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WHISTLEBLOWER
PROTECTION
PROGRAM

Memorandum

Date: June 29, 2010
To: Ron Rifenberg, WBPP Manager, AQS-100
From: Winsome A. Lenfert, Manager, Airports Division, ASO-600 *Winsome A. Lenfert*
Prepared by: James T. Castleberry
Subject: Whistleblower Complaint, WB1049, Federal Express Corporation

The Memphis-Shelby County Airport Authority (MSCAA) received federal funding for the rehabilitation of Runway 9/27. This project included rehabilitation of the runway pavement. Part of the Whistleblower Complaint alleges the culvert under Runway 9-27 is structurally deficient and in danger of collapse. This memorandum addresses that part of the complaint.

The culvert is owned by the Memphis - Shelby County Airport Authority. FAA's Southern Region Airports Division, ASO-600 made contact with the whistleblower on May 25, 2010. On May 27, 2010, FAA's Memphis Airports District Office, MEM-ADO, contacted the airport authority and found:

1. As part of the Runway 9/27 reconstruction design effort in 2008, the design consultant AFRAM analyzed the design of the Hurricane Creek box culvert.
2. The box culvert is a four (4) barrel box culvert with each box being 14-feet wide and 13.5-feet tall. The structure was constructed in 1985.
3. At approximately 1,580 feet long, the Hurricane Creek Box Culvert connects into an existing four (4) barrel box culvert on FedEx property at the north side of Taxiway V. On the south end of the structure, it connects into a reinforced concrete open drainage channel.
4. In December 2009, the airport authority received questions and concerns from the whistleblower over the structural integrity of the Hurricane Creek box culvert based on his visual observations from 2006. The whistleblower is a former employee of FedEx and toured the culvert as part of a business continuity plan that he was working on in 2006. The airport authority allowed the whistleblower to review thousands of documents related to the reconstruction of Runway 9/27 and the report prepared by AFRAM in 2008.
5. In 2010 the airport authority contracted with engineering consultant Kimley-Horn (K-H) and in mid May they completed a more thorough review of the structural integrity of the culvert. They conducted an onsite inspection of the culvert and performed the following:
 - a. Visual Observation

- i. Review existing design drawings
 - ii. Walk-through of all four (4) barrels of the existing structure the full length of airport responsibility (from the south inlet to the interface with the FedEx culvert)
 - b. Structural Testing from Inside Culvert
 - iii. Concrete cores of the base slab/footing, interior wall, and exterior wall
 - iv. Radiographic (X-ray) testing of interior wall
 - v. Ground Penetrating Radar (GPR) scans of the footing, interior wall, exterior wall, and top slab
 - vi. Alkali-Silica Reaction (ASR) testing of the cores
 - c. Structural Testing from Above Culvert
 - vii. Concrete cores of the top slab
 - viii. Ground Penetrating Radar (GPR) scans of the top slab
 - ix. Alkali-Silica Reaction (ASR) testing of the core
 - d. Structural Analysis of the Culvert for Airbus A380-800F and Boeing 777F aircraft
6. K-H concluded that the culvert was in good condition and was structurally sound and could handle current air traffic. Quoting directly from the report:
 - a. "The culvert has been in service for 25 years and is in good condition. We have conducted a visual inspection of the culvert and structural analysis to rate the capacity of the culvert for Airbus A380-800F and Boeing 777F aircraft. The structural analysis is focused on three separate sections of the culvert, at Runway 9-27 and Taxiways A and V."
 - b. "Based upon our structural analysis, the Hurricane Creek Box Culvert can sustain the loading of the A380-800F and Boeing 777F at Runway 9-27 and Taxiways A and V. We did not observe any deterioration in the culvert that would indicate the structure is inadequate to carry either aircraft."
7. K-H also stated in the report that the "Hurricane Creek Box Culvert can continue to provide satisfactory service for the foreseeable future" and recommended a few minor maintenance items which the airport authority plans to complete.
8. The whistleblower attended the airport authority's Board May meeting and expressed his concerns. K-H presented a summary of the results of the report at the Board meeting.
9. At the whistleblower's request, the airport authority mailed him a copy of the final report.

The MEM-ADO also received and reviewed the K-H report. K-H is a qualified professional engineering consultant. Our review of the report does not question the professional opinion of the consultant.

In follow on emails, the whistleblower also claims the airport authority is withholding or hiding information and seeking funds to seismic retrofit the culvert. Based on our knowledge and what we observed, we have no evidence to support the whistleblower's claim that the Airport Authority is withholding information. The Memphis area is in a designated earthquake risk zone. New studies show the risk may be larger than previously predicted. Based on this new data, scientists recommend seismic studies in the Memphis area. This effort does not in any way say the culvert is structurally deficient for normal operations. MEM-ADO accepts the airport authority's assessment of the issue and has no plans for on-site visits.