Memorandum

MIAMI-DADE COUNTY

Date: December 4, 2012

To: Honorable Vice Chairwoman Audrey M. Edmonson and Members, Board of County Commissioners

Agenda Item No. 8(A)(1)

From: Carlos A. Giménez
County Mayor

Subject: Ratification of Acceptance and Execution of Federal Aviation Administration (FAA) Grant Agreement, AIP Number 3-12-0049-066-2012, in the amount of $2,550,000 for Phase 1 - Design and Preliminary Construction of Foreign Object Debris (FOD) Detection for Runway 08R/26L at Miami International Airport

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RECOMMENDATION

It is recommended that the Board adopt the attached resolution ratifying the actions of the Mayor or Mayor's designee, pursuant to provisions of the Aviation Department's Expedite Ordinance No. 95-64, codified as Section 2-285 (6) of the Code of Miami-Dade County, in accepting and executing Grant Agreement AIP Number 3-12-0049-066-2012 between Miami-Dade County and the Federal Aviation Administration (FAA) for Phase 1 - Design and Preliminary Construction of Foreign Object Debris (FOD) Detection System for Runway 08R/26L at Miami International Airport (MIA), in the amount of $2,550,000.

SCOPE

The Foreign Object Debris (FOD) Detection project associated with this Airport Improvement Program (AIP) Grant Agreement is located within Commissioner Rebeca Sosa's District 6; however, the impact of this item is countywide as Miami International Airport (MIA) is a regional asset.

FISCAL IMPACT

This grant will result in the County's receipt of grant funds from the FAA. Phase 1 - Design and Preliminary Construction of the Foreign Object Debris (FOD) Detection Project has been approved for completion under the Aviation Department's Capital Improvement Program and is estimated to cost $5,100,000 in total. This initial FAA grant in the amount $2,550,000 covers eligible design, bid/award and construction costs. FAA will award a grant for Phase 2 - Final Construction if necessary to cover the actual contract award amount if it exceeds the estimated cost. This grant represents 50% FAA funding with the remainder project cost funded by the Miami Dade Aviation Department (MDAD) Capital Improvement Program (CIP) for the final completion of the project. This project will not have any maintenance cost for the first few years as those costs would be covered under the manufacturer's warranty. Any future maintenance costs are estimated to be $63,000 per year after the first year and will be funded through aviation revenue funds.

PROJECT MONITOR

The construction of the project will be managed by Ricardo Solorzano. This grant will be managed by MDAD Chief of Aviation Grants, Norma Mata.

BACKGROUND

Foreign object debris (FOD) at airports is defined as any object found on the airfield which has the capacity to injure airport or airline personnel and/or aircraft. The presence of FOD on an airport operations area (AOA) poses a significant threat to the safety of air travel. FOD has the potential to damage aircraft during critical phases of flight, which can lead to catastrophic loss of life and airframe, and at the very least, increased maintenance and operating costs. FOD damage costs airlines, airports,

and airport tenants millions of dollars every year. The cost to repair a FOD-damaged engine can easily exceed $1 million. FOD also causes extensive indirect costs such as flight delays and cancellations resulting in lost revenue and productivity.

Currently FOD detection and removal at MDAD is handled by trained MDAD Airside Operations staff through FAA mandated visual inspections. Through such periodic inspections objects are identified and manually removed from the airfield. Importantly, the ability to provide continuous FOD detection of pavements, particularly between each aircraft operation (e.g., take-off or landing) is not provided by traditional pavement inspection process, procedures or practices.

While scheduled visual FOD inspections may have been sufficient in the past, the advent of new technologies and a move towards a risk-based safety management now demands that airports take advantage of the benefits of recent technological developments to greatly expand the capabilities of FOD detection and management. Through the proposed automatic FOD detection system MDAD will have the capability to continuously monitor and detect FOD on runways and other critical aircraft movement areas using stationary and mobile detection devices. This project will initially target Runway 08R/26L to monitor the effectiveness of this new technology in FOD detection. This project is currently in the procurement phase.

Jack Osterholt, Deputy Mayor

MEMORANDUM
(Revised)

TO: Honorable Vice Chairwoman Audrey M. Edmonson and Members, Board of County Commissioners

DATE: December 4, 2012

FROM: R. A. Cuevas, Jr.
County Attorney

SUBJECT: Agenda Item No. 8(A)(1)

Please note any items checked.

_____ **"3-Day Rule" for committees applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **No committee review**

_____ **Applicable legislation requires more than a majority vote (i.e., 2/3's ____, 3/5's ____, unanimous _____) to approve**

_____ **Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required**

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(A)(1)
12-4-12

RESOLUTION NO. _____

RESOLUTION RELATING TO MIAMI INTERNATIONAL AIRPORT; RATIFYING EXECUTION BY MAYOR'S DESIGNEE OF GRANT AGREEMENT NO. 3-12-0049-066-2012 BETWEEN MIAMI-DADE COUNTY AND THE FEDERAL AVIATION ADMINISTRATION IN THE AMOUNT OF $2,550,000 TO PROVIDE FUNDS FOR PHASE 1 OF THE DESIGN AND CONSTRUCTION OF A FOREIGN OBJECT DEBRIS DETECTION SYSTEM FOR RUNWAY 8 RIGHT/26 LEFT AT THE AIRPORT

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum and document, copies of which are incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board ratifies, confirms, and approves the execution by the Mayor's designee of the attached Grant Agreement No. 3-12-0049-066-2012 between Miami-Dade County and the Federal Aviation Administration (FAA) in the amount of $2,550,000 to provide funds for Phase 1 of the design and construction of a foreign object debris (FOD) detection system for Runway 8 Right/26 Left at the Airport.

The foregoing resolution was offered by Commissioner , who moved its adoption. The motion was seconded by Commissioner and upon being put to a vote, the vote was as follows:

Audrey M. Edmonson, Vice Chairwoman

Bruno A. Barreiro	Lynda Bell
Esteban L. Bovo, Jr.	Jose "Pepe" Diaz
Sally A. Heyman	Barbara J. Jordan
Jean Monestime	Dennis C. Moss
Rebeca Sosa	Sen. Javier D. Souto
Xavier L. Suarez	Juan C. Zapata

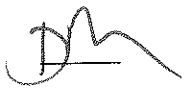
The Chairperson thereupon declared the resolution duly passed and adopted this 4th day of December, 2012. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By:_____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.



David M. Murray

GRANT AGREEMENT

U. S. Department of Transportation Federal Aviation Administration

Date of Offer: September 19, 2012

Project Number: 3-12-0049-066-2012
Recipient: Miami Dade County Board of County Commissioners (Herein called Sponsor)
Airport: Miami International Airport

OFFER

THE FEDERAL AVIATION ADMINISTRATION, FOR AND ON BEHALF OF THE UNITED STATES, HEREBY OFFERS AND AGREES to pay, as the United States' share, seventy-five percent (75%) of the allowable costs incurred in accomplishing the project consisting of the following:

"Phase 1 Design and Preliminary Construction of Foreign Object Debris (FOD) Detection System for Runway 08R/26L"

as more particularly described in the Project Application dated August 9, 2012.

The maximum obligation of the United States payable under this Offer shall be $2,550,000 for airport development.

This offer is made in accordance with and for the purpose of carrying out the applicable provisions of the Federal Aviation Act of 1958, as amended, codified at Title 49 of the United States Code. Acceptance and execution of this offer shall comprise a Grant Agreement, as provided by Title 49 of the United States Code, constituting the contractual obligations and rights of the United States and the Sponsor.

UNITED STATES OF AMERICA
FEDERAL AVIATION ADMINISTRATION

Manager, Airports District Office

SPECIAL CONDITIONS

See Attachment A

ACCEPTANCE

The Sponsor agrees to accomplish the project in compliance with the terms and conditions contained herein and in the document "Terms and Conditions of Accepting Airport Improvement Program Grants" dated April 13, 2012. The Sponsor specifically acknowledges that knowingly and willfully providing false information to the Federal Government is a violation of 18 U.S.C. Section 1001 (False Statements) and could subject the Sponsor's Designated Official Representative to fines, imprisonment or both if the U.S. Department of Justice determines the official acted outside the scope of his/her duties.

Executed this 21 day of September, 20 12
(Seal)

Attest

Senior Commissioner Clerk
Title

Jose Abreu
Name of Sponsor

Signature of Sponsor's Designated Official Representative

Director
Title

CERTIFICATE OF SPONSOR'S ATTORNEY

I, THOMAS P. ARBOTT, acting as Attorney for the Sponsor do hereby certify:

That in my opinion the Sponsor is empowered to enter into the foregoing Grant Agreement under the laws of the State of Florida. Further, I have examined the foregoing Grant Agreement, and the actions taken by said Sponsor relating thereto, and find that the acceptance thereof by said Sponsor and Sponsor's official representative has been duly authorized and that the execution thereof is in all respects due and proper and in accordance with the laws of the said State and the applicable provisions of the Federal Aviation Act of 1958, as amended, codified at Title 49 of the United States Code. In addition, for grants involving projects to be carried out on property not owned by the Sponsor, there are no legal impediments that will prevent full performance by the Sponsor. Further, it is my opinion that the said Grant Agreement constitutes a legal and binding obligation of the Sponsor in accordance with the terms thereof.

Signature of Sponsor's Attorney

9/24/12
Date

ATTACHMENT A: SPECIAL CONDITIONS

PHASE I DESIGN AND PRELIMINARY CONSTRUCTION: This first phase grant is being issued in order to allow the design to be completed and to begin preliminary construction. It is further understood that this Grant is made and accepted upon the basis of estimates. The parties agree that within 120 days from the date of acceptance of this Grant Offer, the sponsor shall furnish final construction documents including design engineering report, complete proposal package including plans and specifications, and estimates for the complete installation of the project, including construction, construction inspection, and equipment acquisition estimates to the FAA. No project procurement activities will begin, nor there has any advertisement for bids for accomplishment of such work, until the final specifications and "Sponsor Certification of Plans and Specifications" been accepted by the FAA. The parties further agree that any reference to specifications made in the Grant Offer or in the project application shall be with respect to the final project specifications.

It is understood and agreed by the parties hereto that within 6 months from the execution of this agreement that the (sponsor) will accept, subject to the availability of federal funding, a grant to complete the final construction of the project in order to provide a useful and useable Foreign Object Debris Detection System.

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SPONSOR COLLECTION OF DATA: One purpose of the FAA issuing this project grant is to collect data related to the use of the Foreign Object Debris Detection System. The data collection requirements are as follows:

FOD DETECTION SYSTEM
Data Collection Requirements

The airport will collect certain types of FOD data and submit it to the FAA. Copies of all reports will be sent to the designated point of contact at the FAA Regional Office/Airports District Office and the FAA William J. Hughes Technical Center POC: Satish Agrawal). The Regional Office/Airports District Office will generally be the airport's point of contact for the procurement of the FOD Detection System and the Technical Center will generally be the point of contact for technical matters.

Pre-Advertisement Submittal: The airport must submit the complete set of the procurement documents to the FAA Regional Office/Airports District office and to the FAA William J. Hughes Technical Center for FAA review prior to advertisement.

1. **FAA Authorization to Advertise:** The airport must receive authorization to advertise from the FAA Regional Office/Airports District Office before advertising the project for procurement. The FAA may, or may not, provide comments on the procurement documents.

2. **FOD Detection System Procurement Submittals to the FAA:** The airport must submit the following documents to the FAA Regional Office/Airports District office and to the FAA William J. Hughes Technical Center.

   a. A complete set of the procurement documents,

      i. As advertised and

      ii. As finally bid, including copies of all bid amendments.

   b. Copy of the public advertisement.

   c. Bid Tabulations.

   d. Copy of the executed contract.

   e. Copy of all change orders

   f. Final financial accounting for the project.

3. **Program Initiation:**

   a. Fixed System: Within one month after being notified that the airport has been selected in the initial FOD detection system program, the airport must provide the FAA with the draft data collection sheets that will be used to compare the runway with the FOD detection system installed on it with the other runways and airfield pavement areas on the airport.

b. Mobile installations: Within one month after being notified that the airport has been selected in the initial FOD detection system program, the airport must provide the FAA with a schematic of the airfield pavement surfaces in the airport's 14 CFR Part 139.327 self-inspection on which the mobile FOD detection system will be used and the surfaces on which the mobile FOD detection system will not be used.

c. During this initial phase, FAA will provide a grid layout that will be used by the airport to locate FOD collected on the airport unless the FAA agrees that an existing grid system used by the airport is suitable for the program.

4. **FOD Reporting:** Once the FOD detection system is operational, the airport must begin reporting on the FOD that is detected and collected.

   a. The airport must prepare monthly reports listing the following required elements of FOD removed from the airfield and submit the reports to the FAA:

      i. Date/Time Detected and Date/Time Retrieved

      ii. Runway Designation (baseline runway, test runway)

      iii. General FOD location

      iv. Specific location found (per FAA grid, including latitude and longitude if available)

      v. Method of detection (FOD detection system, visual identification, notification from aircraft or vehicle)

      vi. Description of FOD (description, origin, material, size, color, shine, identifying features)

      vii. Meteorological condition (clear, rain, snow, sleet)

      viii. Time

      ix. Status of FOD (saved, cataloged, discarded)

      x. Local control number (optional)

      xi. Photograph of FOD

      xii. Associated FOD damage (for example injury, damage to aircraft/vehicle)

      xiii. Individual FOD items smaller than ½ inch by ½ inch do not need to be reported (such as small stones or sand), unless they are found in large clusters (several stones in area).

   b. The airport must submit a monthly report to an electronic web-based data form (to be provided by the FAA). The airport must submit the reports for one year after the FOD detection system is online and operational. The airport has the option to submit reports more often, (for example on a weekly basis).

5. **Maintenance and Operations Report:** The airport must submit a report on the operation of the FOD Detection system. The report must include:

   a. Summary of any service issues, outages, parts or equipment failures

   b. False Alarms – the airport must list the meteorological condition, time, content of false alarm report, result of report

   c. Costs incurred to maintain or operate the system

   d. The airport must submit a monthly report to an electronic web-based data form (to be provided by the FAA). The airport must submit the monthly reports for one year after the FOD detection system is online and operational. The airport has the option to submit reports more often, (for example on a weekly basis).

6. **End of Operational Year Report-Out:** At the end of the one-year reporting period, the airport must meet with FAA to brief out the results of the program.

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FOD IDENTIFICATION CAPABILITY FOR FIXED RADAR SYSTEMS

To limit the false alarms, any fixed radar FOD detection system must have a high resolution, day/night camera system that is a component of the FOD detection system. The camera must have the capability to automatically image any target that causes a FOD radar system alarm on the monitored runway. The camera image must be displayed in the airport operator's center where the FOD radar control and monitoring equipment is located. The purpose of the camera system is to allow the operator to identify the FOD that has triggered the radar FOD alarm. It must have sufficient resolution for the operator to determine the nature and size of the FOD, in day or night, to support a decision on if the FOD must be immediately removed.

FREQUENCY INTERFERENCE DATA COLLECTION

One purpose of the FAA issuing this project grant is to collect data related to possible frequency interference caused by the use of the Foreign Object Debris Detection System. The data collection requirements for frequency interference issues are as follows:

FOD DETECTION SYSTEM

Frequency Interference Data Collection Requirements

The airport will collect certain types of FOD data and submit it to the FAA. Copies of all reports will be sent to the designated point of contact at the FAA Regional Office/Airports District Office and the William J. Hughes Technical Center. The Regional Office/Airports District Office will generally be the airport's point of contact for the program.

1. **Pre-Advertisement Submittal:** The procurement documents must contain the following requirements:

    a. A requirement that the FOD Detection System manufacturer comply with FAA Advisory Circular 150/5220-24 "Foreign Object Debris Detection Equipment" and 150/5210-24 "Airport Foreign Object Debris (FOD) Management." A prohibition against using an FCC Part 15 device as a means of communication with air traffic controllers, either directly or indirectly. .

2. **Frequency Interference Reporting:** The airport must submit a report on the frequency interference caused by the operation of the FOD Detection system. The airport must prepare monthly reports listing any instances of frequency interference. The submission of the report must be coincident with the Maintenance and Operations Report. The report must include:

    a. Date/Time Interference was Noted

    b. Conflict source:

        1. In band interference from other devices operating in the same band.

        2. Out of band interference from all sources in and around the airport location including all airport and aircraft radio, radar and navigation systems.

    c. Steps taken by the airport to mitigate the interference, including amount of time the FOD Detection System was taken off-line to resolve the issue.