

**National Oceanic and Atmospheric Administration**  
**National Weather Service**  
**Weather and Climate Computing Infrastructure Services (WCCIS)**  
**Annual Operational Analysis**  
Calendar 2006

This annual operational analysis report is a status review of the Weather and Climate Computing Infrastructure Services (WCCIS) program in terms of financial performance, customer results and performance measures. It details financial and technical performance against established baselines/requirements and evaluates customer results. The program continues to meet established cost, schedule and performance parameters and directly facilitates NOAA's strategic goal to "Serve Society's Needs for Weather and Water Information."

## **1.0 Financial Performance**

The annual IT Expenditure Report submitted to and approved by the NWS OCIO provides a primary baseline for the performance measurement for this investment. WCCIS financial performance for 2006 falls within budget authority and planned costs. Total 2006 annual expenditures of \$20,144,000 were significantly less than the FY 2006 estimate of \$23,997,000. The three primary contracts incorporated into the WCCIS are with RSIS, QSS and SAIC. All three contracts provide support services to NCEP. A large number of Government personnel also participated in this program providing technical management, technical direction and acquisition authority. A considerable portion of the budget is devoted to systems (hardware, software, maintenance, integration services) acquisition. The relatively large discrepancy between the actual and estimated budget was due to the manner in which IT-infrastructure related funds associated with NCEP's new building project were spent. New building funds were not a part of the NCEP budget, this function instead being carried out as a headquarters project.

## **2.0 Customer Results**

The WCCIS program is fully meeting the customer's needs and the program is delivering the services intended. During 2006 the WCCIS program directly contributed to the NOAA/NWS mission and was critical in supporting the issuance of weather watches and warnings that protect both life and property. The value of this program in terms of lives saved and property protected mandates a continued need for this investment.

### **2.1 Significant Accomplishments**

During 2006 NCEP conducted a full and open acquisition to acquire wide area network capability meeting the requirements listed below. An award was made to Quest Communications for implementation beginning in FY 2007.

Requirements:

The WAN carrier will provide Multiplexers, Routers and all associated equipment needed to provide broadband services to the NCWCP and other NOAA and partner facilities, as necessary including the following:

- All fiber required to connect the WAN carrier network to NCWCP and other NOAA and partner facilities as necessary, in a manner that is fully protected and physically diverse.
- Local battery backup for all WAN carrier-provided equipment.
- Fiber Distribution Panels (FDP) in each TEP/telecommunications equipment room as needed. These FDPs will constitute the DMARC (point of demarcation) where NOAA's single mode fiber will connect to the WAN carrier's broadband services. As necessary, extend DMARC to NOAA's equipment.
- Any other hardware or software required to provide the desired services. The WAN carrier is also responsible for providing any and all fiber splices necessary to connect to their network.
- Detailed physical and logical WAN topologies.
- A low latency, highly available network and provide a Service Level Agreement (SLA) outlining customer and telecomm requirements:
  - SLA will include telecomm penalties for outages
  - Round-trip delays
  - Actual packet delivery
  - Response time to service outage
  - Clearly defined escalation procedures for problem management.

## **2.2 Problems Experienced**

No significant problems were experienced during calendar year 2006.

## **2.3 Adjustments of Plans**

Project scope was decreased slightly in accordance with a revised funding stream for activities supporting NCEP's new building. The adjustment had no impact on activities associated with meeting project Performance Measures (2.4) for 2006.

## **3.0 Strategic and Business Results**

This investment is meeting the business needs of the organization, as demonstrated by the Performance Measures. These performance measures are derived from processes critical to the success of the agency mission. Furthermore, the accomplishment of these business processes directly facilitates NOAA's strategic goal to "Serve Society's Needs for Weather and Water Information." Specifically, the work performed ensures the viability of the infrastructure that carries mission-critical data to NWS forecasters responsible for issuing "Watches" and "Warnings" to the Public.

### 3.1 Performance Measures

The current performance of the system is documented in the table below

<b>Performance Measures</b>			
<b>Indicator</b>	<b>2006 Baseline</b>	<b>Calendar Year 2006</b>	<b>Comments</b>
Help-desk Tickets Closed within 48 Hours	90%	85%	Hardware delivery time makes achieving 48 hour turn-around difficult to achieve
Security Patch Deployment within 14 Days	96%	98%	Exceeds baseline in this critical security element
Systems Under IT Lifecycle Management	75%	75%	Includes all network systems and operational IT systems
NCEP Network Availability	99.5%	99.5%	WAN and LAN

### 4. Innovation

As described in 2.1 a significant change in the delivery of services was addressed. Working in close cooperation with NOAA, NCEP developed a Statement of Need and conducted a full and open acquisition to allow communication suppliers to develop better mechanisms to meet agency requirements. As a result, a new contract was established that will better meet customer requirements and reduce costs to the Government. The winning contractor used new technology to devise an innovative network configuration that can serve NCEP's needs into the future. Specifically, NCEP plans to tie into the NOAANet MPLS network to reach its remote service centers (located in Miami, FL, Kansas City, MO, Boulder, CO and Norman, OK) rather than relying on less reliable individually leased lines. Within NCEP the contract employs DWDM technology (wavelength-division multiplexing is a technology which multiplexes multiple optical carrier signals on a single optical fiber by using different wavelengths (colours) of laser light to carry different signals. This allows for a multiplication in capacity, in addition to making it possible to perform bidirectional communications over one strand of fiber) to provide expandable service at the lowest possible cost.