



# MAINTENANCE AUDIT

September 2022

**CENTRAL  
FLORIDA  
EXPRESSWAY  
AUTHORITY**

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# EXECUTIVE SUMMARY



## Overview and Objectives

In accordance with the FY 2023 Internal Audit Plan, Internal Audit conducted a Maintenance Audit to (1) review how CFX's current maintenance policies encompass federal and state standards, (2) review how CFX manages compliance with its current maintenance policies and procedures, including the internal controls in place over third-party maintenance vendors, and (3) review how CFX measures the impact of its wrong-way driving detection program strategy, including use of available data to help measure the impact.

### Maintenance of Roads, Bridges, and Signs

CFX is responsible for the maintenance of 125 centerline miles of roadway, 361 bridge structures, and 671 overhead signs. Maintenance and inspection practices support the functioning and safety of the roadway system and compliance with federal and state regulations. CFX staff coordinate with multiple third-party vendors to perform daily maintenance and inspection activities.

### Wrong Way Driving Detection Program (WWD)

In addition to performing daily maintenance activities, CFX pioneered an innovative Wrong-Way Driving Detection Program intended to detect instances of wrong-way driving on CFX roadways, increase the rate of turnaround for wrong-way drivers, and decrease the occurrence of wrong-way driving. In 2012, CFX partnered with the University of Central Florida to understand the extent of wrong-way driving and subsequently installed the first phase of detection device and supporting infrastructure. The existing Wrong-Way Driving Detection system is comprised of devices which detect wrong way driving and signs equipped with flashing beacons to alert drivers. Devices also route alerts to the Regional Traffic Management Center, a facility managed by the Florida Department of Transportation which monitors traffic on select Central Florida roads and coordinates responses to incidents and crashes with law enforcement and first responders. Wrong-way driving countermeasures are currently installed and functioning at approximately 55 off ramps, roughly half of the CFX system.



## Scope and Approach

The scope of the audit included a review of CFX policies and procedures to maintain Roadways, Signs and Bridges in addition to a review of the impact of the Wrong-Way Driving Program. Specific to maintenance policies and procedures for Roadways and Bridges, the components of these asset classes on CFX's system that were in scope for this audit consisted of the following:

### Roadways

- Roadways/Pavement
- Roadside
- Traffic Services
  - Lighting
  - Guardrails
  - Barrier walls

### Bridges

- Substructure
- Superstructure
- Deck

# EXECUTIVE SUMMARY



## Scope and Approach (continued)

To execute this audit, Internal Audit performed the following procedures around the areas in scope:

### Maintenance

1. Reviewed how CFX incorporates the following federal and FDOT standards in its maintenance and inspection policies:
  - a. Federal Statutes, Title 23. Highways, Section 106(c). Assumption by States of Responsibilities of the Secretary,
  - b. Federal Highway Administration 23 Code of Federal Regulations (CFR) Part 650, Subpart C, Section 650.307 Bridge Inspection Organization,
  - c. Federal Statutes, Title 23. Highways, Section 116. Maintenance,
  - d. Florida Statutes, Title 26. Public Transportation, Chapter 334.048,
  - e. Florida Statutes, Title 26. Public Transportation, Chapter 335.074 Safety Inspection of Bridges,
  - f. FDOT Bridges and Other Structures Inspection and Reporting Procedures (Topic No.: 850-010-030-k),
  - g. FDOT Maintenance Rating Program Procedures (Topic No.: 850-065-002-j), and
  - h. Federal Statutes, Title 23. Highways, Section 129, subsection 3a & 3b;
2. Reviewed how CFX manages compliance with internally developed maintenance and inspection policies through the following:
  - a. Reviewed key controls surrounding asset tracking, inspection schedules and reporting, repairs and replacements, and incident response management;
  - b. Verified inspections, repairs, and replacements were documented as performed and were reported within applicable deadlines; and
  - c. Reviewed CFX's vendor management processes and controls for a selection of significant maintenance and inspection-related vendors for bridges, signs, and roadway maintenance. Contracts reviewed included the following:

Vendor	Service
Ayres and Associates	Overhead Sign Inspection Services
Kisinger Campo and Associates	Bridge Inspection Services
Jorgensen Contract Services, LLC ("JCS")	Roadway and Bridge Maintenance Services; S.R. 408, S.R. 417, S.R. 528, and Goldenrod Road Extension
Louis Berger Hawthorne Services, Inc.	Roadway and Bridge Maintenance Services - S.R. 429, S.R. 453, S.R. 414 and SR 451

# EXECUTIVE SUMMARY



## Scope and Approach (continued)

### Wrong Way Driving Detection Program

3. Reviewed how CFX measures the impact of its Wrong-Way Driving Detection Program, including the use of available data to help measure the impact of the program through the following:

- a. Reviewed how CFX manages compliance with the WWD program preventative maintenance plan, and
- b. Reviewed how management captures and uses data for WWD trends as provided by third-party reporting.
- c. Reviewed processes and key controls surrounding inspection and repair of WWD technology assets. Contracts reviewed included the following:

Vendor	Service
TapCo	WWD System and Device Inspection and Maintenance

A review of the adequacy of the maintenance policies and procedures being performed by CFX to help ensure customer safety was NOT in scope for this audit.

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