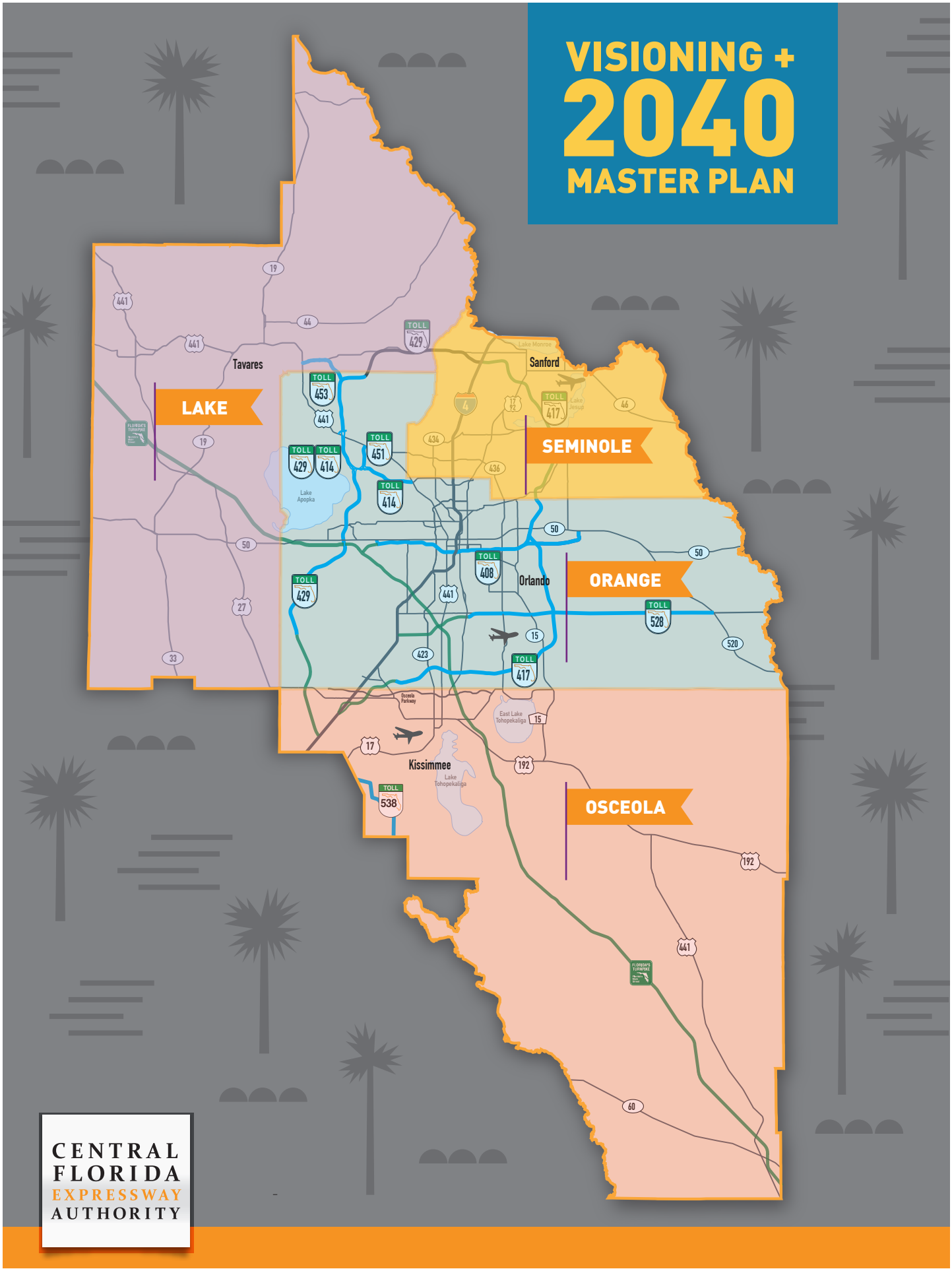
VISIONING + 2040 MASTER PLAN



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Table of Contents

PLAN OVERVIEW 1-3

1.0 INTRODUCTION 4-7
1.1 CFX Enabling Legislation
1.2 CFX Financial Position
1.3 Master Plan Purpose
1.4 Master Plan Development and Overview

2.0 VISION, MISSION AND POLICY PROFILE 8-12
2.1 Vision and Mission Development
2.2 Policy Profile Summary
2.2.1 Existing System Improvements
2.2.2 New Projects
2.2.3 New Services
2.2.4 Multimodal/Intermodal Opportunities

3.0 CENTRAL FLORIDA REGION 13-23
3.1 Lake County
3.2 Orange County
3.3 Osceola County
3.4 Seminole County
3.5 City of Orlando
3.6 Adjacent Counties
3.7 Economic Indicators
3.7.1 Population
3.7.2 Employment
3.7.3 Tourism
3.8 Summary

4.0 EXISTING EXPRESSWAY SYSTEM 24-37
4.1 System Overview
4.2 System Components
4.2.1 State Road 408 (SR 408)
4.2.2 State Road 414 (SR 414)
4.2.3 State Road 417 (SR 417)
4.2.4 State Road 429 (SR 429)
4.2.5 State Road 451 (SR 451)
4.2.6 State Road 528 (SR 528)

Table of Contents (continued)

4.2.7 Goldenrod Road Extension
4.2.8 Toll Facilities, Equipment and Operations
4.2.9 Intelligent Transportation System
4.3 Expressway System Traffic and Revenue Characteristics
4.3.1 Toll Rate Structure
4.3.2 Traffic and Revenue Projections
4.4 Five Year Work Plan
4.5 Existing Expressway System Needs
4.5.1 Capacity Improvements
4.5.2 Existing Interchanges
4.5.3 Renewal and Replacement (R&R) Program
4.5.4 Toll Facility Program
4.6 Existing Expressway System Needs Summary

5.0 NEW PROJECTS 38-45
5.1 SR 408 Eastern Extension
5.2 Lake/Orange Connector
5.3 SR 414 Direct Connect
5.4 Osceola County Expressway Authority Master Plan Projects
5.5 East Central Florida Corridor Task Force Projects

6.0 MULTIMODAL OPPORTUNITIES 46-51
6.1 CFX Multimodal Legislation
6.2 Public Transportation Overview
6.3 Central Florida Public Transportation
6.3.1 Central Florida Regional Transportation Authority (LYNX)
6.3.2 FDOT - SunRail Commuter Rail
6.3.3 Other Local Public Transportation Services
6.4 All Aboard Florida
6.5 Alternate Transit Technologies
6.6 Intermodal Centers
6.7 Strategic Multimodal Investment Strategies

7.0 2040 MASTER PLAN EXECUTIVE SUMMARY 52-53

List of Tables + Figures

LIST OF TABLES

3-1 Historical Population Trends 1980 - 2014
3-2 Projected Population Growth
3-3 Total Employment - Historical Trends 1980 - 2014
3-4 Projected Employment Growth
3-5 Central Florida Attraction Attendance 2011 - 2014
4-1 Existing System Summary
4-2 Current Toll Rates
4-3 Summary of Daily Traffic (AADT) Forecasts at Mainline Plazas
4-4 Work Plan Summary FY 2016 - FY 2020
4-5 Existing System Improvement Needs Cost Summary FY 2020 to FY 2040
5-1 Summary of Potential New Expressway Projects

LIST OF FIGURES

1-1 System Map
2-1 Policy Profile
3-1 Region's Major Activity Centers
4-1 Existing System Map
4-2 2015 AADT Mainline Traffic Volumes
4-3 CFX System Timeline of Expressways
4-4 FY2016 - FY2020 Five Year Work Plan Major Projects
4-5 Existing System Improvement Needs
4-6 Expressway Resurfacing Program
5-1 Potential New Expressway Projects
5-2 Osceola County Expressway Authority Master Plan Projects
5-3 East Central Florida Corridor Task Force Recommendations
6-1 Central Florida Public Transportation
7-1 2040 Master Plan Summary

Appendix

APPENDIX A - VISIONING + 2040 MASTER PLAN FINAL REPORT

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Embracing the principals of operational and service excellence, innovation, regional economic prosperity, and quality of life, the Central Florida Expressway Authority (CFX) developed its 2040 Master Plan. The Plan identifies projects that best address the needs of the region, taking into account expected population, housing and employment growth, financial forecasts, technology developments and extensive public input.

The 2040 Master Plan is CFX's visionary blueprint for system improvements and new projects that support our bold new vision, and accrues economic, customer and community benefits to our region and the state.

CFX identified an estimated $9.7 to $12.2 billion in potential regional project needs through the year 2040.

Capacity and Operational Improvements for the Existing System

Approximately $2 billion of capacity and operational improvements have been identified for the existing expressway system. These investments are driven by the need to accommodate future traffic demands associated with the regional growth in accordance with the adopted CFX travel service standards.

These include long segments, approximately 60 centerline miles, of SR 417, SR 429 and SR 528 that will require widening and three interchanges that will need to be modified. Additionally, as the expressway system continues to age, the annual costs associated with renewal and replacement are anticipated to grow accordingly.

Twelve Possible New Project Opportunities

Approximately $6.5 to $9 billion of potential new expressway expansion projects have been identified that require further analysis. The majority of these candidates are located in the projected high growth areas of Orange and Osceola Counties. CFX may participate by taking the project lead in moving these identified projects forward, providing resources and support to our regional partners, or in a supporting role by coordinating with other lead agencies and partners.

The projected annual toll and investment revenues as well as annual costs associated with operations, maintenance, administration and debt service payments were evaluated during the Master Plan development. The results of this evaluation indicate approximately $6.6 billion in current dollars will be available for future CFX projects through 2040.

All of the identified projects will require additional detailed analyses in the coming years to determine whether they are cost feasible and fundable. Funding for future efforts will be addressed each year during the Five Year Work Plan update. The FY2016-2020 Adopted Five Year Work Plan is approximately $1.2 billion.

Multimodal/Intermodal Opportunities

As part of the 2014 legislation, CFX has the authority to actively plan, design, construct and operate multimodal projects and intermodal facilities that relieve congestion on the existing system. During extensive public outreach, we received feedback from stakeholders and the CFX Board who were interested in exploring potential multimodal and intermodal project opportunities with regional partners. While specific projects were not yet named in the 2040 Master Plan, we will formulate policies with specific criteria and methodologies in the near future.

Economic Impact and Prosperity

A high quality transportation network is vital to a top performing economy like Central Florida. It allows businesses to manage inventories and transport goods, get employees reliably to work, and move visitors seamlessly to their destinations, resulting in direct and indirect benefits that ripple throughout the local economy.

CFX's economic impact on Central Florida is undeniable. The return on investment and overall contributions have been documented many times, with the most recent analysis performed by the Center for Urban Transportation Research (CUTR). Their analysis reported that the Fiscal Year 2016 – 2020 Five Year Work Plan supports over 12,000 jobs and will generate approximately $700 million in wages.

Over the next 25 years, CFX will have the opportunity to expand its contributions even further by investing in new projects and services that will build the integrated mobility network envisioned by our governing board, customers, employees, and regional partners.

S.R. 408 Westbound at Lake Underhill.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 Master Plan Map

CHAPTER 1

Introduction

1.0 ABOUT CFX

This document represents the first long range master plan prepared and adopted by CFX which was established on June 20, 2014 when Governor Rick Scott signed Senate Bill 230 into law. CFX jurisdiction includes Lake, Orange, Osceola and Seminole Counties, and the City of Orlando. Our Board includes nine members with representatives from each of the four counties along with the mayors of Orange County and Orlando and three gubernatorial appointees.

Our expressway system (System) consists of 109 centerline and 767 lane miles of limited access tolled expressways represented on **Figure 1-1** as part of the regional transportation network.

We own and operate E-PASS, Florida's first electronic prepaid toll account with over 500,000 transponders and more than 288,000 accounts.

Our seven system expressways include:

- **State Road 408** / Spessard L. Holland East-West Expressway (SR 408)
- **State Road 414** / John Land Apopka Expressway (SR 414)
- **State Road 417** / Central Florida Greeneway (SR 417)
- **State Road 429** / Daniel Webster Western Beltway (SR 429)
- **State Road 451** (SR 451)
- **State Road 453** (SR 453) *currently under construction*
- **State Road 528** / Martin B. Andersen Beachline Expressway (SR 528)

Inaugural CFX Governing Board

Welton Cadwell
Chairman,
Lake County
Commissioner

Scott Boyd
Vice-Chairman,
Orange County
Commissioner

Brenda Carey
Secretary/Treasurer,
Seminole County
Commissioner

Buddy Dyer
Board Member,
Orlando Mayor

Fred Hawkins, Jr.
Board Member,
Osceola County
Commissioner

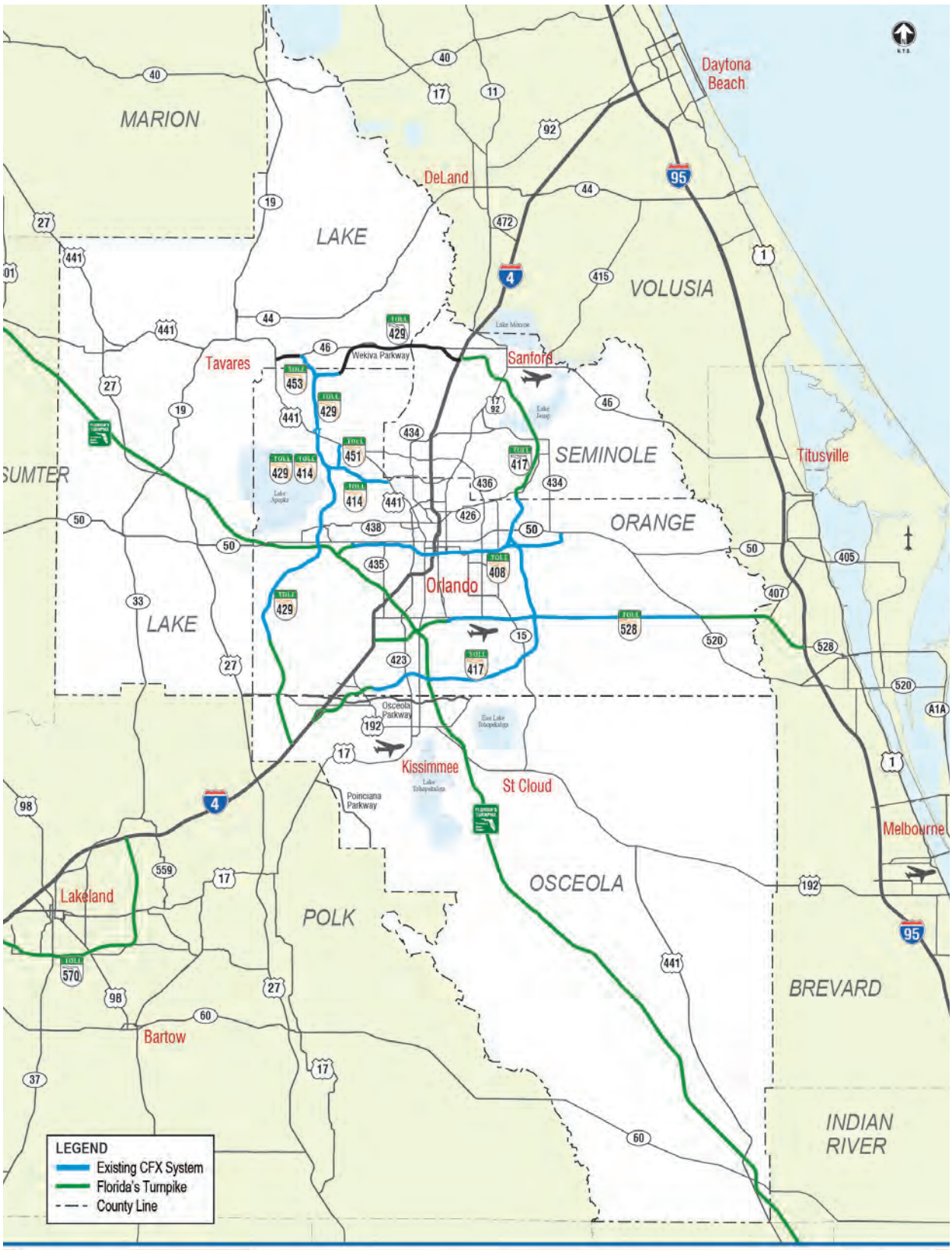
Teresa Jacobs
Board Member,
Orange County
Mayor

Andria Herr
Board Member

Jay Madara
Board Member

S. Michael Scheeringa
Board Member

Diane Gutierrez-Scaccetti, Non-Voting Advisor,
Florida's Turnpike Enterprise



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

System Map

FIGURE 1-1

Driving Progress

Central Florida's transportation landscape will be altered dramatically within the next ten years with the ultimate expansion of Interstate 4, proposed extension of SunRail, introduction of Brightline inter-city passenger rail, expansion of the Orlando International Airport and opening of the Wekiva Parkway, which completes the long awaited western beltway around the Orlando region.

Additionally, the major economic indicators for the Central Florida region are projected to experience substantial growth through the Master Plan horizon year. The new traffic demands associated with this growth will be substantial. The introduction of these long awaited transportation projects and the anticipated economic growth projected for the region serve as the foundation for our 2040 Master Plan.

1.1 CFX ENABLING LEGISLATION

The CFX legislation created a new, multi-county agency that assumed the governance and control of the former Orlando-Orange County Expressway Authority (OOCEA) system. While the legislation included detailed descriptions of virtually every aspect of our new agency, the following three areas have the greatest influence on our 2040 Master Plan.

Our boundaries: Our jurisdiction includes Lake, Orange, Osceola and Seminole counties. Understanding that Central Florida's traffic needs do not stop at county lines, our multi-county agency will have the ability to take a more regional and comprehensive approach to planning and implementing projects that will help meet Central Florida's mobility needs well into the future.

Our Board composition: Our Governing Board consists of nine members. Six Board members are local elected officials and three are gubernatorial appointees. The elected officials include the mayors of the City of Orlando and Orange County, and four county commissioners, one from each county (Lake, Orange, Osceola and Seminole). The governor's appointees must reside within the four county area.

Our ability to do multimodal and intermodal: In addition to operating, maintaining and expanding the system of limited access expressways, the legislation enables us to develop intermodal facilities and multimodal corridors within our right of way to help improve overall regional mobility. The ability to consider additional transportation service options, such as fixed-guideways and park and ride lots, greatly expands our ability to develop comprehensive solutions for future mobility challenges.

1.2 OUR ROADS SAVE DRIVERS TIME AND MONEY

The positive economic impact we have on the local community is undisputable.

Recently, CUTR reported the current Five Year Work Plan (FY 2016 – FY 2020) would support over 12,000 jobs and generate approximately $700 million in wages. It further concluded that the investment in improvement projects would save each household 32 hours per year by way of reduced travel delays and $334 per year in travel time savings.

We are strongly positioned to continue this positive impact on the local economy well into the 2040 Master Plan horizon year.

Our Fiscal Year 2015 Comprehensive Annual Financial Report (CAFR) reaffirms our solid financial position. We carry a strong reputation with the bond rating agencies, receiving an "A" rating from both Standard & Poor's and Fitch, and an "A2" from Moody's.

Further evidence of our strong position is provided in the FY 2015 General Traffic and Earnings Consultant's Annual Report (T&E Consultant). After realizing a strong 9.5 percent increase in toll revenue from the previous year, the T&E Consultant forecasts that FY 2016 revenues will continue to increase.

1.3 MASTER PLAN PURPOSE

The Master Plan serves two critical purposes. First, it defines the policies we will follow when evaluating projects for future mobility needs. Second, it identifies specific near- and long-term projects which we will reevaluate annually as the Five Year Work Plan is developed. The ongoing reevaluation process ensures we make fiscally responsible decisions.

1.4 MASTER PLAN DEVELOPMENT AND OVERVIEW

This document is the culmination of nearly 12 months of community outreach, stakeholder interaction and technical analysis. Our Board members took an active role in the development of this Master Plan, participating in six interactive workshops with our project team, industry experts and community stakeholders.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CHAPTER HIGHLIGHTS

Each section of this Master Plan focuses on a specific element of the Master Planning process. Highlights of each chapter are provided below:

2

Chapter 2 presents the Vision and Mission statements adopted by our Board. It also includes descriptions of the policies that will guide development and evaluation of future transportation projects and capital investment decisions.

3

Chapter 3 provides an overview of the Central Florida Region and presents the economic indicators that will drive future transportation improvement needs. Regional growth, both the magnitude and distribution, are key factors that will influence the characteristics and timing of future transportation improvements.

Chapters 4, 5 and 6 focus on the three major capital elements of the Master Plan.

4

Chapter 4 explores and provides a detailed description of our existing expressway system. It also documents current traffic volumes served by our system and future year projections. It concludes with the identification of future capacity, operational and renewal project needs for our existing system.

5

Chapter 5 explores the wide range of new potential expressway expansion projects we will investigate further in the coming years. Twelve projects representing over 150 new centerline miles of expansion are identified in the region and discussed in this section.

6

Chapter 6 begins with an overview of our enabling legislation as it pertains to multimodal and intermodal opportunities. It then provides a summary of the various multimodal systems, intermodal facilities and transit providers operating in the Central Florida area. It concludes with a discussion of a strategy for future multimodal considerations.

7

Chapter 7 summarizes the 2040 Master Plan program, which includes funding for an estimated over $2 billion of capacity and operational improvement projects for the existing expressway system, identifies 12 new expressway projects costing approximately $9 billion that will be evaluated further for future consideration. Furthermore, it discusses the opportunity for potential future involvement in multimodal and intermodal initiatives.

CHAPTER 2

Vision, Mission and Policy Profile

OUR VISION IS

"To provide the region with a world-class, integrated mobility network that drives economic prosperity and quality of life."

OUR MISSION IS

"To build, operate and maintain a world-class mobility network through accountability, fiscally sound practices and a community focus."

Immediately following the September 2015 Board meeting, a workshop was convened to review and discuss the policy options that will guide our future decisions and involvement in new capital projects. These policies will facilitate the implementation of our vision and mission.

2.1 VISION AND MISSION GUIDE THE FUTURE

Our vision and mission are the foundation for all Master Plan decisions. The vision statement provides guidance and inspiration as to what we are focused on achieving in the future, while our mission is a clear and succinct representation of our day-to-day purpose. They will be referenced throughout the planning horizon as capital investments are considered. The adopted vision and mission statements reaffirm our commitment to serving the region, focusing on our customers, and doing our part to help promote the economic vitality of our community.

A visioning workshop was held on August 13, 2015 where Board members were able to exchange ideas and describe their individual perception of where and what we will be in the future. The visioning process started several months prior to the workshop and included an extensive community outreach and data collection effort.

Our team members actively solicited input from the community by appearing before numerous County Commissions, City Councils and community organizations. The August workshop was the culmination of the process in which the Board members were able to freely discuss their views in an open and transparent setting. The entire visioning process is documented in detail in Appendix A.

2.2 ESTABLISHING POLICY, MEASURING SUCCESS

The intent of the Policy Profile, represented in **Figure 2.1**, is to provide a mechanism to both establish policy positions for major capital investment decisions and measure the success of capital investments in achieving our vision.

The purpose of the Policy Profile is threefold:

- Implement our mission.
- Guide decisions on future initiatives and capital programs.
- Comply with legislation.

CFX legislation allows the agency to:

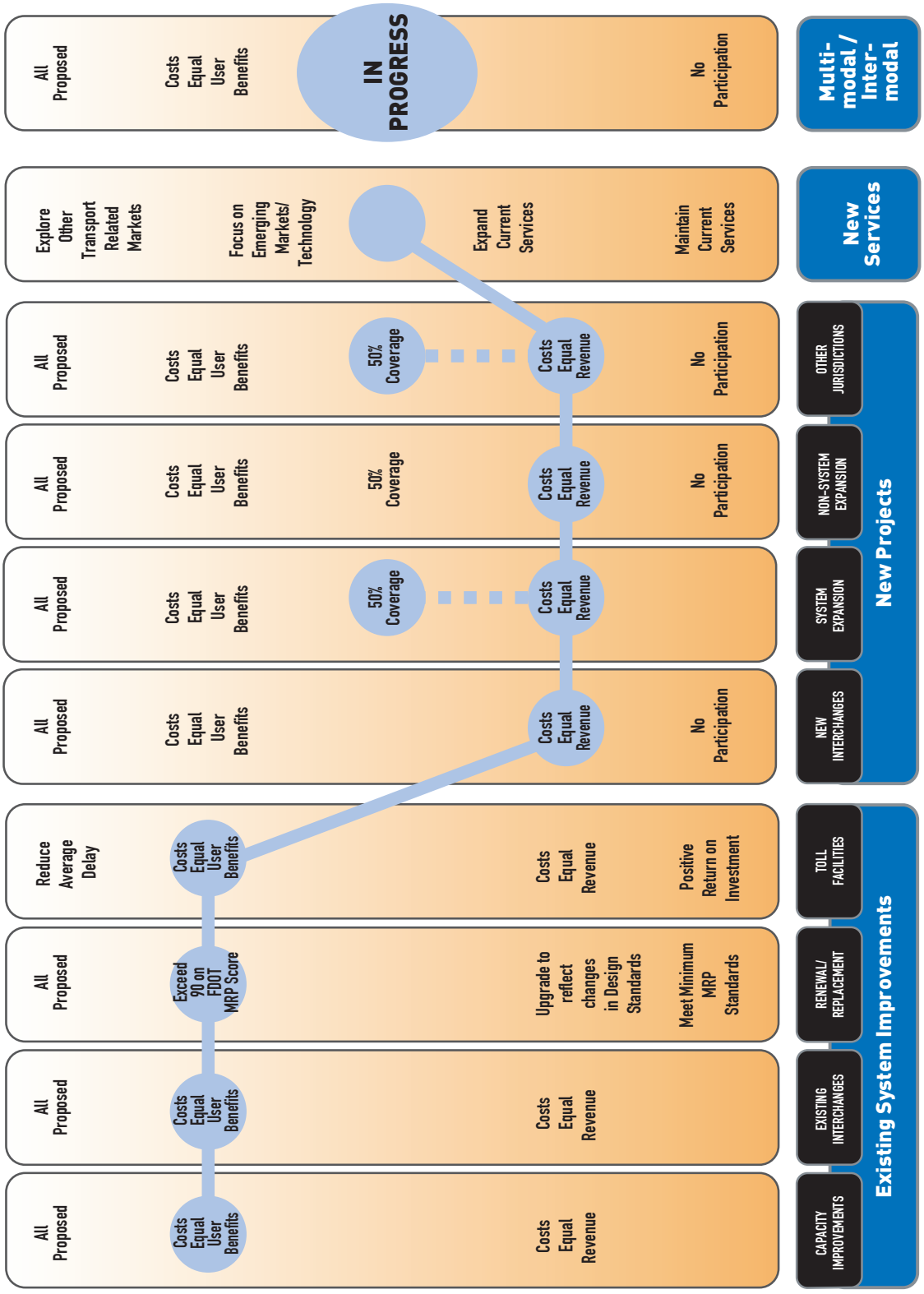
- Maintain, operate and improve our System
- Construct extensions and additions to our System
- Engage in multimodal and intermodal projects within our right of way that improve the level of service on our System

Given the wide range of project options that fall within these broad allowances, the policy positions affirmed by our Board and represented on the policy profile provide direction on future participation in individual projects.

The range of policy options is represented across the bottom of the Figure 2.1 graphic by positions that represent a pure business approach. The options represented across the top of the graphic are more consistent with a government agency focused on serving the public. A policy level for each individual

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Figure 2.1 Policy Profile



Range of Policy Options

S.R. 417 Boggy Creek Road Interchange opened in 2016.

component is set so that it supports our adopted vision and mission. In general, the profile reflects a strong public service approach for the System improvements and a fiscally conservative approach for investing in new projects and opportunities.

2.2.1 IMPROVE THE EXISTING SYSTEM

Future year traffic forecasts indicate that significant congestion will form on portions of our System if no improvements are funded. The policy elements within this category recognize that in the interest of both regional mobility and revenue, travel service on the existing system must be maintained at desirable levels to ensure our customers can travel freely between their destinations with little to no delay due to traffic congestion.

Existing system capacity could be expanded by adding lanes to the mainline or improving existing interchanges. Typically, interchange improvements consist of widening ramps or making improvements at the ramp intersection with the crossroad. Although the benefits would vary by project, in most cases capacity expansion would reduce congestion and delays as well as travel times.

As the System ages and grows with the implementation of new roadways such as the Wekiva Parkway, the importance of a comprehensive renewal program increases. The policy for Renewal and Replacement refers to major activities such as milling and resurfacing, signing and pavement marking replacement and facility renewal.

Electronic toll collection has resulted in tremendous efficiency gains for us and benefits for our customers. Toll collection operations were further enhanced with the development of the Open Road Tolling (ORT) plazas, which allow uninterrupted traffic flow through the toll plaza. We will look for new opportunities to further improve toll collection operations in the future with the objective of providing additional benefits to our customers. Expected benefits include reductions in congestion, travel time and vehicle operating costs.

Our policies on existing system improvements are as follows:

Capacity Improvements: Undertake those improvement projects that will generate user benefits that equal or exceed the cost of the project. User benefits are generally measured in terms of time savings, improved convenience of services and potential reduction in crashes.

Existing Interchanges: Finance those improvement projects that will provide user benefits that are equal to or exceed the cost of the project.

Renewal/Replacement: Maintain the roadway condition at a Maintenance Rating Program (MRP) rating of 90 or better. This is one of the Florida Transportation Commission metrics that we meet or exceed every year.

Toll Facilities: Continue improving toll facilities, provided the value of the benefits of those improvements will equal or exceed the cost.

2.2.2 EXPAND FROM ORANGE COUNTY INTO SURROUNDING COUNTIES

The future need for additional highway capacity in Central Florida will extend beyond the current System. Although the entire existing System is located within Orange County, we are authorized to expand services into Lake, Osceola and Seminole counties. This expanded geographical reach provides us more flexibility and opportunities to respond to shifting development trends and regional needs. Further, our Master Bond Resolution allows us to participate in non-tolled feeder roads within one mile of the System.

To accommodate regional economic prosperity, we will invest in new toll roads and interchange projects in Lake, Orange, Osceola and Seminole counties. We may also investigate partnership opportunities with

toll roads in adjacent counties and, consistent with bond restrictions, in feeder roads that improve access to our System or in other revenue enhancing non-system projects.

The policies that will guide our involvement in new projects are as follows:

- **New Interchanges:** Fund new interchanges that will generate new system revenue in excess of the cost to build the interchange.

- **System Expansion:** Fund new toll roads that will generate toll revenues in excess of the cost of the project. For those projects where toll revenue is insufficient to cover project cost, we may consider entering into partnerships with other public or private entities, whereby we could pledge to cover up to 50 percent of project costs from system revenues. The remaining 50 percent of the project could be covered by a combination of toll revenues from the project and partner contributions.

- **Non-System Expansion:** Fund non-system projects provided they will generate new toll revenue in excess of their costs. This policy applies mainly to improvements to toll-free feeder roads or new arterial connections. The projects must also comply with our Master Bond Resolution, which requires the project be contiguous to, and extend not more than one mile, from our System.

- **Other Jurisdictions:** Our policy regarding expansion projects outside of Lake, Orange, Osceola or Seminole counties is to fund new toll roads that will generate toll revenues in excess of their costs. For those projects where toll revenue is insufficient to cover project cost, we may consider entering into a partnership with other public or private entities, whereby we may pledge to cover up to 50 percent of the project cost from system revenues. The remaining 50 percent of the project may be covered by a combination of toll revenues from the project and partner contributions. The project must also comply with Florida Statutes.

2.2.3 NEW SERVICES ON THE HORIZON

Potential new services would focus primarily on leveraging the resources and opportunities associated with our extensive infrastructure.

- **Traveler information services,** including general information on routes, directions and travel options as well as tourist and truck specific information.

- **Trip planning and management services** such as real-time information integrated into the commercial or emergency vehicle routing and dispatching process, ride sharing information for high-occupancy vehicles and vanpools and trip management for tourist and business travelers.

- **Management of toll/fare collection and electronic payment systems** on a fee-for-service basis for other transportation agencies such as parking lot operators and transit providers.

- **Integration of electronic payment between E-PASS and other transportation activities,** such as parking lot operators, transit agencies, rental car companies and private business.

The advancement of automobile technology is proceeding at an accelerated pace. Today's vehicles can park themselves, notify drivers of impending hazards and unintentional lane diversions and even self-activate breaking systems when drivers fail to react. On-board global positioning systems (GPS) and satellite navigation programs, that were in their infancy just a few years ago, are now provided as standard features on many automobile models.

The advancement in connected vehicle technology will continue, if not accelerate, in the coming years. Connected vehicles use radio communications between each other and the roadway corridor infrastructure to warn drivers and government agencies about dangerous situations. In addition to improving the safety of the traffic stream, this technology can also be used for other purposes such as toll collection.

In 2014 the National Highway Traffic Safety Administration (NHTSA) announced steps to enable vehicle-to-vehicle (V2V) communication technology for light vehicles. The NHTSA anticipates issuing its notice of proposed rulemaking regarding V2V technology by the end of 2016.

Given this significant potential to leverage our technological resources in this dynamically emerging market area, our policy position is as follows:

- **New Services:** Seek opportunities to expand into emerging markets that are compatible with our current technology services and infrastructure, such as traveler information services, parking, and fiber optic cable and advertising. Projects must also comply with legislation and our Master Bond Resolution.

2.2.4 PLANNING FOR MULTIMODAL/ INTERMODAL OPPORTUNITIES

Our vision statement calls for a "world-class, integrated mobility network…" which is anticipated to include more than the existing System of limited access expressways. Given that the enabling legislation allows us to take a leadership role in the planning, design, construction and operation of multimodal corridors and intermodal facilities, it is reasonable to conclude that these types of projects would be critical elements of such a future network.

We may consider opportunities to participate in projects that will expand multimodal transportation services, for both passengers and freight within the Central Florida region. Projects might include parking garages, park-and-ride lots, and multimodal passenger or freight terminals that would facilitate connections between expressways and other transportation modes.

This element was the subject of a detailed presentation and discussion at the December 10, 2015 board meeting led by representatives from the Center for Urban Transportation Research (CUTR) based at the University of South Florida. The CUTR presentation, "CFX Strategic Multimodal Investment Discussion," identified many issues and opportunities associated with multimodal corridors and intermodal projects.

Taking steps to establish a policy position on our future involvement in multimodal

At the conclusion of the discussion, our Board took steps toward establishing a policy position on our future involvement in these types of projects and requested additional information from the team for consideration.

The additional requested information included:

- A set of policy recommendations consistent with Board input, feedback and statutory framework.
- A review of existing multimodal funding needs and potential projects.
- A process for periodic review and evaluation of partnership opportunities.
- Identification and review of all multimodal and intermodal projects currently in progress in Central Florida and identification a potential CFX, role if any.

Our Board will readdress our policy position on this element in the future, once this additional information becomes available. At that time, we will issue an amendment to this Master Plan reflecting the actions on this element.

CFX may consider opportunities to participate in projects that will expand multimodal/intermodal transportation services, for both passengers and freight within the Central Florida region. Projects might include parking garages, park-and-ride lots, and multimodal passenger or freight terminals that would facilitate connections between expressways and other transportation modes.

CHAPTER 3

Central Florida Region

3.0 CENTRAL FLORIDA - ONE OF THE NATION'S FASTEST-GROWING REGIONS

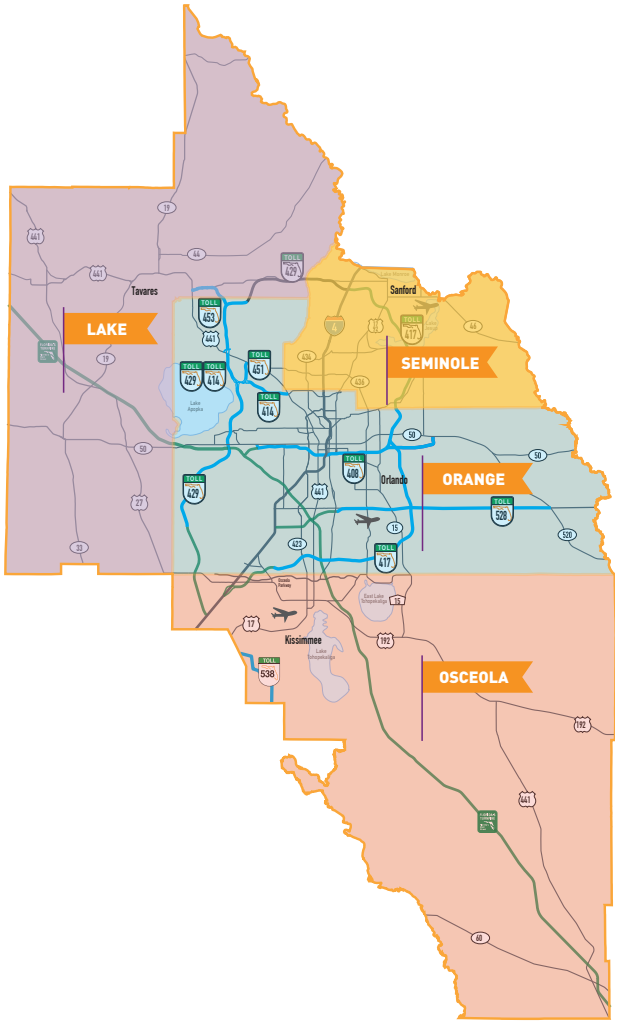
The four county Central Florida region that comprises our jurisdiction, Lake, Orange, Osceola and Seminole, is home to more than 2.3 million residents, or approximately 12 percent of the state's total population. The 4,000 square-mile region has a dynamic mixture of terrain and land uses, and hosts a variety of extraordinary attractions, employers and transportation facilities. With unique qualities, locations and attractions, the region has grown faster than statewide averages in population, employment and tourism. Economists predict Central Florida will continue to be one of the fastest-growing regions in the United States through the 2040 Master Plan horizon year.

3.1 LAKE COUNTY PLANNING TWO MAJOR INITIATIVES

With approximately 316,600 residents and more than 1,150 square miles of diverse landscape and rolling terrain, Lake County is well positioned to handle a significant portion of the future growth projected for Central Florida. The county works closely with its 14 municipalities and citizens on a variety of initiatives to improve the quality of life.

By the year 2040, Lake County's population is projected to increase by 56 percent, to 493,300 residents. Likewise, Lake County employment is supposed to increase more than 60 percent, from about 130,000 jobs today to 212,700 by 2040.

Lake County leaders are working to accommodate the anticipated growth. Planners are identifying Lake County's primary strategic growth corridors. Two of the corridors identified—the Health and Wellness Way and Wolf Branch Innovation District — should greatly influence the future transportation services we provide.



HEALTH AND WELLNESS WAY

Lake leaders have identified the south part of the county for a potentially significant employment center dubbed "The Wellness Way." It includes more than 16,000 acres within a transportation "Golden Triangle" bounded by Interstate 4, Florida's Turnpike and U.S. Highway 27.

Wellness Way is a concept and vision for creating a more robust and healthy economy for Lake County through:

HUMAN WELLNESS

Capitalizing on the human performance training, nutrition, sports medicine and health sciences work being done at the National Training Center, South Lake Hospital and Lake-Sumter State College, among others.

ECONOMIC WELLNESS

Capitalizing on existing growing industries such as tourism, technology, manufacturing, science and agriculture.

ENVIRONMENTAL WELLNESS

Preserving Lake County's natural resources through effective master planning.

The corridor is enhanced by State Road 429 and the soon-to-be completed Wekiva Parkway. Immediately to the east of the corridor is Horizon West, a master-planned community in Orange County that will integrate seamlessly with the Wellness Way.

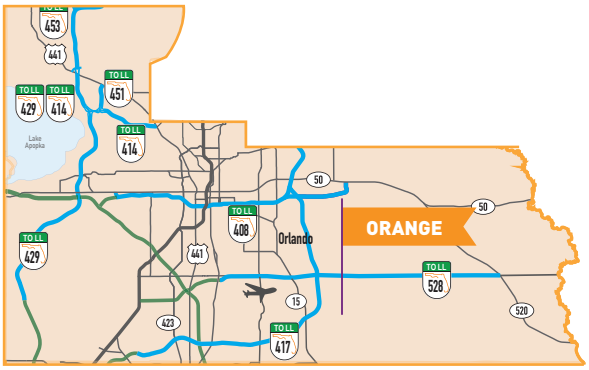
WOLF BRANCH INNOVATION DISTRICT

The Lake County Economic Development Department is working with Mount Dora officials to plan and develop this significant employment center. It would be situated on approximately 900 acres along the soon-to-be-completed Wekiva Parkway extension into Mount Dora. An existing joint planning agreement between Mount Dora and the county has established land uses on the proposed properties and detailed market studies are underway.

The Mount Dora Employment Center would include commercial, light industrial and retail development, with the ultimate mix yet to be determined.

Our portion of SR 429 is close to and readily accessible to Lake County residents and businesses via local roadway interchanges such as Schofield Road and New Independence Parkway. Also, once the CFX portion of the Wekiva Parkway opens in early 2018, Lake County will have direct access to the System from State Road 46.

The Parkway will act as the final leg of the western beltway around Metro Orlando, creating significant economic development opportunities in Lake County. The new extension will link SR 429 in Apopka to Interstate 4 and State Road 417 in Sanford. A significant portion of the Wekiva Parkway will travel through Lake County and will include an extension linking it to SR 46, U.S. Highway 441 and Mount Dora.



3.2 ORANGE COUNTY EMPLOYMENT HUB OF REGION

Orange County is the hub of the region, boasting the largest population (1.25 million) and employment base (940,500 jobs). People live throughout the unincorporated areas of the county, as well as 13 municipalities, including its five largest cities: Orlando, Apopka, Ocoee, Winter Garden and Winter Park.

The entire 109 centerline miles of the CFX System is located within Orange County and each mile plays a critical role in the daily movement of goods and services that drive the Central Florida economic engine. Orange accounted for well over 65 percent of the region's total employment in 2014.

Major employers span a wide spectrum, ranging from Walt Disney World and SeaWorld in tourism; Adventist Health, Florida Hospital and Orlando Health in healthcare; Publix and Walmart in retail; and Orange County Public Schools and the State of Florida in government related occupations.

Tourism is critical to the regional economy and Orange County. In addition to Walt Disney World in the southwest, the county hosts the International Drive District, which is home to thousands of hotel rooms, modest to upscale retail centers, Universal Studios, SeaWorld and the Orange County Convention Center.

By 2040, population is projected to increase by more than 50 percent to 1.9 million, with employment expected to climb at a similar rate. Much of the population growth will be in the cities, along with planned developments such as Horizon West spread throughout the county.

HORIZON WEST

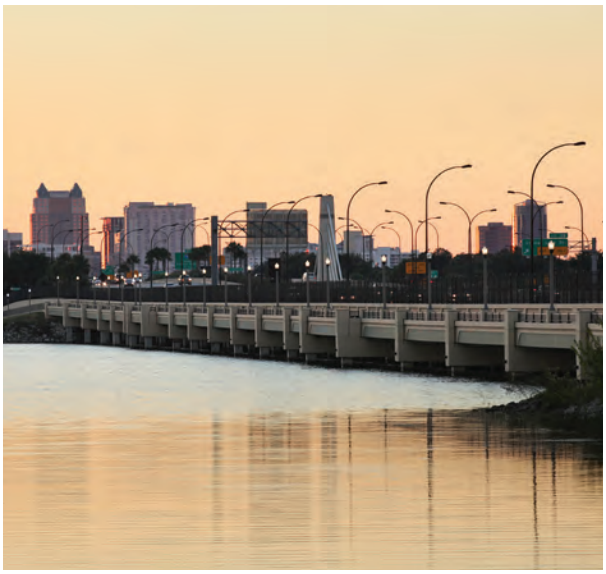
Horizon West is a growing community of mixed-use villages nestled on more than 20,000 acres in southwest Orange County that straddle SR 429. Located northwest of Walt Disney World, Horizon West represents the evolution of historically rural and agricultural lands into self-sustaining urban environments.

It features pedestrian-friendly communities that provide schools and parks intertwined with the natural environment. The vast majority of recent new home starts recorded in Orange County have been in the Horizon West area. At buildout, Horizon West is projected to be home to more than 60,000 people.

ORANGE COUNTY CONVENTION CENTER (OCCC)

Located at the interchange of International Drive and SR 528, the OCCC ranks as the second largest convention center in the United States behind only the McCormick Center in Chicago. The OCCC has seven million feet of total space, 2.1 million of which is for exhibitions.

The OCCC complex consists of two buildings joined by a covered pedestrian sky-bridge. On average, the OCCC hosts 1 million delegates annually, translating into a yearly economic impact of $1.9 billion to Central Florida. Convention-related business and educational events directly or indirectly affect more than 25,500 employees and 1,000 businesses.



UNIVERSITY OF CENTRAL FLORIDA (UCF)

The University of Central Florida is a public research university in unincorporated east Orange County. It is the largest university in the United States by undergraduate enrollment and the second largest by total enrollment. Founded in 1963, UCF opened with a mission of providing personnel to support the U.S. space program at the Kennedy Space Center and Cape Canaveral Air Force Station. Initial enrollment was only 1,948 students.

Today there are more than 60,000 students from more than 100 countries and all 50 states. The university offers more than 200 degrees through 13 colleges and 12 satellite campuses in Central Florida. UCF has awarded almost 280,000 degrees, including 50,000 graduate and professional degrees, to more than 240,000 alumni worldwide.

UCF is a true partner in the Central Florida community and generates and supports numerous research and technical enterprises, such as the **Central Florida Research Park (Research Park)**. The Research Park business community consists of more than 1,000 acres and 58 buildings abutting UCF's main campus. It is the largest research park in Florida, the fourth largest in the United States by number of companies, and the seventh largest in the United States by workforce, which is estimated at 9,000 jobs. It is home to numerous centers hosted by the United States Department of Defense, UCF, and private corporations.

3.3 OSCEOLA COUNTY ROOM TO GROW

Of the four counties within the CFX jurisdiction, Osceola has the largest geographical area — more than 1,500 square miles — but the smallest population — 308,300 residents. Most people live in the northwest and largely within its two cities, Kissimmee (the county seat) and St. Cloud, along with the well-established communities of Poinciana and Celebration. Most of the jobs, about 110,000, are in this area, too. The bulk of Osceola is dominated by ranch lands, undeveloped prairies, woods and marshes.

Of the four regional counties, Osceola is projected to experience the largest population and employment growth (by percentage) by the year 2040, with increases over 83 percent in population and 77 percent in employment.

Several major initiatives are as follows:

NORTHEAST DISTRICT

It encompasses more than 19,000 undeveloped acres northeast of St. Cloud. The goal of the **Northeast District Conceptual Master Plan (NED Plan)** is to create a regional employment center that would land higher-paying jobs in the region's expanding high-tech economy.

The NED Plan also calls for a variety of housing options, protecting environmentally sensitive lands, wildlife corridors and upland habitat and creating a strong sense of place through street layout, open space, streetscape appearance, and linkage of neighborhoods to commercial services and jobs.

At build-out, the Plan projects 29,320 new dwelling units, 8.5 million square feet of commercial / office/ industrial space, nearly two million square feet of institutional / civic space, 5,000 hotel rooms and creation/support of 44,130 jobs.

NORTH RANCH SECTOR PLAN

This long-term master plan involves 130,000 acres of the Deseret Ranch and extends east and south from the Northeast District to the Osceola County line.

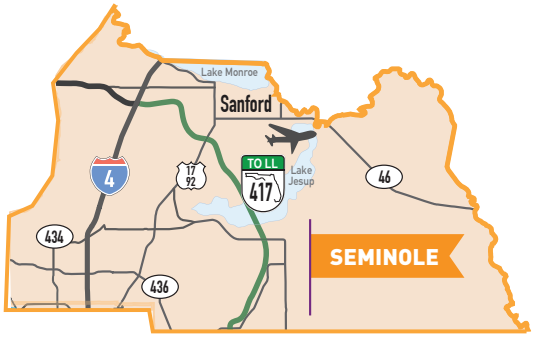
Goals include: encouraging long-term economically sustainable development, connecting regions and economic centers through a multimodal transportation system, accommodating mixed-use communities, and preserving, enhancing and restoring Osceola's large-scale natural systems.

Both the Northeast District and the North Ranch are part of the Deseret Ranch (Ranch) of Florida. This 300,000 acre Ranch, owned by The Church of Jesus Christ of Latter-day Saints, spreads beyond Osceola and into the adjacent counties of Orange and Brevard. Ranch leadership is well known for long-term planning, with both the Northeast District and North Ranch horizons extending well beyond the 2040 outlook of this Master Plan.

S.R. 417 Boggy Creek Interchange

FLORIDA ADVANCED MANUFACTURING RESEARCH CENTER (FAMRC)

The FAMRC is a 100,000 square-foot, state-of-the-art manufacturing research facility set to open in 2016. Partners in the project aim to create the world's first industry-led smart-sensor consortium. The facility will develop innovative manufacturing processes and materials to advance production of smart sensors. Sensors figure significantly in the future of automobiles, surgical devices, home appliances and much more. Some smart sensors are already embedded in things we daily use, such as remote controls. There are other potential applications from detecting deadly carbon monoxide to showing a doctor how cancer, Alzheimer's disease and diabetes affect the body.



3.4 SEMINOLE COUNTY FLORIDA'S NATURAL CHOICE

With 443,000 residents, Seminole County has the second largest population of the four-county region, despite having the smallest land area.

In fact, at only 345 square miles, Seminole is less than one-quarter the size of Osceola and barely one-third the size of Orange. Seminole's population is projected to increase by 27 percent to nearly 563,900 people by 2040.

Regardless of its size, Seminole and its seven cities — relying in part on high-tech businesses — account for some of the highest per capita income in the state. Seminole's average per capita income consistently ranks in the top ten within Florida and is No. 1 within the region. The County's employment base, estimated at approximately 237,000, is concentrated along the I-4 corridor and centered on high-intensity planned development that encompasses the Heathrow International Corporate Park, home of the American Automobile Association (AAA) headquarters.

Seminole's tag line is "Florida's Natural Choice," a testament to the county's vast areas of natural and environmentally sensitive lands associated with the Wekiva River, St. John's River, Lake Monroe and Lake Jessup. Natural features such as these support a thriving eco-tourism industry within the county.

SANFORD ORLANDO INTERNATIONAL AIRPORT

The airport is a major economic driver, just a short distance from SR 417. As stated in its fiscal year 2015 annual report, the airport is the fourth busiest airport in Florida and the sixth busiest in the eight-state southern region based on the number of annual operations.

The airport handles 2.5 million travelers per year, creating an annual economic impact of more than $3 billion to the local economy. The airport accounts for more than 4,000 direct and 24,000 indirect jobs. The Sanford Airport Commerce Park, located adjacent to the airport, boasts 102 non-aviation tenants that provide a range of commercial services and products.

SEMINOLE COUNTY SPORTS COMPLEX

The complex is under construction and set to open in 2016. The 102-acre complex will have 15 state-of-the-art lighted athletic fields capable of hosting world-class tournaments and events. The $27 million complex is expected to draw up to 63,000 athletes and spectators and generate more than $10 million in economic impact annually. The complex includes soccer and softball facilities.

3.5 CITY OF ORLANDO WORLD-CLASS AMENITIES

A variety of world-class amenities, attractions and economic drivers are located within the city limits.

Known as the City Beautiful, Orlando is the region's most populous municipality with about 263,000 residents. City boundaries cover 110 square miles, stretching from the south at the Orange/Osceola county line to the north, almost reaching Seminole.

A partial listing of the diverse entities includes:

DR. PHILLIPS CENTER FOR THE PERFORMING ARTS

The Dr. Phillips Center for the Performing Arts is in the heart of downtown Orlando and houses the Walt Disney Theater and the Alexis & Jim Pugh Theater, hosting a range of performances including those put on by the Orlando Ballet and Broadway in Orlando, as well as smaller community shows. Other art centers and museums within Orlando include the Bob Carr Performing Arts Center, Orlando Science Center and Orange County Regional History Center.

AMWAY CENTER

The Amway Center (Center) is in downtown Orlando and serves as home to the Orlando Magic professional basketball team. From its signature spire and modern architecture to its public spaces and comfortable amenities, the Center is an iconic destination in Central Florida. With more than 20,000 seats, the Center is designed to host a wide range of events. The Center is one of the most technologically advanced in the world, highlighted by the main scoreboard – the largest of its kind in the NBA. Other athletic and event facilities in Orlando include the Orlando Citrus Bowl and, coming soon, the Orlando Lions soccer stadium.

LAKE NONA MEDICAL CITY

Lake Nona Medical City is a 650-acre health and life sciences park in southeast Orlando, near the Orlando International Airport and within the master-planned community of Lake Nona. Medical City is home to the University of Central Florida's Health Sciences Campus, Sanford-Burnham Medical Research Institute, Nemours Children's Hospital, University of Florida Academic and Research Center, Valencia College at Lake Nona and the Veterans Affairs Medical Center.

UNITED STATES TENNIS ASSOCIATION (USTA) NATIONAL CAMPUS "THE NEW HOME OF AMERICAN TENNIS"

The $60 million USTA National Campus (Campus) is being constructed on 63 acres in the northern portion of the Lake Nona Sports Innovation and Performance District (Sports District). The Campus is expected to be the largest tennis center in the nation, offering over 90 regulation tennis courts and serving as home to the University of Central Florida and Team USA tennis programs. Overall, the 11 square-mile Sports District is envisioned to be home to a wide variety of sports-related industries, including sporting equipment and apparel manufacturers, sports membership groups and sports-related technology companies.

ORLANDO INTERNATIONAL AIRPORT

Many of the region's visitors pass through Orlando International Airport (OIA). In 2015, OIA hosted a record 37.8 million travelers, including almost 5 million international passengers. That's 103,500 passengers per day, making OIA the ninth-busiest port of entry into the United States.

Responding to recent and projected growth, OIA has launched a massive expansion that includes upgrades to the existing terminal, automatic people mover and concourses. Construction has started on a new intermodal center, which is a key element of the overall expansion. The $1.3 billion project marks the beginning of a program that will lead to 120 new gates and a 20,000-space parking garage. Airport capacity will increase to 60 million passengers. OIA generates more than $31 billion in annual direct and indirect revenue and is responsible for 18,000 employees.

UCF DOWNTOWN ORLANDO

UCF is expanding with a new downtown Orlando campus where ultimately 7,700 students will live, learn and work. This campus will provide innovative education for high-demand fields that integrate with the emerging high-tech and creative economy. UCF Downtown will offer degrees in digital media and communication, health information technology and administration and community-fairing programs like social work and legal studies—connecting highly skilled talent with industry needs, neighborhood synergies and new opportunities.

S.R. 408 Westbound Approaching Downtown Orlando

3.6 TRAFFIC DOES NOT STOP AT COUNTY LINES

CFX understands that traffic demands do not stop at county borders and that activity centers outside their jurisdiction will influence mobility demands within them. Three adjacent counties, Brevard to the east, Polk to the southwest and Volusia to the north, are dynamically linked to the Central Florida economy. A brief description of key features within each of these counties is provided below.

BREVARD COUNTY

Brevard is located on Florida's east coast, abutting the Atlantic Ocean. Our SR 528 is one of the few primary thoroughfares that link the region with Brevard and one of its premier industries, Port Canaveral (Port). The Port is one of the busiest cruise ports in the world, with a reported 3.9 million passengers passing through in 2014. A 2012 economic impact study of the harbor concluded the Port supported nearly 17,000 direct and indirect jobs and generated revenues in excess of $1.9 billion.

POLK COUNTY

Polk County is southwest of the region and has more than 633,000 residents. It is adjacent to Lake and Osceola counties and is strategically located between Tampa and Orlando. I-4 is the primary transportation corridor linking Polk to the region. One of Polk's newest economic drivers is Florida Polytechnic University. The 170-acre campus is conveniently located on the south edge of I-4. It opened in 2014, offering students various degrees in technical fields.

Another signifcant growth factor is the Central Florida Intermodal Logistics Center (ILC), situated on 318 acres in Winter Haven, which has the capacity to process up to 300,000 containers per year. It is surrounded by 930 additional acres that are being developed in phases to build up to 7.9 million square feet of warehouse distribution centers and light industrial facilities. The ILC, which officially opened in October 2014, provides a centralized hub for transportation, logistics and distribution serving Orlando, Tampa and other Florida markets, and supports thousands of jobs for the Central Florida economy.

VOLUSIA COUNTY

Volusia is just north of Seminole. Volusia cities such as DeBary, DeLand and Deltona have acted as extensions of the Central Florida community for years. Volusia has the "World's Most Famous Beach," Daytona Beach, which is home to the national headquarters of the National Association for Stock Car Auto Racing, or NASCAR. There's also the Daytona International Speedway, which recently underwent a $400 million upgrade. NASCAR's economic benefit to Florida and the area is estimated at $1.6 billion annually.

SUPPORTING STATEWIDE MOBILITY

Our jurisdiction is strategically located in the center of the state, allowing us to positively influence mobility conditions well beyond our borders. We embrace the critical role our system plays in helping to ensure goods and services move throughout the state in a timely and efficient manner, further driving Florida's economy.

3.7 GROWTH DRIVES ECONOMY

Future regional travel needs are driven by the levels, growth rates and location of socioeconomic activity such as population and employment. Other important growth factors unique to Central Florida include passenger activity at OIA, UCF and 20+ regional and post secondary schools' enrollment and attendance at regional attractions. Socioeconomic growth is a major factor used to determine future travel demand and traffic patterns, which in turn helps to identify capital improvement needs for both existing facilities and new corridors.

3.7.1 OUR POPULATION HAS MORE THAN DOUBLED

The number of people living within the seven-county district has more than doubled since 1980, going from 1.7 million to more than 4 million in 2015. This historical growth equates to a compound average annual growth rate (CAAGR) of roughly 2.6 percent. The historical population trend for the district, as well as Florida, from 1980 through 2015 is provided in **Table 3-1**. The corresponding population CAAGR for the same years is also included in the table.

Orange County experienced the largest population increase, while Osceola and Lake counties had the highest annual growth rates of 5.4 percent and 3.2 percent, respectively. Florida's population grew from 9.7 million in 1980 to 19.8 million in 2015, which equates to a CAAGR of 2.1 percent per year.

The University of Florida's Bureau of Economic and Business Research (BEBR) annually prepares forecasts of population within Florida. These population forecasts are presented under three scenarios: low, medium, and high. Medium-level

BEBR population projections are typically used as a base point in the development of county-wide control totals. The BEBR medium-level population projections for the district and the state are presented in **Table 3-2**.

By the year 2040, the district should have nearly 5.7 million people, which is 41 percent greater than the 2015 population. Osceola is expected to have the largest growth rate, about 84 percent. That is projected to be more than double the total growth rate predicted for the district or the state.

In addition to the numerous infill projects being constructed within the urban areas, signs of the population growth are apparent throughout the district. In southwest Orange, the Horizon West special planning area is rapidly developing with single- and multi-family communities, shopping centers and schools. Similar growth also is occurring in southeast Orange and northern Osceola along the SR 417, Narcoossee Road and Boggy Creek Road corridors. Additionally, numerous planned developments have been announced along SR 528 in eastern Orange, and the Northeast District Sector Plan has been approved in northern Osceola.

3.7.2 MAJOR EMPLOYERS

Orange County is not only home to the largest population in the district, it also hosts the largest amount of employment, with approximately 43 percent of the district total. Major Orange employment centers include the Walt Disney World (WDW) area, downtown Orlando and the high-tech campus that surrounds UCF.

As shown in **Table 3-3**, employment within the district more than doubled between 1980 and 2014, with an annual growth rate easily outpacing the state. Osceola experienced the highest annual growth rate at approximately 5.2 percent over the 34-year period and Seminole was a close second with growth of 43 percent.

Employment in the district is projected to grow by an average of 1.6 percent per year through 2040 as shown in **Table 3-4**, which on average is slightly higher than the projected statewide annual growth rate. Osceola's total employment is forecasted to increase the fastest at 2.3 percent per year, while Seminole and Orange are both projected to increase by an annual average of 1.7 percent.

3.7.3 TOURISM CONTINUES LEADING ECONOMY

Tourism will continue to be a focus of the local economy during the next 25 years, and is expected to continue its historic growth rate during that time frame. The district hosted a record 62.7 million visitors in 2014, which was an increase of 5.9 percent over the 59.2 million visitors in 2013.

The district is home to seven of the nation's largest theme parks, which will continue to contribute to the growth in tourism as well as population and employment in Central Florida. This growth is associated with new and planned attractions. Universal Studios at Universal Orlando opened another Harry Potter themed attraction, Diagon Alley, during the summer of 2014. Downtown Disney is being transformed into Disney Springs with new shopping, dining and entertainment choices. It is opening in phases with completion in 2016.

Table 3-1 Historical Population Trends 1980 - 2015

COUNTY	1980	1990	2000	2010	2015	CAAGR 1980-2015
Orange	470,865	677,491	896,344	1,145,956	1,252,396	2.8%
Seminole	179,752	287,521	365,199	422,718	442,903	2.6%
Osceola	49,287	107,728	172,493	268,685	308,327	5.4%
Lake	104,470	152,104	210,527	297,052	316,569	3.2%
Volusia	258,762	370,737	443,343	494,593	510,494	2.0%
Polk	321,652	405,382	483,924	602,095	633,052	2.0%
Brevard	272,959	398,978	476,230	543,376	561,714	2.1%
District Total	1,657,747	2,399,941	3,048,060	3,774,475	4,025,455	2.6%
Florida	9,746,959	12,938,071	15,982,378	18,801,310	19,815,183	2.1%

Source: U.S. Census/BEBR

Table 3-2 Projected Population Growth

COUNTY	2015 POPULATION ESTIMATE	2040 POPULATION PROJECTION	TOTAL GROWTH ESTIMATE
Orange	1,252,396	1,908,000	52.3%
Seminole	442,903	563,900	27.3%
Osceola	308,327	566,300	83.7%
Lake	316,569	493,300	55.8%
Volusia	510,494	598,000	17.1%
Polk	633,052	894,600	41.3%
Brevard	561,714	670,400	19.3%
DISTRICT TOTAL	**4,025,455**	**5,694,500**	**41.5%**
Florida	19,815,183	26,252,100	32.5%

Source: BEBR

Table 3-3 Total Employment - Historical Trends

COUNTY	YEAR 1980	1990	2000	2010	2014	CAAGR 1980-2014
Orange	291,166	516,943	737,821	819,601	940,472	3.5%
Seminole	61,621	121,188	186,969	217,867	236,775	4%
Osceola	19,483	43,173	63,938	93,183	109,184	5.2%
Lake	46,281	58,326	86,724	117,118	129,619	3.1%
Volusia	105,796	146,833	178,519	197,711	210,193	2%
Polk	156,846	194,693	235,518	255,722	272,117	1.6%
Brevard	129,188	202,232	243,415	262,161	270,517	2.2%
District Total	**810,381**	**1,283,388**	**1,732,904**	**1,963,387**	**2,168,877**	**2.9%**
Florida	4,687,521	6,740,289	8,918,234	9,877,353	10,911,330	2.5%

Source: Bureau of Economic Analysis / CDM Smith

Table 3-4 Projected Employment Growth

COUNTY	2014 EMPLOYMENT ESTIMATE	2040 EMPLOYMENT PROJECTION	TOTAL GROWTH ESTIMATE
Orange	940,472	1,433,400	52.4%
Seminole	236,775	360,900	52.4%
Osceola	109,184	192,800	76.6%
Lake	129,619	212,700	64.1%
Volusia	210,193	283,200	34.7%
Polk	272,117	385,200	41.6%
Brevard	270,517	346,900	28.2%
DISTRICT TOTAL	**2,168,877**	**3,215,100**	**48.2%**
Florida	10,911,330	15,831,700	45.1%

Source: Woods & Poole Economics, Inc.[1], 2015; CDM Smith, Atkins

[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.

As shown in **Table 3-5**, Disney's Magic Kingdom had the highest attendance of all Orlando-area theme parks, attracting an estimated 19.3 million visitors in 2014. Universal Studios at Universal Orlando attendance growth of 36.7 percent between 2011 and 2014 was the highest of all local theme parks. Tourism growth will continue to be a focus of the local economy during the next 25 years and is expected to continue its historic growth rate during that time frame.

3.8 SUMMARY: GROWTH IS ROBUST

In summary, the forecasts for the district's primary economic indicators affirm the area will continue growing at a robust rate through the Master Plan horizon year of 2040.

Four-county area is projected to be home to more than 5.7 million people working at 3.2 million jobs by the year 2040.

Additionally, tens of millions of visitors will vacation in the district, taking advantage of the mild weather and world-class attractions.

This continued socioeconomic growth will impact the transportation system in a number of ways. Existing expressways will require additional capacity to accommodate increasing traffic volumes. New routes will be required to alleviate increasing intra- and inter-county travel between the residential communities and the employment centers spread throughout the district. New or enhanced alternate travel modes will also be required to provide needed capacity within constrained corridors.

The District's major activity centers are highlighted on the map in **Figure 3-1.** One of the challenges to CFX for achieving its vision:

"To provide the region with a world-class, integrated mobility network that drives economic prosperity and quality of life"

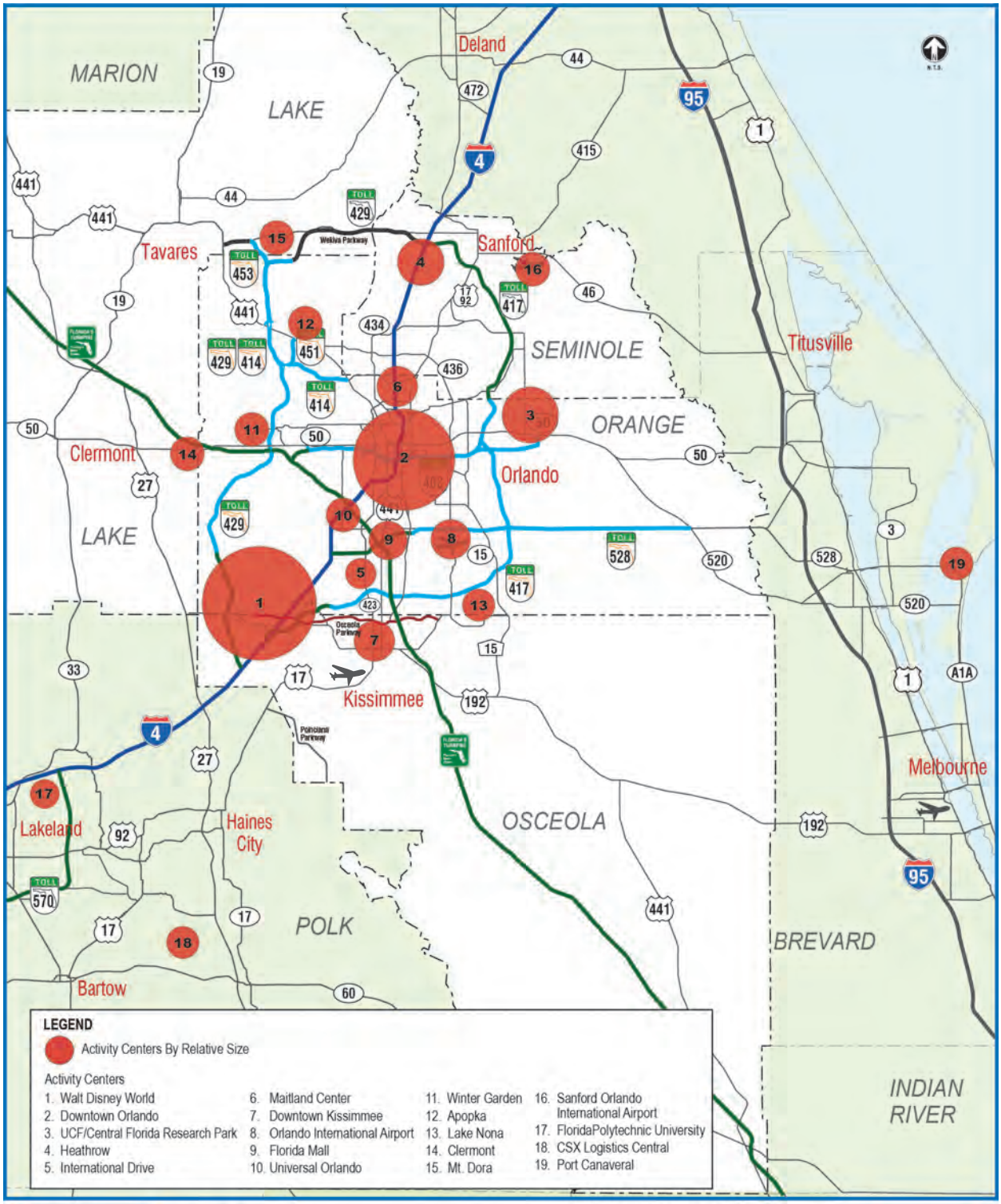
is ensuring that the Central Florida community can travel freely between these major activity centers in a timely and consistent manner.

As shown on the map, one or more of the CFX expressways serve virtually every major activity center. Maintaining our current level of service standard ensures that motorists can freely travel between adjacent activity centers in a matter of minutes. While the time to travel longer distances will be dependent upon the actual miles traveled, our operating standard ensures relatively free-flow travel conditions throughout the majority of the day.

Table 3-5 Central Florida Attraction Attendance | 2011- 2014 (Millions)

THEME PARKS	2011	2014	GROWTH
Disney's Magic Kingdom	17.1	19.3	12.8%
Disney's EPCOT Center	10.8	11.5	5.8%
Disney's Animal Kingdom	9.8	10.4	6.3%
Disney's Hollywood Studios	9.7	10.3	6.3%
Islands of Adventure at Universal Orlando	7.7	8.1	6.1%
Universal Studios at Universal Orlando	6.0	8.3	36.7%
Sea World Orlando	5.2	4.7	-10.0%
WATER PARKS	**2011**	**2014**	**GROWTH**
Typhoon Lagoon	2.1	2.2	6.2%
Blizzard Beach	1.9	2.0	6.1%
Aquatica	1.5	1.6	4.6%
Wet 'n Wild	1.2	1.3	5.0%

Source: Visit Orlando Entertainment Association (TEA) and AECOM. Note: All figures are estimates.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Major Activity Centers

FIGURE 3-1

CHAPTER 4

Existing Expressway System

4.1 OVERVIEW OF OUR SYSTEM

Today, our System includes 109 centerline miles and 767 lane miles (including ramps) of limited access expressways as represented on Figure 4-1 and summarized in Table 4-1. Upon completion of the Wekiva Parkway in 2018, the System will grow to more than 120 centerline and 811 lane miles.

In addition to the System expressways, we also operate and maintain the Goldenrod Road Extension, which is a non-system, two-mile tolled expressway.

Within the System there are 64 interchanges, 13 mainline and 71 ramp toll plazas. The locations of our 13 mainline toll plazas and the average annual daily traffic volumes recorded at each in 2015 are shown on **Figure 4-2**. The System is the result of many individual major projects that started in the mid-1960s. **Figure 4-3** provides a summary of the opening dates for each major project. Additional project details for each facility are provided in the following sections.

TABLE 4-1
CENTRAL FLORIDA EXPRESSWAY AUTHORITY
EXISTING SYSTEM SUMMARY

FACILITY	CENTERLINE MILES	LANE MILES
SR 408	22	200
SR 414	6	57
SR 417	33	230
SR 429	23	126
SR 451	2	8
SR 528	23	146
Current System	109	767
System with Wekiva Pkwy	120	811
Goldenrod Road Extension (non-System)	2	14

4.2 HERE'S OUR SYSTEM:

4.2.1 STATE ROAD 408 (SR 408)

SR 408 was constructed for east-west commuter traffic across the Orlando urban area and to provide fast and efficient access to the Orlando central business district. Today, SR 408 extends 23 miles, from an interchange with Florida's Turnpike in the west to an interchange with SR 50 east of Alafaya Trail. We are responsible for the 22 miles of SR 408 between SR 50 west (at Clarke Road) and SR 50 east.

Several projects have widened segments of SR 408 and updated mainline and ramp toll plazas since their openings. SR 408 features several roadway configurations. Four limited access expressway lanes are provided at the extreme eastern and western segments, while six, eight or more lanes are provided on the interior segments through the core of downtown Orlando.

There are two projects now being designed that will widen segments of SR 408 from four to six lanes. On the west side, the widening begins at Good Homes Road and extends just east of Hiawassee Road. On the east side, widening begins at SR 417 and extends to Alafaya Trail. Construction funding for both projects is committed in the adopted FY 2016-2020 Five Year Work Plan.

4.2.2 STATE ROAD 414 (SR 414)

The first six mile-long segment of SR 414 was constructed as a six-lane, limited access facility, extending the existing FDOT-maintained state road facility, Maitland Boulevard, to the west from US 441 / Orange Blossom Trail to SR 429.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Existing System

FIGURE 4-1

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

2015 AADT Mainline Traffic Volumes

FIGURE 4-2

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

CFX System Timeline of Expressways

FIGURE 4-3

The second phase of SR 414 included a new system interchange with SR 429 and the extension of SR 414, from SR 429 to a new interchange with US 441 (near Plymouth Sorrento Road) located two miles northwest of the original interchange. SR 414 is now nine miles long, of which three miles are part of the dual route with SR 429 (SR 429/SR 414). The extension of SR 414 and the realigned segment of SR 429 ultimately will lead to, and become a part of, the Wekiva Parkway.

4.2.3 STATE ROAD 417 (SR 417)

SR 417 extends 55 miles from an interchange with I-4 south of US 192 in Osceola County to an interchange with I-4 in Seminole County, forming an eastern loop around the heavily developed core of Central Florida. We operate and maintain the central 33-mile portion of SR 417, beginning at the interchange ramps with SR 535 near International Drive and concluding at the Orange / Seminole line. Florida's Turnpike Enterprise (FTE) constructed, operates and maintains the SR 417 north and south of our segments.

Several improvement projects have been constructed along SR 417 since it opened. These projects have included new interchanges, roadway widenings and toll plaza upgrades. SR 417 generally consists of four lanes from International Drive to SR 528 and six lanes from SR 528 to University Boulevard. We have committed funding to design and construct the widening of SR 417 to six lanes from University Boulevard to the Seminole county line.

4.2.4 STATE ROAD 429 (SR 429)

We operate and maintain approximately 23 miles of the 33-mile-long SR 429. Our portion extends from an overpass at Seidel Road in southwest Orange County north to US 441 in Apopka. The remaining 11-mile segment from Seidel Road south to I-4 is operated and maintained by FTE.

When the SR 429/414 portion of the expressway opened to traffic, the former northern portion of SR 429, north of SR 414, was re-designated as SR 451. The SR 429/414 segment serves as the connection to the Wekiva Parkway now being built. Out of the total 23 miles, 3 miles are part of the dual route with SR 414 (SR 429/414). Our segment of SR 429 generally consists of four expressway lanes.

4.2.5 STATE ROAD 451 (SR 451)

SR 451 previously was the northern portion of SR 429's original alignment. With the opening of the SR 429/SR 414, this two-mile segment north of SR 414 to US 441 near Vick Road was re-designated as SR 451. There are no mainline or ramp toll plazas located along this portion of the System.

4.2.6 STATE ROAD 528 (SR 528)

SR 528 was the first System project. It was constructed to provide a straight-line connection between the south Orlando area and the Cocoa-Cape Canaveral areas along Florida's east coast. Although the entire SR 528 extends approximately 45 miles from I-4 on the west to Port Canaveral and the Kennedy Space Center on the east, we own and operate the central 23 mile portion between McCoy Road/Boggy Creek Road and SR 520. The other portions of SR 528, to the east and west of our section, are owned and operated by FTE.

We have completed several improvement projects along SR 528 to help ensure the safe and efficient movement of traffic. Today, SR 528 generally consists of six general-use lanes between McCoy Road and Narcoossee Road, and four lanes east of Narcoossee Road to SR 520.

Demolition of the SR 528 Airport Mainline Toll Plaza project began in 2014. The project will remove the mainline plaza, construct new ramp toll plazas to/from SR 528 east at Tradeport Drive and to/from SR 528 east and west at Boggy Creek Road, and widen the existing portion of SR 528 from McCoy Road to SR 436 to six and eight lanes. Through an agreement with FTE, tolls will be collected at the FTE west main toll plaza located four miles to the west. Construction has started and the airport plaza has been decommissioned. The full project should be completed by the summer of 2016.

S.R. 528 Dallas Mainline Toll Plaza

4.2.7 GOLDENROD ROAD EXTENSION

We also operate and maintain one non-system toll road known as the Goldenrod Road Extension. For construction, we participated in a joint funding agreement with the Greater Orlando Aviation Authority (GOAA), City of Orlando, Orange County and private developers. It extends Goldenrod Road two miles, linking Narcoossee Road with Cargo Road. A new system interchange between Goldenrod Road and SR 528 also was built.

Each partner that contributed to the project will be repaid through toll generated by the road. After all operational expenses are met and the partners are reimbursed for their contributions, the single mainline toll plaza will be demolished and the roadway will be transferred to Orlando. We will retain ownership of the SR 528 interchange and certain portions of the right of way.

4.2.8 TOLL PLAZAS AND RAMPS

We operate and maintain 13 mainline toll plazas and 71 ramp plazas. At each plaza, we offer options to the customer for making their toll payments. Customers can pay with cash or exact coins by using the conventional toll collection lanes — or they can choose to participate in our electronic toll collection (ETC) system, E-PASS.

E-PASS allows customers to pass through the tolling point at a safe speed without stopping. The toll is deducted from a prepaid account created by the customer, which is linked to the E-PASS transponder. E-PASS transponders are interoperable with all other ETC programs within Florida such as SunPass, as well as with the North Carolina Turnpike (Quick Pass) and the Georgia State Road Tolling Authority (Peach Pass) systems. Interoperability agreements with tolling agencies in other states are underway. Today, all toll lanes, including the conventional lanes, are equipped with ETC technology. More than 80 percent of all toll revenues are paid with ETC technology, and ETC transactions account for almost 85 percent of the total transactions on our System.

In addition to offering an efficient toll payment option, the ETC system also has the following benefits:

- **Provides more effective management, accounting and auditing capability.**
- **Helps accommodate the projected traffic growth through enhanced traffic management capabilities.**
- **Provides increased toll facility capacity by accommodating faster transactions and non-stop traffic movement.**
- **Enhances security through software that only allows access by authorized operations and management personnel.**

While the ETC system features automatic vehicle identification (AVI) technology, which allows motorists with prepaid accounts to electronically pay the required tolls without stopping at toll booths, it also includes a violation enforcement system (VES), that uses cameras to capture pictures of the vehicle and license plate.

We are in the process of upgrading the toll collection system. This project will upgrade or replace lane and plaza equipment, the centralized transaction server, and violation enforcement and image processing. This investment supports the mix of electronic/coin/attended lanes, and possible transition to All-Electronic Tolling (AET) in the future.

4.2.9 INTELLIGENT TRANSPORTATION SYSTEM

We maintain a fiber optic network (FON) of more than 200 miles. The FON serves the immediate and long-term telecommunications needs for data, voice, video transmission and future intelligent transportation system (ITS) applications. The network is installed on both sides of our land in a route-redundant configuration along all system facilities. The FON provides linked telecommunication services between the headquarters, mainline toll plazas and ramp toll plazas. A direct fiber optic connection also exists between the headquarters and the FDOT District 5 Regional Traffic Management Center (FDOT D5 RTMC) to allow for sharing of video and data for coordinated traffic management purposes.

There are 178 closed-circuit television (CCTV) cameras covering the system. The camera feeds are viewed by team members as well as operators at the FDOT D5 RTMC to identify and assist in the management of traffic incidents. Additionally, we have agreements with a number of local media stations, as well as media websites, to broadcast video during television newscasts.

To keep our customers up-to-date about traffic conditions, we installed a travel-time system that leverages AVI-based data collection sensors (DCS) placed at 163 key locations including interchanges, system boundaries and dynamic message sign (DMS) locations. These sensors are complemented by a data server and software system that provide accurate, reliable and meaningful traveler information. The data server posts travel times to our 41 DMS locations and feeds FDOT's 511 traveler information service.

We deployed the SunGuide traffic management center software to control the DMS system, with the ultimate goal of utilizing the software for CCTV camera control. SunGuide also has been integrated into the system-wide traffic monitoring stations (TMS). There are 403 traffic monitoring stations that provide real time traffic volume and classification data.

In early 2015, five exit ramps were equipped with wrong-way driver detection and prevention equipment, which consists of radar-activated beacons to alert drivers who enter the off-ramp from the surface street by mistake. The wrong-way technology system design for sites at nineteen additional ramps was completed in late 2015, with installation scheduled for early 2016. Wrong-way detections at the equipped ramps are being studied and evaluated by a research team at the University of Central Florida to further improve safety on the System.

4.3 E-PASS CUSTOMERS GET A BREAK

4.3.1 TOLL RATE STRUCTURE

The average per mile toll collected on our system facilities ranges from approximately 10.7 to 17.3 cents per mile, with the overall systemwide average being approximately 13.4 cents per mile. The current tolls collected at each plaza are presented in **Table 4-2**.

As reflected in the table, customers using E-PASS pay a lower toll than cash customers. The rate differential encourages electronic participation, thereby helping us maintain lower toll collection costs. Our E-PASS customers are also eligible to receive additional benefits through our frequent user discount and commuter relief discount programs.

4.3.2 TRAFFIC AND REVENUE PROJECTIONS

Regional travel demand is driven by the levels, growth rates and location of socioeconomic activity, such as population, housing and employment, as discussed in Chapter 3. Traffic forecasts for the System reflect projected increases in population and employment, and other economic activity in the Central Florida region, as well as anticipated improvements to elements of the region's transportation system.

The extent to which improvements to roadways other than expressways are implemented will influence the traffic volumes on the expressway system. Generally, as the local street system continues to become more congested, more and more drivers will begin to use the expressway system for daily travel needs. It is generally acknowledged that overall capacity of the region's transportation system will not be increased at a rate to match anticipated growth in traffic demand. Therefore, traffic on the expressway system will continue to grow.

Traffic forecasts generated at the mainline toll plaza locations through the year 2040 are summarized in **Table 4-3**. As presented in the table, traffic at nine of the locations is projected to exceed 100,000 daily vehicles by the year 2040, and the Conway Plaza on SR 408 is projected to serve over 200,000 daily vehicles.

The corresponding toll revenue forecasts provided in the CFX, FY 2015 General Traffic and Earnings Consultant's Annual Report indicate toll revenue collections will steadily increase through fiscal year 2040. The toll revenue forecasts were integrated into an overall financial analysis, which included all potential revenue sources as well as total projected expenses including operations, maintenance and

TABLE 4-2 CENTRAL FLORIDA EXPRESSWAY AUTHORITY | CURRENT SYSTEM TOLL RATES

CFX Plaza Location	2 Axles[A]		3 Axles		4 Axles		5 or More Axles	
	E-PASS	CASH	E-PASS	CASH	E-PASS	CASH	E-PASS	CASH
SR 528								
Airport Main Toll Plaza	$1.09	$1.25	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
Beachline Main Toll Plaza	$0.87	$1.00	$1.71	$1.75	$2.00	$2.00	$2.55	$2.75
International Corporate Park Blvd.	$0.59	$0.75	$0.59	$0.75	$0.59	$0.75	$0.59	$0.75
Dallas Boulevard	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50
Dallas Main Toll Plaza[B]	$0.75	$1.00	$1.00	$1.25	$1.25	$1.50	$1.25	$1.50
SR 408								
Good Homes Road	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50
Hiawassee Main Toll Plaza	$0.82	$1.00	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
Hiawassee Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Pine Hills Main Toll Plaza	$1.09	$1.25	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
Old Winter Garden Road/Ortman Dr.	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
John Young Parkway	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Orange Blossom Trail	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Mills Avenue	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Bumby Avenue	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Conway Road	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Andes Ave/SR 436 (Semoran Boulevard)	$1.09	$1.25	$1.09	$1.25	$1.09	$1.25	$1.09	$1.25
Conway East-West Main Toll Plaza	$1.09	$1.25	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
SR 436 (Semoran Boulevard)/Yucatan Dr.	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Dean Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Dean Main Toll Plaza	$0.82	$1.00	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
Rouse Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
SR 417								
John Young Main Toll Plaza	$1.37	$1.50	$1.91	$2.00	$2.46	$2.50	$3.00	$3.00
John Young Parkway	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Orange Blossom Trail	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Landstar Boulevard	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50
Boggy Creek Main Toll Plaza	$1.37	$1.50	$1.91	$2.00	$2.46	$2.50	$3.00	$3.00
Boggy Creek Road	$1.09	$1.25	$1.09	$1.25	$1.09	$1.25	$1.09	$1.25
Lake Nona Boulevard	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Narcoossee Road	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Moss Park Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Innovation Way/Dowden Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Lee Vista Boulevard	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Curry Ford Main Toll Plaza	$0.82	$1.00	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
Curry Ford Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
SR 50 (Colonial Drive)	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
University Main Toll Plaza	$0.82	$1.00	$1.64	$1.75	$1.91	$2.00	$2.46	$2.50
University Boulevard	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
SR 429								
Schofield Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
New Independence Parkway	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Independence Main Toll Plaza	$1.37	$1.50	$1.91	$2.00	$2.46	$2.50	$3.00	$3.00
CR 535	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Plant Street/Franklin Street/SR 438	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50
West Road	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00	$0.82	$1.00
Forest Lake Main Toll Plaza	$1.37	$1.50	$1.91	$2.00	$2.46	$2.50	$3.00	$3.00
CR 437A (Ocoee-Apopka Road)	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
SR 414								
Coral Hills Main Toll Plaza	$1.09	$1.25	$1.64	$1.75	$2.18	$2.25	$2.73	$2.75
Keene Road	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75	$0.55	$0.75
Hiawassee Road	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50	$0.28	$0.50
Goldenrod Road Extension - Non System								
Goldenrod Main Toll Plaza	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50

A - Includes motorcycles
B - The toll listed for this plaza includes the toll collected for FDOT, which is $0.25 for transponder transactions or $0.50 for cash transactions regardless of the number of axles.

TABLE 4-3 CENTRAL FLORIDA EXPRESSWAY AUTHORITY
SUMMARY OF DAILY TRAFFIC (AADT) FORECASTS AT MAINLINE PLAZA

CFX PLAZA	2015	2020	2025	2030	2035	2040
SR 408						
Hiawassee	67,300	76,600	85,800	95,100	104,300	113,600
Pine Hills	83,500	91,900	100,200	108,600	116,900	125,300
Conway East-West	140,300	152,600	164,900	177,100	189,400	201,700
Dean	72,000	81,900	91,800	101,700	111,600	121,500
SR 414						
Coral Hills	27,600	34,500	41,400	48,300	55,200	62,100
SR 414						
John Young	54,500	65,700	77,000	88,200	99,500	110,700
Boggy Creek	52,800	63,700	74,600	85,500	96,400	107,200
Curry Ford	83,100	100,200	117,400	134,500	151,700	168,800
University	83,900	94,400	104,900	115,400	125,900	136,300
SR 429						
Independence	24,500	30,600	36,700	42,900	49,000	55,100
Forest Lake	42,600	53,300	63,900	74,600	85,200	95,900
SR 528						
Airport[1]	89,000	101,200	113,500	125,700	137,900	150,200
Beachline Main	53,900	63,300	72,800	82,200	91,600	101,100
Dallas	42,800	50,300	57,800	65,300	72,800	80,200

Note: (1) The Airport Plaza was removed in FY 2016. The future year traffic forecasts represent the volumes projected for the corresponding segment of SR 528.

administration costs, as well as projected debt service payments. The results of the analysis concluded that approximately $6.6 billion will be available to fund capital projects through the 2040 horizon year.

4.4 FIVE YEAR WORK PLAN

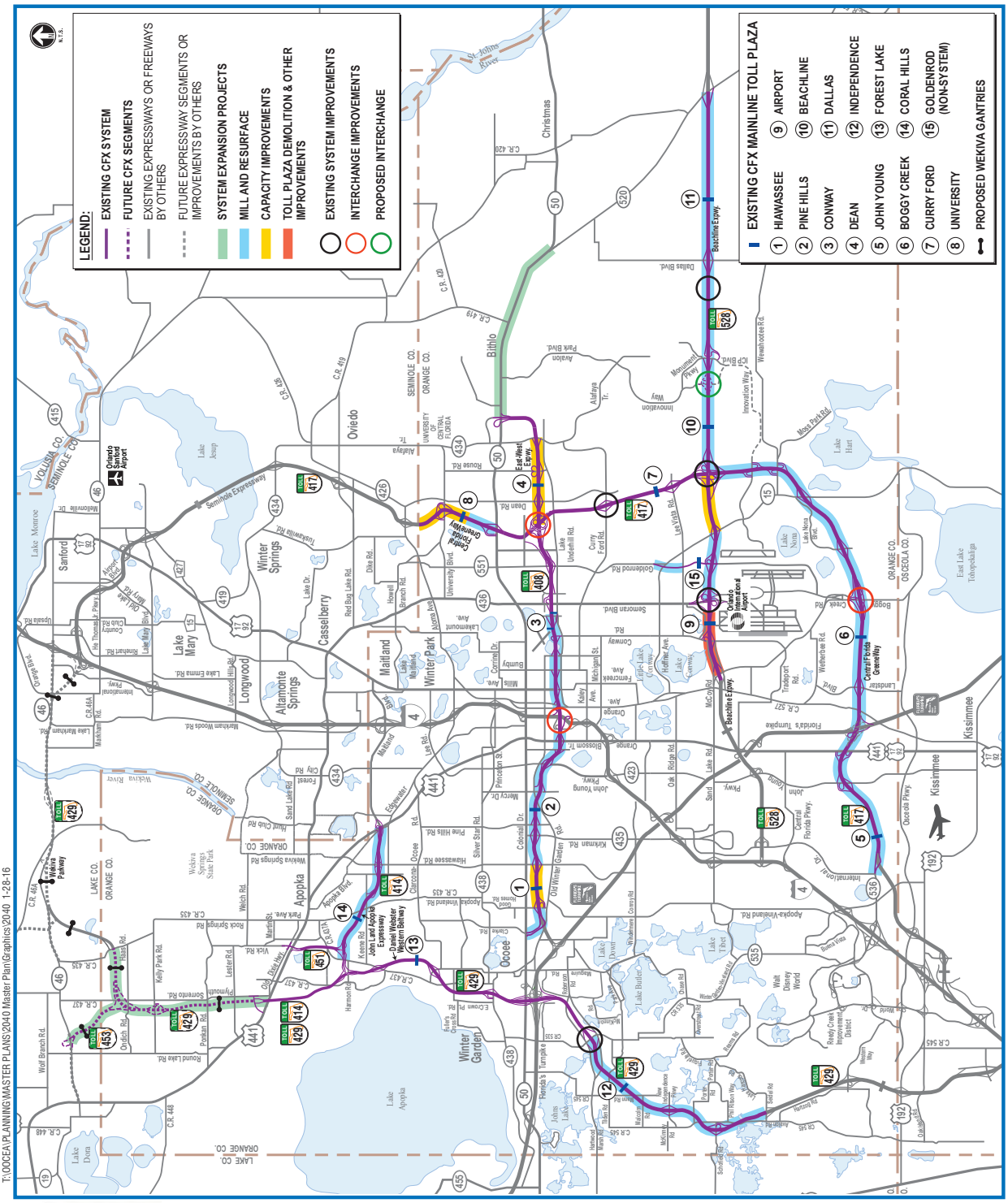
The Five Year Work Plan (Work Plan) is an important tool used to effectively manage our program of System improvements, enhancements and rehabilitation. The purpose of the Work Plan is to identify those projects that we anticipate funding during the next five-year period. The current Work Plan covers the five-year period from FY 2016 to FY 2020 and contains projects with a combined total estimated project cost of $1.2 billion.

Updated annually, the Work Plan is a "living" document that reflects and prioritizes our project needs. Amendments to the Work Plan are periodically made as new projects are developed, project scopes are modified, and/or issues affecting project costs and/or schedules are identified. As such, it can be expected that changes will be made as priorities are reevaluated, projects are completed, and new projects are identified.

The FY 2016 - FY 2020 Work Plan was adopted at the July 9, 2015 board meeting. The projects contained in the adopted Work Plan are grouped into one of the nine categories listed in **Table 4-4**. **Figure 4-4** provides a graphical representation of the major Work Plan projects.

TABLE 4-4
CENTRAL FLORIDA EXPRESSWAY AUTHORITY
WORK PLAN SUMMARY - FY 2016 – FY 2020

Program Category	Estimated Project Cost
Existing System Improvements	$120,816
System Expansion Projects	$458,688
Interchange Projects	$348,230
Toll Facilities Projects	$95,778
Intelligent Transportation System Projects	$14,863
Signing and Pavement Markings	$5,187
Renewal and Replacement Projects	$212,805
Landscaping Projects	$5,000
Non-System Projects	$964
TOTAL	$1,262,331



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

FY 2016 - FY 2020 Five Year Work Plan
Major Projects

FIGURE 4-4

4.5 EXISTING EXPRESSWAY SYSTEM NEEDS

The projected regional growth and corresponding traffic forecasts generated for the System indicate that a number of improvements will be needed, in addition to those already funded in the current Work Plan, to adequately serve the forecasted travel demand.

4.5.1 PLENTY OF IMPROVEMENT PROJECTS ON THE WAY

Traffic volume forecasts were prepared for each segment of the System through the year 2040. Based on the current policy of maintaining a level of service (LOS) D or better on System facilities, it is anticipated that substantial portions of the SR 417, SR 429 and SR 528 will need to be widened or reconstructed during the next 25 years, as highlighted on **Figure 4-5**. It is projected that approximately 120 additional lane miles will be needed on SR 417, SR 429 and SR 528, at an estimated cost of approximately $1.44 billion in 2015 dollars. That would help ensure traffic operates at an acceptable level of service.

Additionally, the traffic volumes forecasted on several segments of SR 408 through downtown Orlando are projected to exceed its LOS D service volume. The SR 408 segments are right of way-constrained due to the close proximity of local roadways, residential and commercial developments. Widening beyond the current configuration is unlikely, meaning alternative methods for meeting or managing the travel demand within the corridor will be necessary.

Also, the future traffic demand and flow on SR 408 through downtown will be heavily influenced by the I-4 Ultimate project and the associated modifications being made to the SR 408 / I-4 interchange. Once the I-4 Ultimate project is completed and traffic flow through downtown has had an opportunity to normalize, a detailed examination of the SR 408 corridor should be performed to reaffirm the travel demand and explore the full range of transportation improvement options available to appropriately meet the mobility demand.

4.5.2 THREE INTERCHANGES SET FOR MAKEOVERS

Three existing interchanges, also highlighted on **Figure 4-5**, are projected to require major improvements within the next 25 years. These are: SR 429 / CR 535, SR 417 / Narcoossee Road and SR 528 / Dallas Boulevard. They are located within, or close to, the projected high growth areas of Orange and Osceola counties as previously discussed.

Each of the identified interchanges were constructed in standard diamond configurations and have not been substantially modified since their opening, although minor improvements are funded in the current Work Plan for the SR 429 / CR 535 and the SR 417 / Narcoossee Road interchanges. The actual development and associated travel demand that has occurred in the areas served by these two interchanges has greatly outpaced the original projections. It is anticipated that future traffic demand at all three locations will further exceed the design capacities as development within the travel sheds continue to intensify.

4.5.3 RENEWAL AND REPLACEMENT PROGRAM KEEPS SYSTEM IN SHAPE

The Renewal and Replacement (R&R) Program determines which system assets need maintenance due to age. The R&R program includes, but is not limited to, pavement, striping and pavement markings, toll plaza assets, fences, bridges and coatings. The majority of the funds allocated for the R&R program are dedicated to milling and resurfacing projects. The pavement management plan is updated annually and identifies needs. Based on historical and projected data, the life cycle for pavement is approximately 10 to 12 years. This is validated on an annual basis during a field inspection.

The signing and pavement markings portion of the R&R Program includes guide signs, retro-reflective pavement markers, trailblazers and fluorescent signs. The life cycles for these has been determined by a combination of historical data, warranty expiration, reflectivity and findings of the annual field inspections. The analysis of these factors leads to the development of replacement cycles for each asset.

The toll plaza assets include generators, air conditioners and roofs. The replacement cycles are dependent upon a combination of our maintenance contractors' maintenance logs, checks performed by certified inspectors and field reviews.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Existing System Improvement Needs

FIGURE 4-5

Additionally, our annual inspection is used as a tool to identify current and near-term R&R needs. Conditions identified during the inspection that are considered degraded due to age, and not part of routine maintenance program, are evaluated for inclusion into R&R projects in the Work Plan. As the year of need approaches for each of the identified items, each asset is evaluated in more detail to determine optimum year of replacement, exact limits and locations.

We recognize the importance of retaining our investment by keeping the System in good condition. As the System ages, it is anticipated that the funds allocated to the R&R Program will increase to keep all portions of the System at optimum performance levels. The estimated cost for the projected R&R program through the 2040 horizon year is $500 million.

4.5.4 TOLL COLLECTIONS SET FOR MAJOR UPGRADE

As stated previously, we are in the process of upgrading elements of the entire toll collection system. The $70 million toll system upgrade project includes lane and plaza toll equipment, the centralized transaction server and violation enforcement/image processing. This investment supports the mix of electronic/coin/attended lanes, as well as possible future transition to All-Electronic Tolling (AET).

The funds for the toll collection system upgrade are programmed in the current Work Plan. Our team is evaluating additional back-office improvements that may be necessary to support the toll program. Capital projects, such as building and office modifications, are being evaluated and will be discussed during the next Work Plan cycle. The Master Plan effort did not identify any additional future capital needs associated with the toll collection system. However, the efficiency and effectiveness of the toll collection operations, as well as the emergence of new collection technology, will be monitored. If additional investments are needed, they will be addressed during the annual update of the Five Year Work Plan.

4.6 EXISTING CAPITAL INVESTMENTS WILL BE NEEDED

$2 billion worth of capital investments are anticipated through the Master Plan 2040 horizon year for the existing system. These improvements, summarized in **Table 4-5**, will allow us to keep pace with the growing travel demand and provide necessary renewal of the System.

TABLE 4-5
EXISTING SYSTEM IMPROVEMENT NEEDS COST SUMMARY FY 2020 TO FY 2040

SYSTEM ELEMENT	IMPROVEMENT	COST EST. (million)
Capacity Improvement		
SR 417		
I-Drive to Boggy Creek Road	Widen to 6 lanes	$240.0
Boggy Creek Road to SR 528	Widen to 6 lanes	$225.0
SR 429		
Seidel Road to CR 535	Widen to 6 lanes	$200.0
CR 535 to SR 50	Widen to 6 lanes	$100.0
SR 50 to SR 414	Widen to 6 lanes	$175.0
SR 528		
SR 436 to SR 417	Widen to 8 lanes	$125.0
SR 417 to Innovation Way	Widen to 6 lanes	$100.0
Innovation Way to SR 520	Widen to 6 lanes	$275.0
		$1,440.0
Interchange Improvement		
SR 429 / CR 535	Interchange Improvement	$15.0
SR 417 / Narcoossee Road	Interchange Improvement	$15.0
SR 528 / Dallas Boulevard	Interchange Improvement	$30.0
		$60.0
Renewal and Replacement Program		
System Wide R&R Requirements	n/a	$500.0
		$2,000.0

CHAPTER 5

New Projects

5. POPULATION AND JOB GROWTH SPUR THE NEED FOR NEW PROJECTS

Central Florida's population could grow by more than 50 percent by 2040, the Master Plan horizon year. Employment and tourism also are expected increase dramatically during the next 25 years. The existing System will serve a substantial portion of the traffic associated with the projected growth. But new expressway projects providing additional travel capacity will be necessary to accomodate this growth.

While the projected improvement needs for the existing 109-mile System were discussed previously in Chapter 4, between 160 and 180 new centerline miles representing up to $9 billion in capital costs of new expressway projects are identified and described in this chapter. These potential projects, presented on **Figure 5-1**, originated from talks with local and regional leaders. **Table 5-1** summarizes each of the potential New Projects, including location, limits, current status and preliminary planning level cost estimates. In coming years, additional analyses of these proposals will be required to better define their limits and characteristics, and determine if there is justification to spend significant dollars.

5.1 EXTENDING SR 408 TO THE EAST

The SR 408 extension would add about eight miles from its current eastern terminus at SR 50 to the vicinity of the SR 50/SR 520 intersection in eastern Orange County. A concept development and feasibility study in 2007 concluded the proposed extension would serve an important future regional transportation need. It called for a more detailed project development and environment (PD&E) study. That study was started during spring 2015 and should be concluded in 2017.

The study will determine if a limited access road is a feasible solution for serving an anticipated rise in travel because of the expected growth in east Orange County. Thousands of new homes are planned in an area primarily served by heavily traveled SR 50, a surface arterial with numerous at-grade intersections and traffic lights. FDOT is widening parts of SR 50, but traffic forecasts show more lanes would be needed by 2040.

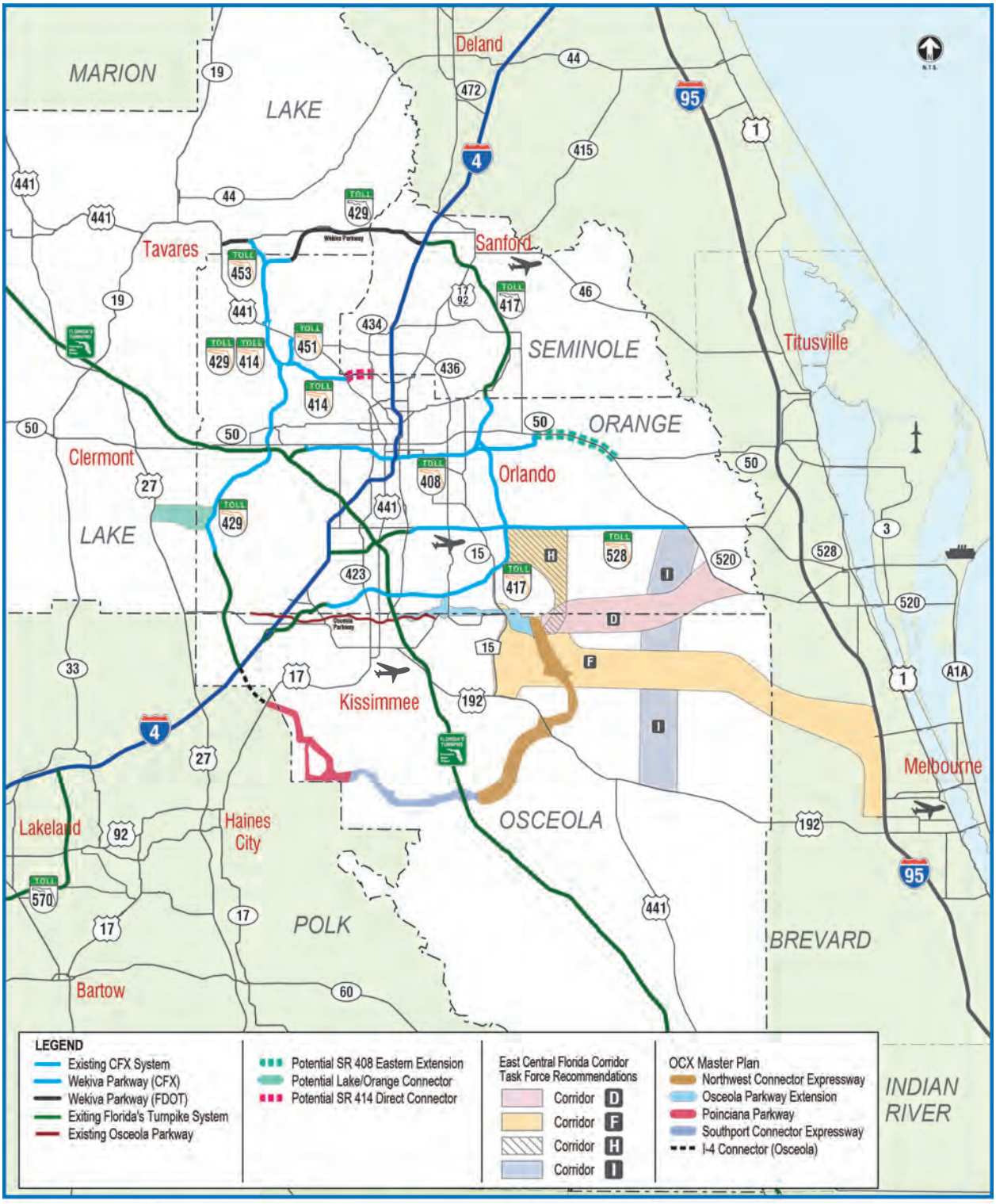
Planners are looking at concepts that would offer the most travel benefits with the least amount of impacts. Estimated costs range from $630 to $800 million. Funding could be discussed during the annual five-Year Work Plan process.

5.2 NEW ROAD CONNECTING LAKE AND ORANGE COUNTIES

The Lake/Orange Connector would create a new five to six mile direct link between US 27 in southeast Lake County and SR 429 in southwest Orange County. A 2007 concept development and feasibility study concluded that a limited access tolled expressway would not attract enough motorists to be financially feasible. A concept for a blended road with toll lanes and general use lanes has been developed, however further study is needed. The cost for this concept could range between $100 and $180 million.

The east-west link provided by the Lake/Orange Connector likely would improve driving in the region and support economic vitality because it would help support the Wellness Way concept previously referenced.

The Lake Sumter MPO long range transportation plan lists the Lake/Orange Connector as one of its highest priorities. It also is supported by the West Orange / South Lake Transportation and Economic Development Task Force (Orange / Lake Task Force). The group formed in 2008 to help coordinate transportation decisions and job creation efforts in west Orange and southeast Lake.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Potential New Expressway Projects

FIGURE 5-1

TABLE 5-1
CENTRAL FLORIDA EXPRESSWAY AUTHORITY
SUMMARY OF POTENTIAL NEW EXPRESSWAY PROJECTS

Project Name	Location	Limits		Approx. Length (miles)	Status	Cost Est. Range (Millions)
		From	To			
SR 408 Eastern Extension	East Orange County	SR 408 @ SR 50	SR 520 / SR 50	8	PD&E Study underway by CFX	$630-$800
Lake / Orange Connector (a.k.a. Wellness Way)	Southeast Lake Co. / Southwest Orange Co.	US 27	SR 429	5 - 6	Concept Development and Feasibility study completed in 2007; Strong support among local landowners and community leaders	$100-180
SR 414 Direct Connect	Orange County	US 441	SR 434	2	Preliminary concept to provide limited access connection between CFX / SR 414 and Interstate 4	$180-300
Osceola Parkway Extension	Orange Co. / Osceola Co.	Boggy Creek Road	Northeast District	9	Included in OCX Master Plan; PD&E Study underway	$540-700
Northeast Connector Expressway	Osceola County	Southport Connector / Florida's Turnpike	Osceola Parkway Extension	25	Included in OCX Master Plan; No formal studies completed	$1,000-1,400
Southport Connector Expressway	Osceola County	Poinciana Parkway	Florida's Turnpike / Northeast Connector	13	Included in OCX Master Plan; PD&E Study underway	$520-700
Poinciana Parkway	Osceola County	Marigold Avenue	C.R. 54 / US 17/92	10	Ultimately a four-lane limited access expressway; Two lanes currently under development	$72-90
Poinciana/ I-4 Connector	Osceola County	Poinciana Parkway	I-4	6 - 9	PD&E Study underway	$240-450
Task Force - Corridor D	Osceola Co. / Orange Co.	Northeast District	SR 520	18 - 20	Corridor identified by East Central Florida Corridor Task Force; Preliminary study being advanced by FDOT	$720-1,000
Task Force - Corridor F	Osceola Co. / Brevard Co.	Northeast Connector	I-95	30 - 35	Corridor identified by East Central Florida Corridor Task Force; Preliminary study being advanced by FDOT	$1,280-1,750
Task Force - Corridor H	Orange Co. / Osceola Co.	Northeast District	SR 528	8 - 10	Corridor identified by East Central Florida Corridor Task Force; Preliminary study being advanced by FDOT	$320-500
Task Force - Corridor I	Orange Co. / Osceola Co.	US 192	SR 528	22 - 24	Corridor identified by East Central Florida Corridor Task Force; Preliminary study being advanced by FDOT	$880-1,200
			TOTAL MILEAGE RANGE: 156 - 171		**TOTAL COST RANGE:**	**$6,482-9,070**

5.3 SR 414 DIRECT CONNECT TO MAITLAND BOULEVARD

The SR 414 Direct Connect concept would create a limited access link between the east end of SR 414 near US 441 with the grade-separated portion of Maitland Boulevard now being built as part of the I-4 Ultimate project. When the I-4 Ultimate is completed in 2021, there will be three intersections with traffic lights (Bear Lake Road/Rose Avenue, Eden Park Avenue and Magnolia Homes Road) located in the two miles of Maitland Boulevard between the SR 414 terminus and I-4. Significant backups already occur during both the AM (eastbound) and PM (westbound) peak periods.

The early concept for this $180 million to $300 million project would provide a direct connection between the two limited-access roads. Motorists could bypass the congestion caused by the intersections. Reversible express lanes within the existing median that would serve the peak hour/peak direction traffic flow is an option because of intense residential development.

The project calls for substantial coordination between local agencies because Maitland Boulevard is owned and maintained by FDOT and the border between Seminole and Orange counties is within the median. The first step should be a study looking at the concept and whether it is feasible. The travel times for customers could be cut dramatically.

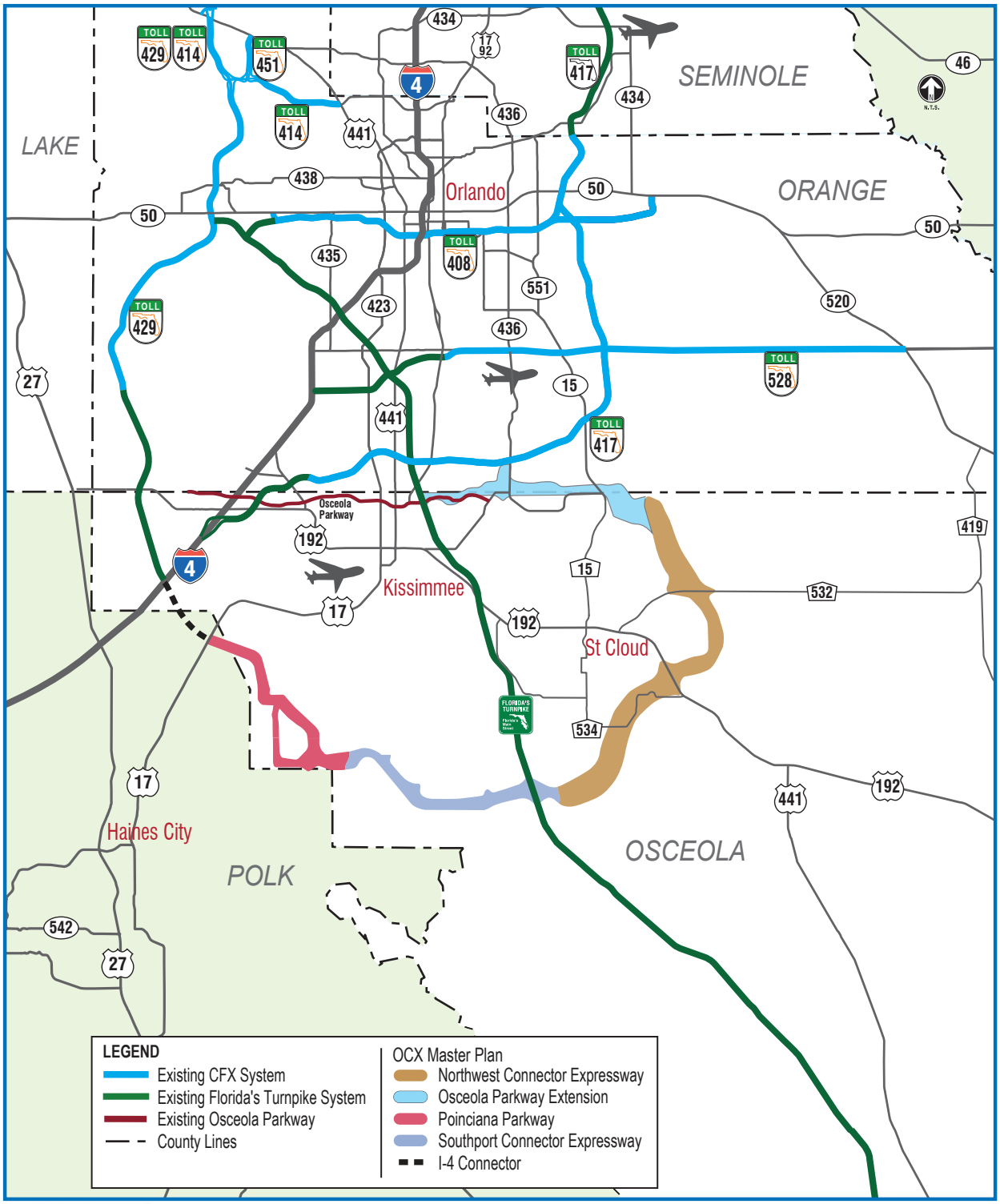
5.4 OSCEOLA COUNTY EXPRESSWAY AUTHORITY HAS LOTS OF PLANS

Our enabling legislation states *"...the Central Florida Expressway Authority shall include the uncompleted elements of the Osceola County Expressway Authority May 8, 2012, Master Plan, as adopted on such date, and an additional extension of the Osceola Parkway Extension 2 miles to the east of its intersection with the Northeast Connector Expressway, in the equivalent Central Florida Expressway Authority master plan or long-range plan, each as a "non-system project"..."*

The Osceola County Expressway Authority (OCX) master plan, as adopted on May 8, 2012 is depicted on **Figure 5-2**. It consists of four major projects totaling approximately 60 new centerline miles of limited access expressways. Each project and its current status are summarized below:

POINCIANA PARKWAY

This 10-mile, four-lane toll road is being built. It begins at Marigold Avenue in the far northwest corner of the Poinciana community and ends at the intersection of County Road 54 and US 17/92. Based on near term traffic forecasts and budget constraints, only two lanes are under construction. The initial two-lane segment of Poinciana Parkway, from Marigold Avenue to U.S. 17-92, opened on April 30, 2016. The remaining four-mile project extending to Cypress Parkway will open by the end of 2016, completing the 9.7 mile parkway. Money for extra lanes is not available, but will be sought when traffic and toll revenues increase. This new roadway will provide an additional access between the Poinciana community and the rest of Central Florida. FDOT is examining routes to link the northwest end of the Poinciana Parkway with I-4. This project, known as the Poinciana / I-4 Connector, was not in the original OCX Master Plan.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Osceola County Expressway Authority Master Plan Projects

FIGURE 5-2

OSCEOLA PARKWAY EXTENSION

This is a proposed nine-mile limited access eastern extension that includes a north/south segment connecting with SR 417. The project would begin approximately one mile west of the Boggy Creek Road/ Osceola Parkway intersection. It would extend eastward along the Osceola/Orange County line to a new link with the proposed Northeast Connector Expressway and ultimately go an additional two-miles beyond the connection. OCX, in association with FDOT and FTE, is doing a PD&E study.

NORTHEAST CONNECTOR EXPRESSWAY

This toll road would run 25 miles from a link with the proposed Southport Connector Expressway at Canoe Creek Road to the Osceola Parkway Extension. The project is proposed as a four lanes with the potential to be expanded to six lanes, if there is enough traffic. No funding is available to advance the project at this time.

SOUTHPORT CONNECTOR EXPRESSWAY

The toll road would be 13 miles long, connecting with the Poinciana Parkway to a new systems interchange with Florida's Turnpike. It would pass through the South Lake Toho mixed use district and form the southern edge of the urban growth boundary. A PD&E study should be complete in 2017.

The OCX master plan projects should cost between $2.4 and $3.3 billion. In the coming years, we will monitor and participate as necessary in the OCX efforts to advance these projects.

The legislation also includes the following language: *"Effective December 31, 2018, all powers, governance, and control of the Osceola County Expressway System, created pursuant to part V of Chapter 348, Florida Statutes, are transferred to the Central Florida Expressway Authority, and the assets, liabilities, facilities, tangible and intangible property and any rights in property, and any other legal rights of the Osceola County Expressway Authority are transferred to the Central Florida Expressway Authority."*

As December 31, 2018 approaches, we will examine the opportunities available to us and our role in the further development and implementation of the OCX master plan projects.

5.5 GOV. RICK SCOTT CREATED THE EAST CENTRAL FLORIDA CORRIDOR TASK FORCE

Governor Rick Scott issued Executive Order 13-319, which created the East Central Florida Corridor Task Force (Task Force) and directed it to evaluate and develop consensus recommendations on future transportation corridors serving established and emerging economic centers in portions of Brevard, Orange and Osceola counties. The Task Force began its duties in January 2014 and submitted its report in November 2014.

The Task Force's recommendations included nine transportation corridor alternatives, four of which are on new alignments, for further study. In addition to conventional roadway capacity, the Task Force also recommended the consideration of multimodal applications within each new corridor.

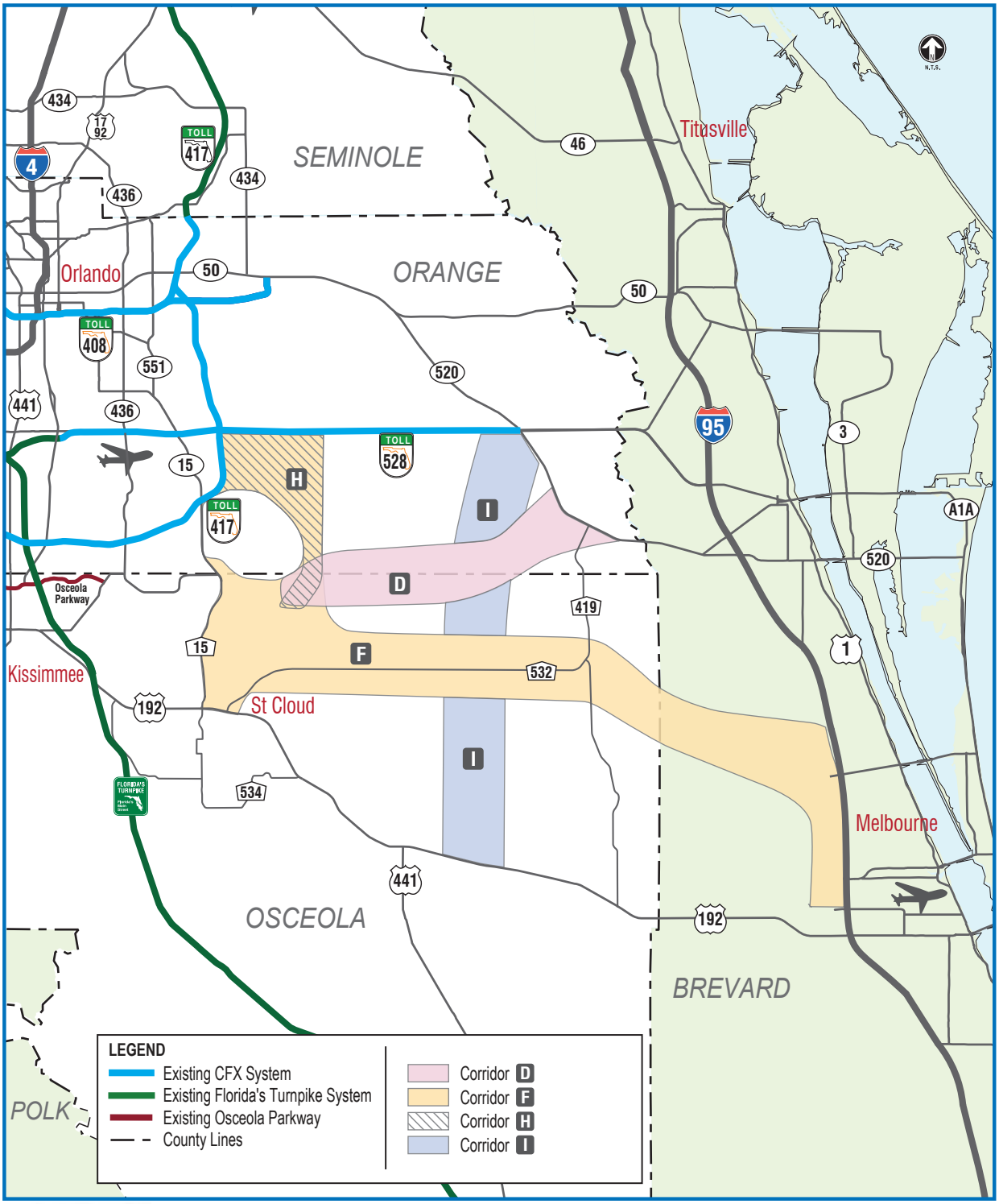
The four new alignments, depicted on **Figure 5-3,** are incorporated as candidate projects into the Master Plan and summarized below:

CORRIDOR D

A new 18-to-20 mile long multimodal corridor along the Orange/Osceola county line. This corridor would connect the Northeast District and northern portions of the North Ranch to the rest of the region via existing transportation corridors (such as State Road 520 on the east end) and planned transportation corridors (such as the Osceola County expressway system on the west end). With these connections, this corridor would form part of an alternative east-west connection from Interstate 4 to Interstate 95. The purpose and need for this corridor is linked to the timing and magnitude of future development on the North Ranch.

CORRIDOR F

A new 30-to-35 mile long multimodal corridor from Orlando International Airport/Lake Nona area to Central/Southern Brevard County. This corridor would provide a direct connection between two major groups of economic centers: the Orlando International Airport and Lake Nona to the west and Viera, Melbourne, and Palm Bay to the east. This option also could serve the emerging population centers in the Northeast District and the North Ranch.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

East Central Florida Corridor Task Force Recommendations

FIGURE 5-3

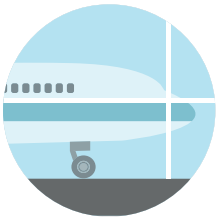
CORRIDOR H

Extends the planned Northeast Connector Expressway eight to 10 miles to the SR 528 corridor. OCX is planning to develop the Northeast Connector Expressway from Canoe Creek Road (just east of Florida's Turnpike) to the east end of the planned Osceola Parkway extension. This alternative would extend the Northeast Connector Expressway further north to SR 528. It would connect the Northeast District to existing and emerging economic centers in Orange County within the current Orange County Urban Service Area. Along with the rest of the Northeast Connector Expressway, it would provide an additional option to the Narcoossee Road corridor for north-south travel in this part of Osceola County, and it also would provide an alternative to State Road 417 south of State Road 528 in Orange County.

CORRIDOR I

A new 22-to 24-mile long north/south multimodal corridor in eastern Orange and Osceola counties. This corridor would connect the future population centers on the North Ranch to other regional destinations and east-west corridors. At its northern end, the corridor could be integrated with proposed improvements to the State Road 520 and State Road 50 corridors and provide connectivity to the University of Central Florida area and downtown Orlando. At its southern end, the corridor could be integrated with proposed improvements to U.S. 192 and provide connectivity to Melbourne/Palm Bay. The corridor also could connect to proposed new and improved east-west corridors linking Orange and Osceola to Brevard, including State Road 528, the proposed new east/west multimodal corridor along the Orange/Osceola line, and the proposed new east-west multimodal corridor from the Orlando International Airport/Lake Nona area to central/southern Brevard County.

The possible cost to develop and construct the four new corridors is between $3.2 billion and $4.5 billion. These estimates are based on general planning level per mile unit costs for multi-lane limited access expressways. The final cost could vary substantially, depending on the final lengths and corridor characteristics. FDOT has ordered a study to evaluate and refine the corridors. We will participate in the studies as appropriate. If one or more of these projects are determined to be viable, we will need to decide if they should be part of our system.



CHAPTER 6
Multimodal/Intermodal Opportunities

6.0 WE COULD GO MULTIMODAL/INTERMODAL

We are a regional partner to other transportation agencies involved in planning, developing, managing and operating a variety of transportation facilities and services across Central Florida. Our enabling legislation allows us to expand our role by taking the lead in the planning, financing, and maitenance of multimodal and intermodal projects that benefit our customers and improve the level of service within our system.

Our legislation specifically lists rapid transit, trams and fixed guideways as possible additions to our system. Transit support facilities such as park and ride lots are also viable options.

6.1 HERE'S WHAT THE CFX MULTIMODAL/INTERMODAL LEGISLATION SAYS

The enabling legislation allows us to not only be involved as a partner in multimodal and intermodal projects but also to serve as the lead agency.

"The authority may, within the right of way of the expressway system, finance or refinance the planning, design, acquisition, construction, extension, rehabilitation, equipping, preservation, maintenance, or improvement of an intermodal facility or facilities, a multimodal corridor or corridors, or any programs or projects that will improve the levels of service on the expressway system."

The term **multimodal** typically refers to transportation corridors or a transportation segment connecting two points. Within the section, multiple modes of transportation could be provided — a multimodal corridor, in other words. This could include a combination of cars and trucks, buses, fixed guideways, trams and bicycles.

The term **intermodal** usually means facilities, such as when transportation modes and services are brought together to promote the seamless transfer of travel between two or more modes. This can include, but not be limited to, vehicles and parking facilities (including park and ride lots), transit (buses, local rail, and intercity rail), taxis, rental cars and shuttle vans. The law requires such projects occur within our right of way.

Before committing existing right of way to the creation of new multimodal or intermodal facilities, we must confirm there is room for the ultimate build-out of additional traffic lanes and roadway-related features such as drainage ponds and signs.

Finally, the legislation also requires potential multimodal and intermodal projects improve the levels of travel service on the system, benefiting our customers. Satisfying the legislative requirement will require the definition of a performance metric and likely a supporting methodology that will define how compliance with this provision will be confirmed and how it will be measured.

6.2 PUBLIC TRANSPORTATION GETS PEOPLE TO WORK AND PLAY

Incorporating public transportation options and considerations into broader economic and land use planning can help a community expand business opportunities, reduce sprawl and create a sense of community through transit-oriented development. Areas with good public transit are generally economically thriving communities that offer location advantages to businesses and individuals. Public transportation also helps reduce road congestion and travel times, air pollution, and energy and oil consumption, all of which benefit both riders and non-riders alike.

Public transportation provides people with a cheap way to get to their jobs, medical care and recreation. It benefits those who choose to ride, as well as those who have no other choice. More than 90 percent of public assistance recipients do not own a car and must rely on public transportation.

While public transportation offers many mobility opportunities, the finances can be challenging. The start-up capital costs to initiate and then annually maintain any public transportation system are substantial. Annual operating expenses must be subsidized by a dedicated revenue source, since farebox collections only recover between 25 percent and 35 percent of the actual operating costs.

6.3 CENTRAL FLORIDA HAS LYNX BUSES AND SUNRAIL COMMUTER TRAINS

There are currently 37 agencies providing public transportation services throughout Florida with total annual ridership estimated at approximately 270 million passengers. The aggregate annual operating and maintenance expenses are roughly $1 billion, while the farebox recovery ratio is about 26 percent.

In Central Florida, two agencies, Central Florida Regional Transportation Authority (LYNX) and FDOT provide the vast majority of public transit options. Public transportation routes within Central Florida are highlighted in **Figure 6-1**.

6.3.1 CENTRAL FLORIDA REGIONAL TRANSPORTATION AUTHORITY (LYNX)

The Central Florida Regional Transportation Authority, operating as LYNX, is the public agency charged with providing transportation services to the citizens of Lake, Orange, Osceola and Seminole Counties.

Buses carried more than 30.1 million passenger during 2014, spanning an area of approximately 2,500 square miles with a population of more than 1.8 million. Small portions of Polk and Volusia counties are also served.

The LYNX operating budget for FY 2015 was $126.5 million. Almost half of the agency's funding comes from four local partners: Orange, Osceola and Seminole counties and the City of Orlando. LYNX system generated funds (fares, advertising, contract services, interest and other income) account for 30.4 percent of the budget with federal (13.2 percent) and state (10 percent) funding plus the fund balance (1.2 percent) providing the rest.

LYNX has about 80 routes, including LYMMO (a free downtown Orlando circulator); the Grapefruit Line which operates between Amway Center and Lake Eola; a commuter assistance Vanpool program; ACCESS LYNX paratransit service; NeighborLink community circulators; FastLink commuter bus lines; Xpress service from Lake and Osceola counties; and, KnightLYNX provides bus service on Friday and Saturday evenings between the University of Central Florida campus and downtown Orlando.

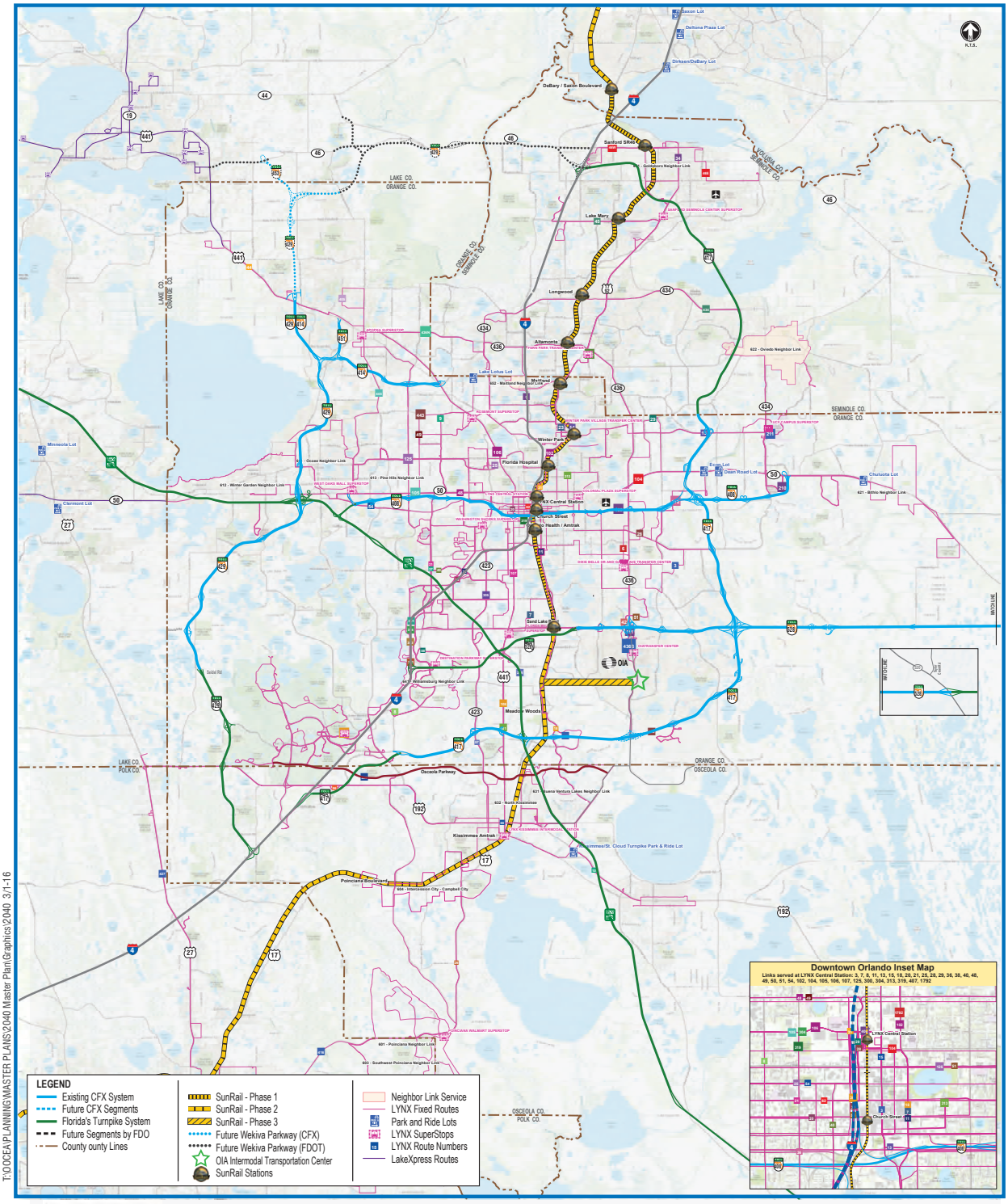
In April 2014, LYNX connected bus routes with SunRail weekday service hours. FDOT developed the feeder plan so the 12 SunRail stations had at least one connecting LYNX bus route to meet each train during peak service.

6.3.2 FDOT - SUNRAIL COMMUTER RAIL

SunRail is a 61.5-mile long commuter rail line that is being built in phases. The first phase started in May 2014. It has 12 stations on a 32-mile route that connects Volusia, Seminole and Orange counties. The commuter trains operate along the existing CSX Transportation (CSXT) corridor, which FDOT purchased.

SunRail operates entirely at-grade, sharing track with freight service, provided by CSXT and Florida Central Railroad, and Amtrak intercity passenger rail service. The SunRail alignment generally parallels Interstate 4 and US 17-92. The rail corridor includes 29 miles of double track and three miles of single track.

Phase 2 is a 30-mile extension that will extend south from Sand Lake Road in Orange County to Poinciana in Osceola County and north to the Deland Amtrak station in Volusia County.



T:\OOCEA\PLANNING\MASTER PLANS\2040 Master Plan\Graphics\2040 3/1-16

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 MASTER PLAN

Central Florida Public Transportation

FIGURE 6-1

There would be five stops: DeLand in Volusia, the Meadow Woods Station in Orange and Tupperware, downtown Kissimmee and Poinciana in Osceola. Construction started on the south end, but the DeLand leg has been postponed. FDOT is running and paying for SunRail until 2021, when local governments take over.

The state also is planning a 5.5 mile Phase 3 extension from just north of the planned Meadow Woods Station into an intermodal station being built to the south of the main terminal at Orlando International Airport. The SunRail extension would run along the existing Orlando Utilities Commission (OUC) rail spur, which is just south of the airport. At the intermodal facility, passengers will have several transfer options including: the automated people mover to take them north to the airport terminal, a planned Brightline train that would go to West Palm Beach, Fort Lauderdale and Miami, and a proposed third transit option that could operate between OIA and the Orange County Convention Center / International Drive area.

6.3.3 INTERNATIONAL DRIVE AND LAKE COUNTY OFFER BUSES

There are two additional public transit providers offering local services in Orange and Lake County. In Orange, I-Ride is a tourist-oriented trolley that runs in the International Drive Resort Area. This service is managed by the International Drive Master Transit and Improvement District, in partnership with Orange County, Orlando and the International Drive business community.

Lake County operates the LakeXpress service, which provides four routes:

ROUTE 1 LADY LAKE AND EUSTIS VIA US 441
ROUTE 2 CITY OF LEESBURG/LADY LAKE
ROUTE 3 CITY OF MOUNT DORA
ROUTE 4 ALTOONA TO ZELLWOOD

Through a partnership with LYNX, a fixed route linking the Four Corners area in south Lake to southern Orange and Osceola is also provided (Link 55).

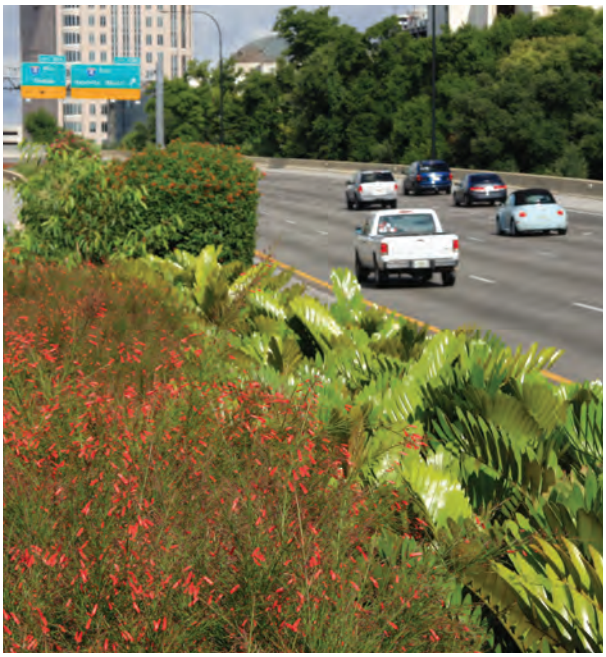
6.4 BRIGHTLINE IS COMING DOWN THE TRACK

In March 2012 All Aboard Florida Operations LLC (AAF) announced plans to begin operation of a passenger rail service primarily along freight tracks owned by a parent company, Florida East Coast Industries, Inc. (FECI), one of Florida's oldest and largest transportation, infrastructure, and commercial real estate companies.

The proposed express intercity passenger rail service, Brightline, would operate between Miami and Orlando with two intermediate stops in Fort Lauderdale and West Palm Beach. The north-south segment, approximately 195 miles, follows existing Florida East Coast (FEC) Railway track from Miami to Cocoa Beach. The east-west segment, approximately 40 miles of new rail, would be constructed alongside SR 528 from Cocoa to OIA. AAF has received environmental approvals for the initial Miami to West Palm Beach segment, and construction is well underway.

AAF proposes hourly service from 6 AM until 9 PM, with 16 daily Brightline trains in each direction, totaling 32 trains per day. It would take three hours to travel from Miami to OIA at speeds up to 79 MPH from Miami to West Palm Beach, up to 110 MPH from West Palm Beach to Cocoa, and up to 125 MPH from Cocoa to OIA. These speeds offer an improvement for travelers in comparison to driving on Florida's Turnpike and will qualify to serve as "Regional Services" and "Core Express Services" as part of the FRA's national High Speed Intercity Passenger Rail (HSIPR) program.

AAF intends to provide rail service between Miami and Orlando, as well as stimulate economic growth



surrounding the South Florida stations. AAF already owns a significant amount of acreage where transit-oriented stations can be constructed.
The Orlando station will be a large complex with a terminal area, ticketing, station platforms, parking, and intermodal connections in the form of bus and taxi service and an automated people mover to the existing OIA terminal to the north. Both the Miami and Orlando stations will function as components of intermodal centers connected with the respective airports and other transit and automobile connections. The three southern stations are under construction with completion targeted in late 2016 and service beginning in 2017 from Miami to West Palm Beach.

We have been working closely with AAF on the proposed location and design characteristics of the AAF alignment paralleling our portion of SR 528. Between SR 436 and Narcoossee Road, the AAF track will be located within our existing right of way and property owned by OIA. East of Narcoossee Road to SR 520, the ongoing process has resulted in the acquisition of right of way on the south side of SR 528. The additional property acquired along SR 528 can accommodate a second fixed route transit option (potentially commuter rail) in additional to AAF. All activities completed to date support the long term concept of creating a SR 528 multimodal corridor.

If successful the AAF passenger rail service will be the first privately-owned, operated, and maintained passenger rail system in the United States since the Rio Grande Zephyr, the last privately operated intercity passenger train that discontinued service in 1983.

6.5 REGIONAL TRAIN, BUS RAPID TRANSIT POSSIBLE FOR REGION

A wide variety of transit vehicle technologies operate throughout the world. Some technologies have broad application, while others are more specialized. Selection of a specific technology depends on a number of factors, including ridership demand, land availability and operating costs.

Highlights of two technologies that could be appropriate within our corridors in the future are described below.

REGIONAL COMMUTER RAIL

Commuter rail typically links with suburban areas, making the trips longer than most light rail transit lines. The lines normally extend an average of 10 to 50 miles from a downtown terminus. In some cities, service is offered only during rush hour periods, while in others the trains run into the evenings and on weekends.

Commuter rail trains normally are made up of a locomotive and several passenger coaches. The dimensions of commuter rail coach car are typically 60 to 85 feet long, 10 to 11 feet wide. The coaches are dimensionally similar to intercity (Amtrak) coaches, but often have more seating because the average ride is shorter. Passenger capacity and speed are the primary advantages of this technology.

The passenger cars usually are pulled or pushed by a diesel or electric locomotive engine that can operate at maximum speeds of 79 mph to 100 mph. But the average speed in the United States is between 30 and 50 mph.

BUS RAPID TRANSIT AND ENHANCED BUS TRANSIT

Bus rapid transit (BRT) systems aim to reduce travel times and improve reliability. The idea is to give priority to transit vehicles that carry more people than automobiles. With exclusive lanes, travel time can be substantially reduced compared to conventional bus service. BRT systems often have fewer stops than conventional bus service, too.

BRT is considered a low cost alternative to light rail transit. Under the BRT strategy, conventional buses can operate primarily in easily identifiable exclusive

busways, managed lanes or dedicated bus lanes. A busway can be in its own right of way, or in a railway or highway right of way. A dedicated bus lane is a roadway lane separated from general traffic lanes by barriers, or simply by signs and road markings.

BRT service can be integrated into managed lanes to provide high-speed and high frequency service. BRT buses can operate in managed lanes along with rideshare vehicles. To provide an enhanced level of service, managed lanes could have exclusive on- and off-ramps for BRT vehicles.

In general, most local bus service in dedicated lanes typically operates at average speeds of 10 to 20 miles per hour. Buses on exclusive busways and managed lanes average operating speeds that range between 20 to 50 miles per hour, depending on the system configuration.

Capital costs for improved busways are usually lower than capital costs for rail systems. Making use of existing rights of way can reduce capital cost. However, a fully featured exclusive busway system can approach the cost of a light rail system. Capital cost for this type of system ranges from $4 million to $40 million per mile, depending on system configuration.

6.6 INTERMODAL CENTER OFFERS SPACE TO CARS, TRAINS, BUSES, BIKES

At intermodal facilities, two or more transportation modes and services are brought together to promote the seamless transfer of travel between them. Modes and services can include vehicles and parking, transit (buses, local rail, and intercity rail), bicycles, pedestrians, as well as taxis, rental cars, shuttle vans and the like.

REGIONAL EXAMPLES OF EXISTING AND PLANNED INTERMODAL FACILITIES INCLUDE:

LYNX CENTRAL STATION
Regular buses, Orange Line downtown circulator, taxis, Amtrak and SunRail

OIA INTERMODAL CENTER (under construction)
Airport people mover, All Aboard Florida intercity rail, buses, taxis, drop-off, automobiles and parking, SunRail commuter rail (future), OIA-Convention Center connector (future)

SAND LAKE ROAD SUNRAIL STATION
Automobiles, park-and-ride lot, taxis, buses, SunRail commuter rail, kiss-and-ride, bicycle, pedestrian

6.7 POTENTIAL ROLE IN MULTIMODAL /INTERMODAL PROJECTS

The topic of multimodal investment strategies was discussed at great lengths during the December 10, 2015 board meeting. Representatives from CUTR, based at the University of South Florida, gave a detailed presentation which led to a prolonged discussion among the board members.

AT THE CONCLUSION OF THE DISCUSSION, OUR BOARD REQUESTED THE TEAM TO DIG INTO THE TOPIC AND COME BACK WITH:

- A set of policy recommendations consistent with board input / feedback and statutory framework.
- Review existing multimodal funding needs and identify potential projects.
- Recommend a process for periodic review and evaluation of partnership opportunities.
- Review all multimodal and intermodal projects in progress and identify our role, if any.

With this additional information, our board will address their policy position (as stated in Chapter 2) and develop a strategy for future multimodal and intermodal endeavors. The selected policy will be presented for inclusion in this Master Plan with a future amendment.

Potential topics or issues that could be studied include:

SR 408 DOWNTOWN ORLANDO CORRIDOR

As presented in Chapter 4, the demand for travel through the SR 408 corridor will greatly exceed the roadway capacity because of nearby development. That makes conventional widening of the expressway unacceptable.

SR 528 MULTIMODAL CORRIDOR

CFX has purchased additional land to the south of SR 528 to make space for a multimodal corridor that could link the Orlando International Airport area to Florida's east coast. Many physical factors and corridor stakeholders could influence the location, length and general characteristics of a mass transit and / or freight system that could be built within the corridor.

PARK AND RIDE OPPORTUNITIES

The CFX System covers 109 centerline miles of Central Florida and has 63 interchanges for motorists getting on and off our road network. Today, LYNX bus routes operate on only small segments of the System, and there are very few transit support facilities, such as park and ride lots, provided at or near the interchanges.

Executive Summary

Economic impact and prosperity linked to good roads

A high-quality transportation network is vital to a top-performing economy like the one in Central Florida. Good roads and multimodal networks allow businesses to manage inventories and transport goods, get employees reliably to work and move visitors seamlessly to their destinations, resulting in direct and indirect benefits that ripple throughout the local economy.

The 2040 Master Plan is our visionary blueprint for system improvements and new projects that are fiscally responsible, support our bold new vision and accrue economic, customer and community key benefits to our region and state.

Capacity and operational improvements for the existing system

Approximately $2 billion will be needed for capacity and operational improvements and the annual renewal programs for the existing expressway system. These investments will be driven by the need to accommodate future traffic demands associated with the regional growth. Long segments, approximately 60 centerline miles of SR 417, SR 429 and SR 528, will require widening, plus modifications will be needed at three interchanges.

Twelve possible new project opportunities

About $6.5 to $9 billion could be needed to fund the 12 identified new expressway expansion projects, each of which require further analysis. The majority of these candidates are located in the projected high-growth areas of Orange and Osceola counties. CFX could take the lead in moving these projects forward or provide resources and support to our regional partners.

Each of the possible ventures will require additional detailed analyses in the coming years to better define their unique benefits, characteristics and ultimate costs and schedules. Funding for the future efforts will be addressed each year during the annual five-year work plan update.

Multimodal/Intermodal opportunities to be determined

During extensive public outreach, we were asked to explore multimodal project opportunities with regional partners. While specific projects were not named in the 2040 Master Plan, we expect to add some specific criteria and methodologies to be discussed and adopted. These include determining:

- A set of policy recommendations consistent with Board input, feedback and statutory framework.
- A review of existing multimodal funding needs and potential projects.
- A process for periodic review and evaluation of partnership opportunities.
- Identification and review of all multimodal and intermodal projects currently in progress in Central Florida and identification a potential CFX, role if any.

Continued reinvestment pays local dividends

Projected annual toll and investment revenues, as well as annual costs associated with operations, maintenance and administration and debt service payments were evaluated during development of the master plan. This evaluation indicates roughly $6.6 billion in current dollars will be available for future CFX projects.

CFX's economic impact on Central Florida is undeniable. The return on investment and overall contributions have been documented many times with the most recent analysis performed by the Center for Urban Transportation Research (CUTR). The center concluded that the FY 2016 – 2020, Five-Year Work Plan supports more than 12,000 jobs and should generate approximately $700 million in wages.

During the next 25 years, CFX will have the opportunity to expand its contributions even further by investing in new projects and services that will build the integrated mobility network envisioned by our customers, employees, the board and regional partners.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2040 Master Plan Map