

## **Raleigh-Durham International Airport**

### **West Side Airfield Electrical Rehabilitation Airfield Lighting and Signage Improvements FAA AIP 3-37-0056-37 RDU Project No. 080559**

#### **Project/Grant Description: Rehabilitate West Airfield Lighting, Including Vault 2**

##### **Airfield Circuits and Lighting**

This proposed project is predominantly a continuation of airfield electrical improvements that began on the east side of the airfield in 2008.

Proposed work consists of the replacement of old wiring fed from Electrical Vault 2 with new wiring in order to provide more dependable lighting. This encompasses the west side of the airfield with some overlap of the east side. Old direct buried wiring will be replaced with new wiring in new conduit to increase reliability and ease the burden of troubleshooting and replacement when necessary. The new conduit runs will be collected in new pull can plazas, replacing existing manholes where practicable. The pull can plaza concept is a continuation of work that began on the east side of the airfield. It allows circuits to be separated for ease of identification and for increased safety. It also dramatically reduces the number of circuits that must be de-activated when troubleshooting or replacing wiring.

In RDU's previous airfield electrical project, the Siemens airfield lighting control system was upgraded to the most recent version, including a hardware upgrade, and it was integrated with new regulators and controls in Electrical Vault 1. The new power system is Siemens' integrated switch gear, monitoring, and control system. Old Vault 2 regulators and controls will be replaced in this project to be compatible with newer components of the lighting system to increase reliability and decrease energy consumption.

Where they were not replaced in the previous airfield electrical project, old quartz taxiway edge lights and centerline lights will be replaced by new LED fixtures.

Quartz Touch Down Zone lights (TDZ's) will be replaced on Runways 23L, 5L, and 23R with LED fixtures, again for anticipated power and maintenance cost savings.

Quartz fixtures on the centerlines of Runways 5R-23L and 5L-23R will be replaced with LED fixtures.

The project includes the replacement of Runway 23L VASI and Runway 32 VASI with new PAPI's.

Runway 5R-23L guard lights were replaced in the previous project with LED fixtures. This project includes replacement of Runway 5L-23R guard lights with LED fixtures.

### **Pavement Condition and Weather Monitoring**

The airport SCAN system monitors and reports airfield pavement surface conditions, which assists in determining the amount and timing of de-icing agents to apply to the pavement in winter weather events.

In the most recent airfield project, the system was expanded to cover the east side of the airfield. This project expands and completes the airport SCAN system by installing pavement sensors on Runway 5L-23R, on west side taxiways, and on two cross-field taxiways not currently covered. One additional centrally-located weather station is included which will accommodate this need, with one subsurface probe. Expanding the system will eliminate the guess work on the west side of the airfield which can experience dissimilar weather conditions during winter events.

### **Airfield Signage**

In the most recent airfield project, LED lighted signs were installed for distance-to-go markers on Runways 5R-23L and 14-32. At the time, those type signs were the only LED lighted signs that were FAA approved. The remaining existing airfield signs consist of various manufacturers, models, and conditions. Several airfield guidance signs are old and un-reliable. As a result, some signs are poorly illuminated and/or vary in intensity. This project includes replacement of all non-LED signs on the airfield with new LED lighted signs of one manufacturer. Doing so will result in consistently illuminated signs, create savings in power costs and maintenance costs, and standardize parts inventories and maintenance functions.