NCEP
Strategic Plan
2009-2013

Mission

NCEP delivers
science-based environmental predictions
to the Nation and the global community.

We collaborate with partners and customers
to produce reliable, timely, and accurate
analyses, guidance, forecasts and warnings
for the protection of life and property and the
enhancement of the national economy.

Vision

The Nation's trusted source,
first alert and preferred partner
for environmental prediction services

"From the Sun to the Sea…
Where America's
Climate, Weather, Ocean and Space Weather
Services Begin"

Goals and Strategies

1.0 Customers and Partners
Ensure the value, usability and relevance of NCEP products and services.

2.0 Product and Services
Improve decision support capability to meet the widest spectrum of user and partner needs.

3.0 Information Systems
Enhance the *real-time, on-time, all the time* access, display and delivery of NCEP products and services.

4.0 Science and Technology
Accelerate science and technology infusion to enhance the value of NCEP guidance, analyses, forecasts and warnings over all spatial and temporal scales.

5.0 People and Organizational Culture
Develop, value and sustain a highly skilled and flexible workforce that excels in service, teamwork and innovation.

6.0 Business Processes
Strengthen and integrate business processes that encourage innovation, manage change, promote efficiency, and hold individuals accountable for results at all levels.

Customers and Partners

1.0 Ensure the value, usability and relevance of NCEP products and services.

1.1 Implement a customer-centered and partner-focused communications and operating practice.

- 1.1.1 Formalize and implement a customer and partner requirements collection, validation and feedback process.
- 1.1.2 Formalize a transparent and inclusive process throughout all phases of a product life cycle.
- 1.1.3 Continuously improve product and service information and customer and partner training, outreach and communication.
- 1.1.4 Use best practices from across NCEP to develop a standardized customer service and partnership approach.

1.2 Take advantage of the greater community's capabilities and resources to meet customer/partner requirements and promote NCEP continuous learning.

- 1.2.1 External Partners

  - *1.2.1.1 Private sector*

    - 1.2.1.1.1 Work with the private sector to augment or enhance NCEP products and services.
    - 1.2.1.1.2 Leverage the media's unique capability to reach the public.
    - 1.2.1.1.3 Utilize private sector observing systems.
    - 1.2.1.1.4 Leverage private sector technology innovations.
    - 1.2.1.1.5 Use industry standard display systems.

  - *1.2.1.2 Federal partners*

    - 1.2.1.2.1 Assess, coordinate and share resources and capabilities.
    - 1.2.1.2.2 Pursue focused research and modeling activities.
    - 1.2.1.2.3 Utilize other partner observing systems.
    - 1.2.1.2.4 Partner in outreach, training and education activities.

  - *1.2.1.3 Academic partners and the research community*

1.2.1.3.1 Involve the larger research community to address existing or emerging NCEP challenges.
1.2.1.3.2 Accelerate research advances to operations through test beds and other mechanisms.
1.2.1.3.3 Engage the community on the ongoing development of the earth system model and multi-model ensemble system.
1.2.1.3.4 Expand the visiting scientist program at NCEP to leverage from the external community.

1.2.1.4 International partners

1.2.1.4.1 Expand scientist exchange for community modeling, data assimilation and the exchange of forecast techniques.
1.2.1.4.2 Share data, observations and expertise.
1.2.1.4.3 Share research results and actively participate in international research programs.
1.2.1.4.4 Expand the forecast training desks to build upon the successes of ongoing activities at the International Training Desks.

1.2.2 Internal Partners

1.2.2.1 NOAA

1.2.2.1.1 Evaluate and integrate, where appropriate, advances across NOAA research and observations into NCEP operations.
1.2.2.1.2 Clarify roles and capitalize on areas of synergy with other NOAA offices.
1.2.2.1.3 Establish scientist exchanges between NCEP and NOAA programs and offices.
1.2.2.1.4 Participate in targeted NOAA training, education and outreach activities.
1.2.2.1.5 Utilize the NCWCP to forge new and innovative strategic relationships through collocation and synergies via partnerships, especially for expanded environmental prediction capabilities.

1.2.2.2 NWS

1.2.2.2.1 Evaluate and integrate best practices from other NWS organizations
1.2.2.2.2 Improve collaboration across the NWS in products and delivery of products and services.
1.2.2.2.3 Expand NCEP product suite for Alaska and Pacific Regions

1.2.2.3 NWS Employees Organization (NWSEO)

1.2.2.3.1 Fully utilize the NWSEO to incorporate the value added of employee input and impact on product and service usability and relevance.

1.2.2.4 NCEP

1.2.2.4.1 Leverage the perspective and experience of the employees in product/service development and assessment.
1.2.2.4.2 Integrate focused efforts and teamwork among the NCEP Centers.

Product and Services

2.0 Improve decision support capability to meet the widest spectrum of user and partner needs.

2.1 Enhance the seamless product and service suite.

2.1.1 Conduct a baseline assessment of NCEP products and services.
2.1.2 Provide a reliable, timely and accurate product suite.
2.1.3 Participate in development of a coordinated NOAA suite of products in collaboration with partners.
2.1.4 Improve the NCEP prediction capability through a collaborative forecast process and enhanced decision support system
2.1.5 Increase probabilistic forecast information across all time scales related to weather, water and climate products and services.
2.1.6 Improve the communication of uncertainty prediction products.
2.1.7 Express products in geospatial advanced digital formats.

2.1.8 Build user capacity including training to improve the use of NCEP products and services.

2.2 Respond to existing high-demand needs in programmatic areas:

2.2.1 Tropical cyclone forecast improvements (through the Hurricane Forecast Improvement Project)
2.2.2 Aviation weather
2.2.3 Climate prediction
2.2.4 Integrated NOAA ocean and coastal prediction
2.2.5 Severe weather prediction
2.2.6 Fire weather prediction
2.2.7 Hydrometeorological prediction
2.2.8 Space weather

2.3 Anticipate emerging critical areas to ensure the product suite remains relevant and brings increased value to the Nation.

2.3.1 Ecosystem forecast support
2.3.2 NextGen aviation transportation system
2.3.3 National Climate Service
2.3.4 Public health
2.3.5 Surface transportation
2.3.6 Agriculture
2.3.7 Energy
2.3.8 Air and Water quality
2.3.9 Homeland security

2.4 Respond to increasing national and international requests and agreements for products and services, and related training, education and outreach

Information Systems

3.0 Enhance the *real-time, on-time, all the time* access, display and delivery of NCEP products and services.

3.1 Implement a process for the acquisition, utilization and dissemination of on-demand data, products and services which leverages emerging technologies.

3.2 Deploy a strategy to ensure a secure and reliable NCEP web process aligned with NOAA.

3.2.1 Continuously improve web page content, organization and information access.
3.2.2 Provide 24x7 support for all web infrastructure.
3.2.3 Leverage best practices from NCEP community web sites.
3.2.4 Provide one-stop shopping ensuring ease of use by our customers.

3.3 Assess and select formats and dissemination methods for NCEP data and products adaptable to changing requirements.

3.3.1 Enhance the use of geographical information system (GIS) technology.
3.3.2 Promote innovative delivery methods to include the use of personal digital assistants (PDA) and Google Earth technology.

3.4 Create a catalog for all internal and external datasets.

3.5 Leverage existing NOAA data management, archival, mining and stewardship.

3.6 Advance IT architecture to support emerging data, display and process requirements NWS wide to include networks, servers, workstations, supercomputers, software and security (e.g. NPOESS, GOES-R and dual polarization radar) .

3.7 Support the transition to AWIPS2 to achieve a unified system to meet NCEP forecaster needs and promote collaboration among NWS forecasters.

3.8 Integrate and balance cyber security policies and implementation to ensure confidentiality and integrity with NOAA and partner agencies.

3.8.1 Establish documented security procedure for codes and scripts.
3.8.2 Align communications protocols across partner agencies.

3.9 Implement a process to include NCEP Service Centers in IT infrastructure decisions.

Science and Technology

4.0 Accelerate science and technology infusion to enhance the value of NCEP guidance, analyses, forecasts and warnings over all spatial and temporal scales.

4.1 Develop and implement the next generation unified numerical forecast system based on a community modeling approach to serve both the operational and applied research needs of NOAA, and the research and application needs of the broader science community in accordance with NOAA's research strategy, related priorities, and Planning Programming Budgeting and Execution System (PPBES) process.

4.2 Strengthen the ability to infuse science and research into operational systems by solidifying partnerships and knowledge transfer and NCEP outreach to the scientific community. (O2R)

- 4.2.1 Document NCEP's forecast systems to facilitate use by the larger research community as part of the "O2R" process.
- 4.2.2 Support use of NCEP's forecast systems by the science community.
- 4.2.3 Engage the science community on NCEP's mission goals and the earth system model system that includes atmosphere, ocean, land and cryosphere model components.
- 4.2.4 Conduct community forums to collaborate on multi-model ensembles, and leverage developments from outside of NCEP.
- 4.2.5 Utilize community workshops on specific mission areas through test beds.

4.3 Enhance, accelerate and harvest research to operations for improving numerical forecast systems and the NCEP product suite. (R2O)

- 4.3.1 Determine best mix of near-term (1-3 year) and longer-term (4-5 year) research products for transition to operations. (R2O)
- 4.3.2 Enhance R2O efficiency by aligning strategy with NCEP expertise.
- 4.3.3 Document, assess need and prioritize R2O areas.
- 4.3.4 Strengthen test beds for enabling use of NCEP and other models as a community model.

4.4 Strengthen service center test beds to energize infusion of new science and technology into NCEP operational forecasting.

- 4.4.1 Create a robust foundation for sustaining and enhancing test beds in each Service Center, the Joint Center for Satellite Data Assimilation and Developmental Test Bed Center

associated with the Environmental Modeling Center and NCEP Central Operations.

4.4.2 Share best practices to enhance test bed efficiency and optimize the effectiveness of community involvement throughout the assessment and implementation process.

4.4.3 Leverage test beds, forecasters and technical staff to support a rapid transition process following established implementation criteria.

4.4.4 Capitalize on forecaster science and technology applied research to advance mission goals.

4.5 Enhance the use of multi-model ensembles and probabilistic forecasting to quantify uncertainty at all time scales related to weather, water and climate products and services.

4.5.1 Develop a multi-model ensemble prediction system and related products in collaboration with national and international partners.

4.5.2 Engage the community in post processing technologies.

4.5.3 Use a National Earth Modeling System to construct diverse model solutions using a common framework.

4.5.4 Adopt new statistical techniques to drive probabilistic guidance and user-specific products.

4.6 Improve the use of observations in operational forecasting and planning for future systems.

4.6.1 Prepare for the next generation of observing systems

4.6.1.1 NPOESS and GOES-R

4.6.1.2 Dual Polarization Radar

4.6.2 Utilize the NASA-NOAA-DoD Joint Center for Satellite Data Assimilation to accelerate the use of new satellite observing systems.

4.6.3 Strengthen data quality and assessment, quality control and data assimilation technology development, working in partnership with the larger observational and modeling community.

4.6.4 Enhance diagnostic procedures to identify model problems.

4.6.5 Improve data assimilation with advanced techniques.

4.6.6 Improve focus of new instrument design and deployment across mission areas by using data assimilation to design and plan for new observing systems.

4.6.7 Enhance collaboration with research partners on data assimilation infrastructure.

4.7 Augment operational, backup and applied research computer capacity to provide fully coupled systems for all applications related to the prediction of the total earth system.

- 4.7.1 Seek a factor of three increase in operational and back-up computing to meet requirements for new mission areas, increased product quality and concurrent product systems.
- 4.7.2 Increase ratio of applied research computing to operational (and backup) to 4:1.
- 4.7.3 Tie benefits of increased mission requirements to computing capacity.
- 4.7.4 Leverage capacity from academia and other organizations for applied research and improved forecast systems

4.8 Revolutionize the NCEP Production Suite to meet emerging requirements.

- 4.8.1 Align model execution times to deliver concurrent high resolution and ensemble, global and regional products across all service areas from climate to weather and water domain.
- 4.8.2 Deliver the model products earlier in response to changing observation delivery times, and user needs.

4.9 Enhance forecaster tools to optimize use of model output and observing systems to develop new product areas.

- 4.9.1 Implement a real-time, 4-dimensional, Level-2 radar mosaic in support of aviation, numerical modeling and high impact weather forecasting.
- 4.9.2 Develop and deliver software tools for forecaster analysis of emerging data sets (TAMDAR, Wind Profiler, Dual Polarization radar, GOES-R instrumentation).
- 4.9.3 Develop and deliver tools to exploit ensemble numerical model forecast data

4.10 Explore and optimize new forecast processes to meet emerging area needs (e.g., forecaster over the loop vs. forecaster in the loop).

People and Organizational Culture

5.0 Develop, value and sustain a highly skilled and flexible workforce that excels in service, teamwork and innovation.

5.1 Adopt a culture of collaboration, teamwork, empowerment and mutual respect.

- 5.1.1 Enhance communication on the status of all NCEP programs, services and products.
- 5.1.2 Communicate agency goals, deliverables and accomplishments to all NCEP employees.
- 5.1.3 Instill a culture of learning, innovation and flexibility.
- 5.1.4 Provide training and tools to support employees adapting to change.
- 5.1.5 Reward results-based performance and innovation.

5.2 Establish a clear process that enhances employee input into NCEP decision processes, including those that relate to adopting new techniques, products and services.

- 5.2.1 Each NCEP Center will establish a process that will ensure employee input for new ideas and related improvements in all aspects of the planning process.
- 5.2.2 Each NCEP Center will ensure that employee's new ideas are brought forward expeditiously for consideration in the Annual Operating Plan and related budget processes.

5.3 Assess future needs and implement a comprehensive training and development program to strengthen or change employee skills and abilities.

- 5.3.1 Capitalize on existing learning programs.
- 5.3.2 Commit 1.5% of total budget for the growth and development of the NCEP workforce.
- 5.3.3 Strengthen cross-training across all Centers.
- 5.3.4 Provide training opportunities to improve knowledge, skills and abilities.
- 5.3.5 Leverage technology in training and development, especially as it relates to distributed training sessions and distant learning capabilities.

5.4 Enhance management and leadership capabilities.

- 5.4.1 Establish an NCEP-wide leadership development pilot program.
- 5.4.2 Utilize a feedback assessment tool to evaluate capabilities and determine improvement targets for all managers and supervisors.
- 5.4.3 Leverage best government and industry practices.

5.4.4 Require management and leadership training for all supervisory levels.
5.4.5 Enhance cross-Center and program interaction through a service oriented feedback action process.
5.4.6 Hold management accountable for service, performance, conduct and work environment.

5.5 Recruit and retain a multi-disciplinary and diverse workforce, skilled in teamwork, customer service and adaptive to changing needs.

5.5.1 Partner with external organizations to enhance recruitment and conduct outreach.
5.5.2 Enhance and support NWS diversity management goals.
5.5.3 Increase under-represented groups throughout NCEP.
5.5.4 Leverage intern programs.
5.5.5 Assess and develop employee skill sets for emerging needs.

5.6 Formalize a system for knowledge transfer, succession planning and continuous learning.

5.6.1 Assess impacts of future employee turnover on NCEP.
5.6.2 Document standardized business and operational processes including lessons learned.
5.6.3 Assign mentors for new employees and managers.
5.6.4 Create liaison opportunities with the NCEP Office of the Director.
5.6.5 Expand student opportunities at NCEP through existing and new programs.

5.7 Improve quality of work life and environment.

5.7.1 Foster a family-friendly workplace.
5.7.2 Explore and implement more flexible work schedule options, such as shift work, AWS, tele-work, etc.
5.7.3 Create an environment of trust, respect and openness.
5.7.4 Provide a safe environment for the workforce.

Business Processes

6.0 Strengthen and integrate business processes that encourage innovation, manage change, promote efficiency, and hold individuals accountable for results at all levels.

6.1 Formalize a routine review process to ensure the operational and administrative effectiveness of NCEP.

6.2 Align NCEP business processes with NOAA and NWS business models.

- 6.2.1 Integrate NCEP activities into the NOAA Planning, Programming, Budgeting and Execution System (PPBES).
- 6.2.2 Participate in NOAA and NWS Councils, Boards and Matrix Teams when needed.

6.3 Strengthen NCEP planning processes to link to high priority goals and deliverables of the Strategic Plan to Annual Operating Plans (AOP) and NCEP Technical Operating Plans (NTOP) down to individual performance plans.

- 6.3.1 Align NCEP priorities with requirements of customers and partners and integrate into planning and budgeting process.
- 6.3.2 Continuously improve the AOP and NTOP process to map agency resources to agency goals and deliverables.
- 6.3.3 Work with NWS Employees Organization to create an operating practice of communicating and connecting agency strategic and annual priorities to all employees.
- 6.3.4 Ensure accountability by linking individual performance plans to Strategic and Annual Operating Plans.
- 6.3.5 Review and assess performance measures annually.

6.4 Streamline business processes to ensure efficiencies and delegation of authority at the lowest levels possible.

6.5 Demonstrate and document a transparent decision making process for all business processes.

- 6.5.1 Improve decision-making capabilities by applying advanced risk management techniques across all NCEP centers.
- 6.5.2 Enhance project management capabilities to routinely monitor schedule, cost, and performance of major projects.
- 6.5.3 Implement a process to manage O2R and R2O more effectively.
- 6.5.4 Develop integrated information technology strategies to reduce costs, improve productivity and enhance service delivery.
- 6.5.5 Ensure science and technological advances influence procurement and acquisition decisions.

Louis W. Uccellini
Director, NCEP
www.ncep.noaa.gov

Ben Kyger
Director, NCEP Central Operations
www.nco.ncep.noaa.gov

Stephen Lord
Director, Environmental Modeling Center
www.emc.ncep.noaa.gov

Bob Maxson
Director, Aviation Weather Center
www.aviationweather.gov

Wayne Higgins
Director, Climate Prediction Center
www.cpc.ncep.noaa.gov

James Hoke
Director, Hydrometeorological Prediction Center
www.hpc.ncep.noaa.gov

Ming Ji
Director, Ocean Prediction Center
www.opc.ncep.noaa.gov

Tom Bogdan
Director, Space Weather Prediction Center
www.swpc.noaa.gov

Joseph Schaefer
Director, Storm Prediction Center
www.spc.ncep.noaa.gov

Bill Read
Director, National Hurricane Center
www.nhc.noaa.gov