.9%
Osceola	8.1%	4.8%	4.5%	4.0%	5.4%
Polk	2.3%	1.8%	2.2%	2.0%	2.1%
Seminole	4.8%	2.4%	1.5%	1.3%	2.5%
Volusia	3.7%	1.8%	1.1%	1.3%	2.0%
Area Total	3.8%	2.4%	2.2%	2.0%	2.6%
Florida	2.9%	2.1%	1.6%	1.6%	2.1%

Source: U.S. Census Bureau

School enrollment is an additional indicator of socioeconomic activity in Central Florida. **Table 2-3** summarizes school enrollment by year and county, including the total percent change and CAAGR. School enrollment in Osceola County experienced the most growth since 2010 at an average pace of 3.0 percent annually. School enrollment was essentially unchanged in the last decade in Brevard and Volusia Counties (0.1 percent per year). Overall, school enrollment in the study area grew 1.3 percent per year on average since 2010. These numbers are not directly comparable to total population due to the number of families in the study area without school-age children and the potential for home-schooling. Also, the 2019 totals are estimates, as final numbers will not be released until the end of the school year in June or July 2020.

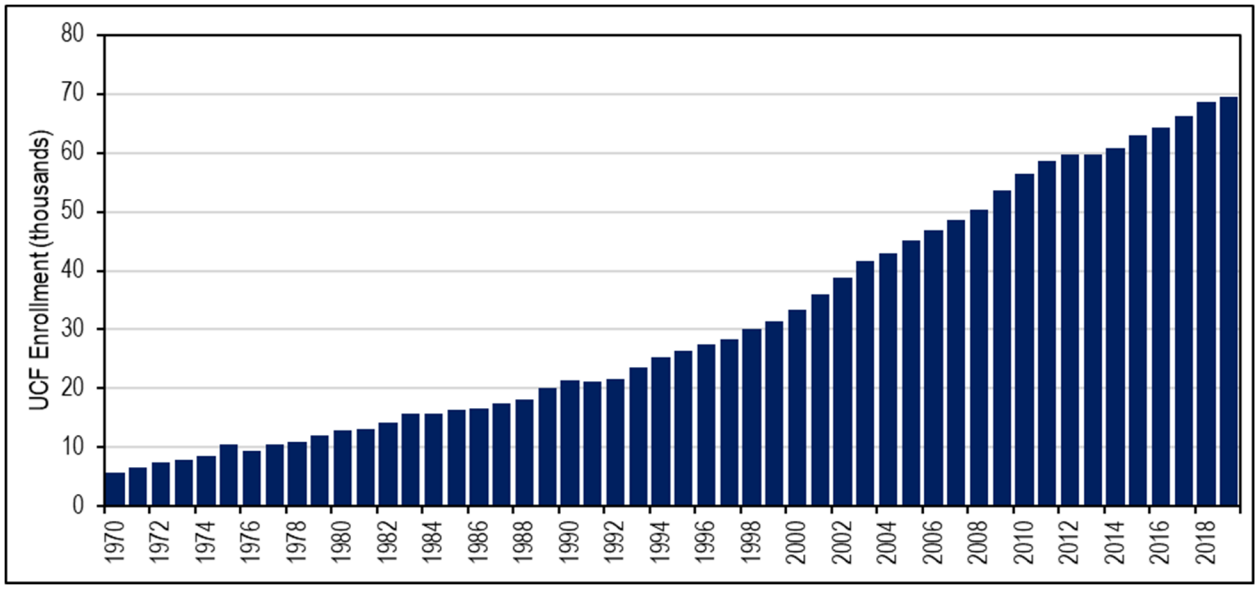
Table 2-3
Historical School Enrollment by County
2009 – 2019

County	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2010-'19 % Δ	2010-19 CAAGR
Brevard	71,866	71,786	71,217	71,234	72,285	72,704	73,446	73,524	73,734	72,837	1.4%	0.1%
Lake	41,110	41,315	41,478	41,789	42,152	42,462	42,516	43,174	43,947	44,047	7.1%	0.8%
Orange	175,986	179,989	183,021	187,092	191,648	196,951	200,667	204,837	209,114	210,457	19.6%	2.0%
Osceola	53,466	54,776	56,369	58,203	59,320	61,893	63,023	65,982	68,561	69,498	30.0%	3.0%
Polk	95,178	96,034	96,943	97,957	99,723	101,635	102,318	104,136	105,673	105,542	10.9%	1.2%
Seminole	64,228	64,335	64,368	64,846	66,134	66,996	67,816	67,915	68,289	67,613	5.3%	0.6%
Volusia	61,559	61,524	61,054	61,237	61,777	62,928	63,100	62,977	63,249	61,970	0.7%	0.1%
Area Total	563,393	569,759	574,450	582,358	593,039	605,569	612,886	622,545	632,567	631,964	12.2%	1.3%

Source: Florida Department of Education

UCF opened in 1968 with fewer than 2,000 enrolled students. As shown in **Figure 2-1,** annual enrollment increased over the years, as UCF became a large-scale university, with over 69,500 students in 2019. Long-term annual growth averaged 4.4 percent per year from 1980 to 2019, 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. Many students attend classes on-line and for that reason may not travel to the main campus in Orlando.

Figure 2-1
Historical UCF Enrollment
1980 – 2019



Source: University of Central Florida (UCF)

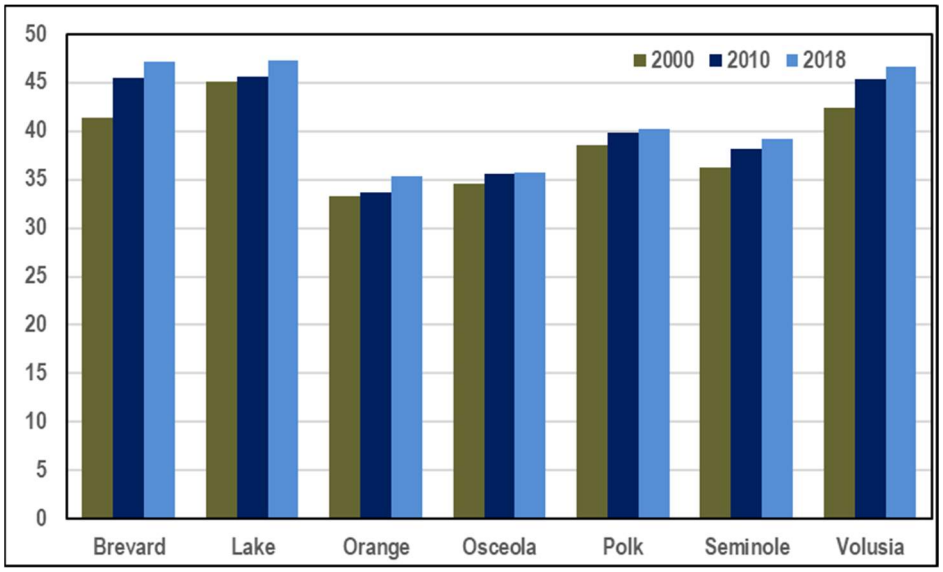
A comparison of the age distributions of study area population in 2000, 2010, and 2018 is shown in **Table 2-4**. A majority of the 2018 population (58 percent) is made up of the working-age group, ages 20 to 64, who typically make the majority of commuter and business-related trips. The previous 2000 and 2010 census years' population data reflects similar trends. The median ages for the study area counties in years 2000, 2010, and 2018 are shown in **Figure 2-2**. Brevard and Lake Counties have the highest median age reflecting the presence of retirement communities. Volusia also has significantly older median age than other counties in the area. All counties had a higher median age in 2010 than in 2000, and in 2018 over 2010, indicating a general aging of the population.

Table 2-4
Historical Population by Age
2000, 2010, 2018

Age	2000 Census		2010 Census		2018 Estimate	
	Population	Percent	Population	Percent	Population	Percent
0-4	184,700	6.1%	221,562	5.9%	243,335	5.5%
5-19	615,697	20.2%	732,041	19.4%	797,617	18.0%
20-24	185,459	6.1%	264,847	7.0%	275,014	6.2%
25-34	405,961	13.3%	473,023	12.5%	616,323	13.9%
35-44	486,110	15.9%	490,323	13.0%	558,231	12.6%
45-54	395,565	13.0%	552,868	14.6%	563,032	12.7%
55-64	289,212	9.5%	453,437	12.0%	572,199	12.9%
65-74	262,234	8.6%	318,580	8.4%	456,946	10.3%
75+	223,120	7.3%	267,794	7.1%	342,661	7.7%
Total	3,048,058	100.0%	3,774,475	100.0%	4,425,358	100.0%

Source: U.S. Census Bureau

Figure 2-2
Median Age by County
2000, 2010, 2018



Source: U.S. Census Bureau

2.1.2 PROJECTIONS

The University of Florida's Bureau of Economic and Business Research (BEBR) updates population forecasts annually for all Florida counties with three scenarios: low, medium, and high. Medium-level BEBR population projections are typically used to develop transportation plans. **Table 2-5** is a summary of the 2019 BEBR medium forecasts, expressed as CAAGRs, released in April 2019. Future long-term population growth for the study area through 2040 is projected to average 1.4 percent per year, which is higher than the 1.1 percent per year projected for the State of Florida. Over the forecast period from 2018 through 2040, Osceola County is projected to experience the fastest population growth rate of 2.4 percent per year. Volusia and Brevard Counties are expected to have the lowest growth rate of only 0.8 percent per year through 2040. All growth rates decelerate over time.

Table 2-5
Population – Projected Growth Rates (CAAGR)
2018 – 2040

County	2018-'20	2020-'30	2030-'40	2018-'40
Brevard	1.3%	0.9%	0.6%	0.8%
Lake	2.6%	1.9%	1.2%	1.7%
Orange	2.4%	1.8%	1.1%	1.5%
Osceola	3.9%	2.8%	1.7%	2.4%
Polk	2.0%	1.4%	0.9%	1.3%
Seminole	2.2%	1.6%	1.0%	1.4%
Volusia	1.2%	0.9%	0.6%	0.8%
Area Total	2.1%	1.6%	1.0%	1.4%
Florida	1.6%	1.2%	0.8%	1.1%

Source: University of Florida Bureau of Economic and Business Research 2019

2.2 Housing Units

2.2.1 HISTORICAL TRENDS

The number of housing units is another key measure in transportation planning. 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 almost 1.9 million in 2018. Orange County has the largest concentration of housing units in the seven-county study area with nearly 545 thousand in 2018. 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 2018 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 1.0 percent per year from 2000 to 2018. This is a similar deceleration trend as population. Osceola County experienced the fastest housing unit growth with an average of 5.0 percent per year while Volusia County was the slowest with only 2.0 percent annual growth between 1980 and 2018. Overall, the historical housing unit growth in the study area has outpaced the growth in the State of Florida.

Table 2-6
Housing Units – Historical Trend
1980 – 2018

County	1980	1990	2000	2010	2018
Brevard	113,900	185,150	222,072	269,864	280,390
Lake	50,511	75,707	102,829	144,996	160,472
Orange	184,701	282,686	361,349	487,839	544,460
Osceola	23,825	47,959	72,293	128,170	153,495
Polk	134,873	186,225	226,376	281,214	299,432
Seminole	68,154	117,841	147,080	181,307	192,255
Volusia	124,427	180,983	211,938	254,226	262,107
Area Total	700,391	1,076,551	1,343,937	1,747,616	1,892,611
Florida	4,378,867	6,100,250	7,303,108	8,989,580	9,547,762

Source: U.S. Census Bureau

Table 2-7
Housing Units – Historical Growth Rates (CAAGR)
1980 – 2018

County	1980-'90	1990-'00	2000-'10	2010-'18	1980-'18
Brevard	5.0%	1.8%	2.0%	0.5%	2.4%
Lake	4.1%	3.1%	3.5%	1.3%	3.1%
Orange	4.3%	2.5%	3.0%	1.4%	2.9%
Osceola	7.2%	4.2%	5.9%	2.3%	5.0%
Polk	3.3%	2.0%	2.2%	0.8%	2.1%
Seminole	5.6%	2.2%	2.1%	0.7%	2.8%
Volusia	3.8%	1.6%	1.8%	0.4%	2.0%
Area Total	4.4%	2.2%	2.7%	1.0%	2.7%
Florida	3.4%	1.8%	2.1%	0.8%	2.1%

Source: U.S. Census Bureau

2.2.2 PROJECTIONS

Table 2-8 is a summary of the long-term housing growth forecasts as published by Woods & Poole.[1] The table also contains information from Fishkind Associates' recent publications for 2018 through 2040. Future long-term housing growth for the study area is projected to average 1.2 percent per year through 2040. Osceola and Lake Counties are forecasted to experience the fastest housing growth with average rates of 2.3 and 1.8 percent per year, respectively, while Polk and Volusia Counties are expected to have the slowest growth of about 0.7 percent per year. The housing unit forecasts 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)
2018 – 2040

County	2018-'20	2020-'30	2030-'40	2018-'40
Brevard	1.5%	0.8%	0.3%	0.6%
Lake	2.5%	2.0%	1.3%	1.8%
Orange	2.2%	1.8%	1.2%	1.6%
Osceola	3.1%	2.6%	1.9%	2.3%
Polk	1.6%	0.9%	0.4%	0.7%
Seminole	2.0%	1.3%	0.8%	1.1%
Volusia	1.5%	0.8%	0.4%	0.7%
Area Total	2.0%	1.4%	0.9%	1.2%
Florida	1.8%	1.1%	0.7%	1.0%

Source: Woods & Poole Economics, Inc 2019 and Fishkind Associates
*Lake, Orange, and Osceola are from Fishkind (as "dwelling units"); the remainder are from Woods & Poole (as "households"); the area total is a weighted average.

[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.

2.3 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 43.8 percent of the seven-county total. Long-term employment growth in the study area averaged 3.1 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 3.4 percent per year, with Osceola County averaging the strongest growth of 5.1 percent per year. Historically, the growth in study area employment outpaced the State of Florida by an average of approximately 0.5 percent per year.

Table 2-9
Total Employment – Historical Trend
1980 – 2018

County	1980	1990	2000	2010	2018
Brevard	129,188	202,232	242,259	256,563	303,181
Lake	46,281	58,326	86,269	113,201	147,861
Orange	291,166	516,943	735,810	822,557	1,130,597
Osceola	19,483	43,173	63,735	101,338	151,298
Polk	156,846	194,693	234,576	255,704	310,399
Seminole	61,621	121,188	186,059	217,211	282,369
Volusia	105,796	146,833	177,896	211,634	253,929
Area Total	810,381	1,283,388	1,726,604	1,978,208	2,579,634
Florida	4,687,521	6,740,289	8,881,279	9,805,154	12,462,208

Source: Bureau of Economic Analysis

Table 2-10
Total Employment – Historical Growth Rates (CAAGR)
1980 – 2018

County	1980-'90	1990-'00	2000-'10	2010-'18	1980-'18
Brevard	4.6%	1.8%	0.6%	2.1%	2.3%
Lake	2.3%	4.0%	2.8%	3.4%	3.1%
Orange	5.9%	3.6%	1.1%	4.1%	3.6%
Osceola	8.3%	4.0%	4.7%	5.1%	5.5%
Polk	2.2%	1.9%	0.9%	2.5%	1.8%
Seminole	7.0%	4.4%	1.6%	3.3%	4.1%
Volusia	3.3%	1.9%	1.8%	2.3%	2.3%
Area Total	4.7%	3.0%	1.4%	3.4%	3.1%
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 1.5 percent per year through 2050 as shown in **Table 2-11**, which is similar to the forecast statewide growth. Osceola County's total employment is forecasted to increase the fastest at 2.5 percent per year while Brevard County is forecasted with the slowest annual growth of 0.8 percent through 2050.

Table 2-11
Total Employment – Projected Growth Rates (CAAGR)
2018 – 2050

County	2018-'20	2020-'30	2030-'40	2040-'50	2018-'50
Brevard	1.1%	1.0%	0.7%	0.6%	0.8%
Lake	2.0%	1.9%	1.6%	1.4%	1.7%
Orange	2.1%	2.0%	1.7%	1.6%	1.8%
Osceola	2.8%	2.7%	2.4%	2.3%	2.5%
Polk	1.4%	1.2%	0.9%	0.6%	0.9%
Seminole	2.0%	1.8%	1.5%	1.4%	1.6%
Volusia	1.4%	1.3%	0.9%	0.7%	1.0%
Area Total	1.9%	1.7%	1.5%	1.3%	1.5%
Florida	1.7%	1.6%	1.4%	1.3%	1.4%

Source: Woods & Poole Economics, Inc., 2019

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 0.6 percent per year for the industrial sector, 1.0 percent per year for the commercial sector and 1.8 percent per year for the service sector through 2050. 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 long-term growth.

Table 2-12
Employment by Sector – Projected Growth Rates (CAAGR)
2018 – 2050

Area	2018-'20	2020-'30	2030-'40	2040-'50	2018-'50
Industrial	1.1%	0.6%	0.4%	0.5%	0.6%
Commercial	1.5%	1.2%	1.0%	0.8%	1.0%
Service	2.1%	2.0%	1.7%	1.5%	1.8%

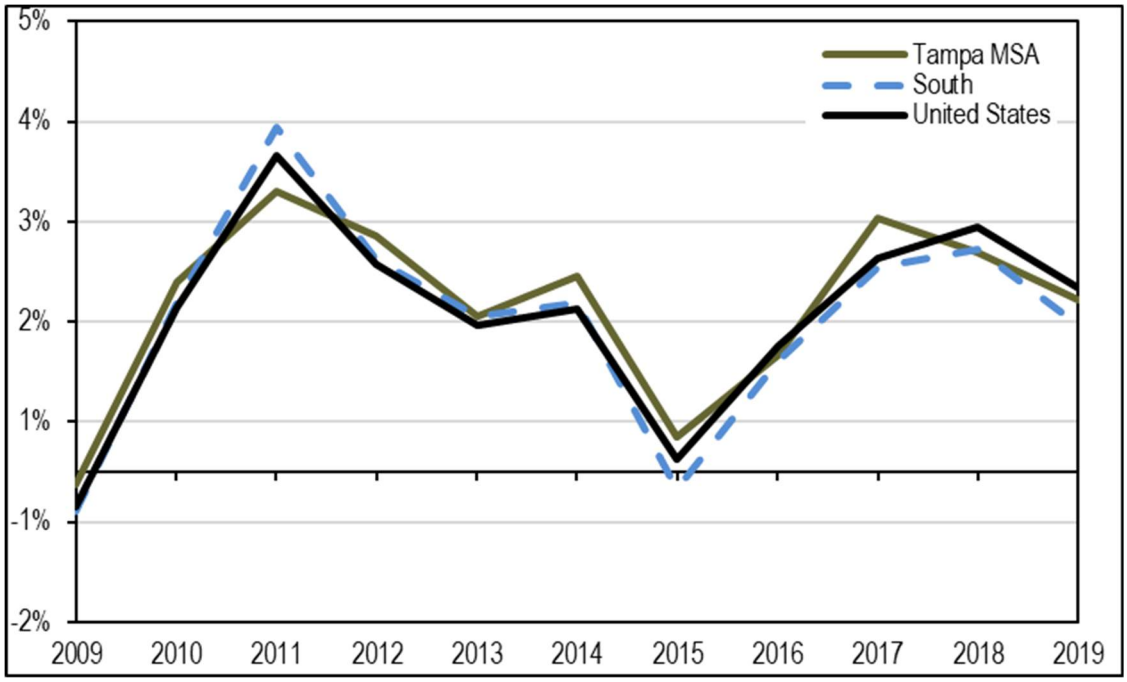
Source: Woods & Poole Economics, Inc., 2019

2.4 Consumer Price Index and Income

2.4.1 CONSUMER PRICE INDEX

The Consumer Price Index (CPI) measures the national average price of an average basket of goods and services compared to a fixed base period (indexing). Changes in the CPI are a measure of price inflation. The historical year-over-year change in the CPI, or annual inflation, for 2009 through 2019 is shown in **Figure 2-3**. In 2009, annual deflation occurred for the first time since 1955 due to the start of the severe global recession, the Great Recession. Since 2009, inflation resumed, albeit at a slower pace than historically, hovering around 2.0 per year, except in 2015 when there were almost no price increases over the prior year. Inflation decelerated from 2011 to 2015; however, inflation accelerated slightly since. 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)
2009 - 2019



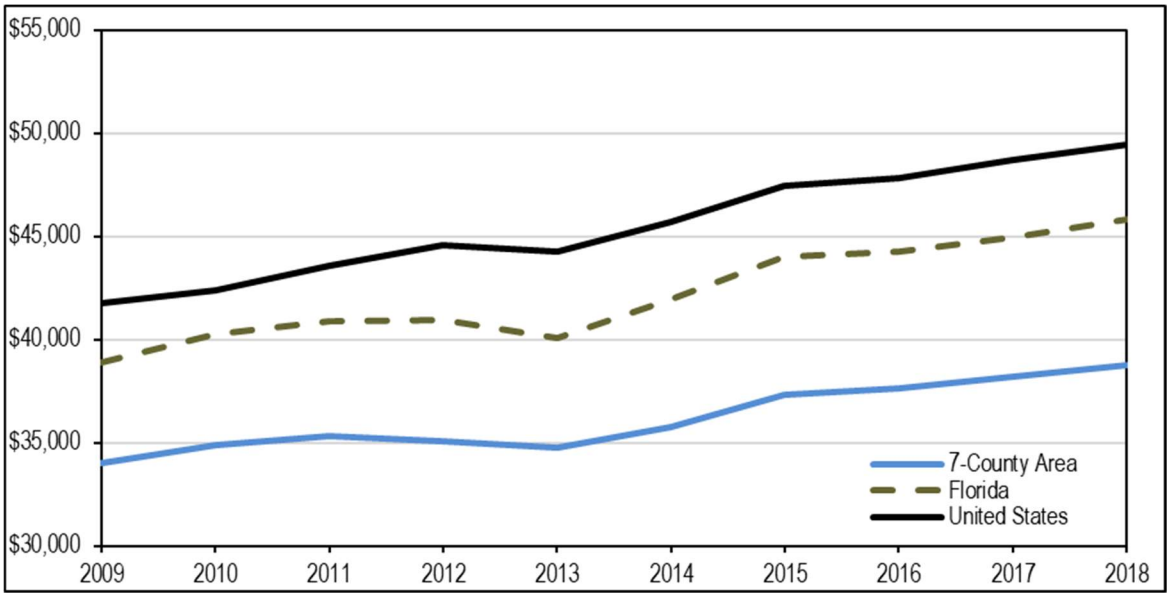
Source: Bureau of Labor Statistics

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 customer's willingness to pay tolls. Real personal income is income adjusted for inflation.

The historical ten-year real per capita income trends since 2009 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 with CAAGRs from 2010 through 2018 of 1.3 and 1.6 percent per year, respectively. Real personal income per capita for the U.S. grew 2.0 percent per year since the recession, between 2010 and 2018.

Figure 2-4
Total Real Personal Income Per Capita
2009 - 2018 (2012 Dollars)

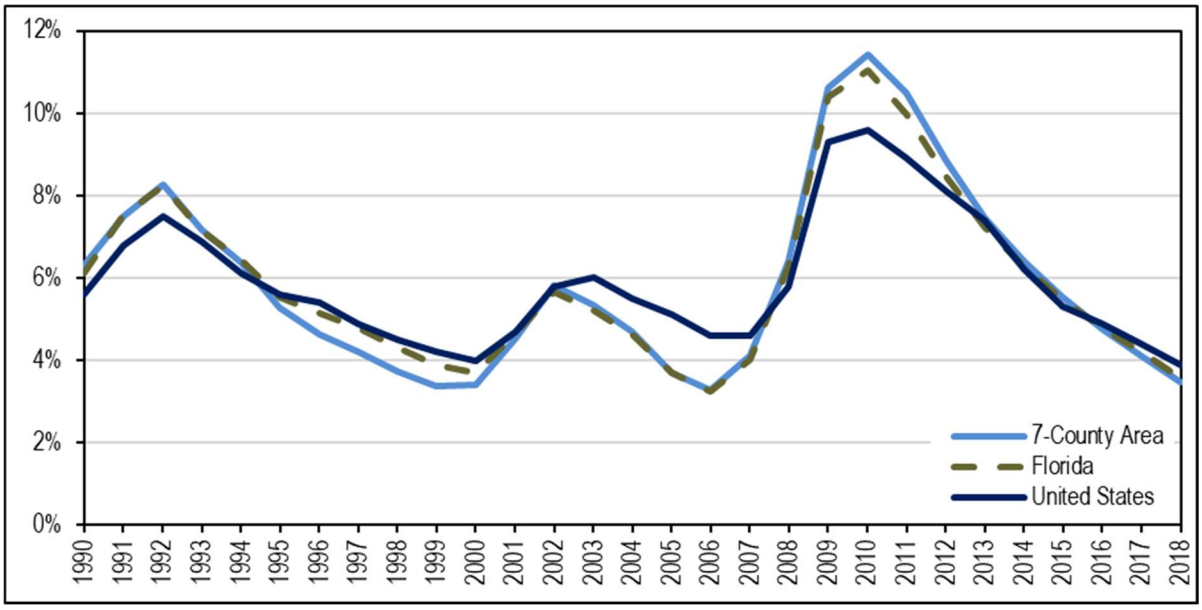


Source: Woods and Poole Economics, Inc., 2019

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 2018. 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 2018 the study area unemployment rate decreased again to an average of 3.5 percent, and once again lower than the national average of 3.9 percent. The study area's unemployment rate has historically been quite close to the Florida average, which had an unemployment rate of 3.6 percent in 2018.

Figure 2-5
Historical Unemployment Rate Comparison
1990 – 2018



Source: Bureau of Labor Statistics

2.6 Regional Tourism

As shown in **Table 2-13**, Orlando hosted a record 75.0 million visitors in 2018, which was an increase of 4.2 percent over the 72.0 million visitors in 2017. Tourism stagnated after the September 11th terrorist attacks, and remained tepid during the Great Recession, but increased every year since 2009. International tourists historically grew faster than domestic tourists, with a 7.9 and 5.2 percent CAAGR, respectively, since 2009. To put this into perspective, 75 million visitors adds over 925,000 people to the Central Florida population daily, with average stay at 4.5 nights.

Table 2-13
Tourism – Orlando Visitors (Millions)
2009 – 2018

Visitors	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2009-'18 CAAGR
Domestic	43.3	47.8	51.4	52.9	54.4	57.4	60.6	62.3	65.9	68.6	5.2%
International	3.3	3.7	3.8	4.3	4.9	5.4	5.9	5.7	6.2	6.5	7.9%
Total	46.6	51.5	55.2	57.2	59.3	62.8	66.5	68.0	72.0	75.0	5.4%

Source: Visit Orlando

In 2018, the Metro Orlando area hotel occupancy rate was 76.1 percent, a decrease of 3.2 percent from 2017. Data is shown in **Table 2-14**. The 2018 average daily room rate was $126.95, which was a 4.5 percent increase over 2017. 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
2009 – 2018

Metro Orlando	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Occupancy Rate	59.5%	63.9%	67.6%	68.8%	71.0%	71.9%	77.0%	75.5%	79.3%	76.1%
Average Daily Rate	$93.34	$90.76	$94.11	$96.88	$101.53	$107.26	$112.00	$116.00	$121.53	$126.95
Room-Night Demand (millions)	24.3	26.7	28.5	29.3	30.1	N/A*	33.0	33.0	34.7	34.5

*2014 room night demand not available at the time of report preparation.
Source: Visit Orlando

The historical and projected enplanements, or boardings, for the Orlando International Airport (OIA) are shown in **Table 2-15** and **Table 2-16**. OIA had an increase of over 6 million enplanements from 1990 to 2000, a decade increase of over 69 percent. Enplanements totaled 22.4 million for 2018, 52.6 percent above the 2000 total. Since 1990, total enplanements at OIA have almost tripled, with a 3.4 percent per year growth rate. The United States Department of Transportation Federal Aviation Administration (FAA) forecasts that OIA enplanements will grow by an average of 2.3 percent per year through 2040. Enplanements are an indicator of tourism and economic growth.

Table 2-15
Historical OIA Enplanements
1990 – 2018

	1990	2000	2010	2018
Enplanements	8,683,491	14,683,594	16,651,359	22,407,345

Source: Federal Aviation Administration Terminal Area Forecasts

Table 2-16
Projected Growth in OIA Enplanements
2018 - 2040

	2018-'20	2020-'30	2030-'40	2018-'40
Enplanements	5.2%	2.1%	1.9%	2.3%

Source: Federal Aviation Administration Terminal Area Forecasts

Metropolitan Orlando is home to several of the 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 that these theme parks have planned to attract tourists to the area. Downtown Disney has been 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 and shops were added in 2018 and 2019. Disney also opened Pandora - the World of Avatar at Animal Kingdom in 2017, Toy Story Land at Magic Kingdom in summer 2018, and Star Wars: Galaxy's Edge at Hollywood Studios in 2019. Universal opened Volcano Bay water theme park in 2017. Several new projects opened in 2018 at Universal Studios including a ride based on the Fast & Furious and the new Aventura Hotel. In 2019, Universal Studios introduced Hagrid's Magical Creatures Motorbike Adventure in The Wizarding World of Harry Potter. Universal Studios also opened its first two value-priced hotels at the new Endless Summer Resort. The two new hotels include the Surfside Inn and Suites, which opened in Summer 2019, and the Dockside Inn and Suites, scheduled to open in 2020.

As shown in **Table 2-17**, the Magic Kingdom attracted an estimated 20.9 million visitors in 2018, which had the highest attendance of all Orlando-area theme parks. Universal Studios at Universal Orlando had the highest recent growth with a 9.5 percent average annual increase in attendance compared to 2012. SeaWorld exhibited a serial year-over-year decline, averaging -2.5% per year, and experienced the first increase in park attendance in three years. Wet 'n Wild closed at the end of 2016 and was redeveloped into Volcano Bay, opening in mid-2017.

Table 2-17
Central Florida Attraction Attendance
2012- 2018 (Millions)

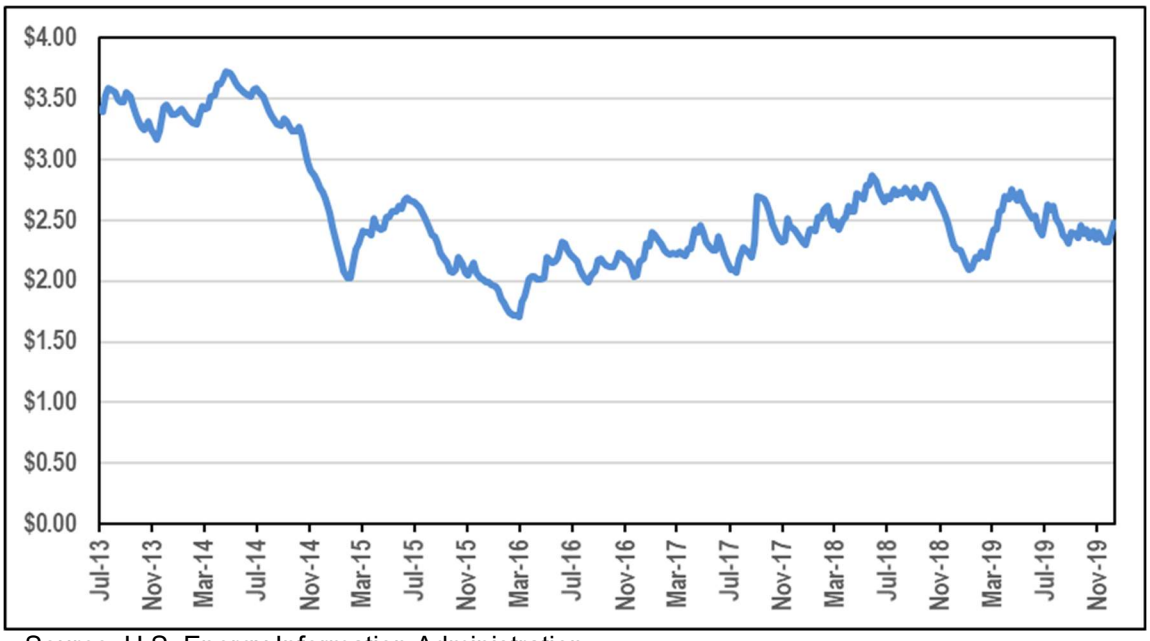
Theme Parks	2012	2013	2014	2015	2016	2017	2018	2012-'18
Disney's Magic Kingdom	17.5	18.6	19.3	20.5	20.4	20.5	20.9	2.9%
Disney's Epcot Center	11.1	11.2	11.5	11.8	11.7	12.2	12.4	2.0%
Disney's Animal Kingdom	10.0	10.2	10.4	10.9	10.8	12.5	13.8	5.5%
Disney's Hollywood Studios	9.9	10.1	10.3	10.8	10.8	10.7	11.3	2.1%
Islands of Adventure at Universal Orlando	8.0	8.1	8.1	8.8	9.4	9.5	9.8	3.5%
Universal Studios at Universal Orlando	6.2	7.1	8.3	9.6	10.0	10.2	10.7	9.5%
Seaworld Orlando	5.4	5.1	4.7	4.8	4.4	4.0	4.6	-2.5%
Water Parks								
Typhoon Lagoon	2.1	2.1	2.2	2.3	2.3	2.3	2.3	1.3%
Blizzard Beach	1.9	2.0	2.0	2.1	2.1	1.9	2.0	0.6%
Aquatica	1.5	1.6	1.6	1.6	1.5	1.4	1.6	0.3%
Volcano Bay (formerly Wet 'n Wild)	1.2	1.3	1.3	1.3	1.3	Closed	1.7	5.6%

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

2.7 Fuel Prices

Figure 2-6 contains weekly retail prices for regular-grade gasoline in Florida, from July 2013 through December 2019 (FY 2014 – FY 2019, plus remainder of CY 2019). From July 2013 through June 2014, gasoline prices fluctuated within a relatively narrow range around $3.50 per gallon. Beginning October 2014, however, motor fuel prices began a noticeable decline. Since March 2016, prices started to increase slightly to $2.79 at the beginning of October 2018. However, since then, average prices have fluctuated and were at $2.48 in mid-December 2019. 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 2014– December 2019

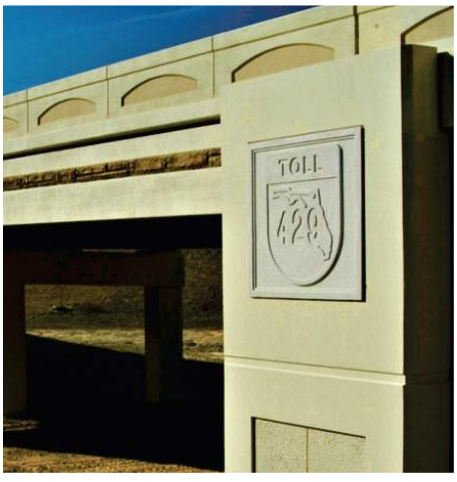


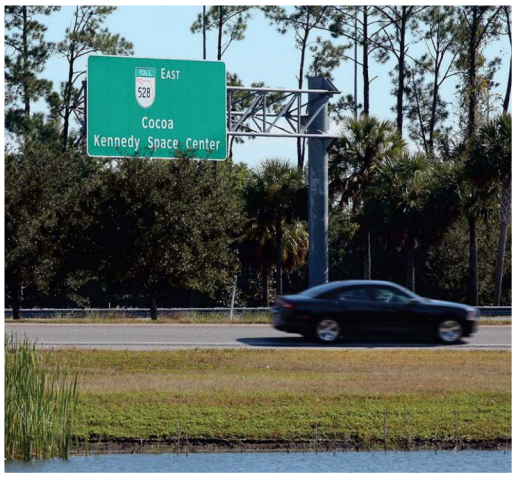
Source: U.S. Energy Information Administration

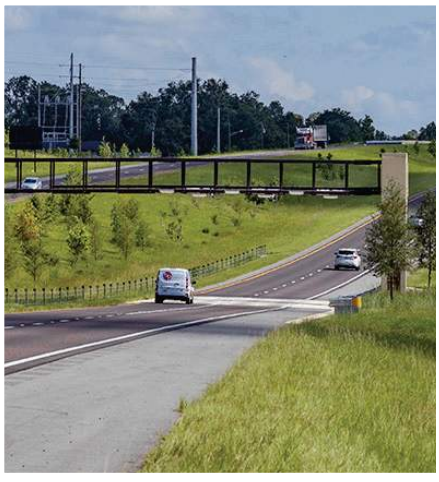
CHAPTER 3

S.R. 528

(MARTIN B. ANDERSEN BEACHLINE EXPRESSWAY)







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

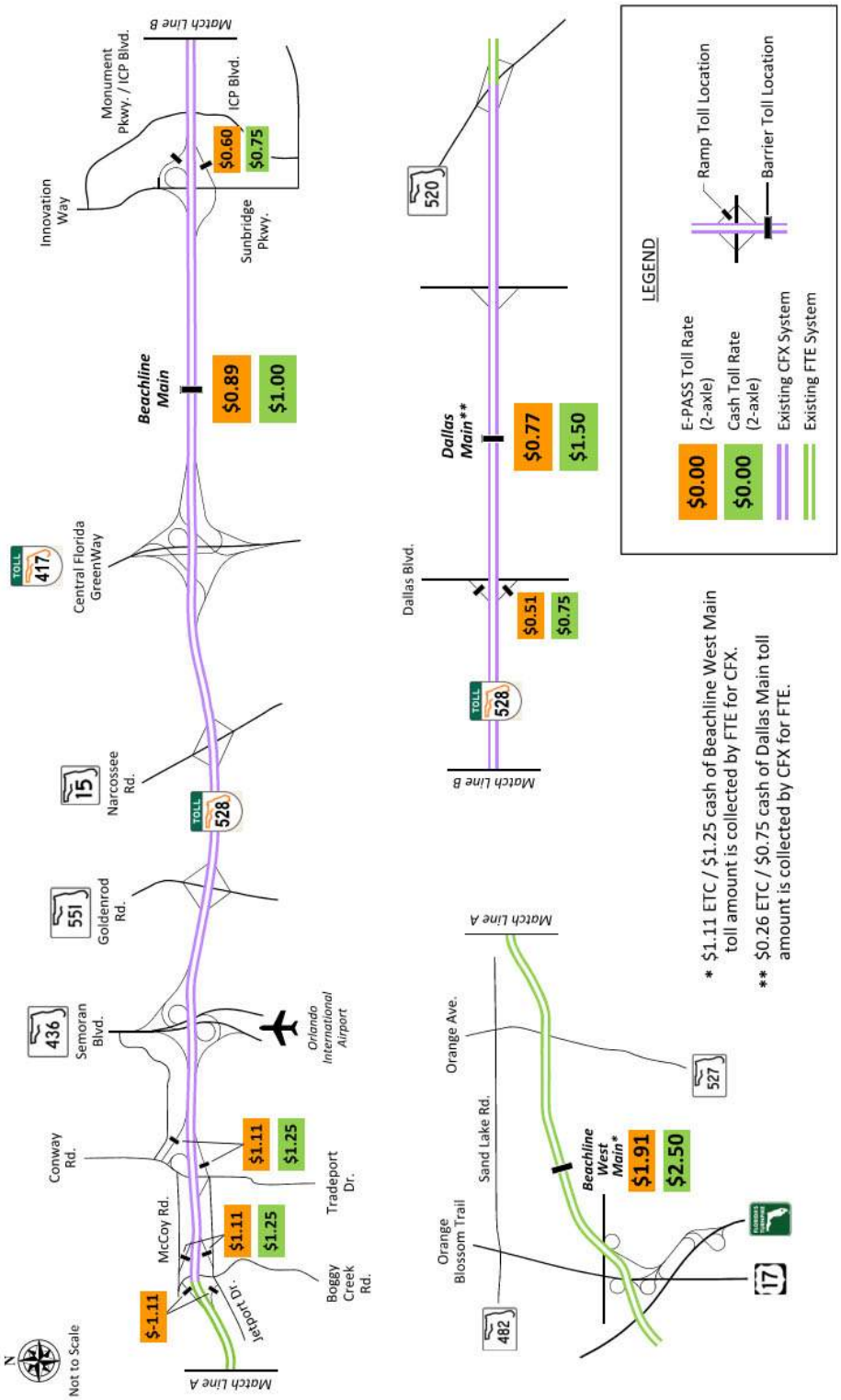
3.1 Facility Description

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 Brevard County near the Atlantic Ocean. The Beachline Expressway is owned, operated and maintained 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 Boggy Creek Road/McCoy Road ramps to/from the east, the Conway Road/Tradeport Drive ramps to/from the east, the Innovation Way interchange to/from the east, and the Dallas Boulevard ramps to/from the west. 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 and the FTE western portion of S.R. 528, including the FY 2019 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 tolled route from Orlando starting at Narcoossee Road to the Space Coast. In July 1983, the segment of S.R. 528 from McCoy Road to S.R. 436/Semoran 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 was a six-lane, limited-access expressway with frontage roads extending from an interchange with McCoy 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 allowed electronic customers to continue through the mainline toll collection point at highway speeds without having to stop or slow down. Automatic coin and manual cash customers were diverted off the roadway to an adjacent traditional toll plaza and required to merge back into traffic after paying the toll. This provided a more efficient means of toll collection, greatly reducing delays to customers and increasing throughput at the toll plaza.

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 and continuing, S.R. 528 was the center of discussions for creation of a super corridor with intercity passenger rail service from All Aboard Florida, now known as Virgin Trains USA, operating as Brightline, future utility needs, future expansion of S.R. 528, and possibly commuter rail. The acquisition phase of the super corridor was completed by the end of FY 2015 through negotiated purchases with the property owners and easements in favor of Virgin Trains USA, whose contributions offset the cost of the corridor. As for the status of intercity passenger rail, construction on the West Palm Beach to Orlando section of Brightline started in June of 2019, with five contractors responsible for the 170-mile project.

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 ETC 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 Main 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. ETC customers with 2-axle vehicles now pay a combined toll of $1.91 at the Beachline West Main Plaza; $0.80 represents the FTE toll amount and $1.11 represents the CFX toll amount. With the combined toll structure, ETC customers using the Boggy Creek Road interchange are eligible for a $1.11 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. The Airport Main plaza group consists of the sum of T&R collected by FTE and the T&R collected by CFX.

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 and to accommodate the Brightline train. The project included 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 feature both exact coin and ETC only lanes. This project also involved removal of the existing S.R. 528/ICP Boulevard interchange. The project was completed and the final ramps on the interchange opened to traffic in March 2018.

In March of 2018, an unsolicited proposal from Virgin Trains USA/Brightline was received by the Florida Department of Transportation (FDOT) for the potential leasing of rights of way owned by FDOT and CFX for the purpose of constructing and operating intercity passenger rail service between Orlando and Tampa. The rights of way owned by CFX that were identified in the proposal include portions of State Roads 417 and 528. Pursuant to the unsolicited proposal, FDOT and CFX issued a Request for Proposals (RFP) for the leasing of rights of way for intercity passenger rail service between Orlando and Tampa. The deadline to submit proposals in response to the RFP was November 7, 2018. No additional bids were received. FDOT granted Virgin Trains USA/Brightline approval to negotiate with transportation agencies for rights of way leases, which continued through FY 2019.

3.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

3.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

A history of annual paid in-lane transactions at the Beachline Main, Airport Main and Dallas Main plaza groups from FY 2000 to FY 2019 are presented in the top half of **Table 3-1**. Annual paid in-lane toll revenues are also summarized and totaled in the bottom half of the table. The S.R. 528 annual paid in-lane transaction and revenue trends including annual growth are also presented visually in **Figure 3-2** and **Figure 3-3**. These historical tables do not include PBP transactions and revenues, only those that are paid in-lane. For these reasons, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report.

Table 3-1
S.R. 528 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2000 – FY 2019

Fiscal Year	Airport Main	Beachline Main	Dallas Main	TOTAL	Airport Main	Beachline Main	Dallas Main	TOTAL
	TRANSACTIONS (millions)				PERCENT CHANGE			
2000	18.9	11.9		30.8				
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%
2018 [J]	36.8	21.6	18.3	76.7	0.5%	-0.5%	-1.1%	-0.1%
2019 [K]	36.8	22.0	18.3	77.1	0.0%	1.9%	0.0%	0.5%
	TOLL REVENUES (millions)				PERCENT CHANGE			
2000	$14.8	$12.9		$27.7				
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%
2018 [J]	$41.6	$20.6	$9.6	$71.8	0.5%	-0.5%	-1.0%	0.0%
2019 [K]	$42.0	$21.3	$10.5	$73.8	1.0%	3.4%	9.4%	2.8%

Notes:

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

B - Effects from 2004 hurricane season (4 storms 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.

J - Effects from Hurricane Irma in September 2017.

K - Systemwide toll rate increase in July 2018.

As shown, total paid in-lane transactions on S.R. 528 in FY 2019 increased by 0.3 million, or 0.4 percent, compared to FY 2018. Paid in-lane revenues experienced 2.8 percent growth during the same period. Total facility paid in-lane transactions and revenues have increased annually over the past twenty years with only three exceptions in FY 2002, FY 2009 and FY 2018. The slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed to an increase in customers utilizing the PBP program.

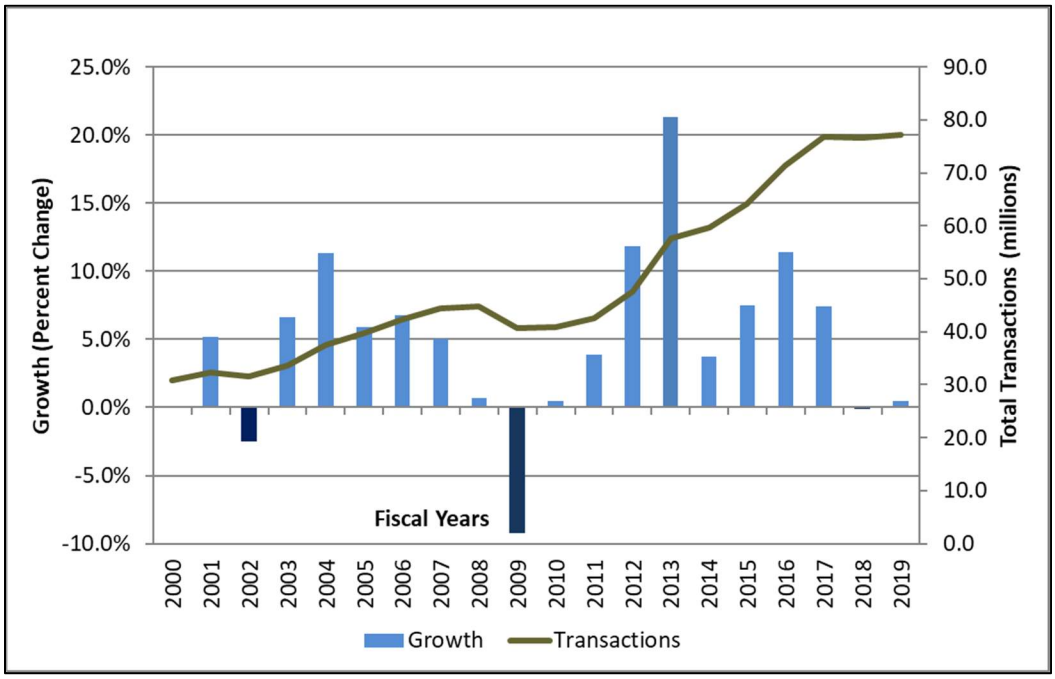
The FY 2002 decrease in paid in-lane transactions of 4.0 percent at the Airport Main plaza group was caused by the reduction of tourism travel in Florida because of the September 11th terrorist attack. Paid in-lane revenues also declined at this plaza group by 3.2 percent. The impact at the Beachline 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 paid in-lane transactions and a decrease of 1.1 percent in paid in-lane revenues. This was the first year of decline since the plaza opened and can be attributed to the start of the Great Recession.

In FY 2009, paid in-lane transactions at the Airport Main and Beachline Main plaza groups decreased by 9.2 percent and 9.0 percent, respectively. Paid in-lane 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 paid in-lane transactions and revenues were affected by the Great 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.

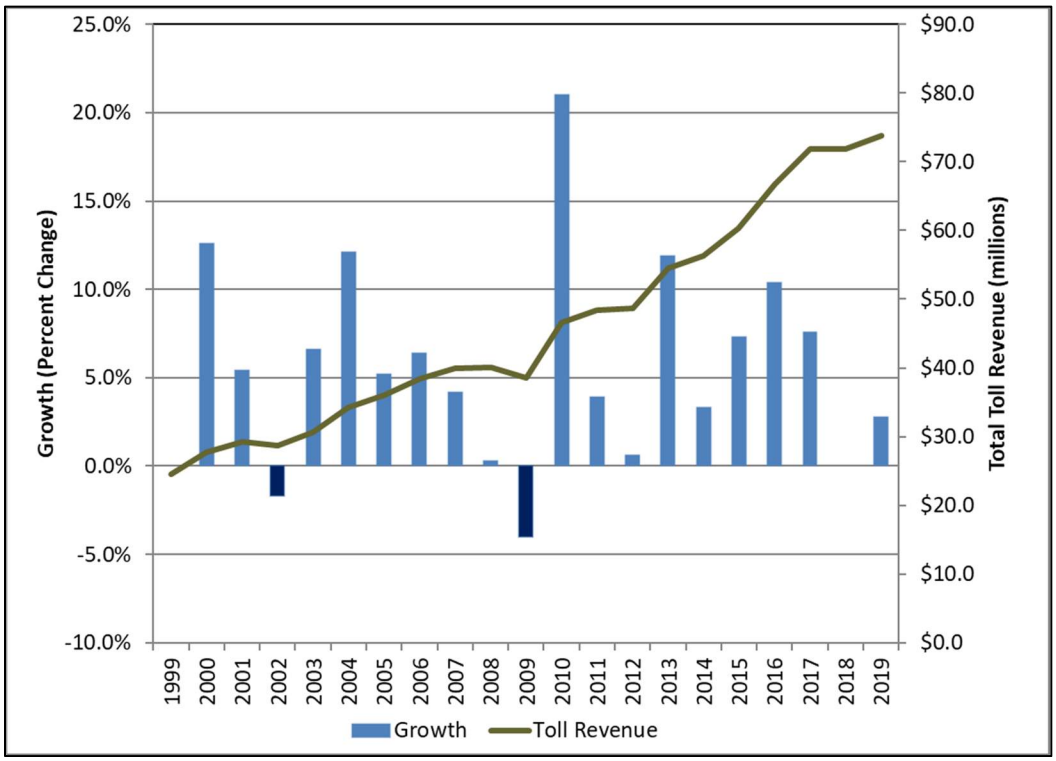
Paid in-lane transactions continued to decline in the Airport Main plaza group in FY 2010 by 0.8 percent due to the continued impacts of the economic recession and the toll rate increase. In FY 2010, paid in-lane revenues on the Airport Main and Beachline Main plaza groups increased significantly due 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. Paid in-lane 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.

Figure 3-2
S.R. 528 Historical Paid In-Lane Transactions and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

Figure 3-3
S.R. 528 Historical Paid In-Lane Revenue and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

In FY 2011, paid in-lane 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 paid in-lane revenue decline of 11.2 percent on the Beachline Main plaza group compared to the prior year. 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 paid in-lane revenues and reported 4.3 million paid in-lane transactions during its first three months of operation in FY 2012. Overall, S.R. 528 paid in-lane transactions would have been relatively flat in FY 2012 compared to FY 2011 without the additional transactions from this new plaza.

In FY 2013, paid in-lane transactions at the Airport Main plaza group declined by 1.4 percent, while paid in-lane 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 paid in-lane transactions and decrease of 15.8 percent in paid in-lane 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, paid in-lane transactions at the Dallas Main plaza increased by 237.2 percent and paid in-lane 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 2013, the combined paid in-lane revenues collected at the Beachline Main and Dallas Main plazas were slightly less 0.9 percent than the amount collected at the single plaza in the prior year.

In FY 2014, paid in-lane transactions at the Airport Main plaza group increased by 2.3 percent and paid in-lane revenues increased by 2.3 percent compared to FY 2013. The Beachline Main plaza group paid in-lane transactions increased by 5.4 percent and paid in-lane revenues increased by 5.1 percent over FY 2013. In FY 2014, Dallas Main plaza group paid in-lane transactions increased by 4.1 percent and paid in-lane 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 paid in-lane transactions increased by 13.2 percent; Beachline Main plaza group paid in-lane transactions increased by 10.0 percent; and Dallas Main plaza group paid in-lane transactions increased by 9.8 percent over FY 2015. Over the same period, the Airport Main plaza paid in-lane revenues increased by 11.0 percent, Beachline Main plaza group paid in-lane revenues increased by 9.9 percent; and Dallas Main plaza group paid in-lane 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 (FY 2017), Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. Tolls were suspended on the CFX System beginning at 8:00 p.m. on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 0.8 million transactions and $0.7 million in toll revenues on S.R. 528. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 3.4 million and a toll revenue loss of $3.2 million on S.R. 528.

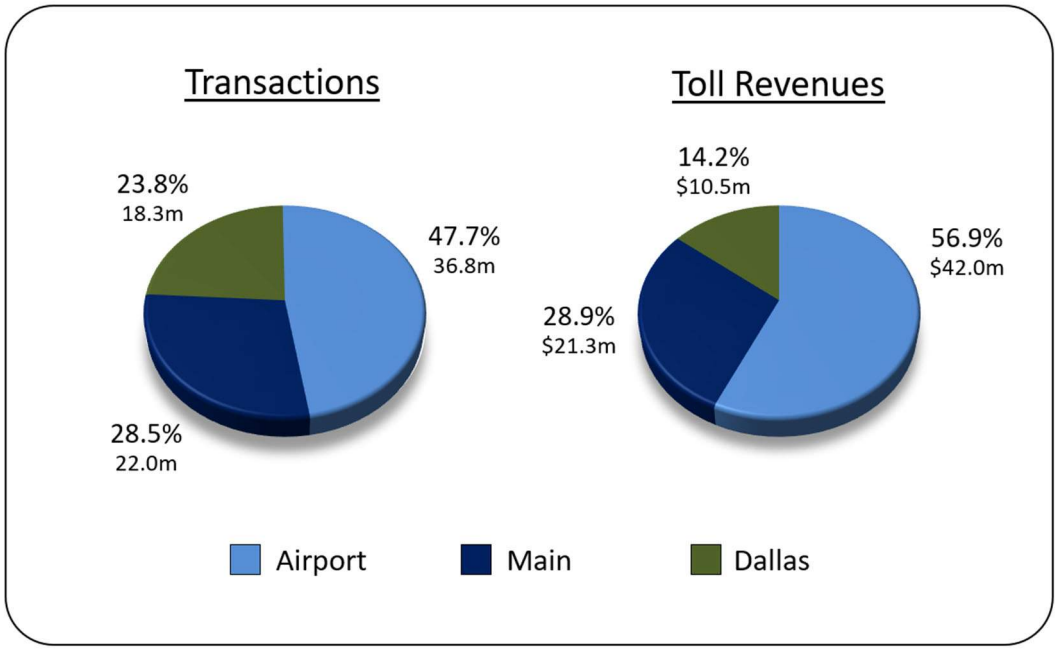
In FY 2018, the Airport Main plaza group paid in-lane transactions increased by 0.5 percent, Beachline Main plaza group paid in-lane transactions decreased by 0.5 percent and Dallas Main plaza group paid in-lane transactions decreased by 1.1 percent over FY 2017. Paid in-lane revenues for each plaza group followed the same trends compared to FY 2017. As previously mentioned, September 2017 transactions and revenues were negatively impacted by toll suspensions during Hurricane Irma.

In FY 2019, the Airport Main plaza group paid in-lane transactions showed no growth, Beachline Main plaza group paid in-lane transactions increased by 1.9 percent and Dallas Main plaza group paid in-lane transactions also showed no growth compared to FY 2018. Paid in-lane revenues increased at each plaza group during the same period due to the FY 2019 toll rate increase. As previously mentioned, the slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed to customers choosing to pay via the PBP program.

The paid in-lane transactions and revenues by plaza group and as a percentage of total S.R. 528 paid in-lane transactions and revenues for FY 2019 are shown in **Figure 3-4**. The Airport Main plaza group represented 36.8 million paid in-lane transactions or 47.7 percent of total S.R. 528 paid in-lane transactions. The Beachline Main plaza group carried 22.0 million or 28.5 percent of total paid in-lane transactions on the facility. Finally, the Dallas Main plaza group represented 18.3 million or 23.8 percent of total S.R. 528 paid in-lane transactions in FY 2019.

The annual totals and percentages for paid in-lane revenues differ from those reported for annual paid in-lane transactions because of differences in toll rates. As shown, the Airport Main plaza group represented $42.0 million in paid in-lane revenues or 56.9 percent of total S.R. 528 paid in-lane revenues. The Beachline Main plaza group carried $21.3 million or 28.9 percent of paid in-lane revenues on the facility. Finally, because of the lower toll, the Dallas Main plaza group represented $10.5 million or 14.2 percent of total S.R. 528 paid in-lane transactions in FY 2019.

Figure 3-4
S.R. 528 Paid In-Lane Transactions and Revenue by Plaza Group
FY 2019



Source: CFX Statistical Report June 2019

3.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 528 from FY 2010 to FY 2019 are presented in **Table 3-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 3-2 shows the annual totals for S.R. 528 as reported at year end.

Table 3-2
S.R. 528 – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	0.3		$0.3	
2011	0.5	66.7%	$0.5	66.7%
2012	0.7	40.0%	$0.6	20.0%
2013	1.0	42.9%	$1.0	66.7%
2014	1.2	20.0%	$1.2	20.0%
2015	1.6	33.3%	$1.6	33.3%
2016	2.2	37.5%	$2.3	43.8%
2017	2.7	22.7%	$3.8	65.2%
2018	3.2	18.5%	$3.8	0.0%
2019	6.0	87.5%	$6.2	63.2%

Source: Unaudited data provided by CFX

PBP transactions have increased from 0.3 million in FY 2010 to 6.0 million in FY 2019, while PBP revenues have increased from $0.3 million to $6.2 million over the same period. In FY 2019, PBP transactions increased 87.5 percent and PBP revenues increased 63.2 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 has contributed to the slower growth and/or decline in paid in-lane transactions and revenues compared to FY 2018. More customers are choosing the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

3.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 3-3**, monthly paid in-lane transactions are normalized to the average number of paid in-lane transactions per day. Using average number of paid in-lane 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.

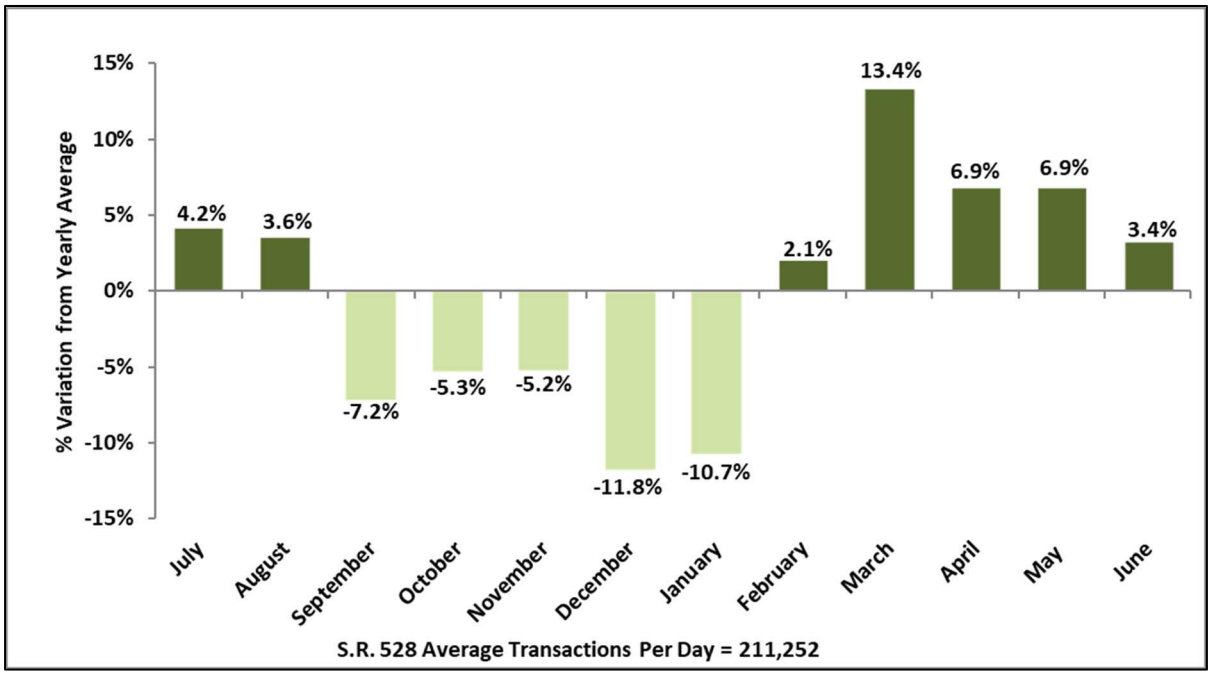
Average paid in-lane transactions per day in FY 2019 on S.R. 528 ranged from a high of nearly 239,531 in March 2019 to a low of 186,286 in December 2018. March is typically the month with the highest average number of transactions per day due to a large number of tourists and seasonal residents in the area during the Spring. This data is presented in a graphical format in **Figure 3-5**. The paid in-lane transactions for each month appear as a percentage of the average for the fiscal year. March paid in-lane transactions were 13.4 percent above average and December paid in-lane transactions were 11.8 percent below average for the facility.

Table 3-3
S.R. 528 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	6,826,604	220,213	1.042
August	31	6,784,993	218,871	1.036
September	30	5,880,254	196,008	0.928
October	31	6,201,603	200,052	0.947
November	30	6,005,592	200,186	0.948
December	31	5,774,855	186,286	0.882
January	31	5,845,020	188,549	0.893
February	28	6,039,097	215,682	1.021
March	31	7,425,468	239,531	1.134
April	30	6,773,996	225,800	1.069
May	31	6,998,829	225,769	1.069
June	30	6,550,667	218,356	1.034
Average		***6,425,582***	***211,252***	***1.000***
Total Year	**365**	**77,106,978**		

Source: CFX Statistical Report June 2019

Figure 3-5
S.R. 528 Variation in Paid In-Lane Transactions Per Day, By Month
FY 2019



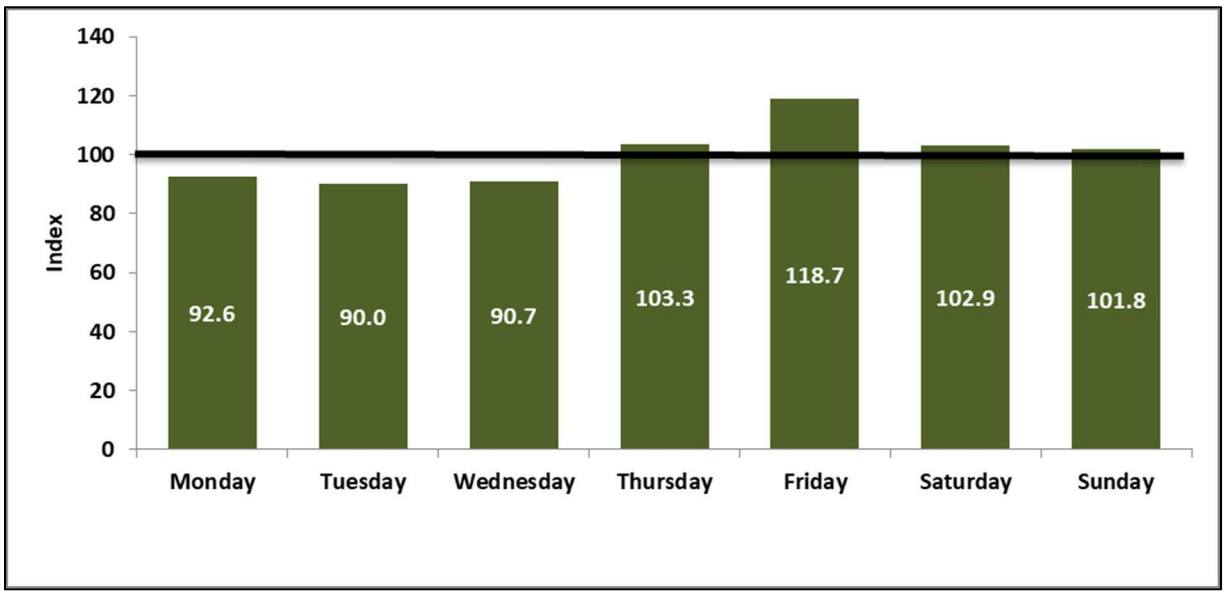
Source: CFX Statistical Report June 2019

3.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 3-6 contains a comparison of transactions by day of week in FY 2019. This data is presented as an index, where the average day 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 average. A value of 120 would indicate a day that has 20 percent greater volume than the average. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

FY 2019 weekday 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 118.7 (18.7 percent higher than the average day), volumes on Thursdays had an index value of 103.3, and volumes on Monday through Wednesday ranged from index values of 92.6 to 90.0. Saturday and Sunday volumes were similar to Thursday volumes with respective index values of 102.9 and 101.8. The higher volumes on Friday can be attributed to weekend and tourism travel using S.R. 528. It is unusual for a facility to have an index below average on weekdays and higher than average on weekend days.

Figure 3-6
S.R. 528 Variation in Transactions, by Day of Week
FY 2019



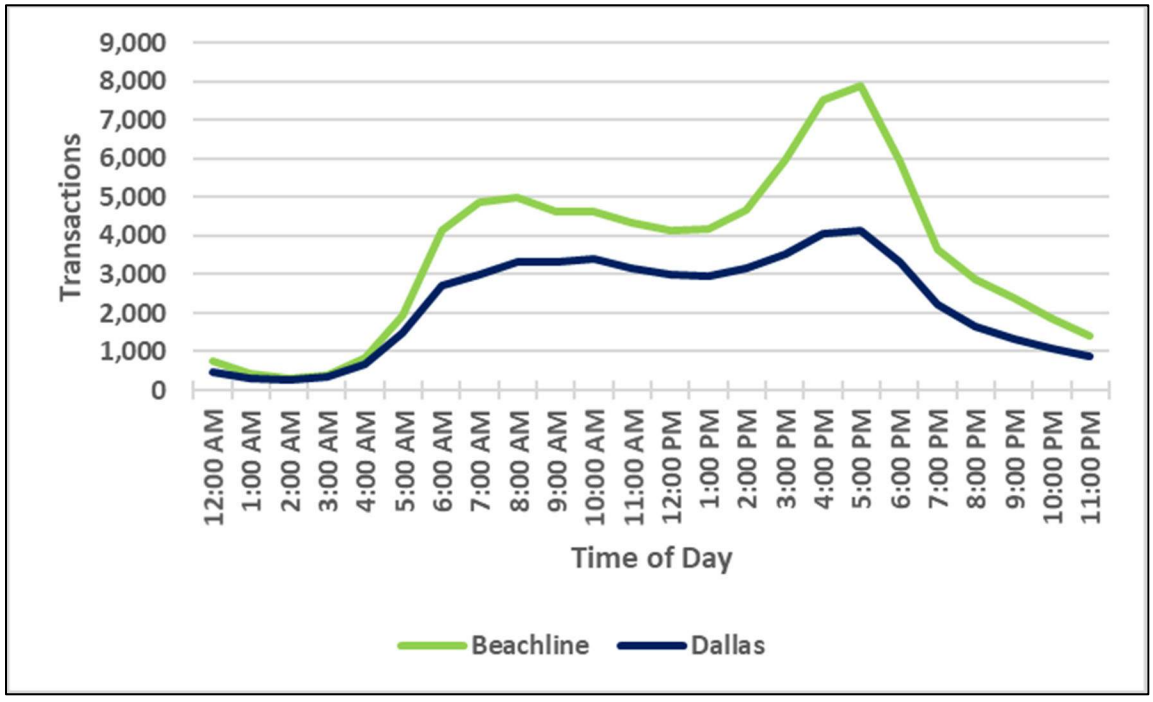
Source: Unaudited lane transaction data – February 2019

3.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic includes information on the usage characteristics of the facility. The hourly distributions represent counts taken during a typical week at the mainline toll plazas in the month of February. 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.

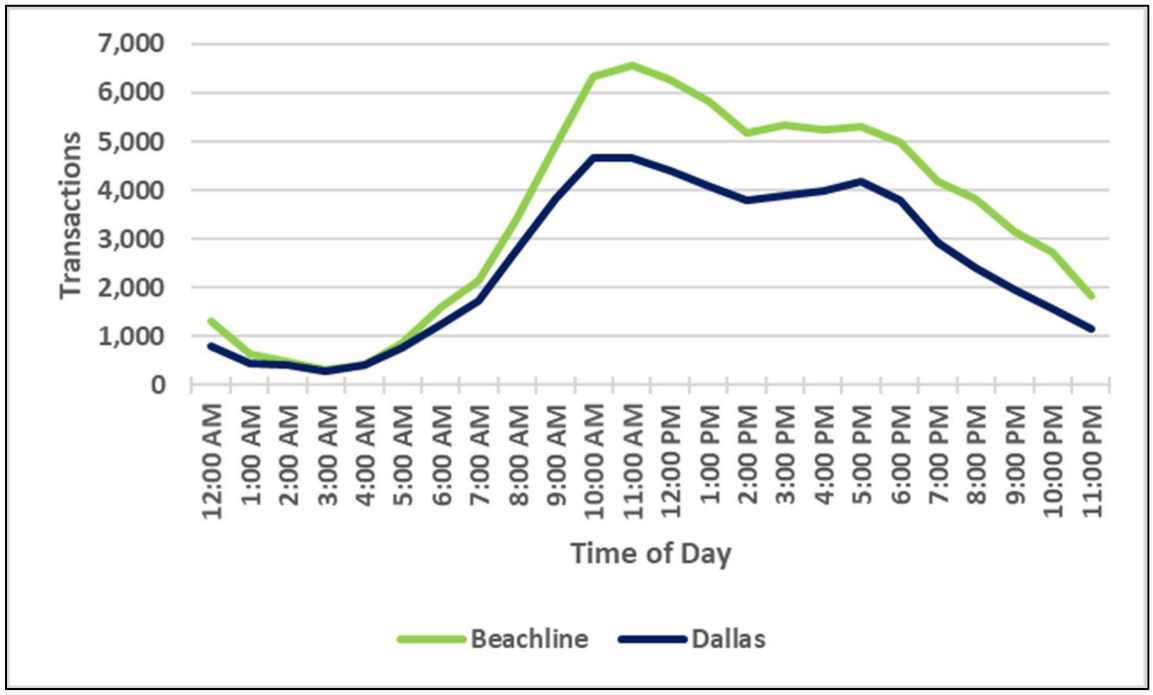
The two mainline toll plaza locations on S.R. 528 exhibit similar hourly traffic patterns. On weekdays, travel demand at both locations is bimodal, with both a morning and an evening peak hour. The Beachline and Dallas mainline plazas both experience higher peak volumes in the evening hours than in the morning hours, with the Beachline p.m. noticeably higher (a difference of 3,000 transactions). The highest peak hour volumes during the week were 7,900 per hour beginning at 5:00 p.m. at the Beachline mainline plaza and 4,100 per hour beginning at 5:00 p.m. at the Dallas mainline plaza. On weekends, there is a clear peak between 10:00 a.m. and 11:00 a.m. and another peak in the afternoon at 5:00 p.m. reflecting traffic heading to the beach for the day.

Figure 3-7
S.R. 528 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 3-8
S.R. 528 Hourly Traffic Variation (Weekend)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

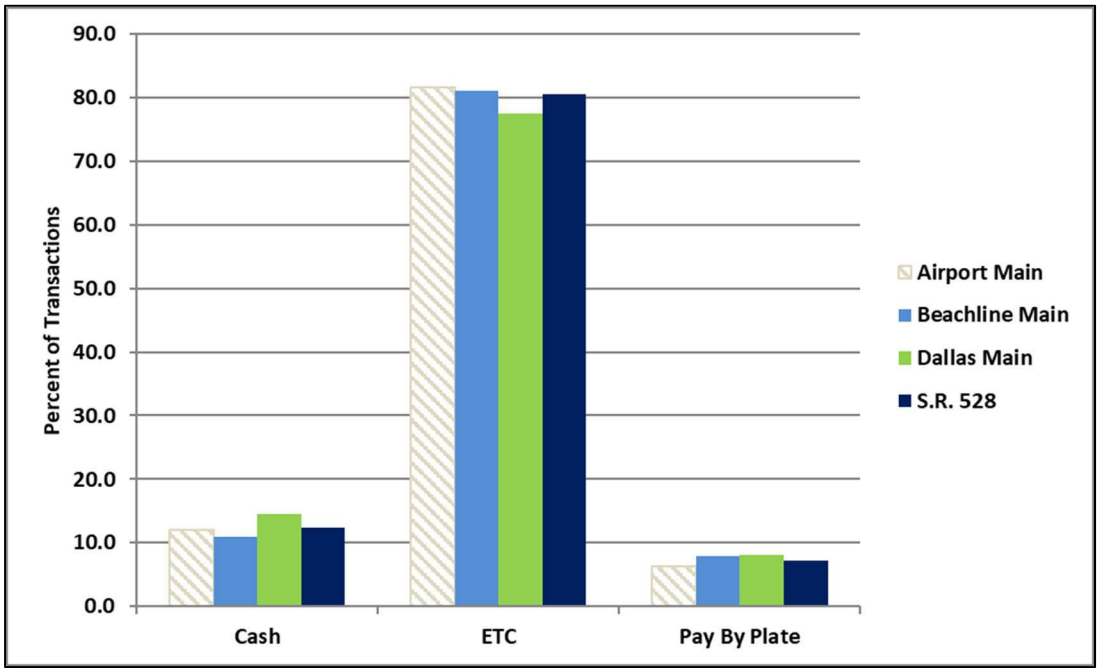
3.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

The distributions of transactions and revenue by payment type and plaza group during FY 2019 are presented in **Figure 3-9** and **Figure 3-10**. Customers pay tolls in one of three ways: cash, ETC, and PBP. As defined in Chapter 1 of this report, paid in-lane transactions and revenue include cash and ETC payments made when a customer drives through a CFX toll location. The remaining transactions and revenue are classified as unpaid in-lane, which includes PBP and a small portion of non-revenue transactions. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

As shown in Figure 3-9, the percent of ETC transactions ranged from a low of 77.4 percent at the Dallas Main plaza group to a high of 81.7 percent at the Airport Main plaza group. Overall, ETC transactions on S.R. 528 accounted for 80.5 percent of total transactions on the system. The percent of cash transactions ranged from a low of 10.9 percent at the Beachline Main plaza group to a high of 14.5 percent at the Dallas Main plaza group. Overall, cash transactions on S.R. 528 accounted for 12.3 percent of total transactions on the system. The PBP transactions ranged from a low of 6.3 percent at the Airport Main plaza group to a high of 8.1 percent of transactions at the Dallas Main plaza group. Overall, PBP transactions on S.R. 528 accounted for 7.2 percent of total transactions on the system.

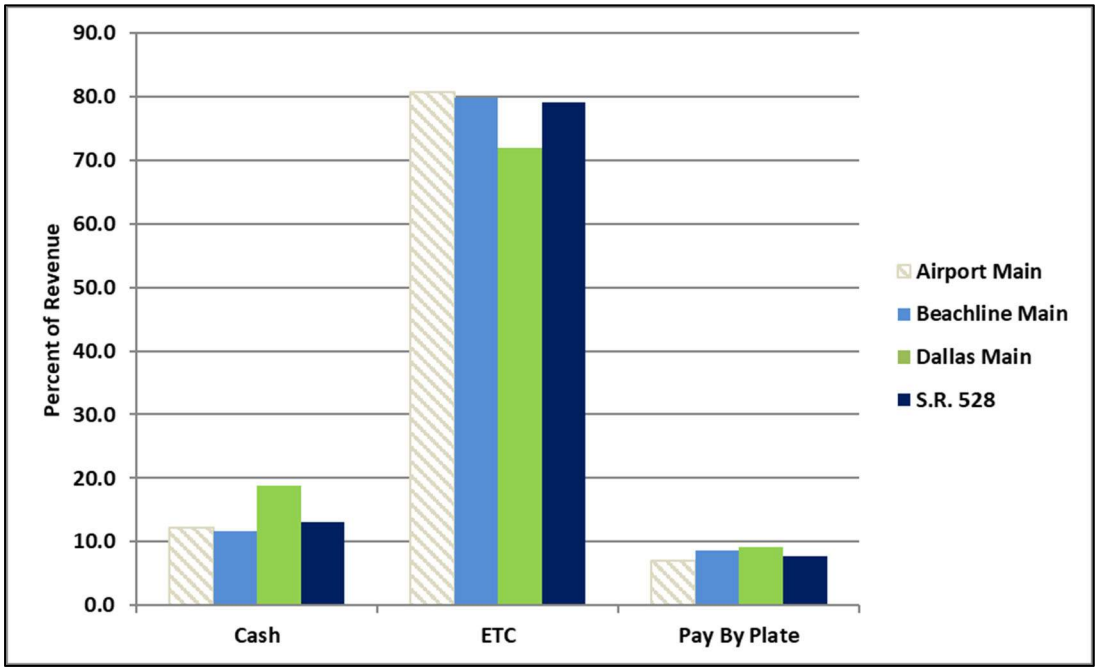
As shown in Figure 3-10, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues ranged from a low of 72.0 percent at the Dallas Main plaza group to a high of 80.7 percent at the Airport Main plaza group. The percent of cash toll revenues ranged from a low of 11.6 percent at the Beachline Main plaza group to a high of 18.8 percent at the Dallas Main plaza group. The percent of PBP toll revenues ranged from a low of 7.0 percent at the Airport Main plaza group to a high of 9.2 percent at the Dallas Main plaza group.

Figure 3-9
S.R. 528 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 3-10
S.R. 528 Percent of Revenue by Payment Type
FY 2019

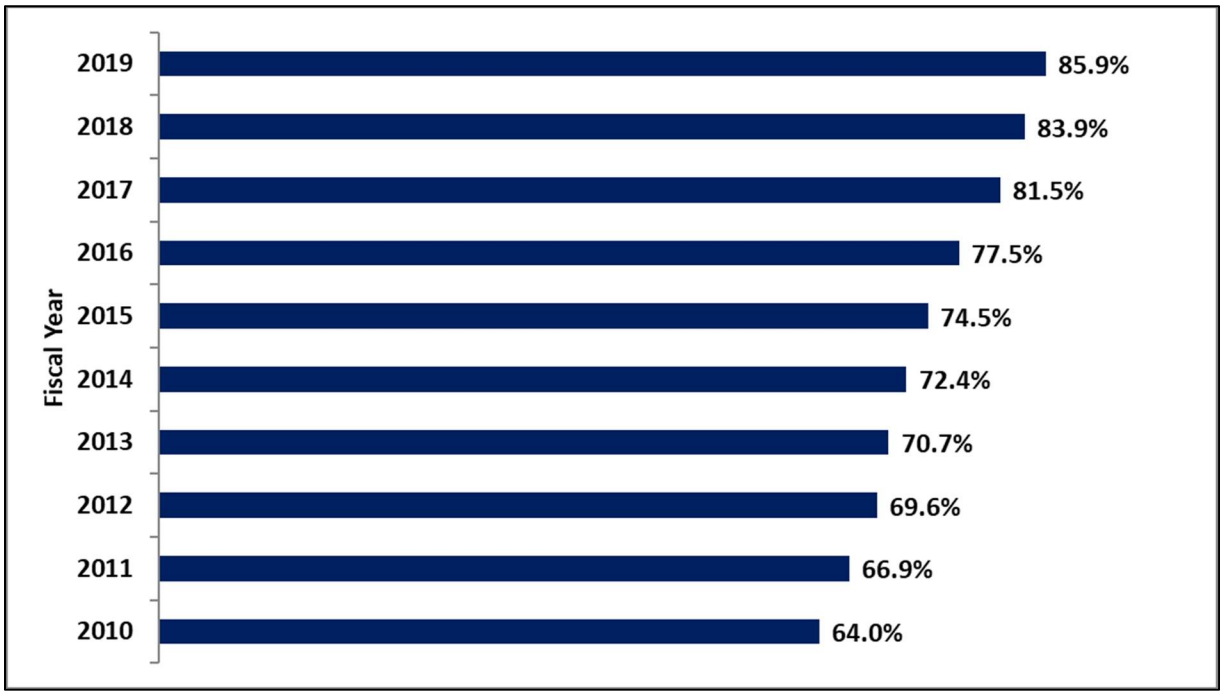


Source: Unaudited toll revenue data provided by CFX

3.3 ETC Usage

The percent of paid in-lane revenues generated from ETC over the past ten fiscal years on S.R. 528 are shown in **Figure 3-11**. PBP revenues are not included. The proportion of ETC toll revenues collected by CFX has steadily increased on the facility. In FY 2010, ETC revenues represented 64.0 percent of total revenues on the facility. In FY 2019, ETC revenues were 85.9 percent. S.R. 528 ETC revenues are lower than the total System ETC revenues due to the significant number of tourists that use the facility. ETC usage is still expected to increase as customers shift to ETC to take advantage of the lower ETC toll rate and the convenience of paying tolls electronically, especially with the implementation of the PBP toll rates that will be twice the ETC toll rate beginning in July 2020 (FY 2021).

Figure 3-11
S.R. 528 Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

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 2.22 percent in FY 2020 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 3-4**, assumed completed in each model horizon year. System improvements, such as the S.R.528 widening projects from S.R. 417 to Innovation Parkway and from S.R. 436 to S.R. 417 will help growth rates in the near term as these are areas of congestion. The improvement to FTE's portion of S.R. 528 from I-4 to McCoy Road should result in higher growth rates in the near term. System improvements, such as S.R. 528 from Innovation Parkway to S.R. 520, will add to growth in the long term. The improvements to feeder roads, including Narcoossee Road and Conway Road positively impact the traffic and revenue growth on S.R. 528 throughout the forecast horizon. In March 2019 the 2040 LRTP was updated to include the Kirkman Road Extension, a new 4 lane highway from SR 528 to Sand Lake Road.

Table 3-4
S.R. 528 - Key Transportation Improvements

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 Lanes
Central Florida Parkway	International Drive	SR 423 (John Young Parkway)	2025	Orange County	Widen to 6 Lanes
Conway Road	Hoffner Road	Michigan Street	2025	Orange County/FDOT	Widen to 6 Lanes
Destination Parkway	Universal Boulevard	John Young Parkway	2025	Orange County	Widen to 6 Lanes
International Drive	Hawaian Court	SR 482	2025	Orange County	Widen to 6 Lanes
SR 15 (Narcoossee Road)	SR 528 (BeachLine Expressway)	Lee Vista Boulevard	2025	Orange County/FDOT	Widen to 6 Lanes
SR 482/Sand Lake Road	Turkey Lake Road	W. of John Young Parkway	2025	FDOT	Widen to 6-lanes
SR 528	SR 417	Innovation Parkway	2025	CFX	Widen to 6-lanes
SR 528	SR 436	SR 417	2025	CFX	Widen to 8-lanes
Kirkman Road Extension	SR 528 (BeachLine Expressway)	Sand Lake Road	2025	Orange County	New 4 lane Highway
Nova Rd (CR 532)	US 192	Pine Grove Rd	2035	Osceola County	Widen to 4 Lanes
Nova Rd (CR 532)	Pine Grove Rd	Eden Dr	2035	Osceola County	Widen to 4 Lanes
Nova Rd (CR 532)	Eden Dr	Deer Park Rd	2035	Osceola County	Widen to 4 Lanes
Central Florida Parkway	SR 423 (John Young Parkway)	Orange Blossom Trail	2035	Orange County	Widen to 6 Lanes
Conway Road	Judge Road	Hoffner Road	2035	Orange County/FDOT	Widen to 6 Lanes
International Drive	SR 482	Kirkman Road	2035	Orange County	Widen to 6 Lanes
Universal Boulevard	SR 482	Pointe Plaza Avenue	2035	Orange County	Widen to 6 Lanes
Nova Rd (CR 532)	Deer Park Rd	Orange County Line	2045	Osceola County	Widen to 4 Lanes
Nova Road	Alligator Lake Rd	US 192	2045	Osceola County	Widen to 4 Lanes
Conway Road	McCoy Road	Judge Road	2045	Orange County	Widen to 6 Lanes
International Drive South	Westwood Boulevard	Hawaiian Court	2045	Orange County	Widen to 6 Lanes
Turkey Lake Road	Sand Lake Commons Boulevard	SR 482	2045	Orange County	Widen to 6 Lanes
Universal Boulevard	SR 482	Carrier Drive	2045	Orange County	Widen to 6 Lanes
US 192	Nova Road	Pine Grove Rd	2045	FDOT	Widen to 6-lanes
SR 528	Innovation Parkway	SR 520	2045	CFX	Widen to 6-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 3-5** and **Table 3-6**. The tables are divided into Paid in-lane and PBP transactions and revenue. Paid in-lane transactions and revenue by plaza group include ETC and cash collection. PBP is only reported as a total on the facility level. 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 paid in-lane transactions on S.R. 528 are expected to grow 2.2 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to decline an average of 6.4 percent per year through FY 2029 and then increase slightly through the forecast period. Total transactions on S.R. 528 are projected to increase during the forecast period from the actual of 83.1 million in FY 2019 to 118.8 million in FY 2049. The paid in-lane revenues on S.R. 528 are projected to increase over the forecast period, from the FY 2019 actual of $73.8 million to $162.5 million in FY 2049. PBP revenues are projected to increase from $6.2 million in FY 2019 to $10.7 million in FY 2049. Total revenues on S.R. 528 are projected to increase during the forecast period from the actual $80.0 million in FY 2019 to $173.2 million in FY 2049. Total transactions are forecasted to increase an average of 1.8 percent per year from FY 2019 to FY 2029. Total revenues during the same period are forecasted to increase an average of 3.3 percent per year. Total transactions and revenues are forecasted to increase at an average of 1.0 and 2.4 percent per year from FY 2029 to FY 2039, and 0.8 and 2.2 percent per year from FY 2039 to FY 2049, respectively.

Table 3-5
S.R. 528 Plaza Groups – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Airport Main	Beachline Main	Dallas Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	25.4	15.5		40.9	0.3	41.2	
2011		26.2	16.3		42.5	0.5	43.0	4.4%
2012[A,C]		26.8	16.4	4.3	47.5	0.7	48.2	12.1%
2013[B]		26.4	16.7	14.5	57.6	1.0	58.6	21.6%
2014		27.0	17.6	15.1	59.7	1.2	60.9	3.9%
2015		28.8	19.0	16.4	64.2	1.6	65.8	8.0%
2016		32.6	20.9	18.0	71.5	2.2	73.7	12.0%
2017[D]		36.6	21.7	18.5	76.8	2.7	79.5	7.9%
2018[E]		36.8	21.6	18.3	76.7	3.2	79.9	0.5%
2019[F]		36.8	22.0	18.3	77.1	6.0	83.1	4.0%
2020	Forecast	38.2	22.8	19.0	80.0	6.5	86.5	4.1%
2021[G]		39.6	24.1	19.8	83.5	3.7	87.2	0.8%
2022[H]		41.0	25.1	20.3	86.4	2.6	89.0	2.1%
2023		41.8	25.5	20.7	88.0	2.9	90.9	2.1%
2024		42.6	25.8	21.0	89.4	2.9	92.3	1.5%
2025		43.4	26.2	21.3	90.9	2.9	93.8	1.6%
2026		44.2	26.5	21.6	92.3	2.9	95.2	1.5%
2027		45.0	26.8	21.9	93.7	2.9	96.6	1.5%
2028		45.8	27.1	22.2	95.1	3.0	98.1	1.6%
2029		46.5	27.4	22.4	96.3	3.1	99.4	1.3%
2030		47.2	27.6	22.7	97.5	3.1	100.6	1.2%
2031		47.9	27.9	22.9	98.7	3.1	101.8	1.2%
2032		48.5	28.1	23.2	99.8	3.1	102.9	1.1%
2033		49.1	28.4	23.4	100.9	3.1	104.0	1.1%
2034		49.6	28.6	23.7	101.9	3.1	105.0	1.0%
2035		50.1	28.9	23.9	102.9	3.1	106.0	1.0%
2036		50.7	29.1	24.1	103.9	3.3	107.2	1.1%
2037		51.2	29.3	24.4	104.9	3.3	108.2	0.9%
2038		51.7	29.5	24.6	105.8	3.3	109.1	0.8%
2039		52.2	29.8	24.8	106.8	3.3	110.1	0.9%
2040		52.7	30.0	25.0	107.7	3.3	111.0	0.8%
2041		53.2	30.2	25.2	108.6	3.4	112.0	0.9%
2042		53.7	30.4	25.4	109.5	3.4	112.9	0.8%
2043		54.1	30.6	25.6	110.3	3.4	113.7	0.7%
2044		54.6	30.9	25.8	111.3	3.5	114.8	1.0%
2045		55.0	31.1	25.9	112.0	3.6	115.6	0.7%
2046		55.5	31.3	26.1	112.9	3.6	116.5	0.8%
2047		55.9	31.5	26.3	113.7	3.6	117.3	0.7%
2048		56.3	31.7	26.4	114.4	3.6	118.0	0.6%
2049		56.7	31.9	26.6	115.2	3.6	118.8	0.7%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2010 - 2019	4.2%	4.0%		7.3%	39.5%	8.1%
2019 - 2029	2.4%	2.2%	2.0%	2.2%	-6.4%	1.8%
2029 - 2039	1.2%	0.8%	1.0%	1.0%	0.6%	1.0%
2039 - 2049	0.8%	0.7%	0.7%	0.8%	0.9%	0.8%

Notes:
Actual revenue data provided by CFX from Monthly Statistical Reports.
A - Dallas Main plaza opened to traffic on March 19, 2012.
B - Systemw ide toll rate increase.
C - Airport Main Plaza closed and new ramp plazas opened in March 2016.
D - Effects from Hurricane Matthew in October 2016.
E - Effects from Hurricane Irma in September 2017.
F - First year of implementation of "Customer First" toll rate policy.
G - New toll rates for PBP customers, set at 2.0 times the ETC rate.
H - Completion of I-4 Ultimate project.

Table 3-6
S.R. 528 Plaza Groups – Toll Revenue Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Airport Main	Beachline Main	Dallas Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	$26.2	$20.4		$46.6	$0.3	$46.9	
2011		$27.0	$21.4		$48.4	$0.5	$48.9	4.3%
2012[A,C]		$27.5	$19.0	$2.2	$48.7	$0.6	$49.3	0.8%
2013[B]		$30.9	$16.0	$7.6	$54.5	$1.0	$55.5	12.6%
2014		$31.6	$16.8	$7.9	$56.3	$1.2	$57.5	3.6%
2015		$33.6	$18.2	$8.6	$60.4	$1.6	$62.0	7.8%
2016		$37.3	$20.0	$9.4	$66.7	$2.3	$69.0	11.3%
2017[D]		$41.4	$20.7	$9.7	$71.8	$3.8	$75.6	9.6%
2018[E]		$41.6	$20.6	$9.6	$71.8	$3.8	$75.6	0.0%
2019[F]		$42.0	$21.3	$10.5	$73.8	$6.2	$80.0	5.8%
2020	Forecast	$43.8	$22.8	$11.0	$77.6	$7.0	$84.6	5.7%
2021[G]		$46.0	$24.5	$11.6	$82.1	$7.3	$89.4	5.7%
2022[H]		$48.1	$25.9	$12.0	$86.0	$5.5	$91.5	2.3%
2023		$49.5	$26.6	$12.4	$88.5	$5.5	$94.0	5.1%
2024		$51.0	$27.3	$12.8	$91.1	$5.8	$96.9	3.1%
2025		$52.5	$28.0	$13.1	$93.6	$6.0	$99.6	2.8%
2026		$54.0	$28.7	$13.4	$96.1	$6.2	$102.3	2.7%
2027		$55.4	$29.4	$13.8	$98.6	$6.4	$105.0	2.6%
2028		$56.9	$30.1	$14.1	$101.1	$6.4	$107.5	2.4%
2029		$58.5	$30.8	$14.5	$103.8	$6.6	$110.4	2.7%
2030		$60.0	$31.5	$14.8	$106.3	$6.9	$113.2	2.5%
2031		$61.6	$32.2	$15.2	$109.0	$7.1	$116.1	2.6%
2032		$63.1	$32.9	$15.5	$111.5	$7.3	$118.8	2.3%
2033		$64.7	$33.6	$15.9	$114.2	$7.5	$121.7	2.4%
2034		$66.3	$34.4	$16.2	$116.9	$7.5	$124.4	2.2%
2035		$68.0	$35.1	$16.6	$119.7	$7.7	$127.4	2.4%
2036		$69.6	$35.8	$17.0	$122.4	$8.0	$130.4	2.4%
2037		$71.3	$36.6	$17.4	$125.3	$8.2	$133.5	2.4%
2038		$73.0	$37.4	$17.8	$128.2	$8.4	$136.6	2.3%
2039		$74.7	$38.2	$18.2	$131.1	$8.5	$139.6	2.2%
2040		$76.4	$39.0	$18.6	$134.0	$8.7	$142.7	2.2%
2041		$78.2	$39.8	$19.0	$137.0	$9.0	$146.0	2.3%
2042		$80.0	$40.6	$19.4	$140.0	$9.2	$149.2	2.2%
2043		$81.8	$41.5	$19.8	$143.1	$9.4	$152.5	2.2%
2044		$83.6	$42.4	$20.2	$146.2	$9.6	$155.8	2.2%
2045		$85.5	$43.3	$20.7	$149.5	$9.8	$159.3	2.2%
2046		$87.3	$44.2	$21.1	$152.6	$10.1	$162.7	2.1%
2047		$89.2	$45.1	$21.5	$155.8	$10.3	$166.1	2.1%
2048		$91.1	$46.1	$22.0	$159.2	$10.5	$169.7	2.2%
2049		$93.1	$47.0	$22.4	$162.5	$10.7	$173.2	2.1%

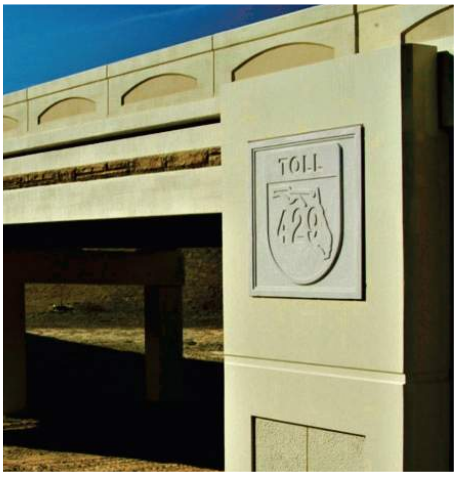
Fiscal Year	Compound Annual Average Growth Rate (CAAGR)					
2010 - 2019	5.4%	0.5%		5.2%	40.0%	6.1%
2019 - 2029	3.4%	3.8%	3.3%	3.5%	0.6%	3.3%
2029 - 2039	2.5%	2.2%	2.3%	2.4%	2.6%	2.4%
2039 - 2049	2.2%	2.1%	2.1%	2.2%	2.3%	2.2%

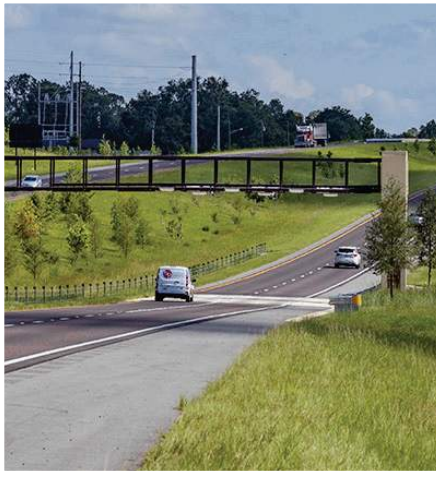
Notes:
Actual revenue data provided by CFX from Monthly Statistical Reports.
A - Dallas Main plaza opened to traffic on March 19, 2012.
B - Systemw ide toll rate increase.
C - Airport Main Plaza closed and new ramp plazas opened in March 2016.
D - Effects from Hurricane Matthew in October 2016.
E - Effects from Hurricane Irma in September 2017.
F - First year of implementation of "Customer First" toll rate policy.
G - New toll rates for PBP customers, set at 2.0 times the ETC rate.
H - 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)

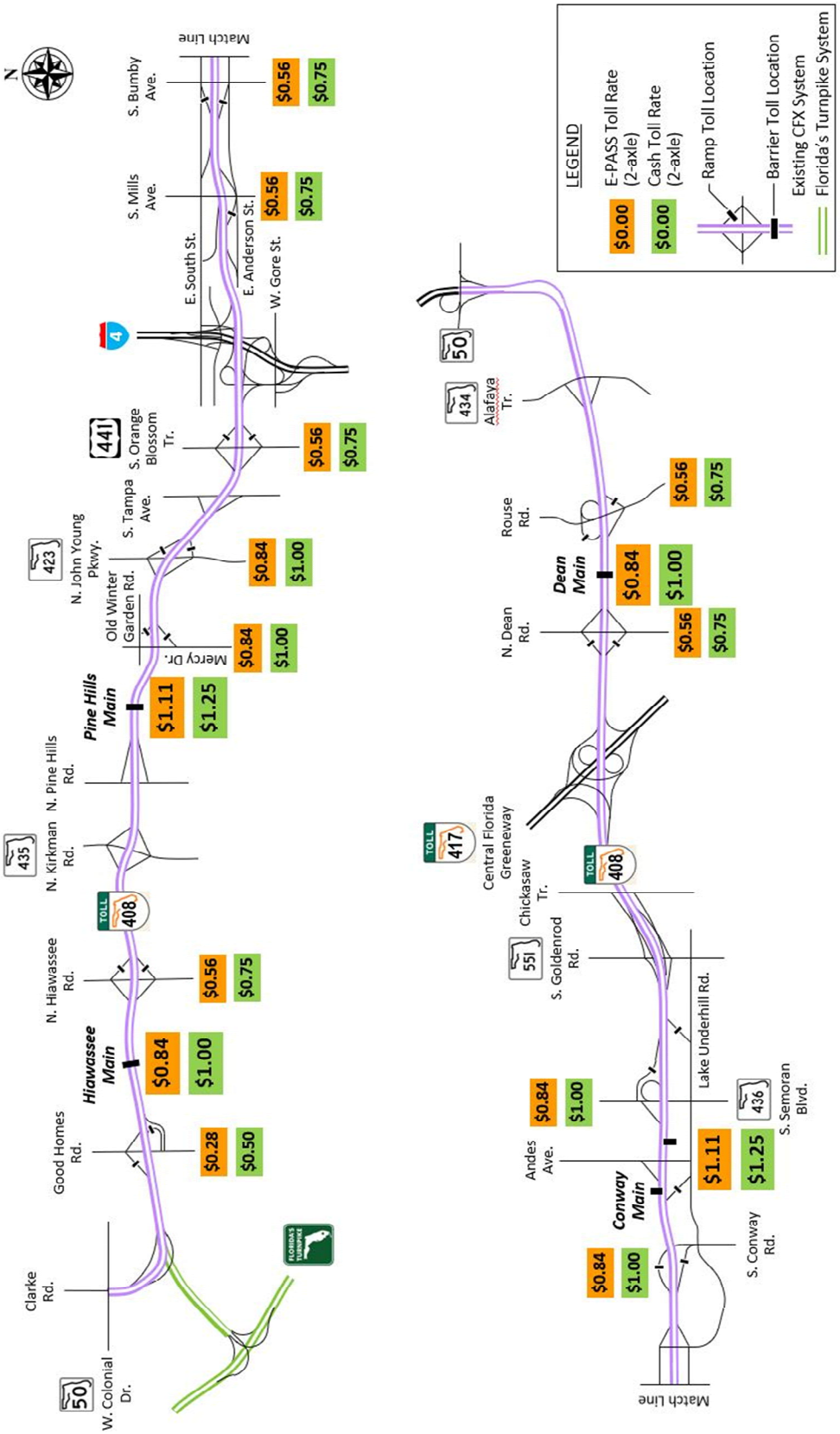
4.1 Facility Description

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 2019 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/Semoran 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 east of Goldenrod Road (S.R. 551). 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 Goldenrod Road to a new interchange with S.R. 50, east of Alafaya Trail (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, in cooperation with Florida's Turnpike Enterprise, 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.

In early 2016, CFX began widening S.R. 408 from Good Homes Road to east of Hiawassee Road. This two-mile project added a travel lane in each direction (from two to three lanes) and widened the ramp from westbound S.R. 408 to Good Homes Road from one to two lanes. This project was completed in July 2018.

As part of a partnership project, the FDOT reconstructed the I-4/S.R. 408 interchange as part of the 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 December 2017, CFX completed a milling and resurfacing project on SR. 408 from the Lake Underhill bridge to Yucatan Drive. This 1.7-mile project included the addition of one express toll lane in each direction at the Conway Road Main Plaza.

In the fall of 2017, CFX began widening 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 early 2020.

4.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

4.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

A comprehensive historical record of paid in-lane 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 2000 to FY 2019 is presented in **Table 4-1**. The facility data and annual growth are also presented visually in **Figure 4-2** and **Figure 4-3**. This table and figures do not include PBP transactions and revenues, only those that are paid in-lane. For this reason, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report.

Paid in-lane transaction and revenue growth from FY 2000 through FY 2006 were stable with annual growth in all plaza groups. 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 and other interoperable transponder 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, paid in-lane transactions decreased at the Conway Main plaza group by 2.3 percent and revenues decreased by 2.4 percent. Paid in-lane 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 Great Recession, and to construction and widening of the facility which included the addition of express lanes at the Conway mainline plaza. Paid in-lane 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 paid in-lane 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 paid in-lane transactions declined at all four plaza groups. Despite the decrease in paid in-lane 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 paid in-lane 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. Paid in-lane revenues also declined at both facilities by approximately 1.0 percent. Paid in-lane 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 paid in-lane transaction and revenue declines or no growth compared to the prior year.

Table 4-1
S.R. 408 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2000 – FY 2019

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				
2000	15.5	24.4	41.0	16.7	97.6					
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%
2018 [H]	29.8	34.2	54.6	26.6	145.2	0.7%	0.0%	-3.2%	-3.3%	-1.7%
2019 [I]	29.8	33.6	52.4	25.3	141.1	0.0%	-1.8%	-4.0%	-4.9%	-2.8%
	TOLL REVENUES (millions)					PERCENT CHANGE				
2000	$7.4	$17.8	$29.3	$7.8	$62.3					
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%
2018 [H]	$23.5	$36.0	$57.1	$21.7	$138.3	0.9%	-0.3%	-3.4%	-3.6%	-1.9%
2019 [I]	$24.1	$36.0	$55.5	$21.0	$136.6	2.6%	0.0%	-2.8%	-3.2%	-1.2%

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.

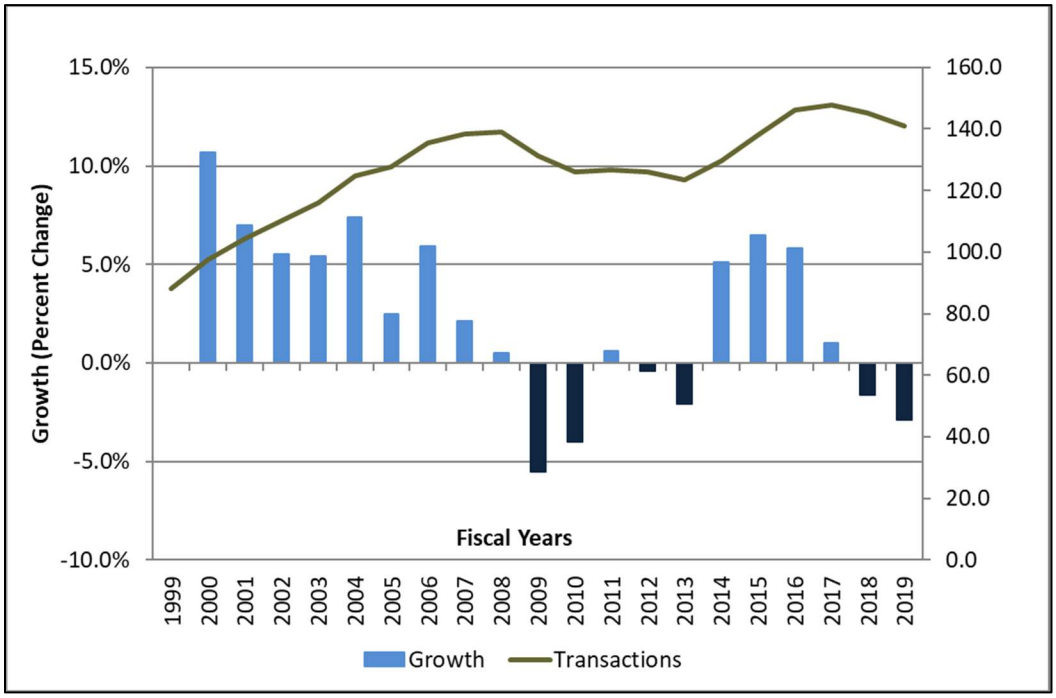
F - Systemwide toll rate increase in July 2013. Conway Main plaza converted to open road tolling in Nov 2008.

G - Effects from Hurricane Matthew in October 2016.

H - Effects from Hurricane Irma in September 2017.

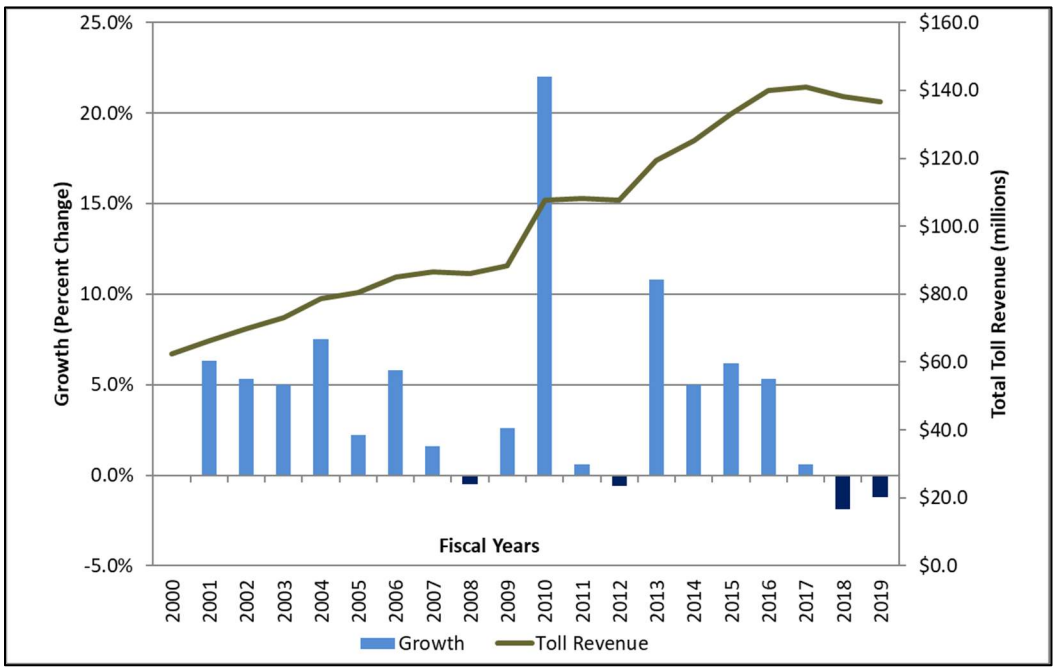
I - Systemwide toll rate increase in July 2018.

Figure 4-2
S.R. 408 Historical Paid In-Lane Transactions and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

Figure 4-3
S.R. 408 Historical Paid In-Lane Revenue and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

Paid in-lane 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, paid in-lane transactions and revenues increased at all four plaza groups. The increase in paid in-lane 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, paid in-lane transactions and revenues increased over FY 2014 at all four plaza groups. The Hiawassee Main plaza group experienced the largest increase in both paid in-lane transactions and revenues. The same trend continued in FY 2016 during which paid in-lane transactions increased by 5.8 percent and revenues increased by 5.3 percent. The Hiawassee Main plaza group experienced the largest increase in paid in-lane transactions and revenues for the second consecutive year. This increase in paid in-lane 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. Tolls were suspended on the CFX System beginning at 8:00 p.m. on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 1.7 million transactions and $1.6 million in revenues on S.R. 408. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 6.7 million and a toll revenue loss of $6.4 million on S.R. 408.

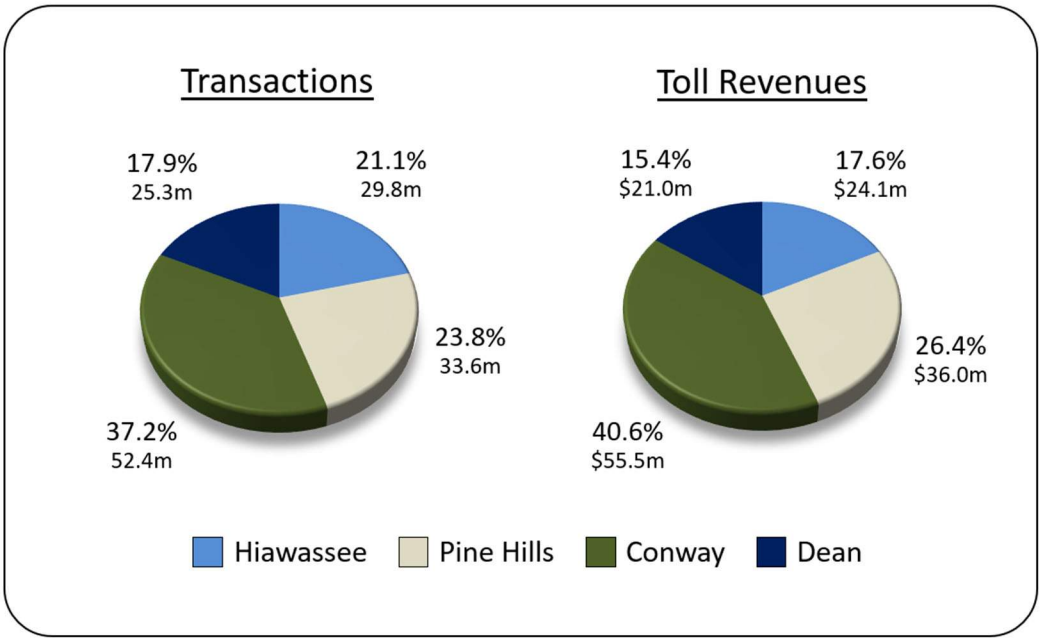
In FY 2018, paid in-lane transactions on S.R. 408 decreased by approximately 2.5 million, or 1.7 percent, compared to FY 2017. FY 2018 paid in-lane revenues decreased by $2.7 million, or 1.9 percent compared to FY 2017. In FY 2018, paid in-lane transactions and revenues increased 0.7 percent at the Hiawassee Main plaza group over FY 2017. The Pine Hills Main plaza group experienced no growth in paid in-lane transactions and a decline in paid in-lane revenues over the same period. Paid in-lane transactions at the Conway Main plaza group declined by 3.2 percent and revenues declined by 3.4 percent. At the Dean Main plaza group, paid in-lane transactions declined by 3.3 percent and revenues declined by 3.6 percent. As previously mentioned, September 2017 transactions and revenues were negatively impacted by toll suspensions during Hurricane Irma.

As shown, paid in-lane transactions on S.R. 408 in FY 2019 decreased by approximately 4.1 million, or 2.8 percent, compared to FY 2018. FY 2019 paid in-lane revenues decreased by $1.7 million, or 1.2 percent compared to FY 2018. In FY 2019, paid in-lane transactions showed no growth and revenues increased 2.6 percent at the Hiawassee Main plaza group over FY 2018. The Pine Hills Main plaza group experienced a decline in paid in-lane transactions of 1.8 percent and and no growth in revenues over the same period. Paid in-lane transactions at the Conway Main plaza group declined by 4.0 percent and revenues declined by 2.8 percent.

At the Dean Main plaza group, paid in-lane transactions declined by 4.9 percent and revenues declined by 3.2 percent. The slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed to an increase in customers utilizing the PBP program.

The paid in-lane transactions and toll revenues by plaza groups and as a percentage of total S.R. 408 paid in-lane transactions and toll revenues for FY 2019 are presented in **Figure 4-4**. The largest portion of the paid in-lane transactions on S.R. 408 during FY 2019 were reported at the Conway Main plaza group, with 52.4 million or 37.2 percent. The Pine Hills Main, Hiawassee Main, and Dean Main plaza groups reported 33.6, 29.8 and 25.3 million paid in-lane transactions respectfully and each contributed between 17.9 and 23.8 percent of total S.R. 408 paid in-lane transactions for FY 2019.

Figure 4-4
S.R. 408 Paid In-Lane Transactions and Revenue by Plaza Group
FY 2019



Source: CFX Statistical Report June 2019

The annual totals and percentages for paid in-lane toll revenues are similar to the trends reported for annual paid in-lane transactions. As shown, the Conway Main plaza group represented $55.5 million in paid in-lane toll revenues or 40.6 percent of total S.R. 408 paid in-lane toll revenues. The Pine Hills Main plaza group represented $36.0 million or 26.4 percent of total paid in-lane revenues on the facility. The Hiawassee Main plaza group represented $24.1 million or 17.6 percent and the Dean Main plaza group represented $21.0 million or 15.4 percent of total paid in-lane revenues on the facility. Toll rates are higher and there are more supporting ramp locations with higher toll rates in the Pine Hills and Conway plaza groups therefore those plaza groups have a higher proportion of facility revenues than transactions.

4.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 408 from FY 2010 to FY 2019 is presented in **Table 4-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 4-2 shows the annual totals for S.R. 408 as reported at year end.

Table 4-2
S.R. 408 – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	0.8		$1.0	
2011	1.4	75.0%	$1.8	80.0%
2012	1.8	28.6%	$2.4	33.3%
2013	2.2	22.2%	$3.5	45.8%
2014	2.7	22.7%	$4.2	20.0%
2015	3.4	25.9%	$5.3	26.2%
2016	4.5	32.4%	$6.9	30.2%
2017	5.1	13.3%	$9.2	33.3%
2018	8.9	74.5%	$9.8	6.5%
2019	16.2	82.0%	$17.7	80.6%

Source: Unaudited data provided by CFX

PBP transactions have increased from 0.8 million in FY 2010 to 16.2 million in FY 2019, while PBP revenues have increased from $1.0 million to $17.7 million over the same period. In FY 2019, PBP transactions increased 82.0 percent and PBP revenues increased 80.6 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 has contributed to the slower growth and/or decline in paid in-lane transactions and revenues compared to FY 2018. More customers chose the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers currently paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

4.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 4-3**, monthly paid in-lane transactions are normalized to the average number of paid in-lane transactions per day. Using the average number of paid in-lane 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.

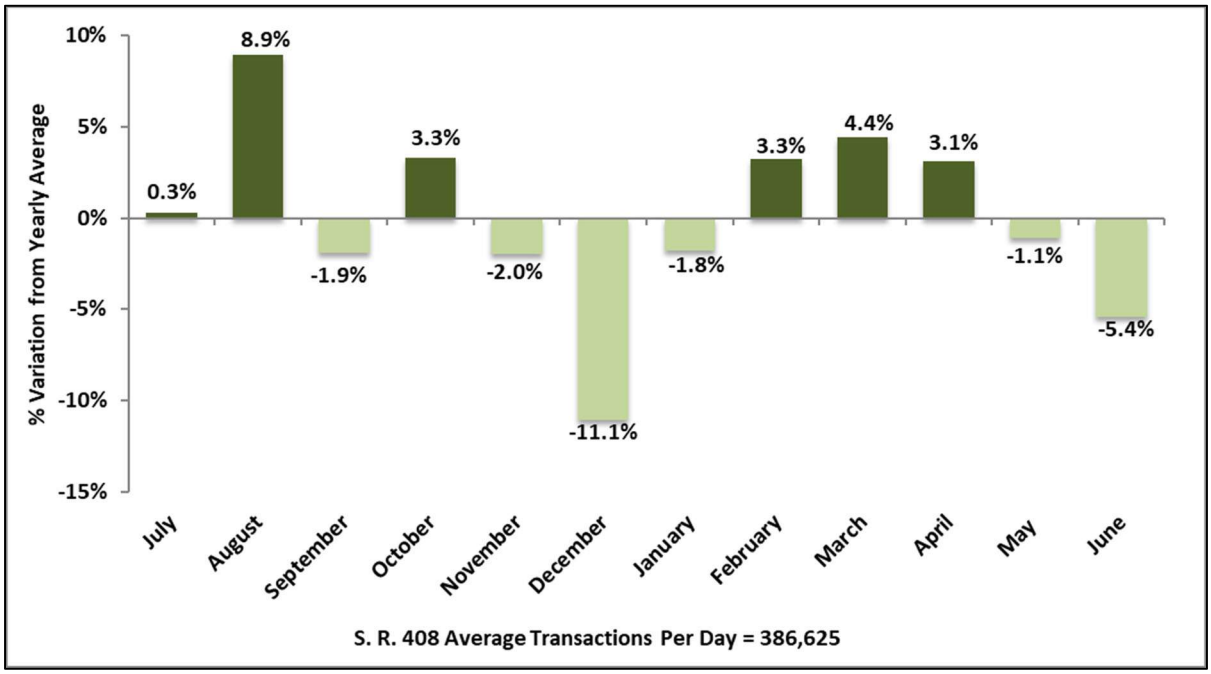
The average number of paid in-lane transactions per day in FY 2019 on S.R. 408 ranged from a high of 421,145 in August 2018 to a low of 343,880 in December 2018. This data is presented in a graphical format in **Figure 4-5**. The paid in-lane transactions for each month appear as a percentage of the average for the fiscal year. As shown in the figure, August paid in-lane transactions were 8.9 percent above average and December paid in-lane transactions were 11.1 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 4-3
S.R. 408 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	12,022,052	387,808	1.003
August	31	13,055,488	421,145	1.089
September	30	11,373,788	379,126	0.981
October	31	12,380,130	399,359	1.033
November	30	11,372,368	379,079	0.980
December	31	10,660,277	343,880	0.889
January	31	11,773,651	379,795	0.982
February	28	11,177,767	399,206	1.033
March	31	12,513,682	403,667	1.044
April	30	11,960,010	398,667	1.031
May	31	11,855,371	382,431	0.989
June	30	10,973,389	365,780	0.946
Average		***11,759,831***	***386,625***	***1.000***
Total Year	**365**	**141,117,973**		

Source: CFX Statistical Report June 2019

Figure 4-5
S.R. 408 Variation in Paid In-Lane Transactions per Day, by Month
FY 2019



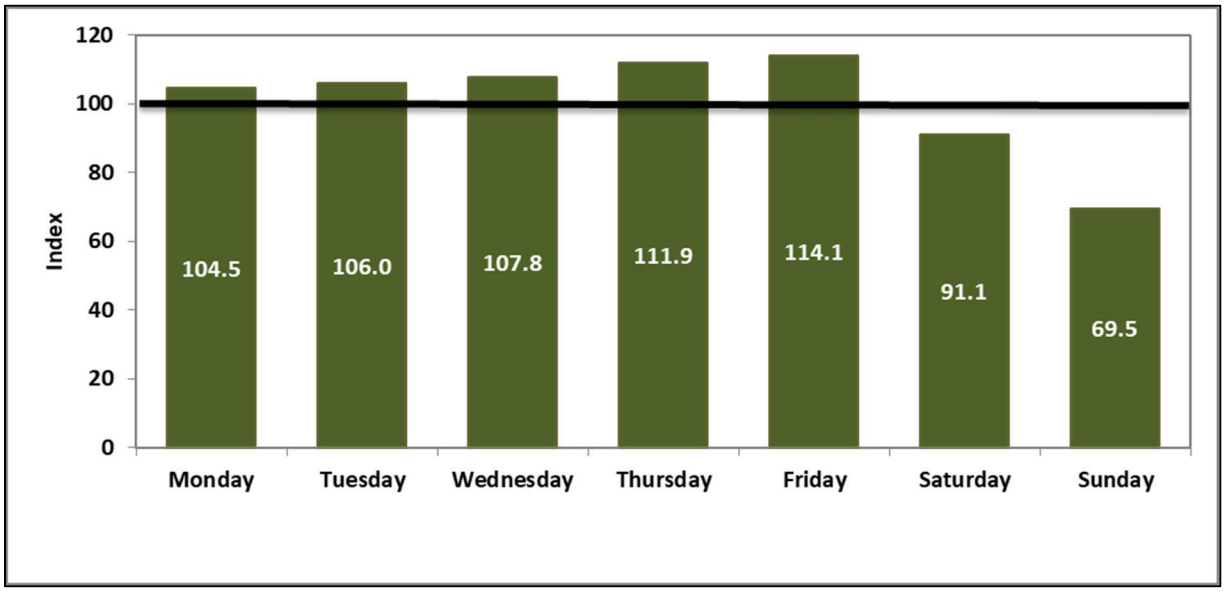
Source: CFX Statistical Report June 2019

4.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 4-6 contains a comparison of transactions by day of week in FY 2019. This data is presented as an index, where the average day 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 average. A value of 120 would indicate a day that has 20 percent greater volume than the average. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

During FY 2019, 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 114.1 (14.1 percent higher than the average day), volumes on Monday through Thursday ranged from index values of 104.5 to 111.9. Transactions decline significantly on Saturdays and Sundays, which have index values of 91.1 and 69.5, or 8.9 and 30.5 percent lower than the average day.

Figure 4-6
S.R. 408 Variation in Transactions, by Day of Week
FY 2019



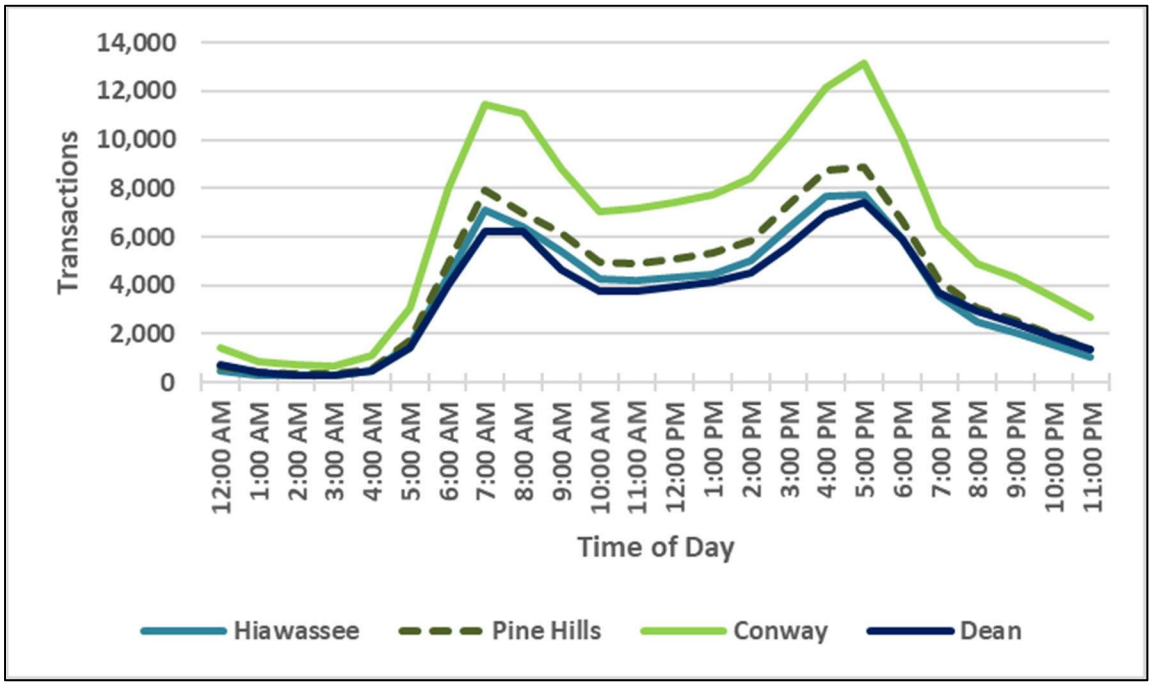
Source: Unaudited lane transaction data – February 2019

4.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic includes information on the usage characteristics of travel on the facility. The hourly distributions represent traffic counts taken during a typical week at the mainline plazas in the month of February. 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.

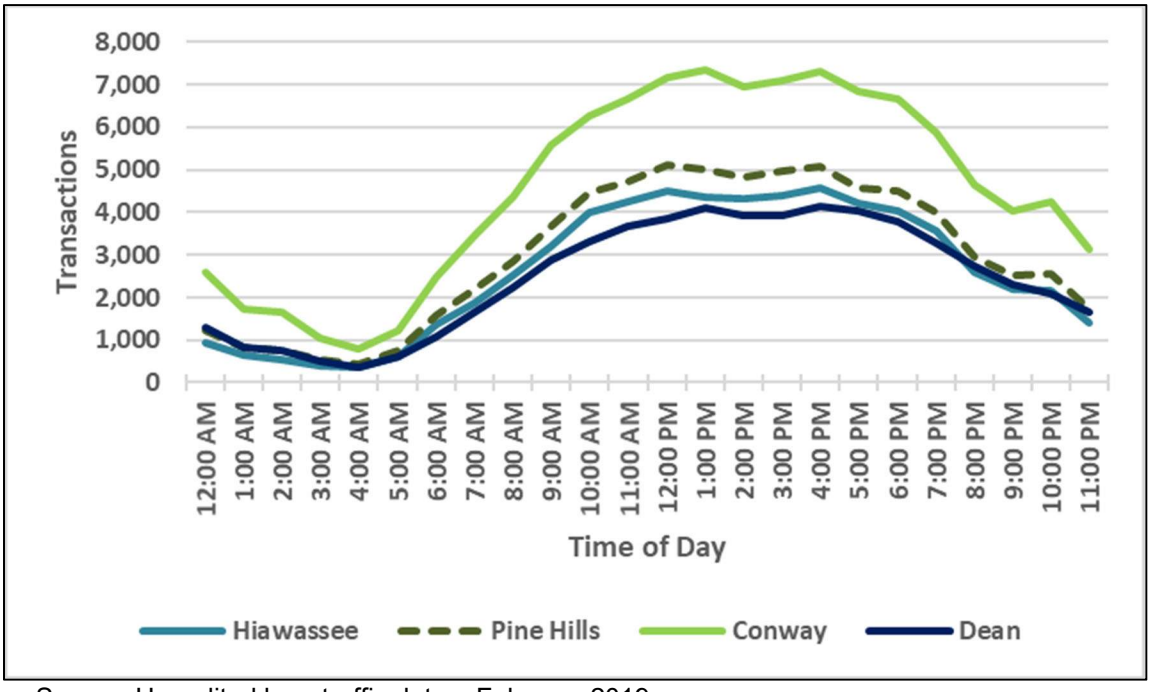
The four mainline locations on S.R. 408 exhibit similar hourly traffic patterns. On weekdays, travel demand at all four locations is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours at all four mainline plazas are higher than in the morning peak hours. The highest peak hour volumes during the week were 13,140 per hour beginning at 5:00 P.M. at the Conway mainline plaza, 8,900 per hour beginning at 5:00 p.m. at the Pine Hills mainline plaza, 7,700 per hour beginning at 5:00 p.m. at the Hiawassee mainline plaza and 7,400 per hour beginning at 5:00 p.m. at the Dean mainline plaza. On weekends, the distributions are unimodal with 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 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 4-8
S.R. 408 Hourly Traffic Variation (Weekend)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

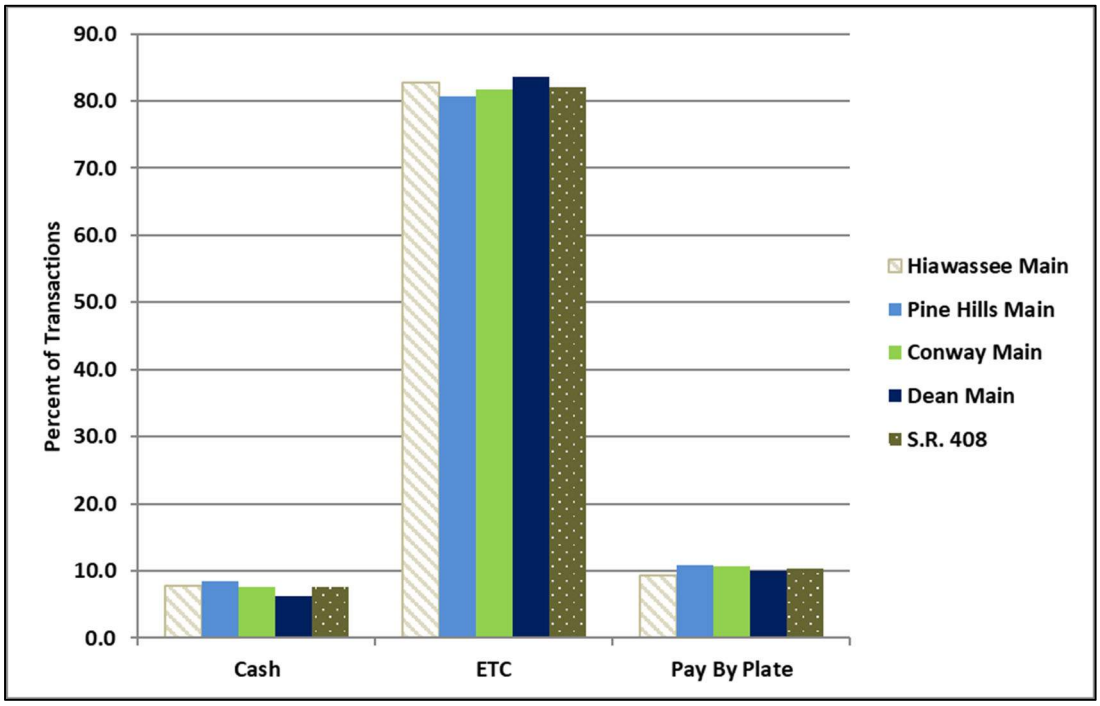
4.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

The distribution of transactions and revenue by payment type by plaza group during FY 2019 is presented in **Figure 4-9** and **Figure 4-10**. Customers pay tolls in one of three ways: cash, ETC, and PBP. As defined in Chapter 1 of this report, paid in-lane transactions and revenue include cash and ETC payments made when a customer drives through a CFX toll location. The remaining transactions and revenue are classified as unpaid in-lane, which includes PBP and a small portion of non-revenue transactions. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

As shown in Figure 4-9, the percent of ETC transactions ranged from a low of 80.7 percent at the Pine Hills Main plaza group to a high of 83.7 percent at the Dean Main plaza group. Overall, ETC transactions on S.R. 408 accounted for 82.1 percent of total transactions on the facility. The percent of PBP transactions ranged from a low of 9.4 percent at the Hiawassee Main plaza group to a high of 10.8 percent at the Pine Hills Main plaza group. Overall, cash transactions on S.R. 408 accounted for 7.6 percent of total transactions on the facility. The Cash transactions accounted for the smallest share, between 6.3 to 8.5 percent of transactions at all plaza groups. Overall, Cash transactions on S.R. 408 accounted for 7.6 percent of total transactions on the facility.

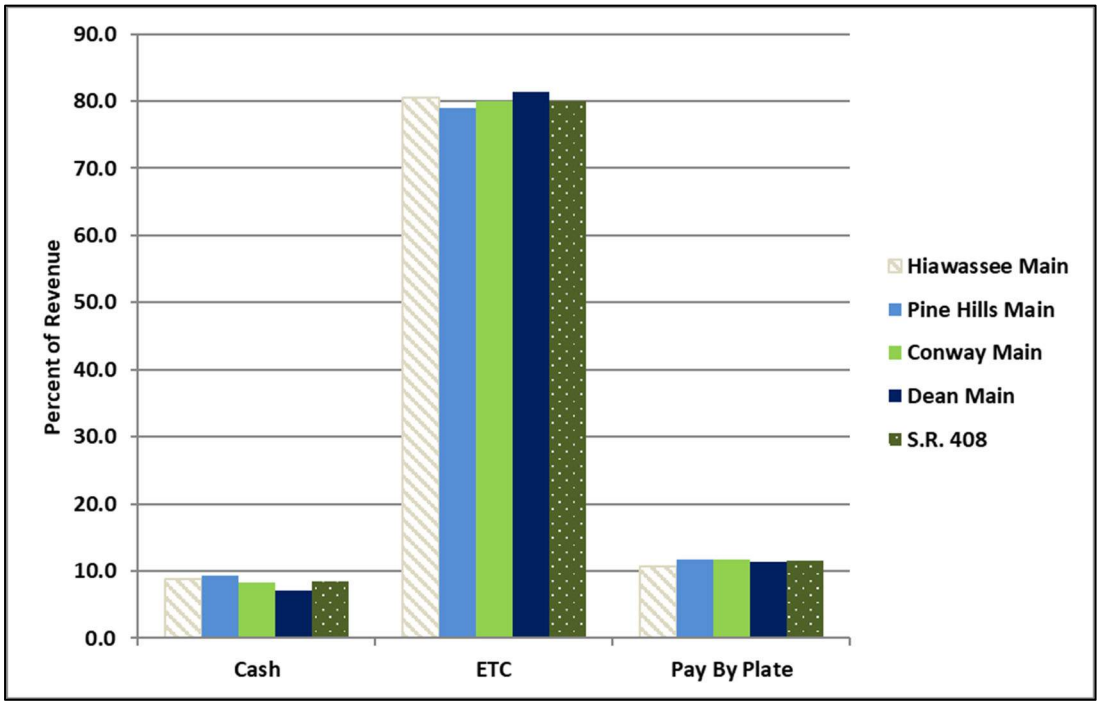
As shown in Figure 4-10, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues ranged from a low of 79.0 percent at the Pine Hills Main plaza group to a high of 81.4 percent at the Dean Main plaza group. The percent of cash toll revenues ranged from a low of 7.2 percent at the Dean Main plaza group to a high of 9.3 percent at the Pine Hills Main plaza group. The percent of PBP toll revenues ranged from a low of 10.7 percent at the Hiawassee Main plaza group to highs of 11.7 percent at the Pine Hills Main and Conway Main plaza groups.

Figure 4-9
S.R. 408 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 4-10
S.R. 408 Percent of Revenue by Payment Type
FY 2019



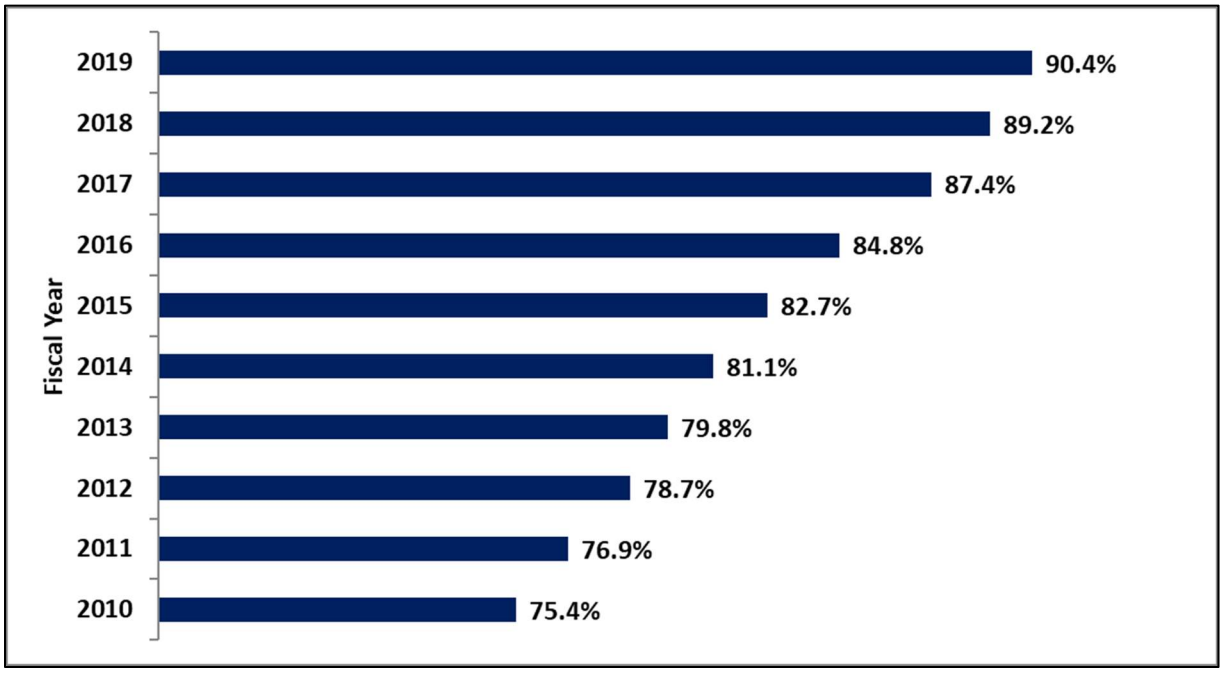
Source: Unaudited toll revenue data provided by CFX

4.3 ETC Usage

The percent of paid in-lane revenues generated from ETC over the past ten fiscal years on S.R. 408 is shown in **Figure 4-11**. PBP revenues are not included. The share of paid in-lane toll revenue collected through ETC has steadily increased on the facility. In FY 2010, ETC revenues totaled 75.4 percent of total paid in-lane revenues on the facility. By the end of FY 2019, ETC revenues reached 90.4 percent. ETC usage is still expected to increase as customers shift to ETC to take advantage of the lower ETC toll rate and convenience of paying tolls electronically, especially with implementation of PBP toll rates that will be twice the ETC toll rate beginning in July 2020 (FY 2021).

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). The program was expanded with the opening of a second Reload Lane at the John Young Main Plaza on S.R. 417 in March 2017 and a third location at the Forest Lake Main Plaza on S.R. 429 in May 2017.

Figure 4-11
S.R. 408 Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

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 2.22 percent in FY 2020 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 4-4**, assumed completed in each model horizon year. System improvements, such as the S.R. 408 widening projects from S.R. 417 to Alafaya Trail on the east and from Hiawassee Road to Clarke Road on the west will help growth rates in the near term as these are areas of congestion. The major improvements to S.R. 50 may be contributing to the recent slowdown in growth on S.R. 408, but feeder road improvements, including Alafaya Trail, John Young Parkway, Hiawassee Road, Clarke Road and U.S. 441, positively impact the traffic and revenue growth on S.R. 408 throughout the forecast horizon.

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

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 lanes
SR 408	SR 417	Alafaya Trail	2025	CFX	Widen to 6-lanes
SR 408	Hiawassee Road	Clark Road	2025	CFX	Widen to 6-lanes
SR 423 (John Young Parkway)	SR 50 (Colonial Drive)	Shader Road	2025	Orange County/FDOT	Widen to 6 Lanes
SR 50	East of SR 417	Old Cheney Highway	2025	FDOT	Widen to 6-lanes
SR 50	SR 429	East of West Oaks Mall	2025	FDOT	Widen to 6-lanes
Alafaya Trail	Huckleberry Finn Drive	Lake Underhill Road	2035	Orange County	Widen to 6 Lanes
Hiawassee Road	SR 50	Silver Star Road	2035	Orange County	Widen to 6 Lanes
SR 50	East of Old Cheney Hwy	SR 520	2035	FDOT	Widen to 6-lanes
Clarke Road	White Road	SR 50	2045	Orange County	Widen to 6 Lanes
SR 408 East Extension	Challenger Parkway	SR 50	2045	CFX	New 4-lane expressway
US 441 (Orange Blossom Trail)	SR 50 (Colonial Drive)	John Young Parkway	2045	FDOT	Widen to 6 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 **4-5** and **4-6**. The tables are divided into paid in-lane and PBP transactions and revenue. Paid in-Lane transactions and revenue by plaza group include ETC and cash collection. PBP is only reported as a total on the facility level.

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 the S.R. 408 T&R forecasts. The growth rates for the remainder of the forecast period are also moderate but steady. The paid in-lane transactions on S.R. 408 are expected to grow 1.2 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to decrease dramatically the first two years and an average of 6.4 percent per year through FY 2029 and then increase slightly through the forecast period. The decline in PBP transactions is expected due to the new PBP toll rate being implemented in FY 2021, which will be twice the ETC toll rate at all toll locations. Total transactions are expected to grow 0.7 percent per year through FY 2029, 0.6 percent per year from FY 2029 to FY 2039, and

0.4 percent per year from FY 2039 to FY 2049. The paid in-lane revenues on S.R. 408 are projected to increase significantly over the forecast period, from the FY 2019 actual of $136.6 million to $249.5 million in FY 2049. PBP revenues are projected to increase from $17.7 million in FY 2019 to $27.8 million in FY 2049. Total revenues are expected to grow from $154.3 million in FY 2019 to $277.3 million in FY 2049. S.R. 408 total revenues are forecasted to increase an average of 2.3 percent per year through FY 2029, 1.9 percent per year from FY 2029 to FY 2039, and 1.7 percent per year from FY 2039 to FY 2049.

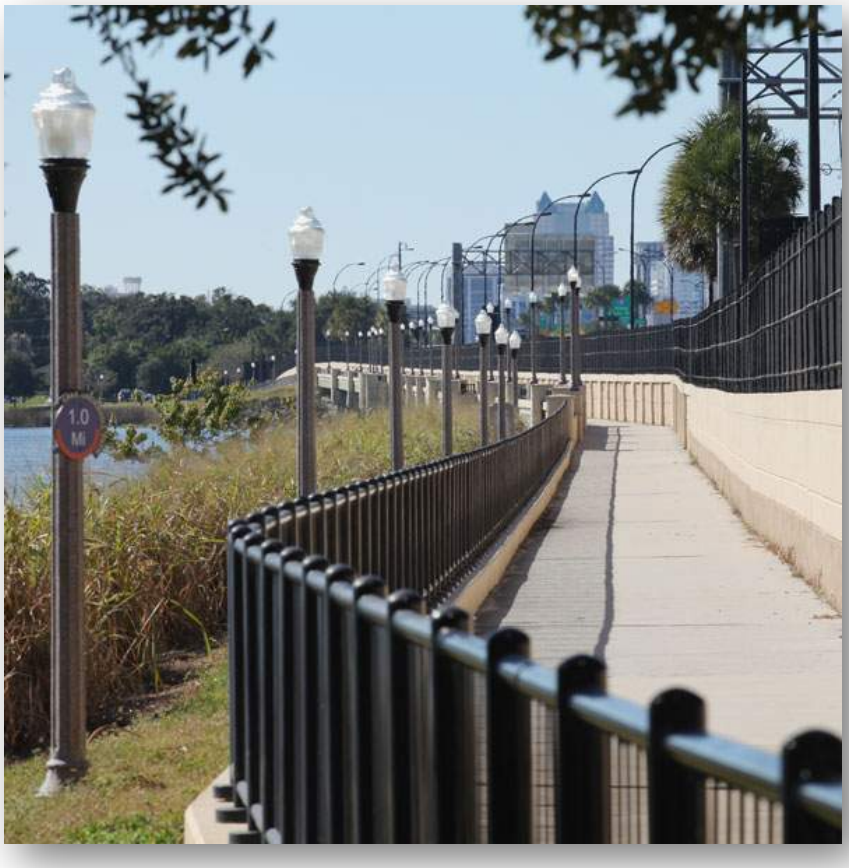


Table 4-5
S.R. 408 Plaza Groups – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Hiawassee Main	Pine Hills Main	Conway Main	Dean Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	23.3	28.4	49.0	25.3	126.0	0.8	126.8	
2011		23.2	28.4	50.0	25.1	126.7	1.4	128.1	1.0%
2012		23.1	28.4	50.1	24.6	126.2	1.8	128.0	-0.1%
2013[A]		22.5	27.6	48.9	24.5	123.5	2.2	125.7	-1.8%
2014		24.1	29.2	51.1	25.3	129.7	2.7	132.4	5.3%
2015		26.4	31.6	53.9	26.3	138.2	3.4	141.6	6.9%
2016		28.6	33.7	56.4	27.5	146.2	4.5	150.7	6.4%
2017[B]		29.6	34.2	56.4	27.5	147.7	5.1	152.8	1.4%
2018[C]		29.8	34.2	54.6	26.6	145.2	8.9	154.1	0.9%
2019[D]		29.8	33.6	52.4	25.3	141.1	16.2	157.3	2.1%
2020	Forecast	29.9	33.8	51.6	24.3	139.6	17.7	157.3	0.0%
2021[E]		31.2	35.3	53.3	25.5	145.3	10.7	156.0	-0.8%
2022[F]		31.9	36.6	54.8	26.2	149.5	7.9	157.4	0.9%
2023		32.5	37.0	54.9	26.5	150.9	8.0	158.9	1.0%
2024		33.1	37.4	55.1	26.8	152.4	8.1	160.5	1.0%
2025		33.7	37.9	55.3	27.1	154.0	8.1	162.1	1.0%
2026		34.3	38.3	55.5	27.4	155.5	8.1	163.6	0.9%
2027		35.0	38.6	55.7	27.7	157.0	8.3	165.3	1.0%
2028		35.5	39.0	55.9	28.0	158.4	8.3	166.7	0.8%
2029		36.1	39.3	56.1	28.2	159.7	8.4	168.1	0.8%
2030		36.6	39.7	56.3	28.5	161.1	8.4	169.5	0.8%
2031		37.1	40.0	56.4	28.7	162.2	8.5	170.7	0.7%
2032		37.6	40.3	56.6	28.9	163.4	8.7	172.1	0.8%
2033		38.0	40.5	56.8	29.0	164.3	8.7	173.0	0.5%
2034		38.4	40.8	57.0	29.2	165.4	8.7	174.1	0.6%
2035		38.8	41.0	57.2	29.4	166.4	8.8	175.2	0.6%
2036		39.2	41.3	57.3	29.5	167.3	8.8	176.1	0.5%
2037		39.6	41.5	57.5	29.6	168.2	8.8	177.0	0.5%
2038		39.9	41.7	57.7	29.8	169.1	8.9	178.0	0.6%
2039		40.3	41.9	57.9	29.9	170.0	8.9	178.9	0.5%
2040		40.6	42.1	58.0	30.1	170.8	9.0	179.8	0.5%
2041		41.0	42.3	58.2	30.2	171.7	9.1	180.8	0.6%
2042		41.3	42.5	58.4	30.3	172.5	9.1	181.6	0.4%
2043		41.6	42.7	58.5	30.5	173.3	9.2	182.5	0.5%
2044		41.9	42.9	58.7	30.6	174.1	9.2	183.3	0.4%
2045		42.2	43.1	58.8	30.7	174.8	9.2	184.0	0.4%
2046		42.5	43.3	59.0	30.8	175.6	9.2	184.8	0.4%
2047		42.8	43.4	59.2	30.9	176.3	9.3	185.6	0.4%
2048		43.1	43.6	59.3	31.0	177.0	9.3	186.3	0.4%
2049		43.4	43.8	59.5	31.1	177.8	9.3	187.1	0.4%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	2.8%	1.9%	0.7%	0.0%	1.3%	39.7%	2.4%
2019 - 2029	1.9%	1.6%	0.7%	1.1%	1.2%	-6.4%	0.7%
2029 - 2039	1.1%	0.6%	0.3%	0.6%	0.6%	0.6%	0.6%
2039 - 2049	0.7%	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemw ide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Effects from Hurricane Irma in September 2017.
D - First year of implementation of "Customer First" toll rate policy.
E - New toll rates for PBP customers, set at 2.0 times the ETC rate.
F - Completion of I-4 Ultimate project.

Table 4-6
S.R. 408 Plaza Groups – Toll Revenue Projections (Millions)
FY 2020– FY 2049

Fiscal Year		Hiawassee Main	Pine Hills Main	Conway Main	Dean Main	Paid In-Lane	PBP	Total	Percent Change
2010	Actual	$16.4	$26.8	$46.1	$18.4	$107.7	$1.0	$108.7	
2011		$16.2	$26.8	$47.1	$18.2	$108.3	$1.8	$110.1	1.3%
2012		$16.0	$26.7	$47.2	$17.8	$107.7	$2.4	$110.1	0.0%
2013[A]		$18.0	$29.3	$51.9	$20.1	$119.3	$3.5	$122.8	11.5%
2014		$19.2	$31.0	$54.2	$20.8	$125.2	$4.2	$129.4	5.4%
2015		$21.0	$33.4	$56.9	$21.7	$133.0	$5.3	$138.3	6.9%
2016		$22.6	$35.5	$59.4	$22.6	$140.1	$6.9	$147.0	6.3%
2017[B]		$23.3	$36.1	$59.1	$22.5	$141.0	$9.2	$150.2	2.2%
2018[C]		$23.5	$36.0	$57.1	$21.7	$138.3	$9.8	$148.1	-1.4%
2019[D]		$24.1	$36.0	$55.5	$21.0	$136.6	$17.7	$154.3	4.2%
2020	Forecast	$24.6	$36.6	$55.7	$20.5	$137.4	$19.5	$156.9	1.7%
2021[E]		$26.0	$38.7	$58.3	$21.8	$144.8	$21.2	$166.0	5.8%
2022[F]		$27.0	$40.6	$60.7	$22.8	$151.1	$15.8	$166.9	0.5%
2023		$27.8	$41.7	$61.7	$23.3	$154.5	$16.1	$170.6	2.2%
2024		$28.7	$42.7	$62.7	$23.9	$158.0	$16.6	$174.6	2.3%
2025		$29.5	$43.6	$63.7	$24.4	$161.2	$17.0	$178.2	2.1%
2026		$30.3	$44.5	$64.7	$24.9	$164.4	$17.4	$181.8	2.0%
2027		$31.2	$45.5	$65.7	$25.4	$167.8	$17.8	$185.6	2.1%
2028		$32.0	$46.4	$66.7	$26.0	$171.1	$18.2	$189.3	2.0%
2029		$32.9	$47.4	$67.8	$26.5	$174.6	$18.7	$193.3	2.1%
2030		$33.8	$48.3	$68.8	$27.0	$177.9	$19.1	$197.0	1.9%
2031		$34.7	$49.3	$69.9	$27.5	$181.4	$19.5	$200.9	2.0%
2032		$35.5	$50.3	$71.0	$28.0	$184.8	$19.9	$204.7	1.9%
2033		$36.4	$51.3	$72.1	$28.5	$188.3	$20.3	$208.6	1.9%
2034		$37.3	$52.3	$73.2	$29.1	$191.9	$20.8	$212.7	2.0%
2035		$38.3	$53.4	$74.3	$29.6	$195.6	$21.2	$216.8	1.9%
2036		$39.2	$54.4	$75.5	$30.1	$199.2	$21.6	$220.8	1.8%
2037		$40.1	$55.5	$76.6	$30.6	$202.8	$22.1	$224.9	1.9%
2038		$41.0	$56.6	$77.8	$31.2	$206.6	$22.5	$229.1	1.9%
2039		$42.0	$57.6	$79.0	$31.7	$210.3	$23.0	$233.3	1.8%
2040		$42.9	$58.7	$80.2	$32.2	$214.0	$23.4	$237.4	1.8%
2041		$43.8	$59.8	$81.5	$32.8	$217.9	$24.0	$241.9	1.9%
2042		$44.8	$60.9	$82.7	$33.4	$221.8	$24.3	$246.1	1.7%
2043		$45.7	$62.0	$84.0	$33.9	$225.6	$24.8	$250.4	1.7%
2044		$46.6	$63.2	$85.3	$34.5	$229.6	$25.2	$254.8	1.8%
2045		$47.6	$64.3	$86.6	$35.1	$233.6	$25.8	$259.4	1.8%
2046		$48.5	$65.4	$87.9	$35.6	$237.4	$26.4	$263.8	1.7%
2047		$49.5	$66.6	$89.2	$36.2	$241.5	$26.9	$268.4	1.7%
2048		$50.4	$67.7	$90.6	$36.8	$245.5	$27.3	$272.8	1.6%
2049		$51.3	$68.9	$91.9	$37.4	$249.5	$27.8	$277.3	1.6%

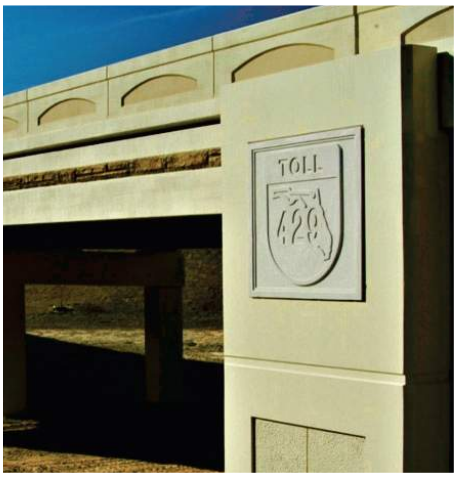
Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	4.4%	3.3%	2.1%	1.5%	2.7%	37.6%	4.0%
2019 - 2029	3.2%	2.8%	2.0%	2.4%	2.5%	0.6%	2.3%
2029 - 2039	2.5%	2.0%	1.5%	1.8%	1.9%	2.1%	1.9%
2039 - 2049	2.0%	1.8%	1.5%	1.7%	1.7%	1.9%	1.7%

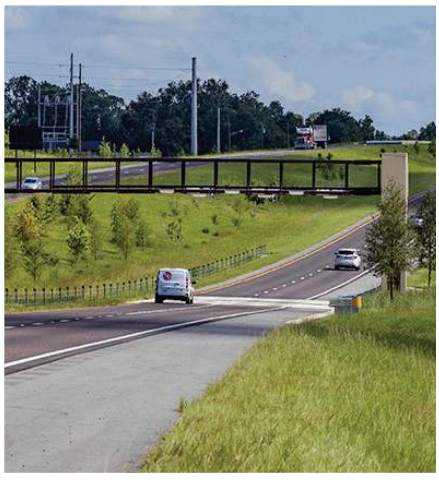
Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemwide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Effects from Hurricane Irma in September 2017.
D - First year of implementation of "Customer First" toll rate policy.
E - New toll rates for PBP customers, set at 2.0 times the ETC rate.
F - Completion of I-4 Ultimate project.

CHAPTER 5

S.R. 417

(CENTRAL FLORIDA GREENEWAY)





S.R. 417 (CENTRAL FLORIDA GREENEWAY)

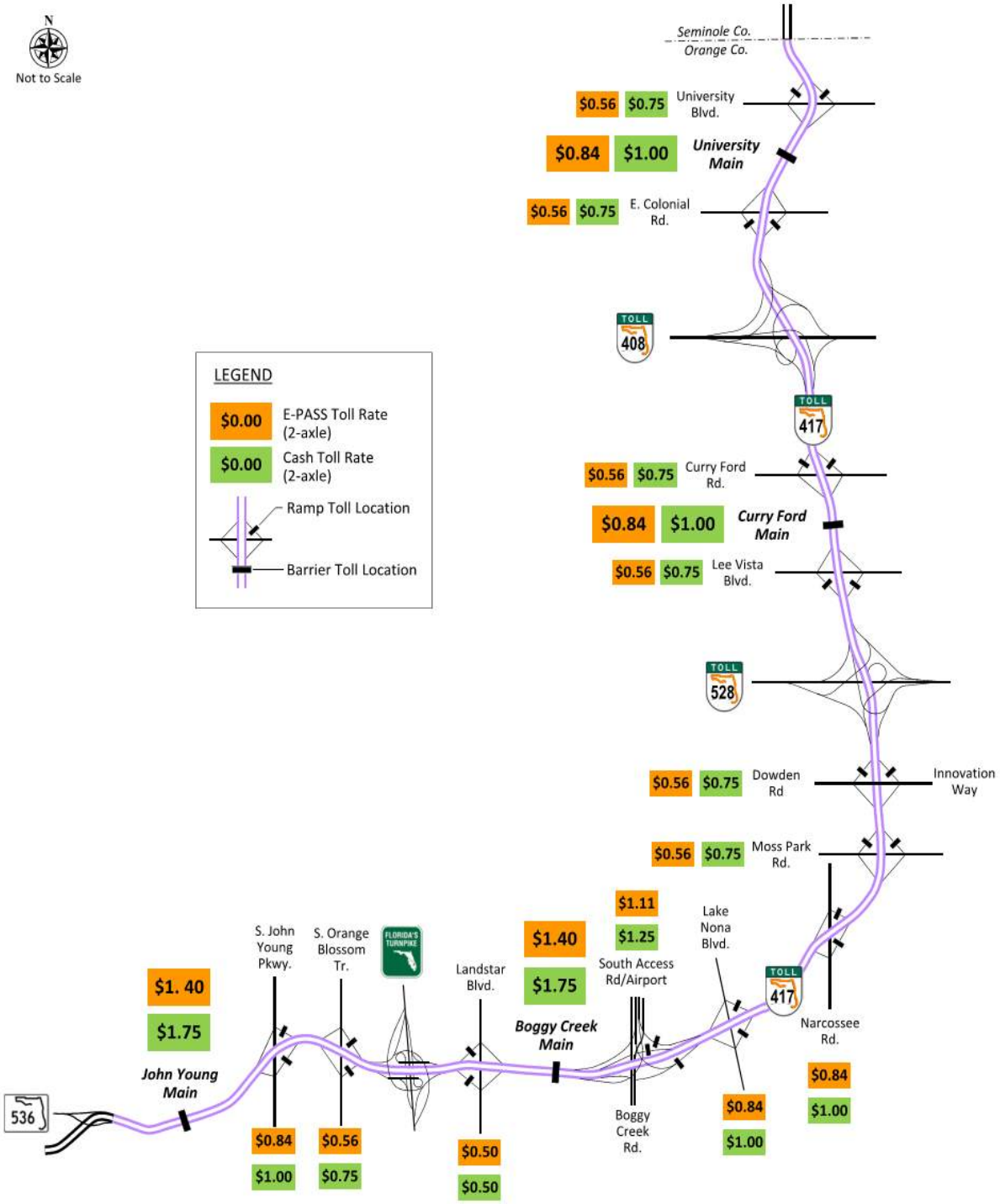
5.1 Facility Description

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 2019 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. 408 to S.R. 528, 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 final section of S.R. 417 includes the Boggy Creek and John Young Mainline plaza groups, extending from International Drive to S.R. 528. This section 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 Open Road Tolling (ORT) lanes. CFX chose this plaza for the first conversion due to its heavy traffic and extensive ETC usage. Conversions followed at the Curry Ford Mainline plaza in July 2005 and the Boggy Creek and John Young Mainline plazas in March 2007.

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



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 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.

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 improvements 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 reconstructing several ramps of 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 four to six lanes) and realigned the northbound S.R. 417 ramp to eastbound S.R. 408. 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 early 2020.

In September 2018, CFX began widening State Road 417 from south of Econlockhatchee Trail to the Orange/Seminole County line. The 3.2-mile project will add a travel lane in both directions, expanding the expressway from four to six lanes. The project also includes eliminating one cash lane in each direction at the University Main Plaza and replacing it with an Open Road Tolling (ORT) lane, for a total of three ORT lanes (dedicated ETC lanes) in each direction. The project is expected to take approximately 24 months to complete.

5.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

5.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

S.R. 417 annual paid in-lane transactions at the John Young Main, Boggy Creek Main, Curry Ford Main and University Main plaza groups from FY 2000 to FY 2019 are presented in the top half of **Table 5-1**. The history of annual paid in-lane 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**. These historical tables do not include PBP transactions and revenues, only those that are paid in-lane. For this reason, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report. Total facility paid in-lane transactions and revenues increased annually from FY 2001 through FY 2008.

With the decreasing paid in-lane transactions and revenues across the System and the threat of an economic recession, CFX instituted a Systemwide toll rate increase in FY 2008 and 2009. Paid in-lane 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, paid in-lane revenues at the John Young Main plaza group and Boggy Creek Main plaza group decreased by 3.6 and 5.7 percent, respectively. Paid in-lane revenues at the Curry Ford Main and University Main plaza groups remained relatively unchanged from FY 2008. FY 2009 paid in-lane transactions and revenues were also impacted by Tropical Storm Fay in August 2008.

FY 2010 paid in-lane 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, paid in-lane 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 paid in-lane revenues of 29.1 percent, or $4.6 million and Curry Ford Main plaza group paid in-lane revenue increased by 27.3 percent, or $3.8 million.

As shown, Curry Ford Main was the only plaza group with a decline in paid in-lane transactions and revenues in FY 2011. The losses in paid in-lane 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 paid in-lane 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 paid in-lane 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 paid in-lane transactions, a decrease of 7.0 percent as compared to FY 2012. All other plaza groups experienced an increase in paid in-lane transactions despite the July 2012 toll rate adjustment. Paid in-lane revenues at all plaza groups increased in FY 2013, overall 13.3 percent.

Table 5-1
S.R. 417 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2000 – FY 2019

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				
2000	13.4	10.1	13.6	20.8	57.9					
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%
2018 [J]	37.2	38.1	35.8	34.8	145.9	6.9%	10.1%	4.7%	0.9%	5.6%
2019 [K]	36.9	39.3	35.4	33.9	145.5	-0.8%	3.1%	-1.1%	-2.6%	-0.3%
	TOLL REVENUE (millions)					PERCENT CHANGE				
2000	$11.6	$9.9	$7.1	$9.7	$38.3					
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%
2018 [J]	$43.0	$45.7	$30.5	$29.2	$148.4	6.4%	8.8%	4.8%	1.0%	5.7%
2019 [K]	$44.3	$48.6	$30.7	$29.0	$152.6	3.0%	6.3%	0.7%	-0.7%	2.8%

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.

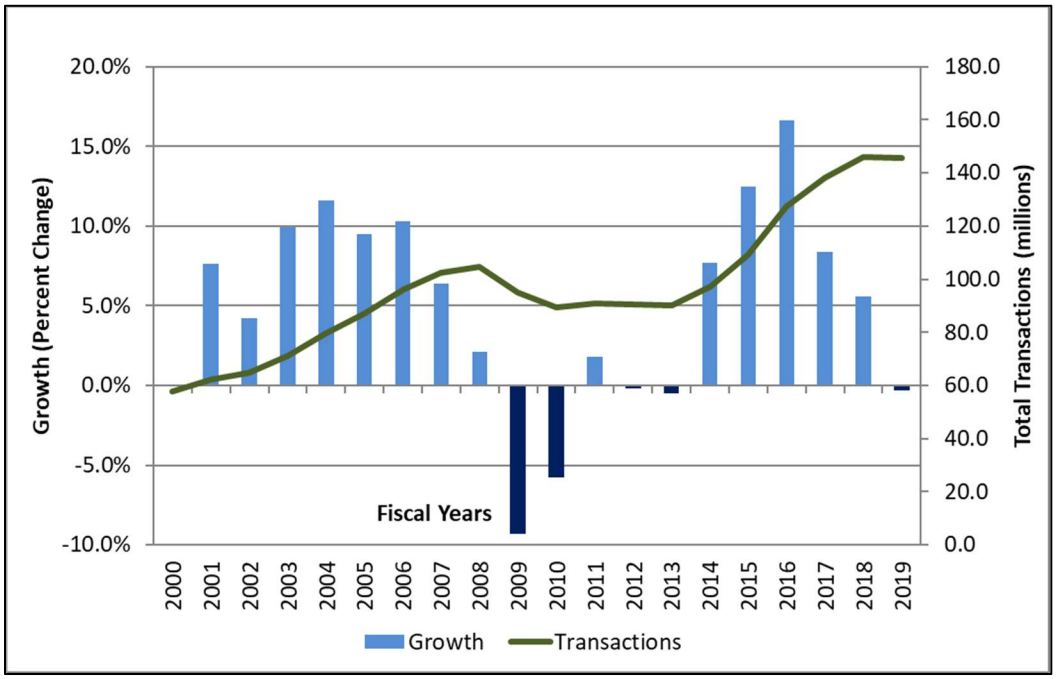
H - Systemwide toll rate increase in July 2013. Implementation of cash and electronic toll rate differential.

I - Effects from Hurricane Matthew in October 2016.

J - Effects from Hurricane Irma in September 2017.

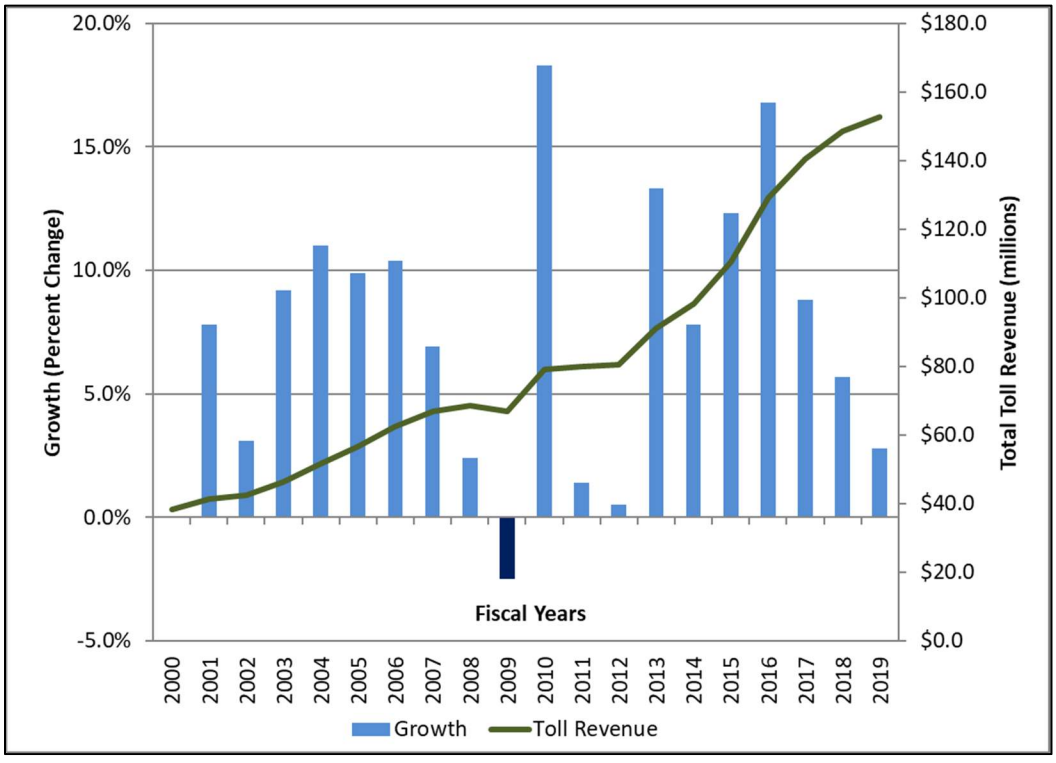
K - Systemwide toll rate increase in July 2018.

Figure 5-2
S.R. 417 Historical Paid In-Lane Transactions and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

Figure 5-3
S.R. 417 Historical Paid In-Lane Revenue and Annual Growth
FY 2000 – FY 2019



Source: CFX Statistical Report June 2019

In FY 2014, all plaza groups experienced growth in paid in-lane transactions and toll revenues. Overall, S.R. 417 paid in-lane transactions increased 7.6 percent and toll revenues increased 7.8 percent over FY 2013. FY 2015 and FY 2016 experienced double-digit growth in both paid in-lane transactions and revenues, which is referred to as the period of extraordinary growth. In FY 2017, paid in-lane 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 paid in-lane 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. Over the four-year period, paid in-lane transactions and revenue increased by more than 50 percent.

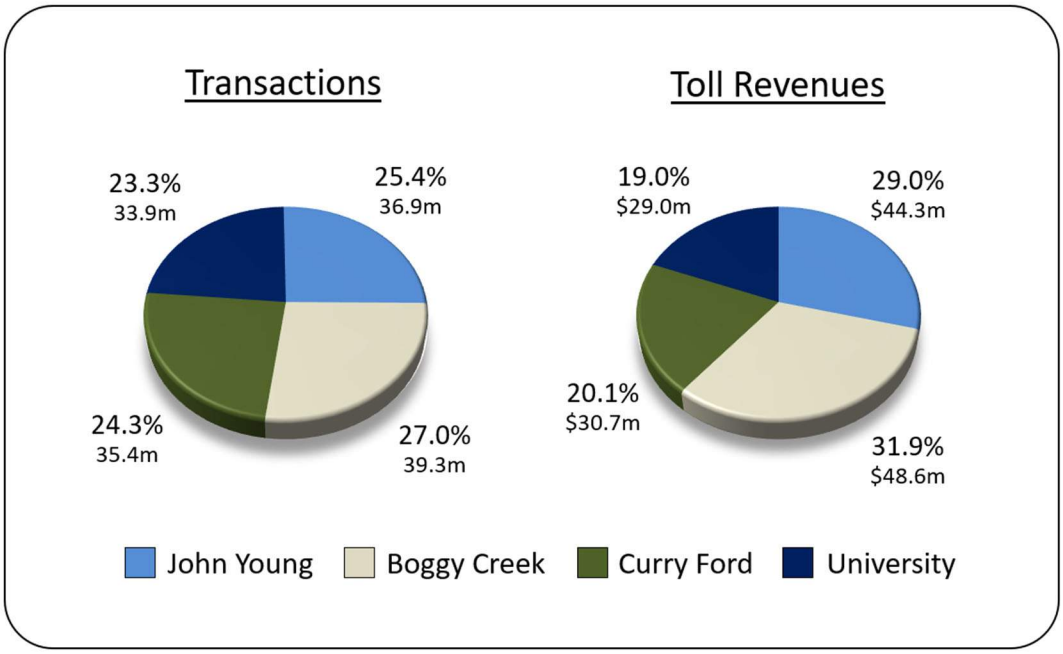
In October 2016 (FY 2017), Hurricane Matthew tracked parallel to the Florida coast as a Category 3 storm with winds up to 130 miles per hour. Tolls were suspended on the CFX System beginning at 8:00 p.m. on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 1.5 million in transactions and $1.5 million in toll revenues on S.R. 417. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 6.4 million and a toll revenue loss of $6.5 million on S.R. 417.

In FY 2018, all plaza groups experienced growth in paid in-lane transactions and toll revenues. Overall, S.R. 417 paid in-lane transactions increased 5.6 percent and toll revenues increased 5.7 percent over FY 2017. As previously mentioned, September 2017 paid in-lane transactions and toll revenues were negatively impacted by toll suspensions during Hurricane Irma.

In FY 2019, S.R. 417 paid in-lane transactions decreased by 0.3 percent and toll revenues increased 2.8 percent over FY 2018. Boggy Creek was the only plaza group that experienced growth in paid in-lane transactions of 3.1 percent in FY 2019. Paid in-lane toll revenues increased at all plaza groups except University Main, which decreased by 0.7 percent compared to FY 2018. The slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed to an increase in customers utilizing the PBP program.

The paid in-lane transactions and toll revenues by plaza group and as a percentage of total S.R. 417 paid in-lane transactions and toll revenues for FY 2019 are presented in **Figure 5-4**. As shown, the Boggy Creek Main plaza group represented 39.3 million paid in-lane transactions or 27.0 percent of total S.R. 417 paid in-lane transactions. The John Young Main plaza group had the second highest amount of paid in-lane transactions at 36.9 million or 25.4 percent. The Curry Ford Main and University Main plaza groups followed close behind with 35.4 and 33.9 million paid in-lane transactions, respectively. In years prior to FY 2016, the John Young Main plaza group consistently had a more paid in-lane transactions than Boggy Creek Main, however the Boggy Creek Main plaza group has surpassed John Young Main three of the last four years. It is important to note that the Boggy Creek plaza group has more supporting ramp toll locations, some with fairly high toll rates. The Curry Ford plaza group has only two pairs of ramp toll locations. University Main plaza group paid in-lane transactions were surpassed by Curry Ford Main plaza group paid in-lane transactions in FY 2018 and FY 2019.

Figure 5-4
S.R. 417 Paid In-Lane Transactions and Revenue by Plaza Group
FY 2019



Source: CFX Statistical Report June 2019

The annual totals and percentages for paid in-lane revenues are also presented in the Figure 5-4. The Boggy Creek Main and John Young Main plaza groups had the highest amounts of paid in-lane revenue. This is attributable to the fact that these two plaza groups have longer distances between mainline plazas which results in higher toll amounts and to the number of tolled ramp locations. The Boggy Creek Main plaza group reported the highest paid in-lane revenues of $48.6 million or 31.9 percent of total S.R. 417 paid in-lane revenues. The University Main plaza group represented the lowest amount of paid in-lane revenues on S.R. 417 with $29.0 million or 19.0 percent of total paid in-lane revenues.

5.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 417 from FY 2010 to FY 2019 are presented in **Table 5-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 5-2 shows the annual totals for S.R. 417 as reported at year end.

Table 5-2
S.R. 417 – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	0.6		$0.6	
2011	1.0	66.7%	$0.9	50.0%
2012	1.3	30.0%	$1.2	33.3%
2013	1.6	23.1%	$1.8	50.0%
2014	2.0	25.0%	$2.2	22.2%
2015	2.7	35.0%	$3.0	36.4%
2016	3.9	44.4%	$4.7	56.7%
2017	4.8	23.1%	$6.7	42.6%
2018	6.8	41.7%	$7.6	13.4%
2019	14.9	119.1%	$17.4	128.9%

Source: Unaudited data provided by CFX

PBP transactions have increased from 0.6 million in FY 2010 to 14.9 million in FY 2019, while PBP revenues have increased from $0.6 million to $17.4 million over the same period. In FY 2019, PBP transactions increased 119.1 percent and PBP revenues increased 128.9 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 represents a significant shift in payment method from paid in-lane transactions and revenues. More customers are choosing the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

5.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 5-3**, monthly paid in-lane transactions are normalized to average number of paid in-lane transactions per day. Using average number of paid in-lane 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.

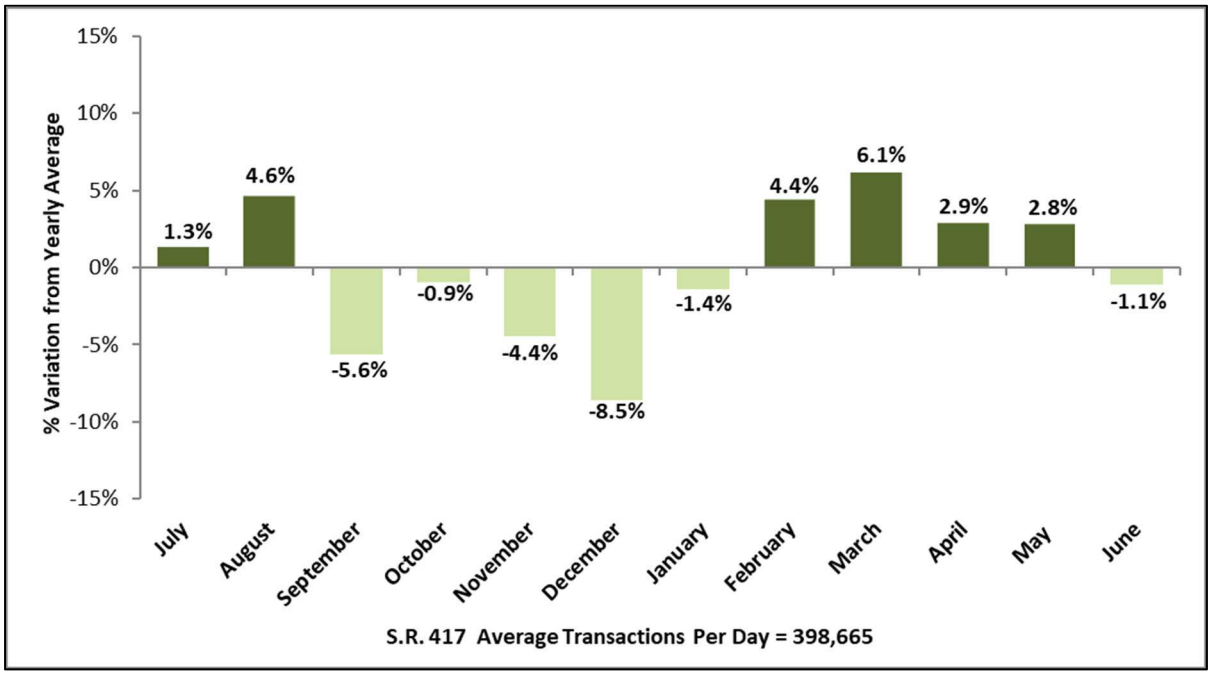
Average number of paid in-lane transactions per day in FY 2019 on S.R. 417 ranged from a high of 422,940 in March 2019 to a low of 364,584 in December 2018. This data is presented in a graphical format in **Figure 5-5**. The paid in-lane transactions for each month appear as a percentage of the average for the fiscal year. March paid in-lane transactions were 6.1 percent above average and December paid in-lane transactions were 8.5 percent below average for the facility.

Table 5-3
S.R. 417 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	12,518,495	403,822	1.013
August	31	12,931,295	417,139	1.046
September	30	11,290,903	376,363	0.944
October	31	12,248,568	395,115	0.991
November	30	11,432,072	381,069	0.956
December	31	11,302,100	364,584	0.915
January	31	12,189,414	393,207	0.986
February	28	11,649,762	416,063	1.044
March	31	13,111,137	422,940	1.061
April	30	12,302,001	410,067	1.029
May	31	12,703,619	409,794	1.028
June	30	11,833,341	394,445	0.989
Average		***12,126,059***	***398,665***	***1.000***
Total Year	**365**	**145,512,707**		

Source: CFX Statistical Report June 2019

Figure 5-5
S.R. 417 Variation in Paid In-Lane Transactions Per Day, By Month
FY 2019



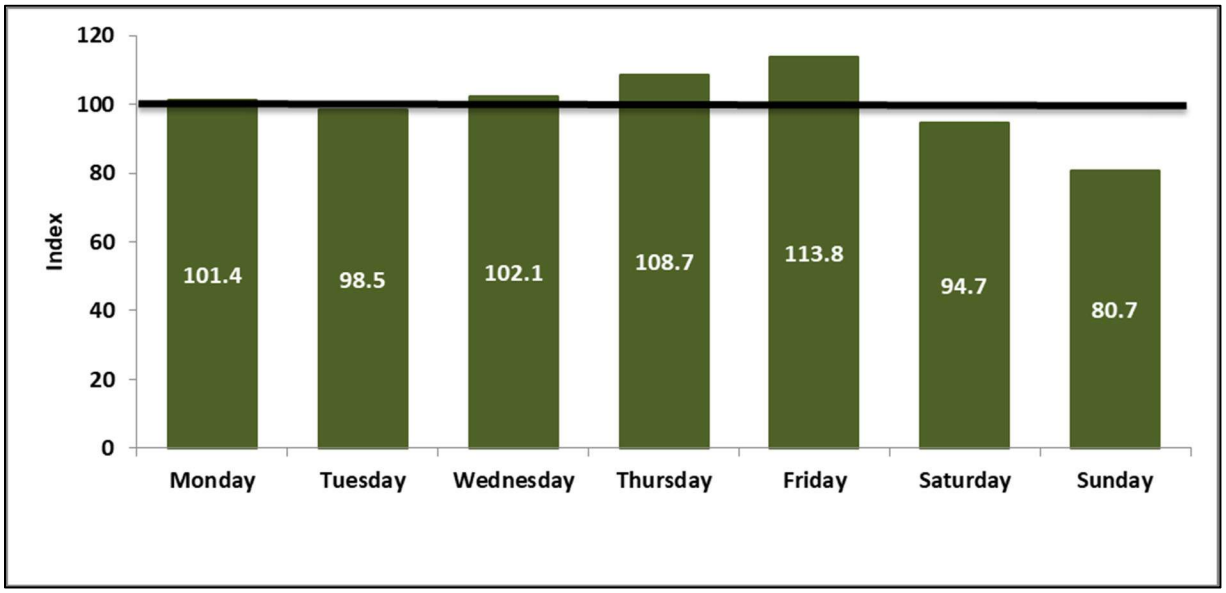
Source: CFX Statistical Report June 2019

5.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 5-6 contains a comparison of transactions by day of week in FY 2019. This data is presented as an index, where the average day 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 average. A value of 120 would indicate a day that has 20 percent greater volume than the average. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

As shown, daily transactions on S.R. 417 fluctuated over the course of the week. Transactions were highest on Fridays, with an index value of 113.8 (13.8 percent higher than the average day). Volumes on Monday through Thursday ranged from index values of 101.4 to 108.7. Saturday volumes were closer to early weekday volumes with an index value of 94.7. Transactions decline significantly on Sundays, which have an index value of 80.7, or 19.3 percent lower than the average day.

Figure 5-6
S.R. 417 Variation in Transactions, by Day of Week
FY 2019



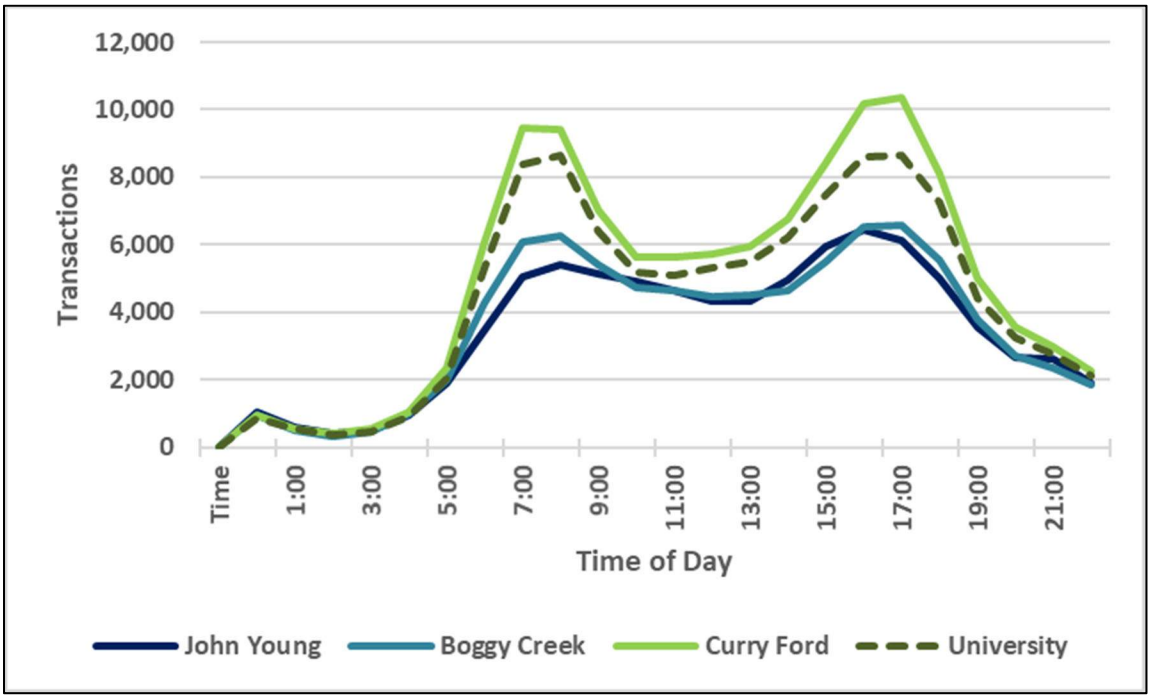
Source: Unaudited lane transaction data – February 2019

5.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic includes information on the usage characteristics of travel on the facility. The hourly distributions represent traffic counts taken during a typical week at the mainline plazas in the month of February. 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.

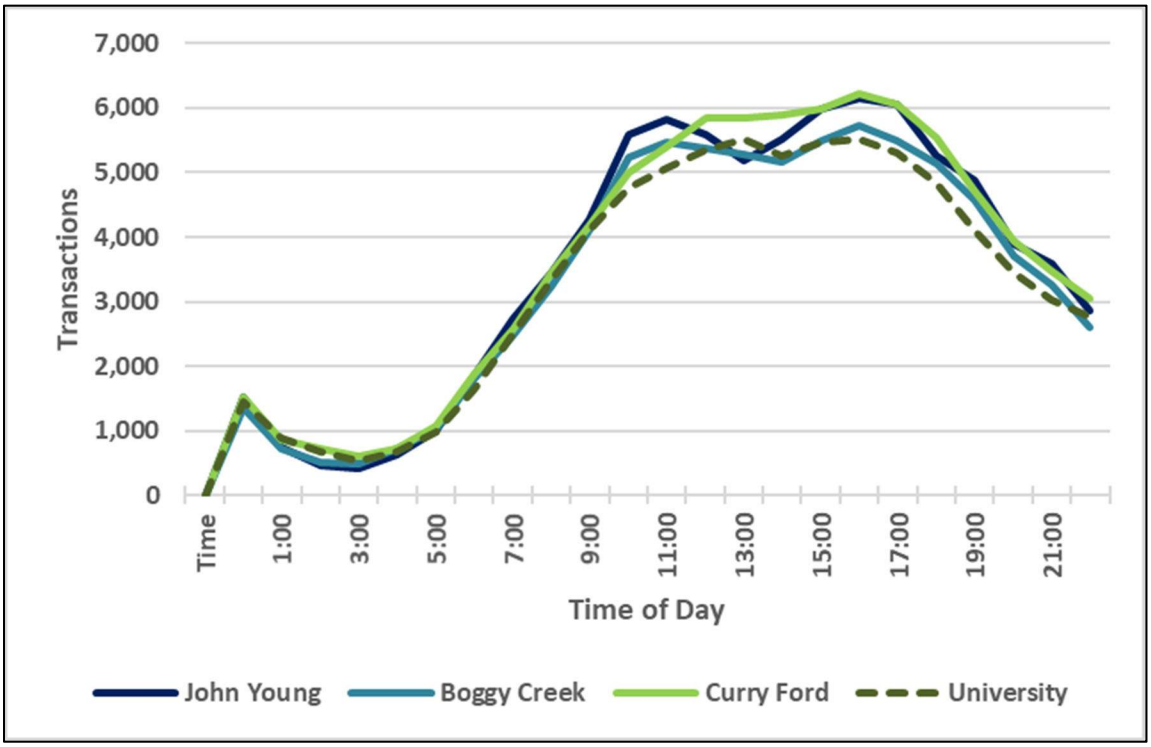
The four mainline locations on S.R. 417 exhibit similar hourly traffic patterns. On weekdays, travel demand at all four locations is bimodal, with both morning and evening peak hours. Traffic volumes are higher in the evening peak hours than in the morning peak hours at all four mainline plazas. The highest peak hour volumes during the week were 10,400 per hour beginning at 5:00 p.m. at the Curry Ford mainline plaza, 8,600 per hour beginning at 5:00 p.m. at the University mainline plaza, and 6,600 per hour beginning at 5:00 p.m. at the Boggy Creek mainline plaza and 6,500 per hour beginning at 4:00 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 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 5-8
S.R. 417 Hourly Traffic Variation (Weekend)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

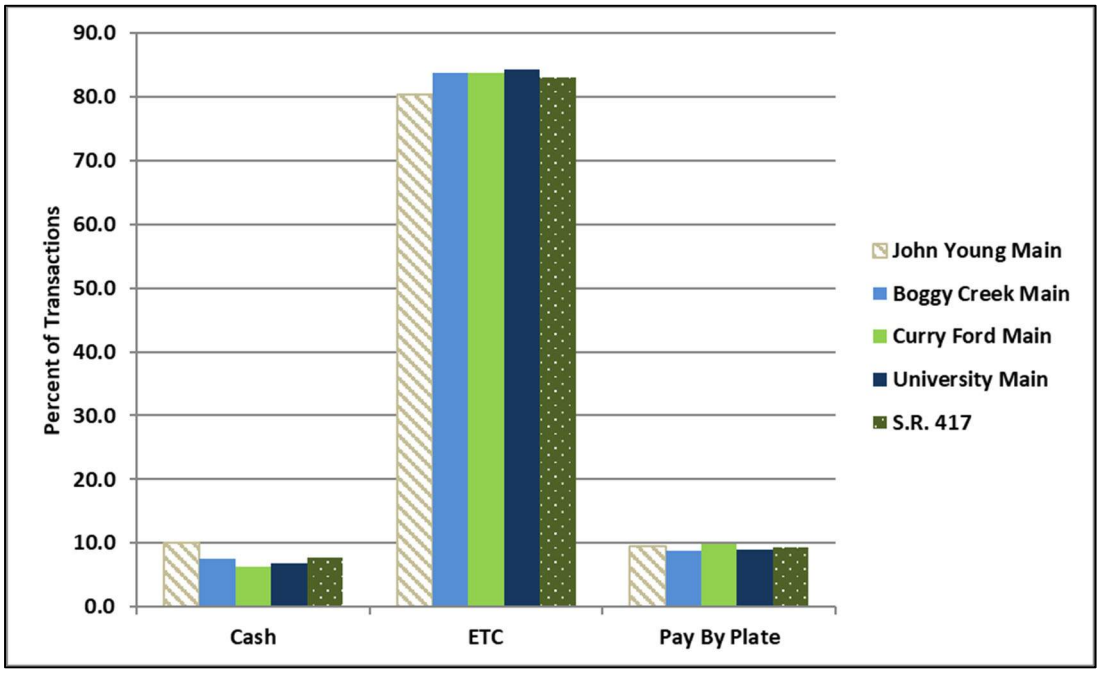
5.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

The distribution of transactions and revenue by payment type by plaza group during FY 2019 is presented in **Figure 5-9** and **Figure 5-10**. Payment types can be classified in one of three ways: cash, ETC, and PBP. As defined in Chapter 1 of this report, paid in-lane transactions and revenue include cash and ETC payments made when a customer drives through a CFX toll location. The remaining transactions and revenue are classified as unpaid in-lane, which includes PBP and a small portion of non-revenue transactions. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

As shown in Figure 5-9, the percent of ETC transactions ranged from a low of 80.4 percent at the John Young Main plaza group to a high of 84.4 percent at the University Main plaza group. Overall, ETC transactions on S.R. 417 accounted for 83.0 percent of total transactions on the facility. The percent of PBP transactions ranged from a low of 8.8 percent at the Boggy Creek Main plaza group to a high of 9.9 percent at the Curry Ford Main plaza group. Overall, PBP transactions on S.R. 417 accounted for 9.3 percent of total transactions on the facility. The Cash transactions accounted for the smallest share, less than 8.0 percent of transactions at all plaza groups except John Young Main with 10.1 percent. Overall, Cash transactions on S.R. 417 accounted for 7.7 percent of total transactions on the facility.

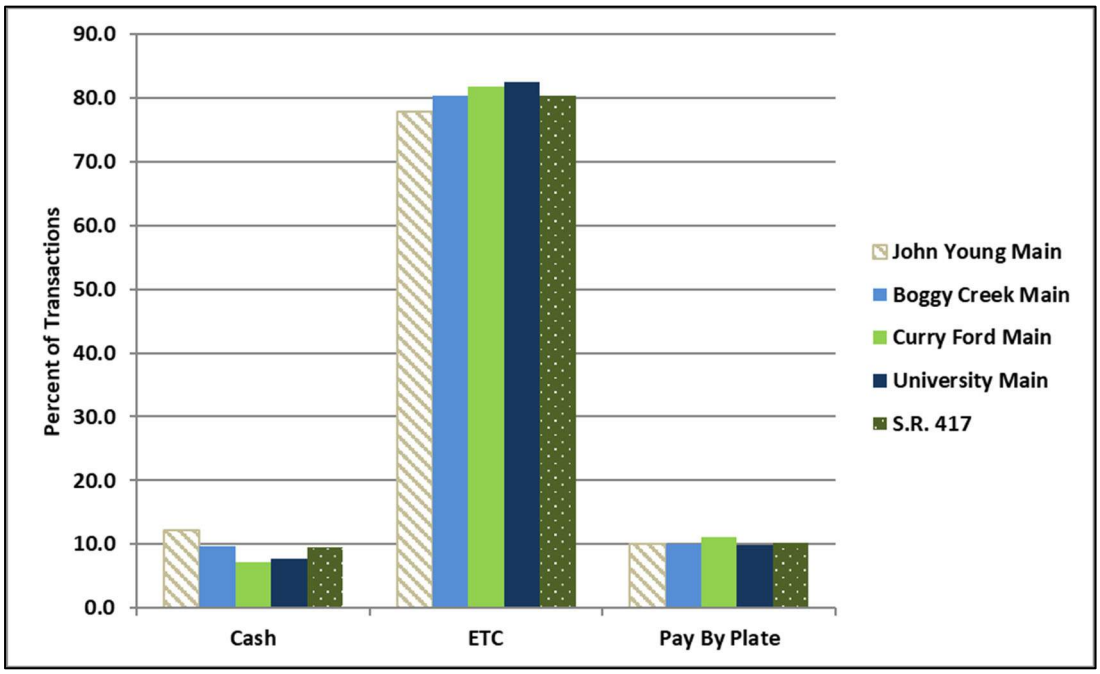
As shown in Figure 5-10, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues ranged from a low of 77.9 percent at the John Young Main plaza group to a high of 82.4 percent at the University Main plaza group. The percent of cash toll revenues ranged from a low of 7.1 percent at the Curry Ford Main plaza group to a high of 12.2 percent at the John Young Main plaza group. The percent of PBP toll revenues ranged from a low of 9.9 percent to a high of 11.1 percent.

Figure 5-9
S.R. 417 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 5-10
S.R. 417 Percent of Revenue by Payment Type
FY 2019



Source: Unaudited toll revenue data provided by CFX

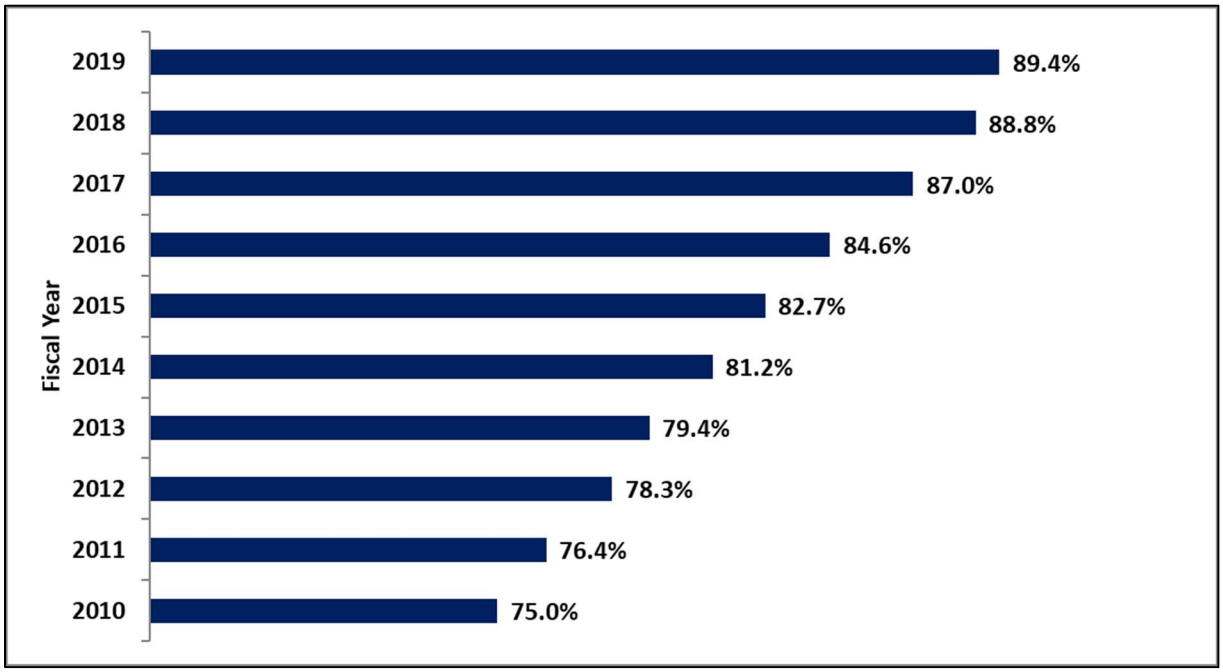
5.3 ETC Usage

The percent of paid in-lane revenues generated from ETC over the past ten fiscal years on S.R. 417 is shown in **Figure 5-11**. PBP revenues are not included. Over this time, ETC revenues have steadily increased on the facility. In FY 2010, ETC revenues totaled 75.0 percent of total revenues on the facility. In FY 2019, ETC revenues reached 89.4 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 , especially with implementation of PBP toll rates that will be twice the ETC toll rate beginning in July 2020 (FY 2021).

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). The program was expanded with the opening of a second Reload Lane at the John Young Main Plaza on S.R. 417 in March 2017 and a third location at the Forest Lake Main Plaza on S.R. 429 in May 2017.

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 5-11
S.R. 417 Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

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 2.22 percent in FY 2020 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 5-4**, assumed completed in each model horizon year. Growth rates remain above 2.1% per year through 2022 due to additional system improvements on S.R. 417 between International Drive and S.R. 528. Most of these segments will be widened.

Feeder road improvements, such as Landstar Boulevard, Innovation Way, Lake Nona Blvd., and Narcoossee Road also positively impact the forecasted T&R growth on S.R. 417 through 2025. 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. Improvements to competitors, including Osceola Parkway, will have impacts on the long-term forecast.

Table 5-4
S.R. 417 - Key Transportation Improvements

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 lanes
Jeff Fuqua Boulevard	.13 miles South of Boggy Creek Road	Heintzelman Boulevard	2025	Orange County	Widen to 4 Lanes
Landstar Boulevard	Osceola County Line	SR 417	2025	Orange County	Widen to 6 Lanes
SR 15 (Narcoossee Road)	SR 528 (BeachLine Expressway)	Lee Vista Boulevard	2025	Orange County/FDOT	Widen to 6 Lanes
SR 417	International Drive	Boggy Creek Road	2025	CFX	Widen to 6-lanes
SR 417	Boggy Creek Road	SR 528	2025	CFX	Widen to 6-lanes
SR 46	Mellonville Rd	SR 415	2025	FDOT	Widen to 4-lanes
Apopka-Vineland Road (SR 535)	SR 536	I-4 WB Ramp	2035	Orange County/FDOT	Widen to 8 Lanes
Apopka-Vineland Road (SR 535)	Osceola County Line	SR 536	2035	Orange County/FDOT	Widen to 6 Lanes
CR 419	Avenue B	West of Lockwood Blvd	2035	FDOT	Widen to 4-lanes
Innovation Way/Dowden Rd	SR 417	SR 528	2035	FDOT	New 4-lane Road
John Young Parkway	Pleasant Hill Road	Portage Road	2035	FDOT	Widen to 6-lanes
Lake Nona Boulevard	Tavistock Lakes Boulevard	SR 417 (Greenway)	2035	Orange County	Widen to 6 Lanes
Narcoossee Rd	US 192	Orange County Line	2035	Osceola County	Widen to 6 Lanes
Osceola Parkway Extension	Boggy Creek Road	Narcoossee Road	2035	CFX	New 4-lane Expressway
SR 426/CR 419	Pine Avenue	Avenue B	2035	FDOT	Widen to 4-lanes
SR 46	SR 415	SR 426	2035	FDOT	Widen to 4-lanes
US 17-92	Lake Mary Blvd	Airport Road	2035	FDOT	Widen to 6-lanes
Wekiva Parkway	Mount Plymouth Road	Interstate 4	2035	FDOT	New 4 lane expressway
Boggy Creek Road	Beacon Park Boulevard	SR 417	2045	Orange County	Widen to 6 Lanes
Orange Avenue	Town Center Blvd	Osceola County Line	2045	FDOT	Widen to 4-lanes
Osceola Parkway	Interstate 4	SR 417	2045	Osceola County	Widen to 8 Lanes
Osceola Parkway	John Young Pkwy	US 441 (Orange Blossom Tr)	2045	Osceola County	Widen to 6 Lanes
Osceola Parkway	Buenaventura Blvd	Boggy Creek Rd	2045	Osceola County	Widen to 6 Lanes
Osceola Parkway Extension	Narcoossee Road	NE District	2045	CFX	New 4-lane Expressway
SR 426	Old Howell Branch Road	Tuskawilla Road	2045	FDOT	Widen to 6-lanes
SR 434	SR 417	Mitchell Hammock Road	2045	FDOT	Widen to 4-lanes
Town Center Boulevard	US 441	Landstar Boulevard	2045	Orange County	Widen to 6 Lanes
US 17-92	Lake Mary Blvd	SR 417	2045	FDOT	Widen to 6-lanes
US 441	W Columbia Ave	Carroll St	2045	Osceola County	CSS Improvements
US 441	US 192	W Columbia Ave	2045	Osceola County	CSS Improvements
US 441	Carroll St	Osceola Pkwy	2045	Osceola County	CSS Improvements
US 441	Osceola Pkwy	Orange Co. Line	2045	Osceola County	CSS Improvements
Vineland Rd (SR 535)	US 192	Orange County Line	2045	Osceola County/FDOT	Widen to 6 Lanes

Transaction and toll revenue projections for each toll plaza group and for all of S.R. 417 are summarized in **Table 5-5** and **Table 5-6**. The tables are divided into paid in-lane transactions and revenue and PBP transactions and revenue. Paid in-lane transactions and revenue by plaza group include ETC and cash collection. PBP is only reported as a total on the facility level.

The paid in-lane transactions on S.R. 417 are expected to grow 2.5 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to decrease an average of 5.3 percent per year through FY 2029 and then increase slightly through the forecast period. Total transactions on S.R. 417 are projected to increase during the forecast period from the actual of 160.4 million in FY 2019 to 242.8 million in FY 2049. The paid in-lane revenues on S.R. 417 are projected to increase significantly over the forecast period, from the FY 2019 actual of $152.6 million to $366.6 million in FY 2049. PBP revenues are projected to increase from $17.4 million in FY 2019 to $35.4 million in FY 2049. Total revenues on S.R. 417 are projected to increase during the forecast period from the actual $170.0 million in FY 2018 to $402.0 million in FY 2049. Total transactions and revenues are forecasted to increase an average of 1.9 and 3.7 percent per year through FY 2029, 1.2 and 2.6 percent per year from FY 2029 to FY 2039, and 1.0 and 2.4 percent per year from FY 2039 to FY 2049, respectively.

Table 5-5
S.R. 417 Plaza Groups – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		John Young Main	Boggy Creek Main	Curry Ford Main	University Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	19.6	17.5	23.6	28.6	89.3	0.6	89.9	
2011		20.1	18.6	23.2	29.0	90.9	1.0	91.9	2.2%
2012[A]		20.6	18.8	23.1	28.2	90.7	1.3	92.0	0.1%
2013[B]		21.0	19.7	23.4	26.2	90.3	1.6	91.9	-0.1%
2014		22.6	21.9	25.2	27.5	97.2	2.0	99.2	7.9%
2015		25.7	25.3	28.3	30.0	109.3	2.7	112.0	12.9%
2016		30.6	31.0	32.5	33.3	127.4	3.9	131.3	17.2%
2017[C]		34.8	34.6	34.2	34.5	138.1	4.8	142.9	8.9%
2018[D]		37.2	38.1	35.8	34.8	145.9	6.8	152.7	6.9%
2019[E]		36.9	39.3	35.4	33.9	145.5	14.9	160.4	5.0%
2020	Forecast	37.4	40.4	36.8	33.3	147.9	17.2	165.1	2.9%
2021[F]		39.9	43.0	38.8	34.2	155.9	10.2	166.1	0.6%
2022[G]		41.7	44.9	40.1	35.1	161.8	7.5	169.3	1.9%
2023		42.7	46.1	41.1	35.4	165.3	7.7	173.0	2.2%
2024		43.7	47.2	42.1	35.8	168.8	7.8	176.6	2.1%
2025		44.7	48.3	43.2	36.1	172.3	7.9	180.2	2.0%
2026		45.8	49.4	44.3	36.4	175.9	8.2	184.1	2.2%
2027		46.8	50.5	45.4	36.6	179.3	8.3	187.6	1.9%
2028		47.8	51.6	46.5	36.9	182.8	8.6	191.4	2.0%
2029		48.7	52.6	47.5	37.1	185.9	8.6	194.5	1.6%
2030		49.6	53.5	48.5	37.3	188.9	8.7	197.6	1.6%
2031		50.5	54.4	49.3	37.5	191.7	8.8	200.5	1.5%
2032		51.3	55.3	50.2	37.6	194.4	9.0	203.4	1.4%
2033		52.0	56.1	50.9	37.8	196.8	9.1	205.9	1.2%
2034		52.7	56.9	51.6	37.9	199.1	9.2	208.3	1.2%
2035		53.4	57.6	52.3	38.0	201.3	9.2	210.5	1.1%
2036		54.1	58.4	52.9	38.1	203.5	9.4	212.9	1.1%
2037		54.8	59.1	53.6	38.2	205.7	9.5	215.2	1.1%
2038		55.5	59.9	54.3	38.3	208.0	9.5	217.5	1.1%
2039		56.2	60.6	55.0	38.3	210.1	9.6	219.7	1.0%
2040		56.9	61.4	55.7	38.4	212.4	9.8	222.2	1.1%
2041		57.6	62.1	56.4	38.5	214.6	9.9	224.5	1.0%
2042		58.3	62.9	57.1	38.5	216.8	10.0	226.8	1.0%
2043		59.0	63.6	57.8	38.6	219.0	10.1	229.1	1.0%
2044		59.7	64.3	58.6	38.6	221.2	10.3	231.5	1.0%
2045		60.4	65.1	59.3	38.7	223.5	10.4	233.9	1.0%
2046		61.1	65.8	60.0	38.7	225.6	10.4	236.0	0.9%
2047		61.8	66.5	60.8	38.7	227.8	10.5	238.3	1.0%
2048		62.5	67.2	61.5	38.8	230.0	10.7	240.7	1.0%
2049		63.1	67.9	62.3	38.8	232.1	10.7	242.8	0.9%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	7.3%	9.4%	4.6%	1.9%	5.6%	42.9%	6.6%
2019 - 2029	2.8%	3.0%	3.0%	0.9%	2.5%	-5.3%	1.9%
2029 - 2039	1.4%	1.4%	1.5%	0.3%	1.2%	1.1%	1.2%
2039 - 2049	1.2%	1.1%	1.3%	0.1%	1.0%	1.1%	1.0%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Report.
A - Widening of S.R. 417 between S.R. 408 and S.R. 528. Valencia College lane ramps closed.
B - Systemwide toll rate increase.
C - Effects from Hurricane Matthew in October 2016.
D - Effects from Hurricane Irma in September 2017.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

Table 5-6
S.R. 417 Plaza Groups – Toll Revenue Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		John Young Main	Boggy Creek Main	Curry Ford Main	University Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	$21.0	$19.9	$17.7	$20.4	$79.0	$0.6	$79.6	
2011		$21.6	$20.6	$17.3	$20.6	$80.1	$0.9	$81.0	1.8%
2012[A]		$22.1	$20.8	$17.3	$20.3	$80.5	$1.2	$81.7	0.9%
2013[B]		$25.3	$24.3	$19.8	$21.8	$91.2	$1.8	$93.0	13.8%
2014		$27.2	$26.9	$21.3	$22.9	$98.3	$2.2	$100.5	8.1%
2015		$30.6	$30.8	$24.0	$25.0	$110.4	$3.0	$113.4	12.8%
2016		$35.9	$37.7	$27.6	$27.8	$129.0	$4.7	$133.7	18.0%
2017[C]		$40.4	$42.0	$29.1	$28.9	$140.4	$6.7	$147.1	10.0%
2018[D]		$43.0	$45.7	$30.5	$29.2	$148.4	$7.6	$156.0	6.1%
2019[E]		$44.3	$48.6	$30.7	$29.0	$152.6	$17.4	$170.0	9.0%
2020	Forecast	$45.7	$50.6	$32.8	$29.0	$158.1	$21.0	$179.1	5.4%
2021[F]		$49.4	$54.7	$35.1	$30.2	$169.4	$22.1	$191.5	6.9%
2022[G]		$52.2	$57.9	$36.8	$31.4	$178.3	$16.4	$194.7	1.7%
2023		$54.1	$60.1	$38.1	$32.1	$184.4	$17.0	$201.4	3.4%
2024		$56.1	$62.3	$39.5	$32.9	$190.8	$17.7	$208.5	3.5%
2025		$58.0	$64.6	$40.9	$33.7	$197.2	$18.4	$215.6	3.4%
2026		$60.0	$67.0	$42.5	$34.5	$204.0	$19.0	$223.0	3.4%
2027		$62.0	$69.4	$44.0	$35.3	$210.7	$19.6	$230.3	3.3%
2028		$64.0	$71.7	$45.5	$36.0	$217.2	$20.4	$237.6	3.2%
2029		$66.0	$74.1	$47.0	$36.8	$223.9	$21.0	$244.9	3.1%
2030		$67.9	$76.5	$48.6	$37.5	$230.5	$21.7	$252.2	3.0%
2031		$69.9	$78.8	$50.1	$38.3	$237.1	$22.4	$259.5	2.9%
2032		$71.9	$81.2	$51.6	$39.0	$243.7	$22.9	$266.6	2.7%
2033		$73.8	$83.5	$53.1	$39.6	$250.0	$23.5	$273.5	2.6%
2034		$75.7	$85.8	$54.6	$40.3	$256.4	$24.3	$280.7	2.6%
2035		$77.6	$88.2	$56.1	$40.9	$262.8	$24.9	$287.7	2.5%
2036		$79.6	$90.6	$57.6	$41.6	$269.4	$25.5	$294.9	2.5%
2037		$81.6	$93.0	$59.2	$42.3	$276.1	$26.3	$302.4	2.5%
2038		$83.7	$95.5	$60.8	$43.0	$283.0	$26.9	$309.9	2.5%
2039		$85.8	$98.1	$62.4	$43.6	$289.9	$27.7	$317.6	2.5%
2040		$87.9	$100.7	$64.1	$44.3	$297.0	$28.2	$325.2	2.4%
2041		$90.0	$103.3	$65.9	$45.0	$304.2	$29.0	$333.2	2.5%
2042		$92.2	$106.0	$67.6	$45.8	$311.6	$29.8	$341.4	2.5%
2043		$94.4	$108.7	$69.4	$46.5	$319.0	$30.5	$349.5	2.4%
2044		$96.7	$111.5	$71.3	$47.2	$326.7	$31.3	$358.0	2.4%
2045		$98.9	$114.4	$73.2	$47.9	$334.4	$32.2	$366.6	2.4%
2046		$101.3	$117.3	$75.1	$48.7	$342.4	$32.9	$375.3	2.4%
2047		$103.6	$120.2	$77.1	$49.4	$350.3	$33.7	$384.0	2.3%
2048		$106.0	$123.2	$79.1	$50.2	$358.5	$34.6	$393.1	2.4%
2049		$108.4	$126.2	$81.1	$50.9	$366.6	$35.4	$402.0	2.3%

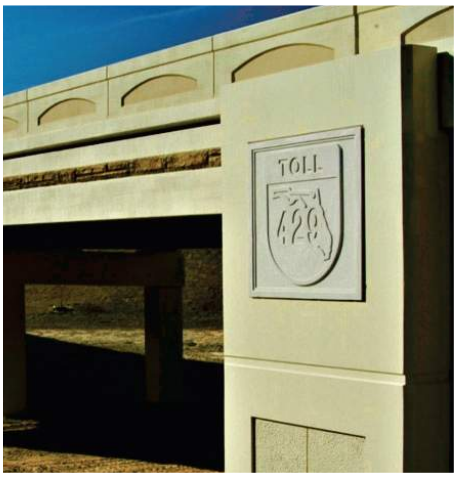
Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	8.6%	10.4%	6.3%	4.0%	7.6%	45.4%	8.8%
2019 - 2029	4.1%	4.3%	4.4%	2.4%	3.9%	1.9%	3.7%
2029 - 2039	2.7%	2.8%	2.9%	1.7%	2.6%	2.8%	2.6%
2039 - 2049	2.4%	2.6%	2.7%	1.6%	2.4%	2.5%	2.4%

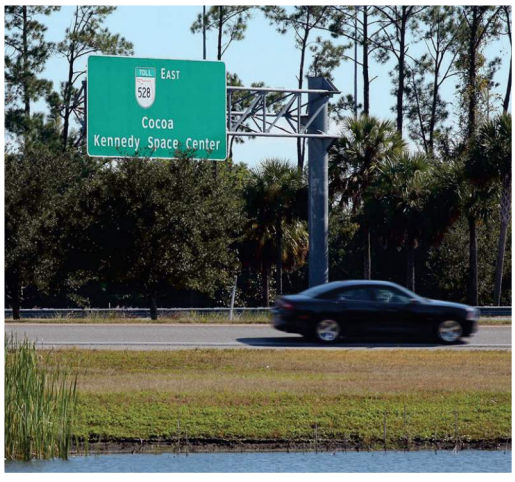
Notes:
Actual transaction data provided by CFX from Monthly Statistical Report.
A - Widening of S.R. 417 between S.R. 408 and S.R. 528. Valencia College lane ramps closed.
B - Systemwide toll rate increase.
C - Effects from Hurricane Matthew in October 2016.
D - Effects from Hurricane Irma in September 2017.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

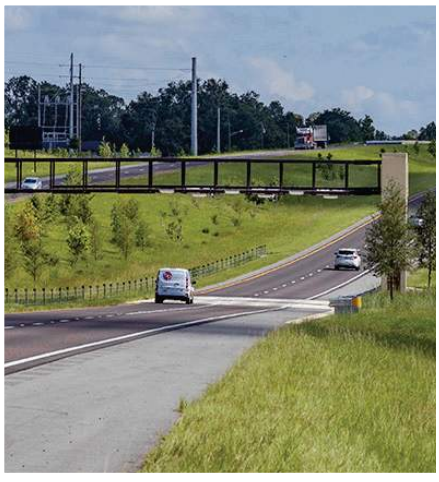
CHAPTER 6

S.R. 429

(DANIEL WEBSTER WESTERN BELTWAY)







S.R. 429 (DANIEL WEBSTER WESTERN BELTWAY)

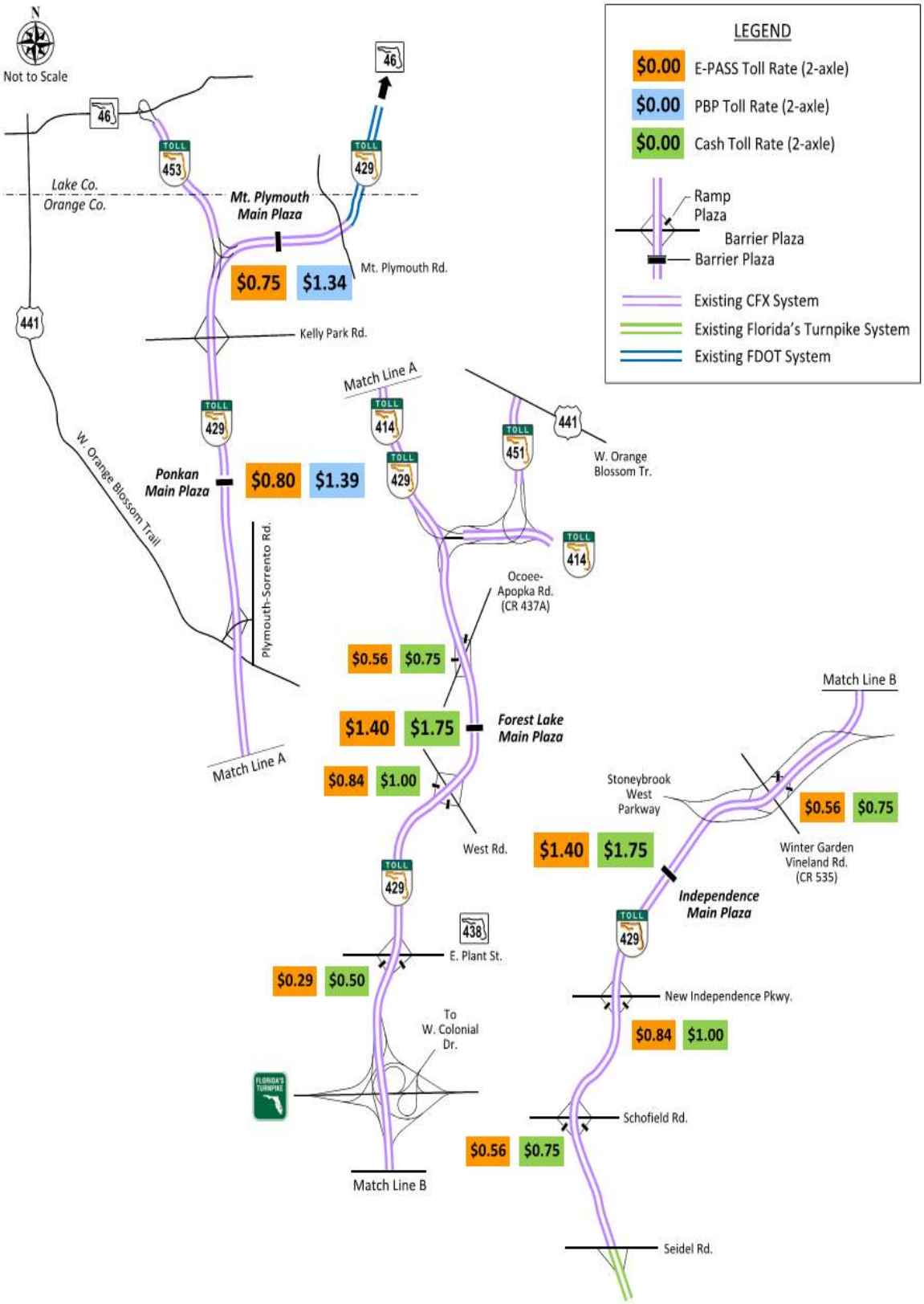
6.1 Facility Description

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 31-mile portion of S.R. 429 from Seidel Road north to Mt. Plymouth Road 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 four mainline toll plazas: the Independence Main Plaza, Forest Lake Main Plaza, Ponkan Main, and Mt. Plymouth Main. Ramp toll plazas associated with the Independence Main plaza group are located at the 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), West Road and Ocoee-Apopka Road interchanges. There are no ramp toll plazas associated with the Ponkan Main and Mt. Plymouth Main plaza groups. Of the 23 miles on S.R. 429, three miles are part of a dual route with S.R. 414. A map of CFX's portion of S.R. 429 including the FY 2019 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 ETC 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, connecting to I-4, in December of 2006.

In June of 2010, construction 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

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



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.

The extension of S.R. 429, locally known as the Wekiva Parkway, is 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 now open to traffic. CFX started construction of its 9 miles in January of 2015 and completed its portion of the Wekiva Parkway with the opening on April 1, 2018. The project also added 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 28, 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). These are all electronic toll (AET) locations, the first on the CFX System. Customers pay toll with ETC or through the PBP process. There are no toll booths to pay the toll with cash. The Wekiva Parkway also included construction of S.R. 453, discussed in Chapter 8. FDOT is still constructing its 18-mile portion of Wekiva Parkway, expected to open in 2022, except for the section from Mt. Plymouth Road to CR 46, which opened in January 2016.

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 March 2018, CFX began widening the entrance ramp to northbound S.R. 429 from C.R. 535/Winter Garden Vineland Road. This project, which runs from C.R. 535 to the Stoneybrook West Parkway overpass, is expected to improve traffic flow with the additional lane on the entrance ramp. Work was completed by the end of 2018.

In August 2019, CFX completed a construction project on S.R. 429 at Kelly Park Road, Plant Street and County Road 437/Ocoee-Apopka Road. The project included adding a turn lane and widening the entrance ramp to Kelly Park Road to southbound S.R. 429. It also included repaving the northbound S.R. 429 exit ramp and the southbound S.R. 429 entrance ramp at Plant Street and improving drainage and installing a sign and paving the northbound S.R. 429 exit ramp at CR 437.

6.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

6.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

The history of S.R. 429 annual paid in-lane transactions for the Forest Lake Main, Independence Main, Ponkan Main and Mt. Plymouth Main plaza groups from opening to FY 2019 are presented in the top half of **Table 6-1**. Annual paid in-lane toll revenues are also summarized and totaled in the bottom half of the table. These historical tables do not include PBP transactions and revenues, only those that are paid in-lane. For these reasons, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report.

Since its opening, S.R. 429 had only two years of negative growth in paid in-lane transactions, which occurred in FY 2009 and FY 2010 as a result of the Great Recession and the toll rate increase in April 2009. Paid in-lane 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, paid in-lane revenues in FY 2010 recovered with a growth of 23.7 percent, or $4.5 million for the facility, while paid in-lane transactions only decreased by 0.4 percent. Another toll rate increase occurred in FY 2013, which negatively impacted transactions.

In FY 2014, all plaza groups experienced growth in paid in-lane transactions and toll revenues. Overall, S.R. 429 paid in-lane transactions increased 12.9 percent and toll revenues increased 14.0 percent over FY 2013. FY 2014 began a four-year period of extraordinary growth. FY 2015, FY 2016 and FY 2017 experienced double-digit growth in both paid in-lane transactions and revenues. Over the four-year period, paid in-lane transactions and revenue increased by more than 50 percent.

In FY 2018, S.R. 429 paid in-lane transactions increased by 13.6 percent over FY 2017 and revenues increased by 12.8 percent. In FY 2018, paid in-lane transactions at the Forest Lake Main plaza group and Independence Main plaza group increased by 4.3 percent and 8.1 percent, respectively, over FY 2017. During the same period, paid in-lane toll revenues at the Forest Lake Main and Independence Main plaza groups increased by 4.2 percent and 10.7 percent. FY 2018 was the opening year for the Ponkan Main and Mt. Plymouth Main plaza groups.

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. Tolls were suspended on the CFX System beginning at 8:00 p.m. on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 0.5 million transactions and $0.6 million in toll revenues on S.R. 429. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 2.2 million and a toll revenue loss of $2.5 million on S.R. 429.

Table 6-1
S.R. 429 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2001 – FY 2019

Fiscal Year	Forest Lake Main [A]	Independence Main	Ponkan Main	Mt. Plymouth Main	TOTAL	Forest Lake Main [A]	Independence Main	Ponkan Main	Mt. Plymouth 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%
2018 [K,L]	24.4	23.9	3.0	0.4	51.7	4.3%	8.1%			13.6%
2019 [M]	25.7	25.5	4.9	1.5	57.6	5.3%	6.7%	63.3%	275.0%	11.4%
	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%
2018 [K,L]	$29.6	$25.8	$2.6	$0.3	$58.3	4.2%	10.7%			12.8%
2019 [M]	$32.1	$29.1	$4.2	$1.3	$66.7	8.4%	12.8%	61.5%	333.3%	14.4%

Notes:

A - Opened to traffic on July 8, 2000. Toll collection began one w eek 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 w ith 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 - Systemw ide toll rate increase in April 2009.

I - Systemw ide toll rate increase in July 2012. Implementation of cash and electronic toll rate differential.

J - Effects from Hurricane Matthew in October 2016.

K - Ponkan Main plaza opened on July 28, 2017. Mt. Plymouth Main plaza opened on April 1, 2018.

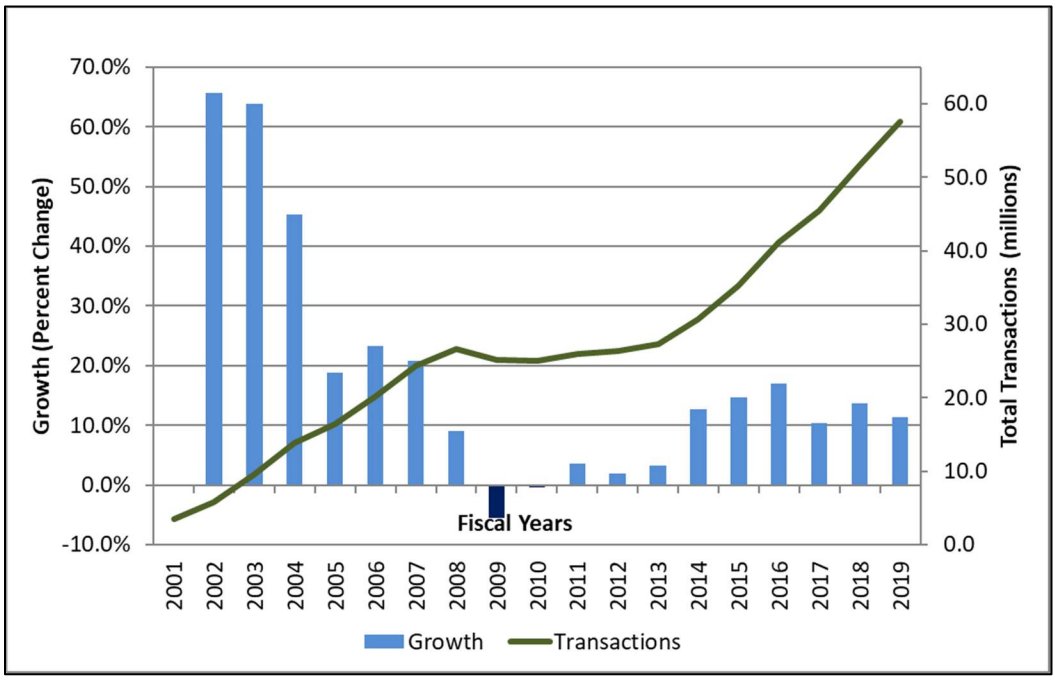
L - Effects from Hurricane Irma in September 2017.

M - Systemw ide toll rate increase in July 2018.

In FY 2019, all plaza groups experienced growth in paid in-lane transactions and toll revenues. FY 2019 was the first full year of toll collection at the Ponkan Main and Mt. Plymouth Main plaza groups. Overall, S.R. 429 paid in-lane transactions increased 11.4 percent and toll revenues increased 14.4 percent over FY 2018.

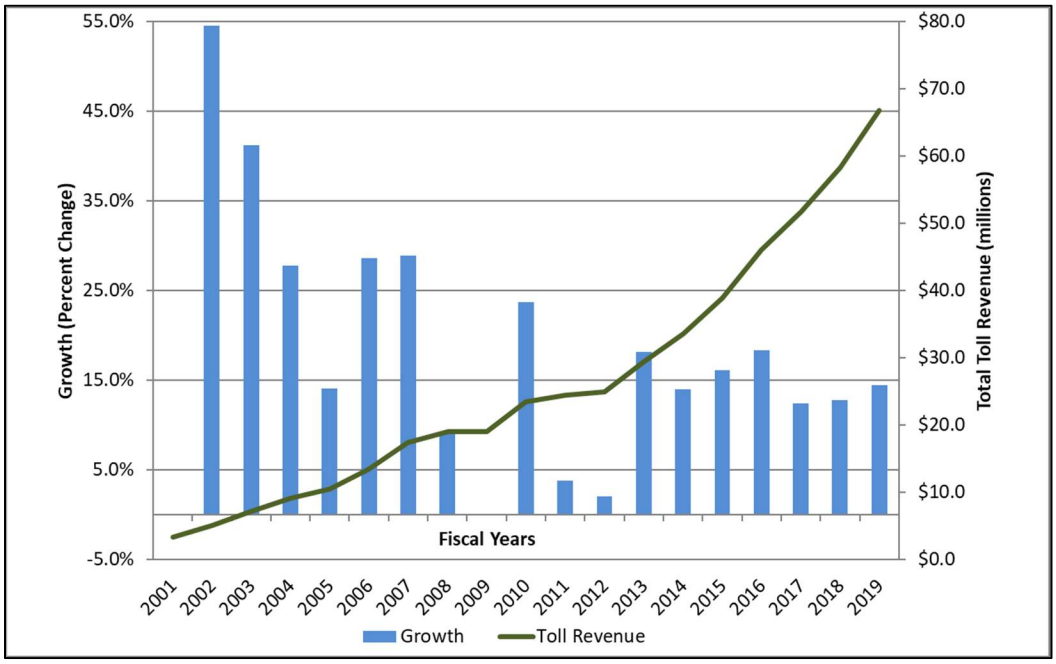
The facility data and annual growth are also presented visually in **Figure 6-2** and **Figure 6-3**. As shown, paid in-lane transactions and revenue have increased rapidly between FY 2001 and FY 2009, with ramp-up growth rates in the first three years. The economic downturn is also represented with a dip in the annual paid in-lane 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 paid in-lane toll revenue chart has the distinct step-up pattern as expected of toll rate increases.

Figure 6-2
S.R. 429 Historical Paid In-Lane Transactions and Annual Growth
FY 2001 – FY 2019



Source: CFX Statistical Report June 2019

Figure 6-3
S.R. 429 Historical Paid In-Lane Revenue and Annual Growth
FY 2001 – FY 2019

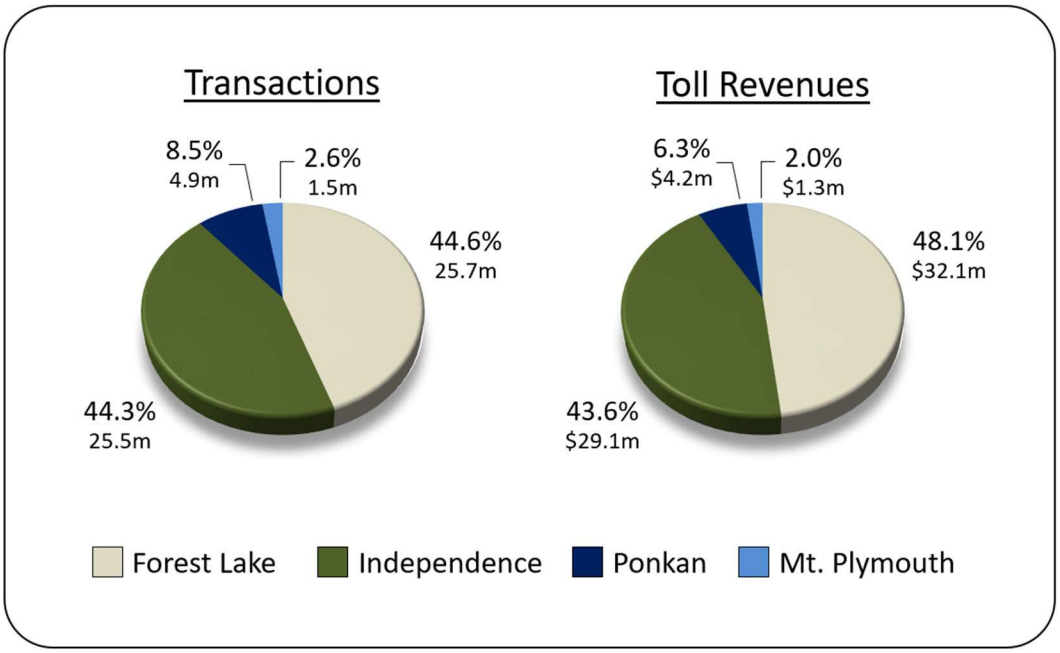


Source: CFX Statistical Report June 2019

The paid in-lane transactions and toll revenues by plaza group and as a percentage of total S.R. 429 paid in-lane transactions and toll revenues for FY 2019 are presented in **Figure 6-4**. As shown, the Forest Lake Main plaza group represented 25.7 million paid in-lane transactions or 44.6 percent of total S.R. 429 paid in-lane transactions. Independence Main plaza group represented 25.5 million or 44.3 percent of total paid in-lane transactions on the facility. The Ponkan Main plaza represented 4.9 million paid in-lane transactions or 8.5 percent of the total, and the Mt. Plymouth Main plaza carried the remaining 1.5 million or 2.6 percent of total paid in-lane transactions on the facility.

The annual totals and percentages for paid in-lane toll revenues are similar to the trends reported for annual paid in-lane transactions. Having more ramp toll plazas and a higher mainline toll rate, the Forest Lake Main plaza group represented $32.1 million in paid in-lane toll revenues or 48.1 percent of total S.R. 429 paid in-lane toll revenues. Independence Main plaza group represented $29.1 million or 43.6 percent of total paid in-lane revenue on the facility. The Ponkan Main plaza represented $4.2 million or 6.3 percent of the total, and the Mt. Plymouth Main plaza carried the remaining $1.3 million or 2.0 percent of total paid in-lane toll revenues on the facility.

Figure 6-4
S.R. 429 Paid In-Lane Transactions and Revenue by Plaza Group
FY 2019



Source: CFX Statistical Report June 2019

6.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 429 from FY 2010 to FY 2019 are presented in **Table 6-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 6-2 shows the annual totals for S.R. 429 as reported at year end.

Table 6-2
S.R. 429 – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	0.2		$0.1	
2011	0.3	50.0%	$0.2	100.0%
2012	0.4	33.3%	$0.3	50.0%
2013	0.5	25.0%	$0.4	33.3%
2014	0.6	20.0%	$0.6	50.0%
2015	0.9	50.0%	$0.8	33.3%
2016	1.3	44.4%	$1.4	75.0%
2017	1.6	23.1%	$2.0	42.9%
2018	2.0	25.0%	$2.5	25.0%
2019	5.0	150.0%	$6.9	176.0%

Source: Unaudited data provided by CFX

PBP transactions have increased from 0.2 million in FY 2010 to 5.0 million in FY 2019, while PBP revenues have increased from $0.1 million to $6.9 million over the same period. In FY 2019, PBP transactions increased 150.0 percent and PBP revenues increased 176.0 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 has contributed to slower growth in paid in-lane transactions and revenues compared to FY 2018. More customers chose the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

6.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 6-3**, monthly paid in-lane transactions are normalized to average number of paid in-lane transactions per day in each month. Using average number of paid in-lane 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.

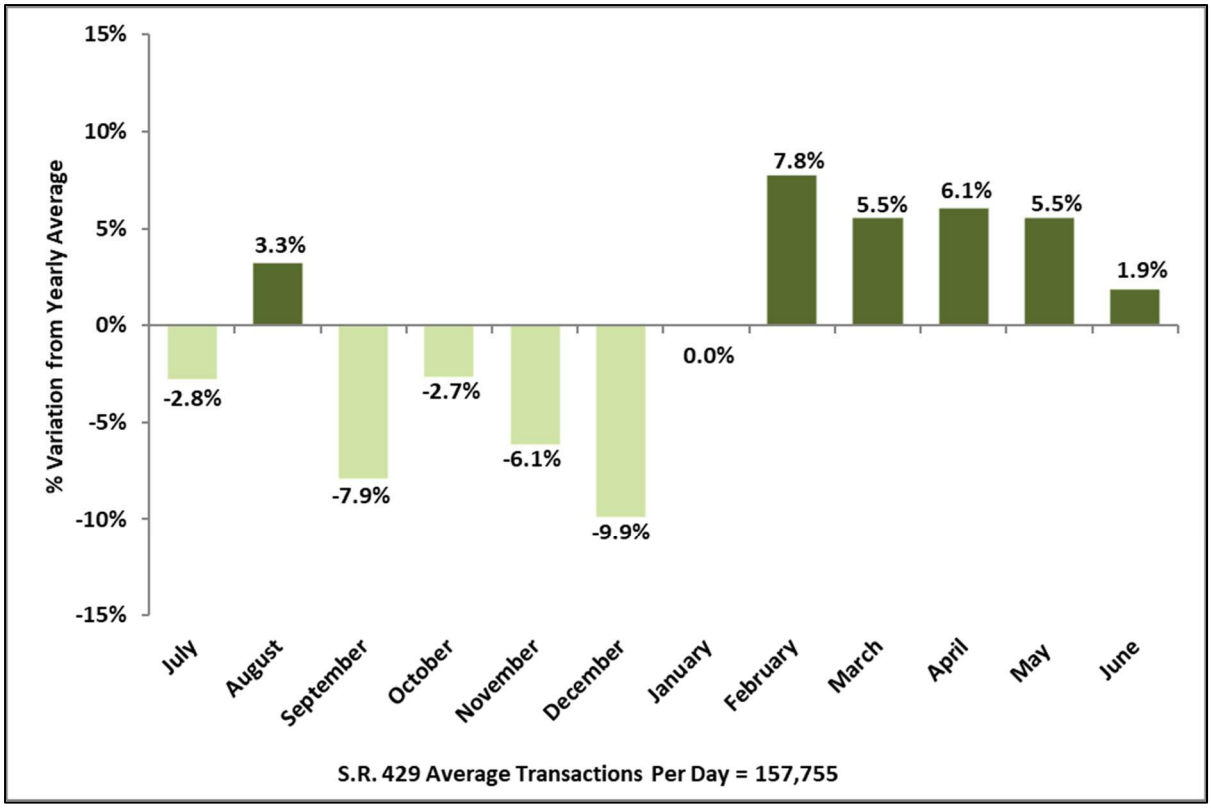
Table 6-3
S.R. 429 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	4,752,607	153,310	0.972
August	31	5,049,768	162,896	1.033
September	30	4,356,862	145,229	0.921
October	31	4,759,448	153,531	0.973
November	30	4,442,227	148,074	0.939
December	31	4,407,021	142,162	0.901
January	31	4,888,993	157,709	1.000
February	28	4,760,119	170,004	1.078
March	31	5,161,374	166,496	1.055
April	30	5,019,364	167,312	1.061
May	31	5,161,195	166,490	1.055
June	30	4,821,495	160,717	1.019
Average		***4,798,373***	***157,755***	***1.000***
Total Year	**365**	**57,580,473**		

Source: CFX Statistical Report June 2019

As presented in Table 6-3, average paid in-lane transactions per day in FY 2019 on S.R. 429 ranged from a high of 170,004 in February 2019 to a low of 142,162 in December 2018. This data is presented in a graphical format in **Figure 6-5**. Each month's average daily paid in-lane transactions appear as a percentage of the average for the fiscal year. Paid in-lane transactions in February were 7.8 percent above average and paid in-lane transactions in December were 9.9 percent below average for the facility. For FY 2019, the paid in-lane 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.

Figure 6-5
S.R. 429 Variation in Paid In-Lane Transactions Per Day, By Month
FY 2019



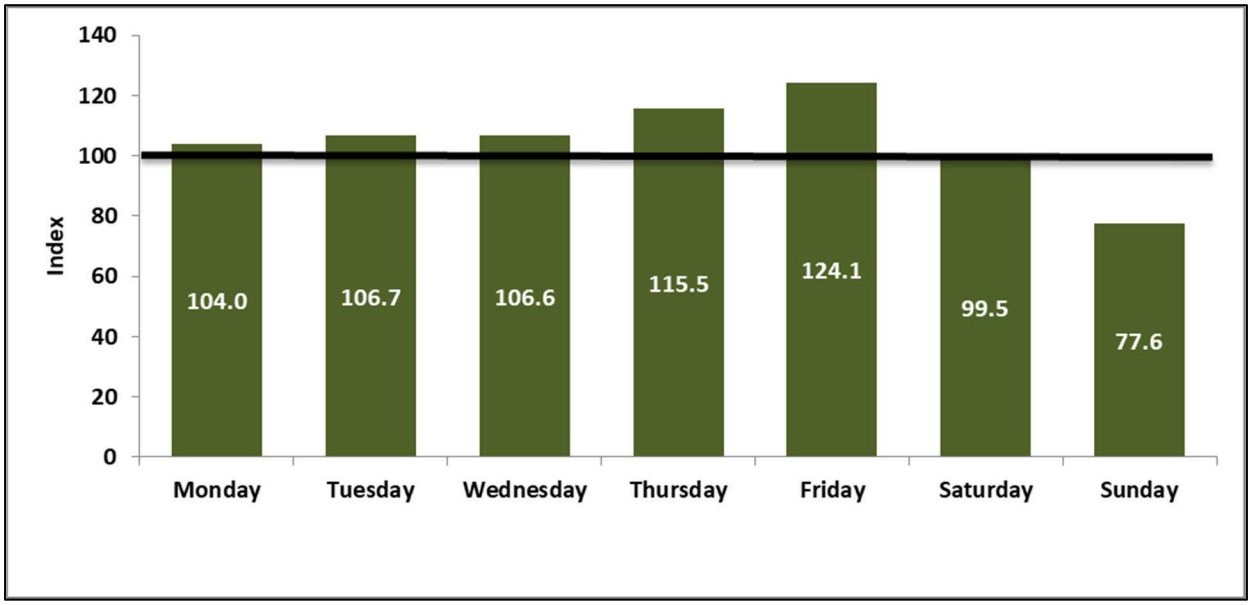
Source: CFX Statistical Report June 2019

6.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 6-6 contains a comparison of transactions by day of week in FY 2019. This data is presented as an index, where the average day equals 100. An index value of 100 for a given day of the week would indicate that day's transactions were precisely the same as the facility average. A value of 120 would indicate a day that has 20 percent greater volume than the average. 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. 429 fluctuated over the course of the week. Transactions were highest on Fridays, with an index value of 124.1 (24.1 percent higher than the average day), volumes on Thursdays had an index value of 115.5, and volumes on Monday through Wednesday ranged from index values of 104.0 to 106.6. Saturday volumes were lower than early weekday volumes with an index value of 99.5 but higher than other commuter facilities. Transactions decline significantly on Sundays, which have an index value of 77.6, or 22.4 percent lower than the average day.

Figure 6-6
S.R. 429 Variation in Transactions, by Day of Week
FY 2019



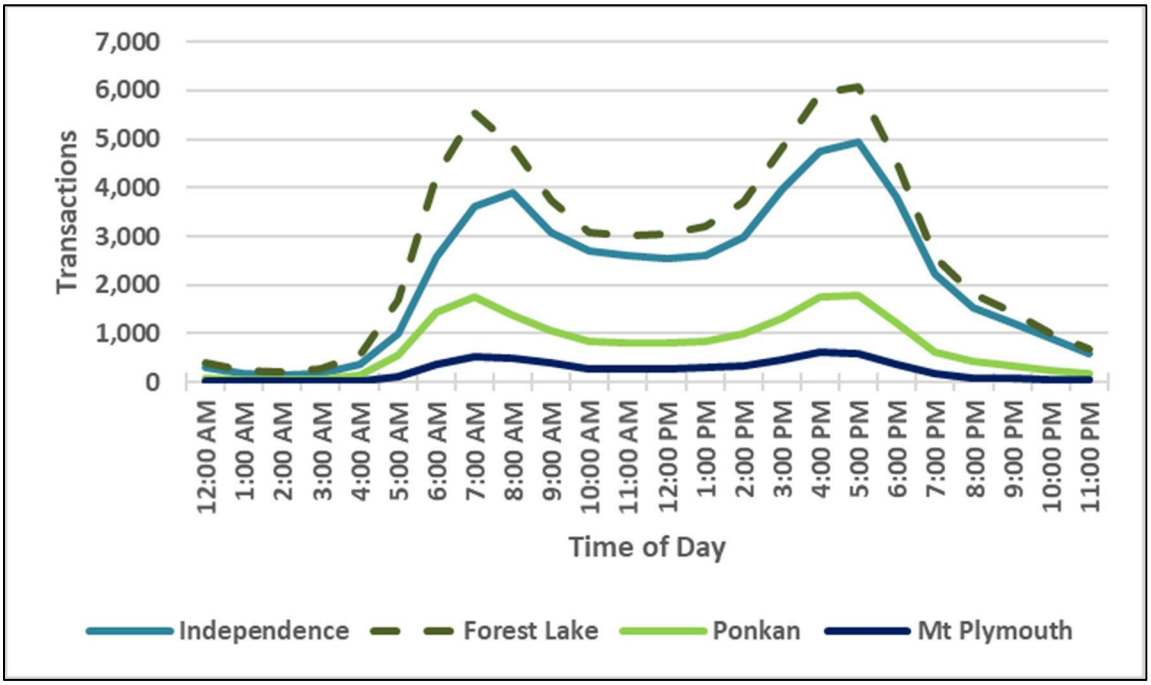
Source: Unaudited lane transaction data – February 2019

6.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic volumes includes information on the usage characteristics of travel on the facility. The hourly distributions represent counts taken during a typical week at the mainline plazas in the month of February. 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.

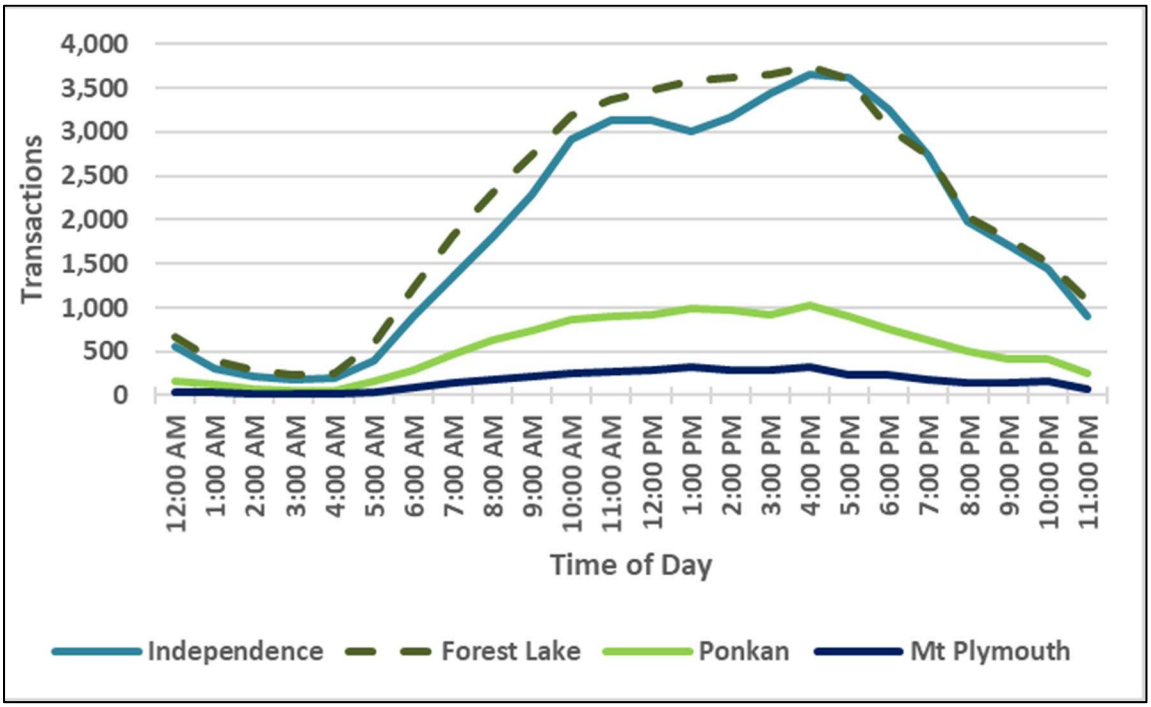
The four mainline toll locations on S.R. 429 exhibit similar hourly traffic patterns. On weekdays, travel demand at all four locations is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours at all mainline plazas are higher than in the morning peak hours. The highest peak hour volumes during the week were 6,100 per hour beginning at 5:00 p.m. at the Forest Lake mainline plaza, 4,900 per hour beginning at 5:00 p.m. at the Independence mainline plaza, 1,800 per hour beginning at 5:00 p.m. at the Ponkan mainline plaza, and 600 per hour beginning at 4:00 p.m. at the Mt. Plymouth mainline plaza. On weekends, the volumes are lower, essentially unimodal. 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 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 6-8
S.R. 429 Hourly Traffic Variation (Weekend)
FY 2019 (February)

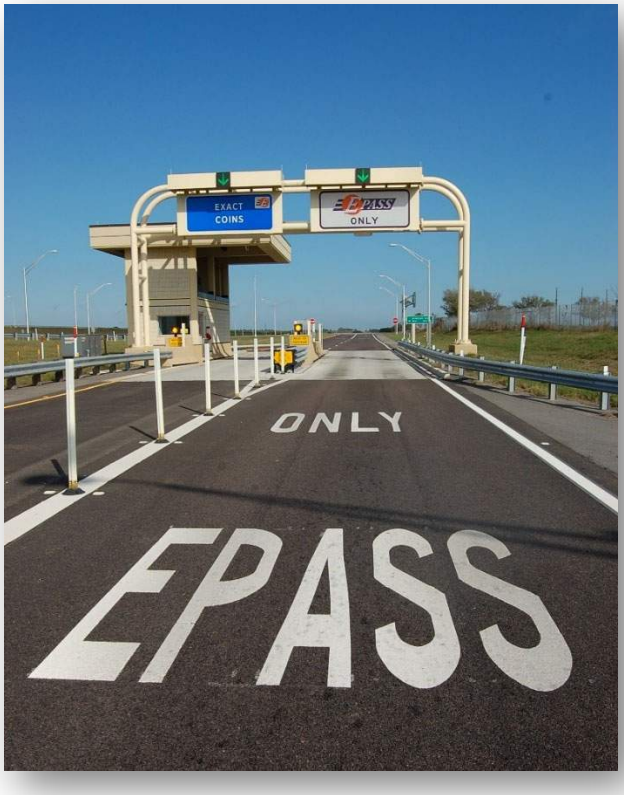


Source: Unaudited lane traffic data – February 2019

6.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

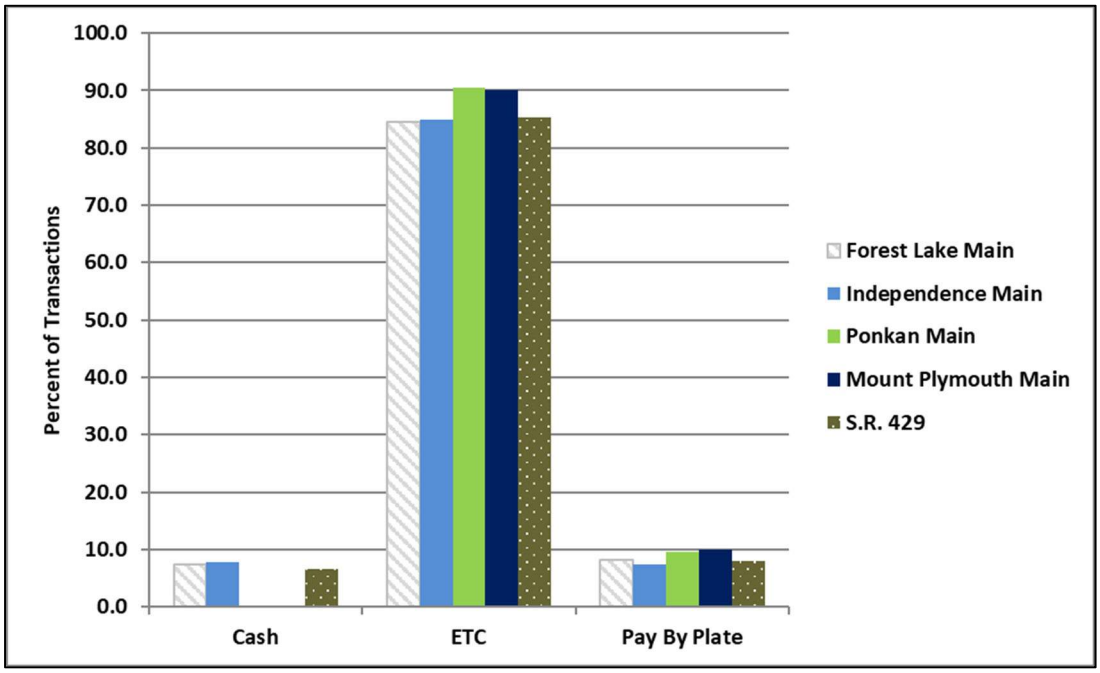
The distribution of transactions and revenue by payment type by plaza group during FY 2019 is presented in **Figure 6-9** and **Figure 6-10**. Payment types can be classified in one of three ways: cash, ETC, and PBP. As defined in Chapter 1 of this report, paid in-lane transactions and revenue include cash and ETC payments made when a customer drives through a CFX toll location. The remaining transactions and revenue are classified as unpaid in-lane, which includes PBP and a small portion of non-revenue transactions. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

As shown in Figure 6-9, the percent of ETC transactions ranged from a low of 84.5 percent at the Forest Lake Main plaza group to a high of 90.4 percent at the Mount Plymouth Main plaza group. The Mount Plymouth and Ponkan mainline plazas, as part of the Wekiva Parkway, both have AET collection. Overall, ETC transactions on S.R. 429 accounted for 85.3 percent of total transactions on the facility. The percent of cash transactions ranged from a low of 0.0 percent at the Ponkan Main and Mount Plymouth Main plaza to a high of 7.7 percent at the Independence Main plaza group. Overall, cash transactions on S.R. 429 accounted for 6.7 percent of total transactions on the facility. The PBP transactions accounted for the smallest share, between 7.4 and 9.9 percent of transactions at all plaza groups. Overall, PBP transactions on S.R. 429 accounted for 8.0 percent of total transactions on the facility.



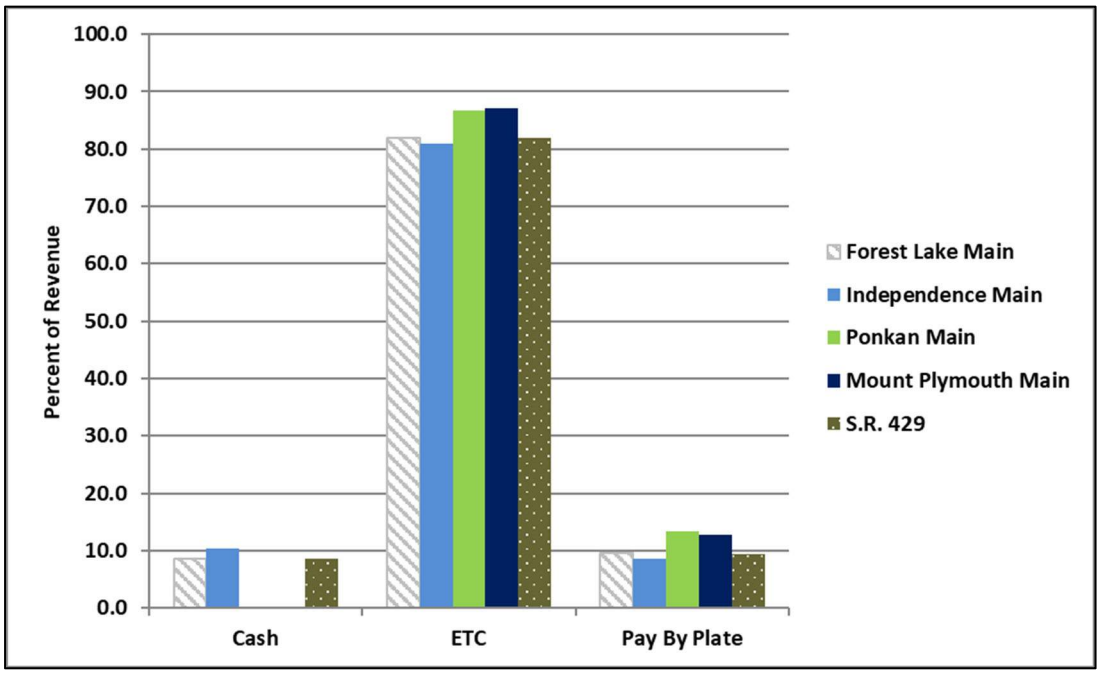
As shown in Figure 6-10, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues ranged from a low of 81.0 percent at the Independence Main plaza group to a high of 87.2 percent at the Mount Plymouth Main plaza. The percent of cash toll revenues ranged from a low of 0.0 percent at the Ponkan Main and Mount Plymouth Main plaza to a high of 10.4 percent at the Independence Main plaza group. The percent of PBP toll revenues ranged from a low of 9.5 percent to a high of 13.2 percent at all plaza groups.

Figure 6-9
S.R. 429 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 6-10
S.R. 429 Percent of Revenue by Payment Type
FY 2019



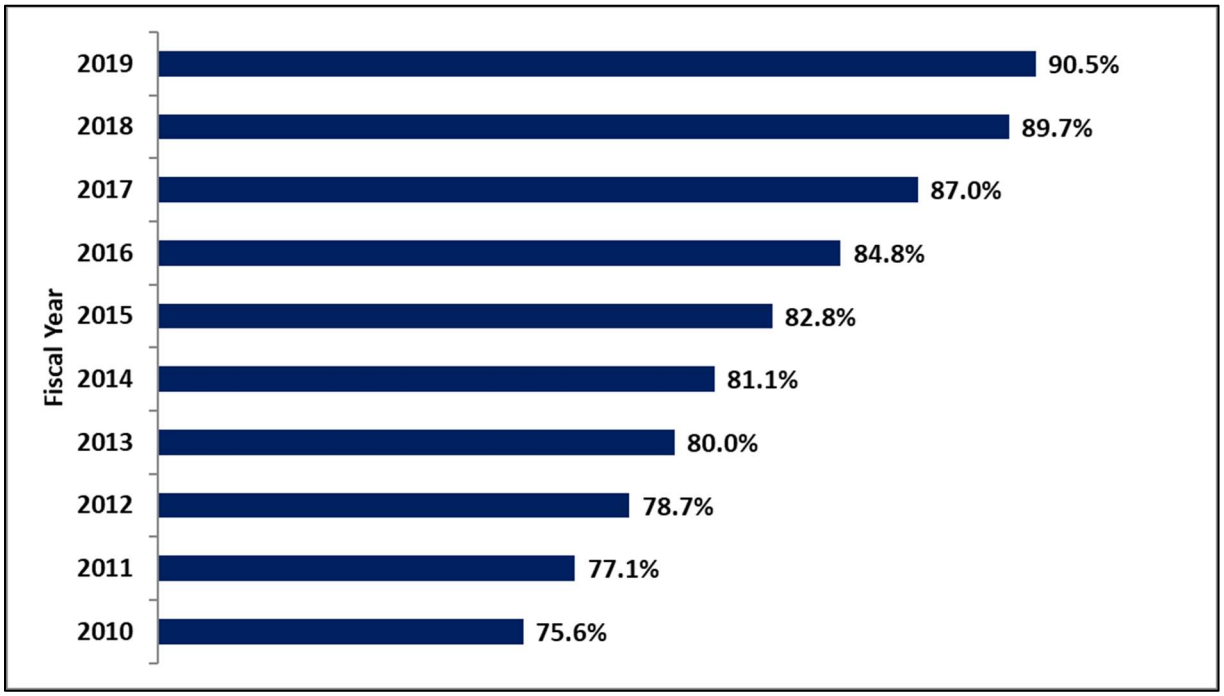
Source: Unaudited toll revenue data provided by CFX

6.3 ETC Usage

The percent of paid in-lane revenues collected from ETC over the past ten fiscal years on S.R. 429 are shown in **Figure 6-11**. PBP revenues are not included. Over this time, ETC revenues have steadily increased on the facility. In FY 2010, ETC revenues totaled 75.6 percent of total revenues. By the end of FY 2019, ETC revenues reached 90.5 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 especially with implementation of PBP toll rates that will be twice the ETC toll rate beginning in July 2020 (FY 2021).

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). The program was expanded with the opening of a second Reload Lane at the John Young Main Plaza on S.R. 417 in March 2017 and a third location at the Forest Lake Main Plaza on S.R. 429 in May 2017. 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 6-11
S.R. 429 Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

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 2.22 percent in FY 2020 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 6-4**. 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 area of West Orange County are actively constructing, specifically near the Schofield Road and New Independence Parkway Interchanges. Growth in this part of Orange County is reflected in the T&R forecast for the Independence Main Plaza Group.

Table 6-4
S.R. 429 - Key Transportation Improvements

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 lanes
SR 429	SR 50	SR 414	2025	CFX	Widen to 6-Lanes
Entry Point Blvd	Funie Steed Rd	US 192	2035	Osceola County	Widen to 4 Lanes
Funie Steed Rd	Westside Blvd	Entry Point Blvd	2035	Osceola County	Widen to 4 Lanes
Funie Steed Rd	Entry Point Blvd	Old Lake Wilson Rd (CR 545)	2035	Osceola County	Widen to 4 Lanes
Lake Orange Connector Expressway	US 27	SR 429	2035	CFX	New 4 lane expressway
New Independence Pkwy/Wellness Way	Lake County Line	SR 429	2035	Orange County	New/Widen 4 Lanes
SR 429	CR 535	SR 50	2035	CFX	Widen to 6-Lanes
SR 438/Silver Star Rod	SR 429	Bluford Avenue	2035	FDOT	Widen to 4-lanes
Wekiva Parkway	Mount Plymouth Road	Interstate 4	2035	FDOT	New 4 lane expressway
Avalon Road (CR 545)	Seidel Road	McKinney Road	2045	Orange County	Widen to 4 Lanes
Avalon Road (CR 545)	Tilden Road	Marsh Road	2045	Orange County	Widen to 4 Lanes
Plant Street (SR 438)	9th Street	West Crown Point Rd	2045	FDOT	Widen to 4-lanes
SR 414	Orange County Line	SR 434/Forest City Road	2045	FDOT	Widen to 6-lanes
SR 429	Seidel Road	CR 535	2045	CFX	Widen to 6-Lanes
US 17/92	Pleasant Hill Rd	Portage St	2045	Osceola County/FDOT	Widen to 6-Lanes
US 17-92	Ham Brown Rd	Pleasant Hill Rd	2045	Osceola County/FDOT	Widen to 6-Lanes
US 17-92	Old Tampa Hwy	Poinciana Blvd	2045	Osceola County/FDOT	Widen to 4 Lanes

CFX System improvements including the Wekiva Expressway have improved access and the potential for growth in NW Orange County. The growth potential is also demonstrated by the planned improvements to the CFX System including S.R. 429 from S.R. 50 to S.R. 414 and C.R. 535 to S.R. 50, as well as a planned expansion project, the Lake Orange Connector, between S.R. 429 and U.S. 27 and a new local road, Wellness Way. Planned improvements to the local street system including Silver Star Road, Plant Street and Avalon Road, serve as feeder roads to S.R. 429 and positively impact T&R in the near term and long-term forecasts.

Transaction and toll revenue forecasts for S.R. 429 are summarized in **Table 6-5** and **Table 6-6**. The tables are divided into paid in-lane transactions and revenue and PBP transactions and revenue. Paid in-lane transactions and revenue by plaza group include ETC and cash collection. PBP is only reported as a total on the facility level.

The paid in-lane transactions on S.R. 429 are expected to grow 4.2 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to decrease an average of 1.7 percent per year through FY 2029 and then increase slowly through the forecast period. Total transactions on S.R. 429 are projected to increase during the forecast period from the actual of 62.6 million in FY 2019 to 129.5 million in FY 2049. The paid in-lane revenues on S.R. 429 are projected to increase over the forecast period, from the FY 2019 actual of $66.7 million to $198.8 million in FY 2049. PBP revenues are projected to increase from $6.9 million in FY 2019 to $20.7 million in FY 2049. Total revenues are projected to increase over the forecast period from the actual of $73.6 million in FY 2019 to $219.5 million in FY 2049. Of this increase, a total of $6.4 million in FY 2020 increasing to $34.2 million in FY 2049 is expected to be collected at the two Wekiva Parkway toll plazas on S.R. 429.

Table 6-5
S.R. 429 Plaza Groups – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Forest Lake Main	Independence Main	Ponkan Main	Mount Plymouth Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	13.0	12.0			25.0	0.2	25.2	
2011		13.4	12.5			25.9	0.3	26.2	4.0%
2012		13.6	12.8			26.4	0.4	26.8	2.3%
2013[A]		14.2	13.0			27.2	0.5	27.7	3.4%
2014		16.1	14.6			30.7	0.6	31.3	13.0%
2015		18.3	16.9			35.2	0.9	36.1	15.4%
2016		21.4	19.8			41.2	1.3	42.5	17.6%
2017[B]		23.4	22.1			45.5	1.6	47.1	10.9%
2018[C,D]		24.4	23.9	3.0	0.4	51.7	2.0	53.7	14.0%
2019[E]		25.7	25.5	4.9	1.5	57.6	5.0	62.6	16.6%
2020	Forecast	27.1	26.9	5.6	1.6	61.2	6.5	67.7	8.1%
2021[F]		29.4	28.9	6.2	2.1	66.6	4.3	70.9	4.7%
2022[G]		31.0	30.0	6.8	2.5	70.3	3.4	73.7	3.9%
2023		32.1	30.9	7.1	3.0	73.1	3.5	76.6	3.9%
2024		32.9	31.8	7.5	3.4	75.6	3.7	79.3	3.5%
2025		33.6	32.8	7.9	3.8	78.1	3.8	81.9	3.3%
2026		34.2	33.7	8.2	4.2	80.3	3.9	84.2	2.8%
2027		34.7	34.7	8.6	4.6	82.6	4.0	86.6	2.9%
2028		35.3	35.6	9.0	5.1	85.0	4.1	89.1	2.9%
2029		35.8	36.5	9.3	5.5	87.1	4.2	91.3	2.5%
2030		36.3	37.4	9.7	5.9	89.3	4.4	93.7	2.6%
2031		36.8	38.3	10.1	6.3	91.5	4.4	95.9	2.3%
2032		37.2	39.1	10.4	6.8	93.5	4.5	98.0	2.2%
2033		37.7	40.0	10.8	7.2	95.7	4.7	100.4	2.4%
2034		38.1	40.8	11.2	7.6	97.7	4.8	102.5	2.1%
2035		38.6	41.5	11.5	8.0	99.6	4.9	104.5	2.0%
2036		39.0	42.3	11.9	8.4	101.6	4.9	106.5	1.9%
2037		39.4	43.0	12.3	8.9	103.6	5.0	108.6	2.0%
2038		39.8	43.7	12.6	9.3	105.4	5.2	110.6	1.8%
2039		40.2	44.4	13.0	9.7	107.3	5.3	112.6	1.8%
2040		40.6	45.0	13.4	10.1	109.1	5.3	114.4	1.6%
2041		41.0	45.6	13.7	10.5	110.8	5.4	116.2	1.6%
2042		41.4	46.2	14.1	11.0	112.7	5.5	118.2	1.7%
2043		41.7	46.7	14.4	11.4	114.2	5.7	119.9	1.4%
2044		42.1	47.2	14.8	11.8	115.9	5.7	121.6	1.4%
2045		42.4	47.7	15.2	12.2	117.5	5.8	123.3	1.4%
2046		42.8	48.1	15.5	12.6	119.0	5.8	124.8	1.2%
2047		43.1	48.5	15.9	13.1	120.6	5.9	126.5	1.4%
2048		43.4	48.8	16.3	13.5	122.0	6.0	128.0	1.2%
2049		43.7	49.1	16.6	13.9	123.3	6.2	129.5	1.2%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	7.9%	8.7%			9.7%	43.0%	10.6%
2019 - 2029	3.4%	3.7%	6.6%	13.9%	4.2%	-1.7%	3.8%
2029 - 2039	1.2%	2.0%	3.4%	5.8%	2.1%	2.4%	2.1%
2039 - 2049	0.8%	1.0%	2.5%	3.7%	1.4%	1.6%	1.4%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemw ide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018.
D - Effects from Hurricane Irma in September 2017.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

Table 6-6
S.R. 429 Plaza Groups – Toll Revenue Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Forest Lake Main	Independence Main	Ponkan Main	Mount Plymouth Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	$13.7	$9.8			$23.5	$0.1	$23.6	
2011		$14.1	$10.3			$24.4	$0.2	$24.6	4.2%
2012		$14.2	$10.7			$24.9	$0.3	$25.2	2.4%
2013[A]		$17.1	$12.3			$29.4	$0.4	$29.8	18.3%
2014		$19.5	$14.0			$33.5	$0.6	$34.1	14.4%
2015		$22.1	$16.8			$38.9	$0.8	$39.7	16.5%
2016		$26.0	$20.1			$46.0	$1.4	$47.4	19.4%
2017[B]		$28.4	$23.3			$51.7	$2.0	$53.7	13.2%
2018[C,D]		$29.6	$25.8	$2.6	$0.3	$58.3	$2.5	$60.8	13.2%
2019[E]		$32.1	$29.1	$4.2	$1.3	$66.7	$6.9	$73.6	21.1%
2020	Forecast	$34.7	$31.6	$4.9	$1.5	$72.7	$9.3	$82.0	11.4%
2021[F]		$38.1	$34.3	$5.6	$2.1	$80.1	$10.3	$90.4	10.2%
2022[G]		$40.8	$36.1	$6.2	$2.6	$85.7	$8.1	$93.8	3.8%
2023		$42.6	$37.7	$6.7	$3.0	$90.0	$8.5	$98.5	5.0%
2024		$44.3	$39.3	$7.1	$3.5	$94.2	$8.9	$103.1	4.7%
2025		$45.8	$40.9	$7.6	$4.0	$98.3	$9.4	$107.7	4.5%
2026		$47.2	$42.6	$8.1	$4.4	$102.3	$9.7	$112.0	4.0%
2027		$48.5	$44.4	$8.6	$4.9	$106.4	$10.2	$116.6	4.1%
2028		$49.9	$46.1	$9.0	$5.4	$110.4	$10.6	$121.0	3.8%
2029		$51.3	$47.9	$9.5	$5.8	$114.5	$11.0	$125.5	3.7%
2030		$52.6	$49.6	$10.0	$6.3	$118.5	$11.5	$130.0	3.6%
2031		$54.0	$51.4	$10.5	$6.7	$122.6	$11.9	$134.5	3.5%
2032		$55.4	$53.2	$11.0	$7.2	$126.8	$12.3	$139.1	3.4%
2033		$56.8	$55.1	$11.4	$7.7	$131.0	$12.8	$143.8	3.4%
2034		$58.2	$56.9	$11.9	$8.1	$135.1	$13.2	$148.3	3.1%
2035		$59.7	$58.7	$12.4	$8.6	$139.4	$13.8	$153.2	3.3%
2036		$61.1	$60.5	$12.9	$9.1	$143.6	$14.2	$157.8	3.0%
2037		$62.6	$62.4	$13.3	$9.5	$147.8	$14.6	$162.4	2.9%
2038		$64.0	$64.2	$13.8	$10.0	$152.0	$15.1	$167.1	2.9%
2039		$65.5	$66.1	$14.3	$10.5	$156.4	$15.6	$172.0	2.9%
2040		$67.0	$67.9	$14.8	$10.9	$160.6	$16.1	$176.7	2.7%
2041		$68.6	$69.7	$15.2	$11.4	$164.9	$16.6	$181.5	2.7%
2042		$70.1	$71.5	$15.7	$11.9	$169.2	$17.1	$186.3	2.6%
2043		$71.6	$73.3	$16.2	$12.3	$173.4	$17.5	$190.9	2.5%
2044		$73.2	$75.1	$16.7	$12.8	$177.8	$18.1	$195.9	2.6%
2045		$74.8	$76.8	$17.1	$13.2	$181.9	$18.7	$200.6	2.4%
2046		$76.3	$78.6	$17.6	$13.7	$186.2	$19.2	$205.4	2.4%
2047		$77.9	$80.2	$18.1	$14.2	$190.4	$19.7	$210.1	2.3%
2048		$79.5	$81.9	$18.6	$14.6	$194.6	$20.1	$214.7	2.2%
2049		$81.1	$83.5	$19.1	$15.1	$198.8	$20.7	$219.5	2.2%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)						
2010 - 2019	9.9%	12.9%			12.3%	60.1%	13.5%
2019 - 2029	4.8%	5.1%	8.5%	16.1%	5.6%	4.8%	5.5%
2029 - 2039	2.5%	3.3%	4.2%	6.1%	3.2%	3.6%	3.2%
2039 - 2049	2.2%	2.4%	2.9%	3.7%	2.4%	2.9%	2.5%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemwide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Ponkan Main plaza opened on July 27, 2017 and Mount Plymouth Main opened on April 1, 2018.
D - Effects from Hurricane Irma in September 2017.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

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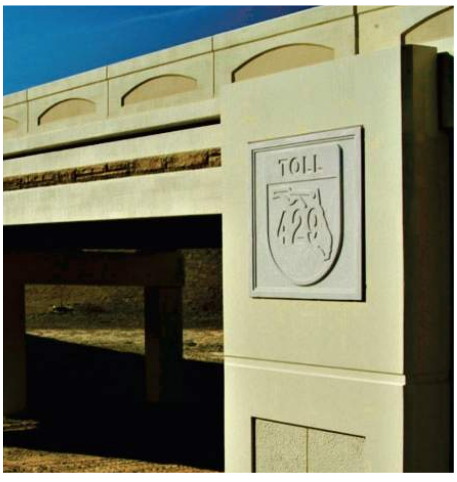
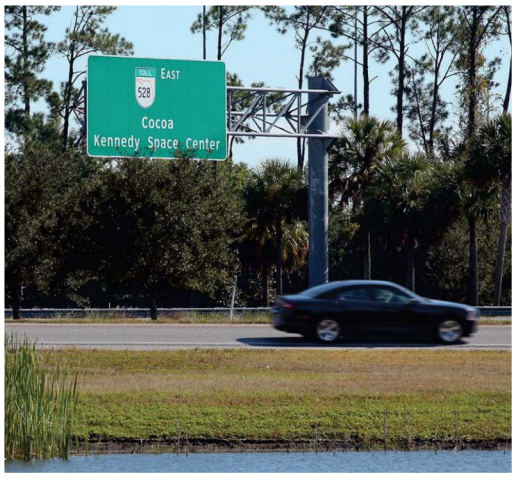
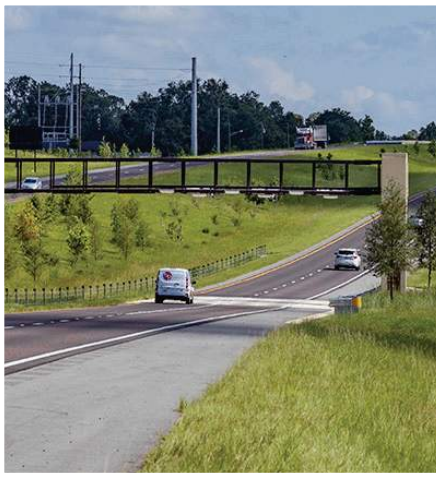
CHAPTER 7

S.R. 414

(JOHN LAND APOPKA EXPRESSWAY)







S.R. 414 (JOHN LAND APOPKA EXPRESSWAY)

7.1 Facility Description

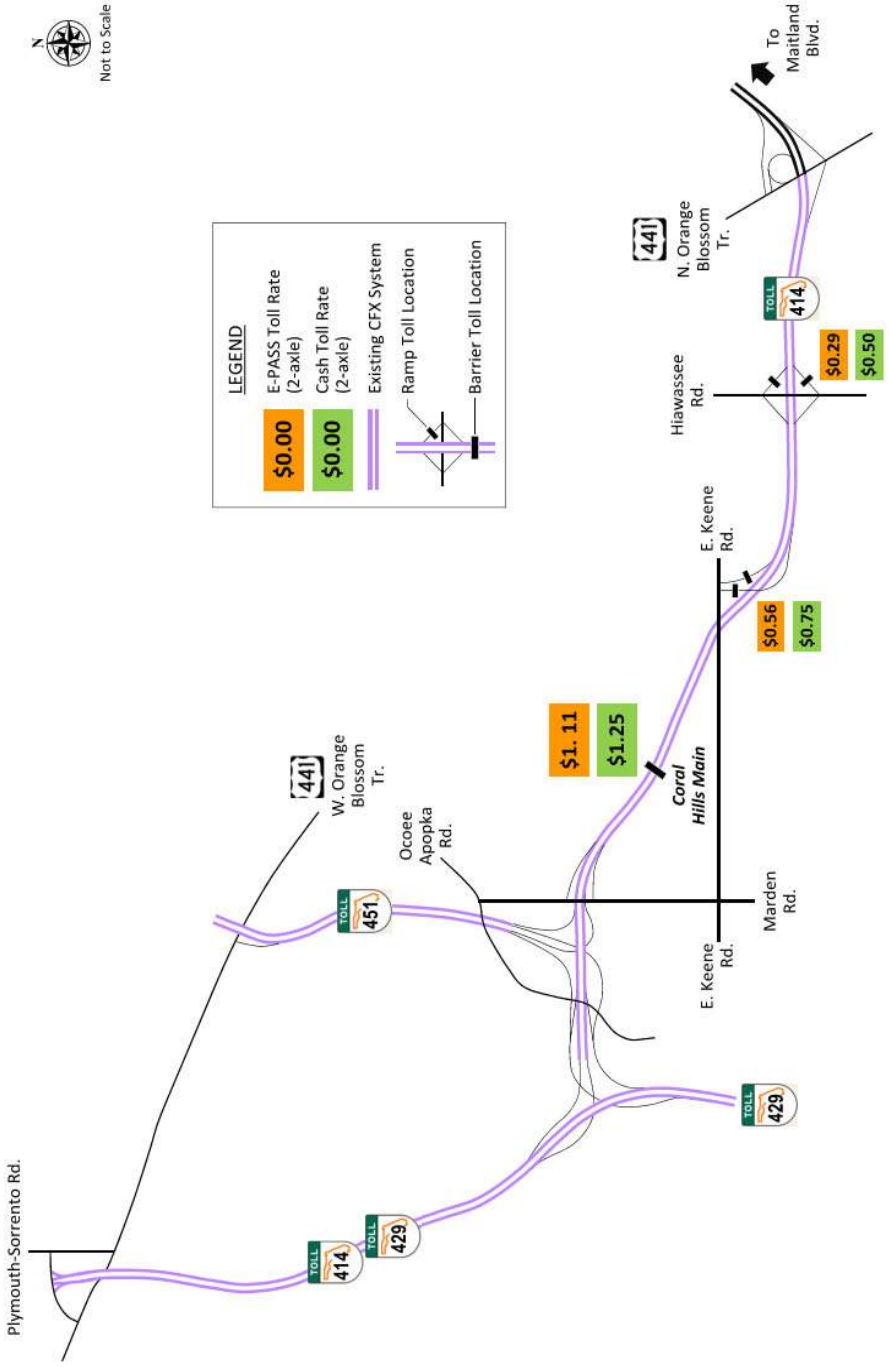
S.R. 414, also known as the John Land Apopka Expressway, is a 9-mile expressway that extends east from S.R. 429 to Maitland Boulevard at U.S. 441 (N. Orange Blossom Trail). Three of these miles are part of a dual route with S.R. 429. This long-awaited expressway improved access between S.R. 429, I-4 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 consists of the Coral Hills Main plaza group. The plaza group has two pairs of ramp toll plazas at the Keene Road and the Hiawassee Road interchanges. Other existing interchanges include S.R. 429, Marden Road, S.R. 451 and U.S. 441/Orange Blossom Trail. A map of S.R. 414 including the FY 2019 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 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 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 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 and nearby land developments.

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



7.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

7.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

A history of S.R. 414 annual paid in-lane transactions for the Coral Hills Main plaza group through FY 2019 is presented in the top half of **Table 7-1**. Annual historical paid in-lane toll revenues are 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**. These historical tables do not include PBP transactions and revenues, only those that are paid in-lane. For this reason, the information presented in this section may differ slightly from the data presented in the FY 2019 Comprehensive Annual Financial Report (CAFR) and other information in this report.

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. Tolls were suspended on the CFX System beginning at 8:00 p.m. on October 5, 2016 through early on October 10, 2016. The toll suspension resulted in a loss of approximately 0.1 million in transactions and $0.1 million in toll revenues on S.R. 414. In September 2017 (FY 2018), Hurricane Irma tracked parallel to the Florida coast as a Category 4 storm with winds up to 155 miles per hour. Tolls were suspended on CFX toll facilities beginning on September 5, 2017 through September 20, 2017 resulting in a transaction loss of approximately 0.6 million and a revenue loss of $0.6 million on S.R. 414.

Total paid in-lane transactions on S.R. 414 in FY 2019 increased by 0.5 million transactions, or 3.7 percent, over FY 2018. Paid in-lane toll revenues increased by $0.8 million, or 5.8 percent, in the same year. The slower growth in paid in-lane transactions and revenues in FY 2019 can be attributed to an increase in customers utilizing the PBP program. The facility has only been open for 10 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 both the FY 2013 and FY 2019 Systemwide toll rate increase. This facility is expected to continue experiencing growth due to the recent opening of the Wekiva Parkway (S.R. 429).

Table 7-1
S.R. 414 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2009 – FY 2019

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%
2018 [D]	13.4	4.7%
2019 [E]	13.9	3.7%
	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%
2018 [D]	$13.8	6.2%
2019 [E]	$14.6	5.8%

Notes:

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

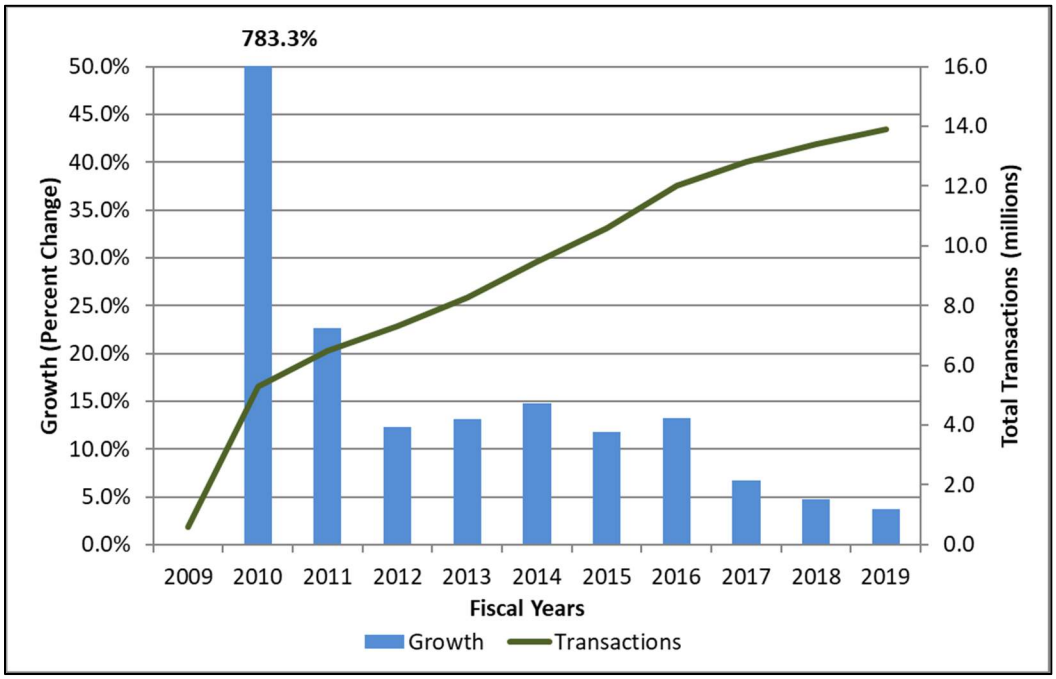
B - Systemwide toll rate increase in July 2013. Implementation of cash and electronic toll rate differential. Extension of S.R. 414 to U.S. 441 opened in January 2013.

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

D - Effects from Hurricane Irma in September 2017.

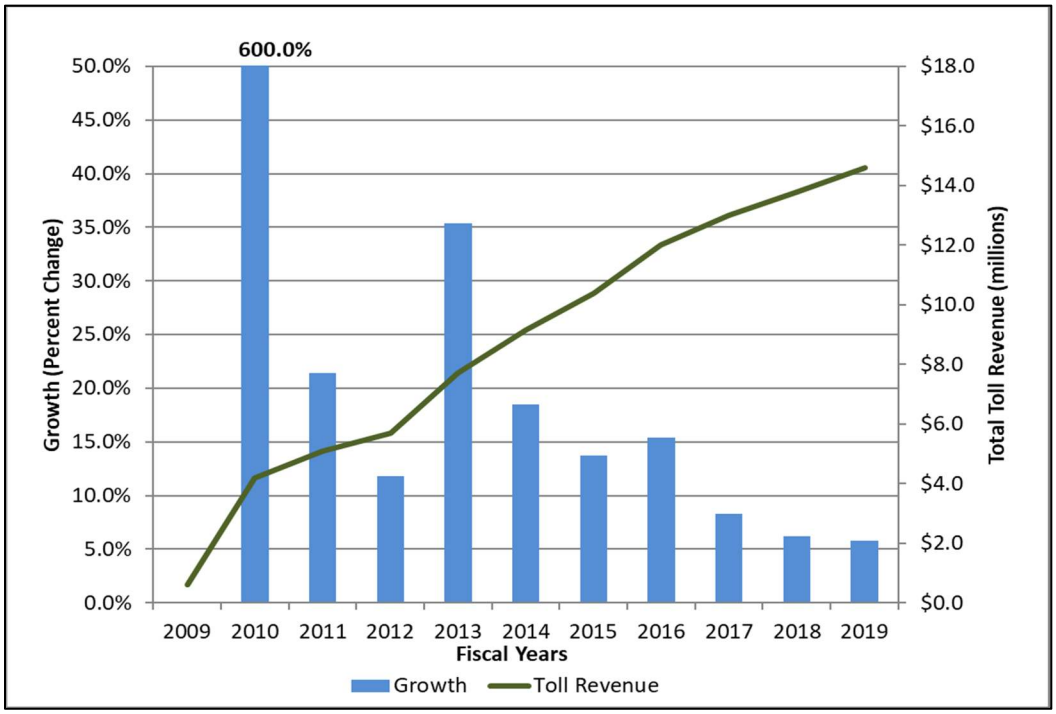
E - Systemwide toll rate increase in July 2018.

Figure 7-2
S.R. 414 Historical Paid In-Lane Transactions and Annual Growth
FY 2009 – FY 2019



Source: CFX Statistical Report June 2019

Figure 7-3
S.R. 414 Historical Paid In-Lane Revenue and Annual Growth
FY 2009 – FY 2019



Source: CFX Statistical Report June 2019

7.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 414 from FY 2010 to FY 2019 are presented in **Table 3-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 3-2 shows the annual totals for S.R. 414 as reported at year end.

Table 7-2
S.R. 414 – Historical PBP Transactions and Toll Revenues
FY 2010 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2010	0.0		$0.0	
2011	0.1	0.0%	$0.1	0.0%
2012	0.1	0.0%	$0.1	0.0%
2013	0.1	0.0%	$0.1	0.0%
2014	0.2	100.0%	$0.2	100.0%
2015	0.3	50.0%	$0.3	50.0%
2016	0.4	33.3%	$0.4	33.3%
2017	0.4	0.0%	$0.6	50.0%
2018	0.7	75.0%	$0.7	16.7%
2019	1.3	85.7%	$1.5	114.3%

Source: Unaudited data provided by CFX

PBP transactions have increased from 0.0 in FY 2010 to 1.3 million in FY 2019, while PBP revenues have increased from $0 to $1.5 million over the same period. In FY 2019, PBP transactions increased 85.7 percent and PBP revenues increased 114.3 percent over FY 2018. This significant increase in PBP transactions and revenues in FY 2019 contributed to the slower growth in paid in-lane transactions and revenues compared to FY 2018. More customers chose the PBP method of payment over ETC and cash. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

7.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 7-3**, monthly paid in-lane transactions are normalized to average number of paid in-lane transactions per day in each month. Using average number of paid in-lane 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.

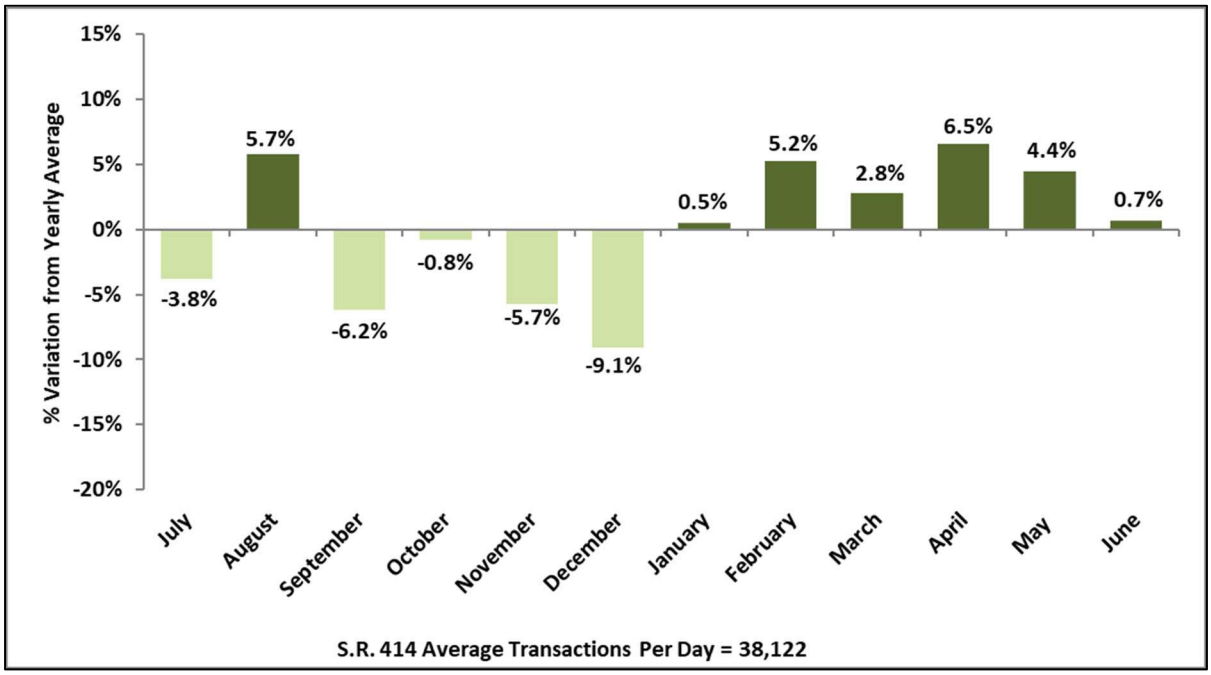
As presented, average paid in-lane transactions per day in FY 2019 on S.R. 414 ranged from a high of 40,599 in April 2019 to a low of 34,665 in December 2018. Like other CFX facilities, peak season is during spring months as there are more tourists in the area (possibly snowbirds) during the second half of the fiscal year. This data is presented in a graphical format in **Figure 7-4**. Each month's average paid in-lane transactions per day appear as a percentage of the average for the fiscal year. April paid in-lane transactions were 6.5 percent above average and December paid in-lane transactions were 9.1 percent below average for the facility. These numbers reflect a combination of continued growth and seasonal variation.

Table 7-3
S.R. 414 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	1,137,152	36,682	0.962
August	31	1,249,616	40,310	1.057
September	30	1,073,297	35,777	0.938
October	31	1,172,824	37,833	0.992
November	30	1,078,651	35,955	0.943
December	31	1,074,620	34,665	0.909
January	31	1,187,566	38,309	1.005
February	28	1,122,931	40,105	1.052
March	31	1,214,575	39,180	1.028
April	30	1,217,971	40,599	1.065
May	31	1,234,201	39,813	1.044
June	30	1,151,177	38,373	1.007
Average		***1,159,548***	***38,122***	***1.000***
Total Year	**365**	**13,914,581**		

Source: CFX Statistical Report June 2019

Figure 7-4
S.R. 414 Variation in Paid In-Lane Transactions Per Day, by Month
FY 2019



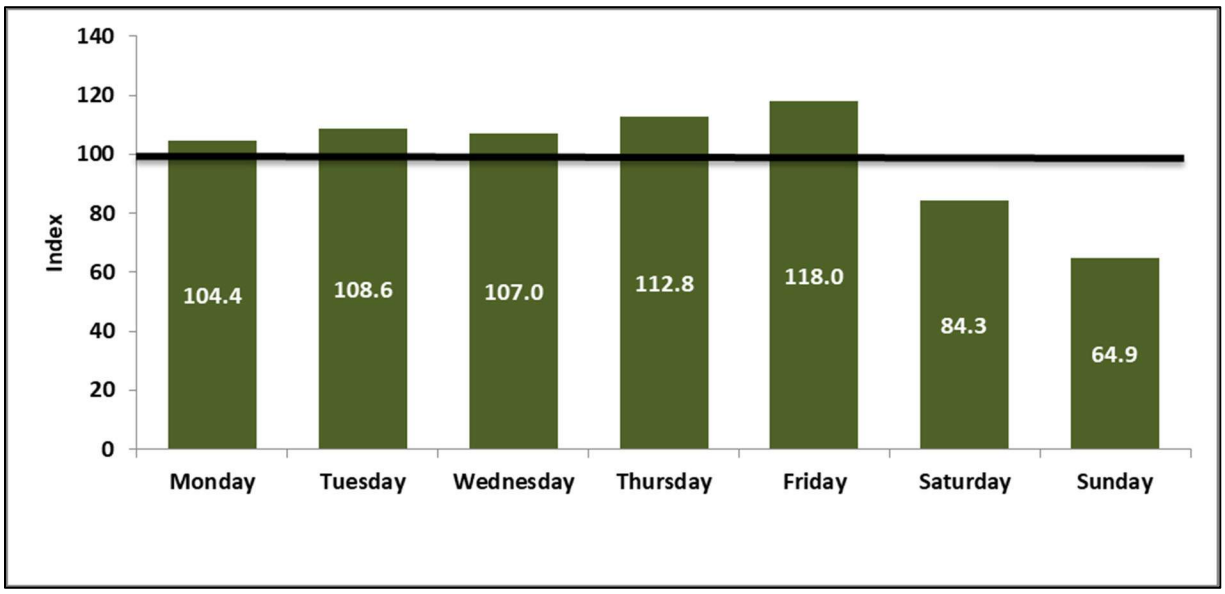
Source: CFX Statistical Report June 2019

7.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 7-5 contains a comparison of transactions by day of week for FY 2019. This data is presented as an index, where the average day equals 100. An index value of 100 would indicate that a day's transactions were precisely the same as the facility average. A value of 120 would indicate a day that has 20 percent greater volume than the average. 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 grew over the course of the week. Transactions were highest on Fridays, with an index value of 118.0 (18.0 percent higher than the average day), volumes on Thursdays had an index value of 112.8, and volumes on Monday through Wednesday ranged from index values of 104.4 to 108.6. Transactions decline significantly on Saturdays and Sundays, which have index values of 84.3 and 64.9, or 15.7 and 35.1 percent lower than the average day. This is lower than other CFX facilities probably due to employers in Maitland Center at east end of S.R. 414 being closed on weekends.

Figure 7-5
S.R. 414 Variation in Transactions, by Day of Week
FY 2019



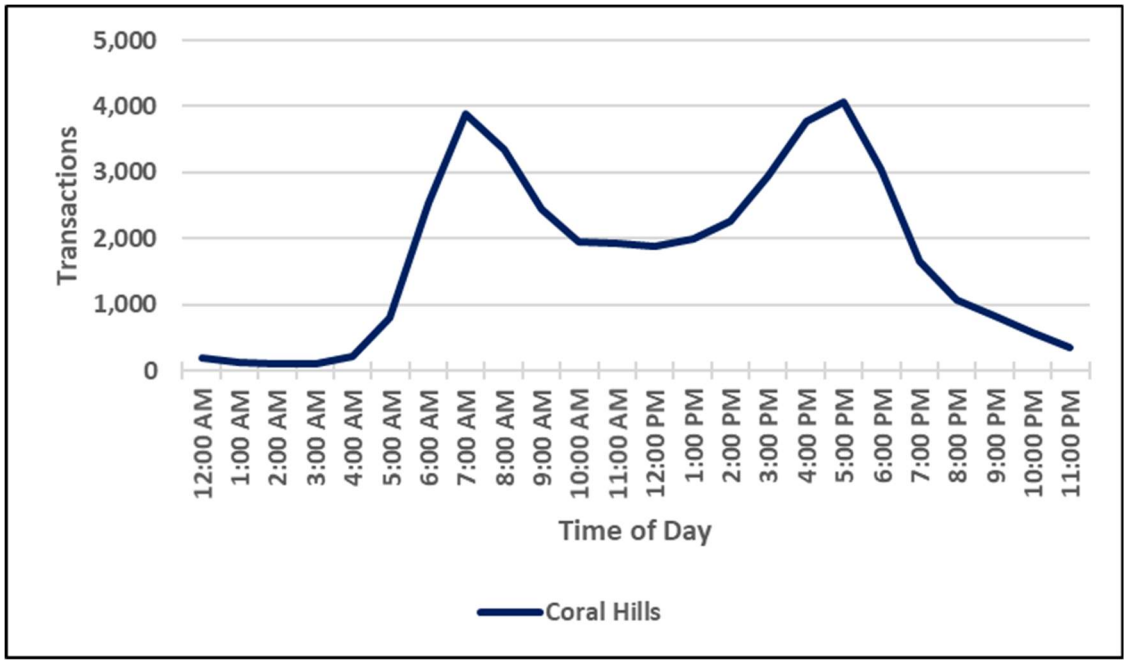
Source: Unaudited lane transaction data – February 2019

7.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic includes information on the usage characteristics of travel on the facility. The hourly distributions represent counts taken during a typical week at the mainline plaza in the month of February. 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, travel demand at the Coral Hills plaza is bimodal, with both morning and evening peak hours. Traffic volumes in the evening peak hours are only slightly higher than in the morning peak hours. The highest peak hour volumes during the week were 4,100 per hour beginning at 5:00 P.M. On weekends, traffic volumes are lower and unimodal.

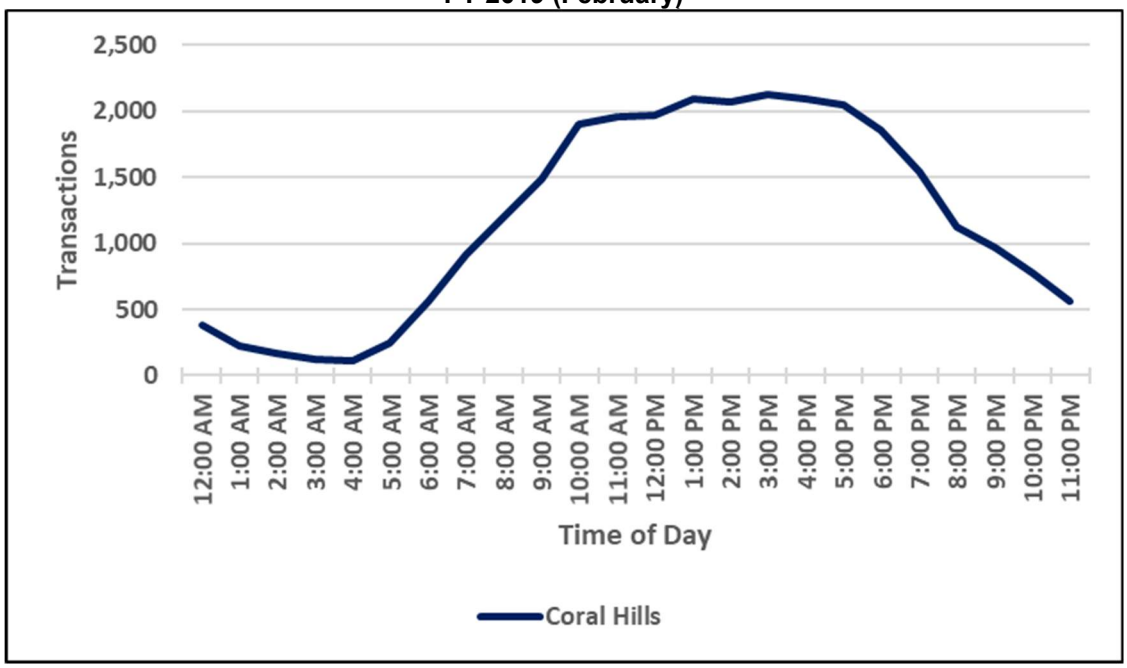
There is no clear morning or evening peak periods, indicating that many customers use the facility for non-work trip purposes. This weekend pattern is typical of the weekend usage of CFX facilities.

Figure 7-6
S.R. 414 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 7-7
S.R. 414 Hourly Traffic Variation (Weekend)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

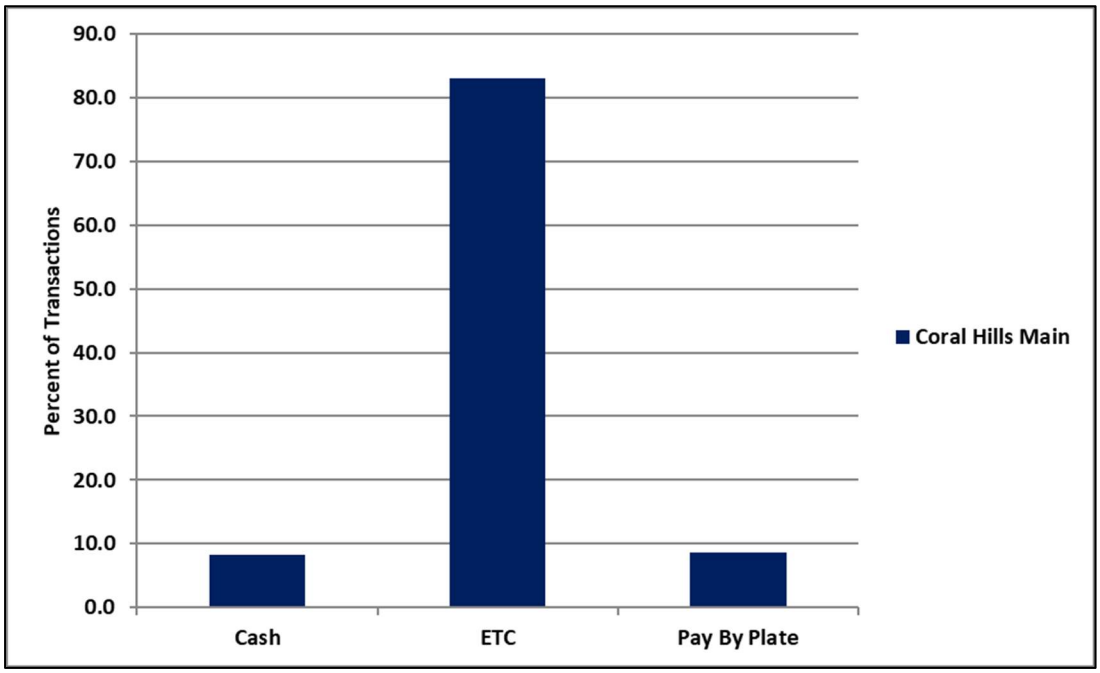
7.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

The distribution of transactions and revenue by payment type for the Coral Hills Main plaza group during FY 2019 is presented in **Figure 7-8** and **Figure 7-9**. Payment types can be classified in one of three ways: cash, ETC, and PBP. As defined in Chapter 1 of this report, paid in-lane transactions and revenue include cash and ETC payments made when a customer drives through a CFX toll location. The remaining transactions and revenue are classified as unpaid in-lane, which includes PBP and a small portion of non-revenue transactions. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

As shown in Figure 7-8, the percent of ETC transactions at the Coral Hills Main plaza group accounted for 83.0 percent, cash transactions accounted for 8.3 percent, and the remaining 8.6 percent were PBP transactions.

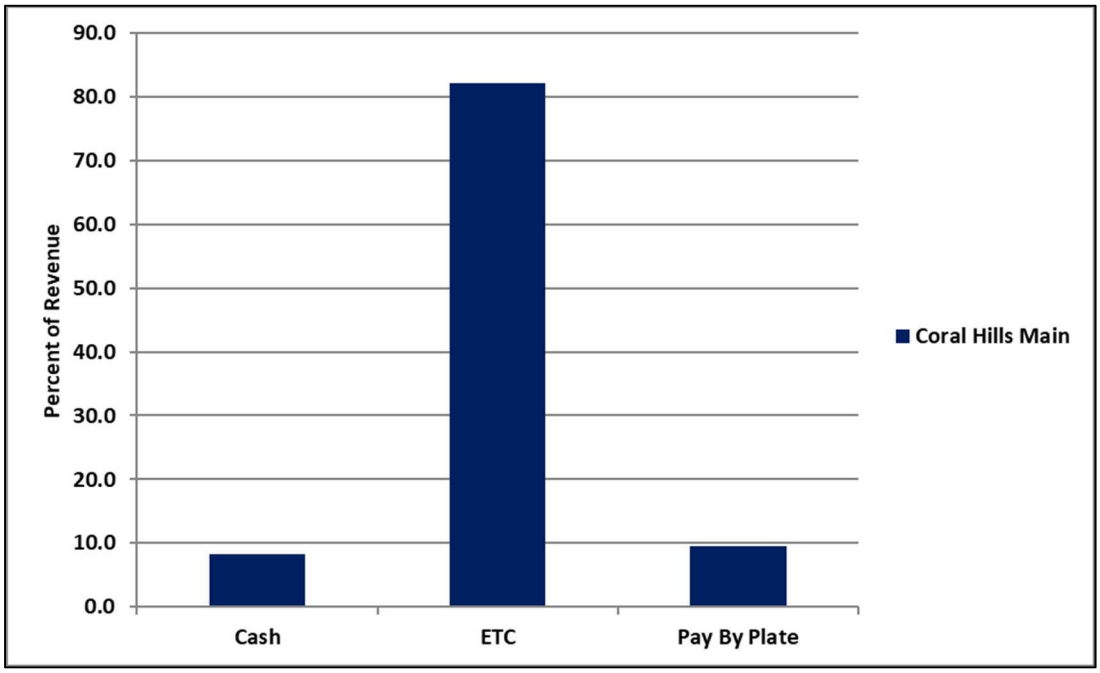
As shown in Figure 7-9, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues accounted for 82.2 percent of toll revenues at the Coral Hills Main plaza group, cash toll revenues accounted for 8.3 percent, and the remaining 9.5 percent were PBP toll revenues.

Figure 7-8
S.R. 414 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 7-9
S.R. 414 Percent of Revenue by Payment Type
FY 2019



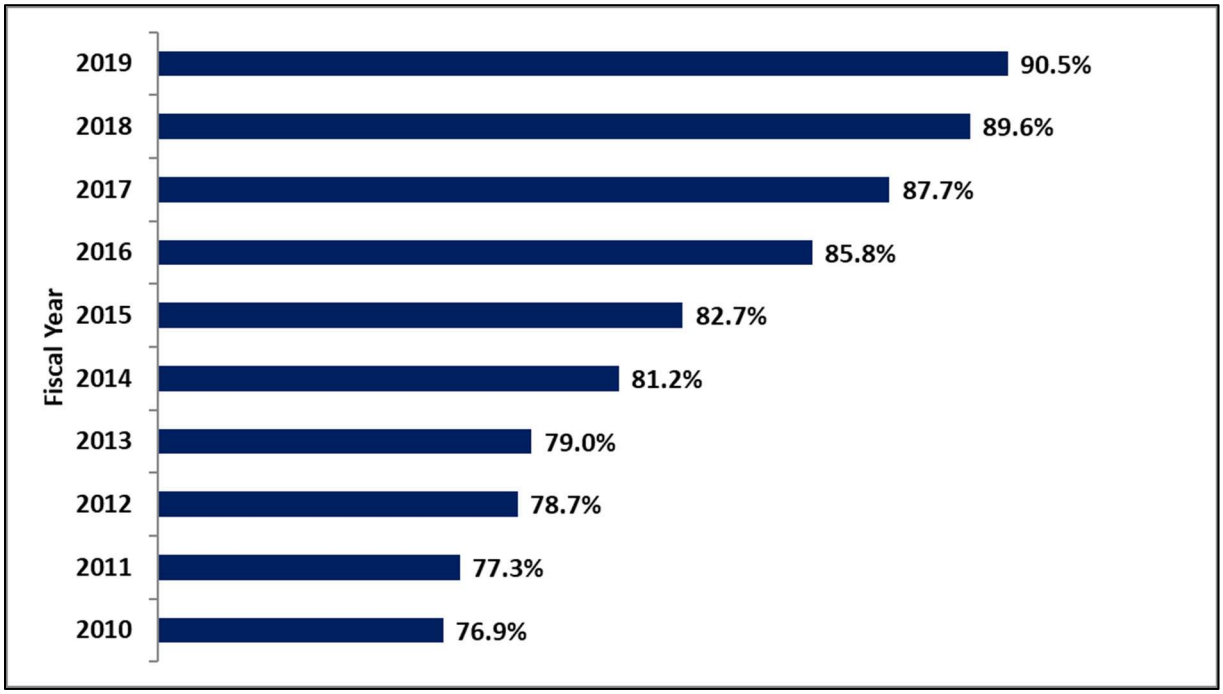
Source: Unaudited toll revenue data provided by CFX

7.3 ETC Usage

The percent of paid in-lane revenues generated from ETC over the past ten fiscal years on S.R. 414 is shown in **Figure 7-10**. PBP revenues are not included. ETC revenues were 76.9 percent during FY 2010. By the end of FY 2019, ETC revenues have reached 90.5 percent of facility paid in-lane revenues. ETC usage is still expected to increase as customers shift to ETC to take advantage of the lower ETC toll rate and the convenience of paying tolls electronically, especially with the implementation of the PBP toll rates that will be twice the ETC toll rate beginning in July 2020 (FY 2021).

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 7-10
S.R. 414 Percent of Paid In-Lane Revenue from Electronic Toll Collection
FY 2010 – FY 2019



Source: CFX Statistical Report June 2019

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 2.22 percent in FY 2020 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 7-4**, assumed to be completed in each horizon year.

In addition to the Wekiva Parkway, the major improvements that do not directly connect to S.R. 414 but influence traffic growth on the facility include the I-4 Ultimate project, S.R. 434/Forest City Road from Edgewater Drive to S.R. 414/Maitland Boulevard, and S.R. 414/Maitland Boulevard from Maitland Avenue to I-4. 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 7-4
S.R. 414 - Key Transportation Improvements

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 lanes
SR 434/Forest City Road	Edgewater Drive	Orange County Line	2025	FDOT	Widen to 6-lanes
SR 414/Maitland Blvd	Interstate 4	Maitland Avenue	2025	FDOT	Widen to 6-lanes
SR 434	SR 436	Montgomery Road	2035	FDOT	Widen to 6-lanes
SR 414 Direct Connect	US 441	SR 434/Forest City Road	2045	FDOT/CFX	New 4-lane expressway

Historical and projected transactions and toll revenues for S.R. 414 are summarized in **Table 7-5** and **Table 7-6**. The tables are divided into paid in-lane transactions and revenue and PBP transactions and revenue. Paid in-lane transactions and revenue by plaza group include ETC and cash collection.

The paid in-lane transactions on S.R. 414 are expected to grow 3.1 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to decline an average of 1.7 percent per year through FY 2029 and then increase through the forecast period. Total transactions on S.R. 414 are projected to increase during the forecast period from the actual of 15.2 million in FY 2019 to 24.9 million in FY 2049. The paid in-lane revenues on S.R. 414 are projected to increase over the forecast period, from the FY 2019 actual of $14.6 million to $37.0 million in FY 2049. PBP revenues are projected to increase from $1.5 million in FY 2019 to $4.7 million in FY 2049. Total revenues on S.R. 414 are projected to increase during the forecast period from the actual $16.1 million in FY 2019 to $41.7 million in FY 2049. 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 2.7 and 4.6 percent per year through FY 2029, 1.4 and 2.7 percent per year from FY 2029 to FY 2039, and 0.9 and 2.3 percent per year from FY 2039 to FY 2049, respectively.

Table 7-5
S.R. 414 Plaza Groups – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Coral Hills Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	5.3	5.3	0.0	5.3	
2011		6.5	6.5	0.1	6.6	24.5%
2012		7.3	7.3	0.1	7.4	12.1%
2013[A]		8.3	8.3	0.1	8.4	13.5%
2014		9.5	9.5	0.2	9.7	15.5%
2015		10.6	10.6	0.3	10.9	12.4%
2016		12.0	12.0	0.4	12.4	13.8%
2017[B]		12.8	12.8	0.4	13.2	6.5%
2018[C,D]		13.4	13.4	0.7	14.1	6.8%
2019[E]		13.9	13.9	1.3	15.2	7.8%
2020	Forecast	14.6	14.6	1.7	16.3	7.2%
2021[F]		15.7	15.7	1.2	16.9	3.7%
2022[G]		16.4	16.4	1.0	17.4	3.0%
2023		16.8	16.8	1.0	17.8	2.3%
2024		17.2	17.2	1.0	18.2	2.2%
2025		17.5	17.5	1.1	18.6	2.2%
2026		17.8	17.8	1.1	18.9	1.6%
2027		18.2	18.2	1.1	19.3	2.1%
2028		18.5	18.5	1.1	19.6	1.6%
2029		18.8	18.8	1.1	19.9	1.5%
2030		19.1	19.1	1.2	20.3	2.0%
2031		19.4	19.4	1.2	20.6	1.5%
2032		19.7	19.7	1.2	20.9	1.5%
2033		20.0	20.0	1.2	21.2	1.4%
2034		20.2	20.2	1.2	21.4	0.9%
2035		20.5	20.5	1.2	21.7	1.4%
2036		20.8	20.8	1.3	22.1	1.8%
2037		21.0	21.0	1.3	22.3	0.9%
2038		21.3	21.3	1.3	22.6	1.3%
2039		21.5	21.5	1.3	22.8	0.9%
2040		21.7	21.7	1.3	23.0	0.9%
2041		22.0	22.0	1.3	23.3	1.3%
2042		22.2	22.2	1.3	23.5	0.9%
2043		22.4	22.4	1.4	23.8	1.3%
2044		22.6	22.6	1.4	24.0	0.8%
2045		22.8	22.8	1.4	24.2	0.8%
2046		23.0	23.0	1.4	24.4	0.8%
2047		23.2	23.2	1.4	24.6	0.8%
2048		23.4	23.4	1.4	24.8	0.8%
2049		23.5	23.5	1.4	24.9	0.4%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)			
2010 - 2019	11.3%	11.3%		12.4%
2019 - 2029	3.1%	3.1%	-1.7%	2.7%
2029 - 2039	1.4%	1.4%	1.7%	1.4%
2039 - 2049	0.9%	0.9%	0.7%	0.9%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemwide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Effects from Hurricane Irma in September 2017.
D - Wekiva Parkway opening in FY 2018.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

Table 7-6
S.R. 414 Plaza Groups – Toll Revenue Projections (Millions)
FY 2020 – FY 2049

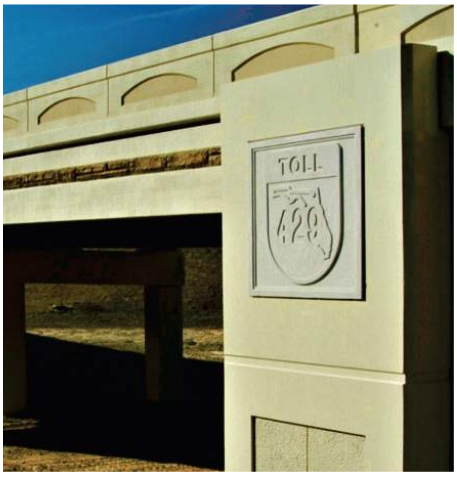
Fiscal Year		Coral Hills Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual	$4.2	$4.2	$0.0	$4.2	
2011		$5.1	$5.1	$0.1	$5.2	23.8%
2012		$5.7	$5.7	$0.1	$5.8	11.5%
2013[A]		$7.7	$7.7	$0.1	$7.8	34.5%
2014		$9.1	$9.1	$0.2	$9.3	19.2%
2015		$10.4	$10.4	$0.3	$10.7	15.1%
2016		$12.0	$12.0	$0.4	$12.4	15.9%
2017[B]		$13.0	$13.0	$0.6	$13.6	9.7%
2018[C,D]		$13.8	$13.8	$0.7	$14.5	6.6%
2019[E]		$14.6	$14.6	$1.5	$16.1	11.0%
2020	Forecast	$15.6	$15.6	$2.0	$17.6	9.3%
2021[F]		$16.9	$16.9	$2.7	$19.6	11.4%
2022[G]		$18.0	$18.0	$2.2	$20.2	3.1%
2023		$18.6	$18.6	$2.3	$20.9	3.5%
2024		$19.3	$19.3	$2.4	$21.7	3.8%
2025		$19.9	$19.9	$2.4	$22.3	2.8%
2026		$20.5	$20.5	$2.5	$23.0	3.1%
2027		$21.2	$21.2	$2.6	$23.8	3.5%
2028		$21.8	$21.8	$2.7	$24.5	2.9%
2029		$22.5	$22.5	$2.8	$25.3	3.3%
2030		$23.1	$23.1	$2.9	$26.0	2.8%
2031		$23.8	$23.8	$3.0	$26.8	3.1%
2032		$24.5	$24.5	$3.1	$27.6	3.0%
2033		$25.2	$25.2	$3.1	$28.3	2.5%
2034		$25.8	$25.8	$3.2	$29.0	2.5%
2035		$26.5	$26.5	$3.3	$29.8	2.8%
2036		$27.3	$27.3	$3.4	$30.7	3.0%
2037		$28.0	$28.0	$3.5	$31.5	2.6%
2038		$28.7	$28.7	$3.6	$32.3	2.5%
2039		$29.4	$29.4	$3.7	$33.1	2.5%
2040		$30.1	$30.1	$3.8	$33.9	2.4%
2041		$30.9	$30.9	$3.9	$34.8	2.7%
2042		$31.6	$31.6	$4.0	$35.6	2.3%
2043		$32.4	$32.4	$4.1	$36.5	2.5%
2044		$33.1	$33.1	$4.2	$37.3	2.2%
2045		$33.9	$33.9	$4.3	$38.2	2.4%
2046		$34.7	$34.7	$4.4	$39.1	2.4%
2047		$35.4	$35.4	$4.5	$39.9	2.0%
2048		$36.2	$36.2	$4.6	$40.8	2.3%
2049		$37.0	$37.0	$4.7	$41.7	2.2%

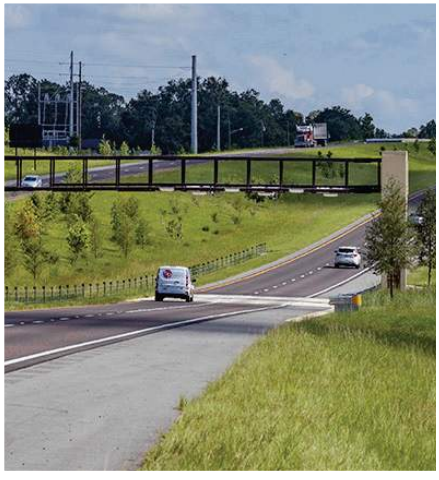
Fiscal Year	Compound Annual Average Growth Rate (CAAGR)			
2010 - 2019	14.8%	14.8%		16.1%
2019 - 2029	4.4%	4.4%	6.4%	4.6%
2029 - 2039	2.7%	2.7%	2.8%	2.7%
2039 - 2049	2.3%	2.3%	2.4%	2.3%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Systemwide toll rate increase.
B - Effects from Hurricane Matthew in October 2016.
C - Effects from Hurricane Irma in September 2017.
D - Wekiva Parkway opening in FY 2018.
E - First year of implementation of "Customer First" toll rate policy.
F - New toll rates for PBP customers, set at 2.0 times the ETC rate.
G - Completion of I-4 Ultimate project.

CHAPTER 8

S.R. 453





S.R. 453

8.1 Facility Description

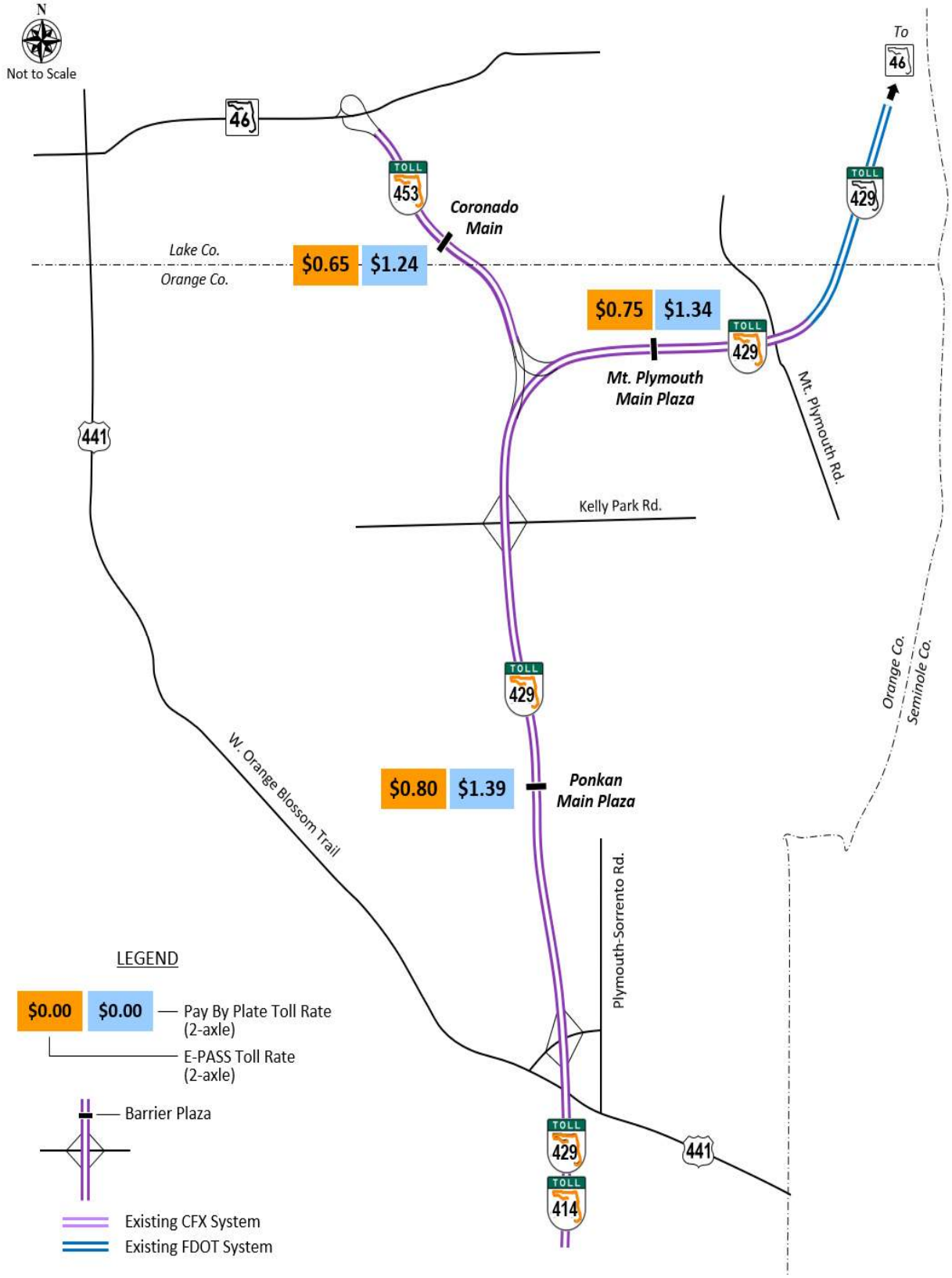
S.R. 453 is a 2.0-mile portion of the CFX System locally known as the Wekiva Parkway, which is a new 27-mile expressway that extends S.R. 429 into northwest Orange, southeast Lake, and east Seminole counties. From a CFX vision in the *Year 2000 Long Range Expressway Plan*, completed in 1983, the CFX portion of the Wekiva Parkway is now finished, with the final section opened on April 1, 2018. The FDOT portions of the project are still under construction and are expected to be fully open in 2022. This long-awaited expressway completes a portion of the Western Beltway around the Orlando metropolitan region.

S.R. 453 provided a 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 opened on April 1, 2018 (FY 2018). A map that includes the CFX portion of the Wekiva Parkway (S.R. 453) with the FY 2019 toll rates for the plaza is shown in **Figure 8-1**.

S.R. 453 is a spur or extension of S.R. 429, locally known as "Mount Dora Connector," is a new S.R. 429 extension that connects to S.R. 46. S.R. 453 runs about 2.2 miles from the Wekiva Parkway, across the Lake County Line to connect to S.R. 46.

Toll collection on the Wekiva Parkway utilizes an all-electronic toll (AET) collection system, i.e., customers are unable to pay cash on the roadway as there are no toll booths, only toll gantries. On the CFX portion of the Wekiva Parkway, customers either pay with E-PASS or other interoperable transponders or through the PBP video billing process. Video billing customers pay the PBP toll rate, which is $0.59 higher than the ETC rate per transaction and is designed to cover the administrative cost of video billing.

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



8.2 Historical Transactions and Toll Revenues

As defined in Chapter 1, CFX transactions and toll revenues are classified as either Paid In-Lane (ETC and cash) or Unpaid In-Lane (PBP and non-revenue). Total transactions are the sum of paid in-lane and unpaid in-lane transactions. Total revenue is the sum of paid in-lane revenue and the revenue collected through PBP, estimated as an accrued amount. The following section includes a breakdown of toll-paying transactions and toll revenues by paid in-lane and PBP.

8.2.1 ANNUAL PAID IN-LANE TRANSACTION AND REVENUE TRENDS

A history of S.R. 453 annual paid in-lane transactions for the Coronado Main plaza group through FY 2019 is presented in the top half of **Table 8-1**. Annual historical paid in-lane toll revenues are also summarized and totaled in the bottom half of the table.

The facility opened on April 1, 2018 (FY 2018), for a total of three months in FY 2018. FY 2019 was the first full year of toll collection. Total paid in-lane transactions on S.R. 453 at the Coronado Main plaza in FY 2019 were 2.2 million and paid in-lane toll revenues during the same period were $1.3 million. S.R. 453 is currently the only facility with a differential toll rate of an additional $0.59 for PBP transactions.

Table 8-1
S.R. 453 Plaza Groups – Historical Paid In-Lane Transactions and Toll Revenues
FY 2018 – FY 2019

Fiscal Year	Coronado Main	
	TRANSACTIONS (millions)	PERCENT CHANGE
2018[A]	0.5	
2019	2.2	340.0%
	TOLL REVENUE (millions)	PERCENT CHANGE
2018[A]	$0.3	
2019	$1.3	333.3%

Notes:
A - Coronado Main plaza opened on April 1, 2018.

8.2.2 ANNUAL PBP TRANSACTION AND REVENUE TRENDS

A history of annual PBP transactions and toll revenues on S.R. 453 from FY 2018 to FY 2019 are presented in **Table 8-2**. PBP transactions and toll revenues are recorded by toll location and accrued monthly by plaza group, however Table 8-2 shows the annual totals for S.R. 453 as reported at year end.

Table 8-2
S.R. 453 – Historical PBP Transactions and Toll Revenues
FY 2018 – FY 2019

Fiscal Year	Transactions (millions)	Percent Change	Toll Revenues (millions)	Percent Change
	TRANSACTIONS (millions)			
2018	0.0		$0.0	
2019	0.2	0.0%	$0.2	0.0%

Source: Unaudited data provided by CFX

PBP transactions have increased to 0.2 million in FY 2019, while PBP revenues have increased to $0.2 million over the same period. The facility still has a small amount of PBP transactions and revenues due to its recent opening in FY 2018 and FY 2019 being the first full year of toll collection. PBP transactions and revenues are expected to decline beginning in FY 2021 due to a new PBP toll rate adopted by the CFX Board that goes into effect on July 1, 2020, at which time the PBP toll rate at all toll locations will be twice the ETC toll rate. Once the new PBP toll rate is implemented, it is anticipated that a portion of customers paying via PBP will switch to paying in the lane through ETC to avoid the higher toll rate.

8.2.3 MONTHLY PAID IN-LANE TRANSACTION SEASONAL VARIATION

In **Table 8-3**, monthly paid in-lane transactions are normalized to average number of paid in-lane transactions per day in each month. Using average number of paid in-lane 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.

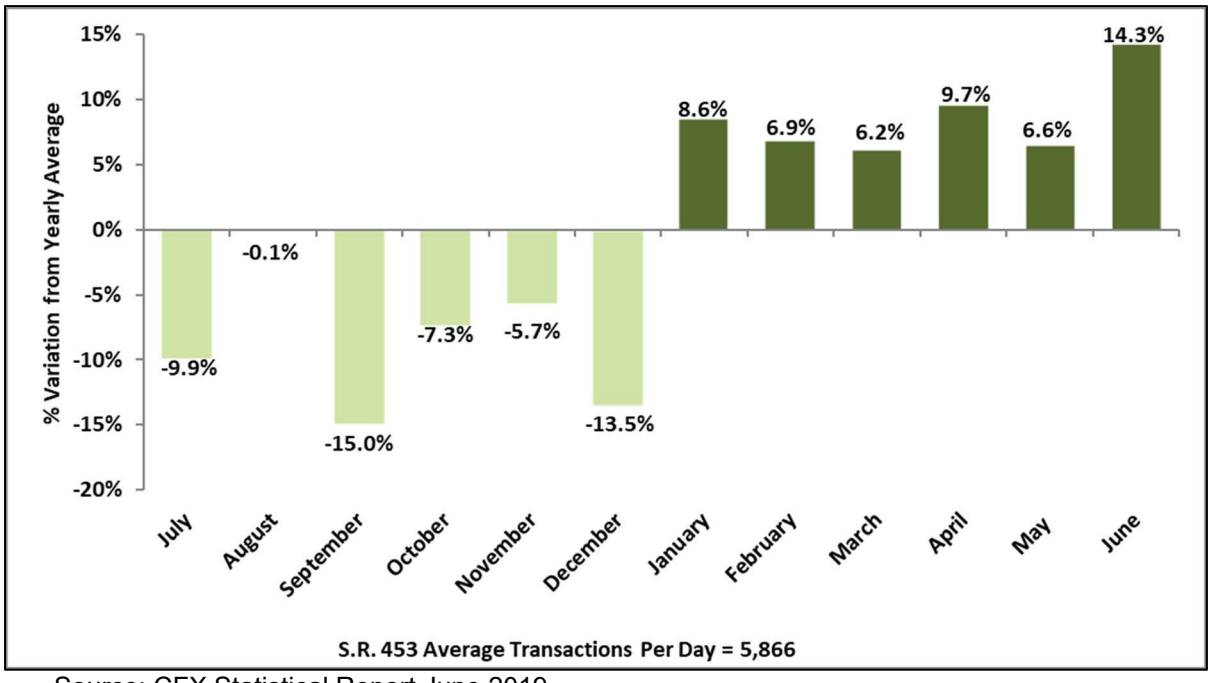
As presented, average paid in-lane transactions per day in FY 2019 on S.R. 453 ranged from a high of 6,704 in June 2019 to a low of 4,987 in September 2018. Like other CFX facilities, peak season is during spring months as there are more tourists in the area (possibly snowbirds) during the second half of the fiscal year. This data is presented in a graphical format in **Figure 8-2**. Each month's average paid in-lane transactions per day appear as a percentage of the average for the fiscal year. June paid in-lane transactions were 14.3 percent above average and September paid in-lane transactions were 15.0 percent below average for the facility. These numbers reflect a combination of continued growth and seasonal variation.

Table 8-3
S.R. 453 – Monthly Seasonal Variation in Paid In-Lane Transactions
FY 2019

Month	Number of Days in Month	Paid In-Lane Transactions	Average Transactions/Day	Seasonal Factor
July	31	163,798	5,284	0.901
August	31	181,695	5,861	0.999
September	30	149,602	4,987	0.850
October	31	168,492	5,435	0.927
November	30	166,010	5,534	0.943
December	31	157,261	5,073	0.865
January	31	197,518	6,372	1.086
February	28	175,642	6,273	1.069
March	31	193,215	6,233	1.062
April	30	192,998	6,433	1.097
May	31	193,812	6,252	1.066
June	30	201,115	6,704	1.143
Average		***713,719***	***5,866***	***1.000***
Total Year	**365**	**2,141,158**		

Source: CFX Statistical Report June 2019

Figure 8-2
S.R. 453 Variation in Paid In-Lane Transactions Per Day, By Month
FY 2019



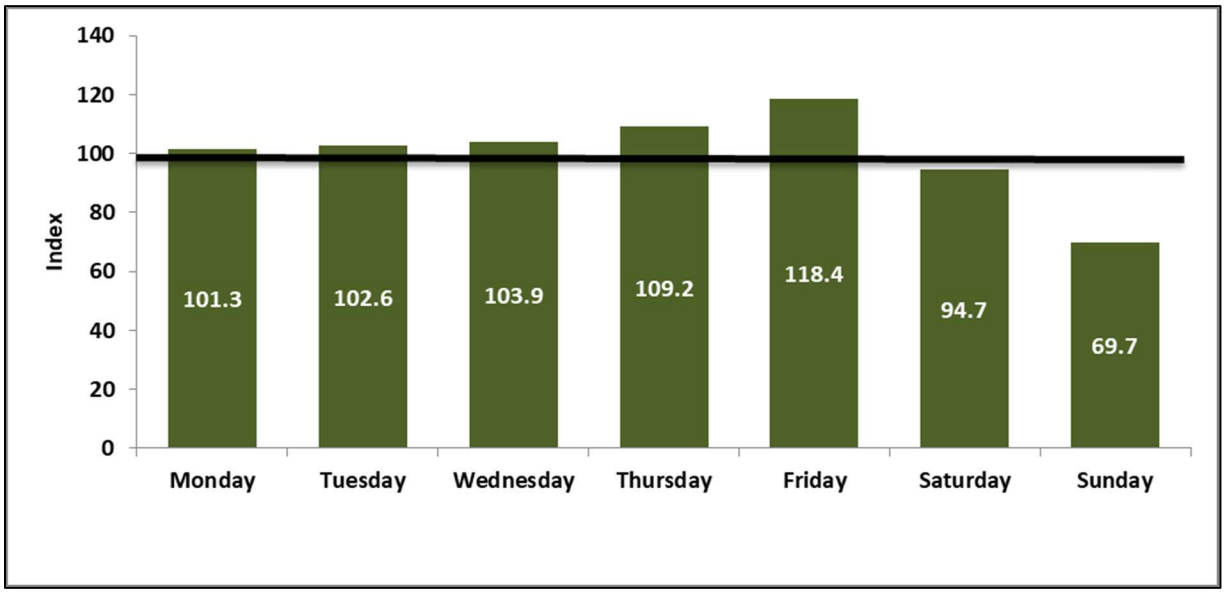
Source: CFX Statistical Report June 2019

8.2.4 DAY-OF-WEEK TRANSACTION VARIATION

Figure 8-3 contains a comparison of transactions by day of the week for FY 2019. This data is presented as an index, where the average day equals 100. An index value of 100 would indicate that the day's transactions were precisely the same volume as the facility average. A value of 120 would indicate a day that has 20 percent greater volume than the average. The data used for this analysis was for a typical week and includes transactions at mainline plazas only (no ramps).

FY 2019 weekday transactions on S.R. 453 fluctuated over the course of the five-day work week. Transactions were highest on Fridays, with an index value of 118.4 (18.4 percent higher than the average day), volumes on Monday through Thursday ranged from index values of 101.3 to 109.2. Saturday volumes were slightly lower than weekday volumes with an index value of 94.7, which is still high for a weekend day. Transactions decline on Sunday, which has an index value of 69.7, or 30.3 percent lower than the average day.

Figure 8-3
S.R. 453 Variation in Transactions, by Day of Week
FY 2019



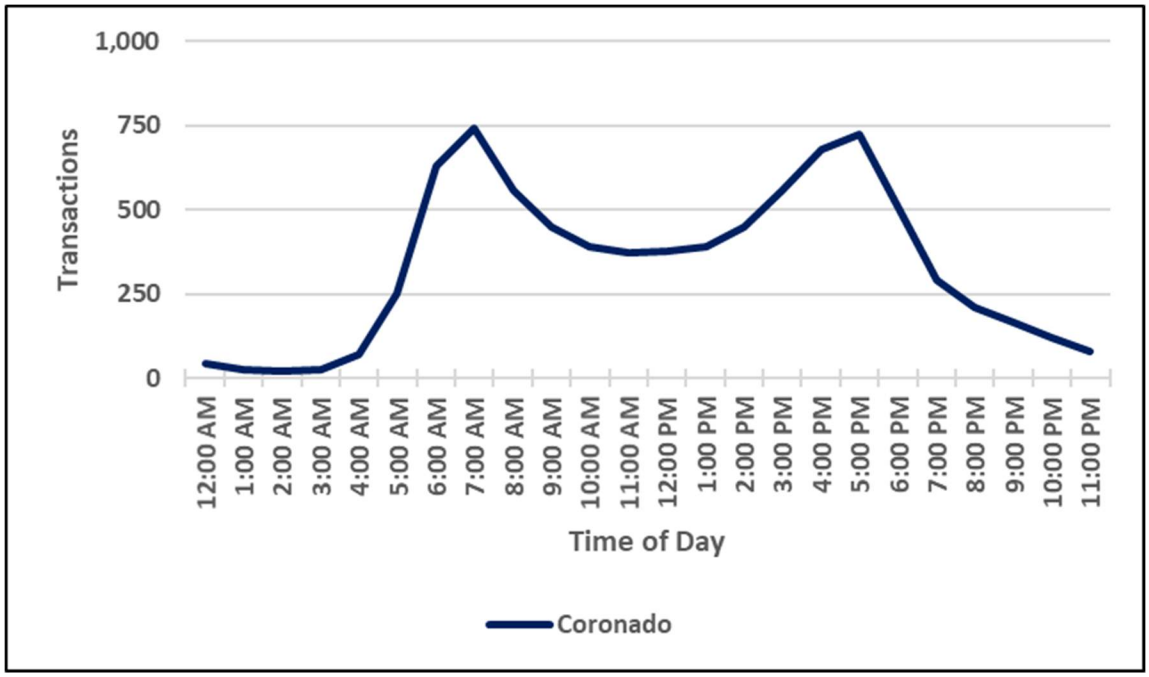
Source: Unaudited lane transaction data – February 2019

8.2.5 HOURLY TRAFFIC DISTRIBUTION

The hourly distribution of traffic includes information on the usage characteristics of the facility. The hourly distributions represent counts taken during a typical week at the mainline toll plaza in the month of May. The typical weekday distribution is shown in **Figure 8-4** and the weekend distribution is shown in **Figure 8-5**. The figures contain the sum of traffic volumes in both directions.

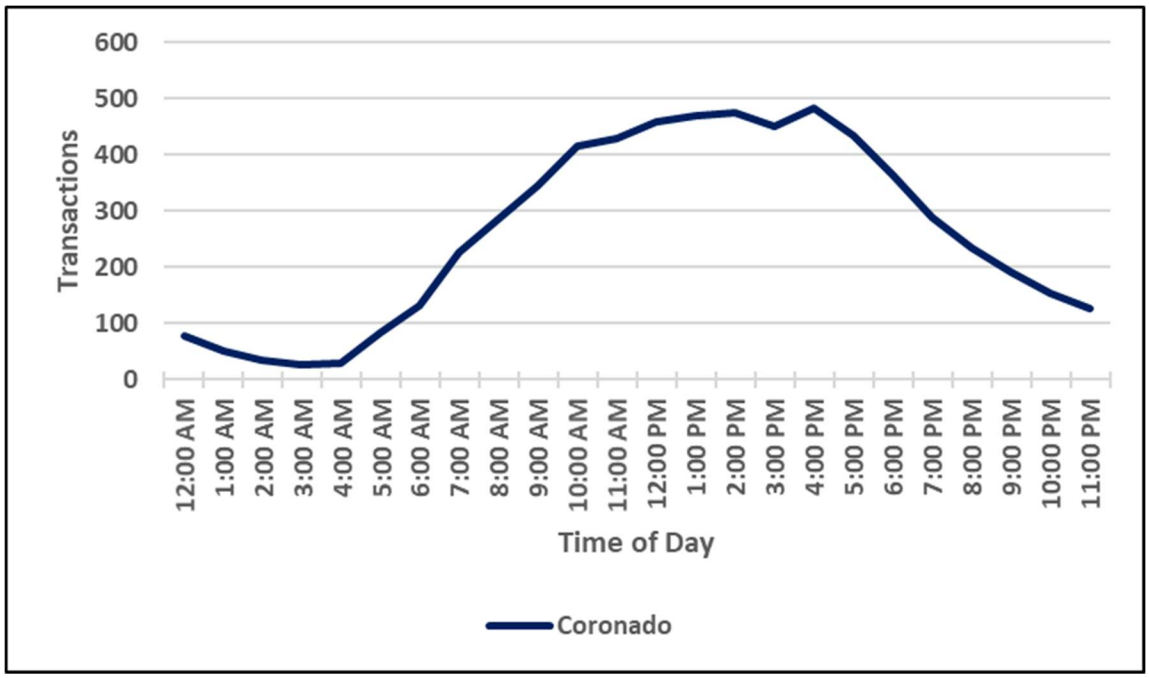
On weekdays on S.R. 453, demand for travel at both locations is bimodal, with both morning and evening peak hours. The Coronado mainline plaza experiences higher peak hour volumes in the morning than in the evening. The highest peak hour volumes during the week were 740 per hour beginning at 7:00 a.m. On weekends, traffic is steady from 10:00 a.m. through 5:00 p.m.

Figure 8-4
S.R. 453 Hourly Traffic Variation (Weekday)
FY 2019 (February)



Source: Unaudited lane traffic data – February 2019

Figure 8-5
S.R. 453 Hourly Traffic Variation (Weekend)
FY 2019 (February)



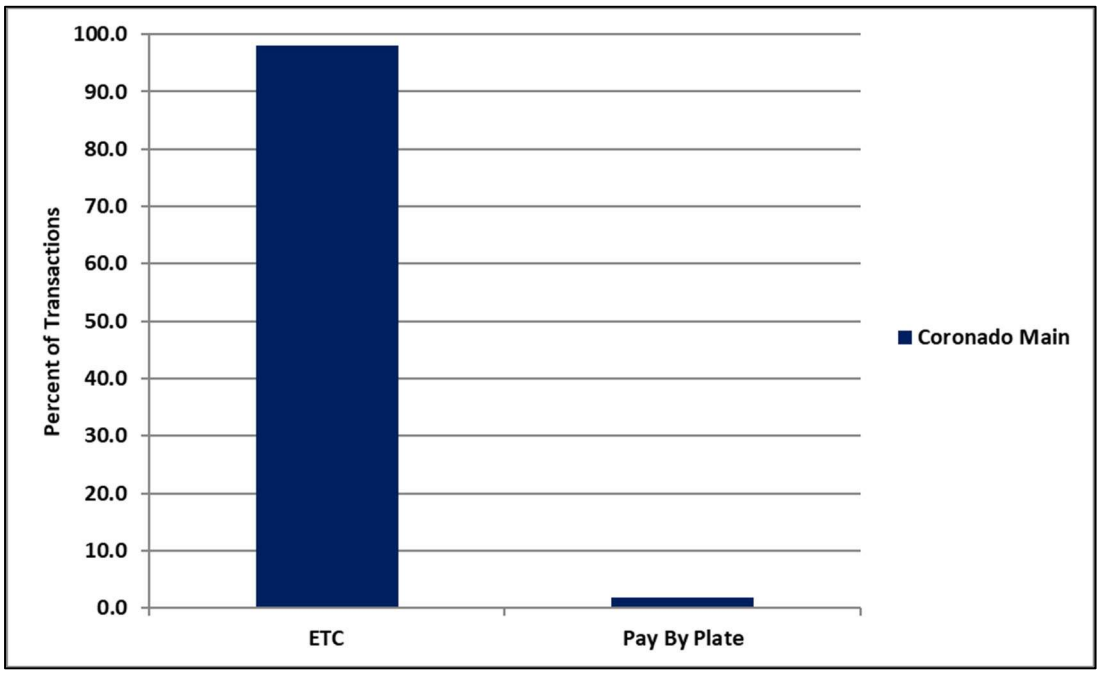
Source: Unaudited lane traffic data – February 2019

8.2.6 TRANSACTIONS AND REVENUE BY PAYMENT TYPE

The distributions of transactions and revenue by payment type during FY 2019 are presented in **Figure 8-6** and **Figure 8-7**. Payment types on S.R. 453 can be classified in one of two ways: ETC and PBP. The Coronado Main plaza is an AET facility, so there is no cash collection. PBP transactions and revenues are estimated monthly based on an accrual rate of 60 percent of all unpaid in-lane transactions and revenues. It is important to note that the data presented in the following two figures is based on unaudited transaction and toll revenue data and may not match the audited data shown in other tables and figures in this chapter.

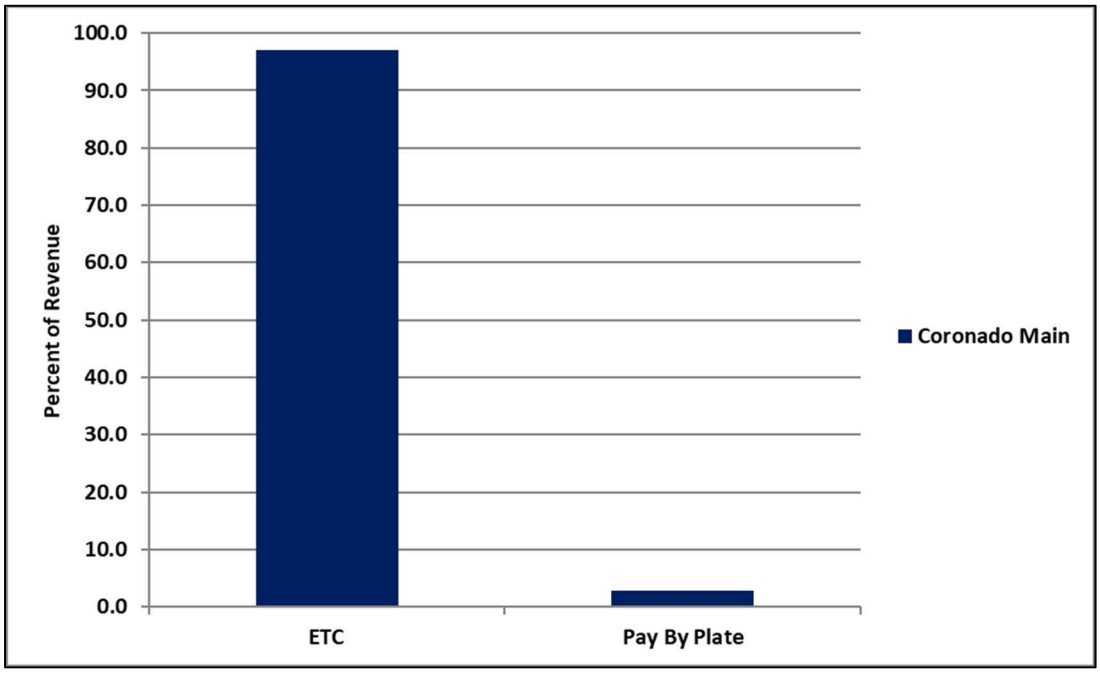
As shown in Figure 8-6, the percent of ETC transactions at the Coronado Main plaza accounted for 98.1 percent and the remaining 1.9 percent were PBP transactions. As shown in Figure 8-6, the percent of toll revenues by payment type is comparable to the trend in transactions. The percent of ETC toll revenues accounted for 97.1 percent of toll revenues at the Coronado Main plaza and the remaining 2.9 percent were PBP toll revenues.

Figure 8-6
S.R. 453 Percent of Transactions by Payment Type
FY 2019



Source: Unaudited transaction data provided by CFX

Figure 8-7
S.R. 453 Percent of Revenue by Payment Type
FY 2019



Source: Unaudited toll revenue data provided by CFX

8.3 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 2.22 percent in FY 2020 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 8-4**, assumed to be completed in each forecast year.

Table 8-4
S.R. 453 - Key Transportation Improvements

Facility	From	To	Year	Jurisdiction	Improvement
Interstate 4	SR 434	Kirkman Road	2025	FDOT	Widen to 10 lanes
SR 429	SR 50	SR 414	2025	CFX	Widen to 6-Lanes
Lake Orange Connector Expressway	US 27	SR 429	2035	CFX	New 4 lane expressway
New Independence Pkwy/Wellness Way	Lake County Line	SR 429	2035	Orange County	New/Widen 4 Lanes
SR 429	CR 535	SR 50	2035	CFX	Widen to 6-Lanes
SR 438/Silver Star Rod	SR 429	Bluford Avenue	2035	FDOT	Widen to 4-lanes
Wekiva Parkway	Mount Plymouth Road	Interstate 4	2035	FDOT	New 4 lane expressway
Avalon Road (CR 545)	Seidel Road	McKinney Road	2045	Orange County	Widen to 4 Lanes
Avalon Road (CR 545)	Tilden Road	Marsh Road	2045	Orange County	Widen to 4 Lanes
Plant Street (SR 438)	9th Street	West Crown Point Rd	2045	FDOT	Widen to 4-lanes
SR 414	Orange County Line	SR 434/Forest City Road	2045	FDOT	Widen to 6-lanes
SR 429	Seidel Road	CR 535	2045	CFX	Widen to 6-Lanes

Several of the planned improvements provide an upgrade to the transportation system to NW Orange County. Many facilities including Silver Star Road, Plant Street and Avalon Road, serve as feeder roads to S.R. 429 and positively impact T&R in the near term and long-term forecasts. System improvements impacting S.R. 453 include widenings from C.R. 535 to S.R. 414 in the near term and from C.R. 535 to Seidel Road in the long-term forecast. Also, the completion of the Wekiva Parkway. 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 has delayed the need to improve some of the parallel facilities such as Plymouth–Sorrento Road, Round Lake Road and Rock Springs Road.

The Coronado Main plaza opened on April 1, 2018 (FY 2018). Historical and projected transactions and toll revenues for S.R. 453 are summarized in **Table 8-5** and **Table 8-6**. The tables are divided into paid in-lane transactions and revenue and PBP transactions and revenue. Paid in-lane transactions and revenue include ETC as cash collection is not possible.

The paid in-lane transactions on S.R. 453 are expected to grow 6.4 percent per year through FY 2029 and then lower rates through the end of the forecast period because of the impact of toll rate adjustments. PBP transactions are forecasted to remain the same through FY 2029 and then increase through the forecast period. Total transactions on S.R. 453 are projected to increase during the forecast period from the actual of 2.4 million in FY 2019 to 6.6 million in FY 2049. During the FY 2019 through FY 2049 forecast period, S.R. 453 traffic is expected to increase an average of 5.5 percent per year from FY 2019 to FY 2029 (due to ramp-up), 2.6 percent per year from FY 2029 to FY 2039 and 2.2 percent per year from FY 2039 to FY 2049. The paid in-lane revenues on S.R. 453 are projected to increase over the forecast period, from the FY 2019 actual of $1.3 million to $5.8 million in FY 2049. PBP revenues are projected to increase from $0.2 million in FY 2019 to $0.8 million in FY 2049. Total revenue on S.R. 453 is projected to increase from the actual of $1.5 million in FY 2019 to $6.6 million in FY 2049. Revenue is expected to increase an average of 8.5 percent per year from FY 2019 to FY 2029 (again due to ramp-up), 3.9 percent per year from FY 2029 to FY 2039 and 2.8 percent per year from FY 2039 to FY 2049.

Table 8-5
S.R. 453 Plaza Group – Transaction Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Coronado Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual					
2011						
2012						
2013						
2014						
2015						
2016						
2017						
2018[A]		0.5	0.5	0.0	0.5	
2019[B]		2.2	2.2	0.2	2.4	380.0%
2020	Forecast	2.7	2.7	0.3	3.0	25.0%
2021[C]		2.9	2.9	0.2	3.1	3.3%
2022[D]		3.1	3.1	0.2	3.3	6.5%
2023		3.2	3.2	0.2	3.4	3.0%
2024		3.3	3.3	0.2	3.5	2.9%
2025		3.4	3.4	0.2	3.6	2.9%
2026		3.6	3.6	0.2	3.8	5.6%
2027		3.7	3.7	0.2	3.9	2.6%
2028		3.8	3.8	0.2	4.0	2.6%
2029		3.9	3.9	0.2	4.1	2.5%
2030		4.0	4.0	0.2	4.2	2.4%
2031		4.1	4.1	0.3	4.4	4.8%
2032		4.2	4.2	0.3	4.5	2.3%
2033		4.4	4.4	0.3	4.7	4.4%
2034		4.5	4.5	0.3	4.8	2.1%
2035		4.6	4.6	0.3	4.9	2.1%
2036		4.7	4.7	0.3	5.0	2.0%
2037		4.8	4.8	0.3	5.1	2.0%
2038		4.9	4.9	0.3	5.2	2.0%
2039		5.0	5.0	0.3	5.3	1.9%
2040		5.2	5.2	0.3	5.5	3.8%
2041		5.3	5.3	0.3	5.6	1.8%
2042		5.4	5.4	0.3	5.7	1.8%
2043		5.5	5.5	0.3	5.8	1.8%
2044		5.6	5.6	0.4	6.0	3.4%
2045		5.7	5.7	0.4	6.1	1.7%
2046		5.8	5.8	0.4	6.2	1.6%
2047		6.0	6.0	0.4	6.4	3.2%
2048		6.1	6.1	0.4	6.5	1.6%
2049		6.2	6.2	0.4	6.6	1.5%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)			
2019 - 2029	5.9%	5.9%	0.0%	5.5%
2029 - 2039	2.5%	2.5%	4.1%	2.6%
2039 - 2049	2.2%	2.2%	2.9%	2.2%

Notes:
Actual transaction data provided by CFX from Monthly Statistical Reports.
A - Coronado Main opened on April 1, 2018 (FY 2018).
B - First year of implementation of "Customer First" toll rate policy.
C - New toll rates for PBP customers, set at 2.0 times the ETC rate.
D - Completion of I-4 Ultimate project.

Table 8-6
S.R. 453 Plaza Group – Toll Revenue Projections (Millions)
FY 2020 – FY 2049

Fiscal Year		Coronado Main	Paid In-Lane	PBP	Total	Percent Annual Change
2010	Actual					
2011						
2012						
2013						
2014						
2015						
2016						
2017						
2018[A]		$0.3	$0.3	$0.0	$0.3	
2019[B]		$1.3	$1.3	$0.2	$1.5	400.0%
2020	Forecast	$1.6	$1.6	$0.3	$1.9	26.7%
2021[C]		$1.8	$1.8	$0.3	$2.1	10.5%
2022[D]		$2.0	$2.0	$0.3	$2.3	9.5%
2023		$2.2	$2.2	$0.3	$2.5	8.7%
2024		$2.3	$2.3	$0.3	$2.6	4.0%
2025		$2.4	$2.4	$0.3	$2.7	3.8%
2026		$2.6	$2.6	$0.3	$2.9	7.4%
2027		$2.7	$2.7	$0.3	$3.0	3.4%
2028		$2.9	$2.9	$0.4	$3.3	10.0%
2029		$3.0	$3.0	$0.4	$3.4	3.0%
2030		$3.1	$3.1	$0.4	$3.5	2.9%
2031		$3.3	$3.3	$0.4	$3.7	5.7%
2032		$3.4	$3.4	$0.4	$3.8	2.7%
2033		$3.6	$3.6	$0.4	$4.0	5.3%
2034		$3.7	$3.7	$0.5	$4.2	5.0%
2035		$3.8	$3.8	$0.5	$4.3	2.4%
2036		$4.0	$4.0	$0.5	$4.5	4.7%
2037		$4.1	$4.1	$0.5	$4.6	2.2%
2038		$4.3	$4.3	$0.5	$4.8	4.3%
2039		$4.4	$4.4	$0.6	$5.0	4.2%
2040		$4.6	$4.6	$0.6	$5.2	4.0%
2041		$4.7	$4.7	$0.6	$5.3	1.9%
2042		$4.8	$4.8	$0.6	$5.4	1.9%
2043		$5.0	$5.0	$0.6	$5.6	3.7%
2044		$5.1	$5.1	$0.7	$5.8	3.6%
2045		$5.3	$5.3	$0.7	$6.0	3.4%
2046		$5.4	$5.4	$0.7	$6.1	1.7%
2047		$5.5	$5.5	$0.7	$6.2	1.6%
2048		$5.7	$5.7	$0.8	$6.5	4.8%
2049		$5.8	$5.8	$0.8	$6.6	1.5%

Fiscal Year	Compound Annual Average Growth Rate (CAAGR)			
2019 - 2029	8.7%	8.7%	7.2%	8.5%
2029 - 2039	3.9%	3.9%	4.1%	3.9%
2039 - 2049	2.8%	2.8%	2.9%	2.8%

Notes:

Actual transaction data provided by CFX from Monthly Statistical Reports.

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

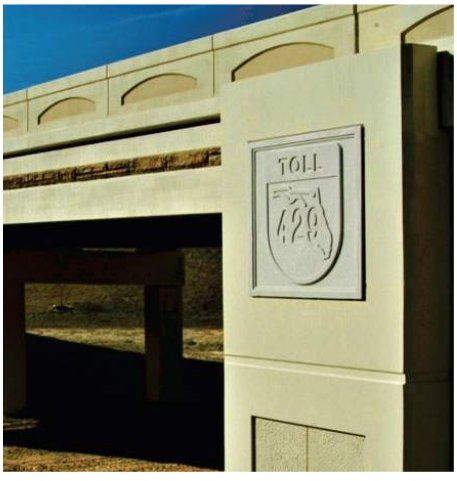
B - First year of implementation of "Customer First" toll rate policy.

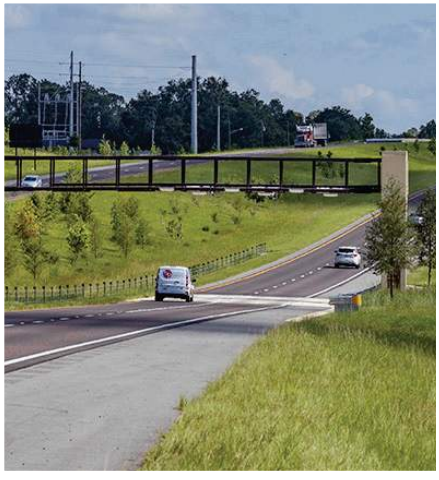
C - New toll rates for PBP customers, set at 2.0 times the ETC rate.

D - Completion of I-4 Ultimate project.

APPENDIX A

TRAFFIC PROFILES
CY 2019 - CY 2049



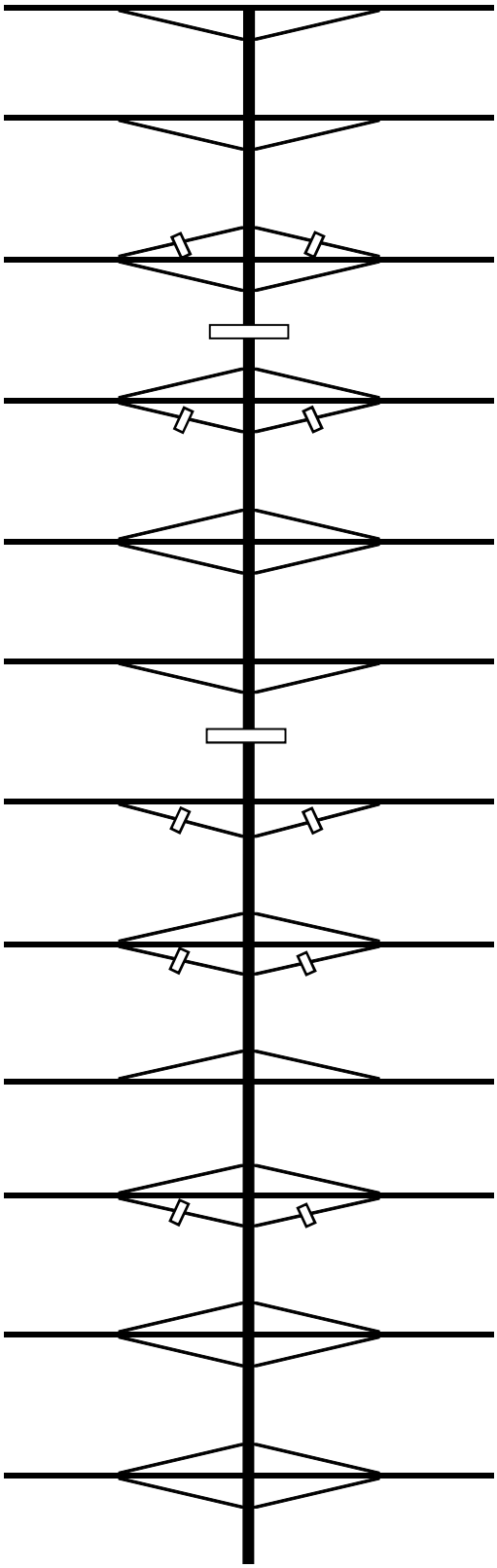


S.R. 528 - Two-Way Daily Revenue Traffic

Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
To S.R. 528 West				
	84,800	**104,200**	**114,900**	**123,500**
Boggy Creek Road	7,600	9,600	10,800	11,800
	17,900	22,600	25,300	27,600
	95,100	**117,200**	**129,400**	**139,300**
Tradeport Drive /	7,000	8,800	9,900	10,800
Conway Road	6,300	7,900	8,800	9,600
	94,400	**116,300**	**128,300**	**138,100**
Semoran Boulevard	42,100	53,000	59,400	64,700
	31,600	39,800	44,600	48,600
	83,900	**103,100**	**113,500**	**122,000**
Goldenrod Road	5,300	6,700	7,500	8,200
	9,100	11,500	12,900	14,100
	87,700	**107,900**	**118,900**	**127,900**
Narcoossee Road	23,100	29,100	32,600	35,500
	6,400	8,100	9,100	9,900
	71,000	**86,900**	**95,400**	**102,300**
S.R. 417	36,800	47,900	53,600	58,400
	27,100	36,500	41,900	45,600
Beachline Main	**61,300**	**75,500**	**83,700**	**89,500**
Innovation Way	7,700	9,600	10,500	11,200
	1,800	2,300	2,500	2,700
	55,400	**68,200**	**75,700**	**81,000**
Dallas Boulevard	5,000	6,200	6,900	7,400
Dallas Main	**50,400**	**62,000**	**68,800**	**73,600**
S.R. 520	3,700	4,600	5,100	5,500
	3,000	3,700	4,100	4,400
	49,700	**61,100**	**67,800**	**72,500**
To S.R. 528 East				

Note: 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.

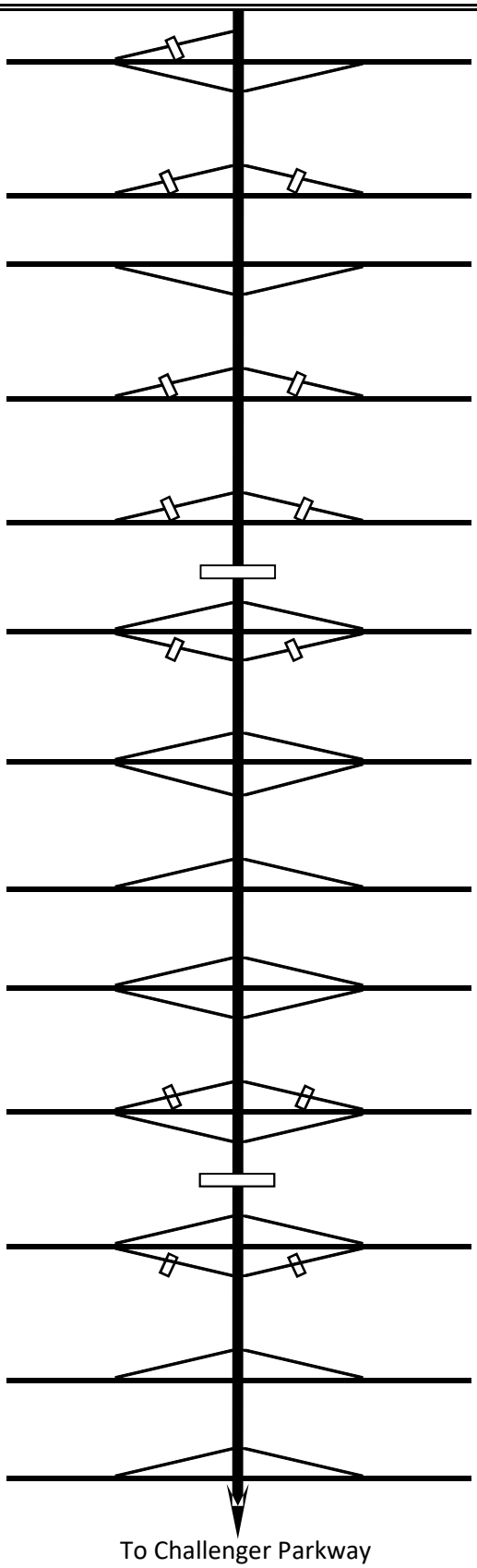
S.R. 408 - Two-Way Daily Revenue Traffic



Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
Turnpike Spur	63,500	77,400	85,100	91,900
	63,500	**77,400**	**85,100**	**91,900**
S.R. 50 West	9,100	11,000	12,300	13,300
	72,600	**88,400**	**97,400**	**105,200**
Good Homes	11,000	13,300	14,900	16,100
Road	9,300	11,300	12,700	13,700
Hiawassee Main	**70,900**	**86,400**	**95,200**	**102,800**
Hiawassee Road	6,600	9,100	11,000	12,500
	10,400	12,400	13,500	14,600
	74,700	**89,700**	**97,700**	**104,900**
Kirkman Road	8,500	11,700	14,000	15,800
	11,200	12,900	13,400	14,100
	77,400	**90,900**	**97,100**	**103,200**
Pine Hills Road	6,200	7,300	7,800	8,200
Pine Hills Main	**83,600**	**98,200**	**104,900**	**111,400**
Old Winter				
Garden Rd	4,800	5,500	5,900	6,200
	88,400	**103,700**	**110,800**	**117,600**
John Young	8,300	10,100	11,000	11,800
Blvd	8,600	10,000	10,700	11,200
	88,700	**103,600**	**110,500**	**117,000**
Tampa Avenue	3,800	4,600	5,000	5,400
	84,900	**99,000**	**105,500**	**111,600**
Orange Blossom	7,300	8,900	9,600	10,300
Trail	8,000	9,300	10,000	10,500
	85,600	**99,400**	**105,900**	**111,800**
Interstate-4	20,400	25,000	27,000	29,000
	60,600	64,100	66,000	68,000
	125,800	**138,500**	**144,900**	**150,800**
Orange Avenue/	12,000	13,400	13,900	14,600
Rosalind Avenue	19,200	20,300	20,900	21,500
	133,000	**145,400**	**151,900**	**157,700**

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

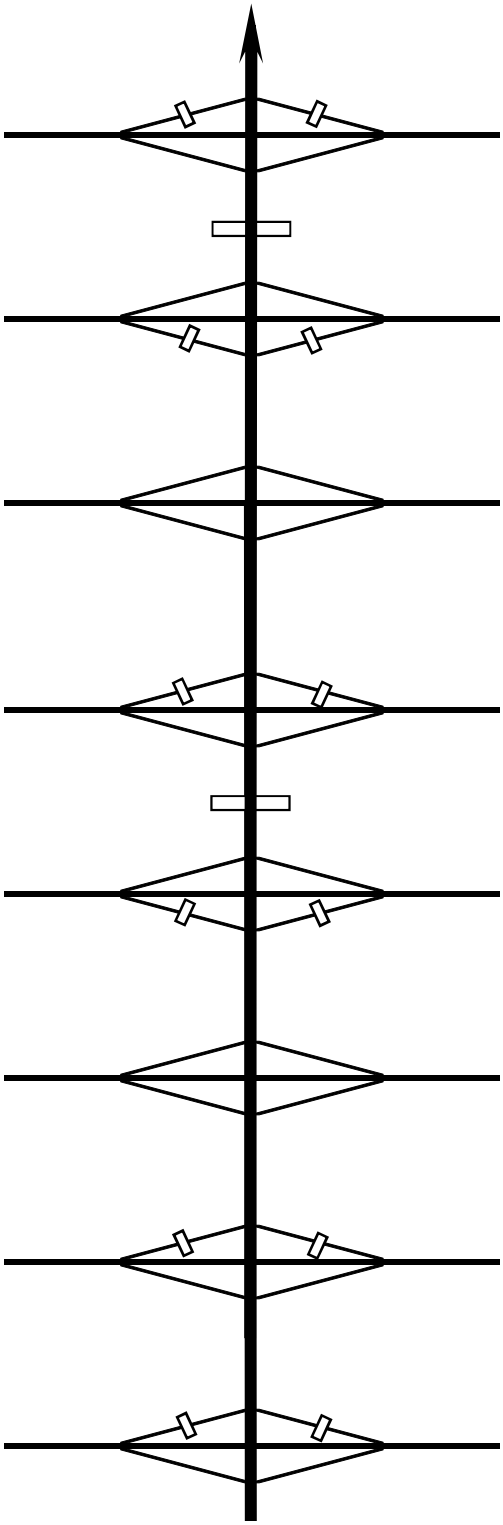
Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
Mills Avenue	1,400	1,600	1,600	1,600
	10,000	10,600	10,900	11,200
	141,600	**154,400**	**161,200**	**167,300**
Bumby Avenue	13,000	14,500	15,100	15,900
	128,600	**139,900**	**146,100**	**151,400**
Crystal Lake Drive	13,800	14,600	15,000	15,500
	142,400	**154,500**	**161,100**	**166,900**
Conway Road	11,300	12,700	13,200	13,900
	131,100	**141,800**	**147,900**	**153,000**
Andes Ave/Semoran	9,700	10,900	11,300	11,800
Conway Main	**121,400**	**130,900**	**136,600**	**141,200**
Semoran Boulevard/	12,500	13,300	13,700	14,100
Yucatan Drive	8,700	9,400	9,700	10,000
	117,600	**127,000**	**132,600**	**137,100**
Goldenrod Road	13,000	13,800	14,200	14,600
	12,100	13,000	13,400	13,800
	116,700	**126,200**	**131,800**	**136,300**
Chickasaw Trail	11,200	11,900	12,300	12,700
	105,500	**114,300**	**119,500**	**123,600**
S.R. 417	55,000	58,600	60,400	62,200
	25,500	28,600	30,300	31,500
	76,000	**84,300**	**89,400**	**92,900**
Dean Road	11,400	12,600	13,400	13,900
	1,900	2,100	2,200	2,300
Dean Main	**66,500**	**73,800**	**78,200**	**81,300**
Rouse Road	8,400	9,300	9,900	10,300
	1,100	1,200	1,300	1,400
	59,200	**65,700**	**69,600**	**72,400**
Alafaya Trail	24,500	27,200	28,800	30,000
	34,700	**38,500**	**40,800**	**42,400**
S.R. 50	24,700	27,400	29,000	30,200
	10,000	**11,100**	**11,800**	**12,200**



To Challenger Parkway

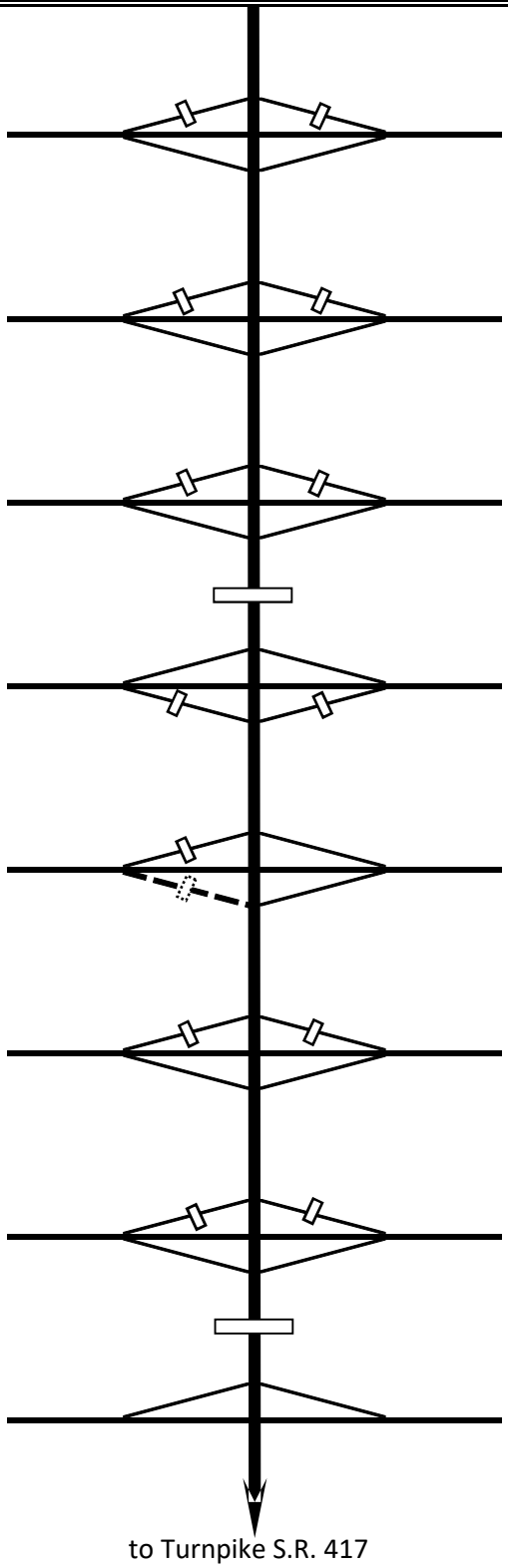
Note: Two-Way Daily Revenue Traffic is a balanced traffic profile of existing and forecasted revenue generating traffic on System facilities, which excludes non-revenue traffic and violations. The profile should not be used for design traffic purposes.

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



Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
	70,500	**90,200**	**107,000**	**124,500**
University Boulevard	6,700	7,300	7,500	7,600
	22,600	24,600	25,300	25,600
University Main	**86,400**	**107,500**	**124,800**	**142,500**
S.R. 50	6,600	6,700	6,900	7,000
	8,400	9,700	11,000	12,100
	88,200	**110,500**	**128,900**	**147,600**
S.R. 408	41,000	44,700	45,000	44,900
	40,500	45,100	49,500	52,300
	87,700	**110,900**	**133,400**	**155,000**
Curry Ford Road	8,700	9,500	9,800	9,900
	13,500	15,700	17,200	18,400
Curry Ford Main	**92,500**	**117,100**	**140,800**	**163,500**
Lee Vista Boulevard	6,000	7,500	7,500	8,500
	4,100	5,500	6,400	7,200
	90,600	**115,100**	**139,700**	**162,200**
S.R. 528	44,900	60,200	68,700	76,500
	19,000	25,500	30,700	35,800
	64,700	**80,400**	**101,700**	**121,500**
Dowden Road	4,500	6,000	8,100	10,200
	3,100	5,200	6,000	6,700
	63,300	**79,600**	**99,600**	**118,000**
Moss Park Road	7,900	10,600	13,300	16,000
	3,300	5,400	6,200	6,900

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



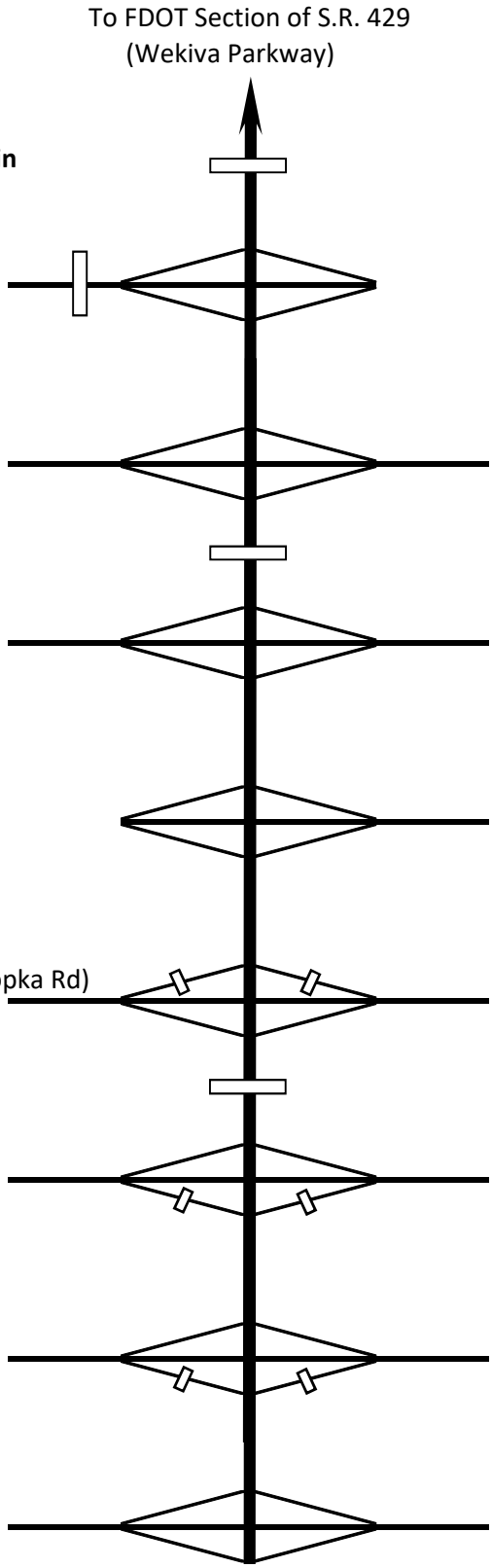
Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
	58,700	**74,400**	**92,500**	**108,900**
Narcoossee Road	14,500	19,400	23,500	27,400
	10,700	15,300	17,600	19,700
	54,900	**70,300**	**86,600**	**101,200**
Lake Nona Road	6,400	8,600	11,000	13,400
	7,800	11,500	13,200	14,800
	56,300	**73,200**	**88,800**	**102,600**
Boggy Creek Road	9,700	13,000	17,300	20,500
	23,300	33,200	38,200	42,800
Boggy Creek Main	**69,900**	**93,400**	**109,700**	**124,900**
Landstar Boulevard	7,900	10,400	13,100	15,200
	17,300	22,800	25,100	27,600
	79,300	**105,800**	**121,700**	**137,300**
Florida's Turnpike	17,400	23,000	29,900	35,700
	12,000	15,800	18,200	20,400
	73,900	**98,600**	**110,000**	**122,000**
Orange Blossom Trail	9,700	12,800	15,900	18,900
	9,500	12,000	13,800	15,500
	73,700	**97,800**	**107,900**	**118,600**
John Young Parkway	13,800	18,200	22,100	25,900
	9,200	11,600	13,300	14,900
John Young Main	**69,100**	**91,200**	**99,100**	**107,600**
World Center Drive	34,400	45,400	52,200	58,500
	34,700	**45,800**	**46,900**	**49,100**

to Turnpike S.R. 417

* S.R. 417 full interchange with Florida's Turnpike is scheduled to open in 2021

Note: 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.

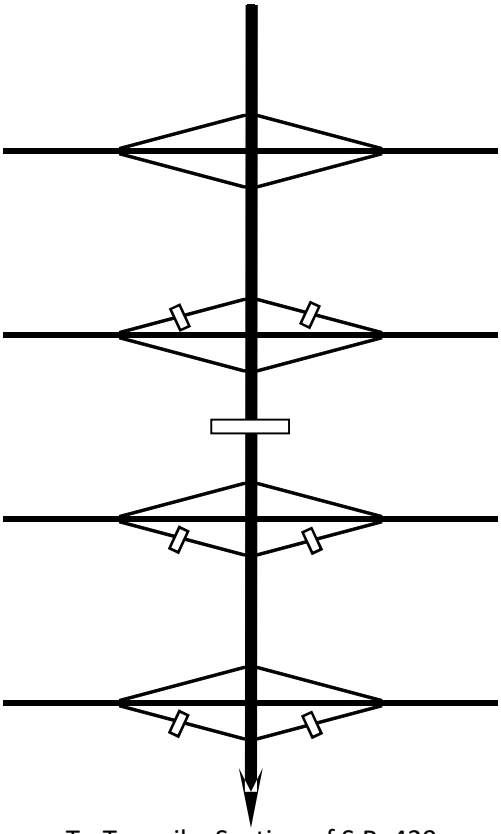
S.R. 429 & S.R. 453 - Two-Way Daily Revenue Traffic



Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
Mount Plymouth Main	**4,100**	**13,700**	**20,400**	**19,900**
S.R. 453				
Coronado Main	500	3,000	5,200	7,700
(To S.R. 46/Mt. Dora)	6,000	11,400	16,000	20,500
	9,600	**22,100**	**31,200**	**32,700**
Kelly Park Road	300	600	800	1,000
	6,000	9,300	10,400	11,300
Ponkan Main	**15,300**	**30,800**	**40,800**	**43,000**
U.S. 441	600	800	900	1,000
	19,500	27,100	30,400	33,100
	34,200	**57,100**	**70,300**	**75,100**
S.R. 414	9,600	14,400	16,200	17,800
	30,800	37,100	41,200	44,900
	55,400	**79,800**	**95,300**	**102,200**
C.R. 437A (Ocoee Apopka Rd)	1,800	2,500	2,800	3,100
	3,700	5,100	5,700	6,200
Forest Lake Main	**57,300**	**82,400**	**98,200**	**105,300**
West Road	2,300	3,200	3,600	3,900
	10,500	14,600	16,400	17,900
	65,500	**93,800**	**111,000**	**119,300**
S.R. 438/	4,500	6,300	7,100	7,700
Plant Street	9,900	13,800	15,500	16,900
	70,900	**101,300**	**119,400**	**128,500**
S.R. 50	7,500	10,400	11,600	12,600
	5,700	7,900	8,800	9,600

S.R. 429 & S.R. 453 - Two-Way Daily Revenue Traffic

Cross Street	FY 2019	FY 2029	FY 2039	FY 2049
	69,100	**98,800**	**116,600**	**125,500**
Florida's Turnpike	35,800	49,800	55,800	60,800
	34,700	50,200	58,200	65,400
	68,000	**99,200**	**119,000**	**130,100**
C.R. 535	30,300	43,300	52,800	58,600
	6,900	9,900	12,100	13,400
Independence Main	**44,600**	**65,800**	**78,300**	**84,900**
New Independence	10,400	14,900	18,200	20,200
Parkway	3,000	4,300	5,200	5,800
	37,200	**55,200**	**65,300**	**70,500**
Schofield Road	7,700	11,000	13,400	14,900
	700	1,000	1,200	1,300
	30,200	**45,200**	**53,100**	**56,900**

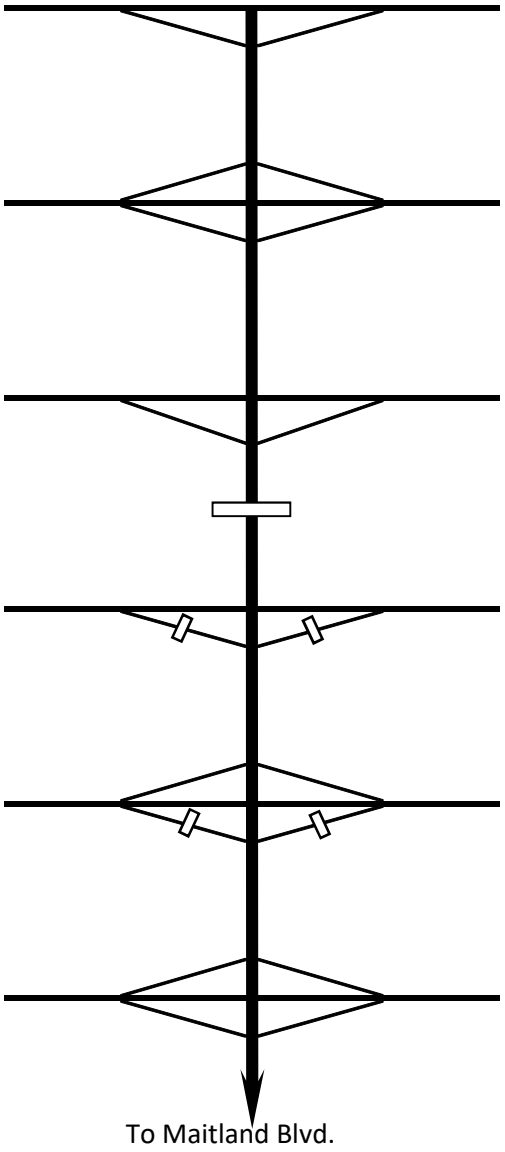


To Turnpike Section of S.R. 429

Note: 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 2019	FY 2029	FY 2039	FY 2049
S.R. 429				
	40,400	51,500	57,400	62,700
	40,400	**51,500**	**57,400**	**62,700**
US 441 via SR 451	11,600	13,700	15,100	16,500
	3,700	5,600	6,800	7,400
	32,500	**43,400**	**49,100**	**53,600**
Marden Road				
	400	1,000	1,500	1,600
Coral Hills Main	**32,900**	**44,400**	**50,600**	**55,200**
Keene Road /				
C.R. 435	4,000	5,400	6,200	6,800
	36,900	**49,800**	**56,800**	**62,000**
Hiawassee Road	5,500	7,400	8,400	9,200
	4,300	5,800	6,600	7,200
	35,700	**48,200**	**55,000**	**60,000**
U.S. 441	4,900	6,600	7,500	8,200
	10,500	13,200	14,000	14,300
	41,300	**54,800**	**61,500**	**66,100**



Note: 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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