FY 2004 President's Request

High Impact Weather

Addresses

NOAA Mission Goal #3

Serve society's needs for weather and water information

What is requested?

NOAA requests an increase of $1.2M to enhance the electrical load-forecasting component of the agency-wide High Impact Weather Initiative. The initiative, designed to improve electrical load forecasting and energy operations management, will increase to a total of $7.3M. The U.S. Weather Research Program (USWRP) manages the initiative.

The funding will allow for continued modernization of the NWS Cooperative Observer network, providing the Nation with a network of accurate surface weather data obtained with state-of-the-art measurement, monitoring, and communication equipment.

Why do we need it?

The NWS requires accurate, non-airport, real-time data to improve its local warning and forecast programs. The weather sensitive industries, including both the public and private weather service sectors, are increasingly in need of higher density and real-time surface data. The need for restoring and improving the NWS Cooperative Observer Network is reinforced by the far-reaching economic and societal impacts of climate variability and potential climate change. Despite its increasing importance, over the past decade the network has been weakened by a combination of technological, organizational, and budgetary factors. The High Impact Weather Initiative will develop a low-cost, standardized, climate/weather observing system that supports federal multi-agency requirements and the requirements of all climate and weather data users. Because of its stability over time and the geographic density of its observations, the network is well suited for monitoring and detecting local, regional and national climate variations and changes.

What will we do?

The planned outcome of implementing this initiative is to provide an efficient, modern, integrated, near real-time reporting and climate monitoring network.

High Impact Weather Initiative At-a-Glance

What: $1.2 M increase
Why: Improved local warning and forecast programs will result in more efficient energy generation and transmission.

Office of Oceanic & Atmospheric Research, Weather and Air Quality Research, U.S. Weather Research Program

To achieve this goal, NWS proposes to upgrade approximately 8,000 locations. Currently, NWS is replacing antiquated equipment that is no longer supportable. NWS will then deploy modernized platforms to identified demonstration areas: New England in 2002 and 2004, the Southeast in 2003 and 2004, and nationally in 2005. The office will also ensure data accuracy and quality through standardization and automation, and expand real-time data availability.

What are the benefits?

The enhancement of the electrical load forecasting component of the High Impact Weather Initiative can potentially save consumers $30 million/day per degree of improvement in temperature forecast accuracy (nationally the value is estimated at $1 billion annually). Improved data will aid significantly to seasonal forecasts, providing more compelling information for decisions relating to management of water resources predictions of crop yield. Data will also support economic development decisions, ecosystem management, and environmental assessments by private industry and private individuals, as well as by all levels of government. In addition, the improvements will assist in providing data for timely assessments of climate variability and change.

Specific benefits include:

- Improved spatial density will fill existing gaps in drought and climate monitoring capabilities, resulting in the ability to acquire data hourly rather than daily or longer. The improvements will provide climate and operational users near real-time data access, which is currently not available on a large scale.
- Improved network resolution will advance drought-monitoring resolution from a 10-county area resolution to a three-county resolution.
  Improved seasonal forecasts will support economic development decisions, ecosystem management, and environmental assessments.
- Improved calibration capabilities for the WSR-88D radar network will reduce river height forecast accuracy errors from 51 percent to 23 percent, which is critical for flood mitigation decisions.
- Improved density and reporting of snowfall will advance crop assessment and planning activities.
- Improved accuracy of the temperature-reporting network will result in a 50 percent reduction in the average 24-hour temperature forecast error.
- An increase in soil moisture, temperature, humidity, and evaporation data from one thousand locations within the COOP network will provide additional data necessary for drought and climate monitoring. The NWS and the USDA will partner on these platform enhancements.

For more information:

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U.S. Weather Research Program

High Impact Weather Initiative