



## Greater Rochester International Airport

### New Network Infrastructure Project

Rochester NY

GRIA Bid Package H

Scope: New Network Infrastructure (NNI)

#### **Overview:**

In preparation for multiple technology enhancements throughout the Greater Rochester International Airport during the 2017/2018 renovation, a project was designed to layout new single mode fiber optic infrastructure including a fiber optic backbone, all necessary racks, switches UPS, patch panels to support multiple current systems and any future systems at GRIA. VS Energy was selected to engineer the new network infrastructure along with performing construction administration and commissioning of the system once completed.

#### **Stated Objectives / Problems:**

A single mode fiber backbone to allow for connectivity of current and future technologies to run through the Greater Rochester international Airport. Existing County wireless to be extended to allow for more uniform coverage within the airport. The GRIA Facilities network to be extended into all mechanical rooms with major HVAC equipment.

Data connectivity for the new ROC View Passenger Information System, also engineered by VS Energy.

New data racks to be located in strategic locations including data rooms and fiber/switches at each gate location to allow for facility wide access to the network

Integration into the existing Facilities network for expansion through GRIA

Fully functional network infrastructure to be completed prior to the installation of concourse holding area lights to allow for network integration with the Flight Information Display System (FIDS) and control of lights.

#### **VS Energy Process:**

- Design:
  - VS Energy and the GRIA network manager surveyed the existing network infrastructure within the facility and determined where new data closets were necessary to facilitate a campus wide fiber backbone along with expanding the Monroe County WAN and the Facilities network. Multiple design review meetings were held with stakeholders to confirm present and future network requirements. Concurrent renovation and construction of new data rack locations required coordination with multiple projects as well as integration of future expansion plans. After data closet locations were determined VS Energy sized all fiber runs to accommodate for current and future technologies. VS

Energy provided project drawings, plans and specifications for the complete project including hardware, installation means and methods, configuration, programming, testing, grounding and bonding, and commissioning.

- VS Energy conducted 30%, 70% and 100% review meetings with stakeholders, and prepared project budget.
- Contractor scope and selection
  - VS Energy prepared scope and bid documents for the NNI contract.
  - Project low bidder was 21% below project estimate including allowances.
  - Post receipt of bids, pricing and interviews of contractors were completed by VS Energy.
  - Submittal review and approval by VS Energy.
- Construction Management
  - Construction Administration and Site Safety was performed by VS Energy.
  - VS Energy maintained a QA manager, commissioning agent and project manager on site for the duration of construction.
    - VSE Responsibilities included daily contractor coordination, weekly project meetings, review of field changes and contract modifications.
  - During construction numerous network changes were made by the owner. VS Energy generated Informational Bulletins with scope descriptions and drawings to direct the work of the contractor. VS Energy provided field direction where existing site conditions and/or future work plans interfered with the installation of the new network infrastructure.
    - VS Energy provided design and scope documents for contractors to facilitate completion of the additional work by the contract completion date. Funds were reallocated from within the terminal renovations project.
- Commissioning
  - VS Energy developed a comprehensive commissioning plan for the new network infrastructure at GRIA.
  - VS Energy supervised fiber and cat6A testing prior to commissioning the NNI.
- Close Out
  - VS Energy reviewed contractor submitted as-built documentation including complete network drawings and made final approval of all hardware documentation for submission to GRIA as a complete new network as-built package.

## **Results:**

- Network infrastructure
  - A VLAN for the ROC holding area lighting was created to allow for campus wide control of the holding area lighting
  - ROC utilized fiber from the NNI to expand the public WiFi through the airport.
  - The ROC View application is utilizing wireless access points installed in the NNI project
  - All major HVAC equipment is networked over the NNI to allow for global control, monitoring and advanced data collection of operating and energy performance data.
  - Project was completed and commissioned at 18% below budget. No contingency dollars were used.