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National Weather Service Strategic Plan for Weather, Water, and Climate Services 2000 - 2005

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

Message from the Assistant Administrator for Weather Services

The National Weather Service (NWS) is the U.S. federal agency charged with providing weather, water, and climate warnings and forecasts. We are a team of dedicated individuals who daily continue our tradition of service above self. Over the last several years, our collective focus has been on delivering necessary products and services while completing the myriad of activities associated with the NWS modernization and restructuring. Our new observing systems (space, radar, and ground); modern information technology assets; and training programs have combined to improve the quality of our products. By working with key partners, especially the emergency management community, we have been striving to ensure our products and services are responsive to the needs of the American public.

The successful El Niño forecast of 1997/1998 and the many actions taken in response to that forecast demonstrate a new level of service that is needed to protect life and property and reduce economic impacts of extreme weather. It is clear that we must build on these successes to provide weather, water, and climate services with time scales ranging from minutes to years to meet the needs of our Nation. This strategic plan builds on our past; recognizes our values; supports our mission, purpose, and vision; and will guide us into the 21st Century. The objectives, strategies, and goals in the plan will result in a more customer-focused, employee-centered, flexible, and responsive organization. It will enable us to better use science to serve our Nation. With your support and hard work, we will achieve our vision of a no surprise weather service that delivers quality products our partners and customers trust and use.

John J. Kelly, Jr.
Assistant Administrator
for Weather Services

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Our Mission

The National Weather Service (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. NWS data and products form a national information data base and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.

The Importance of Weather, Water, and Climate Conditions to America in the 21st Century

America has always been interested in, and sensitive to weather, water, and climate events. Since its existence, the well being and prosperity of the Nation have been dependent on the environment. Our history is punctuated with tragedies and triumphs as individual citizens, or entire sections of the country, dealt with the challenges caused by extreme weather phenomena. The adverse impact on American society of the Dust Bowl of the 1930's, the 1997-98 El Niño, and the recent severe storms in the Midwest are examples of our vulnerability. Today, 90 percent of all presidentially declared disasters are weather- and flood-related, and water resources are the lifeblood of the economy and our standard of living. To protect life and property and to enhance the economic well being of the Nation, the National Weather Service (NWS) has been recognized as the U. S. federal agency responsible for weather and water forecasts and warning.

America's vulnerability to weather, water, and climate variability is rising as more of the population moves into harm's way and national and global economies become more complex. Approximately 40 percent of Americans—some 100 million—currently reside in areas of high risk to natural disasters, with the number climbing yearly. National and global economies are becoming entwined in an intricate web of interdependencies so complex that disruption in one part by weather or water events (e.g., transportation impacts caused by a major snow storm in one region) can reverberate with costs and delays in other parts of the Nation or world. During the next century, historically unprecedented situations will arise in which weather and climate events could significantly challenge the way Americans live or cause dramatic departures in the way the economy functions. Innovative use of weather, water, and climate information will increase our safety and productivity and improve the Nation's competitiveness to enhance our standard of living. The NWS will be challenged to meet this expanded need for high quality weather, water, and climate services.

"Weather is big business. It can help or hurt a community. One-seventh of our economy, about $1 trillion a year, is weather sensitive."

William M. Daley,
U.S. Secretary of Commerce

Worst U.S. Hurricanes on Record

	Year	Name	Damage* (in billions)	Deaths
1	1926	Unnamed	$81	243
2	1992	Andrew	$37	15
3	1900	Unnamed	$30	8,000
4	1915	Unnamed	$25	275
5	1944	Unnamed	$19	18
6	1938	Unnamed	$19	600
7	1928	Unnamed	$15	1,836
8	1965	Betsy	$14	75
9	1960	Donna	$13	50
10	1969	Camille	$12	256
11	1972	Agnes	$12	122
12	1955	Diane	$11	184
13	1989	Hugo	$10	21
14	1954	Carol	$10	60
15	1947	Unnamed	$9	51

Estimated damage had hurricane made landfall in 1998

*Based on Pielke Jr., R.A. and C. W. Landsea 1998 "Normalized Hurricane Damages in the United States: 1925-1995," Weather and Forecasting, 13:351-361.

Seventy-three million persons are expected to live in hurricane-prone counties by 2010, up from 40 million today. As population growth and development continues unabated along our coastlines, working more effectively with partners in sectors such as emergency management and the media may help mitigate the impacts of severe weather, such as hurricanes.

STRATEGIC CONTEXT

The Changing World: Opportunities and Challenges

The world is changing rapidly, and this explosive pace will continue into the next century. The following forces will shape the NWS vision and provide opportunities for our world-class team of professionals to improve products and services and meet tomorrow's challenges:

Explosion of Information Technology

Computer speed and capacity will continue to increase with a corresponding decrease in hardware and communications costs. Greater and faster computer power will provide the mechanism for forecasters to extract critical hydrometeorological information and predict natural hazards related to weather, water, and climate with increasing confidence. Expanding information technology capabilities will enable the NWS to distribute high resolution digital forecast databases that provide the flexibility for users to tailor data and information to meet specific needs.

"The NWS receives and processes over 1 million observations each day to develop forecasts and warnings for the American people."

William E. Brockman, Chief, NWS Systems Operations Center

To be sure the Nation benefits from the promise of science and technology, the challenge will be to keep pace with the fast changing world. Along with technology, the sciences of meteorology, hydrology, and climatology will advance rapidly, requiring an active NWS program of experimentation, planning, implementation, training, and innovation to incorporate proven research techniques into operational use quickly.

Technologies such as the award-winning Advanced Weather Interactive Processing System (AWIPS) help forcasters, such as Jim Purpura, issue warnings and forecasts further in advance with a higher degree of accuracy than ever before. Future AWIPS software promises even greater performance potential.

Strengthen Linkages Among the Disciplines of Weather, Water, and Climate Prediction

Customers and partners have advocated a seamless set of observed and forecast products cutting across the lines of weather, water, and climate and incorporating forecast time scales from minutes to years. The rapid advancement of the sciences of meteorology, hydrology, and climate during the next 6 years (2000 - 2005) will strengthen the linkages among the three disciplines. Accurate and higher resolution forecasts of the hydrosphere, with time scales ranging from minutes to years, will be available. Hydrological forecasting will use quantitative precipitation forecasts (known as QPF), especially with respect to flash floods and river levels, and will rely on climate forecasts for long-term trends. Increasingly reliable climate and long-term hydrological predictions will benefit the Nation's economy and allow the country to prevent natural hazards from becoming natural disasters.

Increased Need to Work More Effectively with Partners to Improve and Expand Services

The NWS serves, in cooperation with many partners including the private sector and the universities, all people and institutions in the United States with timely weather, water, and climate information; forecasts; and warnings. The increasing interest in and utility of weather, water, and climate information coupled with the rapid advances of science and technology will expand the opportunities for both NWS and the private sector. By 2005, more public and private organizations will recognize that weather, water, and climate information has a positive and marked influence on a myriad of business and economic decisions. The private sector will expand into new sectors of the economy with a concomitant demand for more and better information from the NWS. Improved cooperation with our partners in enhancing distribution systems, establishing and accomplishing research objectives, and understanding customer needs will be necessary. Our partners in the university community and national laboratories will play an essential role in developing a better understanding of the Earth's hydrosphere, including the impact of solar activity on the Earth's environment.

"The highly accurate long-range predictions issued by the [NWS] Climate Prediction Center . . . led California to conduct major mitigation efforts . . . [that] led to a reduction in losses of about $1 billion."

Stanley A. Changnon, "Impacts of the 1997-98 El Niño — General Weather in the U.S."; to be published: Bulletin of the American Meteorological Society

A More Responsive and Efficient Government

The American people will continue to demand a responsive and efficient Government. To achieve the highest levels of Government operation will require a more thorough understanding of how customers and partners use NWS products and services. It also will require that managerial structures be in place to ensure cost-efficient operations. Working with our parent organization, the National Oceanic and Atmospheric Administration (NOAA), the opportunity exists to build on the best business practices of the private sector and other Government agencies (Federal, state, and local) to develop a more responsive and efficient agency.

The 1997 El Niño climate event impacted weather patterns across the globe. In Pohnpei, one of Federated States of Micronesia, El Niño influenced the weather bringing drier conditions and water shortages. City planners use National Weather Service products such as climate, weather and water forecasts to better manage resources.

STRATEGIC CONTEXT

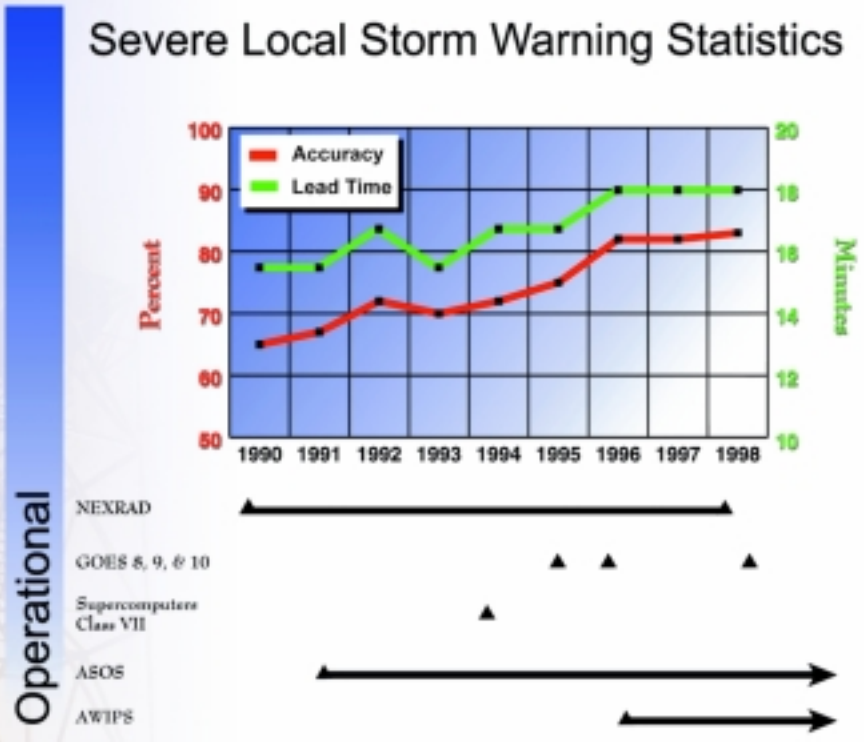
National Weather Service - Past and Future

Starting as part of the Army Signal Corps in 1870, the NWS has a 130-year legacy of service to America. Decade by decade, the NWS has marshaled scientific and technological advances of the time to improve weather services. Historically, America's interests in maritime commerce, agriculture, and aviation led the NWS to major advances in the type and quality of services.

At the close of the 20th Century, the NWS is successfully completing an unprecedented modernization and associated restructuring that has transformed the entire agency. Beginning in the late 1980's, the modernization created an advanced weather forecast and warning system. To accomplish this task required a complete change in virtually every aspect of the NWS scientific, technological, and human resource base without interrupting or degrading day-to-day service to America.The benefits of the modernization and associated restructuring are dramatic. The accuracy and timeliness of warnings and forecasts have set the standard for weather agencies worldwide.

"Since the beginning of the NWS modernization, the lead time for tornado warnings has more than doubled (11 minutes versus 4 minutes) and the lead time for flash flood warnings has increased by more than 500 percent (52 minutes versus 10 minutes)."

Paul Polger, NWS Verification Manager



This figure shows an example of improved warning performance corresponding to deployment of modernized systems. Severe local storms include all tornadoes and severe thunderstorms.

Looking to the next century, the NWS is at a crossroads. Completing the modernization provides the basis for the NWS to better serve the Nation. The path for advancement is clear. Emerging scientific and technological capabilities in weather, water, and climate prediction are matched by increasing national needs for improved warnings and forecasts and

a more integrated NWS focus in these three scientific disciplines. The NWS is now postured to blend forecasts in these areas into a seamless suite of products and services — accurate and timely products with high resolution and in a format that will provide users the flexibility to tailor the information to their specific needs. The characterization of a seamless suite of products and services means that by 2005 the NWS will provide weather, water, and climate forecasts for a specific geographic area from time scales of minutes to seasons or years. Climate services will be provided months in advance to allow communities and businesses to prepare for extreme weather and water conditions. These will be further supported by forecasts that assess the threat of particular hazardous conditions (e.g., heavy precipitation or flooding) for specific areas of the country up to 2 weeks in advance. Finally, very precise forecasts of individual events (e.g., flash floods) will be provided hours and minutes in advance. In contrast, many of today's products and services are prepared independently of other products and services for the same geographic area. This results in potential inconsistencies and in less effective use of data and computational power. By 2005, NWS forecasts will be continuous, cumulative, consistent, relevant, and make the most effective use of data and computing power of the agency.

Our Vision is to be:

America's no surprise weather service. A world-class team of professionals who:

- ✓ Produce and deliver quality forecasts you can trust when you need them most
- ✓ Use cutting edge techniques
- ✓ Provide services in a cost-effective manner
- ✓ Strive to eliminate weather-related fatalities and improve the economic value of weather information

Our Values are:

- ✓ Service above self
- ✓ Our customers and partners
- ✓ Respect and trust of others and the diversity of our agency
- ✓ Open exchange of information and ideas
- ✓ Commitment to integrity, teamwork, self-improvement, high standards, and the scientific approach to our mission
- ✓ An innovative and empowered work force

Our focus through 2005 will be to build on the NWS modernization and provide a seamless suite of weather, water, and climate products and services with time scales ranging from minutes to years. These products will be relevant to user needs, accurate, and timely.

This strategic plan, through the goals, objectives, and performance measures, lays out the path we will take to accomplish our mission, achieve the focus and vision, and integrate our core values throughout NWS.

STRATEGIC CONTEXT

Serving Our Customers

The National Oceanic and Atmospheric Administration and the National Weather Service serve the American public, through a partnership with other Government agencies, academia, nonprofit organizations, and the private sector. These extensive and varied partnerships form a unique weather and climate provider system to support all our citizens and institutions, as well as meet U.S. international obligations. This system provides weather, water, and climate information that reaches nearly every citizen in America. Achieving a high level of customer satisfaction among a diverse user base is a challenge, particularly given that:

"The estimated costs of delays to the U.S. air carrier system is $5 billion per year; 65 percent is weather related."

L. Kiernan, Federal Aviation Administration National Planning Division, to National Capacity Indicator Forum, 9/94

- ✓ American society is sensitive to changes in weather, water, and climate conditions at different scales of interest and action, ranging from individual citizens to households, businesses, organizations, communities, states, and the Nation as a whole.
- ✓ Customer needs for weather, water, and climate information vary markedly by geographic region and by season.

These varied needs are met by NOAA and NWS products and services as well as tailored products created by our partners. Our partners help the NWS collect and share user needs, distribute NWS products directly to the American public, better understand and apply technology and science, and obtain observational data. Better service to America will be achieved by building on the knowledge base and best practices of our partners and improving the cooperation among all components of the weather provider system.

Improved forecasts and warnings by the National Weather Service enable customers such as city planners, grocery store managers and utility company officials to better prepare for severe weather events, such as major snow storms.

STRATEGIC CONTEXT

Relation to the Department of Commerce and NOAA Strategic Plans

The NWS directly supports the NOAA Strategic Goals highlighted in red.

The Department of Commerce (DOC) and NOAA provide us with the policy direction and resources to accomplish our mission. For year 2005, NOAA envisions a world in which societal and economic decisions are coupled strongly with a comprehensive understanding of the environment. The NWS vision of a no surprise weather service is in concert with NOAA's view.
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The DOC and NOAA have given the NWS important guidance for future action to respond to national needs. This guidance is reflected in the strategic goals of DOC and NOAA. The NWS embraces the challenges and actions in the DOC and NOAA strategic plans and will support the visions by:

- ✓ Being a credible and responsive organization
- ✓ Producing budgets based on strategic planning
- ✓ Assessing performance with quantitative measures
- ✓ Administering policy faithfully

The NWS is one of the 32 High Impact Agencies in the Executive Branch of the U.S. Government. As a High Impact Agency, the NWS has a special mandate to strive for new standards of customer service and improved mission performance using the best practices available. This strategic plan is our road map to serve America with distinction.

The NWS has five strategic goals to advance its service to America. To achieve success and to accomplish our mission, the NWS will pursue each goal in a manner that reinforces the others.

Goals 2000 - 2005

1.0 Deliver Better Products and Services

Deliver a credible, timely, and relevant suite of seamless weather, water, and climate products and services which exploit technology to the fullest to meet customer and partner needs.

Our passion is to meet our customer and partner needs. It is the essence of our mission delivery. Our highest priority is to translate customer and partner needs into products and services that are trusted when needed most. We will meet these needs with a seamless suite of weather, water, and climate products of increasingly higher resolution and accuracy.

1.1 Expand and improve the existing weather, water, and climate product and service line:

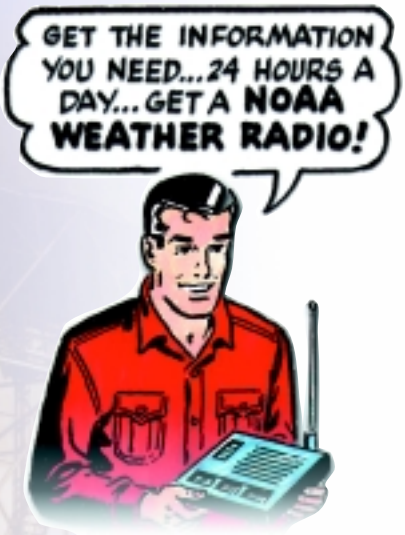
☞ **Public Services**

- **Increase the accuracy and timeliness of NWS warnings.**

Performance Measures:

✓ Reduce the national average tornado warning false alarm rate from 0.80 (1998) to 0.40 or lower and increase the probability of detection from 0.64 (1998) to 0.80 or higher and the lead time from 11 minutes (1998) to 15 minutes (2005).

✓ Increase the average lead time for hurricane landfall forecasts from 19 hours (1998) to beyond 24 hours with no increase in warned area. Improve hurricane wind speed forecasts by 20 percent (2005).



In 1997, King Features teamed up with NOAA and the National Weather Service to help educate people about how they can stay safe and get immediate warnings of hazardous conditions by having a NOAA Weather Radio (NWR). Our goal is to increase coverage of the NWR transmitter network to 95 percent of the U.S. population by 2005.

- ✓ Increase probability of detection of winter storms to 90 percent and the lead time to 18 hours (2005).
- ✓ Increase flash-flood warning lead time from 52 minutes (1998) to 65 minutes (2005).

● Extend the time periods and improve the accuracy and formats of weather, water, and climate forecast products.

Performance Measures:

- ✓ Extend weather forecasts to 7 days (2000).
- ✓ Provide weather, water, and climate forecasts in probabilistic terms (2005).
- ✓ Extend precipitation forecasts to 3 days, and attain current Day 2 accuracy at Day 3 (2005).
- ✓ Improve numerical model guidance over the Pacific and West Coast so it is as accurate as the rest of the country (2005).

"On a yearly average, flooding in the nation kills over 100 people and causes approximately $4.5 billion in damage."

U.S. Army Corps of Engineers, Annual Flood Damage Report 1998

● Improve the accessibility and availability of weather, water, and climate information to the American people.

Performance Measures:

- ✓ Post NWS products and data on the Internet in graphic-oriented format (2002).
- ✓ Increase coverage of the NOAA Weather Radio (NWR) transmitter network to 95 percent of U.S. population (2005).
- ✓ Deploy improved NWR voice for critical products (2003).

● Improve accessibility of weather, water, and climate information to high risk communities[1].

[1] *By high risk, we mean people or property in identified areas of high vulnerability to specific natural hazards (e.g., in a flood plain or in a hurricane-vulnerable area), as well as those cases in which Americans experience some unusual challenges such as reduced physical mobility, language difficulties, etc..*

Performance Measures:

- ✓ Increase NWR coverage to 100 percent in hazardous weather high-risk areas (2004).
- ✓ Where demographics demand, convert NWR products into multilingual formats (2002).

Emergency Management

Enhance partnerships with the emergency management community and increase the lead time for information delivered on emergency weather and water situations.

Three quarters of all presidentially declared disasters are the result of flooding. Technologies, such as the Advanced Hydrologic Prediction System (AHPS), will help the National Weather Service provide more accurate flood forecasts and will help communities better prepare for these events. By 2005, the National Weather Service plans to deploy AHPS to 50 percent of river forecast sites.

Performance Measures:

- ✓ Establish "StormReady"[2] community recognition program, and designate 20 communities as "StormReady" each year.
- ✓ Establish two-way links to state emergency management communications infrastructure (2005).

Aviation Services

Improve terminal and domestic en route warnings and forecasts.

Performance Measures:

- ✓ Ensure local airport warnings for established criteria have a probability of detection of at least 0.80 and a false alarm rate of 0.40 or less (2005).
- ✓ Reduce false alarm rate by 50 percent and increase the probability of detection by 50 percent for the 0- to 12-hour period for critical ceiling (200 feet) and visibility (1/4 mile) forecasts as contained in aviation terminal forecasts (2005).
- ✓ Increase probability of detectionby 50 percent and reduce false alarm rate by 50 percent for the 0- to 12-hour aviation terminal forecasts of ceiling and visibility within instrument flight rules (IFR) and marginal visual flight rules (MVFR) categories. (2005).
- ✓ Increase the probability of detection for turbulence, icing, and thunderstorm warnings by 50 percent, and reduce the false alarm rate by 50 percent (2005).
- ✓ Implement graphical aviation products capable of cockpit display. (2005).

[2]This program would provide a check list of actions to ensure communities are well prepared to respond to hazardous weather.

☛ Marine Services

- Extend and improve the accuracy of marine (wind and wave) forecasts.

Performance Measures:

✓ Improve the accuracy by 30 percent of wind and wave forecasts (2005).

✓ Extend wind and wave forecasts from 36 hours out to 7 days (2005).

✓ Improve by 20 percent the lead time and accuracy for Storm, Gale, and Special Marine Warnings and Small Craft Advisories (2005).

✓ Reduce over-warned coastline from the 1998 average of 45 miles to 30 miles (2005).

- Improve the format and distribution of marine products.

Performance Measures:

✓ Increase NWR programming to include routine and special marine products, and tailor it to needs of marine community (2005).

✓ Increase the number of graphic marine forecasts (2005).

"Our economy today is inextricably linked to the ocean. One of six jobs in the U.S. is marine related, and more than 95 percent of all overseas-U.S. foreign trade passes through American ports."

National Ocean Conference Proceedings, 1998

☛ Flood Forecasting and Water Management

Improve accuracy and lead time of hydrological forecasts and relevance of products.

Performance Measures:

✓ Deploy the Advanced Hydrologic Prediction System (AHPS) to 50 percent of river forecast sites (2005).

✓ Specify the confidence level of all river and flood forecasts produced by the AHPS and increase accuracy at AHPS points by 25 percent (2005).

"In 1998, approximately 207,000 Americans attended public presentations by NWS staff members."

Donald Wernly, Chief, Customer Service Core, NWS

✓ Integrate within AWIPS the functionality of all hydrologic applications required to support Weather Forecast Office and River Forecast Center operations (2005).

☛ **Fire Services**

Implement a seamless suite of fire-weather products and services uniformly across the Nation.

Performance Measures:

✓ Implement Day 1 to seasonal outlook products for critical fire-weather elements and patterns (2002).

✓ Specify the forecast confidence on all national outlook and local forecast products (2005).

✓ Develop baseline for fire-weather parameters and improve accuracy by 30 percent (2005).

"Total dollar amount of insured property in the hurricane prone coastal counties of the U.S. is estimated to be over $3.15 trillion."

-Institute for Business and Home Home Safety, 1993.

☛ **Space Services**

Integrate space weather forecasts into the NWS operational product suite.

Performance Measures:

✓ Integrate totally the operational forecast production process into NWS operations (2005).

1.2 Produce a seamless suite of products and services.

● **Produce a seamless suite of products and services linking weather, water, and climate with an emphasis on emerging climate products**.

Performance Measures:

✓ Introduce threat assessments which link climate events to hazardous weather forecasts (2000).

✓ Link climate forecasts and threat assessments to local weather and water forecasts (2002).

● **Improve the use, integration, quality, and cost effectiveness of observations.**

Performance Measures:

- ✓ Achieve the optimal mix of observing and data processing systems to support the NWS mission (2005).
- ✓ Complete modernization or replacement of the Radiosonde Network, Cooperative Observer Program, Marine Observation Networks, and Voluntary Observing Ship Program (2005).
- ✓ Support the Global Ocean Observing System (known as GOOS) and Global Climate Observing System (known as GCOS) by building on NWS and other observing systems (2005).

Advances in satellites, radar, sophisticated information processing and superspeed computers may be the foundation of tomorrow's warnings and forecasts but tried-and-true technologies such as balloon-launched weather monitoring units, called radiosondes, will continue monitoring the weather. More than 200 of these units are launched daily from National Weather Service offices across the country.

1.3 Nurture critical partnerships to provide effective and efficient delivery of NWS products and services.

Performance Measures:

- ✓ Increase the number of state and local emergency managers trained in the NOAA/Federal Emergency Management Agency core hazard courses by 5% annually (2005).
- ✓ Expand fire-weather incident response from regional to nationwide and for all hazards (2005).
- ✓ Eliminate backlog of Federal Aviation Administration pilot weather briefer certifications (2005).
- ✓ Ensure, in concert with the U.S. Coast Guard, a delivery rate of 99.5 percent of all marine weather products within 5 minutes of schedule (2005).

1.4 Implement a customer service improvement program.

Performance Measures:

- ✓ Establish a customer satisfaction index (2003).
- ✓ Track customer index with the goal of a 10 percent increase yearly (2005).

2.0 Capitalize on Scientific and Technological Advances

Aggressively and continually infuse science and technological advances to improve products and delivery of services that best meet and anticipate customer needs.

Sound science and innovative technologies are the foundation of NWS product and service quality. Improving products and services to meet customer and partner needs in the future is critically dependent on providing a well trained work force with a continual infusion of new and proven scientific ideas and technological systems.

2.1 As operational leaders in weather, water, and climate, expand cooperation with the entire research community to promote and guide research and development toward product- and service-improvement goals.

Performance Measures:

- ✓ Link NOAA research and development activities to NWS improvement goals (2000).
- ✓ Based on NWS service priorities, develop a multi-year research plan and process involving the NWS and its research partners (2005).
- ✓ Assess annually the impact of NWS service improvement goals on research and development programs and initiatives including the Natural Disaster Reduction Initiative, the U.S. Global Change Research Program, the U.S. Weather Research Program, and the Collaborative Science Technology and Applied Research Program among others.

2.2 Reduce the time required to implement proven research and technology into operations.

Performance Measures:

- ✓ Increase the number of cooperative alliances to 5 percent per year.
- ✓ Establish six experimental test beds to accelerate the infusion of new science and technology into the forecast process (2005).
- ✓ Sustain the NWS/Cooperative Program for Operational Meteorology, Education, and Training (known as COMET) outreach program.

✓ Develop and implement standardized procedures for introducing science and technology into the forecast process (2005).

2.3 Improve data assimilation systems and numerical forecasts.

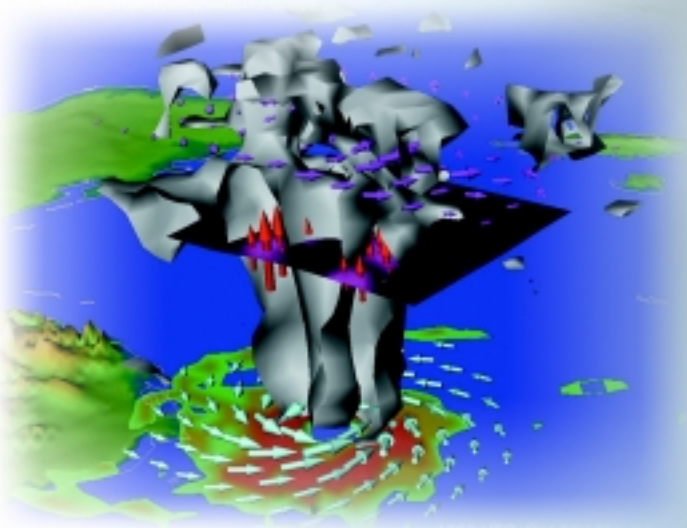
Performance Measures:

✓ Develop and implement a weather research and forecast community model (2004).

✓ Develop and implement the next generation Global/ Climate prediction system (2005).

✓ Decrease by 50 percent the time necessary to incorporate new satellite data sets into an operational assimilation system (2005).

✓ Incorporate Doppler radar data into operational mesoscale models (2002).



NOAA laboratories conducted the basic research and helped develop forecasting tools, such as NEXRAD Doppler Radar and the Advanced Weather Interactive Processing System, that are currently in use by the National Weather Service. Through NOAA research, the National Weather Service will fine-tune weather forecasts even further. Shown here is a model of Hurricane Mitch (1998).

2.4 Improve understanding and prediction of long-term climate variability.

Performance Measures:

✓ Increase forecast accuracy for long-term decadal trends by 25 percent (2004).

✓ Implement, with our partners, a coupled atmospheric-oceanic model for global data assimilation and for seasonal to interannual to decadal prediction. (2005).

2.5 Prepare and disseminate NWS products in a form that offers high resolution and maximum flexibility to customers and partners.

Performance Measures:

✓ Prepare and disseminate NWS forecast products in digital form (2003).

3.0 EXERCISE GLOBAL LEADERSHIP

Strengthen U.S. leadership on emerging applications of weather, water, and climate information to meet **environmental and economic challenges**.

Global weather, water, and climate issues will dominate the attention of the international community through 2005 and beyond. Economic and technological linkages among countries will further translate international concerns to the local level and from the local to regional and global levels. NOAA/NWS is positioned to take advantage of emerging applications to work with our partners in addressing global challenges for the betterment of the Nation and the world. We are poised with the tools, capabilities, and partnerships to seize the opportunity to provide leadership for these emerging and exciting challenges.

3.1 Promote the open exchange of data and information worldwide.

Performance Measures:

- ✓ Continue to actively advocate open exchange of information worldwide.
- ✓ Use regional/international forums to disseminate information on new affordable data and information systems as they become available.
- ✓ Expand the number of international Emergency Manager Weather Information Network (EMWIN) receiving stations by 50 percent (2005).

WORLD METEOROLOGICAL ORGANIZATION

Data from all over the world are needed to provide weather and climate forecasts. Through organizations such as the United Nation's World Meteorological Organization (WMO), the National Weather Service advocates the open exchange and availability of data.

3.2 Increase U.S. participation in international activities.

Performance Measures:

- ✓ Develop and implement in association with all meteorological service agencies in the World Meteorological Organization (WMO) Region IV[3], an integrated regional observing system (2005).

[3]*WMO Region IV includes North America, Central America, and the Caribbean.*

✓ Establish a regional maintenance activity for surface and upper-air observing systems in developing countries in WMO Region IV (2002).

3.3 Foster national and international education efforts and technology transfer programs.

Performance Measures:

✓ Develop courses in "distance learning over Internet" in meteorology and hydrology in at least two languages (initiate 3 courses by 2000, and 10 courses by 2005).

✓ Develop a course in "Application of Climate Data" for international students (2002).

3.4 Continue U.S. leadership of the International Tsunami and Volcanic Ash Programs.

Performance Measures:

✓ Improve the timeliness, accuracy, reliability, coverage, and effectiveness of tsunami warnings.

✓ Expand U.S. Tsunami Program to the Caribbean area (2005).

✓ Host one meeting a year of the Coordinators of the Volcanic Ash Advisory Centers.

✓ Continue active U.S. support to the International Tsunami Warning Program.

✓ Continue U.S. efforts to standardize global response to volcanic activity.

4.0 CHANGE THE NWS ORGANIZATIONAL CULTURE

Work with our people to create an organizational culture which **embraces change**; **values service**; **promotes teamwork** with customers, partners, and each other; and **fosters innovation** in mission and vision accomplishment.

"Nearly 2 million hours of training were provided to the NWS work force from 1990 through 1999."

LeRoy Spayd, NWS Training Leader

The heart and soul of the NWS are its people. They accomplish the mission and convert the vision into reality. With energized, highly trained, and service-oriented people, we will achieve success. We are committed to building on the organizational culture which embraces change, values service and professionalism, and promotes teamwork in serving our customers and partners.

Top: David Paschal, an electronics technician in the Detroit Forecast Office, calibrates a radar. Bottom: Randall Hatfield, a hydrometeorological technician in the Charleston, West Virgina, Forecast Office, repairs a sunshine sensor.

4.1 Implement human resource and management practices to support our Vision and reflect our Core Values.

Performance Measures:

- ✓ Review the 1998 and 1999 National Partnership for Reinventing Government Employee Survey results and 1999 NOAA Survey Feedback and Action (SFA) results[4] and other relevant documents to determine the organizational culture deficits related to implementing the NWS Vision (2000).
- ✓ Develop and implement an improvement plan to address culture deficits with specific targets tied to the results of applicable survey instruments in 2001 and beyond.
- ✓ Implement effective tools to assess management performance, and provide feedback to managers (2002).
- ✓ Implement core competencies for all supervisors and leaders (2005).

4.2 Place decision and budget authority at the lowest and most effective levels.

Performance Measure:

- ✓ Implement a financial information management system which supports delegation of budget authority; periodically review operating procedures to ensure delegation of authority to lowest appropriate level (2005).

[4]The NOAA SFA program is designed to elicit employee perceptions about NOAA in order to improve the quality of work life for all present and future NOAA employees

4.3 Encourage, recognize, and reward innovation at all levels, especially for improved service to customers.

Performance Measure:

✓ Incorporate customer satisfaction indices (refer to 1.4) and reduced operating costs when performing employee appraisals and determining employee recognition (2005).

Meteorologist Anita Silverman keeps a close eye on the radar and performs storm analysis at the NWS forecast office in St. Louis.

4.4 Enhance the professional development and training program for our work force to include teamwork, leadership, diversity, EEO, customer service, and implementing change.

Performance Measures:

✓ Complete leadership training for all supervisors and leaders (2005).

✓ Establish and apply Baseline Proficiency Standards (known as BPS) to all operational positions (2005).

✓ Ensure all employees have an individual development plan (2003).

✓ Expand the National Strategic Training and Education Plan (known as NSTEP) to address all training needs of the work force (2005).

4.5 Capitalize on the diversity of our work force to improve participation, communication, and overall organizational performance.

Performance Measures:

✓ Use geographically and functionally diverse teams to implement this strategic plan (2000).

✓ Establish baseline Managing Diversity performance measures (2001).

✓ Set targets for Managing Diversity performance measures for 2002 and beyond, using 2001 as a baseline (2002).

4.6 Increase the representation of women, minorities, and people with disabilities in NWS.

Performance Measure:

✓ Increase the representation of women, minorities, and people with disabilities in the NWS as compared to the National Civilian Labor Force (NCLF). Use 1999 as baseline; set targets for 2000 and beyond.

5.0 Manage NWS Resources

Create a **responsive support system**, **adaptable** to changing needs and opportunities which maximizes the return on investment to America.

Supporting the mission and vision of the NWS are the critical systems, processes, relationships, mechanisms, and equipment. Our support systems must be quickly adaptable to changing conditions and challenges. We are committed to shaping our infrastructure to facilitate the effective, productive, and cost-effective delivery of products and services to our customers and partners.

5.1 Implement an integrated policy, planning, budgeting, assessment, and accountability system that links decision making and goals to program implementation and evaluation.

- Link planning processes into a system that cascades from strategic to operational to individual performance plans.

  Performance Measures:

  ✓ Align NWS budget and reporting process with the strategic plan for 2003 budget (2002).

  ✓ Put performance measures in place for programs and operations (2000).

  ✓ Put annual operating plans in place for all entities of NWS linked to the strategic plan (2000). Individual performance plans linked to annual plan (2001).

- Ensure operational costs are the minimum required to carry out the NWS mission and meet the goals of this strategic plan.

  Performance Measure:

  ✓ Base decisions to eliminate or add services or activities on assessment of costs to be incurred and the benefits to be achieved.

5.2 Leverage information technology to improve the cost effectiveness of NWS systems, programs, and operations.

Performance Measures:

✓ Base decisions on use of information technology on business needs and an NWS-wide systems architecture.

✓ Base decisions concerning telecommunications on business needs and the NWS telecommunications architecture and strategic plan.

✓ Equip NWS facilities with computer resources necessary to achieve planned and evolving operational and strategic results.

Continuing a 130-Year Legacy — Improved and Innovative Service to America

We have a 130-year legacy of service to America. The five goals in this strategic plan build on the past and lay out a plan and agenda to lead us into the new millennium. The initiatives and activities outlined will enlarge the number, type, time period, and quality of our services to the Nation. We will provide our customers and partners with improved services and a seamless product suite of quality and relevant warnings and forecasts covering time scales from minutes to years. Our actions will show we are a world-class team of professionals. Our customers' reactions will demonstrate we have provided products they can trust when they need them most.

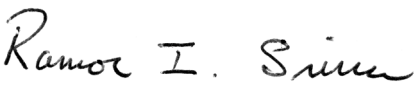
We strive to be America's no surprise weather service and be recognized as one of America's most respected Government agencies. This strategic plan will help us meet these aspirations and elevate a good organization to new levels of greatness.

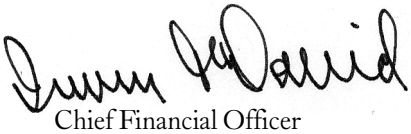
NWS Corporate Board Concurrence

We, the Corporate Board of the NWS, pledge that we are committed to working with the men and women of our agency, and with our customers, partners, and stakeholders, to turn this strategic plan into reality.

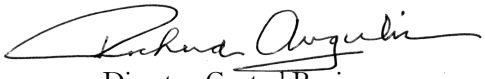

Assistant Administrator


Deputy Assistant Administrator


President, NWS Employees Organization


Chief Financial Officer


Director, Alaska Region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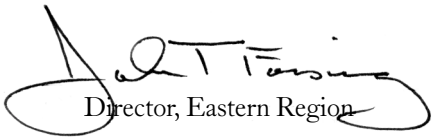
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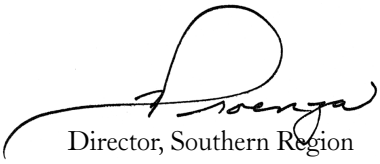
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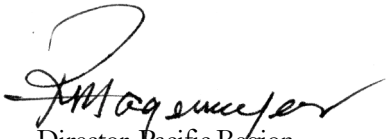
Director, Western Region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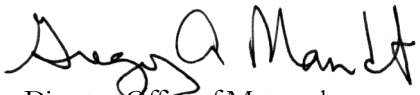
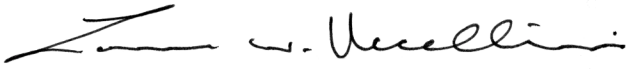
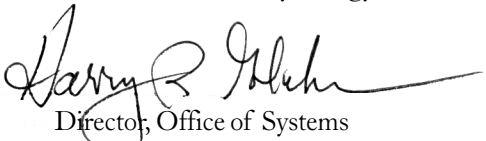
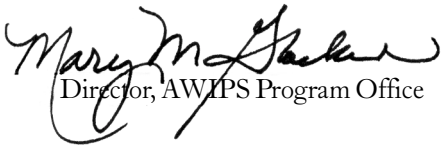

Director, Office of Meteorology


Director, Office of Hydrology


Director, National Centers for Environmental Prediction


Director, Office of Systems Development


Director, Office of Systems Operations


Director, AWIPS Program Office