CAMBRIDGE SYSTEMATICS

FTC Study of Cost Savings for Expressway Authorities

final

report

prepared for

Florida Transportation Commission

prepared by

Cambridge Systematics, Inc.

with

Center for Urban Transportation Research, University of South Florida

December 2012

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10415 Morado Circle, Building II, Suite 340
Austin, TX 78759

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List of Acronyms

AADT – Annual Average Daily Traffic
AASHTO – American Association of State Highway and Transportation Officials
AET – All-Electronic Tolling
AFB – Air Force Base
AM – Asset Maintenance
CCSS – Centralized Customer Service System
CE – Categorical Exclusion
CEI – Construction Engineering and Inspection
CSC – Customer Service Center
DB – Design/Build
DBB – Design-Bid-Build
DBE – Disadvantaged Business Enterprise
DOT – Department of Transportation
EA – Environmental Assessment
EIS – Environmental Impact Statement
ETC – Electronic Toll Collection
F.S. – Florida Statutes
FDOT – Florida Department of Transportation
FHWA – Federal Highway Administration
FONSI – Finding of No Significant Impact
FTC – Florida Transportation Commission
FTE – Florida's Turnpike Enterprise
GEC – General Engineering Consultant
GEC-CM – General Engineering Consultant-Construction Management
HEFT – Homeland Extension of the Florida Turnpike
HPMS – Highway Performance Monitoring System
ICA – Infrastructure Corporation of America
ILA – Interlocal Agreement
ITS – Intelligent Transportation System(s)

IVR – Interactive Voice Response

JCS – Jorgensen Contract Services, LLC

JPA – Joint Participation Agreement

LPA – Lease Purchase Agreement

LRTP – Long-Range Transportation Plan

M&O – Maintenance and Operations

MBBA – Mid-Bay Bridge Authority

MDX – Miami-Dade Expressway Authority

MOU – Memorandum of Understanding

MP – Mile post

MRP – Maintenance Rating Program

NBI – National Bridge Inventory

NEPA – National Environmental Protection Act

O&M – Operating (Operations) and Maintenance

OCX – Osceola County Expressway Authority

OOCEA – Orlando-Orange County Expressway Authority

PD&E – Project Development and Environmental

PDA – Personal Data Assistant

PE – Project Engineering

PS&E – Plans, Specifications and Engineering

REL – Reversible Express Lane

RFQ – Request for Qualifications

RISC – Rapid Incident Scene Clearance

ROW – Right-of-Way

SEIR – State Environmental Impact Report

SHS – [Florida] State Highway System

SMART – Specific, Measurable, Attainable, Realistic and Timely

SR – [Florida] State Route

TEAMFL – Transportation and Expressway Authority Membership Florida

THEA – Tampa-Hillsborough County Expressway Authority

TIFIA – Transportation Infrastructure Financing and Innovation Act

TMC – Transportation Management Center

TSNA –TI –Transfield Services, North America Transportation Infrastructure

VE – Value Engineering

Executive Summary

Why This Study?

The Florida Legislature considered legislative proposals in 2011 and 2012 to consolidate some of the independent Expressway Authorities into the Florida's Turnpike Enterprise (FTE) in order to achieve cost savings through the combination of certain shared functions. In 2012, the Legislature did not enact consolidation, but instead directed the Florida Transportation Commission to conduct a "study of the potential for cost savings that might be realized through increased efficiencies through the sharing of resources for the accomplishment of design, construction and maintenance activities by or on behalf of the expressway authorities in the State."[1] Proposals for consolidation of the Expressway Authorities had contended that each Authority has its own administrative overhead (people, facilities, expenses) and that such multiplicity of administrative functions is wasteful and duplicative.

Why Do Expressway Authorities Exist?

Taking this judgment at face value, a question could be raised as to why so many Authorities exist in the first place. The Authorities did not create themselves; they were created directly by the Florida Legislature or through authority granted local governments by the Legislature. From 1953, when the Legislature created the Florida State Turnpike Authority (the agency which eventually became the FTE) to 2010, when the Osceola County Expressway Authority was created, the Legislature created the system by which these organizations could be formed to design, build, finance and operate and maintain toll roads.

The toll roads offer one of the most direct forms of user-financed transportation. Florida's state highway system is generally funded on a "user-pay" principle, in which road consumers pay for the costs of construction and maintenance of state roads through road user fees such as motor fuel taxes, motor vehicle registration fees, and other transportation-related charges. A toll road operates as one of the purest examples of this user pay principle, in that each user of the toll road is assessed a common, proportionate toll, which is used to pay for the road (capital costs financed by public debt retired by toll revenues)

[1] Section 79, House Bill 599, 2012. In this report, the term "Expressway Authority" also includes the Florida's Turnpike Enterprise, since although the FTE is not organizationally independent of FDOT, it is functionally similar to the other Expressway Authorities. In this study, the term also includes the Miami Dade Expressway Authority (MDX), Mid-Bay Bridge Authority (MBBA), Orlando-Orange County Expressway Authority (OOCEA), Osceola County Expressway Authority (OCX), and Tampa-Hillsborough County Expressway Authority (THEA).

and its maintenance (tolls fund road operations and maintenance). Those who choose not to use the toll road do not pay any tolls.

By authorizing the creation of local, county-based Authorities, the Legislature also ensured that toll revenues would be retained locally. Toll roads would be added to a regional transportation network only when the toll road proved to be financially feasible and only when a locally accountable organization decided that toll financing was the appropriate method of delivering the project. This results in local control of tolling decisions and of toll revenues.

These Authorities also allow for leveraging other funding sources for local highway capacity. Toll roads are funded through debt in the public finance market, in which private investors are willing to buy project revenue bonds paid by toll revenues, which puts this up-front private capital to work in delivering transportation assets. These toll roads may also be supported by other public sources through state transportation funds committed in lease-purchase agreements or highway funds committed to toll road interchanges with other state highways.

This Legislatively created toll road system has resulted in the construction of $12.8 billion of toll payer-financed transportation assets constructed and operated by the State's Authorities.[2] Florida mobility is advanced by this transportation capacity and Florida state highway resources are freed for other purposes.

What Do These Authorities Do?

Figure ES.1 is a state map with the roads and bridges of the Authorities[3] in Florida: Florida's Turnpike Enterprise (FTE), Miami-Dade Expressway Authority (MDX), Mid-Bay Bridge Authority (MBBA), Orlando-Orange County Expressway Authority (OOCEA), and Tampa-Hillsborough County Expressway Authority (THEA). Table ES.1 contains some basic information on the scale and activities of the Authorities' systems.

[2] This figure is the sum of capital assets reported by all five active Authorities in this study in their Comprehensive Annual Financial Reports for the fiscal year ending June 30, 2011.

[3] Osceola County Expressway Authority (OCX) is included in this study, but will be missing from many figures and tables in this report, as the Authority was recently formed, and does not have an operational toll road or one under construction at the time of this report.

Figure ES.1 Florida Expressway Authorities

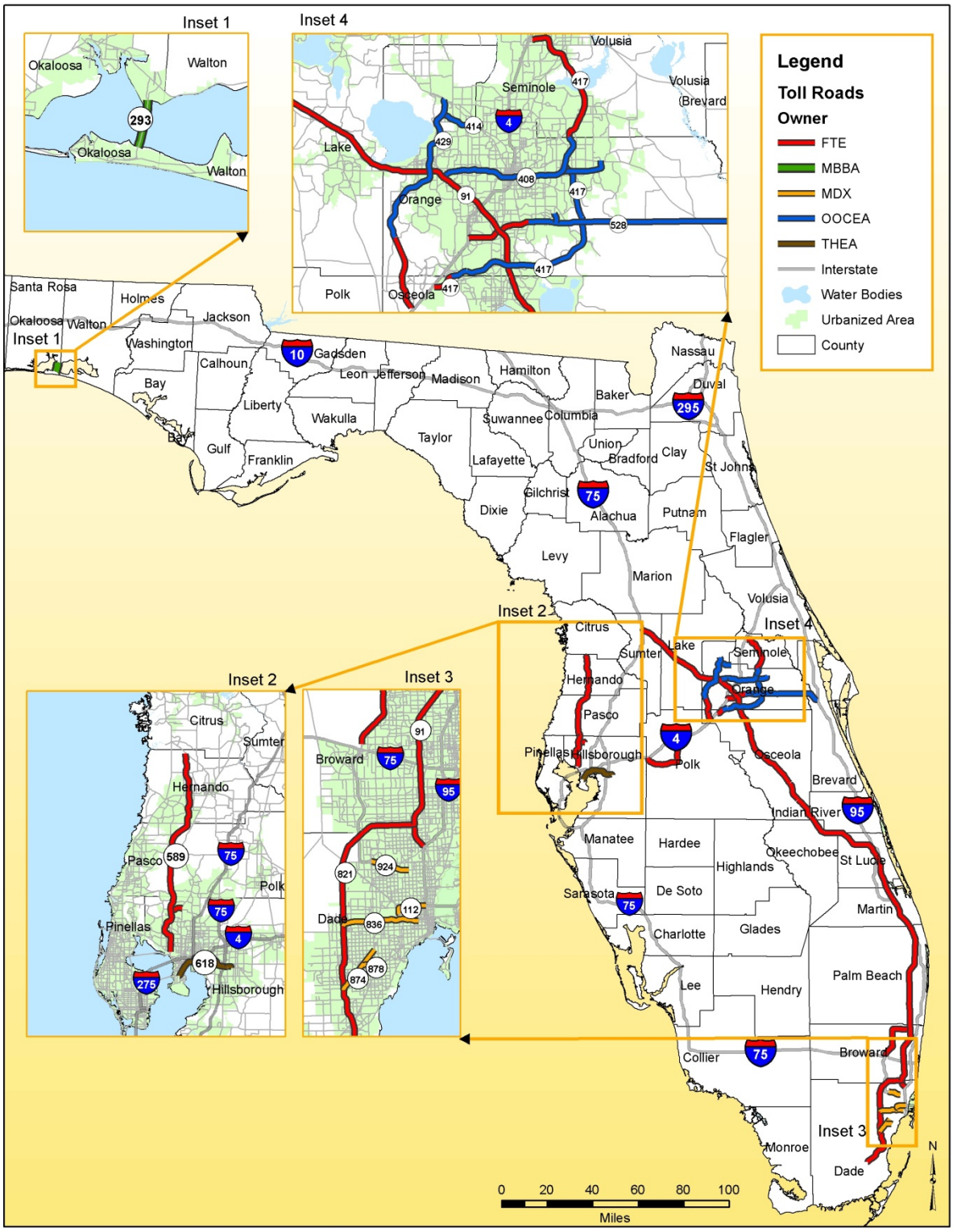


Table ES.1 Florida Expressway Authority Information

Authority	2011 Lane Miles	2007-2012 Construction Lettings ($Mil)	2011 Toll Revenues ($Mil)
FTE	2,174	1,044.2	612.0
MDX	220	308.1	122.7
MBBA	21	71.6	15.7
OOCEA	563	775.9	262.4
THEA	115	13.9	40.5

Sources: Authority data, FTC Performance Reports, Authority Financial Statements.

This report contains additional details on each Authority's processes for project development, construction and maintenance. The Authorities use private sector firms to manage project development tasks and construction projects carried out by other consultants and contractors. Using these private resources allows the Authorities to tailor their support functions to the changing scale of projects and construction. The Authorities use similar methods and techniques in accelerating project delivery, and making effective and efficient decisions: making an offer on right-of-way acquisition that will gain access to the property faster (and complete the construction faster) and avoid costly and time-consuming litigation, performing project development tasks in parallel instead of consecutively, and sizing construction projects to maximize competition. The Authorities are also already sharing resources and partnering on projects; the report offers examples of sharing construction and engineering costs on intersecting facilities, using common contracting techniques.

The Authorities also share a common approach to performance-based asset management. All the Authorities use these contracts on all or part of their facilities to combine routine maintenance functions under a single contractor who is compensated on meeting certain maintenance standards. The Authorities and FDOT share a common asset maintenance evaluation process and criteria, and use generally consistent contracting terms. Each Authority is reaching high targets for asset standards, which not only offers toll road customers a high-quality traveling experience, but also extends the usable life of the infrastructure assets over time.

The Authorities have already adopted an interoperable electronic toll collection system, and most electronic transactions (the bulk of toll revenues collected) use a common transponder and customer account brand, FTE's SunPass. OOCEA maintains a customer base in Central Florida using their E-Pass transponders, but FTE provides the bulk of customer account management, transponder distribution, transaction processing and revenue accounting for electronic transactions for the other Authorities. Given this common toll collection system, Florida's four largest Authorities are cooperating to procure a third-party vendor to provide a consolidated customer service system, to offer high-

performance customer account management and transaction processing with increased customer convenience and access. (This consolidated customer service system is one of the recommendations of this study.)

This report, therefore, will be outlining many examples of how these Authorities are using common practices, shared resources and partnerships to increase the efficiency of project development, construction, maintenance, and operations.

What Are the Major Recommendations of this Study?

As a result of examining the data collected during this study, considering the information gathered during interviews and discussions with FTC Commissioners and Authority leaders, this report offers a set of overall findings or observations, recommendations on FTC's performance measures for Authorities, and other recommendations, which are summarized in this executive summary.

Centralized Customer Service System (CCSS) should be implemented. FTE, MDX, THEA and OOCEA have executed a Memorandum of Understanding (MOU) to adopt an Interlocal Agreement (ILA) to manage the procurement and engagement of a third-party private sector provider to provide customer account maintenance, transponder distribution, and violations processing. This report affirms the contention of the MOU signatory agencies that this CCSS will offer all toll road customers a single, simplified point of contact for account management, and offer the Authorities more efficient and less costly toll transaction processing.

The Authorities are working to develop the specifications for the procurement and adopt a structured governance process for the ILA, with provisions for dispute resolution among the Authorities. The ILA will establish regional business rules and ensure that regional customer connections are established for all Authorities. The CCSS should be fully privatized, and support a single transponder brand for the entire State.

The FTC should follow up on this report's recommendation by:

- Requiring regular updates on progress of the CCSS project, tied to the schedule of major milestones for the CCSS, with an expectation that the transition be completed no later than 36 months from the adoption of the ILA;

- Designating FTC staff to participate in CCSS ILA working group to keep informed on CCSS implementation and planning;

- Encouraging the four Authorities to adopt a CCSS that provides the broadest range of toll collection support functions possible to achieve economies of scale and cost control and keep the process simplest for customers; and

- Keeping the Legislature informed of the status of the CCSS, probable performance improvements from CCSS implementation (transaction cost savings, customer service enhancements).

Explore geographic continuity in maintenance services. Authorities should carefully examine whether performance-based asset maintenance contracts could be combined for toll roads that are abutting, intersecting or regionally common as contracts expire. In the Orlando region, three toll roads (SR 528, SR 429, and SR 417) have segments with different owners (FTE and OOCEA) as shown on Figure ES.1 above. Therefore, these contiguous roadway segments are maintained by separate contractors under separate asset maintenance contracts. In the Miami region, MDX toll roads are maintained under a common asset maintenance contract, while the Homestead Extension of the Florida Turnpike (HEFT) that intersects many of those toll roads is maintained by the FTE under a series of contracts for maintenance services. In these cases, this report does not contend that sharing these kinds of road maintenance responsibilities would necessarily result in monetary savings, nor is a judgment offered as to which toll road owner is best suited to manage the combined maintenance responsibility. However, some efficiencies might result from having a single maintenance regime for a toll road with common route designations but different owners, and this possibility should be explored by the Authorities involved. If changes are warranted, implementation of new asset maintenance contracts would have to wait for the expiration of current asset maintenance contracts of different toll road owners, and the actual administration of the new asset maintenance agreement might be accomplished under an ILA among the Authorities. Given the contract periods for the asset management contracts in place, the FTC could lead consideration of the opportunities for changes in maintenance responsibility near the end of the 2013 fiscal year.

If Authorities agree to change responsibility for maintenance for nearby facilities, then, in a completely different process, the Authorities may wish to consider the steps and ramifications of exchanging ownership of these facility segments. Such an exchange would have to involve a voluntary agreement between the Authorities and would require compensation for the value of the facility segment, and would involve the opinions of financial advisors and bond counsel, and considerations of current bond holders. Considering changes in maintenance of contiguous facilities would not necessarily lead to any changes in asset ownership.

Asset maintenance contracts should be considered across all facilities. Where possible and cost-effective, performance-based asset maintenance contracts should be examined for application to all Authority roadways, structures, and rights-of-way. These contracts would need to be appropriately sized (usually 100 centerline miles of roadway or less) to allow contractors to effectively manage the work, and to allow Authorities to effectively achieve maximum competition for the contracts. The FTC can include discussion of this subject with the Authorities during their annual performance review cycle.

Revise and update 2004 Executive Compensation Study. In 2004, the FTC published a study of public and private sector market data on executive compensation at FDOT, responding to concerns that FDOT was experiencing difficulties retaining and recruiting leaders under current pay schedules. The economy and transportation industry has changed significantly since 2004, as have the differences in executive compensation among Authorities in this study. Therefore, the FTC should revise and update its Executive Compensation study, and build in a process for updating the report every two years.

Regional working groups of Authorities and FDOT districts. Significant benefit could be achieved through the sharing of best practices to coordinate project development, operations, construction and maintenance. Some Authorities have created information exchanges or best practices meetings to share information on construction contracting or project development tasks. Creating a more regular, routine working group among Authorities (FTE and a regional Authority) and the local FDOT district in a given region could accomplish two objectives:

1. Agencies could share best practices directly or learn from other agencies' experiences shared by general consultants of working group member agencies.

2. Agencies could coordinate project development tasks and construction scheduling on adjacent or intersecting facilities.

These groups could meet periodically (once or twice a year) and focus on one of the subjects studied in this report: project development, construction, or maintenance. Leadership or facilitation could rotate among working group agencies. After a year or two, the Authorities could report to the FTC on accomplishments and lessons learned from the groups and offer suggestions as to whether the working groups offer sufficient value to be continued.

Common performance measures. Looking beyond a cursory glance at Authority operations reveals that each Authority is unique in many ways despite the common functions or legal authorities. Each Authority makes its own business calculations to determine how to perform its functions. Each of the Authorities must be responsive to a distinct master bond resolution that establishes their financial reporting requirements. These same Authorities have adopted budget procedures that govern how data is reported and collected, while others, subject to legislative appropriations, have a different set of financial reporting requirements.

These distinctions among Authorities make direct "apples to apples" comparisons difficult with existing data. Part of the challenge for the FTC in performing its statutory duties to create a performance measurement system for the Authorities and for FDOT is to find measures that are meaningful and readily collectible. Part of the challenge in this report was in identifying the common approaches and functions that create opportunities for shared resources and operating efficiencies.

The FTE currently provides performance data to the FTC as part of FDOT, and does not also report under the FTC Expressway Authority measures. In empowering FTE with influence and flexibility as an organizational enterprise, the Legislature maintained the FTE's clear connection to FDOT and the Secretary of Transportation. This report will point out how many of FTE's practices are a result of being an integral part of FDOT, and the report only points out distinctions between the FTE and FDOT when necessary. However, this report recommends that FTE also report performance measures applicable to other toll road owner/operators as Expressway Authorities. FTE is organizationally part of FDOT, but functionally similar to the Authorities.

MBBA has not been included in FTC Authority performance reporting because it was established under a different statutory framework than other Expressway Authorities.[4] The Authority is smaller than other Authorities in this study, in terms of lane miles, operating budget and staff. While this report does not necessarily recommend that MBBA be included in FTC Authority reporting, should the FTC wish to include MBBA, the Authority would require additional FTC staff support to compile the reporting data.

In 2007, as the Legislature directed, the FTC adopted performance measurement standards for the Expressway Authorities and Transportation Authorities. This report recommends, as part of an overall examination of the original performance measures, new measures and modifications to existing measures.

One new measure would gauge the overall project delivery time, from the beginning of the plans and design engineering to the completion of construction. The FTC currently has one project measure that applies to consulting engineering contracts (in terms of total spending compared to budgeted amounts) and two measures that apply to construction contracts (completion on time and on budget). This new measure would begin with a notice to proceed on design plans for a project and measure the elapsed time while the project was designed, bid, let, and constructed. This would enable the FTC to examine the differences in elapsed project delivery time for different kinds of contracts (larger roadway construction, building construction, technology and toll collection facility construction) and for different kinds of project delivery methods.

Another set of new measures would not directly involve the specific project elements in this study as directed by the Legislature, but could assess the effectiveness of toll roads in providing mobility benefits for customers. This effectiveness could be measured by average annual daily traffic (AADT) (how much travel is occurring across an entire roadway, a common measure used in highway planning), lane volumes (how intensely is transportation capacity being used) and by the congestion index (how congested are toll roads in peak periods). The FTC already collects vehicle miles traveled data from reporting Authorities for its traffic fatality rate measures. Expressing traffic counts for major toll roads would translate traffic activity in terms commonly used in transportation planning, rather than just tracking total transactions. Using a traffic intensity measure, such as the measure of total number of vehicles per lane per hour (a measure commonly used in managed lanes performance), particularly for peak and off-peak periods, would help describe how much toll road customers are depending on a facility. Using a congestion measure like the Travel Time Index used by the Texas Transportation Institute in its Urban Mobility Report, would measure the ratio of travel times during peak periods to travel times in off-peak periods. This regularly used congestion measurement, already applied to roadway networks in more than 400 urban areas in the country, would offer a good benchmark for toll road congestion compared to overall congestion levels in Florida cities like Tampa, Orlando, and Miami.

[4] The FTC's statutory directive for Expressway Authority performance reporting is tied to Authorities created under Chapter 348 Florida Statutes.

The FTC should require each Authority to present its current five-year work program and report on major projects on an exception basis (certain changes to the projects in the work program). This would involve each Authority reporting information on projects, including progress and expenditures. The Authorities would also report on major capital projects (new, expanded, or significantly improved facility that involves planning, environmental studies, design, right-of-way and/or construction) that are changed (schedule changes that shift projects more than one year, changes in project limits, cost adjustments of plus/minus 10 percent, projects added or deleted from the work program). This information would allow the FTC to track progress of major projects that have the largest impact on toll paying customers, and would provide data on specific, high-profile projects that currently is included in aggregate reporting of project development and construction data.

Finally, by adding FTE to the FTC reporting for Authorities, the FTE would report information on the same kinds of debt service and debt coverage that the Authorities currently provide. This information would offer the FTC an assessment of how effectively the FTE is managing its revenue stream, bond rating, and system capacity.

1.0 Administration

Overview

The Legislature has offered the Authorities broad statutory authority for procurement and contracting in Chapters 348 and 338, Florida Statutes. The Authorities have statutory authority to enter into agreements with other units of government for services or project development. This section will examine how the Authorities are organized and how they address administrative matters, including how certain services are provided: general legal and communications, government relations, payroll processing and whether Authority consultants are co-located in Authority offices. Information in this section on operating and maintenance spending is prospective, as Authority budgets contain more detailed information on relative spending categories than is found in the Authority consolidated annual financial reports. Organization charts for the Authorities are found in Appendix A.

1.1 Florida's Turnpike Enterprise

Florida's Turnpike Enterprise[5] is a 456-mile system of limited-access toll highways that passes through 16 counties in Florida. The Turnpike System is composed of 2,174 lane miles with 699 fixed bridges and eight service plazas. The Turnpike also collects tolls for eight off-system facilities. House Bill 261, which was passed during the 2002 Florida Legislative Session, changed Florida's Turnpike District into the Turnpike Enterprise, allowing the Department to leverage the financial capabilities and to use best practices to improve the cost-effectiveness and timeliness of project delivery, increase revenues, improve the quality of services to customers, and expand the capability of the Turnpike's capital program.

Explicit powers granted to FTE include those to plan, construct and maintain a turnpike system and for its Executive Director to hire staff. There were significant changes granted to FTE in its creation. Among those are the ability for the FDOT Secretary to exempt FTE from FDOT policies and procedures under his or her control, and the requirements for determining the economic feasibility of a turnpike toll project. For budgeting purposes, the Enterprise submits its annual budget as part of FDOT and has the ability to carry over

[5] The Florida Turnpike Enterprise is included in the FTC Performance Report for the Florida Department of Transportation, and is also one of the organizations that is among the Expressway Authorities being reviewed under the current FTC Expressway Authority Cost Savings Study.

any unspent funds into the next fiscal year not to exceed five percent of the original budget. Further, these funds may be used for any authorized activity of FTE, including marketing. FDOT may exercise the same authority as the Department of Management Services in the areas of procurement and management of public property and publicly owned buildings for the benefit of the Turnpike Enterprise.

While FTE has some unique statutory authority, the FTE operates as a fully integrated part of FDOT. FDOT provides a variety of central services for FTE, as the Department would for any District. FTE has unique financial reporting relationships given its access to the public finance market for revenue bonds, but FTE also receives its budgetary authority through the legislative appropriations process that applies to FDOT as a whole. FTE uses similar project development, construction and maintenance practices and tools that are used by other FDOT districts.

As reported in the "Traffic Engineer's Annual Letter Report, Fiscal Year Ended June 20, 2011," the Turnpike System consists of several components; the principal one is the Mainline with a length of 320 miles, shown on Figure 1.1, with information on geographic zones for maintenance, discussed later in this report. The Mainline includes five different subcomponents:

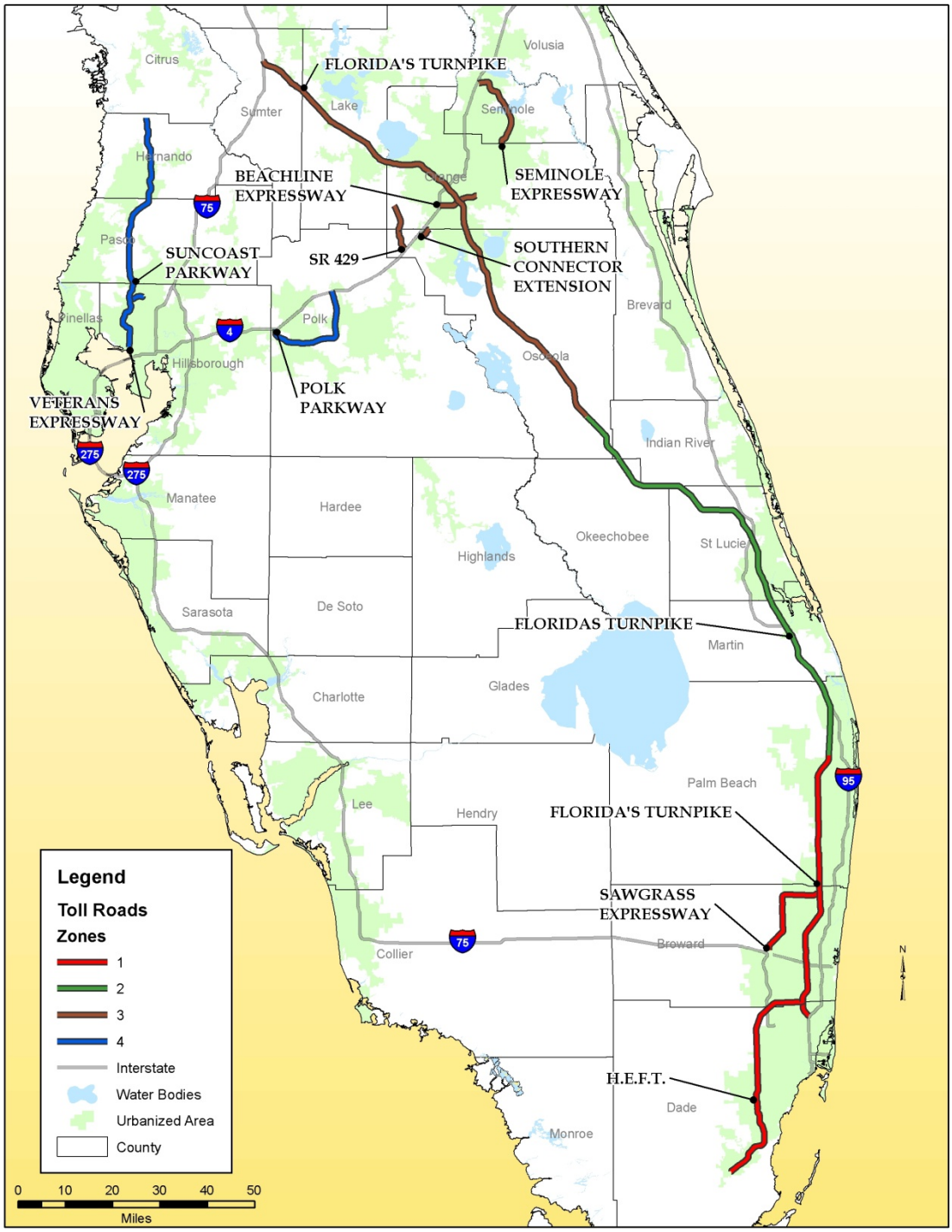
- Homestead Extension of Florida's Turnpike (HEFT);
- Southern Coin System;
- Ticket System;
- Northern Coin System; and
- Beachline West Expressway.

The first four segments of the Mainline are continuous with a north-south direction extending from Florida City in southern Miami-Dade County to I-75 at Wildwood in Sumter County to the north. The fifth segment, the Beachline West Expressway, intersects with the Northern Coin System in Orlando and has an east-west orientation. The Turnpike also owns and operates seven expansion projects that are open to traffic:

- Sawgrass Expressway in Broward County;
- Seminole Expressway in Seminole County;
- Veterans Expressway in Hillsborough County;
- Southern Connector Extension in Orange and Osceola counties;
- Polk Parkway in Polk County;
- Suncoast Parkway in Hillsborough, Pasco and Hernando counties; and
- Western Beltway, Part C in Orange and Osceola counties.

The Sawgrass Expressway, formerly part of the Broward County Expressway Authority, is the only expansion project ever acquired by the Turnpike. The remaining six expansion projects were all constructed by the Turnpike.

Figure 1.1 Florida's Turnpike System



Another new expansion project, the I-4/Selmon Expressway Connector, is under construction through a partnership with FDOT District 7, Tampa-Hillsborough Expressway Authority and the Turnpike. This elevated SunPass-only interchange between Interstate 4 and the Lee Roy Selmon Crosstown Expressway in Hillsborough County will provide a limited-access alternative route to and from downtown Tampa. District 7 is responsible for the design, construction, and maintenance of the facility, while the Turnpike will assist with the design and installation of toll equipment. After construction, the new facility will be a part of Florida's Turnpike System. The I-4/Selmon Expressway Connector is scheduled to open to traffic in FY 2014.

The FY 2011 Operations and Maintenance budget information is listed in Table 1.1, taken from FTE's financial reporting. FTE had 468 full-time equivalent positions in FY 2011, including those in toll collection equipment maintenance, toll systems IT and administration. The total compensation for salaries and benefits totaled $29.976 million. Salaries for the top five executives for the FTE total $623,429. Operating expenses from the FTE FY 2011 comprehensive annual financial report amount to $81,305 per lane mile, or $0.023 per vehicle-mile traveled. As shown in Table 1.2, FTE does not self-perform payroll processing, it is done by the FDOT Central Office coordinated through the Department of Financial Services.

Table 1.1 FTE Operating and Maintenance Expense Estimates, FY 2011

Expense Item	FY 2011
Audit	$1,911,078
Toll Equipment Maintenance	3,676,265
Data Center	4,793,109
Sun Pass	27,505,488
Cash Toll Collection	54,003,371
Video Tolling/Violations	9,130,612
Overhead on Toll Operations	5,132,534
Net Transponders	6,432,717
Work Program Operating Items	20,425,698
Overhead on Work Program	817,028
Total Toll Operating Estimate	**$133,827,900**
General Consultant	$5,328,000
Maintenance Programming	41,478,700
Overhead on GC Maintenance Program	2,340,335
In-House Charges for Maintenance.	325,000
Overhead on In-House Charges	16,250
Total Maintenance Charges	**$49,488,285**
Florida Highway Patrol	$18,018,519
Overhead on FHP	900,926
General Consultant Admin/Operating	$1,590,581
Total O&M Before Subsidies	**$203,826,211**
Less O&M Subsidies	(8,384,000)
Net O&M for Certification	**$195,442,211**

Source: FTE data provided for this study.

Table 1.2 FTE Administration Items

General Legal Services	In-House	Contract	**Both**
Communications Services	In-House	Contract	**Both**
Government Relations	**In-House**	Contract	Both
Payroll Processing	In-House	Contract	Both
Contract Staff in Offices	**Yes**	No	

Source: FTE data provided for this study.

1.2 Miami-Dade Expressway Authority

Miami-Dade Expressway Authority (MDX) is an agency of the State of Florida, created in 1994 pursuant to Chapter 348, Part I, Florida Statutes, for the purposes of and having the power to acquire, hold, construct, improve, maintain, operate, own, and lease an expressway system located in Miami-Dade County. The Authority may also fix, alter, change, establish and collect tolls, rates, fees, rentals, and other charges for the services and facilities of such system and is further authorized to issue bonds. MDX is reported as an Independent Special District of the State of Florida and subject to the provisions of Chapter 189, Florida Statutes (Uniform Special District Accountability Act of 1989) and other applicable Florida Statutes.

The governing body of MDX consists of 13 voting members. Seven members are appointed by the Miami-Dade County Commission, five members are appointed by the Governor, and the District 6 Secretary of the Department is the ex officio member of the Board. Except for the District 6 Secretary, all members must be residents of Miami-Dade County and each serves a four-year term and may be reappointed. Current Board members are listed in Table 1.3.

MDX oversees, operates and maintains five expressways constituting 34 centerline-miles and 220 lane miles of roadway in Miami-Dade County. The five toll facilities include: Dolphin Expressway (SR 836); Airport Expressway (SR 112); Don Shula Expressway (SR 874); Gratigny Parkway (SR 924); and, Snapper Creek Expressway (SR 878). These routes are shown on Figure 1.2.

Figure 1.2 South Florida Toll Roads

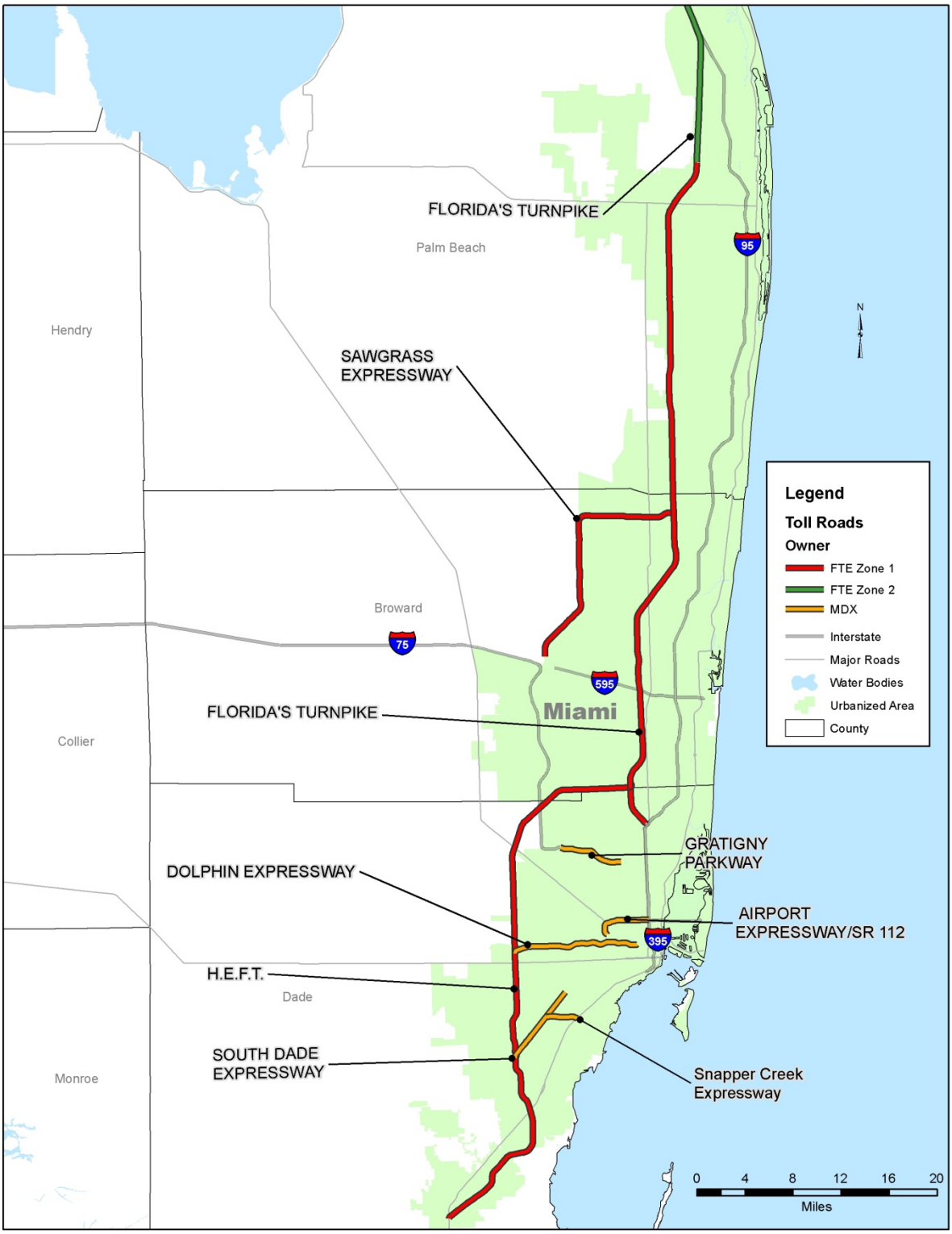


Table 1.3 MDX Board Members, October 2012

Maurice A. Ferré, Chair
Shelly Smith Fano, Vice-Chair
Gonzalo Sanabria, Treasurer
Gus Pego, P.E., FDOT District 6 Secretary
Carlos R. Fernandez-Guzman
Maritza Gutierrez
Jose M. Hevia
Robert W. Holland, Esq.
Al Maloof, Ph.D.
Felix Lasarte, Esq.
Louis V. Martinez, Esq.
Yvonne Soler-McKinley
Norman R. Wartman

Source: MDX data provided for this study.

The FY 2011 Operations and Maintenance budget information is listed in Table 1.4. MDX had 47 full-time equivalent positions in FY 2011, and a total of $5.8 million budgeted for salaries and benefits. Salaries for the top three executives total $629,452. MDX has two contract staff in the Authority's headquarters building: one each from the general engineering consultant and from the contract asset maintenance contractor. The professional services expenses include project development costs. The operating and maintenance expenses reported in the MDX FY 2011 comprehensive annual financial report amount to $122,000 per lane mile, or $0.025 per vehicle-mile traveled.

Table 1.4 MDX Operating and Maintenance Budget, FY 2011

Budget Item	FY 2011 Approved Budget	FY 2011 Projected Actual
Agency Toll Operations	$10,117,117	$9,510,083
FDOT Toll Operations	6,436,604	6,436,604
Roadway Operations	4,729,437	4,483,437
Operations Category	**$21,283,158**	**$20,430,124**
Maintenance Category	**$6,739,164**	**$6,951,720**
Salaries and Benefits	$5,833,131	$5,357,544
Professional Services	3,259,000	3,520,240
Office Administration	1,263,364	1,176,642
Treasury and Bond Admin.	118,450	116,950
Administrative Category	**$10,473,945**	**$ 10,171,376**
Contingency	$250,000	–
Total Operating Expenses	**$38,746,267**	**$37,553,220**

Source: MDX data provided for this study.

Table 1.5 MDX Administration Items

General Legal Services	**In-House**	Contract	Both
Communications Services	In-House	Contract	**Both**
Government Relations	In-House	**Contract**	Both
Payroll Processing	**In-House**	Contract	Both
Contract Staff in Offices	**Yes**	No	

Source: MDX data provided for this study.

1.3 Mid-Bay Bridge Authority

The Mid-Bay Bridge Authority (MBBA) is a dependent special purpose district of Okaloosa County, and was created in 1986 by the Florida Legislature to build and finance a bridge across Choctawhatchee Bay. Construction started five years after the MBBA was created, following completion of environmental studies, permitting, design, and financing. This included obtaining right-of-way from Eglin Air Force Base through the Army Corps of Engineers.

Since the facility opened in 1993, the toll plaza has been expanded three times and the south approach widened from two to four lanes, along with improvements to the intersection with U.S. Highway 98. All of these projects were necessary to keep up with the traffic demand in Okaloosa County. In 2005, the MBBA began a project to alleviate traffic congestion on the north approach to the bridge. This project included the task of development and construction of an 11-mile controlled access north approach to the bridge. The first three miles of this Mid-Bay Bridge Connector, including improvements to State Road 20, were completed in 2011. Construction of the remaining eight miles of the Connector will be completed in early 2014. The Authority entered into a Lease-Purchase Agreement with the Department whereby the Department maintains and operates the Mid-Bay Bridge and remits all of the tolls collected to the Authority as lease payments.

The MBBA is governed by a five member board, four members of which are appointed by the Governor to three-year terms. Board members are listed in Table 1.6. The FDOT District 3 Secretary is a non-voting, ex officio member of the Board, and is not listed in the table. The MBBA sets an annual operating budget, which is submitted to the Okaloosa County Commissioners for approval.

Table 1.6 MBBA Board Members, October 2012

Gordon E. Fornell, Chair
Virginia Asthana, Vice-Chair
Lois Hoyt, Secretary/Treasurer
Daniel A. Bowers, Jr.
James D. Neilson, Jr.

Source: MBBA web site, http://www.mid-bay.com/about/board.php.

The FY 2011 Operations and Maintenance budget information is listed in Table 1.7. The operating budget includes expenses for the maintenance and toll collection services for the bridge performed by FDOT and FTE, although this expense is not actively managed by MBBA staff in the same manner the other operating expenses are directly controlled internally. Noted in Table 1.8, MBBA does not have a dedicated full-time equivalent responsible for governmental relations, nor does the Authority contract for the services. MBBA had two employees in FY 2011, and its Executive Director had a FY 2011 salary of $146,404.

Table 1.7 MBBA Operating and Maintenance Budget, FY 2011

Budget Item	FY 2011 Budget
Executive, Administration and Legal	$130,000
Auditing and Accounting	70,000
Operations Admin	285,300
Professional Services	146,800
Advertising	100,000
FDOT Operations/Maintenance	2,498,860
Trustee Fees	50,000
Total Operation and Administrative Expenses	**$3,280,960**

Source: MBBA data provided for this study.

Table 1.8 MBBA Administration Items

General Legal Services	In-House	**Contract**	Both
Communications Services	In-House	**Contract**	Both
Government Relations	In-House	Contract	Both
Payroll Processing	**In-House**	Contract	Both
Contract Staff in Offices	Yes	**No**	

Source: MBBA data provided for this study.

1.4 Orlando-Orange County Expressway Authority

Orlando-Orange County Expressway Authority (OOCEA) is an agency of the State of Florida, created in 1963 under Chapter 348, Part III, Florida Statutes, for the purpose of construction and operation of an expressway road system in Central Florida. OOCEA is reported as an Independent Special District of the State of Florida and subject to the provisions of Chapter 189, Florida Statutes (Uniform Special District Accountability Act of 1989) and other applicable Florida Statutes. OOCEA has the right to construct, operate, and maintain roads, bridges, avenues of access, thoroughfares, and boulevards together with the right to construct, repair, replace, operate, install, and maintain electronic toll payment systems outside of Orange County with the respective county's consent. The Authority is also authorized to issue revenue bonds to finance portions of the System.

The governing body of OOCEA consists of five members. Three of the members are citizens of Orange County appointed by the Governor. These members serve four-year terms and may be reappointed. The Mayor of Orange County and District 5 Secretary of the Department are the two ex officio members of the Board. Current Board members are listed in Table 1.9.

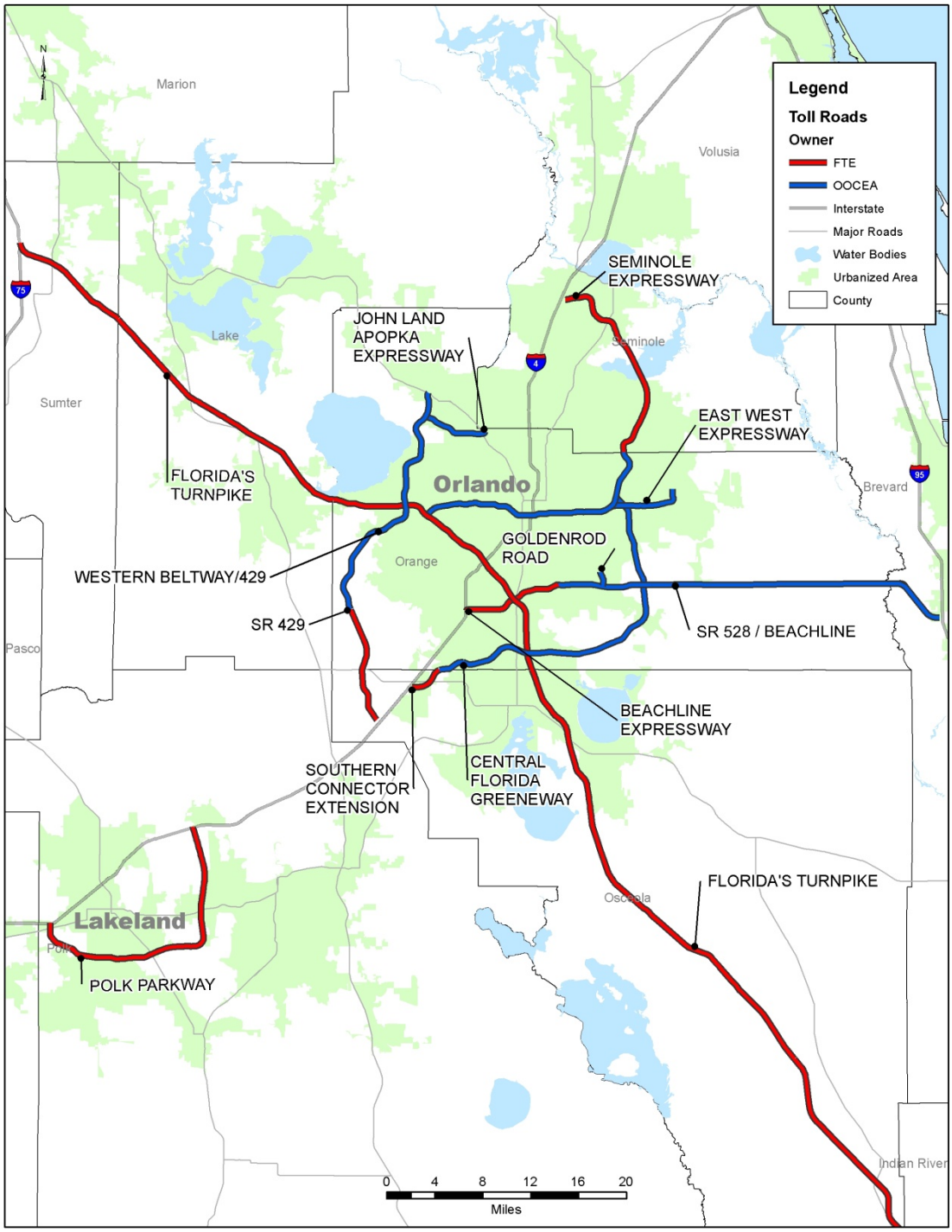
Table 1.9 OOCEA Board Members, October 2012

Walter A. Ketcham, Jr., Chair
Scott Batterson, P.E., Vice-Chair
Teresa Jacobs, Secretary/Treasurer
Noranne B. Downs, P.E., FDOT District 7 Secretary
Tanya Wilder

Source: OOCEA web site, https://www.oocea.com/CorporateInformation/Administration/BoardMembers.aspx.

OOCEA owns and operates 105 centerline-miles, and 563 lane miles of roadway in Orange County. The toll facilities include: 22 miles of the Spessard Holland East-West Expressway (SR 408); 23 miles of the Martin Andersen Beachline Expressway (SR 528); 33 miles of the Central Florida GreeneWay (SR 417); 22 miles of the Daniel Webster Western Beltway (SR 429); and five miles of the John Land Apopka Expressway (SR 414). These routes are shown in Figure 1.3.

Figure 1.3 Central Florida Toll Roads



The FY 2011 Operations and Maintenance budget information is listed in Table 1.10. OOCEA had 59 full-time equivalent positions in FY 2011, and salaries for the Authority's top five executives total $878,971. Noted in Table 1.11, OOCEA does not have a dedicated full-time equivalent responsible for governmental relations, nor does OOCEA contract for such services. The operating and maintenance expenses from OOCEA's FY 2011 comprehensive annual financial report amount to $83,820 per lane mile, or $0.027 per vehicle-mile traveled. Although development of OOCEA's central offices was undertaken by previous management, the overall structure is sized in part to accommodate contracted staff for project development, construction, and maintenance management consultants.

Table 1.10 OOCEA Operating and Maintenance Budget, FY 2011

Budget Item	FY 2011 Actual	FY 2012 Budget
Toll Operations	$13,338,670	$14,370,164
Toll Facilities	20,349,345	21,520,043
Operations	33,688,015	35,890,207
Maintenance and Operations	13,675,786	13,310,077
Administrative Costs	5,307,054	5,703,273
Total Operating	**$52,670,855**	**$54,903,557**
FDOT Toll Operations	($5,646,264)	($5,569,167)
FDOT Maintenance	(2,407,500)	(2,335,000)
Total FDOT Participation	($8,053,764)	($7,904,167)
Net Operating Expenses	**$44,617,091**	**$46,999,390**

Source: OOCEA data in FY 2013 Operating Budget.

Table 1.11 OOCEA Administration Items

General Legal Services	In-House	Contract	**Both**
Communications Services	In-House	Contract	**Both**
Government Relations	In-House	Contract	Both
Payroll Processing	**In-House**	Contract	Both
Contract Staff in Offices	**Yes**	No	

Source: OOCEA data provided for this study.

1.5 Osceola County Expressway Authority

Osceola County Expressway Authority (OCX) is an agency of the State of Florida, created in 2010 under Chapter 348, Part V, Florida Statutes, for the purpose of construction and operation of an expressway road system in Central Florida. OCX is reported as an Independent Special District of the State of Florida and subject to the provisions of Chapter 189, Florida Statutes (Uniform Special District Accountability Act of 1989) and other applicable Florida Statutes. OCX has the right to construct, operate, and maintain roads, bridges, avenues of access, thoroughfares, and boulevards together with the right to construct, repair, replace, operate, install, and maintain electronic toll payment systems in Osceola County. The Authority is also authorized to issue revenue bonds to finance portions of the System.

To date, OCX is not operating any facilities. OCX has a six member board; five members, (at least one of whom must be a member of a racial or ethnic minority group,) are residents of Osceola County. Osceola County appoints three members and the Governor appoints two members. The sixth nonvoting, ex officio member is the FDOT District 5 Secretary. The OCX Board met for the first time on June 21, 2011, and the Authority has no funding or staff. Osceola County is providing staff assistance and other support. OCX has developed a draft 2040 Master Plan that includes construction of four proposed tolled expressways within Osceola County.

1.6 Tampa-Hillsborough County Expressway Authority

Tampa-Hillsborough County Expressway Authority (THEA) is an agency of the State of Florida and was created in 1963 pursuant to Chapter 348, Part II, Florida Statutes, for the purposes of and having the power to construct, reconstruct, improve, extend, repair, maintain and operate the expressway system within Hillsborough County, Florida. THEA is reported as an Independent Special District of the State of Florida and subject to the provisions of Chapter 189, Florida Statutes (Uniform Special District Accountability Act of 1989) and other applicable Florida Statutes. The Authority is also authorized to issue revenue bonds to finance improvements or extension of the Expressway System. The 2009 Legislature revised Section 348.54, Florida Statutes, enabling THEA to issue their own revenue bonds without having to go through the Division of Bond Finance (DBF) of the State Board of Administration (SBA). The 2010 Legislature further amended and clarified various bond related provisions of the Tampa-Hillsborough County Expressway Authority Law.

The governing body of THEA consists of seven members. Four members are appointed by the Governor and serve four-year terms. Serving as ex officio members are: the Mayor of the City of Tampa, or the mayor's designate, who is Chair of the City Council; one member of the Board of County Commissioners of Hillsborough County, selected by such board; and, the District 7 Secretary of the Department. Current Board members are listed in Table 1.12.

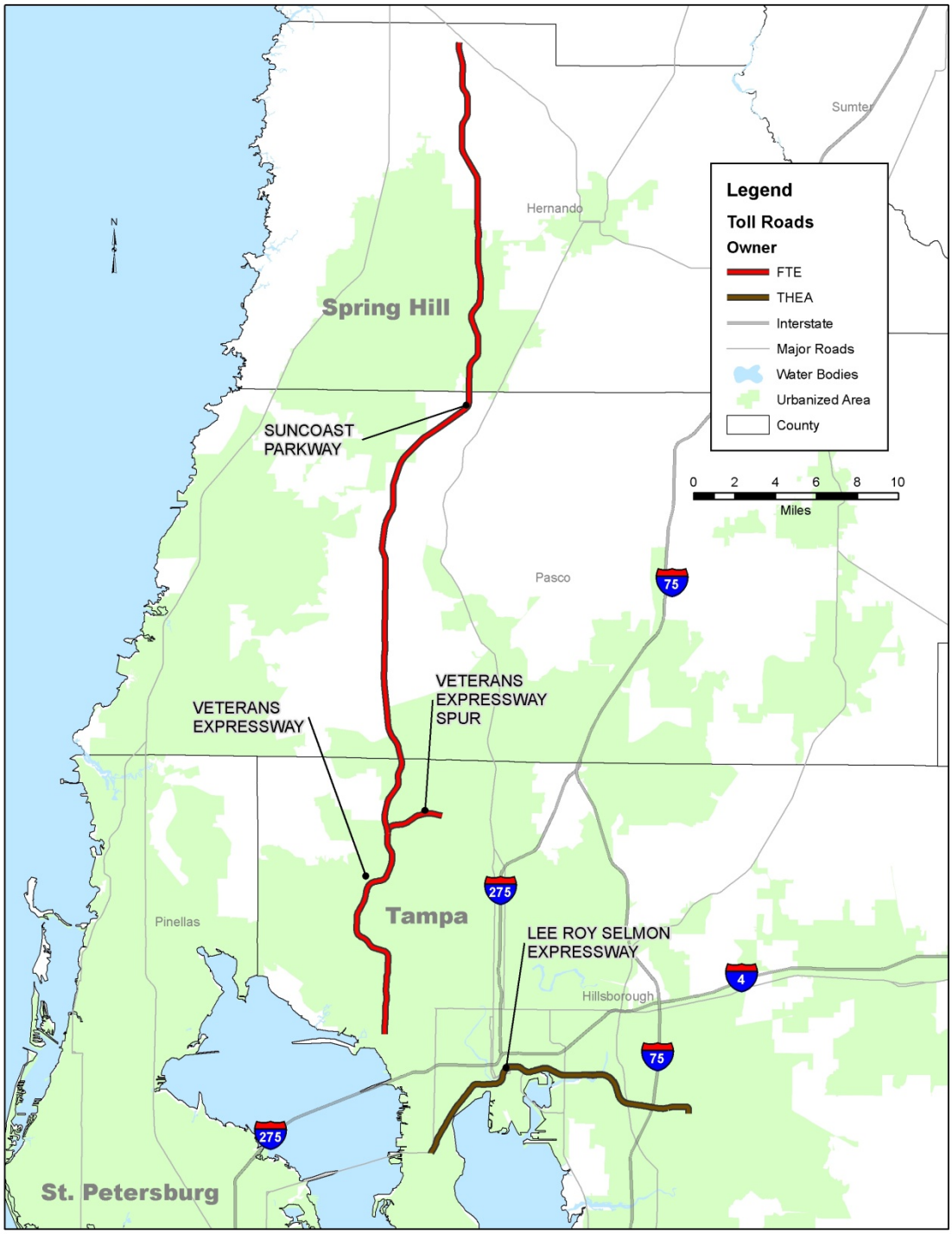
Table 1.12 THEA Board Members, October 2012

Stephen Diaco, Esq., Chair
Curtis Stokes, Vice-Chair
Rebecca J. Smith, Secretary
Bob Buckhorn
Lesley "Les" Miller
Donald Phillips
Don Skelton, P.E., FDOT District 7 Secretary

Source: THEA web site, http://www.tampa-xway.com/AboutUs/BoardMembers.aspx.

THEA owns the Selmon Expressway, a 15-mile limited-access toll road. The original 14-mile, four-lane, at-grade facility crosses Hillsborough County from east to west through the City of Tampa and connects the Gandy Bridge with I-75. Elevated and at-grade reversible express lanes within the existing facility between Meridian Street and I-75 and the one-mile extension from I-75 to Town Center Boulevard opened in 2006. THEA's facilities, 115 lane miles, are shown on Figure 1.4.

Figure 1.4 Western Florida Toll Roads



The FY 2011 Operations and Maintenance budget information is listed in Table 1.13. THEA had 16 full-time equivalent positions in FY 2011, with total compensation budgeted at $2.0 million. Salaries for the Authority's top five executives total $751,016. The operating and maintenance expenses from THEA's FY 2011 comprehensive annual financial report amount to $63,174 per lane mile, or $0.030 per vehicle-mile traveled.

Table 1.13 THEA Operating and Maintenance Budget, FY 2011

Budget Item	FY 2011 Budget	FY 2011 Expenditures
Employee Compensation	$2,010,194	$1,925,510
Professional Services	505,215	613,812
Office Administration	370,568	351,862
Furniture, Equipment, and Vehicles	49,500	48,583
Contingent Liabilities	814,232	–
Communications	200,000	218,436
Total Administration	**$3,949,709**	**$3,158,203**
Insurance	$625,976	$548,041
FDOT Toll Operations	4,016,917	2,675,710
Violation Enforcement	1,849,755	1,180,803
Operations	**$6,492,648**	**$4,404,553**
Maintenance	**$3,465,479**	**$ 3,055,252**
Total Operating Budget	**$13,907,836**	**$10,618,009**

Source: THEA data provided for this study.

Table 1.14 THEA Administration Items

General Legal Services	**In-House**	Contract	Both
Communications Services	In-House	Contract	**Both**
Government Relations	In-House	Contract	**Both**
Payroll Processing	**In-House**	Contract	Both
Contract Staff in Offices	**Yes**	No	

Source: THEA data provided for this study.

1.7 Findings on Administration

This report recommends that all Authorities be included in FTC performance measurement reporting. One FTC metric currently calculates the amount of administrative expenses as a percentage of total operations and maintenance budgets. Even among the current reporting Authorities, there are some differences in how the administrative expenses are calculated (some include project development costs, some do not). Since FTE is an integrated operating unit of FDOT, separating administrative expenses associated with the FTE will be a challenge in this process of incorporating FTE into the FTC Authority reporting system. In addition to expressing FTE operating and maintenance expenses in a format similar to other stand-alone Authorities, the FTE's calculations will also need to incorporate administrative expenses incurred by FDOT's Central Office, such as legal, government affairs, accounting and human resources. As the FTC recalibrates its measurements, this administrative metric will need to be considered for inclusion or change, considering the differences in data.

The Legislature has granted FDOT and the Authorities legal authority to independently purchase real estate (a necessary function for infrastructure development) and other "vertical" construction such as office space, toll collection facilities, maintenance yards, structures (even if for toll collection equipment and not roadways), and toll plazas (along the Turnpike). The information in this section indicates that some Authorities co-locate consultants in Authority facilities. This can offer productivity gains by having staff and consultants side-by-side in managing project plans, construction management, maintenance cycles, and other operating responsibilities. In many cases, consulting firms are asked to provide reduced overhead rates for co-located staff to account for Authority-provided resources.

Not all Authorities use outside resources for legal or communications professional services. Communications and public relations services are not only good opportunities for Authorities to use local, small or disadvantaged businesses, but local delivery of these services can take advantage of relationships with local media. Almost all Authorities self-perform payroll processing, and readily available accounting software makes payroll functions very simple to administer for such relatively small workforces.

Overall, as Authorities carefully manage administrative costs, more net revenues go to mobility improvements for toll payers. Rather than consider another formal measurement, the FTC could ask, as part of annual FTC performance reporting, for narrative and concrete examples of how Authorities are controlling administrative costs.

Special Note on Executive Compensation. Data collected for this study show differences in executive compensation among the authorities. The FTC conducted an Executive Compensation Study in 2004 that studied compensation of FDOT leaders compared to other public agencies and to the private sector. That study was concerned with executive retention and recruitment for FDOT. A thorough market-based analysis of executive compensation among the Authorities and FDOT is beyond the scope of this particular study, but the differences that remain indicate that the subject matter of the FTC's compensation study remains relevant.

Additional data reveal differences between FDOT and other peer state transportation departments (DOT). Table 1.15 lists salaries for leadership positions at other peer[6] DOTs as of 2011, to illustrate differences between Florida's legislatively established compensation and that of other states.[7]

Table 1.15 Peer State Department of Transportation Salaries

	Chief Admin. Officer	Chief Counsel	Finance Director	District Engineer	Chief Engineer
Virginia	$198,450	–	$126,744	$121,957	$161,028
Texas	$192,500	$146,400	$144,600	$140,980	$170,000
Georgia	$182,504	$120,999	$153,890	$ 95,817	$175,000
Pennsylvania	$141,920	$138,328	$106,876	$121,957	$130,602
Florida	$140,001	$130,000	$114,711	$85,147	$125,915
New York	$136,000	–	$119,846	$149,938	–
Ohio	$127,400	$101,005	$102,419	$100,830	$122,845
North Carolina	$120,363	–	$135,461	$120,628	$154,388

Source: 2011 Salary Survey, American Association State Highway and Transportation Officials.

A compensation study conducted for OOCEA[8] examined salaries of a series of comparable toll authorities across the country, and identified midpoint salaries for some of the positions listed in Table 1.15: General Counsel: $153.350, Finance Director: $139,600, Chief Engineer: $168,750.

This information on current transportation market conditions, combined with the changes in the overall economy since the last FTC study was conducted in 2004, all leads to a recommendation that the FTC should update and revise its 2004 Executive Compensation Study, and to update the study every two years thereafter.

[6] Using FHWA Highway Statistics Table PS-1 2009, peer states determined by economic data, total mileage, overall traffic. California is another peer state, but did not provide information for 2011 Salary Survey.

[7] Texas DOT salaries have increased since the publication of this AASHTO survey, as the Chief Administrative Officer (Executive Director) salary is $292,000 and other salaries have increased according to newspaper accounts in July 2012.

[8] Compensation Study, Orlando Orange County Expressway Authority, Cody and Associates, 2011.

2.0 Design/Project Development

Overview

The project development process, for the purposes of this report, includes planning and environmental evaluation, project design, and real estate acquisition. The following section describes information collected and developed in these areas as well as information related to pooled procurements, coordination among and between agencies, Authority data on aspects of performance, and opportunities to future enhance efficiencies through increased collaboration and cooperation.

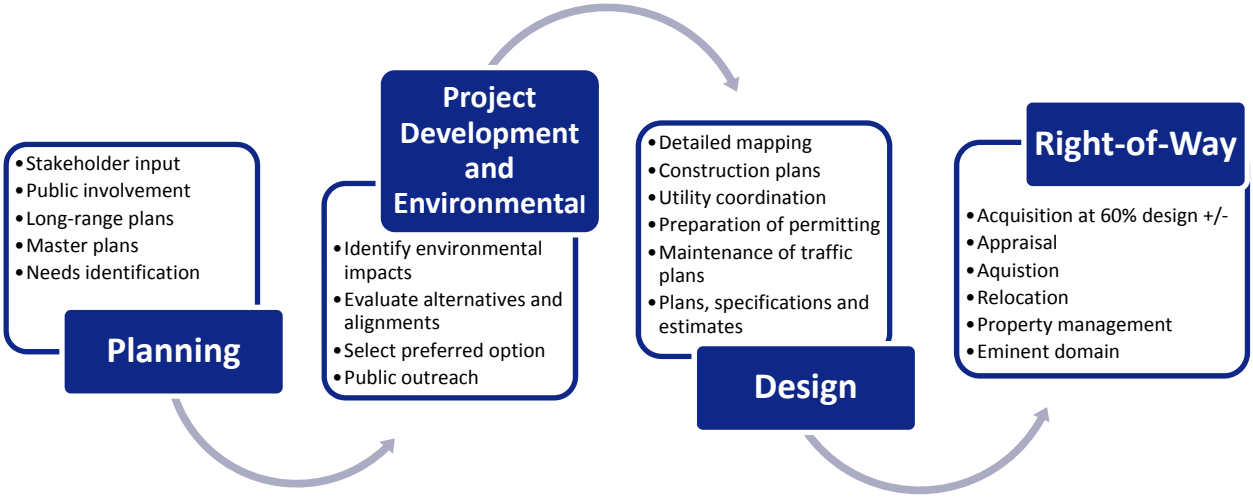
The Authorities under study are unique in many aspects, and the capital projects and work programs are no different. By their very nature, project development and construction programs will vary widely not only among different agencies, but also across time within an Authority. Demands for services, the condition of the facilities, and economic conditions are among the factors that cause transportation work programs to ebb and flow. Economic conditions and the individual Authority's financial position will impact the availability of resources to engage in active capital programs, which will control the size and composition of a work program and the associated project development activities.

Comparisons of capital programs and the development of the projects that are included in those work programs are further clouded by the extremely wide range of the complexity of the design, location of the projects, and the local conditions that impact project development. Adding an additional lane on a rural facility within the existing right-of-way with minimal environmental impacts can be accomplished more expeditiously and less expensively on a unit cost basis than a capacity improvement in a dense urban area with a myriad of environmental, cultural, traffic control, and design nuances and complexities. Further, the Authorities included in this study range from one that has not yet completed the design for its inaugural project to the Florida Turnpike Enterprise that manages a Five-Year Work Program in excess of $3 billion.

Capital programs are typically developed for multiple years (e.g., Florida Department of Transportation has a Five-Year Work Program) and can vary year to year due to changes in revenue forecasts, economic conditions, Federal-aid assumptions, or legislative and policy changes. Agencies also differ in what activities are included in multiyear programs – with some agencies including only capital projects, and others including system maintenance and operations along with the capital projects. Each Authority defines the phases of project funding slightly differently. For example, some separate out "Final Design" from "Preliminary Engineering" phases.

Generally, the Project Development Process is organized into four major phases: Planning, Project Development and Environmental Assessment, Project Design, and Right-of-Way acquisition. This process and each step's major activities are illustrated in Figure 2.1.

Figure 2.1 Phases of the Project Development Process



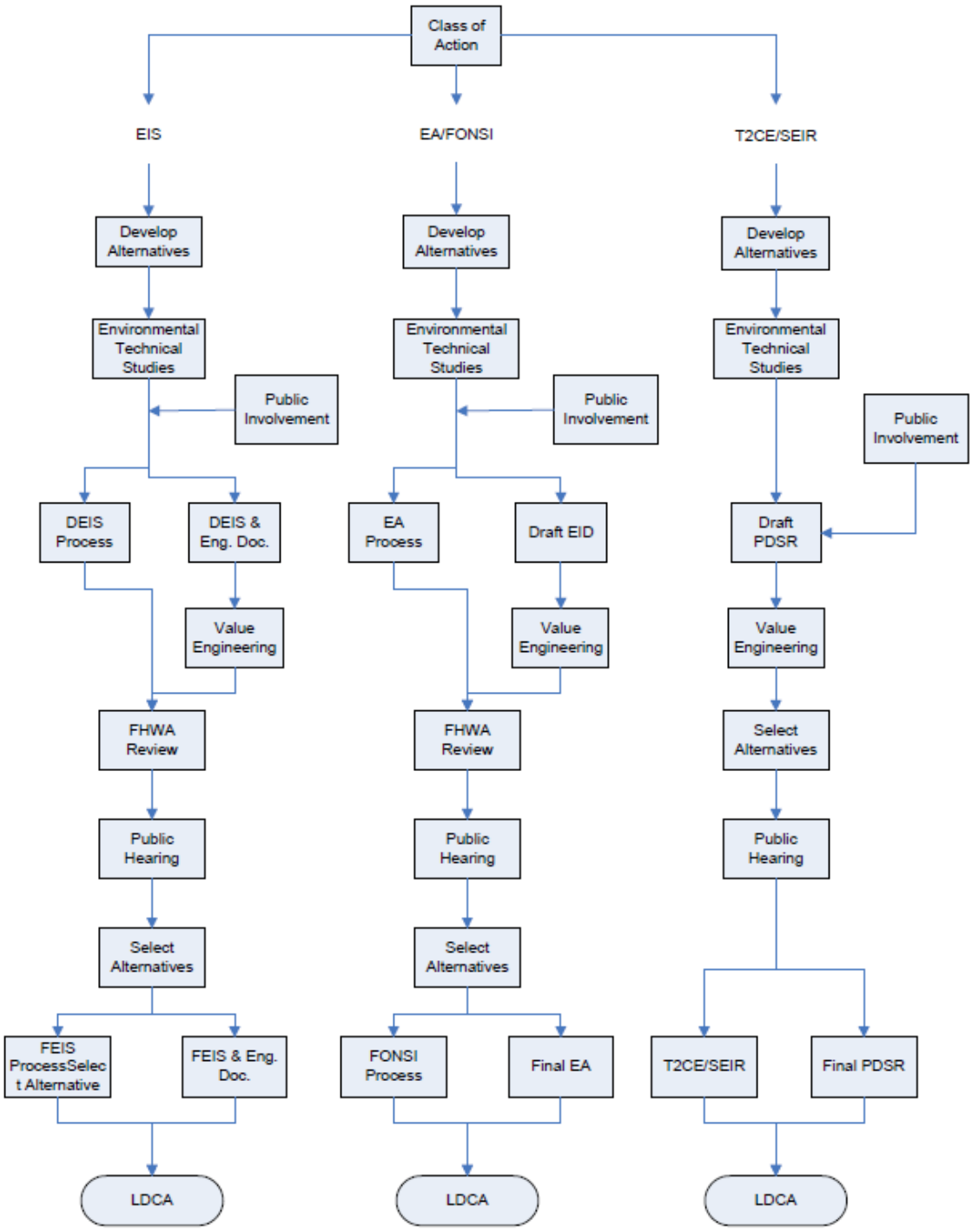
A project is defined in the planning phase and can emerge from local or regional long-range transportation plans or visions, transportation needs assessments, or public policy input. In metropolitan areas, projects typically are defined during a needs assessment phase in the development of a Long-Range Transportation Plan (LRTP). Based on regional need, projects are prioritized and included in the Plan based on the financial capacity of the region. This action produces the "financially constrained" long-range plan. Once a project is included in the final Plan, funds are allocated by the implementing Authority for further, more detailed planning.

An Authority will typically include funds in its Work Program or Capital Improvement Program for each phase of a project. Corridor studies and sketch-level planning funding can be programmed either at the project level or for an Authority's total capital program. Once the need and preliminary feasibility is fully assessed, Project Development and Environmental (PD&E), work can be initiated. This phase typically ranges in duration from 18 months to a multiyear-long process. The length of time required to perform the activities included in the PD&E phase is dependent on the overall complexity of the project (geographic location, environmental sensitivity, project size). If Federal funds are being used this phase can have added complexity.

Figure 2.2 illustrates the process flow for two types of Federal PD&E processes as defined by the National Environmental Policy Act (NEPA) and the Florida State Environmental Impact Report (SEIR) process. The two NEPA processes include: 1) a full Environmental Impact Study (EIS); and 2) an Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI). Typically, NEPA processes are followed when Federal funds are used to plan for or construct a project. Both NEPA and SEIR are fully defined processes that must be followed to avoid any type of legal challenge during the project development process. NEPA can be a very complex, time-consuming process, and costly process. Since most of the major projects included in the capital programs of the authorities and FTE do not use Federal funds, the SEIR process is followed. In the absence of Federal funding, a SEIR is required for "major projects" on the State Highway System (SHS), a toll project, a privately funded project, or a project connected to the SHS. Major projects are defined as a new freeway or expressway, a project substantially increasing access or capacity, bypasses, and new interchanges.

Once the PD&E phase is complete and Location and Design Acceptance is achieved, the project can move to the Design phase. This part of the project development process can take 14 to 18 months, depending on the complexity of the project. Community commitments made during the PD&E process are incorporated into the project, and contract plans and specifications are developed that are used to advertise the project for bidding to contractors. During the Design phase, the cost engineer's estimate is developed and used to benchmark contractor bids and final project construction costs. Complete plans, specifications, quantities, and utility relocation activities must be understood and detailed before the final engineer's estimate can be completed. Other important activities included in this portion of a project's development include Value Engineering (VE) evaluation that identifies potential cost-saving alternatives that can enhance project value prior to the development of final engineering. The Design phase also includes the development of a traffic control plan for use during construction, and environmental permitting. If access to land or land easements are required to construct or stage the construction of a project, these parcels are identified. All the Authorities included in this study have been granted the powers of eminent domain in their enabling statutes in order to acquire needed rights-of-way (ROW) for authorized projects.

Figure 2.2 Florida PD&E Process Flow Chart: Project Development Phase



DEIS: Draft Environmental Impact Statement
EA: Environmental Assessmen
EID: Environmental and Engineering Document
EIS: Environmental Impact Statement
FEIS: Final Environmental Impact Statement

FONSI: Finding Of No significant Impact
LDCA: Location & Design Concept Acceptance
PDSR: Projecty Development Summary Report
SEIR: State Environmental Impact Report
T2CE: Type 2 Categorical Exclusion

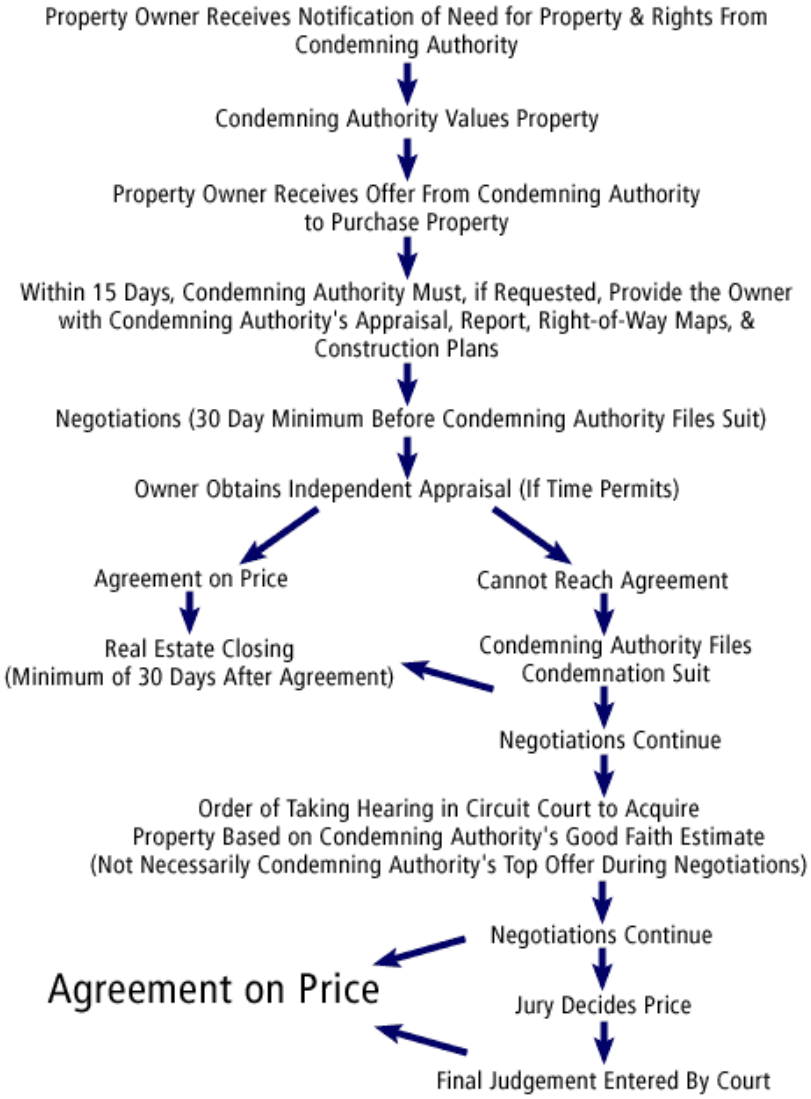
Source: *FDOT Project Management Handbook*, Part 2, Chapter 2, page 16.

As part of the right-of-way phase of a project, securing the necessary permits prior to construction is a critical element of the overall project development process. Permitting requirements enacted by legislation are administered by a diverse set of regulatory agencies depending on project impact, and each have established distinct thresholds, exemptions, and permit conditions specific to their agencies.

Environmental permits are required from one or more regulatory agencies for most Authority projects that include the addition of impervious surface, building or alteration of storm water management infrastructure, bridge structure reconstruction and repair, or for projects with wetlands or surface water impacts.

The right-of-way phase of project development is highly specialized and can be complex and time-consuming. As stated earlier, each of the agencies under review has been statutorily granted the power of eminent domain, or the right to temporarily or permanently acquire partial or total parcels and/or easements for a public purpose. The process as applied in Florida is charted in Figure 2.3.

Figure 2.3 Eminent Domain Process

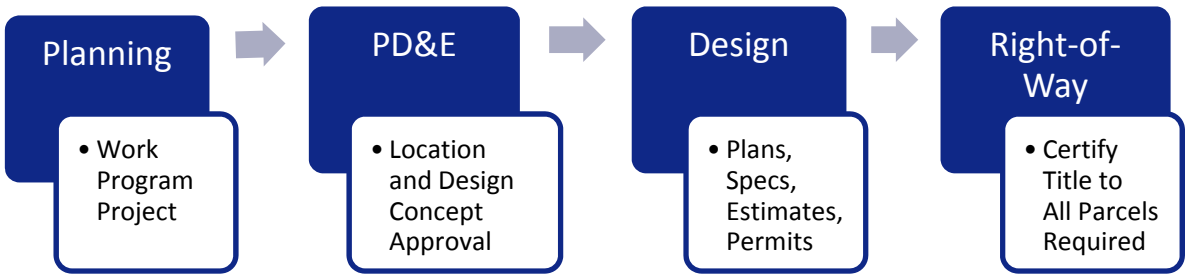


Source: http://www.floridaeminentdomain.com/practiceareas/eminentdomain.html.

The acquisition of rights-of-way usually involves a balance between compensation for the property and the timeliness of the process to secure necessary parcels and easements. Once all the project development phases have been completed, an agency solicits bids for construction in a traditional "Design, Bid, Build" project. In a Design/Build project, phases are consolidated, but the responsibility for the ROW phase can vary.

The general outputs from each of the Project Development phases are illustrated in Figure 2.4.

Figure 2.4 Project Development Phase Outcomes



Each of the Authorities included in this study were requested to provide information on the status of their work programs, a breakdown of anticipated expenditures by phase of work and performance indicators for the project development process. The Authorities were consulted on best practices to achieve efficiencies and for suggestions for how best to measure project development performance fairly.

2.1 Authority Reviews

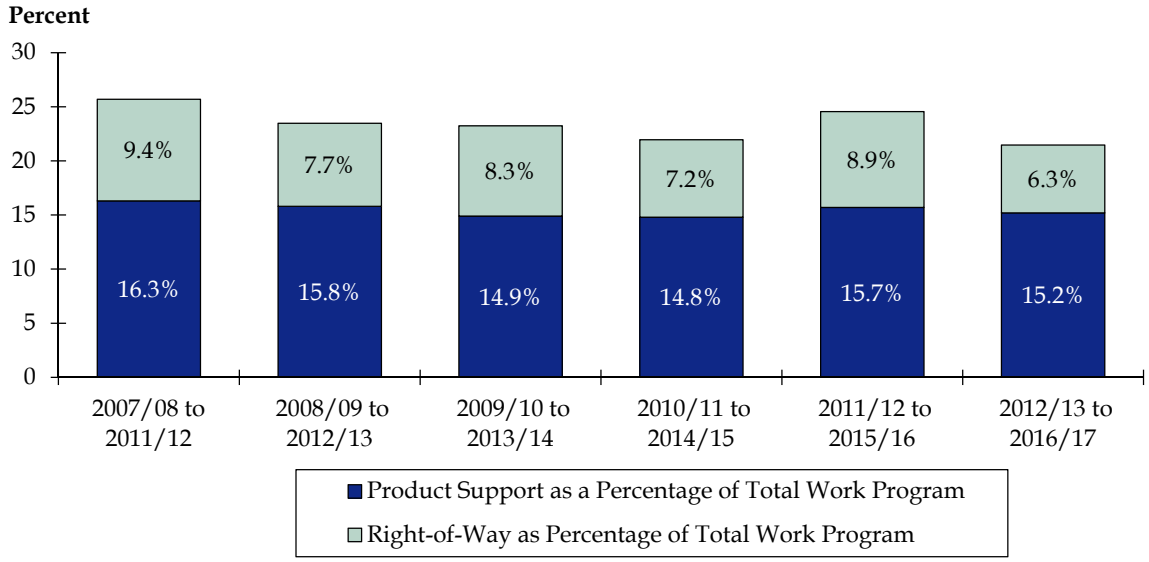
2.1.1 FDOT

Selected work program data for FDOT are presented to provide a baseline of a very large, complex and diverse program. The Department's program is very large and the shares of funding dedicated to various programmatic activities indicate the relative demands placed on revenues for the project development function. This information is included in this report to provide a backdrop for the FTE and Authority programs.

The FDOT data were taken from the *Review of the Department of Transportation Tentative Work Program* documents produced by the Florida Transportation Commission for the 2008-2012, 2009-2013, 2010-2014, 2011-2015, 2012-2016, and 2013-2017 FDOT Tentative Work Programs. Major Work Program categories include Product, Product Support, Operations and Maintenance, Administration, and Fixed Capital. Product Support includes the functions typically related to project development, including Project Engineering, Planning, and Right-of-Way Support, as well as Construction Engineering and Inspection (CEI). Actual right-of-way acquisition is included under the Product category and is reported separately.

For the last six work programs, Product Support has ranged from 14.8 to 16.3 percent of the program total, and ROW (property acquisition) has ranged from 9.4 to 6.3 percent (Figure 2.5). The data show a healthy investment in keeping needed projects moving through the project development "pipeline."

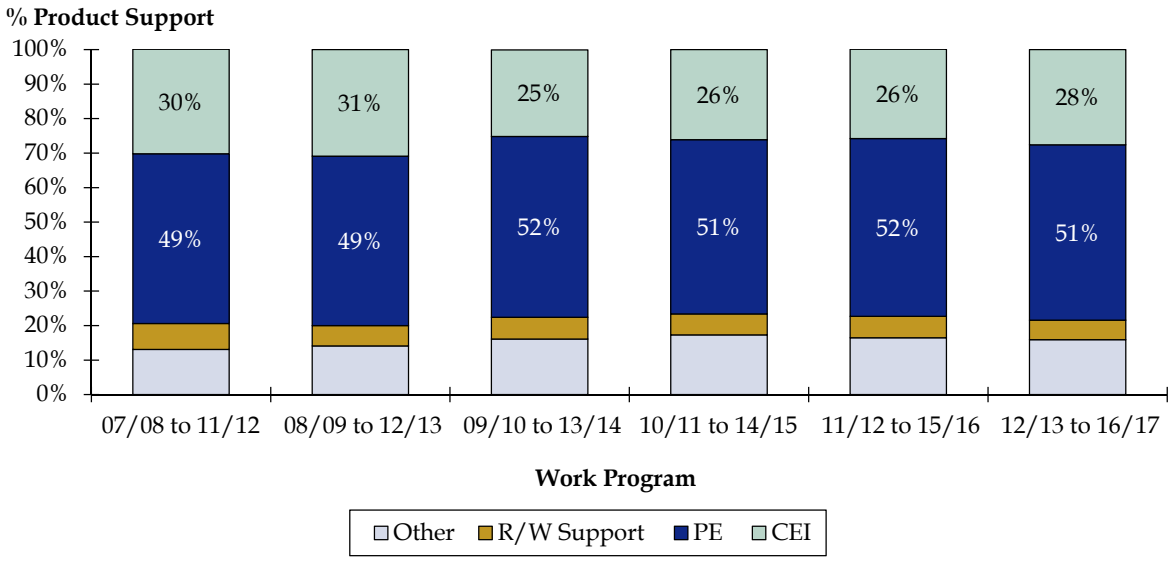
Figure 2.5 Product Support and Right-of-Way as a Percentage of FDOT Work Program



Source: FTC Reviews of Department of Transportation Tentative Work Program, 2008 through 2012 Reports.

As illustrated in Figure 2.6, roughly one-half of the planned support expenditures are routinely for Design (PE). Construction Engineering and Inspection (CEI), accounts for 25 to 30 percent of Product Support activities.

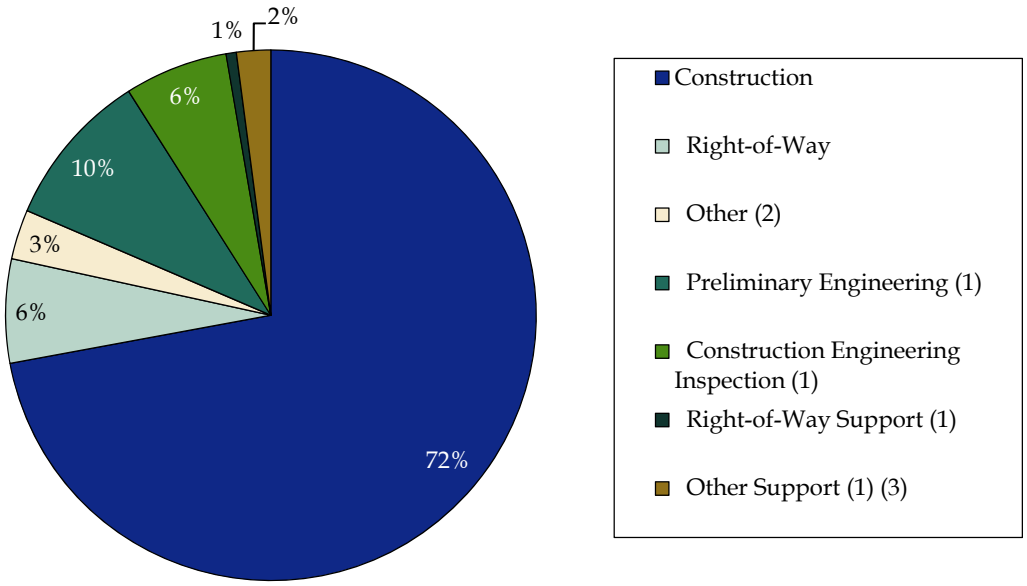
Figure 2.6 FDOT Product Support – Percentages



Over $33 billion is anticipated to be spent over the next five fiscal years for the FDOT Tentative 2012/2013 to 2016/2017 work program. Product Support activities make up 15.2 percent and ROW acquisition accounts for 6.3 percent of the work program expenditures. "Product Support" in this case does not represent "Project Development." As noted earlier, Product Support also includes activities such as CEI that may not be included as project development expenditures by other agencies.

In order to provide a picture of the FDOT and FTE Project Development expenditures, "Maintenance and Operations" costs are excluded in order to provide Project Development costs that are more consistent with the toll authorities. FDOT program shares are presented in Figure 2.7 (again, without Maintenance and Operations), without $5.5 billion in anticipated Public Transportation expenditures.

Figure 2.7 FDOT Program Category Shares
FY 2013-2017 Excluding Maintenance and Operations and Public Transportation



Source: FTC Review of FDOT Tentative Work Program, 2013-2017.

[1] Excludes in-house programming.

[2] Other product includes county transportation programs, economic development, and safety grants.

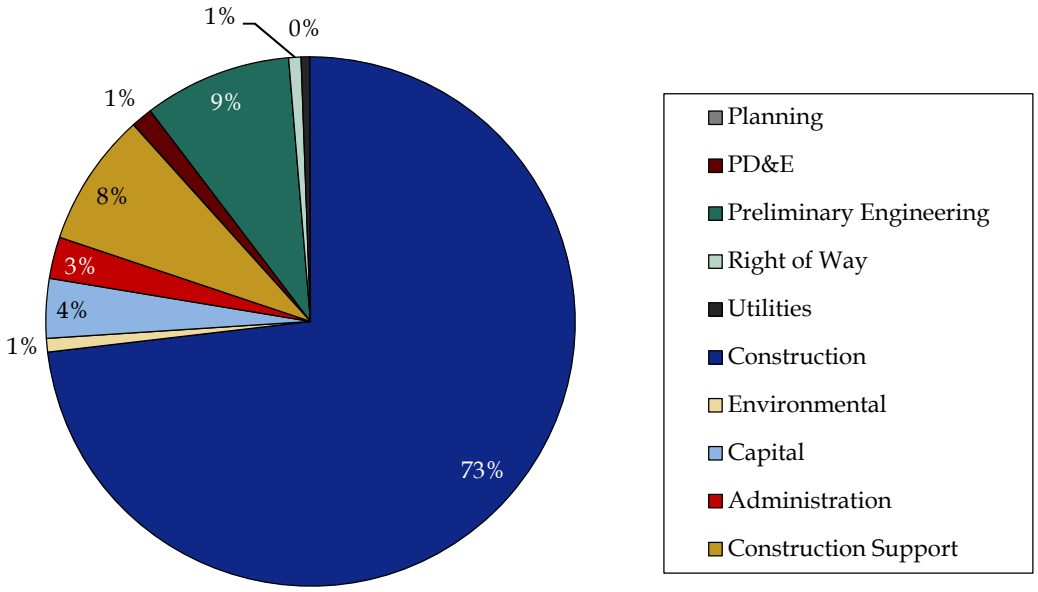
[3] Other product support includes environmental mitigation and planning and environment.

2.1.2 FTE

Work Program

Florida Turnpike Enterprise (FTE) presents its work program with the same categorical distinctions as FDOT. Without including Maintenance and Operations (M&O) or Emergency Operations work program projected cash flows, Project Development accounts for about 11 percent of the entire work program (planning, PD&E, engineering). Figure 2.8 illustrates the distribution of the FTE work program.

Figure 2.8 FTE Work Program Category Shares
Adopted FY 2013-2017 Excluding Maintenance and Operations



Source: FTE Adopted FY 2013-2017 Work Program excluding: Maintenance, Operations and Emergency Operations.

Totaling nearly $3.2 billion, the vast majority of funding is projected for construction, including significant system capacity improvements, most of which are not planned to include significant ROW acquisition. Preliminary Engineering is expected to account for nine percent of the work program expenditures (without M&O).Construction Support services, including CEI, will account for eight percent.

Project Development Process

FTE has indicated that they rarely use the Federal project development process (NEPA) and are required to follow the SEIR process, which allows for elimination of multiple alternatives and reduces the level of effort assigned to project study elements.

FTE conducts at least one Value Engineering (VE) exercise for major projects, ideally during a PD&E phase of project development. If there is no full PD&E required, then VE is applied at the 30 percent completion of design phase of the project. In addition, any project over $25 million and bridge over $20 million must, by FDOT policy, undergo a VE evaluation.

FTE uses FDOT design standards, specifications, and procurement methods, and follows all procedures in FDOT's *Plans Preparation Manual*. Exceptions to any design standards can be granted within FTE, aside from those associated with design speeds and other than very simple structures. All design speed and Category 2 Structure exceptions must be approved by FDOT officials outside of FTE.

Project Development Efficiencies

The organization continues to implement streamlining techniques in order to improve efficiency. As a part of the consultant selection process, FTE has instituted the establishment of a Technical Panel for consultants to meet with to discuss projects they are interested in pursuing with FTE. During these sessions, concept reports can be developed that assist FTE in project scope definition. FTE conducts concurrent design and PD&E activities that eliminate duplicative meetings and paperwork submittals and reduces the project development time requirements. They have also taken steps, through increased coordination, to reduce the number of plan reviews for more efficient project delivery. FTE also uses "SMART" (Specific, Measurable, Attainable, Realistic, and Timely) Plans, Lump-Sum projects, and Design Build delivery methods to optimize efficient contracting methods.

The agency has developed methods using computer-aided design and geographic information system software to automate identification of utility conflicts in preparation of construction plans. Eliminating these conflicts in the plan development phase helps to avoid potential construction claims and cost overruns. FTE has also developed a web-based project management process that allows for electronic submittal and processing of all shop drawings resulting in a savings in shipping and reproduction costs. The project management process has produced a 26 percent reduction in processing time, and centralizes requests for project information, lane closures, warranty management and overall project document control.

In the area of ROW, FTE is relying on existing General Engineering Consultant contracts for support. When significant acquisitions are required, FTE relies on contracted service to provide ROW services through the property management phase. Appraisal work is done under a separate contract.

FTE employs the "Ignite the Torch, Pass the Torch, and Extinguish the Torch" process to ensure seamless transfer of projects through the entire project development process. This process is designed to engage all FTE functions in all steps of the project development process. The process includes a project debriefing after project completion to share lessons learned with consultant stakeholders, production, construction, and maintenance personnel. The process also serves to document lessons learned for use by interested consultants in future project development activities.

Current Collaborative Activities

There is a high level of interest on FTC's part for ensuring that Florida's toll agencies are cooperating and collaborating with each other as well as other governmental entities to deliver transportation services and facilities in an efficient manner. FTE has a long history of collaborating with regional and local toll authorities and FDOT Districts. The circumferential facility nearing completion around Orlando is a principle example of these partnerships at work.

The following information provides a summary of active projects in which FTE is partnering to achieve this goal. These examples are only in the area of project development and do not include other collaborations in the areas of operations and toll collection.

Expressway Authorities

- State Route (SR) 874 Extension with MDX – Coordinating with MDX to include the design/construction of the SR 874 extension over the Homestead Extension of Florida's Turnpike (HEFT) into FTE's Design Build project to allow for a more efficient delivery.
- SR 417 Widening with OOCEA – Coordinating with OOCEA on the widening along SR 417 between Alafaya Drive and Aloma Avenue. Both agencies have projects planned in this area and are working to allow all improvements to be delivered together.
- OOCEA – SR 417 South Interchange with FTE Mainline Improvements.
- District 7 and Tampa Hillsborough Expressway Authority (THEA) – I-4 Connector.

FDOT Districts

- District 2 – Toll 23 (State Route 23 Duval County) – Working with the district on the toll-related items associated with this project. Providing financing for the project.
- District 4 – I-595 – The district is leading the construction activities that overlap, which minimizes the impact to the traveling public.
- District 6 – Golden Glades Interchange – Working with the district to provide improvements at a location where roads from the different entities converge.
- Districts 4 and 6 – I-95 Express Lanes.

- Districts 4 and 6 – I-75 Express Lanes Interchange with HEFT.
- District 5 – I-4 Interchange/Managed Lanes at FTE Mainline.

Governmental Entities

- HEFT at Lucy Street Interchange – City of Homestead (potential interchange improvement).
- Minneola Interchange – City of Minneola and Private Development.
- Service Plaza Improvement Program – City of Wildwood and City of Port St. Lucie.

Through its internal process improvements, innovation in the project development process, and its demonstrated track record of project collaboration, FTE has demonstrated a commitment to an efficient project development process. FTE's large statewide scope of responsibility and ambitious work program are key decision-drivers in the organization's commitment to implement internal project development process improvements associated with a quality production-oriented organization.

2.1.3 Miami-Dade Expressway Authority (MDX)

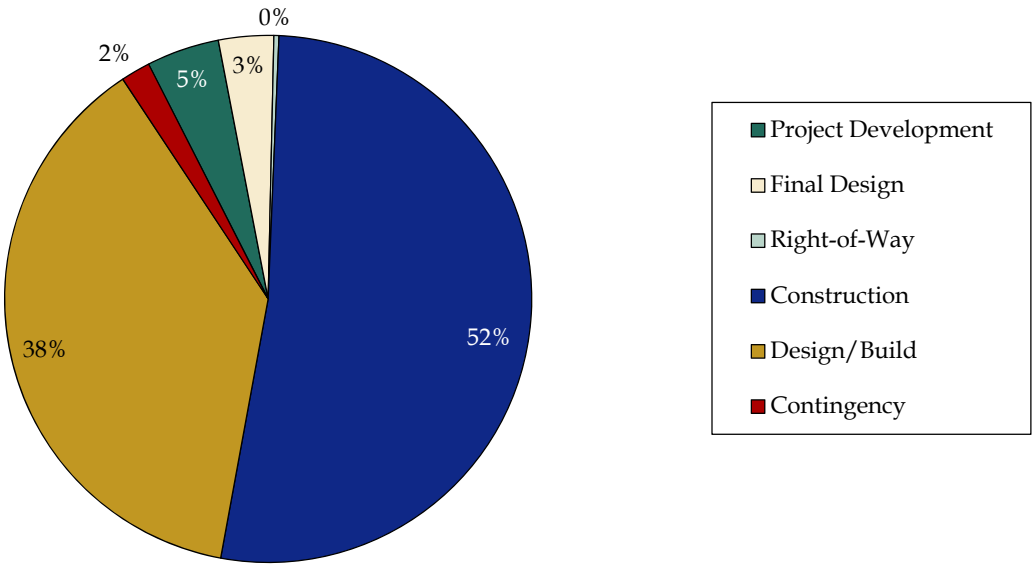
Work Program

The MDX work program data are taken from its most recently published FY 2013-2017 Work Program. MDX's work program appears to be comprised solely of capital projects. The phases identified for cash flow expenditures are Project Development, Final Design, ROW, Construction, and Design/Build. CEI costs are included in the Construction phase.

For the $360.2 million current MDX work program, illustrated in Figure 2.9, Project Development costs are estimated at $15.9 million, or 5 percent of the program total. ROW costs are projected at less than one percent, and construction and design-build phases make up the vast majority of projected expenditures at 90 percent, or $325 million, for the five years FY 2013 to FY 2017.

The project mix represented in these totals includes major interchange improvements, open road tolling projects, planning and design of new critical regional system connectors and links, and a substantive rehabilitation and replacement program component.

Figure 2.9 MDX Work Program Category Shares
FY 2013-2017



Source: MDX Approved FY 2013-2017 Work Program.

Project Development Process

MDX follows the same PD&E process as FTE and FDOT. For major projects, it uses the State Environmental Impact Report rules and guidance. The Authority also uses the FDOT PD&E Manual and conducts a VE exercise when a project has reached the 30 percent design status.

As the Authority is created by a Charter County under Part One of Chapter 348 F.S., it has broader powers to develop projects that are consistent with local plans. With the approval of the county, MDX may use revenues deemed as excess to its primary mission of building, operating, and maintaining an expressway system for other intermodal transportation investments. It is permitted by statute to enter into private/public partnerships for the implementation of transportation facilities as well.

MDX uses the FDOT procedures specified in the *Plans Preparation Manual* and uses the American Association of State Highway and Transportation Officials (AASHTO) or FDOT design standards. Design exceptions are reviewed and, if appropriate, approved within the Authority.

The makeup of the current MDX work program does not currently include significant ROW activity because of the project mix being made up of large interchange reconfigurations, reconstruction activities and major projects within existing rights-of-way. The Authority does have ROW expertise via its General Engineering Consultant (GEC), and is investigating improved contracting methods to reduce time and costs in this area. MDX is

examining the options of contracting with the FDOT District to provide ROW services and a "turn-key" consultant arrangement that provide all required ROW services under one contract.

Project Development Efficiencies and Collaborative Activities

MDX has demonstrated its commitment to efficient project development and delivery through ongoing and extensive partnerships with many agencies. The Authority's facilities and its systems are part of an extensive urban expressway network, and continuous collaboration is essential for success.

During the project development process, MDX continuously coordinates with FDOT District 6 and/or FTE on each project that has facilities that overlap, connect, or will be modified. MDX presents to the local District Interchange Review Committee and coordinates all traffic and modeling into project PD&Es.

The Authority has recently partnered with FDOT on two projects. The first is the SR 826/SR 874 Interchange Improvement project, which involved the widening and reconstruction of SR 826 (Palmetto Expressway – FDOT) and improvements to the Don Shula Expressway (SR 874 – MDX). This project will help facilitate MDX's project to widen and reconstruct SR 874.

Another example is the SR 826/SR 836 Interchange reconstruction. MDX cofunded this project with $200 million. These projects were managed by FDOT with MDX involvement providing efficiencies by combining both systems improvements to be delivered simultaneously. This delivery method also provided cost efficiency through economy scales.

MDX is partnered with FDOT and Miami-Dade County on the Airport Central Boulevard Project. This is a county project in which MDX and FDOT are cofunding through the use of local toll revenue and State Growth Management funds. MDX is the lead agency in managing this vital link to improve commercial and passenger traffic access to Miami International Airport.

MDX is also partnering with FTE to combine HEFT's Widening Project with the MDX SR 874 Ramp Connector Project. These partnerships provide the same efficiencies as discussed in the jointly funded projects mentioned above.

FDOT and MDX have entered into a Joint Participation Agreement (JPA) to complete a PD&E for potential improvements to the SR 836 (Dolphin Expressway)/Interstate I-95 Interchange, and they are negotiating a fund-sharing arrangement for the design and construction of the ultimate project.

MDX, by the nature of the location of its facilities, organizational mission, and culture, takes advantage of opportunities to realize efficiencies through the extensive use of partnering with sister agencies. Its network of expressways is located in a dense and complex urban environment, involving several governmental entities with significant transportation responsibilities. It has demonstrated its commitment to finding efficiencies in its project development process.

2.1.4 Mid-Bay Bridge Authority (MBBA)

Work Program

Within just five years of its creation, MBBA constructed the Mid-Bay Bridge after completing environmental studies, permitting, design, and financing. This included obtaining ROW from Eglin Air Force Base (AFB) through the Army Corps of Engineers. In 2005, MBBA began a project to alleviate traffic congestion on the north approach to the bridge. MBBA undertook the task of developing and constructing an 11-mile controlled access north approach to the bridge. The first three miles of this Mid-Bay Bridge Connector, including improvements to State Road 20, were completed in 2011. Construction of the remaining 8 miles of the Connector will be completed in early 2014. This 11-mile roadway has historically been a priority project for FDOT to relieve congestion on Okaloosa County roadways.

The entire connector project is estimated at $174.4 million for the design, ROW, and construction phases, and is being funded through the Authority's Capital Improvement Fund and proceeds from bond issuances in 2007 and 2011.

Project Development Process

Due to the Mid-Bay Bridge's proximity to Eglin AFB and involvement of Federal lands, the Federal NEPA was followed, although Federal funds are not used to finance improvements or expansions. MBBA follows FDOT's procedures as detailed in the *Plans Preparation Manual* and, like OOCEA, conducts constructability reviews on its projects.

Design exceptions are handled for MBBA through FDOT District 3, and while real estate appraisals are conducted by contracted entities, negotiations with AFB personnel are done by MBBA management.

Project Development Efficiencies and Collaborative Activities

The Mid-Bay Bridge Authority has an agreement with HDR Engineering for general consulting requirements. The cost of an element of work (task) is negotiated with the consultant based on a fully defined scope of work for activities that include PD&E, environmental studies, and design. The hourly costs used to negotiate the tasks are the same hourly costs approved by FDOT District 3 for similar work.

What appears to have been a rather lengthy period between the PD&E study for the Connector and the bid was influenced by the Base Realignment and Closure actions in 2005 by the Air Force. Although the PD&E was completed in 2002, no further action was taken until conceptual approval was granted by the Air Force in December 2006. Over the next two-year period, the NEPA documents were completed, design completed, permits obtained, and bids received (January 2009) for Phase 1 of the Connector. By October 2010, environmental documents were updated, designs completed, permits obtained, and bids received for Phase 2 and 3 of the Connector. The Authority was able to accomplish the

tasks required to bid the projects by working them in parallel, rather than in a typical end-to-end process.

As a small, singularly focused organization, MBBA employs creative and time-saving methods to develop its projects. Its unique relationship with Eglin AFB and District 3 have certainly assisted in allowing efficient project development.

2.1.5 Orlando-Orange County Expressway Authority (OOCEA)

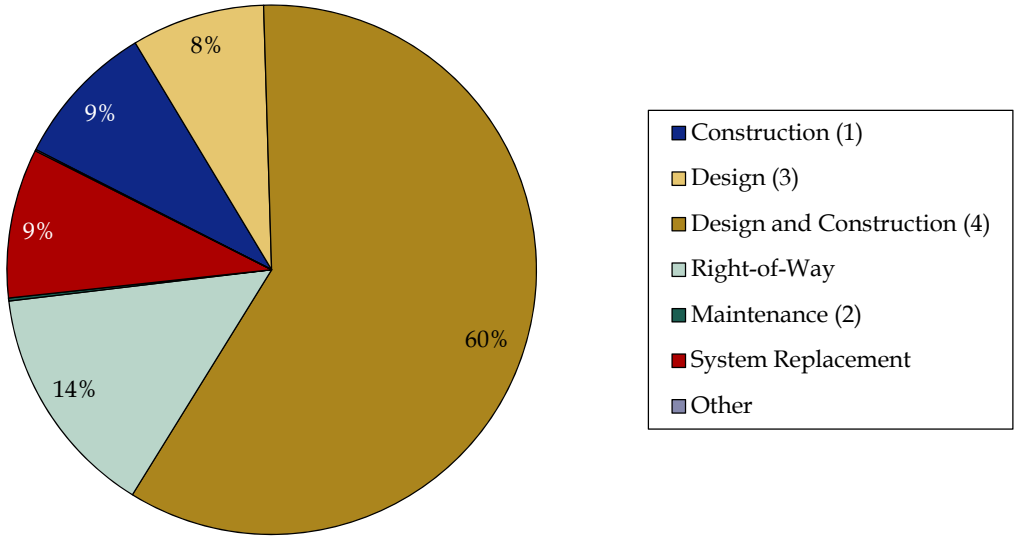
Work Program

OOCEA's work program for FY 2013 to FY 2017 totals over $700 million of investments in the Orlando Metropolitan area. Over $250 million of the expected expenditures are programmed to expand the expressway system by purchasing ROW and constructing OOCEA's portions of the Wekiva Parkway. Other agencies that have partnered in order to complete the circumferential expressway around Orlando are FDOT District 5 and FTE. In addition, OOCEA's work program includes $45 million in improvements to the existing system, $131 million for interchange projects, $83 million dedicated to renewal and replacement, and $28 million in Intelligent Transportation System (ITS) projects.

For project development activities associated with this program, $57 million is programmed for the Design phase and $100.8 million for ROW. Figure 2.10 illustrates OOCEA's Five-Year Work Program totals by phase.

The "Design and Construction" component of OOCEA's program is the largest by far and can be attributable to the current work program's inclusion of the large, complex system expansion projects described above.

Figure 2.10 OOCEA Work Program Category Shares
FY 2013-2017



Source: OOCEA Final FY 2013-2017 Work Plan.

1 Includes "installation."

2 Includes "install and maintain."

3 Design includes design expenditures for "design-bid-build" projects.

4 Design and Construction includes expenditures for "design-build" projects and the Construction phase of "design-bid-build."

Project Development Process

OOCEA follows the typical project development process detailed in the introduction of this section and includes Planning, PD&E Assessment, Design, ROW, Permitting, and Soliciting Bids for construction. OOCEA has indicated that it typically does not follow the Federal NEPA process, but will do so on a segment of the Wekiva project partnership with FDOT. It typically follows the SEIR process as shown in Figure 2.2.

While a VE assessment is not formally built in to the Authority's project development process, OOCEA does engage in the practice of Value Engineering and routinely conducts constructability reviews. These reviews typically mirror a VE process in that they involve a peer review of project design to achieve improved cost-effectiveness and project quality. OOCEA indicates that this review begins at about the 15 percent design project milestone, and the project is reevaluated through the design phase.

OOCEA follows the FDOT procedures specified in the *Plans Preparation Manual* and approves most design exceptions in-house. New, unique, or major bridge designs are

processed through FDOT for approval. OOCEA does have its own general specifications for construction, which are based on FDOT specifications with some refinements that include lump-sum payments for maintenance of traffic, erosion control, and no time adjustments for weather.

For the ROW phase of a project's development, OOCEA relies on in-house general counsel for some support and outside ROW counsel. It contracts separately for other phases of real estate appraisal and acquisition.

Project Development Efficiencies

OOCEA provided FTC with development and construction schedule information for the project phases of 11 miles of the SR 429 Western Beltway Part A project completed in 2002. This information (included in Table 2.1) indicated the following time schedule by phase.

Table 2.1 SR 429 Part "A" Western Beltway – Project Phase Schedule

Phase	Duration
PD&E	18 months
Final Design	14 months
Right-of-Way	18 months – concurrent with final phase of PD&E and Final Design
Bidding	2 months
Construction	24 months
Project Duration – Begin PD&E to Open to Traffic	5.5 years

These completion times for a new highway on a new location are impressive when compared with average project durations from other states that were also provided. These include typical schedules for Georgia DOT at seven and a half years, North Carolina at 10 years, Alabama DOT at eight and a half years, and Virginia DOT at 12 years. While the delivery of this project was impressive, caution should be exercised in making direct comparisons.

OOCEA strives to use early acquisition of ROW and total parcel takes if possible in order to expedite this phase of project development. The Authority uses a ROW committee that meets once a month to help move the process and does not wait until the entire corridor is "clear" before allowing a construction contract for bid.

Current Collaborative Activities

The Authority has a strong track record of collaboration with other government agencies, including sister toll agencies. Table 2.2 includes a summary of current collaborative activities, not only in the area of project development (although those examples are included), but also in the area of operations.

Table 2.2 OOCEA Strategic Partnerships and Collaboration

Partner	Project/Activity
FDOT	Shared use of each entity's fiber optic network
FDOT/FTE/Lee Co	Interoperability for toll collection
FDOT	Shared ITS operations and communications
FDOT	OOCEA collection of SR 528 tolls for FDOT
FDOT	MOU to build the Wekiva Parkway
Lake County	Wekiva Parkway MOU
FTE	Provide Road Ranger Service to FTE (Central Florida)
GOAA/Orlando	Goldenrod Extension development and maintenance agreements
Orange County	Traffic Signal Maintenance
Osceola County	O-Pass Customer Support
FDOT	$230 million contribution for ultimate SR 408/I-4 Interchange

OOCEA efficiencies in the project development arena stem from its agility and responsiveness to individual project circumstance and its partnerships with other agencies. Like MDX, its urban situation requires constant collaboration and coordination due to its system being an interconnected and critical part of the transportation system in the Central Florida region.

2.1.6 Osceola County Expressway Authority (OCX)

As a newly created Authority, OCX is aggressively pursuing several projects and is currently engaged in a PD&E study for the Osceola Parkway Extension. As an example of existing efficiencies and resource sharing, FTE has been retained as the project manager. Another project in an advanced stage of development is the Poinciana Parkway. This project has been long planned by a private sector entity, including all design and permitting activities. There is not yet an established record of project development activities.

2.1.7 Tampa-Hillsborough County Expressway Authority (THEA)

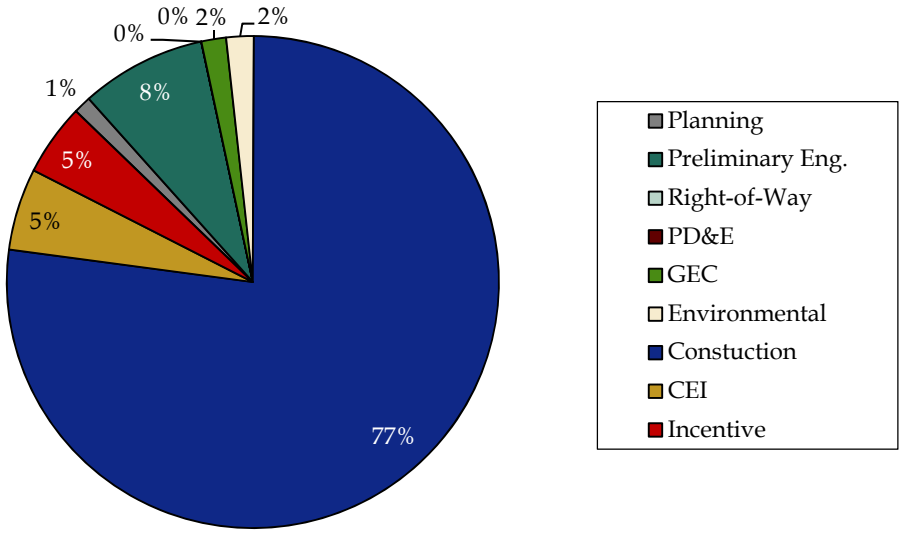
Work Program

THEA is an organization in transition and its work program reflects that status. After completing major investment in the construction of the Reversible Express Lane project and projects serving the City of Tampa and Hillsborough County, the Authority has focused on planning future projects, rehabilitating aging parts of the original facility, and working with FDOT and FTE to facilitate the I-4/Crosstown Connector.

THEA's five-year work program, FY 2012 to FY 2016, totals over $112 million. Eighty-three million dollars will be advanced by FDOT for a portion of the I-4 Connector and the major bridge rehabilitation and widening project on the Selmon Expressway through downtown Tampa. These funds are to be repaid to the Department under financial agreements currently in place.

Like the other agencies included in this report, the majority of the capital investments planned are for the construction phases of delivering projects. No ROW acquisition is required for the current set of programmed projects. Preliminary engineering on future investments accounts for 8 percent of the expected capital expenditures (Figure 2.11).

Figure 2.11 THEA Work Program Category Shares
FY 2012-2016



Project Development Process

The Authority follows the State Environmental Impact Report (SEIR) process for "major" projects. On smaller projects, the Authority's General Engineering Consultant (GEC) and/or THEA staff apply VE principles while reviewing all design submittals. On larger

projects, an independent VE study may be performed. THEA follows FDOT's procedures specified in the *Plans Preparation Manual,* and under the current Lease Purchase Agreement (LPA) between THEA and FDOT, design exceptions are approved by FDOT. As of this writing, plans were finalized to dissolve the LPA and have THEA reimburse FDOT for previous advances of funding.

As stated above, THEA is not currently planning to acquire ROW and has hired consultants to handle this function in the past. THEA management indicates that in the future they may utilize FDOT staff or piggyback other negotiated consultant contracts with local public agencies, such as the Tampa Port Authority or the Hillsborough County Aviation Authority.

THEA, being a small Authority with limited staff, has taken advantage of concepts developed by FDOT in the mid-1990s and has instituted a streamlined, seamless Planning, PD&E, and Preliminary Design process.

Project Development Efficiencies

THEA is a local Authority collaborating with other local agencies to identify and address community-based problems with a clear mission when developing transportation solutions for the region. Because THEA often undertakes only one major project at a time, the small staff has the ability to focus solely on overseeing the planning and project development activities associated with that single project. THEA also takes advantage of the Florida state law that permits "piggybacking" onto other competitively selected public authority contracts, which results in lower procurement costs and shortened production timeframes while achieving the same pricing benefits that have been obtained by other public agencies operating in a competitive environment.

The combination of employing a seamless project development process, the unique understanding and vested interest of the Authority in their community, the use of innovative procurement methods and the ability to tightly manage a small number of projects has resulted in the substantial savings of time and resources during the planning and environmental studies associated with the following outstanding major projects.

For THEA, one of several recently completed projects includes the Brandon Feeder Roads Project. The PD&E Study was completed in 13 months at a cost of approximately $1 million. It included 3.5 miles of arterial roadways, nearly two miles of which were on new location, and a bridge over Interstate 75 connecting to the Selmon Expressway. The final construction cost of the roadways and bridge over the Interstate and ROW was in the vicinity of $50 million. The project was outsourced to the THEA General Engineering Consultant (GEC) and managed by a THEA staff member.

THEA also coordinated closely with the City of Tampa in creating a new gateway to the downtown and Channelside Districts through the development of the Meridian Street project. Consistent with redevelopment plans for that part of Tampa, the project has helped in the resurgence of the area for residential, commercial, and entertainment interests.

The Reversible Express Lane (REL) project PD&E Study covered approximately 10 miles of reversible express lanes and a one-mile-long, six-lane arterial boulevard in downtown Tampa. More than half of the project is on structure, and the overall project construction cost was in excess of $300 million. THEA staff and consultants successfully completed the PD&E in approximately 14 months at a cost of $1.35 million. The project PD&E was out-sourced to the GEC and managed by a THEA staff member. In addition, the project also included the acquisition of just under $30 million in ROW, and the design and construction of a new centralized Transportation Management Center (TMC) and computer-based traffic control system.

THEA has demonstrated its commitment to efficient project development processes, and, due to its community-based board and focus, is able to use its smaller size to its advantage. Its position as a local Authority allows it to take advantage of FDOT, FTE, Hillsborough County and City of Tampa consultants, processes, and services.

2.2 Resource Sharing for Project Development Activities

This element of the study examined practices to efficiently share the use of existing staff and consultants, specifically these ideas: pooled procurements, "piggybacking" on contracts, and sharing project development consultant or in-house engineering staff resources. The value in documenting these examples is that they can provide guidance to the FTC and to the agencies for further opportunities of resource sharing. Examples of current or past practices in sharing consultant or in-house resources are presented in Table 2.3.

OCX and FTE have agreed that FTE will manage the Project Development and Environmental (PD&E) phase of one of its first projects, a feasibility study to examine the potential realignment and extension of the Osceola Parkway from its terminus at Boggy Creek Road to the Northeast Planning District (approximately 10 miles).

MDX has been actively cooperating with other transportation providers in its service area to bring critical improvements to fruition. Along with FTE, FDOT District 6, and Miami-Dade County, several cost-sharing and project-combining efforts have resulted in cost efficiencies through leveraging economies of scale and simultaneous project delivery. Another noteworthy collaboration is the agreement by FTE to include an MDX interchange improvement, the reconfiguration of the ramps at SR 874 (Don Shula Expressway) with its design/build project to widen the HEFT between SW 117th Avenue to south of Kendall Drive.

Table 2.3 Project Development Resource Sharing Summary

Authority	Project	Description	Sharing Arrangement
FTE/OCX	Osceola Parkway Extension	Project Management being performed by FTE	Sharing In-house or Consultant resource
FTE/MDX	HEFT Widening SR 874 Ramp Connector Project	FTE to include design and construction of the SR 874 extension over HEFT into FTE Design Build project	"Piggybacking" on project development contracts
THEA/FDOT District 7	Ongoing proposal development and review	THEA routinely seeks FDOT District 7 expertise in Consultant selection	Sharing In-house resource
OOCEA/FDOT	Permitting Provision	FDOT District 5 provides permitting services for OOCEA, avoiding duplication of staff	Sharing In-house or Consultant resource
MDX/FDOT	SR 826/SR 874 Interchange	Cofunded $60 million improvement with FDOT	Joint Participation Agreement – pooled financing
MDX/FDOT	SR 826/SR 836 Interchange	MDX cofunded $200 million project with FDOT	Joint Participation Agreement – pooled financing
MDX/FDOT/Miami-Dade County	Airport Central Boulevard Project	Partnered with FDOT and Miami-Dade County – cofunding	Joint Participation Agreement – pooled financing

Source: Authority provided data and interviews.

2.3 Coordination between Expressway Authorities and FDOT during Project Development

Another set of activities that yields efficiencies in the project development process involves the coordination between the FDOT Districts, FTE, and the expressway/bridge authorities (Table 2.4). The organizational structures of all these entities facilitate coordination. Each of the authorities included in this study has the FDOT District Secretary as part of its governing board. While the value of the Secretary's appointment seems obvious, it is also required in the legislative or statutory authority creating MBBA, MDX, OCX, OOCEA, and THEA. In addition, with FTE being a part of FDOT, there is a ready pool of projects under development that are evaluated as potential toll facilities.

All the authorities, including MBBA, are in designated metropolitan areas. The metropolitan planning process provides another ongoing opportunity and, in some cases, a requirement for project development coordination between FDOT, the authorities, and county and local governments.

In addition, a review of the enabling statutes and laws of each of the agencies includes specific language to allow and encourage sharing of resources and the assignment of project development activities. Below is an excerpt from the OOCEA part of Chapter 348, Florida Statutes. Similar or exact language also appears in enabling legislation listed in Table 2.4 for all of the entities under study.

> **"Cooperation with other units, boards, agencies, and individuals.** Express authority and power is hereby given and granted any county, municipality, drainage district, road and bridge district, school district or any other political subdivision, board, commission, or individual in, or of, the State to make and enter into with the authority, contracts, leases, conveyances, partnerships, or other agreements within the provisions and purposes of this part. The authority is hereby expressly authorized to make and enter into contracts, leases, conveyances, partnerships, and other agreements with any political subdivision, agency, or instrumentality of the State and any and all Federal agencies, corporations, and individuals, for the purpose of carrying out the provisions of this part or with the consent of the Seminole County Expressway Authority, for the purpose of carrying out and implementing part VIII of this chapter."

Further, if circumstances warrant an expressway or bridge authority to have the Department act on its behalf as its construction agent, the following (or similar) language also appears for each authority.

> **"Department may be appointed agent of authority for construction.** The department may be appointed by said authority as its agent for the purpose of constructing improvements and extensions to the Orlando-Orange County Expressway System and for the completion thereof. In such event, the authority shall provide the department with complete copies of all documents, agreements, resolutions, contracts and instruments relating thereto and shall request the department to do such construction work, including the planning, surveying and actual construction of the completion, extensions, and improvements to the Orlando-Orange County Expressway System and shall transfer to the credit of an account of the department in the treasury of the State the necessary funds therefore and the department shall thereupon be authorized, empowered and directed to proceed with such construction and to use the said funds for such purpose in the same manner that it is now authorized to use the funds otherwise provided by law for its use in construction of roads and bridges."

With few exceptions, (e.g., local access roads, expressway connectors) the facilities planned, designed, constructed, and operated by the bridge and expressway authorities are part of the SHS and are subject to the design standards of FDOT. The exceptions are for those facilities that are access routes to the authorities' main facilities, other highways providing more of a local function, or where a design exception is approved.

The established Federal and state planning requirements ensure some level of coordination during the project development process between not only the subject agencies, but also with regional, county, and municipal entities. Examples of the results of the coordination were discussed in the earlier section on shared resources.

Table 2.4 Project Development Coordination Summary

Authority	Legislative Authority	FDOT District Secretary	Authorization to Construct a New Project	Provisions for Cooperation with Local Governments	Type of Entity	MPO Affiliation
FTE	FDOT – F.S. 20.23 FTE – F.S. 338.22	Executive Director member of FDOT Executive Team	Inclusion in FDOT Work Program, legislative approval, financial tests.	Inclusion in Fla. Transportation Plan, metro areas long-range plans, non-metro County notification	FDOT – State Executive Department	Through Districts
MBBA	Ch.2000-411 Laws of Florida	Member of MBBA Board ex officio (nonvoting)	Mid-Bay Bridge, approaches, and other facilities	County budget review and approval – County sits on MPO Board	County dependent special district	Okaloosa County on TPO
MDX	Florida Expressway Act F.S. Chapter 348 Part I	Member of MDX Board ex officio (voting)	Add facilities with the prior express written consent of the Board of County Commissioners	Expenditures are consistent with MPO adopted long-range plan. Voting seat on the MPO Board with two FDOT reps (nonvoting)	Independent Special District – State	Miami-Dade MPO
OCX	F.S. Chapter 348 Part V	Member of OCX Board ex officio (nonvoting)	Add facilities with the prior express written consent of the Board of County Commissioners	Same as Part I authorities – Expenditures are consistent with MPO adopted long-range plan. County on MPO Board – no seat for OCX	Independent Special District – State	MetroPlan Orlando
OOCEA	F.S. Chapter 348 Part III	Member of OOCEA Board ex officio (voting)	Expressway System in Orange County, extensions, and new facilities at the invitation of another county	Voting seat on the MPO Board with FDOT District Sec. (nonvoting advisor)	Independent Special District – State	Metro Plan Orlando
THEA	F.S. Chapter 348 Part II	Member of THEA Board ex officio (voting)	Expressway System in Hillsborough County	Collaboration/Consultation Hills. Co. Planning Commission. Voting seat on the MPO Board with FDOT District Sec. (nonvoting adv.)	Independent Special District – State	Hillsborough County MPO

Source: Florida Statutes and CUTR.

2.4 Performance Data

The efficacy of the project development process can be assessed by multiple measures. The FTC requires annual reporting from the toll agencies covered under Chapter 348 of Florida Statutes (MDX, OOCEA, OCX, and THEA) and for FTE as a part of the FDOT performance report. In order to legitimately recommend specific project development efficiency actions, it would be ideal to examine how efficient all these agencies have been, given all the actions that they have taken in order to streamline and improve their processes.

Unfortunately, for the purposes of this study, FTC reporting requirements are different for the Authorities under review. FTE is included in FTC's review of FDOT with a focus on delivering work program commitments. MBBA has not been subject to FTC oversight, so comparable data to the toll authorities are not available. OCX is such a recently created entity that it will take some time for a performance track record to emerge.

As with all performance metrics, there needs to be a sufficient number of indicators to provide a complete picture for assessment. Not any one measure will be so comprehensive as to accurately portray performance.

One measure of an Authority's ability to estimate and manage the project development process is to track the final closed-out costs of consultant contracts against the upset limit or award amount. This metric has been collected for the Chapter 348 organizations by the FTC since the inception of their oversight. Table 2.5 indicates that measure from FY 2007 to FY 2012.

Table 2.5 Project Development Measures and Operating Indicators for Expressway Authority Consultant Contracts
For Consultant Contracts Closed Out the Percent Over the Original Contract Amount

MDX		OOCEA		THEA	
2007	-2.3	2007	25.2	2007	8.4
2008	2.2	2008	-2.5	2008	N/A
2009	-20.2	2009	2.9	2009	-17.6
2010	2.1	2010	-6.3	2010	N/A
2011	2.8	2011	-17.4	2011	N/A
2012	0.3	2012	-3.8	2012	-1.4%

Source: FTC Performance Reports.

For the agencies reporting these data to FTC, there seems to be little issue with consultant contract overruns in recent years. In fact, the data suggest that those entities reporting have a good handle on estimating consultant services costs and managing those contracts.

Another measure of the complexity of projects and efficiency of the use of capital funds is the percentage of construction dollars spent on design consultants for those projects. Data were requested and the results of the responses are presented below in Table 2.6.

Table 2.6 Design Consultant Costs as a Percentage of Construction Awards

Thousands of Dollars

	MDX		MBBA		OOCEA		THEA	
Year	Award	Percent Design Consult	Award	Percent Design Consult	Award	Percent Design Consult	Award	Percent Design Consult
2007	$43,680	8%			$367,881	7%		
2008	$17,753	9%			$66,415	6%		
2009	$109,117	10%	$22,828	17%	$22,927	11%		
2010	$60,675	9%			$97,992	9%		
2011	$9,000	10%			$197,746	9%	0	0%
2012	$46,431	7%			$20,955	11%	$697	22%

Source: Authority provided data.

FTC annually assesses the ROW acquisition function for Chapter 348 agencies by comparing costs through the process from property appraisals to final settlement. Table 2.7 summarizes the data available from FY 2007 to FY 2012.

Table 2.7 FTC Right-of-Way Acquisition Metrics for Monitored Toll Authorities

Thousands of Dollars

MMBA		Authority Appraisals	Initial Offers	Owners Appraisals	Final Settlements
	2007[1]	N/A	N/A	N/A	N/A
	2008[1]	N/A	N/A	N/A	N/A
	2009	$7,200	N/A	N/A	$10,300
	2010[1]	N/A	N/A	N/A	N/A
	2011	$17,600	N/A	N/A	$21,500
	2012[1]	N/A	N/A	N/A	N/A
MDX		**Authority Appraisals**	**Initial Offers**	**Owners Appraisals**	**Final Settlements**
	2007	$5,095	$4,969	$3,790	$6,418
	2008	$1,420	$1,420	$2,959	$2,250
	2009	$392	$500	$2,528	$1,306
	2010	$2,200	$1,868	$1,868	$1,868
	2011	$653	$413	$2,180	$923
	2012[1]	$0	$0	$0	$0
OOCEA		**Authority Appraisals**	**Initial Offers**	**Owners Appraisals**	**Final Settlements**
	2007	$38,380	$14,423	$18,177	$45,708
	2008	$22,096	$22,096	–	$30,577
	2009	$14,972	$7,587	$13,551	$20,595
	2010	$5,765	$4,021	–	$7,567
	2011	$5,221	$3,378	$11,645	$9,535
	2012	$1,385	$1,321	$2,919	$2,118
THEA[1]		**Authority Appraisals**	**Initial Offers**	**Owners Appraisals**	**Final Settlements**
	2007[1]	N/A	N/A	N/A	$0
	2008[1]	N/A	N/A	N/A	$0
	2009[1]	N/A	N/A	N/A	$0
	2010[1]	N/A	N/A	N/A	$0
	2011[1]	N/A	N/A	N/A	$0
	2012[1]	N/A	N/A	N/A	$0

Source: Authority Data, FTC Performance Reports.
[1] No right-of-way required.

For FDOT, FTC monitors the ROW acquisition activity by comparing how many of an entity's parcels are acquired through a negotiated settlement with those that proceed through the entire condemnation process. All the study agencies provided some data for this metric and they are displayed in Table 2.8.

Table 2.8 Numbers of Parcels Acquired through Negotiation Compared with the Number Acquired through Condemnation

	FTE		MDX		MBBA		OOCEA		THEA	
	Negotiated	Condemned	Negotiated	Condemned	Negotiated	Condemned	Negotiated	Condemned	Negotiated	Condemned
2007	5	4	20	3	0	0			0	0
2008	15	5	2	0	0	0			0	0
2009	5	0	0	3	1	0			0	0
2010	3	0	2	0	0	0			0	0
2011	2	0	1	0	2	0	7	0	0	0
2012					0	0	3	0	0	0

Source: FTC Review of FDOT Tentative Work Program, 2008 through 2012 Reports, and Authority-provided data.

One of the most telling results of an efficient and effective project development process is in measurements of the delivery of actual construction projects. While site conditions, weather, and other factors certainly come into play, solid design plans and projects with no outstanding ROW issues are more likely to be completed within the engineer's estimates, budget, and time that are bid on the project. This aspect of the agencies' performance will be examined in a subsequent section on construction.

2.5 Recommendations

2.5.1 Standardized Reporting Requirements

If the State's policy-makers and the FTC want to continue to make finding efficiencies among and between the entities a priority, then it is recommended that existing metrics for the agencies be standardized and that new reporting requirements documenting actions and progress that demonstrate improvements in collaborations in the project delivery arena be implemented. The lack of consistent performance data, particularly in light of some of the innovative and aggressive actions taken by the agencies, does not support making credible, detailed efficiency recommendations. The FTC is considering

revising its performance measurements and, at a minimum, should consider the following changes to project development measures:

- For PD&E, Design, and ROW – Number of months from the start of PD&E to the facility open to revenue traffic (described in construction section to follow); and
- For ROW – Number of projects delayed for right-of-way issues and number of months of delay (for the delay).

Finally, the Texas A&M Transportation Institute is examining the issue of assessing the Project Development process for OOCEA; the results of this effort should be reported to the FTC. The results could provide valuable input the into the consideration of an updated set of performance measures.

As the FTC focuses on proposing new, consolidated and consistent performance measures the selected measures should be relevant to each toll Authority management, easily replicated with consistent data, and able to be effected by the agencies' management.

2.5.2 Establish Regular Forum for Discussing Project Development Opportunities and Efficiencies

Another recommendation is to establish a regular forum for agencies to discuss innovative techniques, project teaming efforts and efficiencies developed within the project development processes. This kind of forum could not only allow the Authorities to share new ideas, best practices and innovations; the meeting will allow the Authorities to share news on their respective work programs and seek ways of cooperating on project development activities. This process could also include consideration of best practices from other toll authorities (as gathered by Authority GECs) and state departments of transportation (from the Federal Highway Administration and the American Association of State Highway and Transportation Officials).

The initial forums need to be carefully planned and executed so that all participants find participation in future meetings sufficiently valuable. This will help address likely organizational resistance or limitations on Authority resources. Leadership of the forum meetings could rotate among Authorities, so that all Authorities participate equally.

This recommendation requires no formal legislative or regulatory authority to implement, but a simple organizational charter could be developed to establish the working group for this issue and those for other study elements recommended in this report. Each Authority has general consultant resources that could be called upon to assist in the organization of the meetings. The FTC staff could designate an Authority to agree to host the first meeting, and help organize future meetings and follow up activities. The FTC staff could provide reports to the FTC on the benefits of these meetings.

3.0 Construction

This section includes an overview of the Construction Process, a discussion of construction-related topics, including performance data, current efficiency efforts, and recommendations.

3.1 Construction Process Overview

Florida DOT has demonstrated an organizational strategy that relies on private firms to accomplish many functions that in some states are performed by in-house resources, particularly in project development and maintenance, as is explained elsewhere in this report. Florida's Authorities extend that strategy and use layers of private firms to augment modest in-house staff.

In the area of roadway construction, DOTs have long used private firms to construct new facilities or make major adjustments (capacity expansion or major rehabilitation) to existing facilities. Construction projects require specialized equipment, skilled labor, materials acquisition and sophisticated project management, all which can be applied to distinctive kinds of projects across a wide geographic area. Public agencies have relied upon construction firms (referred to as general "contractors") to put together teams of specialized subcontractors to offer turnkey delivery of completed roadway projects (pavement, structures, earthwork, drainage, landscaping). Authorities use many of the same contracting methods and specifications used by Florida DOT and use many of the same contractors to deliver Authority projects.

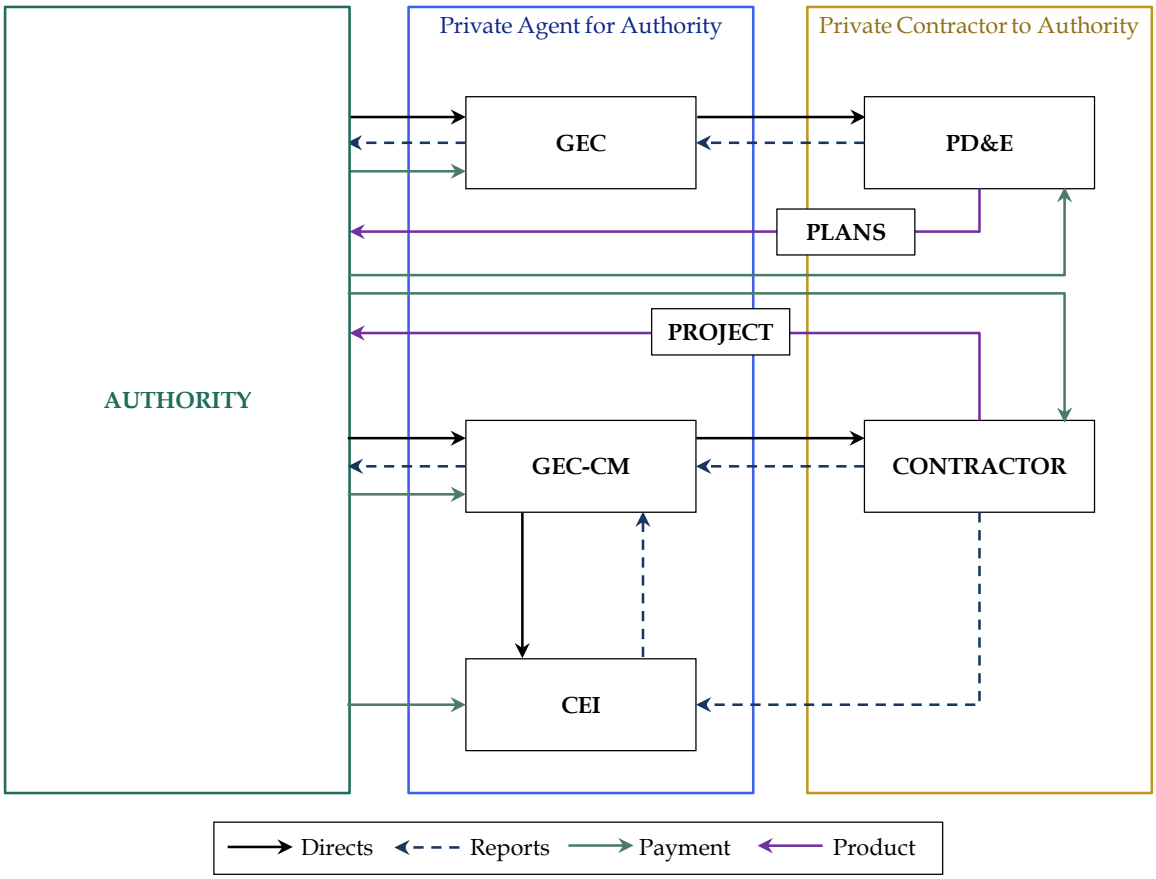
Generally, Authorities and Florida DOT use the Design-Bid-Build (DBB) process for construction projects. In this process, the public Authority contracts with an engineering firm (PD&E) to prepare plans and specifications for a project (as described in Section 2.0), and makes those plans and specifications available to qualified contractors to prepare bids on unit costs (and project time in some cases). Public agencies award the construction project to the contractor with the lowest responsive bid (generally), and the contractor is responsible for all materials, equipment and labor to deliver the project as planned and specified.

Authorities also employ private firms to manage this project development and construction process. As explained in the previous section, Authorities use General Engineering Consultants to coordinate planning and design/engineering of projects that are performed by a number of other consulting firms. Authorities also use General Engineering Consultants to provide overall construction management services (GEC-CM). The GEC-CM is an extension of Authority staff to manage construction bidding and keep all projects on time and on budget. Authorities also use private firms to perform Construction Engineering and Inspection (CEI) services on particular construction

projects, acting as the Authorities' agents to ensure that projects are constructed as planned, to inspect and test materials actually used on a project are those specified in the plans and specifications, and to verify construction progress to evaluate project invoices and budget and schedule management. The GEC-CM coordinates all the work products of these CEI firms to provide consistent application of Authority procedures for the benefit of the Authority and its contractors.

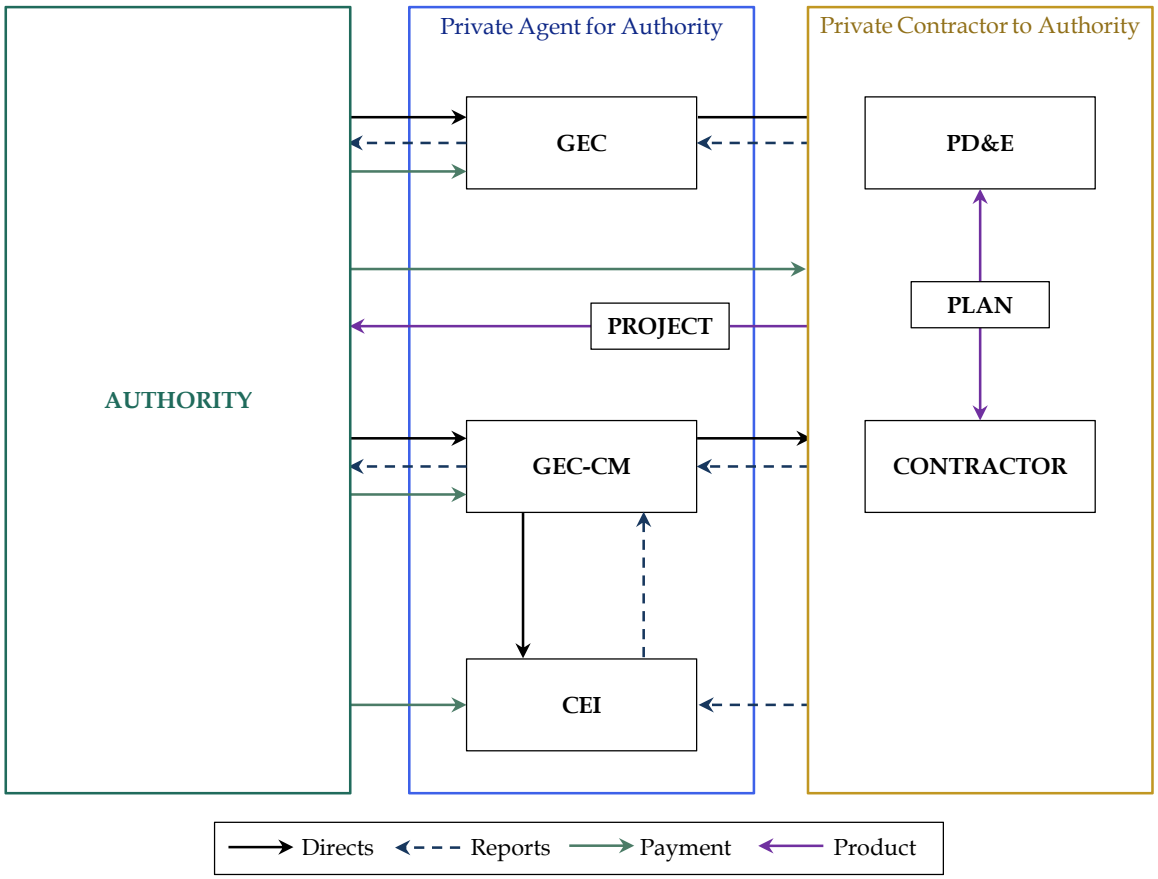
Figure 3.1 illustrates this DBB process, distinguishing between private firms working as agents for the Authority and private firms working as contractors to the Authority. In this figure, the GEC and GEC-CM are singular for each Authority, and the other firms (CEI, PD&E, Contractor) are different for each individual construction project.

Figure 3.1 Design-Bid-Build Construction Firm Relationships



A variation on this contracting process became more widely used in the 1990s, referred to as Design/Build (DB). The public agency executes a single contract with a team of firms to provide the plans and build the project. This allows the contractor to work with the design engineer to consider constructability, different construction methods and materials, and project phasing that would allow a project to be completed in less time or lower budget. The contractor, more familiar with the plans, should be able to build the project while reducing project risks that the contractor would otherwise include in a bid price. This process requires a more complicated procurement process for the public agency, and the agency's engineering and construction management GECs perform an independent engineering function to review the DB firm's work. Florida DOT and the Authorities have used this method on a number of projects, and the process is illustrated in Figure 3.2.

Figure 3.2 Design/Build Construction Firm Relationships



Because the procurement is more complicated, Florida DOT and the Authorities use this method on larger projects, and each Authority's use of this method will be described below.

3.2 Construction Topic Areas

This section includes data and metrics on each Authority's construction program and a discussion of construction-related issues and how the Authorities address those issues differently.

3.2.1 Construction Metrics

Construction data was collected from FTC performance reports (for the Authorities and for FDOT) and from the Authorities directly. As these metrics are evaluated, some distinctions between the overall scale of construction programs can be made among the Authorities. First, since the Osceola County Expressway Authority has not constructed its first project, it is not included in this data discussion. As Table 3.1 shows, MBBA and THEA have much smaller, more occasional construction programs. Therefore, more details will be provided on the other Authorities with larger, regular construction programs – MDX, OOCEA, and FTE. This distinction is unsurprising given the larger number of lane miles and overall toll revenues of these three Authorities. A description of each Authority follows.

Table 3.1 Authority Construction Program Overview
2007-2012 Fiscal Years

Authority	Total Contract Lettings 2007-2012	Average Number of Contracts Completed Per Year
FTE	$1,044,200,000	17.34
MDX	$308,056,173	4.67
MBBA	$71,560,248	0.34
OOCEA	$775,915,433	9.17
THEA	$13,984,503	0.50

Source: Authority Data, FTC Performance Reports.

FTE

FTE has a more extensive construction program, a mixture of expansion, new location, interchanges, facilities, and toll collection system upgrades. Table 3.2 shows that FTE contract bids are an annual average of 81 percent of total project estimates.

FTE has a good record of completing construction projects within FTC performance standards for FDOT contract time and budget, as shown in Table 3.3. FTE reports this data to the FTC in the FDOT annual performance report, and these reports also includes

data on the small number of completed contracts which account for a majority of time and budget overages.

Table 3.2 FTE Construction Lettings

2007-2012 Fiscal Years

Fiscal Year Ending June 30	Estimated Amount of All Construction Contracts Let During the Fiscal Year	Actual Amount of Construction Contracts for those Contracts Let During the Fiscal Year	Letting Total Percent of Estimated Amount
2007	498,400,000	418,100,000	83.89%
2008	239,900,000	182,900,000	76.24%
2009	272,900,000	145,100,000	53.17%
2010	152,000,000	116,700,000	76.78%
2011	32,500,000	30,300,000	93.23%
2012	180,800,000	151,100,000	83.57%

Source: Authority Data, FTC Performance Reports.

Table 3.3 FTE Construction Completion Metrics

2007-2012 Fiscal Years

Fiscal Year Ending June 30	Number of Construction Contracts Completed During Fiscal Year	Percent Contracts Completed During Fiscal Year within 20 Percent Above Original Contract Time	Percent Contracts Completed During Fiscal Year within 10 Percent Above Original Contract Amount
2007	4	75.00%	100.00%
2008	27	66.67%	70.37%
2009	29	82.76%	68.97%
2010	16	68.75%	81.25%
2011	15	73.33%	73.33%
2012	13	92.31%	92.31%

Source: Authority Data, FTC Performance Reports.

Two observations about these construction data concern performance criteria definitions and types of construction project adjustments. First, FDOT defines and reports contract completion based on final acceptance of the contract, not on substantial completion as used by many of the Authorities in this section of the report. Substantial completion, defined in the contract specifications, is intended to encourage contractors to resolve most issues before the conclusion of contract time, but substantial completion usually occurs at least 30 days before the conclusion of the project. For FDOT, final acceptance will require complete resolution of all contract issues, which can take longer than substantial completion. Therefore, more FDOT contracts have the potential to miss FTC targets because of the definition of project completion.

Second, FDOT reports significant information in its FTC annual reports that explains the projects which exceed contract time and amount thresholds. Full information on all variances in these data is available from FTE, and was provided for this report. In many cases, cost variances are related to FDOT provisions for contractor cost adjustments, often for certain volatile commodities like fuel and fuel-related pavement materials. These changes can lead to increased cost but are not considered supplemental agreements since the cost adjustments are part of the contract. Other changes in cost and time can be associated with business decisions by FTE, such as decisions to add installation of open-road tolling equipment to an existing contract for toll plaza improvements. Adding the equipment increases the contract time and cost, but it is less costly and less time consuming than seeking a completely new contract for the equipment (not to mention less disrupting to toll road customers). In another contract for an interchange on Suncoast Parkway, FTE agreed to adjust its contract for time and cost to incorporate widening on the county road at the interchange at Hillsborough County's cost.

Cost changes to FTE contracts completed during the past two years have been within 3 to 5 percent of original contract amounts, as FTE accounts for its contract supplemental agreements (according to FDOT policy, which offers an easier process to document time extensions). In 2011, FDOT experimented with a pilot project that offered contractors an inflation cost adjustment to account for material cost volatility. That adjustment accounted for 45 percent of the contract cost adjustments for that year for FTE. Looking at the top 15 contractors' annual contract payments from FTE for the past three fiscal years (2010 to 2012), the total payments to the top six contractors account for 61 percent of the total payments made. The lower contractor concentration can be explained by FTE's larger geography (which involves more contractors bidding on FTE's projects) and larger number of projects.

MDX

MDX has a more regular construction program, with a variety of roadway and toll collection construction projects. Table 3.4 shows that project estimates have been close to contract bids with limited exceptions, an annual average of 84.7 percent of project estimates.

MDX has a good record of completing construction projects within FTC performance standards for contract time and budget, as shown in Table 3.5.

Table 3.4 MDX Construction Lettings
2007-2012 Fiscal Years

Fiscal Year Ending June 30	Estimated Amount of All Construction Contracts Let During the Fiscal Year	Actual Amount of Construction Contracts for those Contracts Let During the Fiscal Year	Letting Total Percent of Estimated Amount
2007	$53,674,300	$53,679,939	100.01%
2008	$6,300,000	$6,300,000	100.00%
2009	$173,905,953	$123,570,529	71.06%
2010	$95,019,469	$67,575,185	71.12%
2011	$10,500,000	$10,500,000	100.00%
2012	$69,619,886	$46,430,520	66.69%

Source: Authority Data, FTC Performance Reports.

Table 3.5 MDX Construction Completion Metrics
2007-2012 Fiscal Years

Fiscal Year Ending June 30	Number of Construction Contracts Completed During Fiscal Year	Percent Contracts Completed During Fiscal Year within 20 Percent Above Original Contract Time	Percent Contracts Completed During Fiscal Year within 10 Percent Above Original Contract Amount
2007	4	75.00%	50.00%
2008	5	80.00%	80.00%
2009	3	100.00%	100.00%
2010	4	100.00%	100.00%
2011	7	100.00%	100.00%
2012	5	100.00%	100.00%

Source: Authority Data, FTC Performance Reports.

Cost changes to MDX contracts completed during the past two years have been within 2 percent of original contract amounts, as MDX accounts for its contract supplemental agreements. Looking at the top 15 contractors' annual contract payments from MDX for the past three fiscal years (2010 to 2012), the total payments to the top six contractors account for 94 percent of the total payments made to the top 15 contractors. This overall concentration of contractor payments is related to the smaller number of projects let by MDX annually.

MBBA

MBBA has one major construction project underway, the Mid-Bay Bridge Connector, which has been bid in phases, with the same contractor winning each contract. In 2007, MBBA completed a contract for expansion of its Toll Plaza.

Phase 1 of the Mid-Bay Bridge Connector and the SR 20 widening was let in 2008 for $22.8 million, 86.14 percent of the project estimate. Phase 2 and 3 were let in 2011 for $48.7 million, 92.55 percent of the project estimate. Both the Toll Plaza expansion and the Bridge Connector Phase 1/SR 20 widening were completed within FTC standards for time and budget. Cost changes (not time extensions) for the contract completed in 2011 totaled eight percent of the original contract bid amount (less than the FTC 10 percent cost threshold), but 41 percent of the change amount was for work requested by the Authority at contract bid unit costs, and 32 percent of the change amount was for a FDOT-standard contract adjustment for fuel and bituminous costs (to account for market volatility in fuel prices for equipment, transportation, and materials).

OOCEA

OOCEA has a more extensive construction program, a mixture of expansion, new location, interchanges, and toll collection system upgrades. Table 3.6 shows that OOCEA contract bids are an annual average of 81 percent of total project estimates.

Table 3.6 OOCEA Construction Lettings

2007-2012 Fiscal Years

Fiscal Year Ending June 30	Estimated Amount of All Construction Contracts Let During the Fiscal Year	Actual Amount of Construction Contracts for those Contracts Let During the Fiscal Year	Letting Total Percent of Estimated Amount
2007	$473,682,157	$367,881,035	77.66%
2008	$86,651,639	$66,414,694	76.65%
2009	$27,543,636	$22,926,544	83.24%
2010	$126,400,131	$97,992,447	77.53%
2011	$230,908,578	$197,746,072	85.64%
2012	$23,399,079	$20,954,641	89.55%

Source: Authority Data, FTC Performance Reports.

OOCEA has a excellent record of completing construction projects within FTC performance standards for contract time and budget, as shown in Table 3.7.

Table 3.7 OOCEA Construction Completion Metrics
2007-2012 Fiscal Years

Fiscal Year Ending June 30	Number of Construction Contracts Completed During Fiscal Year	Percent Contracts Completed During Fiscal Year within 20 Percent Above Original Contract Time	Percent Contracts Completed During Fiscal Year within 10 Percent Above Original Contract Amount
2007	5	100.00%	100.00%
2008	10	100.00%	100.00%
2009	6	100.00%	100.00%
2010	9	100.00%	100.00%
2011	13	100.00%	100.00%
2012	12	100.00%	100.00%

Source: Authority Data, FTC Performance Reports.

Cost changes to OOCEA contracts completed during the past two years have been within one to two percent of original contract amounts, as OOCEA accounts for its contract supplemental agreements. Looking at the top 15 contractors' annual contract payments from OOCEA for the past three fiscal years (2010 to 2012), the total payments to the top six contractors account for 89 percent of the total payments made.

THEA

During the 2007-2012 period, THEA completed one project in 2009 and two in 2012, both within FTC performance standards for contract time and budget. Given the small number of contracts over the time period, two contractors accounted for 95 percent of the total contractor payments. THEA reports that their projects let during this time period ($12.2 million in 2010 and $1.7 million in 2012), mainly for all-electronic toll collection equipment installation, met project bid estimates.

3.2.2 Construction Issues

Contract Size

Authorities have flexibility to set project limits to result in smaller contracts in order to increase contractor competition. This depends on the nature of the construction project and the need to coordinate activities across the project; an interchange would generally not be broken into smaller contracts. In setting contract size, Authorities face a tradeoff: having to coordinate more projects to keep an entire corridor on schedule compared to the risks of being subject to possible delays from a single contractor. The Authorities can consider contract size not only to foster overall contractor competition, but also to encourage

certified small and minority businesses an opportunity to bid on smaller projects (smaller businesses can face challenges obtaining completion bond coverage for larger projects).

Design/Build and Design-Bid-Build

Design/Build (DB), explained earlier in this section, offers a project owner an alternative project delivery mechanism that can transfer some project risks to a designer/contractor team and may result in time or cost savings in some cases. Careful attention to project execution decisions by a DB team is necessary to ensure that the DB firms do not make construction and materials decisions that save construction costs but might affect longer term life-cycle costs for the project owner.

Without making any judgments about the utility of DB in any given project context, the Authorities in this study enjoy legislative flexibility to use DB as a project delivery mechanism. The three larger Authorities (MDX, OOCEA, and FTE) use DB in different ways. MDX generally uses DB on larger projects (over $10 million), and has done so for a number of years. MDX has grown more comfortable using the method, as have its local contractors, although about 10 to 15 percent of its construction program uses DBB. OOCEA prefers to conduct as many project development activities in parallel to accelerate project completion and reduce risks for contractors. OOCEA has data that favorably compare its project delivery times to DOTs in the Southeast using its conventional DBB method. FTE and FDOT consider the applicability for DB on a contract-by-contract basis, generally using it for projects over $25 million and those contracts with greater than average complexity or potential for cost and time savings.

Incentives/Disincentives, Time Acceleration

DOTs have used a variety of contract provisions to add incentives and disincentives to motivate contractors, usually focused on time completion. In new location construction, toll road agencies have a more direct interest in project completion, as revenue collection depends on it. Most Authorities incorporate some time measurement in contract bids, in which contractors bid on unit prices and contract time (which may be monetized for bid award calculations). This encourages contractors to compete on time completion (using innovative construction methods) and to carefully commit to project completion timeframes, so that future time adjustments may be less necessary. Most Authorities do not use bonuses or incentives as a matter of common practice, preferring to control total contract costs instead of time. The success of these practices is demonstrated in metrics earlier in this section, particularly in the small amounts involved in supplemental agreements to change the timing or amounts for construction projects. FTE reports that FDOT incentives/disincentives (completion and milestone bonuses, liquidated damages) generally result in contract time savings.

There are certainly instances in which contractor incentives are an important element in completing a construction project for the early use of toll road customers. FTE and FDOT used aggressive incentives in an emergency contract to repair a bridge on the Turnpike Mainline Northbound in December 2009 damaged by a accident related fire on Lake County Road 561 under the Turnpike. Two emergency contracts were put in place, one to

divert northbound traffic temporarily to open the road to traffic, and one for the reconstruction of the northbound bridge span. Reopening the road and repairing the bridge was particularly important given the high traffic volumes on the Turnpike during the Christmas holidays. Substantial incentives were contracted for the diversion and traffic control contract and for the bridge replacement, and were instrumental in restoring the Turnpike fully to traffic in less than two weeks after the accident.

3.3 Current Construction Efficiency Efforts

Authorities finance their capital programs through bond financing tied to projected revenue collections, and the Authorities are legally bound in these bond covenants to be directly responsible for construction contract delivery. So while Authorities have demonstrated various methods to seek efficiencies and share resources and best practices, ultimately each Authority is accountable to its bondholders for construction contract management.

Interviews conducted for this project have identified a number of instances of sharing resources and practices to increase construction efficiencies:

- **OOCEA/MDX Best Practices Sharing.** A few years ago, the GECs of these two Authorities facilitated a meeting to share best practices in construction management. MDX was able to incorporate some of the administrative provisions that OOCEA had altered from FDOT's standard project specifications to gain better control of contracts.

- **FDOT/FTE/MDX Project Coordination.** A number of projects were described in Section 2.1 involving the coordination of design, right-of-way, and utility relocation, as well as the dividing or sharing of construction projects. The decision on which agency leads and which contributes to the other is situational, but represents an effort to coordinate construction projects on facilities owned by different public agencies.

- **CEI Procurement Sharing.** Most authorities report executing contracts with pools of CEI consultants that allow those contracts to be accessed by other public entities, sharing among FDOT districts and among Authorities. This reduces construction delivery times by reducing procurement delays.

- **OOCEA Contract Provisions.** OOCEA reports a number of initiatives to increase construction contract efficiencies. First, OOCEA includes provisions in its contracts to require substantial completion 30 days before the end of the contract. This provision reduces the number and amounts of contractor claims at the end of a project. Second, OOCEA has streamlined its contractor payment procedures, offering twice monthly payments and accelerating payment processing. This is believed to reduce the overhead charged by contractors in their bids.

- **Dispute Resolution Boards**. OOCEA incorporates a Dispute Resolution Board in many of its larger contracts, in which the Authority pays for services of a three-

member board (one chosen by the contractor and by the Authority and one agreed to by both) that keeps apprised of project status and is available to quickly resolve claims and disputes. FDOT uses these Dispute Resolution Boards on all construction contracts.

3.4 Construction Improvements and Recommendations

Authorities believe they have legislative flexibility to experiment with different delivery mechanisms and construction contract terms. Florida Legislators deserve credit for having equipped FDOT and the Authorities with a range of tools to use in delivering construction projects. Three improvements could further increase efficiencies for Authority construction programs.

3.4.1 Project Delivery Timeline Performance Measure

Recommendation: The FTC should consider a common definition for project development/construction pipelines, so that a single measure of calendar days from initiation of project design to project construction completion could be collected. The current performance measures calculate consultant contract and construction contract management, but do not allow for the tracking of project delivery results across different project delivery methods. The construction completion measures also fail to account for the differences in how Authorities define project completion (project acceptance versus substantial completion).

Some Authorities may determine that proceeding with design at risk may deliver sufficient project clarity that the Authority can use in seeking alternative project financing such as Federal credit programs like the Federal Transportation Infrastructure Finance and Innovation Act program (TIFIA). But usually, an Authority decision to initiate the preparation of plans and specifications is usually tied to a commitment of financing to the completion of the project. The beginning of that design project could start the clock, which would be stopped at the completion of the construction of the project and opening the facility to revenue traffic. There may need to be a distinction made between projects that require right-of-way takings and environmental review, permits and mitigation (which will take longer) and projects within existing rights-of-way and that require limited environmental reviews (toll plaza improvements or toll collection systems).

This measurement would allow Authorities to manage their multiyear capital programs more transparently. This also would allow Authorities to test the time implications of different project delivery improvements.

Risk Assessment: The administrative costs of creating and tracking this measurement should be modest, as most Authorities already use the services of a GEC and GEC-CM to manage project plans and construction projects. This measurement could be created

retroactively for projects with completed construction projects during the first year of measurement collection using existing Authority records.

Implementation: Even if current systems do not track project times across the project delivery pipeline, creating a simple system to track PD&E cost and time, bid preparation/ letting/contracting time and construction completion could be done to measure capital program delivery within each Authority and reported to the FTC. The consideration of this new measurement can be included in an overall FTC recalibration of all its Authority performance measurements.

3.4.2 Construction Project Revenue Estimates

Recommendation: For larger projects (over $10 million) for new locations or extensions of existing facilities (greenfield projects), Authorities could prepare traffic and revenue estimates for construction projects that would calculate the traffic benefits and revenue implications of the completed construction project. This revenue calculation could be used in setting contract completion bonuses, as the bonus amount could be tied to a portion of the increased revenues from the resulting completed facility. The current system considers incentives only in terms of the total construction contract amount.

For new location projects, like the Wekiva Parkway, traffic and revenue estimates could be calculated not only on an annual basis for purposes of project financing, but also on a monthly basis at project opening, so that the Authorities could have an estimate of the additional revenues possible if the project were opened early. This revenue stream can be converted to a present value, and used in setting incentive payments.

Risk Assessment: This additional level of analysis would lead to increased consulting costs by the traffic and revenue consultants. In the case of new locations, incentive payments would have to be offered in operable corridor segments, not necessarily by construction project. If a project was split into segments for contracting purposes, any revenue-related incentives would have to be offered only if a roadway were accessible for traffic. This may complicate the negotiation of incentives among different contractors, but shared incentives can be executed.

Continuing with the status quo also involves risks associated with the opportunity costs of additional revenues not collected, and the delayed benefits to Authority customers of project improvements.

Implementation: This recommendation could be tested on a pilot basis by more than one Authority on a new location project. Carefully collecting all costs associated with the contracts with the contractors and consultants will allow the Authorities to determine whether or how to implement a broader use of the practice where it makes good business sense. This recommendation can be considered by the Authorities and does not require any formal action on the part of the FTC.

3.4.3 Project Estimate Calibration

Recommendation: More careful matching of plan estimates to current market conditions would allow Authorities to gain the maximum benefit of their bond financing on more projects. Construction program metrics reported in this section show that the three Authorities with the largest construction programs, MDX, OOCEA, and FTE, let construction projects within an average 84.8 percent, 81.1 percent, and 77.8 percent of project estimates for the period 2007-2012, respectively.

Calculating the estimate from the actual lettings on an annual basis would provide a measure of how much more could be programmed by each Authority. This would not result in a cost savings, but a more careful calculation of project estimates could increase the amount of projects that could be constructed within a given capital program, resulting in increased capital investments supported by Authority customer revenues.

FDOT project lettings and estimates are set in the appropriations bill, the result of the Legislature's exercise of setting construction spending as a percent of total available state and Federal revenues and balancing projects across the State. The project estimates used in preparing the annual construction letting schedule are not to be changed once set by the Legislature. However, these project estimates are calculated up to 18 months in advance of letting dates, and market prices could be different, depending on total economic activity, worldwide commodity demand and contractor utilization. The Legislature may wish to consider authorizing FDOT to adjust bid estimates on a quarterly basis, so that the construction contracts can be awarded within available resources.

Risk Assessment: Market volatility is a cyclical process. Just as construction bids have come in lower than estimated due to depressed market conditions and lower demand for construction materials, the experience of the previous decade was marked by steady increases in unit costs and construction bids. This meant that Authorities were able to deliver fewer projects. Therefore, the matter of unit cost calculations and market analysis requires careful study and flexibility in capital programming.

FDOT has maintained a practice of carefully monitoring economic trends and unit costs in construction bids to provide a quarterly analysis of construction trends. Authorities could combine their resources with FDOT in using this cost information on a regional basis to calibrate their capital programs to market-based project estimates.

Implementation: The FTC does not require reporting of construction bids versus project estimates for Authorities, although this information is provided in a secondary measure reported by FDOT to the FTC. However, a more careful calculation of ongoing market conditions and unit costs would be a very valuable tool for each Authority to manage its capital programs and bond financings, whether or not the FTC collects these data.

Since FDOT already collects this information for its construction activities, the Authorities should be able to gain access to the databases and contribute their own construction data to the benefit of the database. By contributing to the maintenance of the database, the Authorities could improve the value of the market information for Authority projects and for FDOT projects alike.

4.0 Maintenance

This section provides an overview of Asset Maintenance (AM) contracts and a discussion of AM-related topics, including performance standards, inspection practices and incentives. The section also includes a summary for FTE and each Authority and includes three distinct set of recommendations for FTC to consider.

4.1 Overview

FTE and the Authorities currently incorporate asset maintenance contracts to increase efficiency, manage maintenance costs and achieve performance standards on their systems. Maintenance includes recurring activities carried out to maintain the functional integrity of the existing transportation facilities and keep system components, i.e., assets, in good condition. Assets include bridges, high mast lights, roadways, roadside items, guardrail and barriers, vegetation, and drainage. When assets are maintained in good working order, disruptions and downtimes for the traveling public are reduced. When assets are kept in a state of good repair, system safety is enhanced, minimizing Authority and customer risk while ensuring that the assets achieve their full potential service life. Maintenance leverages efficiencies that ensure fiscal responsibility and is critical in satisfying the duty of care pledged to bondholders and the State of Florida.

Routine maintenance is generally provided through three types of maintenance programs, including in-house forces, traditional contracts and asset maintenance contracts. In-house forces generally comprise Authority employees, based at a local maintenance yard or operations center, who perform maintenance work using Authority-owned equipment. Traditional contracts, typically constrained in scope, are awarded to perform specific maintenance activities as delineated in the contract and may be driven by a detailed work order or based on performance metrics. The contractor is paid on the basis of unit prices for different work items, i.e., inputs. To maximize its turnover and profits, the contractor is incentivized to carry out the maximum number of inputs.

AM contracts represent a performance-based method of contracting between an Authority and public or private entities for the management and maintenance of specific transportation facility assets or defined roadway corridors or an entire geographic region. With AM contracts, contractors are not paid directly for inputs, but for outputs, i.e., maintenance of the asset to predefined standards, with payment routinely made in the form of monthly lump-sum payments. In order to receive payment for work, the contractor must ensure that the assets under contract comply with service quality levels specified in the bidding documents. The contractor's work load to comply with service mandates may vary significantly from month to month, yet the monthly payment remains the same as long as the required service levels are attained. The contractor has a strong financial incentive to be

efficient. To maximize profits, the contractor must reduce activities to the smallest possible volume of well designed interventions while, at the same time, ensuring that predefined outputs are achieved and maintained.

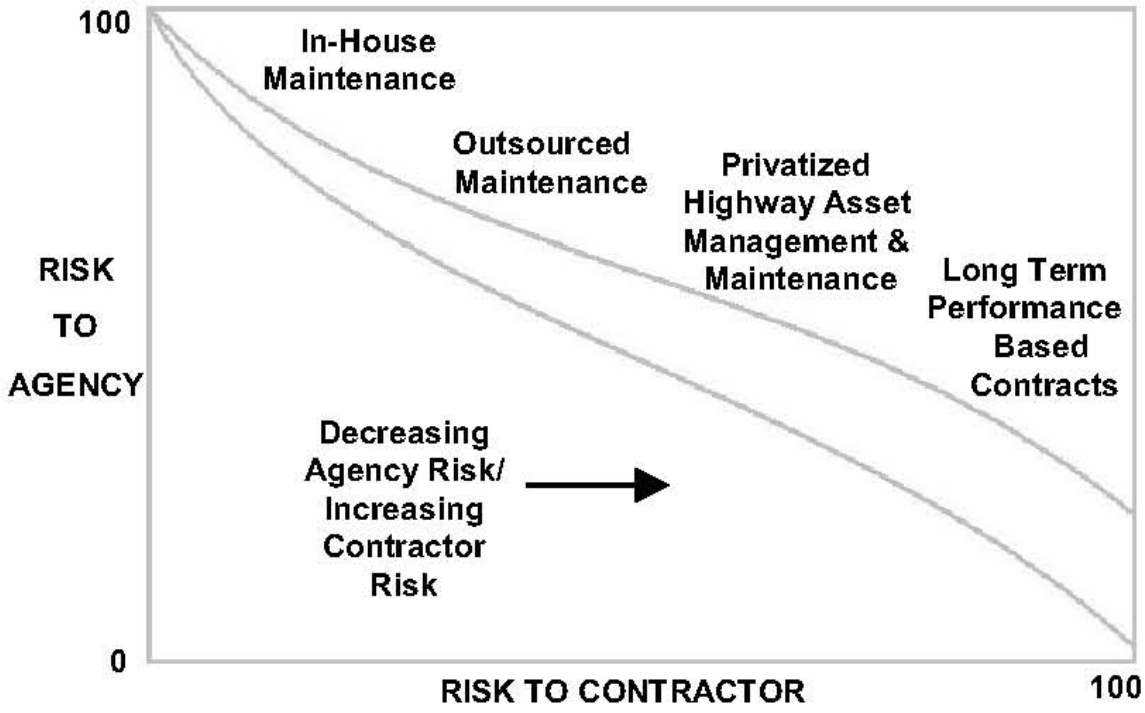
FDOT began utilizing AM contracts for maintenance and management of Florida's transportation infrastructure in July 2000. As detailed in "Asset Maintenance Contracts," FDOT Topic No.: 375-000-005-b, AM, originally called Asset Management, was conceived as an innovative contracting method under authority of Florida Statute 287, allowing solicitation of competitive sealed proposals. AM was realigned to fall under the authority of Florida Statute 337, but was allowed to retain the ability to solicit competitive sealed proposals.

A review of literature on the subject of AM contracting found that performance-based specifications are being used as an alternative to method-based specification. Agencies specify measureable performance standards, targets and timeliness requirements that the maintenance contractor must meet throughout the contract. Performance standards consist of short descriptive statements of the physical condition the contractor is required to maintain for each roadway asset type and are measured using indicators that are specific, measurable, achievable, realistic and timely to schedule. Performance targets represent the desired level of service to be produced, and timeliness is defined as the timeframe within which a deficiency must be corrected. There was general agreement in the literature that the fundamental aspects of successful performance-based maintenance contracts were clearly defined performance requirements; a sound condition assessment method for evaluating compliance with these requirements; a rational performance-based pay adjustment system; and a best-value bid evaluation method. Suggested contract limits ranged from 75 to 100 centerline miles of roadway.

Performance-based contracts have been found to minimize the amount of supervision required on the part of the Authority and encourage contractors to find the best way to meet performance requirements within the required parameters of the AM contract. Reasons to adopt performance-based contracts included reduction of the effort required to measure the amount of work completed; elimination of the frequent claims and contract amendments required to increase quantities of activities that have plagued some traditional contracts; increased client focus that results from payment on the basis of user-related performance indicators; innovation realized from a contractor's responsibility to increase capacity; and reallocation of performance risk. The transition to performance-based contracts from in-house maintenance and traditional quantities and unit price-based contracts transfers a significant degree of risk from the Authority to the private sector, as illustrated in Figure 4.1.

Use of contracting out maintenance, which has often been shown to produce cost savings over traditional practices, appears to be on the rise. Innovation and efficiency in delivering quality work have resulted from the private sector's response to opportunities provided. Potential downsides of contracting out maintenance include difficulty in setting appropriate end-result specifications, risk associated with contractor defaults and ineffective dispute resolution procedures.

Figure 4.1 Distribution of Risk with Different Contract Approaches



Source: Robin, Paul D. (paulr@arrb.org.au). 2000. "Asset Management and Road Maintenance by Contract in Australia and New Zealand." Transportation Research Board 79th Annual Meeting, National Research Council, Washington, D.C.

FTE, MBBA, MDX, OOCEA, and THEA currently have AM contracts in place to provide roadway and bridge maintenance services. While FTE and the Authorities maintain assets that vary in type of roadway, facilities, geographic location, and breadth of responsibility, they rely on FDOT specifications and guidelines for the maintenance and preservation of their systems.

Roadway and bridge AM contracts generally follow facility limits; however, due to the breadth of FTE's facilities, FTE redefined maintenance limits into four separate maintenance zones (FTE Zones 1 through 4). FTE's maintenance costs and performance data are reported by zone where possible, and in the absence of available zonal data, FTE data are reported in aggregate.

The Authorities provided copies of roadway and bridge AM contracts, facilities maintenance contracts and landscaping contracts currently in place. FTE provided AM agreements for FTE Zone 3, FTE Zone 4, and MBBA as well as MBBA's facilities maintenance contract. Traditional contracts in place within FTE Zone 1 and FTE Zone 2 were not reviewed in detail.

Expressway Authority financial and performance data were obtained primarily from the FTC's *Transportation Authority Monitoring and Oversight Fiscal Year 2011 Report.* FTE

financial and performance data were taken largely from the FTC's *Performance and Production Review of the Florida Department of Transportation FY 2010/2011* and *Florida's Turnpike System Comprehensive Annual Financial Reports* for fiscal years 2008, 2010, and 2011. Mid-Bay Bridge data came predominantly from FDOT's *Traffic Engineer's Annual Report, Enterprise Toll Operations/Fiscal Year Ended June 30, 2011* and from *Mid-Bay Bridge Authority Financial Statements* for fiscal years 2009 through 2011. The period of focus for data analysis of all agencies was 2006 through 2011.

Each Authority's bridge and roadway AM contracts were reviewed to identify both unique and common contract components with a focus on maintenance standards, inspection practices and incentives. Factors included in the review are as follows:

- AM contract term and contractor;
- Limits of AM Contract;
- Bid-evaluation method;
- Renewal options;
- Performance requirements;
- Condition assessment method for evaluating compliance; and
- Performance-based pay adjustment system.

4.2 Maintenance Topic Areas

This section summarizes data and performance measures for each Authority's AM contract and a discussion of AM contract-related issues and how the Authorities address those issues.

4.2.1 FTE and Authority Asset Maintenance Contracts

All contracts were competitively bid, are governed by the laws of the State of Florida and stipulate similar performance and payment bonds. Contractors are required to manage assets within the project limits and perform work that produces end results in accordance with FDOT specifications, Authority specifications, FTE specifications, design standards, maintenance activity standards, manuals, handbooks and guides in effect at the time of performance of the work and are consistent with FDOT's statewide maintenance practices.

All contracts also require that proper health and safety measures be taken to ensure safety for the public, Authority employees, contractor employees, and subcontractor employees. All agencies, with the exception of MDX, require contractors and agents to pay all tolls. Disadvantaged business enterprise (DBE) utilization must be monitored and reported on a regular basis; only MDX established a minimum Small Business participation rate within

the contract. Contractors must comply with local lane closure restrictions and requirements at all agencies. All contractors are required to identify and provide contact information for emergency personnel, who must be available on a 24-hour basis, seven days a week.

FTE

FTE redefined maintenance limits into four geographic zones as detailed in Figure 4.2.

FTE Zone 1 (South Florida Area)

FTE Zone 1 is maintained by FTE staff through conventional contracts (pay item/low bid-based). FTE Zone 1 limits include the turnpike mainline from milepost (MP) 0 to 100, the Homestead Extension of Florida's Turnpike (HEFT) and the Sawgrass Expressway, as illustrated in Figure 4.2. FTE Zone 1 lane miles, excluding ramps, total in excess of 900 miles, nearly 820 of which are on the SHS system. Zone 1 encompasses 125 centerline miles.

There are currently 25 active contracts for routine maintenance specific to FTE Zone 1. FTE Zone 1 shares contracts for landscape planting, weed control, lighting maintenance (MP 0-100) and traffic control devices with FTE Zone 2 and shares a contract for sign installation (MP 88-100) with FTE Zone 2 and FTE Zone 3. A contract for maintenance of traffic and a performance-based contract for rapid incident scene clearance (RISC) are currently in place for FTE Zones 1 through 4. Structure inspections are performed under two structure inspection consultants, split geographically for FTE Zones 1 through 4. In addition to the scheduled structure safety inspection, the Structure Inspection Consultants are required to respond in a timely fashion for emergency inspection and load analysis of structure damage from vehicles or storm impacts.

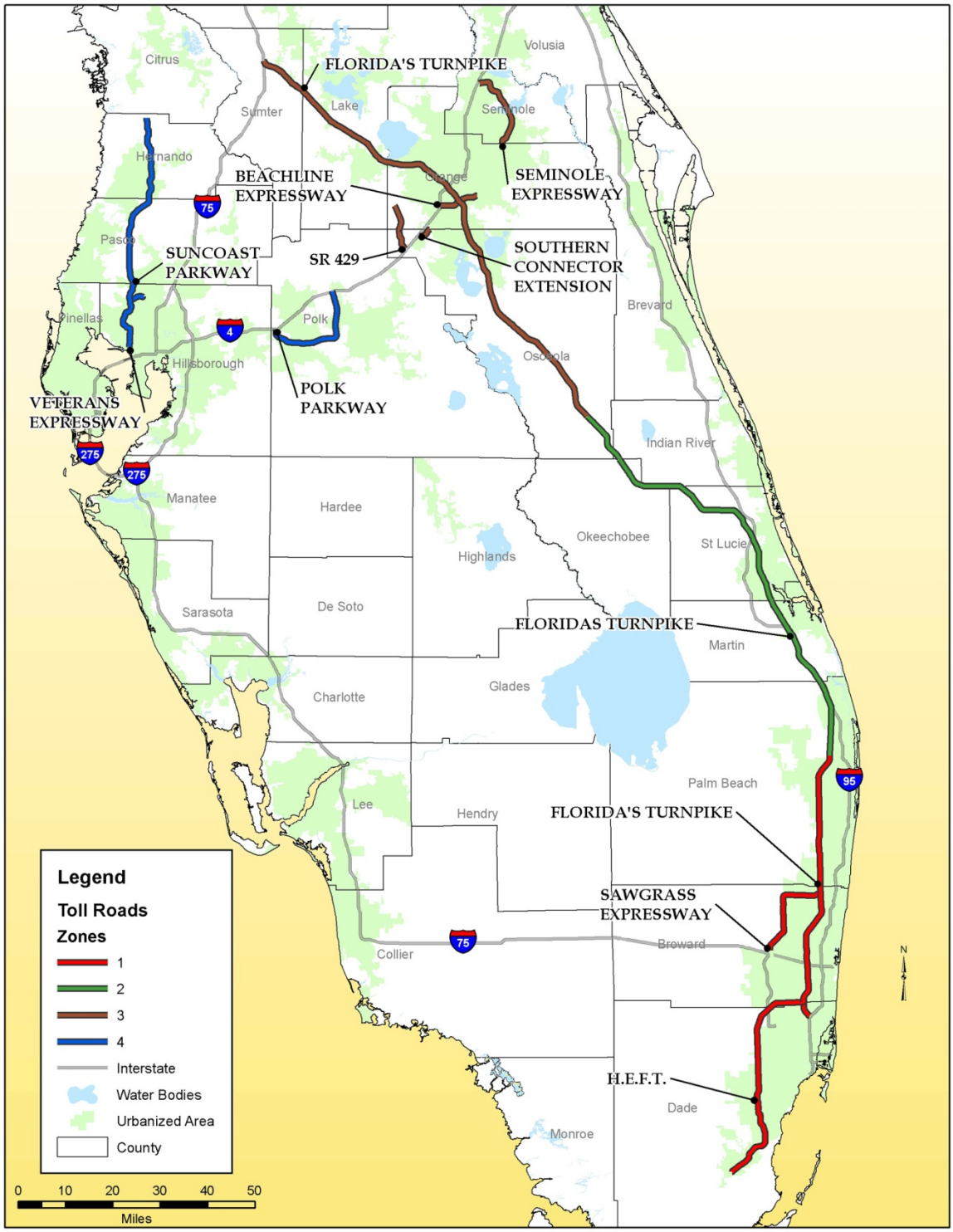
FTE Zone 1 will be undergoing extensive reconstruction in the next few years, which makes it a poor candidate for an AM contract.

FTE Zone 2 (Fort Pierce Area)

FTE Zone 2 is maintained by FTE staff through conventional contracts (pay item/low bid-based). FTE Zone 2 limits include the turnpike mainline from MP 100 to 200, as illustrated in Figure 4.2. FTE Zone 2 lane miles, excluding ramps, total in excess of 400 miles, nearly all of which are on the SHS system. FTE Zone 2 encompasses 100 centerline miles.

There are currently 19 active contracts for routine maintenance specific to FTE Zone 2. FTE Zone 2 shares contracts for landscape planting, weed control, lighting maintenance (MP 101-117) and traffic control devices with FTE Zone 1 and shares a contract for sign installation (MP 101-200) with FTE Zone 1 and FTE Zone 3. A contract for maintenance of traffic and a performance-based contract for RISC are currently in place for FTE Zones 1 through 4. Structure inspections are performed under two structure inspection consultants, split geographically for FTE Zones 1 through 4. In addition to the scheduled structure safety inspection, the Structure Inspection Consultants are required to respond in a timely fashion for emergency inspection and load analysis of structure damage from vehicles or storm impacts.

Figure 4.2 FTE Maintenance Zones



FTE intends to move to an AM contract for FTE Zone 2, based in part on line item contract costs and will proceed with an AM contract if bid prices are lower than previous FTE experience. FTE determines asset maintenance contract use by the overall scale of the contract (100 miles of road optimal according to AM contractors) and in consideration of rural versus urban roadways. FTE indicated that it may be more cost effective to manage conventional maintenance contracts on longer distance rural roadways.

FTE Zone 3 (Orlando Area)

FTE Zone 3 is maintained by Transfield Services, North America-Transportation Infrastructure (TSNA-TI) through a seven-year AM contract secured through a competitive sealed bid using a best-value bid evaluation method. The $35.9 million contract was awarded in December 2005 and is scheduled to expire this year. While the contract contained one renewal option for the original term of the contract that could have been exercised at FTE's sole discretion, FTE chose to rebid the contract based on competitive pricing and maintenance needs/performance. A new competitively bid seven-year AM contract has been awarded to Infrastructure Corporation of America (ICA) for $33.3 million, resulting in anticipated savings of $2.6 million over the seven-year term of the contract.

The contract is a lump sum contract with only one pay item listed in the contract and is paid out at a monthly rate provided in the payment schedule.

FTE Zone 3 limits include the turnpike from MP 200-312, the Seminole Expressway (SR 417), the Western Beltway, Part C (SR 429), the Beachline Expressway (SR 528) and the Southern Connector Extension (SR 417), as illustrated in Figure 4.2. FTE Zone 3 lane miles, excluding ramps, total in excess of 800 miles, nearly 750 of which are on the SHS system. FTE Zone 3 encompasses 150 centerline miles.

FTE Zone 3 shares a contract for traffic control devices with FTE Zone 4 in addition to a contract for sign installation (MP 201-236) that is shared with FTE Zone 1 and FTE Zone 2. A contract for maintenance of traffic and a performance-based contract for RISC are currently in place for FTE Zones 1 through 4. Structure inspections are performed under two structure inspection consultants, split geographically for FTE Zones 1 through 4. In addition to the scheduled structure safety inspection, the Structure Inspection Consultants are required to respond in a timely fashion for emergency inspection and load analysis of structure damage from vehicles or storm impacts.

FTE Zone 4 (Tampa Area)

FTE Zone 4 is maintained by Transfield Services, North America-Transportation Infrastructure through a five-year AM contract secured through a competitive sealed bid using a best-value bid evaluation method. The $15.9 million contract was awarded in January 2011 and is scheduled to expire in December 2015. The contract contains one or more renewal options at FTE's sole discretion not to exceed the original five-year term of the contract and indicates that inflation will be considered at the time of renewal and could result in an increase, decrease or no change in value.

The contract is a lump sum contract with only one pay item listed in the contract and is paid out at a monthly rate provided in the payment schedule.

FTE Zone 4 limits include the Polk Parkway (SR 570), the Veterans Expressway and SPUR (SR 589) and the Suncoast Parkway (SR 589), as illustrated in Figure 4.2. FTE Zone 4 lane miles, excluding ramps, total 400 miles, nearly 360 of which are on the SHS system. FTE Zone 4 encompasses 82 centerline miles.

FTE Zone 4 shares a contract for traffic control devices with Zone 3. A contract for maintenance of traffic and a performance-based contract for RISC are currently in place for FTE Zones 1 through 4. Structure inspections are performed under two structure inspection consultants, split geographically for FTE Zones 1 through 4. In addition to the scheduled structure safety inspection, the Structure Inspection Consultants are required to respond in a timely fashion for emergency inspection and load analysis of structure damage from vehicles or storm impacts.

MDX

MDX bridges and roadways are maintained by Transfield Services, North America-Transportation Infrastructure through a 66-month AM contract secured through a competitive sealed bid using a best-value bid evaluation method. MDX bids a combination of lump sum, cyclical completion items and unit cost items as well as optional services. The $31.7 million contract was awarded in January 2009 and is scheduled to expire in June 2014. The contract contains two renewal options at MDX's sole discretion not to exceed two years each and indicates that inflation will be considered at the time of renewal and could result in an increase, decrease or no change in value.

The contract is a lump sum contract with only one pay item listed in the contract and requires monthly invoicing with payment based on 1/12th of the amount indicated for a given fiscal year.

A contractual requirement unique to MDX is a contractor requirement to provide one person to be located at the MDX Headquarters full time. The employee is designated the Reports and Submittals Manager, whose primary responsibility is performing status reporting and record archiving. All records and reports are processed by the manager within specific timeframes.

MDX limits include the Airport Expressway (SR 112), the Dolphin Expressway (SR 836), the Don Shula Expressway (SR 874), the Snapper Creek Expressway (SR 878) and the Gratigny Parkway (SR 924), as illustrated in Figure 4.3. MDX lane miles, excluding ramps, total 220 miles, all of which are on the SHS system. MDX encompasses 34 centerline miles.

MBBA

The Mid-Bay Bridge is maintained by Transfield Services, North America-Transportation Infrastructure through a seven-year AM contract secured by FDOT District 3 through a competitive sealed bid using a best-value bid evaluation method. The $18.4 million

contract was awarded in July 2011 and is scheduled to expire in June 2018. The contract contains one or more renewal options at the sole discretion of FDOT District 3 not to exceed the original seven-year term of the contract and indicates that inflation will be considered at the time of renewal and could result in an increase, decrease or no change in value.

The contract is a lump sum contract with only one pay item listed in the contract and is paid out at a monthly rate provided in the payment schedule.

MBBA limits include the Mid-Bay Bridge (SR 293) and the Mid-Bay Bridge Connector (to SR 85), as illustrated in Figure 4.3. MBBA lane miles, excluding ramps, total 21 miles, all of which are on the SHS system. MBBA encompasses 7.2 centerline miles.

OCCEA

OOCEA bridges and roadways are maintained by two separate AM contracts secured through competitive sealed bids using a best-value bid evaluation method. Both OOCEA contracts provide a reduced payment schedule tied to construction activities that would prevent the contractor from completing all contracted services in the construction area.

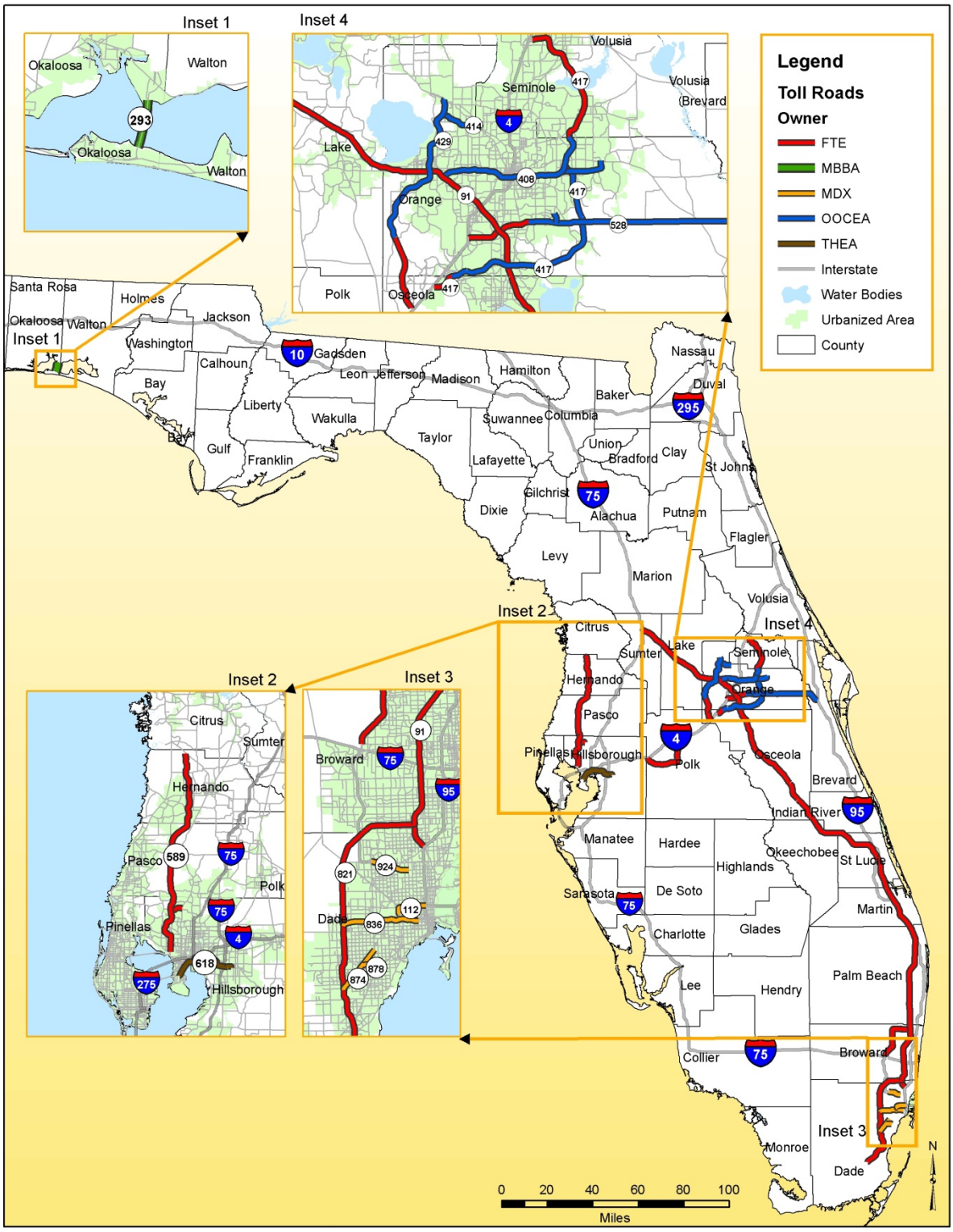
Both contracts are lump sum contracts with only one pay item listed in the contract and require monthly invoicing with payment based on a monthly payout schedule calculated on the value of the total contract.

The Daniel Webster Western Beltway (SR 429) and the John Land Apopka Expressway (SR 414), as illustrated in Figure 4.3, are maintained by Infrastructure Corporation of America pursuant to a five-year AM contract awarded in July 2010. The $8 million contract is scheduled to expire in June 2015. The contract contains five renewal options not to exceed one year each.

The Spessard L. Holland East-West Expressway (SR 408), the Central Florida GreeneWay (SR 417), the Martin Andersen Beachline Expressway (SR 528), and the Goldenrod Road Extension (SR 551), as illustrated in Figure 4.3, are maintained by Jorgensen Contract Services, LLC (JCS) pursuant to a five-year AM contract awarded in July 2011. The $17 million contract is scheduled to expire in June 2016. The contract contains five renewal options at OOCEA's sole discretion not to exceed one year each and makes no mention of additional compensation for contract renewal.

OOCEA lane miles, including ramps, total 671 miles, 563 of which are on the SHS system. OOCEA encompasses 105 centerline miles.

Figure 4.3 Toll Road Owner



THEA

THEA bridges and roadways are maintained by Transfield Services, North America-Transportation Infrastructure through a 54-month AM contract secured through a competitive sealed bid using a best-value bid evaluation method. The $6.4 million contract was awarded in January 2009 and is scheduled to expire in June 2013. The contract contains one renewal option at THEA's sole discretion not to exceed four years. THEA's contract includes a three percent increase in the lump sum annual fee for current contract years two through four. THEA's renewal option contains similar increases for years five through eight.

The contract is a lump sum contract with only one pay item listed in the contract and requires monthly invoicing with payment based on 1/12th of the amount indicated for a given fiscal year.

THEA limits include the Lee Roy Selmon Expressway (SR 618), Reversible Express Lanes (REL) (SR 618A) and Brandon Parkway, as illustrated in Figure 4.3. THEA lane miles, including ramps, total 115.8 miles, 115.4 of which are on the SHS system. THEA encompasses 26.2 centerline miles.

4.2.2 FTE and Authority Performance Requirements

Authority maintenance performance, in addition to performance in a variety of other areas, is evaluated annually by FTC using established performance metrics. Oversight and monitoring of FTE by FTC was established pursuant to Section 20.23(2)(b)8, F.S. In 2007, the legislature passed House Bill 985, amending Section 20.23(2)(b)8, F.S. and expanding FTC's oversight role to monitor the efficiency, productivity and management of Authorities created under Chapters 343 and 348, F.S., including MDX, OOCEA and THEA. FTC was specifically charged to conduct periodic reviews of each Authority's operations and budget, acquisition of property, management of revenue and bond proceeds, and compliance with applicable laws and generally accepted accounting principles. On July 1, 2010, pursuant to House Bill 1271, the newly created OCX became subject to FTC oversight; however, OCX operates no facilities at the present time. Performance measures and objectives established for the Turnpike Enterprise differ slightly from those established for the Authorities, including MBBA. The Mid-Bay Bridge is maintained and operated by FDOT pursuant to a Lease-Purchase Agreement with the Mid-Bay Bridge Authority and falls outside of FTC performance monitoring.

Routine maintenance of Florida's SHS is driven by three programs FDOT has established to meet legislatively mandated standards for the physical condition of the SHS and to achieve objectives and strategies detailed in the long-term Florida Transportation Plan. These FDOT programs include the Pavement Management Program, the Bridge Inspection Program and the Maintenance Rating Program (MRP). These three programs detail the performance standards used to assist in the evaluation of AM contracts within Florida.

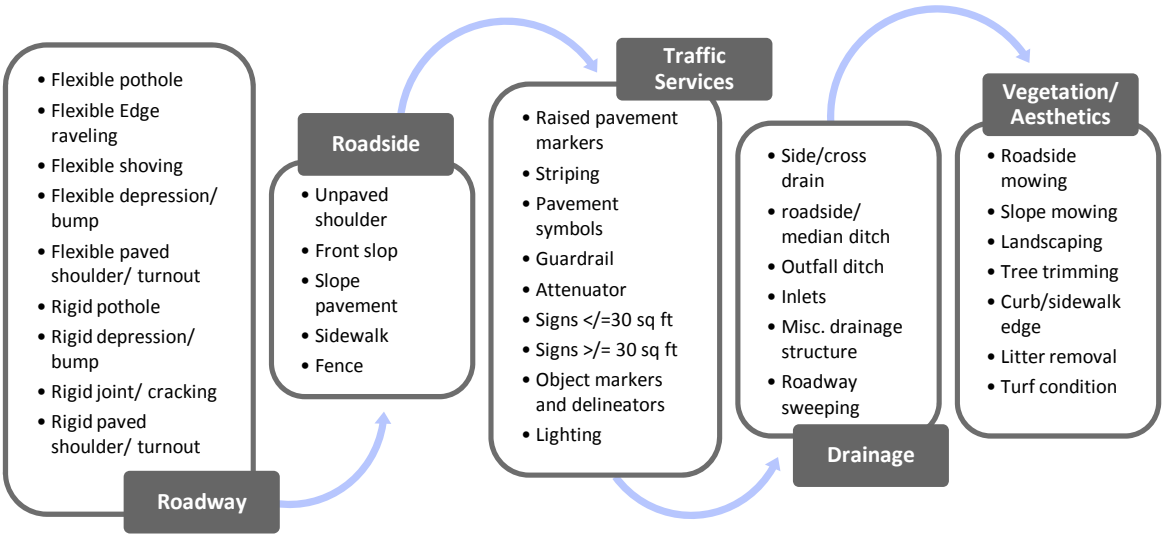
Annually, the Pavement Condition Unit conducts a survey of the entire SHS in support of the Department's Pavement Management Program. Data collected (in terms of crack, ride, and rut measurements) are used to assess the condition and performance of the State's roadway as well as to predict future rehabilitation needs that form the basis of legislative resurfacing budget requests and distribution of funds to the districts. In addition, the unit oversees the Federally mandated Highway Performance Monitoring System (HPMS) and project-level evaluations that involve assessment of the ride quality of pavement surfaces for acceptance purposes. FDOT has established that 80 percent of pavement on the SHS will meet department standards, while the FTC requires that greater than 85 percent of the Authorities SHS lane miles rate "good or excellent."

Within FDOT, Structures Operations provides statewide oversight of bridge inspection, bridge management, bridge repair, and bridge rehabilitation programs, including budget, and provides technical support and oversight for FDOT's statewide bridge load rating program. Each bridge is to be inspected at regular intervals not to exceed 24 months; nonetheless, the condition of a bridge's components, major features and the bridge posting rating can require increased frequency of inspection. Each district runs its own bridge inspection efforts, including underwater bridge inspections, which are performed by a combination of in-house teams and consultant efforts, and five districts have in-house dive teams. FTE and the Authorities may complete their own inspections and provide FDOT with the results of their findings. FDOT's primary measure is to have 90 percent of its bridges achieve a National Bridge Inventory (NBI) rating of 6 or higher. The NBI is a Federal Highway Administration (FHWA) requirement used to evaluate the condition of bridges, based on a scale of 0 (failed condition) to 9 (excellent condition). FTC requires that greater than 95 percent of the Authorities bridge structures rate "good or excellent (6 or 7)."

Through the Maintenance Rating Program, FDOT provides a uniform system for evaluating maintenance features on the SHS in Florida. Trained FDOT personnel, using an MRP Handbook, survey all types of highway facilities. Locations to be surveyed are randomly generated from the Department's Roadway Characteristics Inventory (RCI) with approximately 30 samples per facility type or a minimum of three samples for each available mile for each maintenance area. Each of the highway facility types is divided into the following five elements: roadway, roadside, traffic services, drainage, and vegetation/aesthetics, with each of the elements further divided into features that are characteristic of that element. The MRP grades the five maintenance elements as well as the characteristics and arrives at a composite score based on a scale of 1 to 100. Results are reported for each of the three rating periods and an average annual rating is calculated based on the results from the three ratings. Results of the MRP provide valuable information that can be used not only to schedule and prioritize routine maintenance activities, but also to provide uniform maintenance conditions that meet established FDOT objectives. While FDOT has committed to achieve an MRP of at least 80 on the SHS, FTE has chosen to establish a target MRP of at least 90, which mirrors the FTC MRP rating of at least 90 for the Authorities.

All contracts incorporate the MRP as a condition assessment for evaluating compliance and require the contractor to achieve and maintain specific overall, element and characteristic MRP ratings. The five major MRP elements along with characteristics associated with each of the elements are illustrated in Figure 4.4.

Figure 4.4 Maintenance Rating Program



MRP ratings are a primary measure utilized by all agencies to evaluate contractor performance. Agencies do, however, differ in their use of specific deductions/disincentives for select maintenance activities. FTE Zone 3, FTE Zone 4, MBBA and MDX identify specific deductions/disincentives for a number of maintenance activities. Failure to complete an inspection on time, submit the completed inspection report on time, and complete the identified repair on time could result in three separate monetary deductions. If MDX's contractor fails to meet the required year end FDOT MRP rating two times, the contract can be terminated. OOCEA assesses liquidated damages for failure to complete work, particularly work that involves safety-related emergency repair and must be completed quickly to restore service or access. THEA uses two specific deductions. The first is a general work order, the use of which is driven by THEA's practice of Authority-performed rather than contractor-performed inspections. The second deduction involves accurate reporting. Should THEA perform a concurrent inspection on any asset and find that the contractor submitted a falsified or blatant erroneous report, THEA issues a deduction for each report.

Both THEA and MDX provided a six-month period at the start of the contract term that focused on the contractor achieving a minimum MRP. MDX included a significant monetary incentive/disincentive for timely achievement of the initial MRP rating. For the effective annual score of the first fiscal year, a onetime MRP incentive payment of $24,000 was available to the contractor for achieving an FDOT MRP rating equal to one point above the initial baseline score, or a score of 90, whichever was greater. In addition, MDX would assess, as a reduction, $24,000 for failure to achieve an FDOT MRP rating equal to one point above the initial baseline score, or a score of 90, whichever was greater. MDX increased the MRP rating by one point per year to a maximum of 91, except that

regardless of the baseline score, after completion of the third full fiscal year of the contract the MRP requirement was 91.

FTE and Authority performance criteria as detailed in AM contracts include the following:

- FDOT MRP requirements as expanded and amended:
  - Overall MRP rating ranging from 80 to 92; Element rating ranging from 75 to 90; Characteristic rating ranging from 70 to 81;
  - Sample MRP ratings every four months conducted by FDOT, by the contractor or subcontracted by the contractor to a qualified firm trained by FDOT; and
  - Retainage for each FDOT MRP rating point below target during four-month rating periods (returned if annual rating achieved) and/or annual rating:
    - Overall MRP rating – retainage of 0.5 percent or one percent or $5,000;
    - Element rating – retainage of 0.25 percent or 0.5 percent or $500; and
    - Characteristic rating – retainage of 0.125 percent or 0.25 percent or $250.
- Deductions for failure to perform;
- Timely and accurate submittal of deliverables, tasks, and cycle;
- $500 per day deduction for failure to perform General Work Order;
- $5,000 per falsified or erroneous report;
- Disincentives detailed in contract;
- Contractor Annual Evaluation;
- Response time incentives;
- Discipline-specific requirements;
- Liquidated damages not to exceed $200 per day for failure to complete the work;
- Comparing actual work performance to criteria in scope; and
- Semiannual grading of contractor according to Asset Maintenance Contracts Procedure.

4.2.3 Routine Maintenance Practices

Contracts generally include responsibility for similar maintenance activities with relatively few exceptions. Most agencies require the contractor to inspect, maintain and repair guardrail, attenuators and signs. THEA completes semiannual guardrail and attenuator inspections and provides annual inspection of signs and drainage systems; however, the contractor is responsible for repair and maintenance. OOCEA's attenuators are inspected semiannually by FDOT. An overview of select maintenance activities with the range of corresponding deductions for the contractor's failure to perform the maintenance activities, as designated in FTE and Authority AM contracts, is presented in Table 4.1.

Table 4.1 Select Maintenance Activity Performance

	Guardrail	Attenuator	Signs
Maintenance Activity	Deduction per Day per Item for Failure to Perform		
Perform timely inspections	$500/$1,000	$500/$1,000	$500/$1,000
Submit timely Inspection Reports	$100/$500/$1,000	$100/$500/$1,000	$100/$500/$1,000
Make repairs identified in Inspection Reports	$200/$500	$200/$500	$500
Make temporary safety repairs from incidents	$200/$500/$1,000	$200/$500/$1,000	$100/$200
Make permanent safety repairs from incidents	$200/$500/$1,000	$200/$500/$1,000	$200/$500
Characteristic rating <95 (per point)	.25%	.25%	
Replace missing signs (Regulatory)			$200/$2,000

Source: CUTR assembled data from: Authority and FTE active Bridge and Roadway Maintenance Service Contracts.

Bridge and structure inspections are completed by FDOT for several agencies, with routine maintenance and minor repairs completed by the contractor. MDX, THEA and OOCEA contractors inspect and maintain roadway and navigational lights. All agencies with the exception of OOCEA require that the contractor develop an Incident Response Plan/Emergency Management Plan; the contractor must comply with OOCEA's established Emergency Response Plan. Response times for covering graffiti range from two hours (OOCEA) to 36 hours (FTE Zone 4 and MBBA); THEA's time limit is 12 hours and the time limit at MDX is 24 hours. The contractor is responsible for maintenance of traffic at all agencies.

Other common maintenance activities include roadside and slope mowing, vegetation control inspection and maintenance, landscape, turf and tree maintenance, litter removal, clear zone obstructions, mechanical sweeping, and pavements. FTE Zones 3 and 4, MBBA, MDX, and THEA hold the contractor responsible for the development and implementation of a Customer Service Response Plan, require contact with the customer within 24 hours and resolution of the customer service request within two weeks.

MDX is the only Authority that includes facilities maintenance in its asset maintenance contract. FTE Zones 3 and 4 are responsible for maintenance and repair of call boxes. FTE Zones 3 and 4 and MBBA do not include any ITS components or traffic signal maintenance in their contracts. MDX excludes ETC equipment, IT and ITS equipment, and associated Control Power. THEA excludes maintenance of toll booths, the Traffic Management Center (TMC) and the Intelligent Transportation System (ITS). Maintenance of toll facilities and equipment, the fiber optic network, landscaping and aquatic weed control are not part of OOCEA contract.

4.3 Maintenance Costs and Performance Metrics

This section provides a detailed summary of the cost data and performance metrics for FTE and each of the Authorities.

4.3.1 Authority Maintenance Costs and Performance

Metrics for years 2006 through 2011 were reviewed for FTE, MBBA, MDX, OOCEA and THEA. FTE maintenance costs in the aggregate were used in the analysis due to the fact that total routine maintenance costs are not computed for FTE maintenance zones. Factors reviewed include:

- Operating and Maintenance Expense – As presented in Authority and FTE Oversight and Performance Reports, Consolidated Annual Financial Reports and Financial Statements;
- Routine Maintenance Expenses – As presented in Authority and FTE Oversight and Performance Reports, Consolidated Annual Financial Reports and Financial Statements;
- SHS Lane Miles – As provided by FTE and the Authorities; THEA is the only Authority that includes ramps in SHS lane miles;
- Centerline Miles – As provided by FTE and the Authorities;
- Pavement Condition Rating – FDOT requires that 80 percent of pavement on the SHS meet department standards; FTC requires Authorities to achieve greater than 85 percent of SHS lane miles rated good or excellent;
- Bridge Condition Rating – FDOT established that 90 percent of FDOT-maintained bridges meet department standards; FTC requires Authorities to achieve greater than 95 percent of their bridge structures rated "good or excellent"; and
- Overall Maintenance Rating Program Rating – FDOT is committed to achieving an overall MRP of at least 80 on the SHS; FTC established an overall MRP rating of at least 90 for the Authorities; FTE has chosen to establish a target MRP of at least 90.

FTE

Due to the breadth of FTE's facilities, FTE redefined maintenance limits into four separate maintenance zones (FTE Zones 1 through 4). FTE Zone 1 and FTE Zone 2 are maintained by FTE staff through conventional contracts (pay item/low bid-based). FTE Zone 3 is maintained by Transfield Services, North America-Transportation Infrastructure through a seven-year AM contract awarded in December 2005 and scheduled to expire this year. A new competitively bid seven-year AM contract has been awarded to Infrastructure Corporation of America, with anticipated savings of $2.6 million over the seven-year term

of the contract. FTE Zone 4 is maintained by Transfield Services, North America-Transportation Infrastructure through a five-year AM contract awarded in January 2011 and scheduled to expire in December 2015.

FTE indicated that routine maintenance expenses include expenditures on Structures Inspection, Road Ranger, General Consultant, Security for Service Plazas, Rapid Incident Scene Clearance, Toll Facility Maintenance, Permit Administration, Management and Field Inspection. The Expressway Authorities do not necessarily have the same expenditures. FTE expenses and performance metrics are presented in Table 4.2.

In 2011 as compared to 2010, FTE reported an increase of $6.5 million (3.8 percent) in O&M expenses and an increase of $1.9 million (4.8 percent) in routine maintenance costs. Routine maintenance costs represented 23.1 percent of O&M expenses, a 0.2 percent increase over the previous year. FTE added 62 SHS lane miles (excluding ramps) in 2011. O&M expenses per SHS lane mile increased by less than one percent and the maintenance cost per SHS lane mile increased by 1.8 percent. Centerline miles remained unchanged. The O&M expense per centerline mile increased by 3.8 percent and the maintenance cost per centerline mile rose by 4.8 percent.

In 2011, FTE met the pavement condition standard with a 96 percent rating, exceeding FDOT's goal of 80 percent; there was no change in the rating from 2010. FTE also achieved the bridge condition standard with a 92 percent rating, exceeding FDOT's goal of 90 percent. FTE's overall MRP rating remained at 91, and continued to exceed FDOT's goal of 80 and FTE's goal of 90. FTE indicated that in recognition of the need for a higher maintenance level for the purpose of providing value to FTE's customers on a tolled facility, FTE self-imposed this higher standard (MRP of 90) on the Turnpike system. FTE's MRP ratings for FTE Zone 3 and FTE Zone 4 are provided in Table 4.3. FTE Zone 3 and FTE Zone 4 consistently exceeded FTE's overall MRP rating goal.

FTE's O&M expenses have grown 13.8 percent since 2006. Maintenance costs have also grown (3.9 percent increase), but represented a smaller portion of total O&M expenses, falling to 23.1 percent of total O&M expenses in 2011 as compared to 25.3 percent in 2006 (a decrease of 2.2 percent).

The most significant change in FTE expenses occurred in 2010, when FTE reduced O&M expenses by $16 million (an 8.8 percent decrease) compared to 2009, despite adding 20 SHS lane miles and exceeding the pavement standard (increased from 95 to 96 percent), the bridge standard (increased from 94 to 98 percent), and the overall FTE MRP goal.

Table 4.2 FTE Maintenance and Performance Metrics

	Fiscal Year					
Factors	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Operating and Maintenance Expense (O&M) ($000)	155,357	175,386	184,218	186,608	170,262	176,758
Change in O&M Expense ($000) versus previous year		20,029	8,832	2,390	-16,346	6,496
Maintenance Expense ($000)	39,246	42,137	41,044	39,353	38,909	40,789
Change in Maintenance Expense ($000) versus previous year		2,891	-1,093	-1,691	-444	1,880
Maintenance Expense/O&M Expense	25.3%	24.0%	22.3%	21.1%	22.9%	23.1%
Lane Miles on SHS (excluding ramps)	1,962	2,009	2,090	2,092	2,112	2,174
Change in Lane Miles on SHS versus previous year		47	81	2	20	62
O&M Cost per SHS Lane Mile ($000)	79.18	87.30	88.14	89.20	80.62	81.31
Change in O&M Cost per SHS Lane Mile ($000) versus previous year		8.12	0.84	1.06	-8.58	0.69
Maintenance Cost per SHS Lane Mile ($000)	20.00	20.97	19.64	18.81	18.42	18.76
Change in Maintenance Cost per SHS Lane Mile ($000) versus previous year		0.97	-1.34	-0.83	-0.39	0.34
Centerline Miles	454	460	460	460	460	460
Change in Centerline Miles versus previous year		6	0	0	0	0
O&M Cost per Centerline Mile ($000)	342.20	381.27	400.47	405.67	370.13	384.26
Change in O&M Cost per Centerline Mile ($000) versus previous year		39.08	19.20	5.20	-35.53	14.12
Maintenance Cost per Centerline Mile ($000)	86.44	91.60	89.23	85.55	84.58	88.67
Change in Maintenance Cost per Centerline Mile ($000) versus previous year		5.16	-2.38	-3.68	-0.97	4.09
Percent of Pavement Meeting Standards – FDOT Goal 80%	84%	87%	87%	95%	96%	96%
Percent of Bridges Meeting Standards – FDOT Goal 90%	94%	96%	95%	94%	98%	92%
Overall MRP Rating – FDOT Goal 80, FTE Goal 90	89	90	91	92	91	91

Source: CUTR assembled data from: FTE, FTC Performance Reports and Comprehensive Annual Financial Plans.

Table 4.3 FTE Zone 3 and FTE Zone 4 MRP Ratings

	Fiscal Year					
Factors	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
FTE Zone 3						
Overall MRP Rating – FDOT Goal 80, FTE Goal 90	94	93	95	95	95	95
FTE Zone 4						
Overall MRP Rating – FDOT Goal 80, FTE Goal 90	96	97	96	97	95	92

Source: Information received from FTE by e-mail dated November 8, 2012.

Since 2006, FTE's addition of a total of 212 SHS lane miles appears to have offset increased maintenance costs, resulting in a lower maintenance cost per SHS lane mile in 2011 ($18,760) compared to 2006 ($20,000).

MDX

MDX bridges and roadways are maintained by Transfield Services, North America-Transportation Infrastructure through a 66-month AM contract awarded in January 2009 and scheduled to expire in June 2014. MDX expenses and performance metrics are presented in Table 4.4.

Table 4.4 MDX Maintenance and Performance Metrics

	Fiscal Year					
Factors	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Operating and Maintenance Expense (O&M) ($000)	15,975	23,673	23,961	27,135	25,445	26,840
Change in O&M Expense ($000) versus previous year		7,698	289	3,173	-1,689	1,394
Maintenance Expense ($000)	5,621	11,204	3,904	4,597	6,022	6,577
Change in Maintenance Expense ($000) versus previous year		5,583	-7,300	692	1,425	556
Maintenance Expense/O&M Expense	35.2%	47.3%	16.3%	16.9%	23.7%	24.5%
Lane Miles on SHS (excluding ramps)	209	221	221	221	220	220
Change in SHS Lane Miles versus previous year		12	0	0	-1	0
O&M Cost per SHS Lane Mile ($000)	76.43	107.12	108.42	122.78	115.66	122.00
Change in O&M Cost per SHS Lane Mile ($000) versus previous year		30.68	1.31	14.36	-7.12	6.34
Maintenance Cost per SHS Lane Mile ($000)	26.90	50.70	17.67	20.80	27.37	29.90
Change in Maintenance Cost per SHS Lane Mile ($000) versus previous year		23.80	-33.03	3.13	6.57	2.53
Centerline Miles	31	34	34	34	34	34
Change in Centerline Miles versus previous year		2	0	0	0	0
O&M Cost per Centerline Mile ($000)	512.02	704.54	713.14	807.58	757.31	799.06
Change in O&M Cost per Centerline Mile ($000) versus previous year		192.53	8.60	94.45	-50.28	41.75
Maintenance Cost per Centerline Mile ($000)	180.17	333.45	116.20	136.81	179.22	195.82
Change in Maintenance Cost per Centerline Mile ($000) versus previous year		153.28	-217.25	20.60	42.41	16.60
Percent of Pavement Meeting Standards – FTC Goal 85%	97%	96%	94%	89%	92%	91%
Percent of Bridges Meeting Standards – FTC Goal 95%	97%	98%	98%	98%	98%	98%
Overall MRP Rating – FTC Goal 90	88	91	90	91	91	92

Source: CUTR assembled data from: MDX, FTC Performance Reports and Comprehensive Annual Financial Plans.

In 2011 as compared to 2010, MDX reported a 5.5 percent increase in O&M expenses and a 9.2 percent increase in routine maintenance costs. Routine maintenance costs represented 24.5 percent of O&M expenses, an increase of 0.8 percent over the previous year. SHS lane

miles (excluding ramps) and centerline miles remained unchanged. O&M expenses per SHS lane mile and centerline mile increased by 5.5 percent and maintenance cost per SHS lane mile and centerline mile grew by 9.2 percent.

In 2011, MDX met the pavement condition standard with a 91 percent rating, exceeding FTC's goal of 85 percent. MDX also achieved the bridge condition standard with a 98 percent rating, exceeding FTC's goal of 95 percent. MDX's overall MRP rating grew to 92 from 91, exceeding FTC's goal of 90.

MDX's O&M expenses have grown 68.0 percent since 2006. Maintenance costs have also grown (17.0 percent increase), but represent a smaller portion of total O&M expenses, falling to 24.5 percent of total O&M expenses in 2011 as compared to 35.2 percent in 2006 (a decrease of 10.7 percent).

Since 2006, MDX's addition of a total of 11 SHS lane miles and two centerline miles appears to have been insufficient to offset increased maintenance costs, resulting in a higher maintenance cost per SHS lane mile in 2011 ($29,900) compared to 2006 ($26,900) and a higher maintenance cost per centerline mile in 2011 ($195,820) compared to 2006 ($180,170).

Maintenance expenses reported in 2007 appeared to be higher than other maintenance expenses reported. A review of the FTC's *Transportation Authority Monitoring and Oversight Fiscal Year 2007 and 2008 Reports* revealed that MDX maintenance expenditures in 2007 contained $4.9 million in clean-up cost expenses related to Hurricanes Katrina and Wilma. Maintenance costs were reconciled in 2008, following reimbursement of eligible expenses, and MDX maintenance expenses returned to normal in 2009.

MDX reported that routine maintenance costs for FY 2011 increased primarily due to periodic maintenance expenses related to the installation of antitheft devices on certain street lighting and signing overlays, and increases in roadway and plaza maintenance, consultant maintenance support, ITS maintenance and ROW maintenance.

MBBA

Mid-Bay Bridge maintenance is provided by Transfield Services, North America-Transportation Infrastructure through a seven-year AM contract secured by FDOT District 3, awarded in July 2011 and scheduled to expire in June 2018. MBBA expenses and performance metrics are presented in Table 4.5.

In 2011 as compared to 2010, MBBA reported a 5.8 percent increase in O&M expenses and a 21.0 percent increase in maintenance expenses. Maintenance costs represented 8.9 percent of O&M expenses, a 1.1 percent increase over the previous year. SHS lane miles (excluding ramps) grew by 49.3 percent (from 14 to 21), while O&M expenses per SHS lane mile fell by 29.1 percent and the maintenance cost per SHS lane mile was reduced by 19.0 percent. Three centerline miles were added to the existing four centerline miles (a 63.6 percent increase), while the O&M expense per centerline mile fell by 35.3 percent and the maintenance cost per centerline mile decreased by 26.1 percent.

Table 4.5 MBBA Maintenance and Performance Metrics

Factors	Fiscal Year 2006	2007	2008	2009	2010	2011
Operating and Maintenance Expense (O&M) ($000)	1,837	2,162	2,271	2,350	2,138	2,263
Change in O&M Expense versus previous year		325	109	79	-212	125
Maintenance Expense ($000)	194	246	213	195	167	202
Change in Maintenance Expense ($000) versus previous year		52	-33	-18	-28	35
Maintenance Expense/O&M Expense	10.6%	11.4%	9.4%	8.3%	7.8%	8.9%
Lane Miles on SHS (excluding ramps)	14	14	14	14	14	21
Change in Lane Miles on SHS versus previous year		0	0	0	0	7
O&M Cost per SHS Lane Mile ($000)	133.12	156.67	164.57	170.29	154.93	109.85
Change in O&M Cost per SHS Lane Mile ($000) versus previous year		23.55	7.90	5.72	-15.36	-45.07
Maintenance Cost per SHS Lane Mile ($000)	14.06	17.83	15.43	14.13	12.10	9.81
Change in Maintenance Cost per SHS Lane Mile ($000) versus previous year		3.77	-2.39	-1.30	-2.03	-2.30
Centerline Miles	4	4	4	4	4	7
Change in Centerline Miles versus previous year		0	0	0	0	3
O&M Cost per Centerline Mile ($000)	417.50	491.36	516.14	534.09	485.91	314.31
Change in O&M Cost per Centerline Mile ($000) versus previous year		73.86	24.77	17.95	-48.18	-171.60
Maintenance Cost per Centerline Mile ($000)	44.09	55.91	48.41	44.32	37.95	28.06
Change in Maintenance Cost per Centerline Mile ($000) versus previous year		11.82	-7.50	-4.09	-6.36	-9.90
Overall MRP Rating – FDOT Goal 80			85	85	85	85

Source: CUTR assembled data from: MBBA, FDOT Traffic Engineer's Annual Report and MBBA Financial Statements.

MBBA's O&M expenses have grown 23.2 percent since 2006. Maintenance costs have also grown (4.1 percent increase), but represent a smaller portion of total O&M expenses, falling to 8.9 percent of total O&M expenses in 2011 as compared to 10.6 percent in 2006 (a decrease of 1.6 percent).

Since 2008, MBBA has consistently achieved an overall MRP rating of 85, exceeding the FDOT goal of 80.

Since 2006, MBBA's addition of seven SHS lane miles and three centerline miles appears to have offset increased O&M expenses and routine maintenance costs, resulting in not only lower O&M expenses per SHS lane mile and per centerline mile, but also lower maintenance costs per SHS lane mile and centerline mile in 2011 compared to 2006.

OCCEA

OOCEA bridges and roadways are maintained by two separate AM contracts that include a five-year AM contract awarded to Infrastructure Corporation of America in July 2010 and scheduled to expire in June 2015 and a five-year AM contract awarded to Jorgensen Contract Services, LLC (JCS) in July 2011 and scheduled to expire in June 2016. OOCEA's maintenance and performance metrics are presented in Table 4.6.

In 2011 as compared to 2010, OOCEA reported a 2.4 percent increase in O&M expenses and a 0.7 percent increase in routine maintenance costs. Routine maintenance costs represented 29.0 percent of O&M expenses, a 0.5 percent decrease over the previous year. SHS lane miles (excluding ramps) and centerline miles remained unchanged, while O&M expenses per SHS lane mile and centerline mile grew 2.4 percent and maintenance cost per SHS lane mile and centerline mile increased 0.7 percent.

In 2011, OOCEA met the pavement condition standard with a 100 percent rating, exceeding FTC's goal of 85 percent; the rating improved by one percentage point from 2010. OOCEA also achieved the bridge condition standard with a 99 percent rating, exceeding FTC's goal of 95 percent; the rating remained unchanged from 2010. OOCEA's overall MRP rating grew from 92 to 93, exceeding FTC's goal of 90.

OOCEA's O&M expenses have grown 6.4 percent since 2006. Maintenance costs have also grown (24.1 percent increase) and represent a larger portion of total O&M expenses, increasing to 29.0 percent of total O&M expenses in 2011 as compared to 24.8 percent in 2006 (an increase of 4.1 percent).

Since 2006, OOCEA's addition of a total of 171 SHS lane miles appears to have offset increased O&M expenses and routine maintenance costs, resulting in a lower O&M costs per SHS lane mile in 2011 ($83,820) compared to 2006 ($113,180) as well as a lower maintenance cost per SHS lane mile in 2011 ($24,290) compared to 2006 ($28,120).

Table 4.6 OOCEA Maintenance and Performance Metrics

Factors	Fiscal Year 2006	2007	2008	2009	2010	2011
Operating and Maintenance Expense (O&M) ($000)	44,368	46,308	50,059	45,928	46,104	47,191
Change in O&M Expense ($000) versus previous year		1,940	3,751	-4,131	176	1,087
Maintenance Expense ($000)	11,024	12,482	14,468	13,695	13,577	13,677
Change in Maintenance Expense ($000) versus previous year		1,458	1,986	-773	-118	100
Maintenance Expense/O&M Expenses	24.8%	27.0%	28.9%	29.8%	29.4%	29.0%
Lane Miles on SHS (excluding ramps)	392	439	438	563	563	563
Change in Lane Miles on SHS versus previous year		47	-1	125	0	0
O&M Cost per SHS Lane Mile ($000)	113.18	105.49	114.29	81.58	81.89	83.82
Change in O&M Cost per SHS Lane Mile ($000) versus previous year		-7.70	8.80	-32.71	0.31	1.93
Maintenance Cost per SHS Lane Mile ($000)	28.12	28.43	33.03	24.33	24.12	24.29
Change in Maintenance Cost per SHS Lane Mile ($000) versus previous year		0.31	4.60	-8.71	-0.21	0.18
Centerline Miles	100	100	100	105	105	105
Change in Centerline Miles versus previous year		0	0	5	0	0
O&M Cost per Centerline Mile ($000)	443.68	463.08	500.59	437.41	439.09	449.44
Change in O&M Cost per Centerline Mile ($000) versus previous year		19.40	37.51	-63.18	1.68	10.35
Maintenance Cost per Centerline Mile ($000)	110.24	124.82	144.68	130.43	129.30	130.26
Change in Maintenance Cost per Centerline Mile ($000) versus previous year		14.58	19.86	-14.25	-1.12	0.95
% of Pavement Meeting Standards – FTC Goal 85%	79%	85%	98%	100%	99%	100%
% of Bridges Meeting Standards – FTC Goal 95%	100%	100%	99%	100%	99%	99%
Overall MRP Rating – FTC Goal 90	90	89	92	94	92	93

Source: CUTR assembled data from: OOCEA, FTC Performance Reports and Comprehensive Annual Financial Plans.

THEA

THEA bridges and roadways are maintained by Transfield Services, North America-Transportation Infrastructure through a 54-month AM contract awarded in January 2009 and scheduled to expire in June 2013. The new AM contract was estimated by THEA to generate savings of approximately $1.4 million over 4.5 years, while incorporating an increase in THEA's minimum MRP rating from 80 (FDOT standard pursuant to LPA) to 90 (FTC standard for Authorities). THEA expenses and performance metrics are presented in Table 4.7.

Table 4.7 THEA Maintenance and Performance Metrics

Factors	Fiscal Year 2006	2007	2008	2009	2010	2011
Operating and Maintenance Expense (O&M) ($000)	6,752	8,463	10,071	10,856	9,302	7,265
Change in O&M Expense ($000) versus previous year		1,711	1,609	784	-1,554	-2,037
Maintenance Expense ($000)	1,349	2,085	3,530	4,022	3,475	3,265
Change in Maintenance Expense ($000) versus previous year		736	1,445	492	-547	-210
Maintenance Expense/O&M Expenses	20.0%	24.6%	35.1%	37.0%	37.4%	44.9%
Lane Miles on SHS (including ramps)	87	97	115	115	115	115
Change in Lane Miles on SHS versus previous year		10	18	0	0	0
O&M Cost per SHS Lane Mile ($000)	77.92	87.24	87.25	94.05	80.58	62.94
Change in O&M Cost per SHS Lane Mile ($000) versus previous year		9.32	0.01	6.80	-13.46	-17.64
Maintenance Cost per SHS Lane Mile ($000)	15.57	21.49	30.58	34.84	30.10	28.29
Change in Maintenance Cost per SHS Lane Mile ($000) versus previous year		5.93	9.09	4.26	-4.74	-1.82
Centerline Miles	17	20	26	26	26	26
Change in Centerline Miles versus previous year		3	6	0	0	0
O&M Cost per Centerline Mile ($000)	401.91	418.95	382.94	412.77	353.68	276.24
Change in O&M Cost per Centerline Mile ($000) versus previous year		17.04	-36.01	29.83	-59.09	-77.43
Maintenance Cost per Centerline Mile ($000)	80.30	103.21	134.23	152.93	132.12	124.14
Change in Maintenance Cost per Centerline Miles ($000) versus previous year		22.92	31.01	18.70	-20.81	-7.98
% of Pavement Meeting Standards – FTC Goal 85%	100%	100%	100%	98%	100%	100%
% of Bridges Meeting Standards – FTC Goal 95%	86%	86%	86%	86%	97%	97%
Overall MRP Rating – FTC Goal 90	89	86	88	90	92	92

Source: CUTR assembled data from: THEA, FTC Performance Reports and Financial Statements.

In 2011 as compared to 2010, THEA reported a 21.9 percent decrease in O&M expenses and a 6.0 percent decrease in routine maintenance costs. Routine maintenance costs represented 44.9 percent of O&M expenses, a 7.6 percent increase over the previous year. SHS lane miles (including ramps) and centerline miles remained unchanged.

In 2011, THEA met the pavement condition standard with a 100 percent rating, exceeding FTC's goal of 85 percent; the rating remained unchanged from 2010. THEA also achieved the bridge condition standard with a 97 percent rating, exceeding FTC's goal of 95 percent;

the rating remained unchanged from 2010. THEA's overall MRP rating remained unchanged at 92, exceeding FTC's goal of 90.

THEA's O&M expenses have grown 7.6 percent since 2006. Maintenance costs have also grown and represent a larger portion of total O&M expenses, increasing to 44.9 percent of total O&M expenses in 2011 as compared to 20.0 percent in 2006 (an increase of 25.0 percent).

Given THEA's reduction in maintenance costs in 2010 and 2011, THEA's O&M costs were examined further. THEA reduced O&M expenditures by $1.6 million (a 14.3 percent decrease) in 2010 and by $2.0 million (a 21.9 percent decrease) in 2011. THEA reduced maintenance costs by $547 thousand (a 13.6 percent decrease) in 2010 and by $210 thousand (a 6.0 percent decrease) in 2011. The bulk of the reduction in O&M expenditures occurred in operations, $1.0 million (a 14.7 percent reduction) in 2010 and $1.8 million (a 31.3 percent reduction) in 2011. Because operating expenses declined at a rate greater than maintenance expenses, maintenance costs accounted for a larger portion of the expenses.

THEA has added a total of 29 SHS lane miles and 10 centerline miles since 2006. The maintenance cost per SHS lane mile was $28,290 in 2011 compared to $15,570 in 2006, and the maintenance cost per centerline mile was $124,140 in 2011 compared to $80,300 in 2006.

4.4 Regional Sharing

This section will discuss options for sharing resources within regions. The section will focus on the potential for providing greater continuity in the provision of maintenance services statewide.

4.4.1 Maintenance Limits

From a maintenance perspective, based on the asset maintenance agreements reviewed, there appears to be minimal sharing among the Authorities or between FTE and the Authorities. Maintenance activities are performed within the limits defined in the contracts. The Authorities function within their geographic footprints in much the same way that FTE's Zones 3 and 4 operate.

A concept that might have potential for regional sharing is addressing the geographic "overlap" or continuity in the provision of maintenance services. For areas that abut or are contained within another Authority's footprint (as illustrated in Central Florida shown on Figure 4.3), affected agencies could consider identifying optimal limits and adjust asset maintenance agreements accordingly. It should be noted that all areas with the exception of FTE Zones 1 and 2 currently have contracts in place, and some renewal options could extend contracts until 2024.

FTE has indicated its intent to bid an AM contract for FTE Zone 2, which could provide FTE with an opportunity to explore possible overlap areas suitable for coordination of maintenance activities with neighboring agencies. FTE recently awarded a new seven-year AM contract for FTE Zone 3, which is scheduled to begin at the end of this year.

Table 4.8 presents a timeline of existing contracts and renewal periods. FTE and Authority AM contracts are currently held by the following contractors:

- FTE Zone 3, FTE Zone 4, MBBA, MDX and THEA – Contract with Transfield Services, North America-Transportation Infrastructure (TSNA-TI), formerly VMS, Inc.;
- OOCEA – Contract with Infrastructure Corporation of America (ICA); and
- OOCEA – Jorgensen Contract Services, LLC (JCS).

Table 4.8 Current Asset Maintenance Contracts and Renewals

	FTE Zone 3	FTE Zone 4	MBBA	MDX	OOCEA	OOCEA	THEA
2006	TSNA-TI						
2007	TSNA-TI						
2008	TSNA-TI						
2009	TSNA-TI			TSNA-TI			TSNA-TI
2010	TSNA-TI			TSNA-TI	ICA		TSNA-TI
2011	TSNA-TI	TSNA-TI	TSNA-TI	TSNA-TI	ICA	JCS, LLC	TSNA-TI
2012	TSNA-TI	TSNA-TI	TSNA-TI	TSNA-TI	ICA	JCS, LLC	TSNA-TI
2013	ICA	TSNA-TI	TSNA-TI	TSNA-TI	ICA	JCS, LLC	TSNA-TI
2014	ICA	TSNA-TI	TSNA-TI	TSNA-TI	ICA	JCS, LLC	
2015	ICA	TSNA-TI	TSNA-TI			JCS, LLC	
2016	ICA		TSNA-TI				
2017	ICA		TSNA-TI				
2018	ICA						
2019	ICA						
2020							
2021							
2022							
2023							
2024							
Renewal Options							

Source: CUTR assembled information from: Authority and FTE active Bridge and Roadway Maintenance Service Contracts.

4.4.2 FTE and Authority Best Practices and Efficiencies

In terms of best practices, FTC and FDOT appear to be the threads that tie all the systems together through the use of performance standards, supplemented with FDOT's required inspection programs and detailed maintenance specifications and standards that provide a framework for effective maintenance operations. All agencies incorporate standards provided through FDOT's Pavement Condition Unit, Bridge Inspection Program and Maintenance Rating Program. The effectiveness of the agencies' maintenance activities is documented in this report.

The Authorities and FTE have incorporated performance-based contracts that are competitively bid through use of a best-value bid evaluation method. Performance requirements are detailed in the contracts along with an established condition assessment method for evaluating contractor compliance. The contracts require a high level of oversight on the part of the contractor, minimize the amount of supervision required on the part of the Authority, and encourage contractors to find the best way to meet performance requirements within the required parameters of the contract. The contracts incorporate a performance-based pay adjustment system that provides a strong financial incentive for contractors to be efficient. To maximize profits, the contractor must reduce activities to the smallest possible volume of well designed interventions while, at the same time, ensuring that predefined outputs are achieved and maintained.

The Authorities and FTE are evaluated by FTC through use of established performance metrics, and while performance targets for the Authorities and FTE are established at different levels, FTE has voluntarily adopted FTC's MRP rating as a goal.

4.5 Recommendations

4.5.1 Standardized Performance Metrics

Recommendation: Maintenance performance measures for all agencies subject to review should be established at the same rates. At the present time, FTE is evaluated by similar maintenance performance measures but with performance targets below the performance targets required of the other Authorities. Setting common maintenance standards would ensure that Florida toll payers could expect the same high standards on all Authority facilities.

Risk Assessment: The higher MRP standard is already part of FTE's AM contracts and part of its internal financial reporting, so this recommendation will pose no additional risks to FTE.

Implementation Plan: Since FTE has already established a 90 percent MRP target, being included in Authority maintenance metrics would not pose any difficulties in implementation. Including FTE in FTC Authority performance reporting should be part of the overall recommendation of this report.

4.5.2 Track FTE Maintenance Performance Metrics by Maintenance Zone

Recommendation: Common metrics should be tracked for each defined area of maintenance. FTE maintains the Turnpike within four distinct geographic zones, but does not routinely report zone-specific performance data. Evaluating the effectiveness and efficiency of maintenance within each of those zones requires the collection of performance data specific to each of the areas. This would ensure that areas of the FTE system maintained under different contracting methods (AM or conventional) are sampled and reported under the same measures.

Risk Assessment: This change would require the FTE to collect and report MRP sample data on all four maintenance zones, including zones not covered by AM contracts. MRP sampling is performed by a common FDOT-administered process, so expanding the sampling on all FTE facilities to allow zone-specific scores will require a change in sampling practices.

Implementation Plan: This change in MRP reporting can be accomplished as part of the transition to FTC Authority performance reporting for the FTE.

4.5.3 Investigate the Benefits and Costs of Providing Geographic Continuity of Maintenance Services

Recommendation: For the geographic service areas within Florida that overlap (see Figure 4.3) the applicable agencies should investigate providing maintenance services for some of these facilities under a single contract. In Central Florida, contiguous toll facilities operated by FTE and OOCEA include SR 429, SR 417 and SR 528. In Western Florida, THEA facilities are proximate to FTE facilities covered by the Zone 3 AM contract. In Southern Florida, MDX and FTE facilities intersect, but FTE Zone 1 is not covered by an AM contract. In each of these geographic areas, the Authorities are encouraged to examine whether administrative or cost efficiencies could result from maintaining contiguous or nearby facilities under a common AM contract. These contracts should be structured with "piggyback" provisions that allow additional or modified services to be easily contracted under the same general contract.

Risk Assessment: Bond covenants generally require that each Authority is responsible for the maintenance of a toll facility, in order to preserve its condition as a revenue producing asset during the life of the bonds. Authorities have been able to execute AM contracts that retain the Authorities' control and responsibility to bondholders. If one Authority determines that an AM contract of another Authority is more efficient or cost-effective for some of its facilities, the arrangements for sharing those AM contracts would need to include sufficient administrative provisions to allow each Authority to meet their respective maintenance obligations under their bond covenants.

Implementation Plan: Table 4.8 shows the current durations of the AM contracts in effect at the Authorities. Considering the transfer of AM responsibilities from AM contract to another (or that of another Authority) would be more easily accomplished at the conclusion of an AM contract period. Given these AM contracting periods, the FTC should

begin encouraging Authorities to consider these maintenance changes at the conclusion of 2013.

If Authorities agree to change responsibility for maintenance for nearby facilities, then, in a completely different process, the Authorities may wish to consider the steps and ramifications of exchanging ownership of these facility segments. Such an exchange would have to involve a voluntary agreement between the Authorities and would require compensation for the value of the facility segment, and would involve the opinions of financial advisors and bond counsel, and considerations of current bond holders. Considering changes in maintenance of contiguous facilities would not necessarily lead to any changes in asset ownership.

5.0 Operations Review

5.1 Overview of the Study Element Area

The purpose of this section is to document and summarize toll operations as it relates to the toll road agencies, including FTE, OOCEA, MDX, and THEA. Since MBBA toll operations are provided by FTE, specific MBBA operation separate data and information for MBBA is not included in this section. This section includes a review of transaction processing, including cash transaction, electronic tolls, and violations; a summary of customer account management; examples of interagency cooperation; existing efficiencies in electronic toll collections; and a summary of the operational recommendations.

Florida has a long history of implementing electronic toll collections (ETC) that was initiated by the OOCEA and the FTE. Florida also is a national leader in all electronic tolling (AET). Currently, MDX, THEA, and FTE selected facilities include transponder-based and image-based toll collection methods with new business rules, systems and customer account types developed to accommodate AET. THEA is one of the first toll authorities in the United States to move its entire toll collection system to AET and is the only toll Authority in Florida to eliminate cash tolls collections.

There are three agencies that provide ETC customer account management. Commonly referred to as "Home Agencies," OOCEA, FTE, and LeeWay[9] all provide toll transponders sales, customer account management, and full transaction processing. MDX and THEA play important roles in processing AET "Pay-by-Plate" transactions that includes establishing direct customer interfaces and AET processing capabilities. Table 5.1 provides a summary of customer accounts and transactions to highlight transaction volumes, account management and the importance of toll interoperability among the toll agencies.

As illustrated in Table 5.2, all Florida toll agencies collect cash tolls with the exception of THEA. Table 5.2 also provides a summary of the percentage of electronic toll collections and cash collections. All toll agencies aggressively pursue increasing the percentage of ETC-related toll collections and have produced increasing rates of ETC toll collection over the last several years. LeeWay provides the only exception, with a flat rate of growth in ETC transactions over the last 10 years. LeeWay's 2011 Annual Traffic and Revenue Report suggests that a relatively stagnant growth in ETC transactions may be due to an upfront fee of $40.00 to purchase a LeeWay tag and receive discounted toll rates on the

[9] LeeWay has a modest toll collection process, but was not included in this study per the Legislature.

LeeWay operated bridges. They believe that the market penetration has reached a saturation level that will preclude additional near term growth.

Table 5.1 Customer Accounts and Transaction Volumes

Authority	Customer Accounts		Total Annual Transactions of FY 2011 (in Thousands)	
	Accounts	Transponders	ETC[1]	Total
FTE (SunPass)	4,100,000	7,800,000	493,627	652,857
OOCEA (E-Pass)	291,208	513,553	220,437	295,598
LeeWay (LeeWay)	Less than 100,000	N/A	9,803	17,199
MDX	N/A	N/A	223,090[2]	232,655
THEA	N/A	N/A	31,635[3]	31,635

[1] ETC transactions include transponder and image (Toll-by-Plate) transactions.

[2] Approximately 85 percent of ETC transactions are SunPass customers.

[3] Approximately 80 percent of ETC transactions are SunPass customers.

Table 5.2 FY 2011 Toll Collection Summary – Cash Collections versus ETC Collections

Collection Method	FTE	OOCEA	Leeway	MDX	THEA
ETC[1]	77.6%	74.6%	57.1%	93.9%	100%
Cash	22.4%	25.4%	42.9%	6.1%	N/A

[1] ETC percent includes video tolls (pay-by-plate) and transponder-based tolls.

Cash collection methods and procedures are standard among the toll agencies. Typically each plaza includes a secure facility for a toll collector to open and close out a "tour of duty" (or the individual work shift). The close out process requires the collector to account for all toll transactions collected during the work shift. A toll plaza supervisor will witness the close out process. Once the cash accounting process is complete, cash receipts are placed in a vault (or secure area) and are deposited at the appropriate bank using armored car services. The transfer process occurs at least on a daily basis. Each Authority includes auditing systems to protect against potential cash shrinkage.

As illustrated in Table 5.3, each toll Authority reports the cost to collect a single transaction that is net of any type of exclusion. All agencies have a $0.16 per transaction target established in their performance reporting. All agencies achieve the performance target and have continued to reduce, over time, the cost to collect tolls.

Table 5.3 FY 2011 Cost to Collect a Toll Transaction
Net of Any Exclusion

Florida Toll Authority	Reported Cost to Collect a Toll Transaction for FY 2011	Toll Collection Methods
FTE	$.14	Electronic, cash AET
OOCEA	$.11	Electronic, cash
LeeWay	N/A	Electronic, cash
MDX	$.07	Electronic, cash, AET
THEA	$.10	AET

Table 5.3 also includes a summary of the various toll collection methods employed at each Authority. It is important to note that the costs included in this table are affected by the range and type of toll collection methods employed, and represent the total aggregate cost to collect a toll by all collection methods supported by each toll Authority (transponder-based, cash an license plate methods). The variance in cost is attributed to the aggregate reporting method. As an example, FTE toll road facilities include transponder-based electronic transactions, cash transactions and all electronic tolling (AET). THEA, on the other hand, collects all tolls based on AET technology, which produces a different range of costs as compared to the FTE reported cost to collect value.

The cost to collect will also be skewed by the geographic coverage of the Authority facilities and the volume of transactions occurring at each plaza. Toll plazas in rural low transaction volume areas require minimum staffing levels that could increase the cost of collecting tolls. Finally, the percentage of tolls collected by the various methods (see Table 5.2) will affect the aggregate cost to collect values.

Based on these factors, comparing the cost values across the Florida toll agencies that offer a wide range of collections method is difficult. They are included in this section of this report to act as information the FTC can refer to as the toll agencies work toward a unified toll system.

Recent national studies provide a summary of toll collection costs, and cautions readers on how best to interpret the published collection costs.[10] The recently published Reason Foundation report provides a comprehensive summary of the toll collection cost literature along with a summary of three AET cost studies. Table 5.4 provides summary of the 2007 work completed for the Washington State Department of Transportation (WSDOT) that was designed to assist in completing an assessment of estimated costs for the proposed toll collection at the Tacoma Narrows Bridge.[11] While the report did not include costs associated with AET collection methods, the Reason Foundation reports provides the supplemental information on AET collection included in Table 5.4.[12]

Table 5.4 National Data on Cost to Collect Tolls by Various Collection Types

Toll Agency	Cash and Electronic Collection Method Costs[1]	AET Collection Method Costs[2]
Tacoma Narrows Bridge (estimated)	$.49	N/A
E-470 (Denver, Colorado)	$.23	N/A
Caltrans Bridges (San Francisco)	$.29	N/A
Golden Gate Bridge (San Francisco)	$.62	N/A
Tobin Bridge (Boston, Massachusetts)	$.50	N/A
TCA (Orange County, California)	$.31	N/A
SR 91 (Orange County, California)	$.46	N/A
Lake Pontchartrain Causeway (New Orleans, Louisiana)	$.56	N/A
I-25 Managed Lanes (Denver, Colorado)	N/A	$.07
Fort Bend County Toll Road Authority (Houston, Texas)	N/A	$.05
Tampa-Hills Expressway Authority (Tampa, Florida)[3]	N/A	$.11

1 Comparative Analysis of Toll Facility Operational Costs, page 9.

2 Dispelling the Myths: Toll and Fuel Tax Collection Costs in the 21st Century, page 31-34.

3 Variation in the THEA values is a result of the data collection timeframe.

[10] Dispelling the Myths: Toll and Fuel Tax Collection Costs in the 21st Century, Daryl S. Fleming, Ph.D., PE. Contributions by Thomas L. McDaniel, Ph.D., Roman L. Grijalva, Ph.D., and Luis Alberto Sanchez-Ruiz, PE. Reason Foundation, Policy Study 409. November 2012, page 12-16.

[11] Comparative Analysis of Toll Facility Operational Costs. Report prepared by IBI Group, Inc., for the Washington State Department of Transportation. February 2007.

[12] Dispelling the Myths: Toll and Fuel Tax Collection Costs in the 21st Century, page 30-41.

As illustrated in Table 5.4, the national cost to collect data varies based on the several factors cited in the report. The WSDOT report includes the following items that caused the reported cost variations.[13]

- Magnitude, type and geographic location of the toll facility;
- Method and distribution of toll collections offered at each agency;
- Toll collection responsibilities between contracted (private) and agency (public) responsibilities;
- Magnitude of toll violations and the requirements to pursue;
- Accounting variations among toll agencies; and
- Potential restrictions required by bond covenants.

Since AET collection methods are designed to be highly cost-effective, the examples cited in the Reason Foundation Report provide a narrower range of collections cost results. It is important to note that all three AET examples include variation in the percentage of transactions collected by transponders (versus license plates) that provide a logical explanation of the reported cost variation. Fort Bend County Toll Road Authority has the highest rate of transponder transactions that range between 91 to 92 percent; the I-25 example has a transponder rate of approximately 86 percent; and the THEA example has a rate of approximately 79 percent.

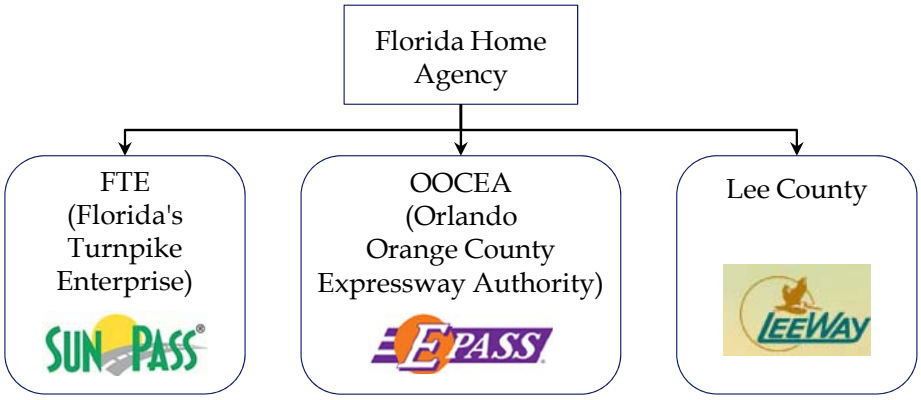
5.2 Study Element Area – Topic Areas

5.2.1 Authority Transaction Processing

Based on the start-up of ETC technology in Florida, three agencies invested in comprehensive electronic tolling systems that are designed to manage customer accounts, provide transponder sales, process electronic transactions, and pursue toll violators. Today these three agencies FTE, OOCEA and Lee County remain as the only customer outlets for transponder-based ETC systems. As depicted in Figure 5.1 these agencies are referred to as "Florida Home Agencies."

[13] Comparative Analysis of Toll Facility Operational Costs, page 1-3.

Figure 5.1 Florida Home Agencies



Home Agencies establish and maintain customer accounts. This also includes specific responsibility for distributing toll revenue to the designated toll Authority. The distribution process, typically referred to as the settlement process, requires each Home Agency to transfer the appropriate toll revenue from their customer accounts for all valid transactions that take place on the other toll agency roadways. As highlighted in Table 5.1, the FTE manages the vast majority of customer accounts, which is the primary reason it is responsible for processing such a large percentage of electronic toll transactions. FTE provides toll collections for the Mid-Bay Bridge Authority and OOCEA provides full services to Osceola County.

By agreement, Home Agencies interact with each other, and with all other toll agencies in Florida. As highlighted in Figure 5.2, "Client Agencies" do not establish or maintain customer accounts. They essentially operate without a designated (or defined) customer account base. All electronic toll transactions from Client Agency toll facilities are sent to the appropriate Home Agency for posting and settlement. Electronic toll transaction file transfer, posting, and settlement are defined in a strict set of interface specification documents.

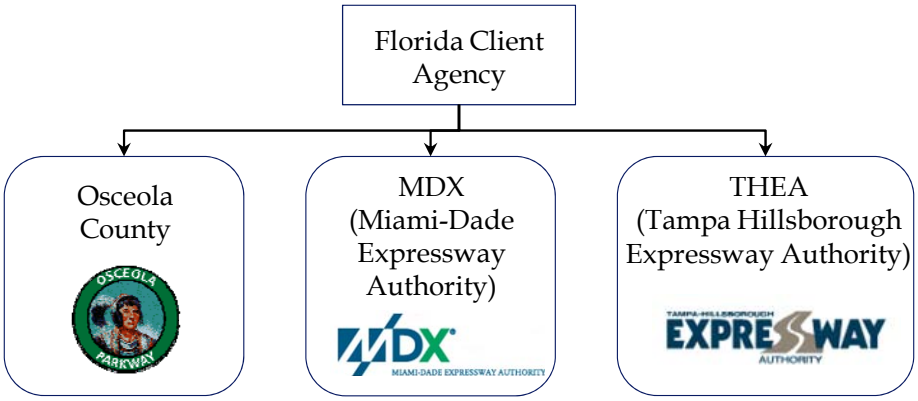
In Florida, these procedures are codified in the Interagency Electronic Toll Collection Interoperability and Reciprocity Agreement. These binding agreements include the following elements.

- Records and data file interface specifications;
- Accounting business rules (methods and timing for the exchange of toll-related funds); and
- Technical business rules (detailed business rules documenting the acceptance of toll-related transactions exchanged between each participating agency).

The structured process defined in the Agreement is a central functional element in developing and maintaining interoperability between Florida toll agencies and provides an excellent working example of offering significant efficiencies to Florida's toll customers.

The Florida toll agencies strongly believe that interoperability will eliminate redundancies in toll collection systems, minimize the financial burden of customer account management, offer significant cost savings to the participating toll agencies and produce consistent operational accounting for the participating toll agencies.

Figure 5.2 Florida Client Agencies

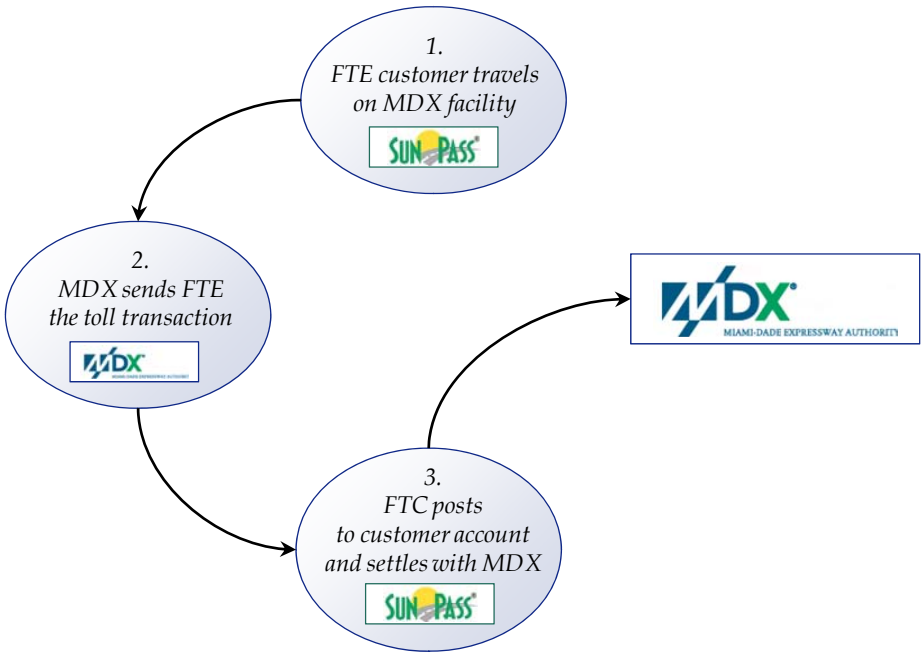


A simplified example of electronic toll interoperability, Figure 5.3, provides a graphic representation of the data and transaction flow between a Home Agency and a Client Agency. The toll posting and settlement process is similar between any "Home Agency to Home Agency" or "Home Agency to Client Agency" as depicted in Figure 5.3.

There are at least three steps that occur to complete the toll settlement process for transponder-based tolls. It is important to note that the settlement process includes both the posting of the appropriate toll to each customer account (Home Agency activity) and the reimbursement to the Client Agency. Once a customer incurs a toll on a Florida facility, the toll transaction is assigned to the Home Agency that maintains that customer's prepaid toll account. The transaction is bundled with other identical transactions and sent to the Home Agency for processing. Once the transaction is received the Home Agency will identify the correct customer account, post the toll to the account, and create a settlement file to transfer the toll amount to the proper agency. The transfer of the actual toll revenue between Home and Client Agencies is conducted using wire transfer processes that occur at least on a weekly basis.

In the case depicted in Figure 5.3, the toll occurs on a MDX facility by a SunPass customer. The interaction occurs between systems maintained by FTE and MDX. It is important to note that each step of the simplified process requires several accounting actions along with detailed electronic documentation of data files that contain the toll transaction information. The Interagency Electronic Toll Collection Interoperability and Reciprocity Agreement provides the detailed codes, descriptions, and transaction record formats used to exchange the toll-related data and information to complete the transaction highlighted in Figure 5.3.

Figure 5.3 Example of Current Interoperable Transaction Flow



While Figure 5.3 provides a generic example of how toll transactions are settled between agencies and accounted for using independent toll systems, it is important to highlight that SunPass customers and the associated electronic toll process capabilities of FTE play a very important role in providing interoperability with all toll Agencies in Florida. Based on the data included in Table 5.1, the FTE toll systems play a vital role in supporting interoperability between all other agencies within Florida.

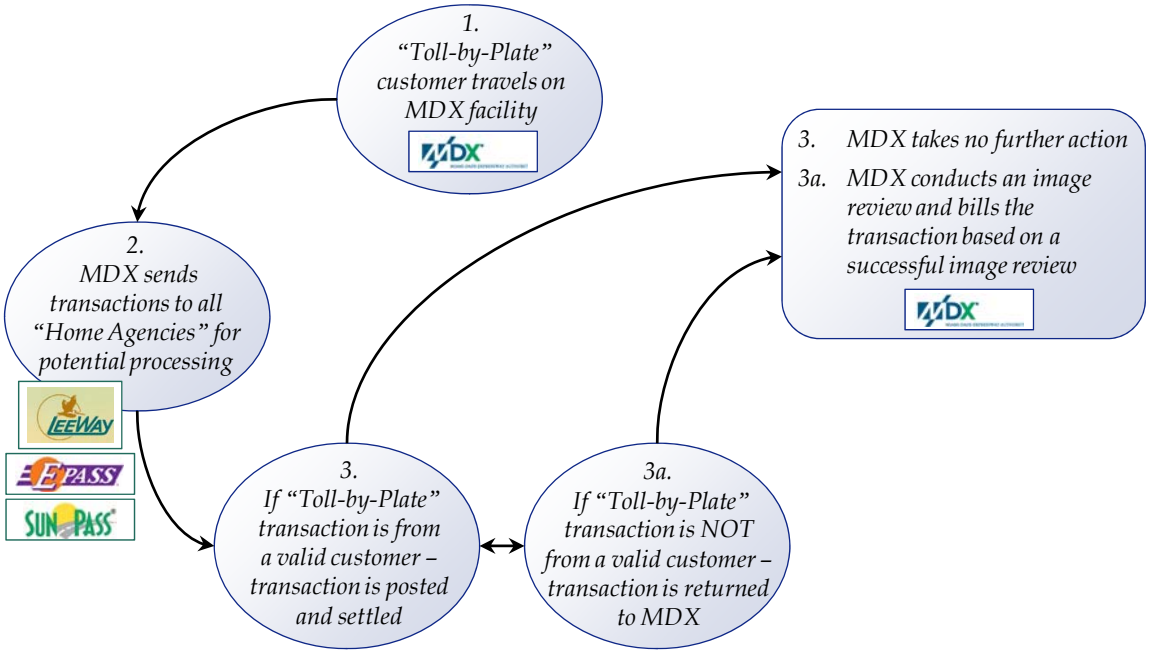
Over the last few years, FTE, MDX and THEA have converted some facilities to cashless, AET systems. While AET improves the increased efficiency in travel (eliminating plaza-based delay and potential safety issues) and reduces roadway design costs by eliminating toll plazas, it also introduces new interoperability rules and processes. In the case of Florida, it introduced new tolling systems for MDX and THEA.

Customers who maintain a valid transponder experience no significant difference in transaction processing. AET systems allow for "Toll-by-Plate" transactions that use the vehicle license plate as the primary source of customer identification and toll billing information. The challenge is to obtain accurate billing information for those customers (and vehicles) not enrolled in a Home Agency program.

Home Agency toll systems must accommodate the new "Toll-by-Plate" toll transaction type, which requires adding the ability to match toll transactions to customer accounts using only the image of a vehicles' license plate. Many image-based transactions require some type of manual intervention and review. "Toll-by-Plate" customers on MDX and THEA facilities (customers without an active ETC account) rely on MDX and THEA systems to process and bill each transaction. Again, this has introduced new toll systems into the process and – from a customer perspective – introduced new "Home Agencies" in

MDX and THEA. The process also has introduced new policies and business rules for processing these transactions along with a new prepaid "Toll-by-Plate" account (SunToll) hosted by FTE. As depicted in Figure 5.4, the "Toll-by-Plate" image-based collection process flows differently than the transponder-based collection process.

Figure 5.4 Toll-by-Plate Generalized Transaction Flow



Florida business rules allow "Toll-by-Plate" transactions to be matched against "Home Agency" customer accounts. Since FTE maintains a prepaid "Toll-by-Plate" account, matching the license plate image with these accounts is a critical part in the second and third steps of this process (Figure 5.4). Motorists that do not maintain either a prepaid "Toll-by-Plate" account or an active transponder-based customer account (SunPass, E-Pass, or LeeWay) will be charged an additional service fee to process the toll. The additional processing fee varies based on the toll facility.

Finally, Authority responsibility for processing all toll violations varies based on Authority relationships. MDX and THEA share violation process capabilities, which focus on "Pay-by-Plate" processes. OOCEA provides full violation processing support to Osceola County. FTE processes all violations on all FTE owned and operated facilities. This includes violation noticing and escalation procedures through collections noticing and traffic citations.

5.3 Summary of Authority Efficiencies – ETC Interoperability

Toll roads play an integral role in supporting the travel and the economy in Florida. Having the ability to collect tolls for infrastructure investment and maintenance while developing technology that minimizes travel delay, improves safety, and avoids cost associated with toll plazas provide additional efficiencies beyond revenue enhancement. The toll authorities in Florida have worked together to initiate interoperability and expand ETC transactions throughout the State. As an example, over 80 percent of all electronic toll transactions in Florida are processed by SunPass providing a single toll bill to SunPass customers independent of where they travel. FTE provides services for FDOT owned and operated facilities and OOCEA is a full service provider for Osceola County. MDX and THEA share in the same contract that supports critical elements of the AET processing and collections on each of their facilities. A new customer account type – SunToll – was created to provide additional efficiencies in collecting AET and is managed through the SunPass system.

The toll authorities have placed a substantial investment in defining rules that define how interoperability will take place. The Interagency Electronic Toll Collection Interoperability and Reciprocity Agreement is the formal "rulebook" of toll interoperability. As discussed earlier in this section, these agreements codify the entire financial and technical process for toll settlement among all agencies in Florida.

Florida also formed as a collaborative working group –TEAMFL – in 1997 to provide a platform to share information on toll road operations, financing, acquisition, and marketing. TEAMFL's purpose is to provide a forum for the transportation-related agencies throughout the State that have an interest in, or operate the expressway systems in Florida. TEAMFL provides a common meeting ground for the toll agencies to focus on providing high-quality and integrated tolling services throughout the State.

The development of a new centralized customer service center (CCSS) will significantly advance interoperability among the toll agencies in Florida. The CCSS also should provide additional operational cost efficiencies for all participating agencies. As the system is designed it will rely on key foundational operating components that are in place and operational in the Florida tolling systems. Leveraging the history of toll interoperability and applying new advancements in technology will allow for the continued growth and enhancement of toll systems throughout the State while providing additional operational cost efficiencies.

5.3.1 Recommendations – Unification of Electronic Toll Collection Systems

While the Florida agencies continue to take advantage of new and more cost-effective tolling technologies, systems that are responsible for processing and settling tolls should be updated to address new toll technologies and the associated business rules. The

complexity of collecting "Pay-by-Plate" tolls is emblematic of the need to have systems that can effectively accommodate this advance in technology. As part of this effort, consideration of other transportation user fees programs – like distance-based fees, transit and parking fee generation programs – should be considered in the overall design of the CCSS.

To address this need, Florida's largest toll agencies have initiated the process of creating the CCSS by executing a Memorandum of Understanding (see Appendix B) for this purpose. The early design considerations include having all aspects of customer service operation activities become the responsibility of a third-party private vendor, including customer contact management, video toll billing, violation enforcement and financial reconciliation and accounting. The current customer service center (CSC) system replacement is planned as a life-cycle upgrade to the legacy CSC systems of the participating agencies that in many cases is much needed. For example, FTE's legacy CSC system, which is the largest of the participating agencies, was deployed in 1999, with ongoing enhancements and patches over the past 13 years. The system has supported significant growth in customer accounts, increased complexity in business rules, expanded interoperability and the accommodation of prepaid "Pay-by-Plate" accounts. Since this process is currently underway, the recommendations in this section deviate from the prior sections. This section will focus on a set of reporting action that FTC should consider to be completely informed on the progress of the CCSS.

The procurement of a new system supports the recent TEAM Florida Resolution which acknowledged the goal of coordination between the tolling agencies in Florida to develop a centralized customer service system as identified below:

> "The Board of TEAMFL acknowledges and supports the cooperation of Orlando-Orange County Expressway Authority, Tampa-Hillsborough Expressway Authority, Miami-Dade Expressway Authority and Florida's Turnpike Enterprise of the Florida Department of Transportation in their efforts to examine the merits of the development of a single, fully integrated back-office operation for all of Florida's toll systems."

The Participating Agencies in the CCSS include:

- Florida's Turnpike Enterprise (FTE);
- Miami-Dade Expressway Authority (MDX);
- Orlando-Orange County Expressway Authority (OOCEA); and
- Tampa-Hillsborough Expressway Authority (THEA).

The goals for the new system include the following elements.

- Develop one standard set of business rules for a fully integrated operation for all of Florida toll customers and residents;
- Enhanced financial tracking, reporting, and auditability for electronic toll collection, video tolling and violations;

- Consolidated statewide transaction processing for all electronic tolling transactions (AVI and video);
- Efficient operations with a low cost per transaction processing for all agencies;
- Enhanced interoperability and transaction processing for all Authority toll transactions (SunPass, video tolling, and violations); and
- A modern, state-of-the-art customer account management system and system architecture capable of supporting the growth in statewide electronic transactions for the next decade.

Several actions and activities have occurred to date that include:

- Completing Memorandum of Understanding (signed by all four agencies);
- Meetings with each Authority's senior leadership to identify preliminary concepts of operations for the new statewide system;
- Organization of all Authority business rules and standard operating procedures;
- Authority business rule and technical requirements meetings are scheduled (kickoff scheduled for October 4, 2012); and
- Currently, the Authority teams are completing the overall project schedule and will be seeking vendor input on the schedule itself.

While the participating agencies have made significant process over the last few months, it will be important for FTC to remain informed on the overall status and progress of the CCSS. Important considerations include the following items.

- A fully centralized and privatized system that reduces operating costs, standardizes accounting and reporting, and significantly reduces any risk associated in toll revenue collection. The system should house all functions associated with toll collections for all of the participating agencies.
- A system that operates under a single branded transponder to avoid any type of customer confusion while creating greater efficiencies in toll collections, reimbursement processes, and the potential to expand interoperability.
- A structured governance process that provides all participating agencies equal representation in the development and operation of the system. This should include a formal dispute resolution process to ensure fair and equitable decision-making.
- A system design and governance structure that allows for growth based on the addition of new members over time.
- A system design and implementation schedule that minimizes the impact on existing ETC customers. This should include system design elements that allow each participating Authority to continually identify customers frequently using their facilities.

Given the complexity of individual Authority business rules, toll collection and accounting processes, the FTC should receive a detailed briefing on the overall project schedule as it is being developed, with an expectation that the transition to a new system should be accomplished no later than 36 months from the execution of the ILA. As part of these briefings, it will be important to isolate the areas of significant risk facing the participating agencies and understand the various strategies to manage schedule and project risks, including the possibilities of implementing the new CCSS system in stages. The FTC should request that a FTC staff member be added to the CCSS working group preparing an ILA to implement the CCSS procurement, in order to keep informed on ongoing developments.

As part of the CCSS development process, the FTC is encouraged to understand how the new systems best accommodate the participating agencies, reduce operating costs and support new and existing customers. Centralizing customer service function should provide the participating agencies all the benefits outlined in the goals and considerations listed above. Clearly enumerating the CCSS benefits by the design goals will be helpful as FTC tracks the overall system development and deployment process along with understanding the overall operational cost efficiencies.

An important element in the CCSS design is to ensure that customer interaction is being addressed and accounted for as the system is developed. This should include, at the highest level, how customers effectively interact with the key "customer facing" components of the system. The ability to effectively use web-based applications, interactive voice response (IVR) systems as well as the emerging application designed specifically for a personal digital assistant (PDA) should be well developed. A common system look and feel along with optimal branding also should be key considerations in developing the CCSS. Finally, ensuring that each Authority has direct access to their facility customer base should provide greater customer interaction and satisfaction. These elements also should be key considerations in the overall system design.

6.0 Conclusion

Overall Assessment of Current Activities and Best Practices

This report has demonstrated that the Expressway Authorities in Florida (as defined in this study) have built a common practice of sharing resources. The Authorities coordinate project planning with regional planning organizations and FDOT districts, they share access to pools of design and construction engineers, they cooperate on joint projects, they use a common approach to asset maintenance.

This collaborative culture is leading the State's four largest Authorities to cooperate in the procurement of a consolidated customer service center. This new customer service center should provide the nearly five million toll account holders with enhanced access to their accounts and provide the Authorities with a higher-performing, cost-effective technology platform to support future interoperability along the East Coast and new toll collection methods.

Cross-Cutting Recommendations Based on Collective Study Process

The Legislature's 2007 directive to the FTC to create a system of performance measurement for Expressway Authorities provides a wealth of information to help Authorities manage their businesses more carefully and more transparently. The Legislature should encourage the FTC to adopt standardized reporting for the FTE as well. This would mean including FTE in FTC measurements of project development and maintenance, and also could include development of FDOT construction performance data for all Authorities. The FTE is organizationally a part of FDOT and reports to the FTC as part of FDOT's annual performance review, but its function as a toll Authority, its legislative distinction, and its role as a service provider to other Authorities, should bring it within the overall FTC reporting regime.

Summary of Recommendations

Centralized Back Office. The FTC should do more than monitor activities of the Authorities in reaching agreements to implement a Centralized Customer Service System (CCSS), they should affirm the CCSS, actively support and participate in its creation, and require progress reports on system implementation. All toll collection functions should be included in the centralization – including customer accounts, violation processing, and toll by plate processing. The system should be fully privatized so that all Authorities are customers of the CCSS vendor, not of each other. The system should lead to the adoption

of a single transponder for customer simplicity. The CCSS should be built on a careful governance structure, with defined dispute resolution procedures.

Asset maintenance contracts. Where possible and cost effective, Authorities should consider the use of AM contracts for maintenance of roadways, structures and related facilities. This would be subject to reasonable limitations on the size of each contract, in order to encourage contract bidding. Newly executed contracts should routinely offer other Authorities access to the contract if such sharing makes good business sense.

Maintenance Continuity. Authorities should explore the possibilities of geographic continuity of maintenance, both in terms of contiguous roadway segments, and also in regions with common road networks. Bringing roadway segments under a single AM contractor could offer efficiencies across a larger area. The Authorities would be responsible for considering which entity is best able to manage the new maintenance agreements. This of course would require an examination of the bond covenant implications of paying for the maintenance of an Authority roadway under a contract managed by another Authority. If such maintenance changes are made, the Authorities may wish to consider, in a completely separate decision-making process, a formal ownership exchange of the applicable segments, understanding the legal and financial requirements of such a voluntary agreement (making a change in maintenance responsibilities would not necessarily lead to any changes in asset ownership).

Revise and update 2004 Executive Compensation Study. In 2004, the FTC published a study of public and private sector market data on executive compensation at FDOT, responding to concerns that FDOT was experiencing difficulties retaining and recruiting leaders under current pay schedules. The economy and transportation industry has changed significantly since 2004, as have the differences in executive compensation among Authorities in this study. Therefore, the FTC should revise and update its Executive Compensation study, and update the study every two years thereafter.

Regional working groups of Authorities and FDOT districts. Sharing best practices and coordinating project development, operations, construction, and maintenance could improve service delivery and encourage collaboration.

Consistent and new performance measures. As the FTC reconsiders its original 2007 performance measures, the FTC Expressway Authority performance reporting process should extend to FTE. New performance measures or reporting requirements to be considered include:

- Transportation effectiveness measures, such as total vehicle miles traveled, annual average daily traffic, travel congestion index (ratio of travel time during peak periods to travel time during off-peak);
- New measurement of total project delivery time from inception of design to opening to revenue service;
- Updates on each Authority's five-year work program should be reported to the FTC as part of the annual performance reporting cycle;

- Authorities should provide information each year explaining how administrative costs are being managed and controlled so that more net revenues are available for mobility purposes; and
- Authorities should provide information each year describing practices to use statewide construction unit cost information from current bids to adjust construction project cost estimates.

Next Steps for the FTC and the Authorities

This report recommends new reporting measures and reporting relationships that will require FTC actions in setting performance measures and collecting the information during the future. The information in this report can inform the FTC's process for collaboratively resetting the performance measures most applicable and most valuable to the current missions of the Authorities. This annual reporting cycle will also offer the FTC an opportunity to request updates on major projects and on progress in controlling administrative expenses.

Most importantly, this report sets out a role for the FTC in the planning and implementation of the consolidated customer service center discussed in Section 5.0. The implementation of the executed MOU will outlast the terms of this project, but should garner FTC engagement and accountability to ensure that the substantial promise of the new customer service center (and its new technologies) can benefit toll payers and Toll Authorities alike. This will require regular reporting from the Authorities to the FTC on progress in implementing the CCSS, and the FTC should work with the Authorities to adopt a project schedule and establish a milestone reporting process.

Appendix A – Organization Charts

Figure A.1 Mid-Bay Bridge Authority

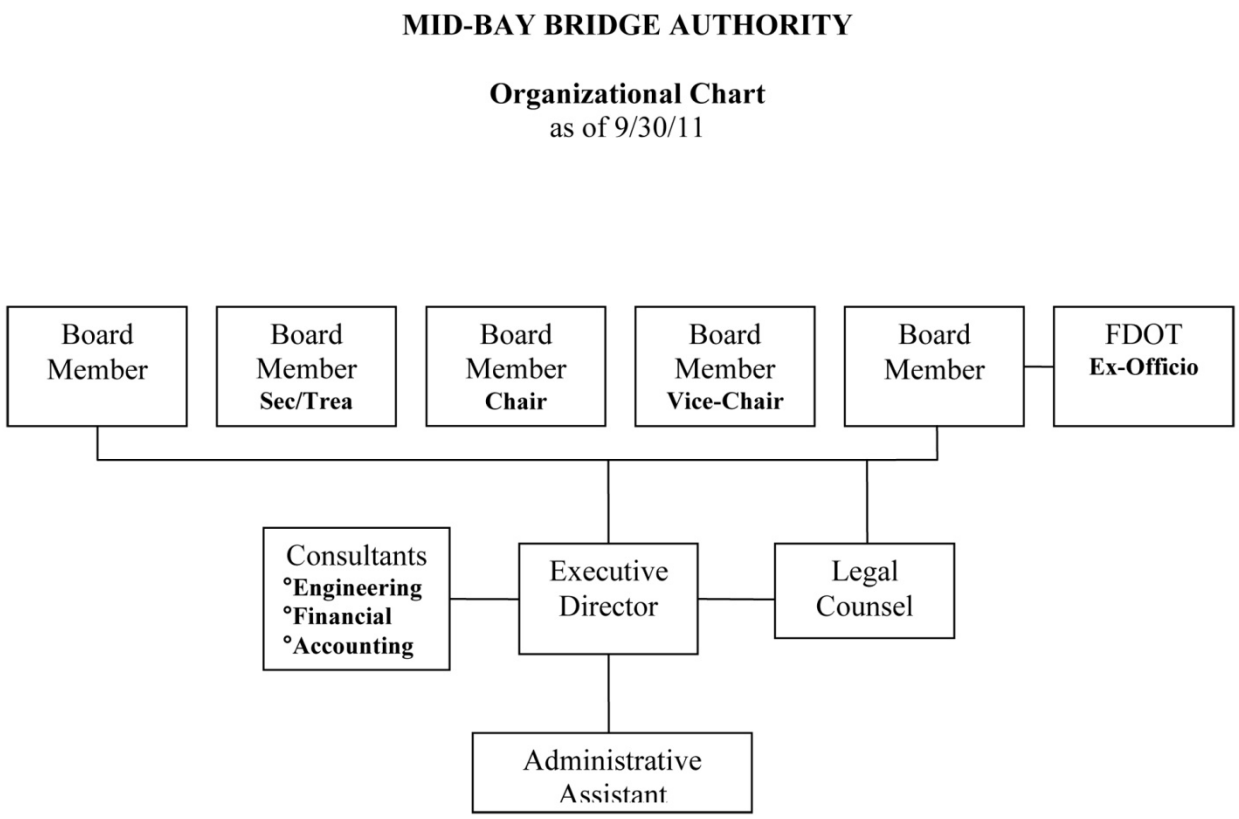


Figure A.2 Miami-Dade Expressway Authority

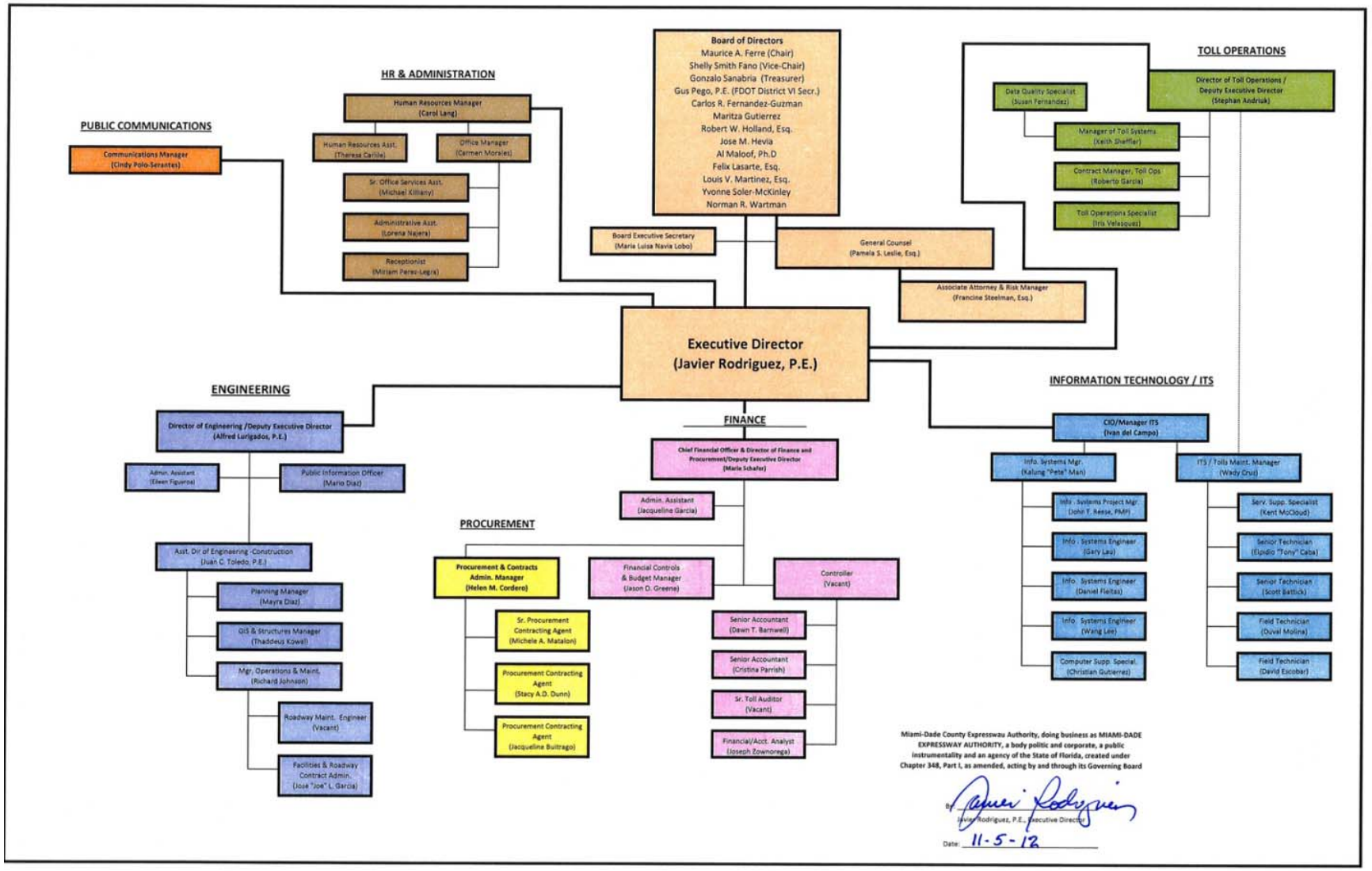


Figure A.3 Orlando-Orange County Expressway Authority

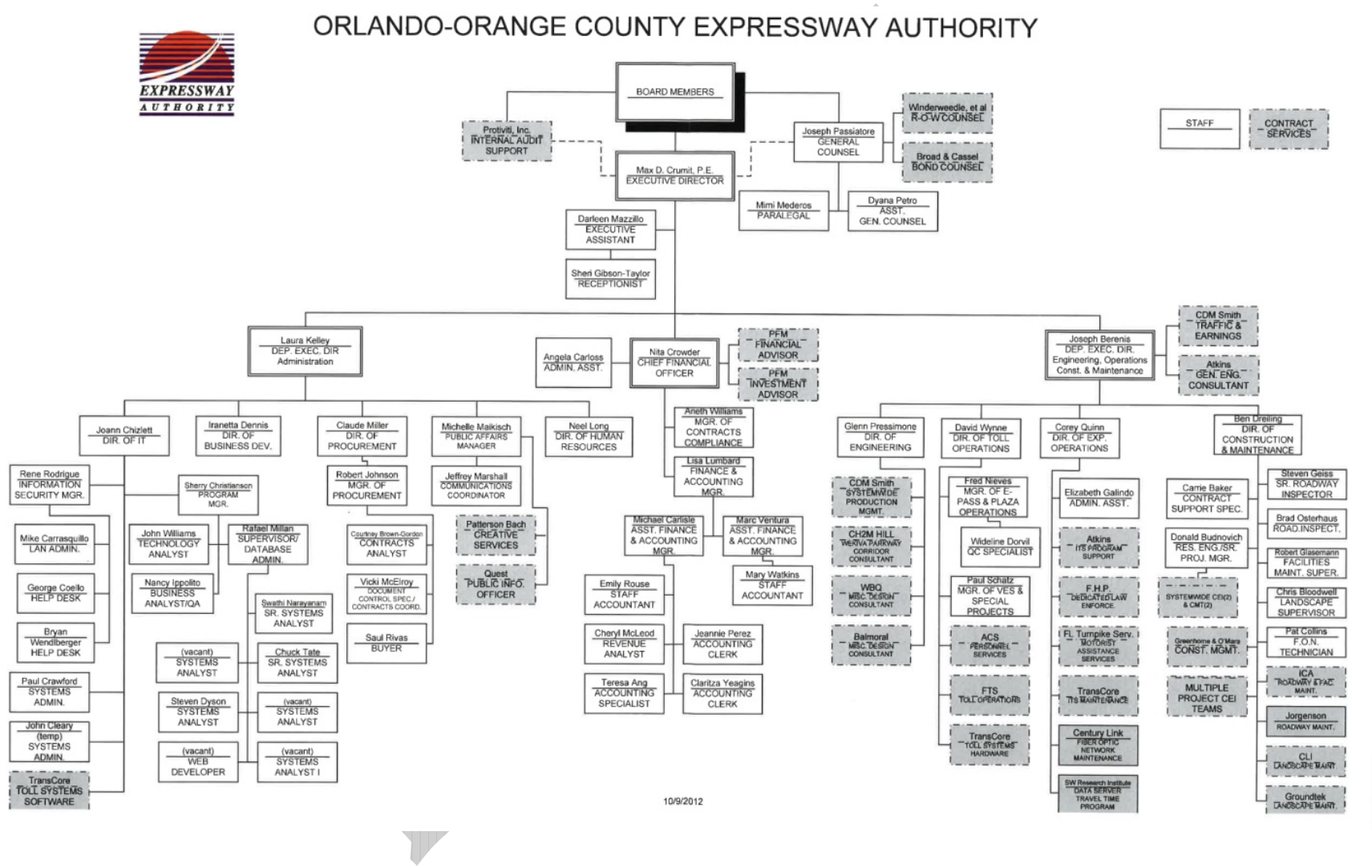


Figure A.4 Tampa-Hillsborough County Expressway Authority

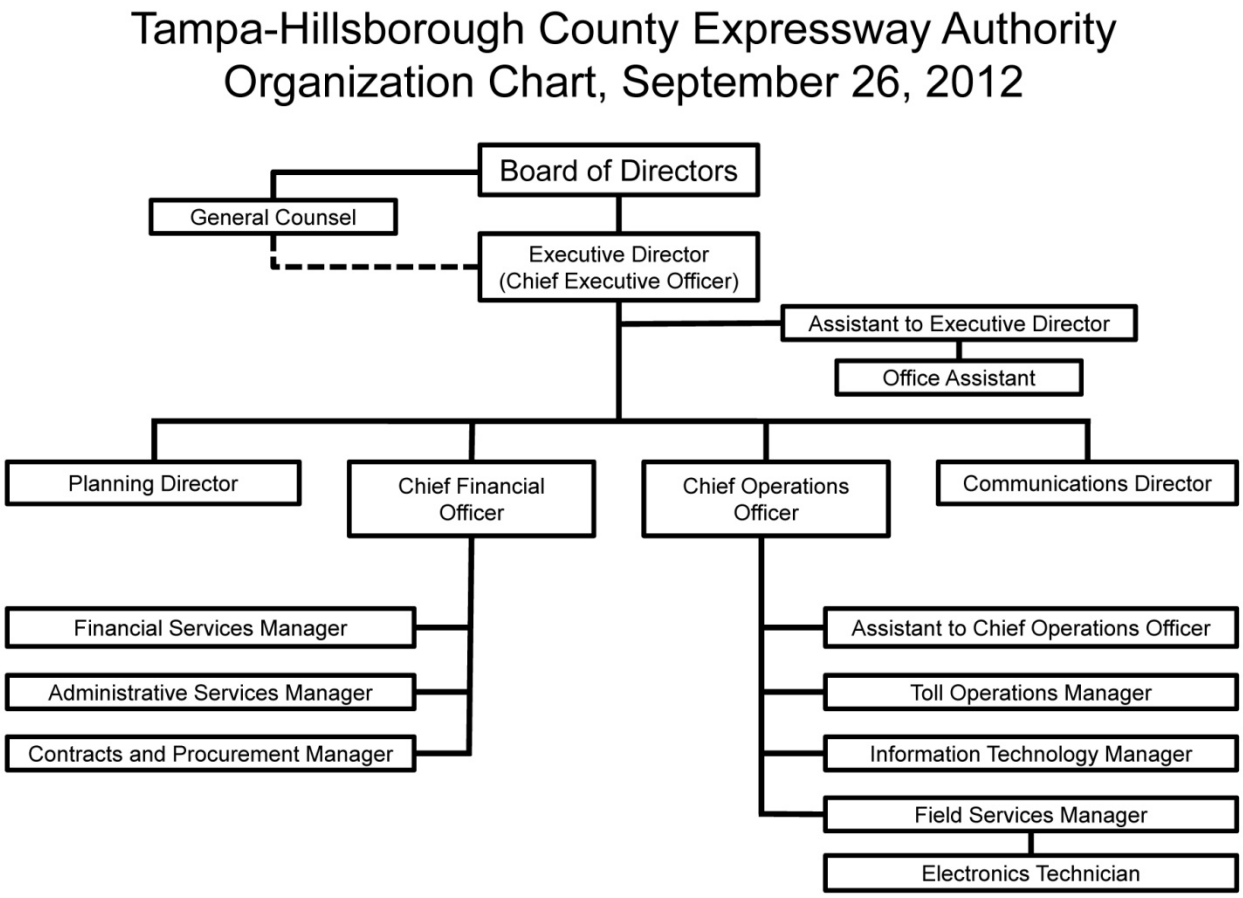
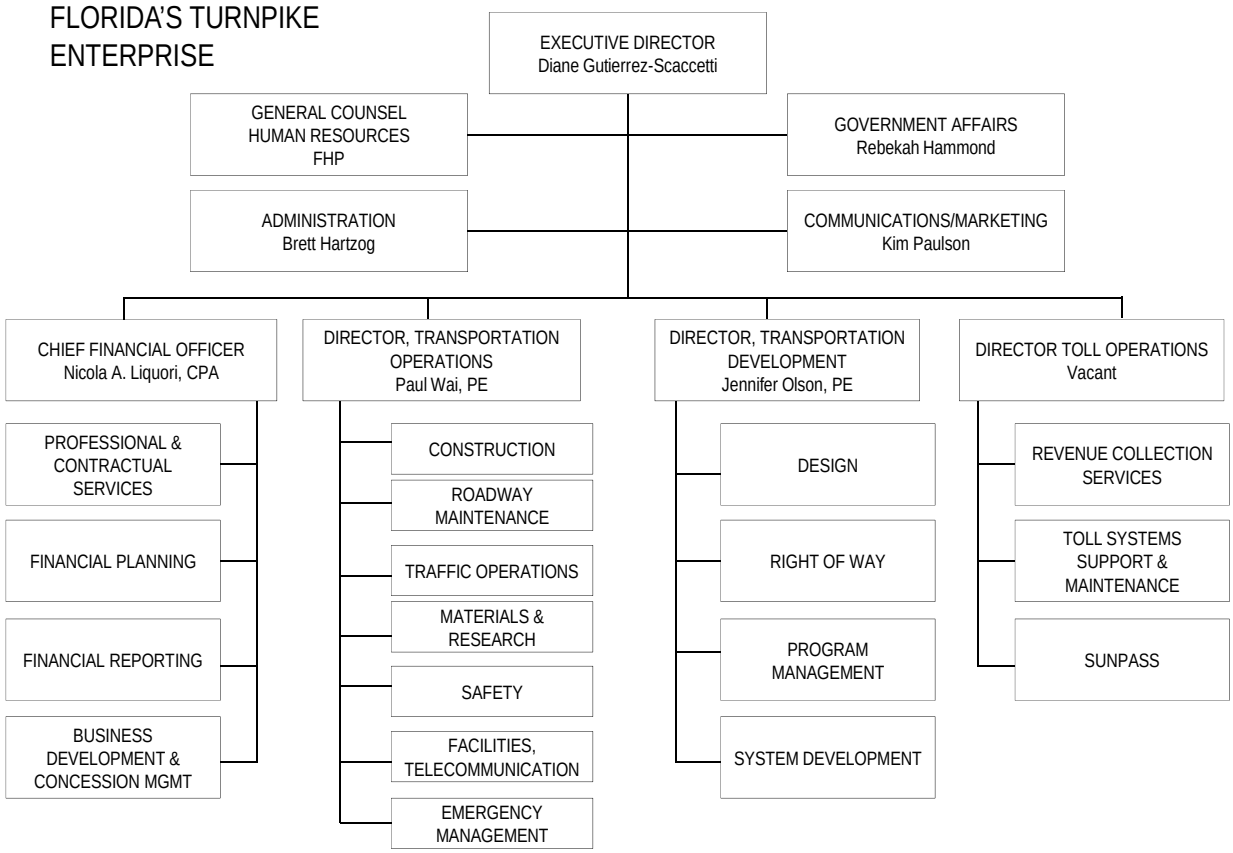


Figure A.5 Florida's Turnpike Enterprise



Appendix B – CCSS Memorandum of Understanding

CENTRALIZED CUSTOMER SERVICE SYSTEM
MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is entered into as of this 12th day of Sept., 2012 between Florida's Turnpike Enterprise ("FTE"), Miami Dade Expressway Authority ("MDX"), Orlando-Orange County Expressway Authority ("OOCEA"), Tampa Hillsborough Expressway Authority ("THEA") (individually a "Participating Agency" and collectively "Participating Agencies"). The Participating Agencies agree as follows:

1. The Participating Agencies desire to implement a centralized customer service system (CCSS) for statewide back office operation for administration of electronic toll collection activities to: (i) provide a single point of contact for all of the Participating Agencies' non-cash toll collection customers to improve and simplify customer service; (ii) reduce the cost of non-cash toll collection; and (iii) provide a single, centralized service center with regional satellite offices.

2. The Participating Agencies envision that a CCSS will provide various services, including, but not limited to, those relating to the establishment and maintenance of customer accounts, the distribution of transponders for customers, violations processing and enforcement, and interfacing with third parties such as airport parking facilities, private parking facilities, rental car providers, fleet customers and others.

3. Each Participating Agency expressly reserves its respective statutory powers and autonomy.

4. As a result of this MOU, the Participating Agencies intend to implement a CCSS through a jointly developed Interlocal Agreement among all the Participating Agencies pursuant to Section 163.01, Florida Statutes. In connection with execution of the Interlocal Agreement, each Participating Agency will obtain an opinion of bond counsel that the terms of the Interlocal Agreement and the implementation of the centralized statewide back office in accordance with those terms will not violate any

bond covenants of the Participating Agency. The Interlocal Agreement (ILA) is expected to include agreement on:

i. Guidelines for development of a procurement document for the provision of CCSS services by a third party vendor, including system technology and data requirements;
ii. The location of the centralized service center, disaster recovery and backup operations site(s), and regional walk-in customer service centers which support walk-up counter services, resolution of transaction discrepancies, and development of billable transactions and image reviews;
iii. Interoperability between the CCSS and non-participants;
iv. Interfaces with third parties such as parking facilities, rental car providers, fleet services and special customer requests;
v. Common business rules for customer account management, customer account types, and customer communications;
vi. Common procedures for the issuance of unpaid toll notices, citations, and vehicle registration holds and releases;
vii. Procedures to adopt or modify business rules related to functions of the CCSS. The Participating Agencies agree to work cooperatively to address and resolve any issues that may arise during the administration of the CCSS contract and to promptly address issues and effect written modification to the ILA as it from time to time may be required.
viii. Procedures for protection of customer data;
ix. Quality control processes and reporting requirements;
x. Data retrieval and reporting requirements;
xi. A violation enforcement system that meets the requirements of all court jurisdictions;
xii. Criteria for a common customer service center website;
xiii. Audit processes and reporting needs;

xiv. Administrative fees;

xv. Collection criteria;

xvi. The use of collection agencies;

xvii. Maintenance of minimum account balances and handling of negative balances;

xviii. Allocation and distribution to each agency the toll transaction and violations revenues and fees for their roadways and the associated processes for allocation and distribution.

xix. The disposition of interest earnings on prepaid toll accounts;

xx. Identification of each agency's costs related to the operations and administration of the CCSS and the method of allocation and collection of those costs.

5. The Participating Agencies expect that FTE will take the lead and provide funds for the cost of the development of the procurement document needed to implement the CCSS.. The procurement document will provide that the other Participating Agencies have the right to enter into separate agreements with the selected vendor on the same or substantially the same terms as contained in the agreement executed between FTE and the selected vendor. Each Participating Agency will be equally represented on the vendor selection committee. The other Participating Agencies will execute agreements with the selected vendor immediately following execution of an agreement by FTE and the selected vendor. Each Participating Agency will administer its contract with the selected vendor in accordance with the terms and conditions of the Interlocal Agreement.

6. No amendment of the Memorandum of Understanding will be effective unless made in writing and executed by each of the parties of the MOU.

7. This Memorandum of Understanding and the contemplated Interlocal Agreement are subject to approval and ratification by the governing bodies of OOCEA, THEA, and MDX.

The parties have executed this MOU on the dates indicated below.

[SIGNATURE PAGE FOLLOWS ON THE NEXT PAGE]

FLORIDA'S TURNPIKE ENTERPRISE

BY: Diane Gutierrez-Scaccetti

Diane Gutierrez-Scaccetti

DATE: 09/12/2012

Legal Review:

MIAMI DADE EXPRESSWAY AUTHORITY

BY: Javier Rodriguez, P.E.

Javier Rodriguez, P.E.

DATE: 9/4/2012

Legal Review:

ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

BY:

Max Crumit, P.E.

DATE: 8/30/2012

Legal Review:

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

BY:

Joe Waggoner

DATE: 9/10/2012

Legal Review: