National Oceanic and Atmospheric Administration
National Weather Service
NOAA/NWS/NDBC Ocean Observing System of Systems (NOOSS)
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Annual Operational Analysis - 2006

1.0 Strategic and Business Results

This Annual Operational Analysis (AOA) report provides an assessment of the NOAA/NWS/NDBC Ocean Observing System of Systems (NOOSS) program's performance for calendar year 2006. This investment continues to meet established cost, schedule and performance parameters and must continue in order for NOAA to meet its Strategic Goals of Serving Society's Needs for Weather and Water; and Supporting the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation.

2.0 System Performance

The steady-state NOOSS program is comprised of moored buoys, Coastal Marine Automated Network (CMAN) stations, and Voluntary Observing Ship (VOS) stations. NDBC serves as the program office and maintenance facility. In 2003, the Deep-ocean Assessment and Reporting of Tsunami (DART) warning array stations were added. The Pacific Tropical Atmosphere, Ocean (TAO) array was added in 2005. The NOOSS provides accurate, quality controlled atmospheric/oceanographic data in real-time, 24x7x365, to the public, NOAA service and modeling communities, other government agencies, the private sector and universities. NOOSS surface and oceanographic observations are a primary and critical information source of NOAA's Goal Teams and over 15 NOAA Programs, including Local Forecast and Warning, Environmental Modeling, and Coasts Estuaries and Oceans. The Commerce and Transportation Mission Goal outcomes, to increase transportation safety and productivity, directly depend directly on NOOSS observations.

Performance of the NOAA/NWS/NDBC Ocean Observing System of Systems (NOOSS) investment for 2006 is shown in the table below:

Measurement Area	**Measurement Indicator**	**2006 Baseline**	**Through September 30, 2006**	
			Goal	Actual
Mission and Business Results	Environmental Management	Quality controlled marine observations PDA&QC	1,700,000 quality controlled marine observations	1,850,000 quality controlled marine observations
Customer Results	Service Quality	Quality controlled marine observations from Non-NOOSS sites	3,500,000 quality controlled marine observations	4,322,000 quality controlled marine observations
Process and Activities	Productivity and Efficiency	NOOSS all systems availability	NOOS - 85% TAO - 80% DART - 80%	NOOS - 90.5% TAO - 80% DART - 80%
Technology	Reliability and Availability	% TAO Refreshed, Number of stations converted	Zero (0)	Zero (0)

3.0 Financial Performance

NOOSS funding pays on-going operations and maintenance costs for communications, electric utilities, maintenance training, preventive maintenance, repair and logistics support, and sustaining engineering efforts with the goal of achieving the performance measures listed in section 1.0. In FY 06, $23.24 was appropriated for this purpose. All funding was obligated in accordance with approved spending plans. These plans included the NOOSS program contribution of $1.9M to the TOC shortfall. This was a $1.9M real cut to the NDBC. This cut effectively reduced the base operating budget by over 20%.

4.0 Customer Results

The NWS provides weather, hydrologic and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas for the protection of life and property and the enhancement of the national economy. To that end, the NOOSS is the key tool NWS forecasters use to sustain the current level of advance warnings of severe marine weather and hurricanes.

Customers including:

- NOAA forecasters charged with warning responsibility
- Other Federal Agencies requiring radar data for operational decisions including the FAA, DOD, EPA, USGS, Corps of Engineers, DHS, etc
- State and local emergency managers and local officials charged with public preparedness and response decisions for extreme events, hazardous spills, homeland security issues, and wild fire
- Private sector environmental information providers
- Weather sensitive businesses including transportation, energy, and agriculture
- National, state, and local media
- Citizens who act on the information or are directed to respond by governmental and other local decision makers
- Waterway and reservoir managers and coastal fishing and marine operators

5.0 Innovation

The mission of the Office of Operational Systems (OOS) is to provide cost effective operations and maintenance support for NWS systems in support of our customers. OOS routinely explores alternative maintenance concepts, best practices, contract strategies, technologies, etc to provide improved services at lower costs. For example, several innovative modifications were recently implemented on the new DART buoys which promise to improve system performance (reliability) and reduce O&M costs. The single payload inside the buoy well was difficult to manufacture, difficult to trouble shoot, and was a single point of failure. The payload was redesigned to a two-box configuration to simplify manufacturing, simplify trouble shooting, eliminate the single point of failure, and improve system reliability. Another example is the installation of a simple, inexpensive radar reflector on the buoy to generate a radar return such that ship's radars can detect the buoy and reduce the chance of a ship strike and damage/ destruction of the buoy. The net effect of these initiatives will be a reduction in O&M costs.