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NOAA Annual Guidance Memorandum for FY 2008 – 2012

The updated National Oceanic and Atmospheric Administration (NOAA) Strategic Plan articulates NOAA's long-term vision and establishes the overarching goals and strategies required to realize that vision.¹ Each year, NOAA's planning processes provide an opportunity to assess our progress, accommodate new developments and events within and outside NOAA, and adjust our program emphases to ensure progress toward our strategic goals. This Annual Guidance Memorandum (AGM) identifies the most urgent and compelling programmatic and managerial priorities for FY 2008 – 2012, reflecting input from NOAA's stakeholders as well as internal analyses of mission requirements, external trends and drivers, program capabilities, and alternative solutions to achieving NOAA's strategic goals.

By its nature, the Annual Guidance Memorandum does not and cannot refer to all significant program and managerial efforts NOAA will need to pursue over the planning period to successfully execute its mission requirements. Based on an extensive internal assessment of all capacity and capability gaps that must be closed to satisfy NOAA's entire set of mission requirements, this Annual Guidance Memorandum identifies a limited number of high-level programmatic and managerial priorities that are NOAA-wide in nature (e.g. interdisciplinary, inter-organizational initiatives), require significant and sustained financial or managerial resources and effort, and have a singular impact on NOAA's ability to achieve its long-term strategic goals:

¹ In April 2005 the NOAA Executive Council approved an updated version of *New Priorities for the 21st Century – NOAA's Strategic Plan*. The document is pending DOC clearance for release to the public; it is available to NOAA staff at: https://www.ppbs.noaa.gov/PDFs/Strategic_Plan_2006_FINAL_04282005.pdf

1. Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management (*Ecosystems*);
2. Understand climate variability and change to enhance society's ability to plan and respond (*Climate*);
3. Serve society's needs for weather and water information (*Weather and Water*);
4. Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation (*Commerce & Transportation*); and
5. Provide critical support for NOAA's mission (*Mission Support*).

Each of these goals is focused on generating long-term outcomes delivering a broad array of benefits for society, including public safety, security, and quality of life (for example, accurate weather forecasts improving public safety); healthy and productive ecosystems (for example, collaborative resource management approaches improving the sustainability and value of fisheries and other marine and coastal resources); and innovative and efficient commerce (for example, precise and robust navigation tools improving the efficiency of transportation systems). Maximizing these societal benefits requires ongoing calibration and adjustment of NOAA's programmatic and managerial priorities. As technologies change, customer needs evolve, and other external conditions change, NOAA must continually refine and improve its ability to:

- Collect, integrate, assimilate, and effectively manage Earth **observations** on a global scale, ranging from atmospheric, weather and climate observations to oceanic, coastal, and marine life observations;
- Leverage world-class science, technology, and modeling capabilities to develop new or improved **information services, forecasts, and predictions**;
- Advance **ecosystem-based approaches to management** and related stewardship roles pivotal to the health, and productivity of oceanic and coastal resources;
- Continuously advance society's ability to use and benefit from NOAA's information services and stewardship roles through **environmental literacy** efforts; and
- Achieve **breakthrough organizational performance** across NOAA's entire work portfolio, ranging from NOAA's scientific and technical assets to every dimension of its product and service delivery systems, physical and informational infrastructure, and workforce management practices.

Over time, these core functions drive NOAA's ability to transform Earth observations and data into resource management decisions and information services that improve public safety, security, and quality of life, create healthier and more productive ecosystems, and stimulate innovative and efficient commerce.² As drivers of NOAA's societal benefits, these core functions provide the framework for NOAA's annual investment priorities.

² See Appendix A for a basic model of NOAA's value-creation chain and for linkages from NOAA's strategic goals and outcomes to societal benefits.

NOAA-wide Priorities for FY 2008 – 2012

This Annual Guidance Memorandum establishes NOAA's priorities for the FY 2008 – 2012 planning period. NOAA selected these priorities based on the following criteria:

- *Potential impact:* NOAA is where science creates value, and consequently NOAA selects and pursues its priorities based on their potential societal benefits. NOAA's mission requirements are extensive and, if addressed fully, would exceed current resources. To maximize the impact of its investments, NOAA selects priorities based in part on the potential scale and scope of societal benefits.
- *Customer needs:* NOAA delivers value by managing marine resources and providing high-quality, reliable data and information services that meet customer needs. In these capacities, NOAA must continuously refine its product and service portfolio in response to customer input and new scientific and technical capabilities. This approach requires an end-to-end commitment to customer service, extending from research, design, and deployment through education, technical training, and other capacity-building mechanisms that maximize our customers' ability to benefit from NOAA's products and services. Consistent with this approach, NOAA's annual investment priorities focus on areas addressing particularly compelling and urgent customer needs.
- *High-leverage solutions:* In setting its annual priorities, NOAA emphasizes programs that effectively leverage NOAA's distinctive research expertise and operational competencies with contributions from other elements of the Nation's and the world's environmental information enterprise, science base, and ecosystem stewardship community. The scale and scope of its mission requirements demand that NOAA operate simultaneously and flexibly across numerous scientific and technical disciplines and within international, national, regional, and local settings. NOAA must demonstrate both national and international leadership across its core functions, achieving its mission by working closely with its partners toward shared goals. This mode of operating requires a close focus on NOAA's unique competencies, high levels of internal collaboration and coordination, and extensive use of domestic and international partnerships.

In sum, the priorities set forth below promise high benefits to society, the economy, and the environment; respond to compelling and urgent customer needs; and rely upon distinctive NOAA expertise and competencies, leveraged wherever possible by external partnerships. Table 1 summarizes NOAA's priorities in relation to its core functions and strategic outcomes. Subsequent sections of this document describe key trends and requirements specific to each core function and identify the products or capabilities NOAA anticipates developing within each priority area over the planning period, with references to the external partners that will be critical to NOAA's success.

Table 1: NOAA's Priorities for FY 2008 – 2012

Core Function	PRIORITIES FOR FY 2008 – 2012	Strategic Outcomes*
Observation systems, data, and models <i>See table 1.A</i>	Globally integrated oceanic and atmospheric observations and data management Ocean and Earth system modeling Capable and reliable observations infrastructure	Healthy and productive coastal and marine ecosystems that benefit society A predictive understanding of the global climate system on time scales of weeks to decades... Reduced loss of life, injury, and damage to the economy Safe, secure, efficient, and seamless movement of goods and people...
Information services, forecasts and predictions <i>See table 1.B</i>	Science-based climate information services Water information services Forecast accuracy for high-impact weather Information services for aviation, marine, and surface transportation systems	Reduced loss of life, injury, and damage to the economy Better, quicker, and more valuable weather and water information... A predictive understanding of the global climate system on time scales of weeks to decades... Climate-sensitive sectors and the climate-literate public effectively incorporating NOAA's climate products... Safe, secure, efficient, and seamless movement of goods and people... Environmentally sound development and use of the U.S. transportation system Healthy and productive coastal and marine ecosystems that benefit society
Ocean and coastal ecosystem management <i>See table 1.C</i>	Collaborative, science-based approaches to ecosystem management Environmental information on oceans and human health Climate variability and ecosystem predictions	Healthy and productive coastal and marine ecosystems that benefit society A predictive understanding of the global climate system on time scales of weeks to decades...
Environmental literacy <i>See table 1.D</i>	Formal education in Earth System science, as it relates to NOAA's mission Life-long learning about Earth system science, as it relates to NOAA's mission	A well-informed public that acts as a steward of coastal and marine ecosystems Climate-sensitive sectors and the climate-literate public effectively incorporating NOAA's climate products... Reduced loss of life, injury, and damage to the economy
Breakthrough organizational performance <i>See table 1.E</i>	Improve service delivery excellence and value to customers Strategic use of information technology Modernized, safe, high quality facilities Strategic workforce management	(Supports all strategic outcomes)

* As specified in *New Priorities for the 21st Century—NOAA's Strategic Plan* (April 2005). The appendix provides a list of NOAA's strategic outcomes, aligned with mission goals and downstream societal benefits.

Observation Systems, Data, and Models

Key trends and requirements

In a major development at the third Earth Observation Summit this year, 60 countries and 34 international organizations agreed to a 10 year implementation plan for integrating Earth observations world-wide to create a Global Earth Observation System of Systems (GEOSS). This implementation plan was recognized and reinforced during the G-8 Summit held in July 2005: the Gleneagles Communiqué commits each G-8 member to implementing GEOSS and to working with developing countries and regions to fill data gaps in observing systems, increase capacity to analyze and interpret observational data, and to develop decision-support systems and tools relevant to local needs.

Consistent with this international effort, the Administration has called for all supporting agencies to work through the National Science and Technology Council (NSTC) U.S. Group on Earth Observations Subcommittee to ensure continued coordination and implementation of the Strategic Plan for the U.S. Integrated Earth Observation System and continued strong U.S. leadership in the international community.³ NOAA, as a co-chair and key member of this working group, must do its part to guide U.S. efforts in realizing the full potential of GEOSS.

The Strategic Plan for the U.S. Integrated Earth Observation System focuses and coordinates federal efforts to integrate the Nation's Earth observation and data management capabilities and link them with observation systems in other countries. Globally integrated observations are required to build U.S. scientific and resource management capacity to develop and deliver new monitoring capabilities, improved forecasting and prediction services, and more effective resource management practices—including NOAA's own capabilities in information services, forecasts and predictions, and ecosystem management (as outlined further in this Guidance). Key development and deployment requirements include:

- Data gaps, inadequate integration, and interoperability problems limit the range and utility of existing observing systems for NOAA's information service and resource management needs as well as for the research and management needs of external users. Data gaps and integration challenges are particularly pronounced and urgent in oceanic observing systems, including systems supporting living marine resources sciences, ocean and coastal mapping, and related areas. The breadth of NOAA's commitment to GEOSS also requires a concentrated effort to improve integration and close critical gaps in upper air and surface observing systems.
- In addition to resolving data gaps and integration problems, NOAA also must ensure the scientific integrity of the data over time by correcting for changes in observing system capabilities and other potential sources of bias. Broader and higher quality data inputs raise additional requirements for effective data management. From archiving to interoperability, the effectiveness of data management will profoundly shape the accessibility and utility of observations systems.

³ OMB / OSTP Memorandum M-05-18, FY 2007 Administration Research and Development Budget Priorities: July 8, 2005.

- As the range and utility of observation systems increases, NOAA must simultaneously expand its capacity to use and apply observational data. In this respect, modeling is a critical enabling technology: it will drive NOAA's ability to extract usable knowledge from its observation systems, and will improve the quality and explanatory power of NOAA's information services, forecasts, and predictions. Requirements are particularly urgent for a functional Earth System Modeling Framework and operational atmospheric, ocean and coastal modeling capabilities integrating physical, chemical, and biological systems. At the same time, NOAA also must use advanced models to optimize the design and integration of its own observing systems.
- Deploying and operating high capacity, reliable, and efficient observations infrastructure, including NOAA satellites, ships, aircraft, in situ platforms, and associated data management and scientific data stewardship requirements. These assets must be deployed in the most efficient and effective manner to maximize NOAA's observational capacity and provide optimal support for NOAA's entire product and service portfolio as well as its ecosystem management needs.

Table 1.A: Priorities for Observation Systems, Data, and Models

Priorities	Products / capabilities by 2012	Partners
Globally integrated oceanic and atmospheric observations and data management	<p>Operationally integrated NOAA observing systems based on a common architecture and nested within other national and global Earth observation systems</p> <p>Priority gaps in ocean observing systems have been closed; a fully functional Integrated Ocean Observing System that serves internal and external user needs</p> <p>Multi-mission geospatial data collected through integrated ocean and coastal mapping</p> <p>Integrated data assimilation and management: archived, interoperable, accessible, and readily usable observations and data products</p>	Other countries; international organizations; other U.S. agencies; universities; technical associations and societies; private sector equipment and service providers
Ocean and Earth system modeling	<p>Expanded operational capacity through an Earth System Modeling Framework</p> <p>New data assimilation methods that support expanded observational system capabilities</p> <p>Operational atmospheric, ocean and coastal modeling capabilities that support all NOAA programs</p> <p>New analytical and predictive capabilities for ecosystem parameters and air and water quality</p>	Universities; other agencies; other countries; international organizations
Capable and reliable observations infrastructure	<p>Long-term satellite and fleet upgrades deployed</p> <p>Multi-disciplinary, multi-sensor ocean data collection</p> <p>Improved productivity of data collection platforms</p>	Other countries; national and international organizations; other U.S. agencies; private sector

Information Services, Forecasts, and Predictions

Key trends and requirements

Significant environmental events over the past year underscore the premium society places on accurate and timely information services, forecasts, and predictions. Diverse events—including frequent and intense hurricanes and other extreme weather events, and the devastating consequences of the December 2004 Indian Ocean tsunami—have elevated demands for improved forecasting and prediction tools for public safety and resource stewardship on a national and international scale, as well as better climate information for use in long term planning and mitigation strategies.

While NOAA strives to continuously improve the quality and effectiveness of existing forecast and prediction services (see table 1.E), it also must develop new capabilities in response to growth and change in the complexion of demands for environmental information services, forecasts, and predictions. Key trends and requirements include:

- Gaps in our understanding of climatic variations, particularly intra-seasonal and inter-annual trends, hinder efforts to address important societal issues including drought, human health, agriculture, sustainable living marine resources, and urban and coastal impacts from climate change. The U.S. Climate Change Science Program, which integrates all federal research on global climate change, and other sources of national and international attention to climate change continue to elevate the need for improved climate predictions and more robust climate data and information tools.
- The persistence and impact of the prolonged drought in the western United States has elevated regional and national attention to water forecasting and management needs. The National Research Council recently identified hydrologic forecasting as one of eight “grand challenges” in environmental science, and the NSTC is coordinating a long-term, multi-agency plan to increase the Nation’s ability to measure, monitor, and forecast U.S. and global supplies of fresh water. To meet this requirement, NOAA needs to expand its capability to provide water forecasts and information services in the broader context of water resources.
- The economic and societal costs of high-impact weather require NOAA to develop new tools and techniques for increasing the accuracy of one-day to two-week high-impact weather forecasts. Improving forecasts of the intensity of tropical storms (including those in and near hurricane stage) is particularly important for coastal residents and the emergency management community. In other high-impact areas, such as air quality, NOAA will need to leverage its increased observational and modeling capacity over time to support a wider range of operational forecasts.
- As the pace and intensity of international trade and commerce continues to accelerate, U.S. competitiveness in global markets will be shaped by the efficiency and safety of all major modes of transportation. Increasingly dense transportation networks require more extensive, fast, and accurate information and forecasting tools and services for aviation, marine, and surface transportation systems. Fast, safe, and environmentally sound transportation networks will contribute to the nation’s competitive advantage in trade-intensive, global markets.

Collectively, NOAA's response to these priority areas will shape its ability to respond to key trends and requirements in ocean and coastal ecosystem management (see table 1.C). For instance, new climate information services are needed to support ecosystem predictions and resource management needs. Similarly, improved hydrological information services will shape NOAA's ability to provide environmental information on oceans and human health. These are but two examples of the high level of interdependence among NOAA's priorities for FY 2008 – 2012.

Table 1.B: Priorities for Information Services, Forecasts and Predictions

Priorities	Products / capabilities by 2012	Partners
Science-based climate information services	Improved intra-seasonal to inter-annual predictions New information products for climate extremes, coastal ocean climatologies, climate normals, precipitation frequency estimates, and assessments of climate forcing agents and substitutes for ozone-depleting substances Decision support services for drought, health, agriculture, living marine resources, and urban / coastal management	Universities; other countries; international organizations; private industry
Water information services	New hydrologic forecasting information services for drought and water management Observations expanded to regional watersheds, covering coasts, rivers, and upland areas New analytical tools and predictive capabilities that link forecast models of water resources, hydrology, weather events, climate, and oceans Hydrological forecasting capabilities that support NOAA's priorities for environmental information on oceans and human health	USGS; EPA; state and local water resource managers
Forecast accuracy for high-impact weather	Accelerated research and optimization of observing strategies yield improvements in the accuracy of one-day to two-week high-impact weather forecasts Accurate 48-hour hurricane intensity forecasts	Universities; other agencies; other countries; international organizations; private industry
Information services for aviation, marine, and surface transportation systems	Increased lead-time prediction of low ceiling and visibility at airports Increased 48 hour forecast accuracy of high seas marine warnings Expanded geographic coverage of real-time, integrated marine navigation products and services Increased operational availability of weather information for surface transportation systems	Other agencies; states; universities; private industry

Ocean and Coastal Ecosystem Management

Key trends and requirements

NOAA has been designated a lead agency in implementing key aspects of the Administration's Ocean Action Plan, a response to last year's Final Report of the U.S. Commission on Ocean Policy. This was brought about by unprecedented public concern

over the health and vitality of the world's oceans. The Ocean Action Plan identifies steps to be undertaken to ensure continued conservation of coastal and marine habitats and living marine resources, while guaranteeing that the public can continue to derive benefits from those same resources.

The U.S. Ocean Action Plan emphasizes the Administration's focus on making the oceans, coasts, and Great Lakes cleaner, healthier, and more productive by employing the best available science and data to inform decision making. The Ocean Action Plan specifically encourages the further development and refinement of regional approaches to making complex resource management decisions related to water, land, coastal zones, living marine resources, and marine ecosystems. Preferred approaches are specific to regional and local conditions and center on effective partnerships that are driven by local and state authorities but draw extensively on support from NOAA, its federal partners, and others.

- Motivated in part by the Ocean Action Plan, ecosystem approaches to management of resources will continue to evolve over the planning period and will feature region-specific approaches that are locally-driven, scientifically informed, and focused on specific resource management needs. These approaches will draw extensively on NOAA's multidisciplinary scientific and technical expertise and resource management capabilities, and will require high levels of inter-organizational collaboration and flexibility through strong partnerships involving federal, state, tribal, and local governments, the private sector, international partners, and other interests.
- The effectiveness of ecosystem approaches to management will depend in part on the refinement and expansion of integrated assessment and forecasting capabilities. For example, the health of specific marine populations, individual marine mammals, and certain fish species have emerged as important indicators of ecosystem health and living marine resource productivity. Improvements in our ability to measure and forecast ecosystem health and productivity, including socioeconomic dimensions, will guide improvements in resource management strategies and practices.
- NOAA's own ecosystem-based approach to management and its specific stewardship responsibilities for living marine resources and coastal zones will be re-affirmed and deepened through the reauthorization of several key legislative drivers, such as the Coastal Zone Management Act, the Marine Mammal Protection Act, and the Magnuson-Stevens Act. As outlined in the Ocean Action Plan, NOAA must approach this broad legal and regulatory framework holistically and work closely with its federal partners to identify statutory and regulatory redundancies or omissions, overcome traditional organizational barriers, and develop pragmatic strategies for resolving conflicts, filling gaps, and addressing emerging needs.
- Recent events, such as the prolonged harmful algal blooms in the northwest Atlantic, have elevated national attention to the impact of ocean and coastal conditions on human health. As we expand our scientific knowledge of the role humans play in complex ecosystems, NOAA also will need to address emerging requirements for measuring, monitoring, and predicting ocean and coastal ecosystem conditions that may have large impacts on human health.

- The long-term health and productivity of marine ecosystems will be driven in part by climate regime changes. Scientists do not adequately understand the complex links over time between climate variation and regional ecosystem conditions and trends, such as the links between observed climate variations in the Arctic and Pacific marine ecosystems. To ensure successful long-term ecosystem management, NOAA must work to improve our scientific understanding of the impact of climate variability and abrupt climate change on marine ecosystems.

Table 1.C: Priorities for Ocean and Coastal Ecosystem Management

Priorities	Products / capabilities by 2012	Partners
Collaborative, science-based approaches to ecosystem management	Region-specific collaborative approaches to ecosystem-based management—including cooperative science programs with industry, academia, and others—that are generating specific, measurable improvements in ecosystem health and productivity and sustainability of resources Integrated assessments and forecasts of ecosystem health and productivity, including socioeconomic impacts and the effects of ecological factors on living marine resource sustainability Harmonized legal-regulatory approaches to coastal and marine resource management Regulatory structure and robust scientific and technical support for marine aquaculture	State, local, and other federal agencies; coastal resource managers; other countries; international organizations; universities; Regional Fisheries Councils; private industry; universities; non-governmental organizations; commercial and recreational fishers
Environmental information on oceans and human health	Prediction, monitoring, and multi-region warning systems for harmful algal blooms and hypoxia Ecological monitoring, forecasting and environmental modeling for human health risk characterization	Federal, state, and local health and environmental agencies; coastal resource managers; universities; international partners
Climate variability and ecosystem predictions	Improved monitoring and forecasting of ecosystem conditions based on climate observations and models Improved understanding of climate change and climate predictability at decadal time scales, with impacts on marine ecosystems	Universities; other countries; international organizations

Environmental Literacy

Key trends and requirements

Environmental literacy is integral to NOAA’s mission: All of NOAA’s long-term goals ultimately depend on the public’s capacity to understand and react to Earth system science and ecosystem conditions. A better informed public will provide improved environmental stewardship and will acquire, use, and respond to NOAA’s information services and forecasts in more predictable and effective ways. For example, NOAA’s increased capacity to monitor and respond to tsunami events requires communities that understand and are prepared to react effectively to tsunami warnings; likewise, individuals who understand the complex interdependencies within an ecosystem—

including their own roles—are more likely to act as stewards of that ecosystem. Given the central role of environmental literacy to NOAA’s long-term effectiveness, NOAA places a high priority on formal and informal education efforts leveraging NOAA’s distinctive scientific, technical, and operational expertise. Key requirements include:

- Ensuring coordination between developers of educational products and those partners responsible for establishing educational standards;
- Overcoming barriers to influencing formal educational curricula that exist because of education standards that do not adequately reflect Earth system science; and
- Deploying strategic approaches to environmental literacy, as articulated in the NOAA Education Plan and Policy, which recognize the multi-generational, long-term nature of change in public attitudes and actions.

Table 1.D: Priorities for Environmental Literacy

Priorities	Products / capabilities by 2012	Partners
Formal education in Earth System science, as it relates to NOAA’s mission	Widespread use of high quality, multi-disciplinary curricula and learning tools that broadly leverage NOAA’s scientific and technical expertise Increased number of students receiving formal education in the Earth system science	Other federal, state, and local agencies; associations and non-profit scientific and educational organizations; other countries and international organizations
Life-long learning about Earth system science, as it relates to NOAA’s mission	Improved public understanding of and responsiveness to warnings about oceanic and atmospheric phenomena Improved public stewardship of environmental resources Improved information for the public’s use in making decisions about natural resources	

Breakthrough Organizational Performance

Key trends and requirements

In the context of financial and other resource constraints, increased demands for NOAA’s scientific expertise, data, and information services add further incentive to develop new organizational approaches and technology-driven service delivery improvements to maximize the value of the public’s investment in NOAA. At the same time, a wide range of external drivers will place a premium on the strategic use of information technology, including increasingly dense and information-intensive weather and climate models, massive increases in the volume of satellite data under NPOESS and GOES-R, geographically dispersed use of NOAA’s high performance computers, and broad-based needs for greater integration and interoperability of observational data and information to support GEOSS and NOAA’s own mission needs.

To maximize the value of its services for external customers, NOAA must:

- Maximize its efficiency and effectiveness in transitioning research results to operations and in delivering products and services;
- Continuously improve product and service quality and utility, in keeping with NOAA's on-going corporate commitment to service leadership; and
- Leverage information technologies and systems to improve product and service quality, enhance access to a wider range of integrated observational data and information services, and to lower internal operational costs.

To maximize operational efficiency and effectiveness, NOAA also must:

- Integrate data and information across all elements of NOAA's programs;
- Integrate facility planning and management with NOAA-wide program needs through a stable, long-term, NOAA-wide facilities modernization strategy; and
- Maintain core competencies and meet new capability demands as the NOAA workforce changes in composition.

Table 1.E: Priorities for Breakthrough Organizational Performance

Priorities	Products / capabilities by 2012	Partners
Improve service delivery excellence and value to customers	Accelerated transition of research capabilities to new or improved operational products and services New service delivery models deployed that provide higher quality, higher value, fully integrated information services, forecasts, and predictions	State, local, and other federal agencies; private sector; international partners
Strategic use of information technology	A single, secure NOAA enterprise network that integrates data and information across physical and disciplinary boundaries and time scales, adequate to support GEOSS and NOAA's national mission imperatives A comprehensive Management Information System for corporate NOAA	Department of Commerce Chief Information Officer; IT service providers; international partners
Modernized, safe, high quality facilities	Modernized, consolidated facilities portfolio, leveraged in collaboration with partners	State, local, and other federal agencies; universities
Strategic workforce management	A more flexible, diverse, and mobile workforce with minimal skill gaps Ability to rapidly reconfigure or acquire new skills as technologies and program needs change	Universities and other educational, scientific and technical, and environmental organizations; other agencies

Conclusion

NOAA's Vision: An informed society that uses a comprehensive understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to make the best social and economic decisions.

The priorities identified in this Annual Guidance Memorandum embody NOAA's vision of the future and establish a solid framework for the programming phase of NOAA's Planning, Programming, Budgeting, and Execution System.

Over the last three planning cycles, NOAA has identified a consistent set of themes in its annual planning cycle, reflecting the organization's focus on long-term priority areas that will drive the future performance and societal value of NOAA's program portfolio: globally integrated observations, data, and modeling; ecosystem-based management; information services, forecasts and predictions related to weather and water, climate, and transportation; environmental literacy; and organizational excellence (see table 2 below). Building on prior planning efforts, this AGM grounds these priority areas in NOAA's core functions (see p.2 and the appendix); refines the approach to identifying priorities by applying selection criteria focused on potential impact, customer needs, and high-leverage solutions (see p.2-3); and identifies sixteen priorities that NOAA will pursue (see table 1), with its external partners, to create new or enhanced products and capabilities by 2012 (see tables 1.A through 1.E). In pursuing this guidance, NOAA will further its strategic goals and generate ever increasing value for the environment, society, and the economy.

Table 2: Alignment of AGM Themes, FY 2006 – FY 2008

FY 2008 – 2012 AGM	FY 2007 – 2011 AGM	FY 2006 – 2010 AGM
Observation systems, data, and models	Pulse of the Planet: Integrate Global Observations	Pulse of the Planet: Integrate Global Observations
	Advancing NOAA's Modeling Capability	[identified within "enablers"]
Information services, forecasts, and predictions	Increase Climate Information, Services, and Products	Expand Climate Services
	Provide Critical Information for Water Resources	Improve Water Resource Information
	Support U.S. Transportation Systems	Facilitate Intermodal Transportation
Ocean and coastal ecosystem management	Leadership for the Oceans (ecosystem-based management)	Advance toward an Ecosystem Orientation
Environmental literacy	Enhance Environmental Literacy	[identified within "approaches"]
Breakthrough organizational performance	Deliver Effective, Efficient Decision-Support Information	Sustain Important National NOAA Programs (forecasts & warnings, weather & air quality, R&D)
	<i>Enablers:</i> Skills and capabilities of NOAA's workforce; improve administrative programs; maintain and provide necessary platforms; improve critical infrastructure and services; advance use of technology	<i>Enablers:</i> Environmental modeling; data management; technology; human capital; facilities; platforms; administrative services

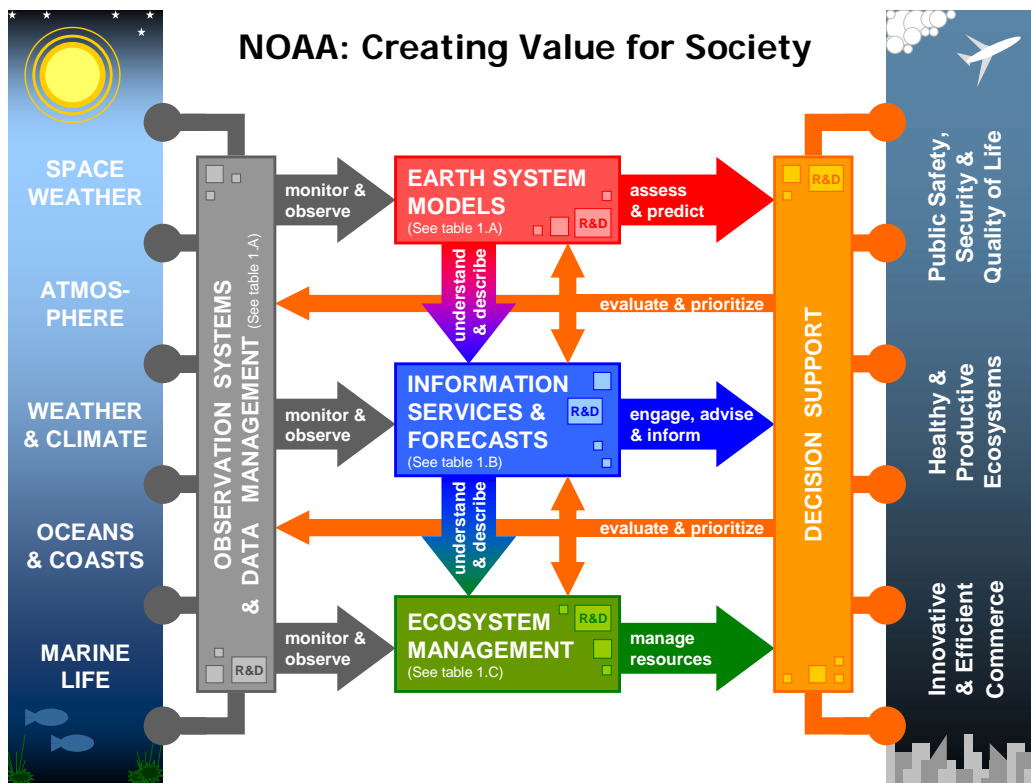
Appendix

NOAA’s Value-Creation Model and Strategic Direction

As depicted in the figure below, NOAA delivers benefits to society through a set of enduring activities that embody NOAA’s distinctive mission⁴:

- *Monitor and observe* the land, sea, atmosphere, and space to create an observational and data collection network that tracks Earth’s changing systems;
- *Understand and describe* how natural systems work together through investigation and interpretation of information;
- *Assess and predict* the changes of natural systems and provide information about the future;
- *Engage, advise, and inform* individuals, partners, communities, and industries to facilitate information flow, assure coordination and cooperation, and provide assistance in the use, evaluation, and application of information; and
- *Manage* coastal and ocean resources to optimize benefits to the environment, the economy, and public safety.

Figure 1: System Model with Linkages to Societal Benefits



⁴ See *New Priorities for the 21st Century--NOAA’s Strategic Plan* (April 2005), p. 3.

Each component of this model is an interdependent piece of a complex decision support system shaping society's ability to manage, live, and prosper within its natural environment. NOAA manages these components through its Strategic Plan, which articulates the organization's long-term goals and associated outcomes—e.g., the avenues through which NOAA executes its mission responsibilities and maximizes its impact on society.

Table 3: NOAA's Mission Goals, Outcomes, and Societal Benefits

Mission Goal	Outcomes	Societal Benefits
Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management	Healthy and productive coastal and marine ecosystems that benefit society A well-informed public that acts as a steward of coastal and marine ecosystems	Healthy and productive ecosystems Public safety, security, and quality of life
Understand climate variability and change to enhance society's ability to plan and respond	A predictive understanding of the global climate system on time scales of weeks to decades with quantified uncertainties sufficient for making informed and reasoned decisions Climate-sensitive sectors and the climate-literate public effectively incorporating NOAA's climate products into their plans and decisions	Healthy and productive ecosystems Public safety, security, and quality of life
Serve society's needs for weather and water information	Reduced loss of life, injury, and damage to the economy Better, quicker, and more valuable weather and water information to support improved decisions Increased customer satisfaction with weather and water information and services	Public safety, security, and quality of life Innovative and efficient commerce
Support the nation's commerce with information for safe, efficient, and environmentally sound transportation	Safe, secure, efficient, and seamless movement of goods and people in the U.S. transportation system Environmentally sound development and use of the U.S. transportation system	Innovative and efficient commerce Public safety, security, and quality of life