



Orlando-Orange County Expressway Authority

Maintenance and Safety Plan Compliance

February 14, 2014

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Executive Summary

Overview

The Orlando-Orange County Expressway Authority is responsible for the maintenance and safety of 109 miles of roadway and 873 structural assets, including toll bridges, roadway signs, and high mast light poles. The maintenance and safety process is managed by the Authority's Maintenance Department, consisting of two Authority personnel that perform monitoring activities and four contractors/consultants that perform daily maintenance and inspection activities.

In accordance with the 2014 Internal Audit Plan, Internal Audit reviewed the maintenance and inspection procedures around the Authority's roadways and bridges for compliance with federal, state FDOT, and internally developed standards.

Objectives

The objectives of the audit were to (1) verify the Authority's compliance with federal and state maintenance and inspection regulations, and (2) to review the processes and controls surrounding the maintenance and inspection of the Authority's roadways and bridges, including third party maintenance and inspection agreements, contract performance monitoring, asset tracking, scheduling of inspections, repairs and replacements, outputs of preventative maintenance and safety repairs and inspections, and incidence response initiatives.

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Executive Summary

Scope and Approach

Internal Audit evaluated key processes and controls over the Authority roadway and bridge maintenance and inspection programs for the period July 1, 2012 through December 31, 2013. This included identifying federal and state FDOT regulations, reviewing the Authority's compliance with those regulations, reviewing the asset maintenance and inspection schedule tracking procedures and response initiatives, and reviewing the vendor performance monitoring procedures for maintenance and inspection contractors. The components of the Authority's roadways and bridges in scope were roadways/pavement, roadside, traffic services, substructures, superstructure, and deck.

Internal Audit identified four vendor contracts executed by the Authority to provide roadway and bridge maintenance and inspection services:

1. **Ayers Associates, Inc. #000988** – System wide Overhead Sign Inspection Services. The Authority selected the option to obtain sign inspection services from FDOT's consultant. This contract mirrors the FDOT's contract for inspection services .
2. **Kisinger Campo & Associates Corp. #000848** – Bridge Inspection Services. The Authority selected the option to obtain bridge inspection services from FDOT's consultant. This contract mirrors the FDOT's contract for inspection services .
3. **Infrastructure Corporation of America #000689** – S.R. 429 and S.R. 414 Roadway and Bridge Maintenance Services. This contract began in July 2010 and has a contract value of \$8 million.
4. **Jorgensen Contract Services #000761** – S.R. 408, S.R. 417, S.R. 528 and S.R. 551 Roadway and Bridge Maintenance Services. This contract began in July 2011 and has a contract value of \$17 million.

Summary of Procedures Performed and Results

Internal Audit identified risks and tested key controls within the roadway and bridge maintenance and inspection processes. Where applicable, a sample of detailed maintenance and inspection activity was reviewed and tested for accuracy and compliance with federal, state, and Authority guidelines. Based upon the work performed, Internal Audit identified five opportunities that would strengthen the Authority's overall control environment. The table below provides an overview of the areas reviewed and opportunities identified.

Process	Procedures Performed / Key Areas Reviewed	Total Controls Tested	Number of Observations	Observation Reference
Maintenance & Inspection Contract Management	Authority's quality review of contractor performance, and prioritization of maintenance activities.	8	1	1
Asset & Activity Monitoring	Authority's asset tracking process, monitoring of inspections and maintenance activities, and record retention.	3	3	2,3,4
Maintenance & Inspection Standards	Compliance with federal and state inspection and maintenance regulations. Inclusion of pertinent regulatory requirements in Authority maintenance and inspection contracts . Authority's internally developed standards align with regulatory requirements.	8	1	5
	TOTAL:	19	5	

Detailed Observations

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Observation 1 – Lack of Written Maintenance and Safety Procedures

Relative Priority: *Medium*

The Authority's Maintenance and Safety activities follow the State of Florida and Federal guidelines and the Master Bond Resolution Covenants from a policy perspective. However, in regards to the method of accomplishing the applicable standards, there are no written procedures documenting the Authority's maintenance and inspection program. Written procedures are an integral component of the infrastructure surrounding each critical business process. Procedures help govern, in writing, the actions necessary to fulfill the organization's policy for operations. Procedures provide guidance in the pursuit of achieving the objectives of the process, help reduce misunderstanding, and increase distribution of pertinent information to those involved in the process.

Recommendation

The Authority should consider developing written "desktop" procedures that clearly document key aspects of the Authority's maintenance and inspection program, including:

- Internal procedures for managing and maintaining the Authority's roadways and bridges
- Asset tracking
- Role of third party maintenance & inspection agreements (scheduling of inspections, repairs, and replacements; outputs of preventative maintenance)
- Maintenance contract performance monitoring
- Work order, maintenance request, and deficiency response deadlines
- Incidence and Emergency Response process
- GEC Annual Inspection process

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Observation 1 – Lack of Written Maintenance and Safety Procedures

Relative Priority: *Medium*

Management Response

Management feels there are limited resources in the Maintenance Department (2 full-time employees) to fulfill this recommendation. However, the Authority understands the importance of documenting Maintenance procedures performed by Authority personnel and the value of documenting the Authority's role in the maintenance program. The Authority concurs with the recommendation.

Management Action Plan

The Authority will develop written procedures to document the pertinent aspects of the Authority's maintenance and inspection operations in regards to bridges, overhead structures, and roadways.

Action Plan Owner / Due Date

Ben Dreiling, Director of Construction & Maintenance / December 31, 2014

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Observation 2 – GEC Annual Inspection Report Response

Relative Priority: *Medium*

Annually, the Authority's General Engineering Consultant (GEC) performs an independent visual inspection of the Authority's roadway system. A ten (10) point rating system is used by the GEC to evaluate the condition of the roadways and roadway features, where 10 is excellent or "like new" condition and 1 is emergency or unacceptable. Roadway features receiving a rating of 3 or lower are considered deficient and require action from the Authority's maintenance contractor.

The GEC Annual Inspection takes several months to complete; however, deficiencies requiring immediate action by the maintenance contractor are communicated to the Authority and maintenance contractor continuously throughout the inspection. A final inspection report is issued to the Authority at the conclusion of the inspection. The Authority's Construction and Maintenance Department and maintenance contractors perform a review of the final report issued by the GEC. Due to the natural lag between the identification of a deficiency and completion of the annual GEC inspection, followed by the issuance of the final report, many of the deficiencies requiring Authority action (rating 1-3) have been resolved through maintenance requests or routine maintenance. However, the Authority does not document the action taken previously or the planned action to address the deficiencies identified by the GEC.

Recommendation

Due to the natural delay in the issuance of the GEC's Annual Inspection Report, the Authority should request that the GEC inspector formally communicate deficiencies rated 1-3 to the Authority. In a separate document the Authority should address, prior to the issuance of the report, the status of the deficiency. This process improvement would allow the Authority to provide resolution/responses to high priority deficiencies. The GEC would report on the current status of the deficiencies within the Annual Inspection Report at the time of publication.

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Observation 2 – GEC Annual Inspection Report Response

*Relative Priority: **Medium***

Management Response

The Authority concurs.

Management Action Plan

The Authority will meet with the GEC to develop procedures requiring the GEC to formally communicate deficiencies rated 1-3 to the Authority. Based on this additional process, the Authority will request that the GEC report on the resolution or management responses to the deficiencies identified within the Annual Inspection Report.

Action Plan Owner / Due Date

Ben Dreiling, Director of Construction & Maintenance / July 1, 2014

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Observation 3 – Monitoring of Bridges and Overhead Structures Inspection Quality Control

Relative Priority: *Medium*

Per FDOT quality control requirements, inspection reports for all structure types must be signed by the inspector and independently reviewed and signed by the inspection supervisor. In addition, the report must be signed and sealed by the professional engineer responsible for confirming the accuracy of the report.

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Monitoring

As part of this audit, a selection of sealed, final structure inspection reports was reviewed for evidence of the quality control process performed by the inspector, independent reviewer, and professional engineer. In 25% of the samples selected (14 of the 55), the Authority's inspection files did not contain the sealed final inspection report to evidence the quality control review. Therefore, it was determined that the Authority may not be consistently monitoring compliance with FDOT quality control requirements prior to inspection reports being submitted to the FDOT.

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In addition, final inspection reports with appropriate signatures are stored within FDOT's EDMS system. The Authority's Maintenance Department is permitted to access the FDOT's EDMS system, but cannot utilize the EDMS system due to IT asset limitations. The Maintenance Department has not followed up with the IT Department for resolution of the system issue.

Recommendation

The Authority should implement procedures to conduct a quality control review of final inspection reports with all appropriate signatures. As the responsible party for roadway safety, the Authority should perform independent reviews of final inspection reports to obtain additional assurance that inspections were completed in accordance with all applicable regulations and that the work of the inspection consultants has been reviewed for quality and accuracy. Additionally, the Authority should retain all final inspection reports as submitted to FDOT by the inspection consultants for documentation purposes.

In addition, the Authority's IT department should prioritize resolution of the limitations impacting the Maintenance Department's access to FDOT's EDMS system.

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Observation 3 – Monitoring of Bridges and Overhead Structures Inspection Quality Control

Relative Priority: *Medium*

Management Response

The Authority concurs.

Management Action Plan

The Maintenance Department will work with the IT Department to ensure EDMS access issues are resolved. The Authority has refined its process and will no longer accept draft reports from the inspection consultants as evidence of inspection completion.

Action Plan Owner / Due Date

Ben Dreiling, Director of Construction & Maintenance / December 31, 2014

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Observation 4 – Monitoring of Regulatory Inspection Compliance of Bridges and Overhead Structures

Relative Priority: Low

The Authority's inspection consultants are responsible for scheduling and performing FDOT required inspections in accordance with applicable federal and state regulations. The inspection consultants must issue an inspection report to the FDOT within 60 days of the inspection.

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The official records for regulatory inspection compliance are maintained on FDOT's Pontis system. In order to monitor compliance with federal and state inspection requirements for roadways and related structures, the Authority and the Inspection Consultants utilize the FDOT Pontis System. While no deficiencies were detected, there is no documented evidence that the Pontis System is reviewed on a regular or recurring basis to identify delinquent inspection reports.

Recommendation

The Authority should implement a consistent, defined, periodic monitoring procedure over official inspection records within FDOT's Pontis system. Monthly, the Authority should generate the Pontis Delinquent Reporting schedule from FDOT's Pontis system and review the report for delinquent inspections. Appropriate follow-up should be conducted on any delinquent inspection reports. Documentation of the review should be retained and signed as evidence of review of this monitoring control.

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Observation 4 – Monitoring of Regulatory Inspection Compliance of Bridges and Overhead Structures

Relative Priority: Low

Management Response

The Authority concurs.

Management Action Plan

The Authority will implement the monthly review procedure utilizing the reporting capabilities of FDOT's Pontis system to monitor regulatory inspection compliance. The Authority will retain evidence of the review procedure in accordance with the recommendation.

Action Plan Owner / Due Date

Ben Dreiling, Director of Construction & Maintenance / June 1, 2014

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Observation 5 – Maintenance Deadlines in Third Party Agreements for Bridges and Overhead Structures

Relative Priority: Low

Pursuant to state publication “Bridges and Other Structures Inspection and Reporting”, the FDOT District 5 Maintenance Office is responsible for reviewing inspection reports, issuing work orders based on maintenance recommendations found within the inspection reports, and assigning a priority level (1-4) to each work order related to Lease-Purchase Agreement (LPA) roadways (S.R. 408, S.R. 528, and portions of S.R. 417). The Authority is responsible for work order issuance for any Non-LPA roadways (S.R. 414, S.R. 429, S.R. 551, and portions of S.R. 417). However, the Authority has employed FDOT to also create work orders for Non-LPA roadways for consistency. Per the state regulation, the following deadlines apply to FDOT-issued work orders:

- Priority 1 - 60 Days
- Priority 2 - 180 Days
- Priority 3 - 360 Days; 180 Days in District 5
- Priority 4 - No Time Limit

Upon review of the Authority's maintenance contracts for inclusion of FDOT-issued work order deadlines, Internal Audit determined that the Scope of Services within the vendor maintenance contracts do not include the FDOT priority levels and associated deadlines.

Recommendation

Maintenance contracts should accurately reflect actual FDOT requirements for FDOT-issued work orders. Due to the associated contractual risk and opportunity for non-compliance with FDOT regulations, the Authority should consider amending the contract language in the vendor contracts to include the FDOT District 5 work order completion requirements.

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Observation 5 – Maintenance Deadlines in Third Party Agreements for Bridges and Overhead Structures

Relative Priority: Low

Management Response

The Authority concurs.

Management Action Plan

The Authority will coordinate maintenance contract updates to require completion of FDOT work orders in accordance with FDOT District 5 deadlines.

Action Plan Owner / Due Date

Ben Dreiling, Director of Construction & Maintenance / Upon contract renewal (July 2015 & July 2016)

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