

# Section 1.

## Vision for 21st Century Data Services

As part of its mission, NOAA serves as steward and archivist of the largest collection of atmospheric, geophysical, biological, and oceanographic data in the world. NOAA collects environmental data in support of specific strategic goals directly related to its mission of environmental assessment, prediction, and stewardship. Many of these data sets are stored at the geographically-dispersed locations where they are used to address a wide variety of research and management information needs. These are related to the following:

- Providing advance short-term warnings
- Providing short- and long-term forecasts
- Promoting safe navigation
- Managing living marine resources
- Managing coastal and ocean environments

Most of these data—as well as environmental data collected by other agencies, governments, and research programs worldwide—come to the NOAA National Data Centers (NNDC) for archiving and dissemination to support both the current and future needs of additional users. Other valuable data are serviced by distributed facilities often referred to as Centers of Data.

By the Year 2005, NOAA envisions having the capability to rapidly provide to the Nation most NOAA data and information products in useful forms. NOAA's current data storage and retrieval methodologies and technologies will have been completely revamped to accommodate the massive amounts of environmental data collected by the new remote sensing systems. Also, NOAA environmental information will be compliant with the standards outlined by the National Spatial Data Infrastructure (NSDI). Products and services will be made available by nationwide networking connectivity at high data exchange rates, using advanced information technology. NOAA's system of environmental information services will form an important link in the chain, leading to informed policy decisions.

In NOAA's vision, distributed data collections will be major components of an overall environmental decision support system that is accessible to users from anywhere in the world. New accessibility systems will focus on the needs of the user community. Through the use of state-of-the-art archive and access systems, users anywhere in the U.S. will be provided with the capability to search data directories and inventories, preview or browse them, and retrieve the most frequently requested data and information via electronic means. Information requests that require action from NOAA data managers

### **YES** **Just Say ~~No~~ to Data???**

*NO construction building codes*  
*NO bridges engineered*  
*NO heating or air conditioning designed*  
*NO dams or airports constructed*  
*NO offshore drilling platforms built*  
*NO fisheries managed*  
*NO shipping routes planned*  
*NO space vehicles launched*  
*NO drainage & sewer systems built*  
*NO disaster response systems planned*  
*NO insurance policy rates set*  
*NO transportation systems designed*  
*NO aircraft landing systems installed*  
*NO national defense systems created*  
*NO farms operated*  
*NO snow removal operations planned*

**...Without a Long-Term  
Data Record!!!**

will be made significantly less labor-intensive, allowing the majority of the staff to focus on ensuring the currency, accuracy, relevancy, and accessibility of the data and information that they maintain.

This vision requires an evolution from a focus on the bits and bytes of data to a focus on the *value of the information* in NOAA's care. It requires changing the perception of—and modernizing—NOAA's capabilities.

In this vision, NOAA does not just preserve environmental data collected by NOAA and others, but it develops and maintains a *dynamic* and growing environmental database that encompasses the world—its land, oceans, and atmosphere. This *global* environmental database will *integrate* the multitude of Earth science observations of the oceans, the lakes, the coasts, the surface of the Sun, Earth's surface, and the various levels of the atmosphere. Furthermore, this global environmental database will incorporate both historical and current data in an easily accessible form to meet the demands of both today's and tomorrow's users. In this way, NOAA will provide vital input to today's—and tomorrow's—pressing environmental plans and decisions.

Some of the efforts for the attainment of this vision are well into implementation. However, many challenges remain to be overcome for this vision to become a reality. These challenges and the actions needed to resolve them comprise the subject of the following sections of this report.

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