

STRATEGIC  
PLAN FOR  
FEDERAL  
WEATHER  
ENTERPRISE  
COORDINATION

*Fiscal Years  
2018—2022*

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STRATEGIC PLAN FOR  
FEDERAL WEATHER ENTERPRISE  
COORDINATION  
FY 2018-2022

FEDERAL COORDINATOR FOR METEOROLOGICAL  
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## Preface

Dear Federal Weather Community:

I am pleased to introduce our first Strategic Plan for Federal Weather Enterprise Coordination. This plan provides guidance for the committees and working groups of the Federal Weather Enterprise (FWE) as they form their agendas and plans for the coming years.

In April 2016, the Federal Committee for Meteorological Services and Supporting Research (FCMSSR) directed its subordinate committees and the Office of the Federal Coordinator for Meteorology (OFCM) to develop a strategic plan to focus many of the important yet disparate efforts ongoing within the broad federal weather community. The fifteen Federal agencies comprising that community responded by contributing and distilling ideas to improve cooperation and coordination in several key areas. These ideas evolved into common goals and objectives which may prove most valuable to the community effort.

These agencies have agreed to use the Strategic Plan to guide the subordinate committees and working groups that make up the FWE coordination infrastructure as they craft meeting agendas and work plans. This plan should be considered the collective intent of the FWE, but it is not intended to alter Federal agency appropriations or other legally allocated funding.

The FCMSSR approved this inaugural Strategic Plan at its October 24, 2017 meeting. Minutes of that meeting may be found on [OFCM's website](#).

I appreciate the great work being carried out by the leadership and staff of the FWE agencies and the OFCM. It is only through each of your organization's active and engaged participation that coordination in this important field occurs. Thank you for your contributions!



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## Introduction and Background

The purpose of this document is to express the strategic consensus of the member agencies of the Federal Committee for Meteorological Services and Supporting Research (FCMSSR) for coordination of the Federal Weather Enterprise (FWE, defined below) over a “foreseeable planning horizon” of about five years. The FCMSSR member agencies will of course continue to fulfill their missions as mandated by law and in accordance with enacted authorization and appropriation bills. FWE coordination supports and does not replace or override these agency mission mandates. Rather, this Strategic Plan is intended to provide strategic guidance to the coordination infrastructure. That infrastructure consists of committees, working groups and joint action groups addressing specific meteorological services and research areas. These coordination elements are staffed voluntarily by members of Federal Weather Enterprise agencies. The infrastructure is led by the FCMSSR, with executive direction provided by the Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR), and with coordinating support provided by the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM).

Multiple Federal Agencies are involved in providing meteorological services and supporting research to a diverse array of communities, for a broad range of end uses. Through a complex web of interactions and information flows, these services tie in with and support the activities and services of the private and academic sectors, as well as the non-federal public sector (state and local entities). A 2003 report from the National Research Council, *Fair Weather: Effective Partnership in Weather and Climate Services*, noted that “all three sectors—public, private, and academic—contribute to the weather and climate information system, and all have an interest in improving its quality and usefulness.” That report referred to the combined efforts of the three sectors as the “U.S. Weather and Climate Enterprise,”<sup>1</sup> and the term has since been adapted and broadened, as in the American Meteorological Society’s [Commission on the Weather, Water, and Climate Enterprise](#). This Strategic Plan uses the related term, *Federal Weather Enterprise* (FWE) to refer to the federal-only portion of the larger U.S. Weather, Water, and Climate Enterprise, recognizing that federal agency activities and services are just a portion of the much larger enterprise and must link into that larger enterprise to be effective.

In 1964, the FCMSSR was formed as part of a plan developed by the Department of Commerce and subsequently approved by the Bureau of the Budget (forerunner to today’s Office of Management and Budget) to respond to a Congressional request, codified in Public Law 87-843 (Section 304), for a “horizontal look” across all federal agencies involved in what we now call the FWE. Today the FCMSSR members represent 15 federal entities (FCMSSR membership is shown on the verso side of this plan’s cover) that participate in voluntary coordination and collaboration activities with the aim of reducing redundancies in efforts and spending, leveraging resources and investments across participating agencies, producing services that meet the mission needs of multiple agencies, identifying common research goals, and coordinating assets employed in supporting research. The 1964 plan also created, within the Department of Commerce, OFCM to support the interagency coordination activities agreed upon by the FCMSSR.

As noted, the planning horizon for this strategic plan extends for at least five years; that is, from fiscal year (FY) 2018 through FY 2022. After this first edition is approved and released, the aim is to review and update the plan on a 4-year cycle to ensure that its goals and objectives remain current with national needs and FCMSSR priorities.

## Vision and Mission Statements

**Vision: Well-coordinated weather services and supporting research across the Federal Weather Enterprise that meet the evolving needs of the Nation.**

In recent years, categories of weather services in which interagency coordination has been active and productive have included *basic services* (observing systems, public weather forecasts, severe weather warnings and advisories, etc.), *aviation weather services* (services to meet needs of general, commercial, and military aviation), *surface transportation services* (specialized weather information used by road system users, railways, transit systems, and others), *agriculture and land management services* (agricultural industries and protection and maintenance of the Nation’s land areas), *military services* (operations, services, and capabilities to meet the unique needs of

1 See in particular, [Chapter 2 of Fair Weather](#).

military user commands and their component elements for weather, water, and climate information), *wildland fire weather services*, *space weather services*, *emergency response and homeland security services*, and others. With time, new needs for weather-related services will emerge and old needs will change. Although many of the final products and services in these evolving areas are provided by or in coordination with non-Federal partners in the larger U.S. Weather and Climate Enterprise, effective coordination of FWE roles and responsibilities is critical to meeting the needs of these diverse user communities.

In the context of the FWE and this strategic plan, *supporting research* includes those applied research and development (R&D) activities that are conducted or resourced by participating federal entities and whose immediate objective is the improvement of weather services in one or more of the categories noted above.

**OFCM Mission Statement: Foster the effective use of Federal meteorological resources by encouraging and facilitating the systematic coordination of meteorological services and supporting research across the Federal Weather Enterprise.**

Each entity that participates in the FWE has its own mandate, mission, and plans, so the Mission Statement is one that delineates the role for OFCM in supporting a voluntary coordination infrastructure approved by the FCMSR for pursuing the FWE Vision. In particular, OFCM does not direct the activities of participating agencies; its role is to *foster* effective use of resources by *encouraging and facilitating* coordination and collaboration among participants in the committees, working groups, joint action groups, and other elements of the coordination infrastructure under the auspices of the FCMSR.

## COORDINATION GOALS AND OBJECTIVES

Through this strategic plan, FCMSR provides the following goals to OFCM and the coordinating elements (e.g. the committees, working groups and joint action groups) to guide interagency collaboration and coordination, recognizing that individual agency participation in these elements is voluntary and constrained by agencies' resources as well as their own planning and programming processes. The coordinating elements should consider these goals when creating agendas and plans within their areas of expertise. Not every goal is applicable to each coordinating element. Coordinating elements may request guidance from ICMSR and FCMSR as needed.

**Goal 1.** Improve the resolution, frequency, information content, and sustainability of global observing capabilities.

**Goal 2.** Make federal forecasting processes more resilient for all relevant time and spatial scales.

**Goal 3.** Improve interagency collaboration to support effective and consistent decision-support products, information, and services.

**Goal 4.** Conduct productive, synergistic interagency research efforts.

**Goal 5.** Develop, recruit, and sustain a professional and diverse federal weather workforce.

**Goal 6.** Coordinate messaging about FWE priorities and needs.

For the current strategic planning period (FY 2018 to FY 2022), objectives for each goal have been set. Each goal and its associated objectives are listed and explained next.

**Goal 1. Improve the resolution, frequency, information content, and sustainability of global observing capabilities.**

**Objective 1.1:** Enable interagency discussions of observation system acquisition at the capability planning stage.

**Objective 1.2:** Provide forums to discuss and promote development, deployment, and sustainment of common-use systems through formalized interagency processes.

**Objective 1.3:** Coordinate data formatting, processing, communication, management, and stewardship standards to optimize the exchange, timeliness, usability, and value of earth observations.

**Objective 1.4:** Coordinate the development of new observing technology and technology to extract information from observations.

Meteorological observing capabilities include systems that are ground-based, airborne, satellite-based, and seaborne. Observations taken by these systems provide the raw data for meteorological and related information services and products, so improving observing capabilities is a continuing goal of the FWE. Encouraging interagency discussions during the capability planning stage is a particularly potent way to reap cost savings and cost-effectiveness gains from the acquisition process for observing systems. In some cases, these discussions can foster agreement on common-use systems—systems whose observations have broad applicability to a range of products and services.

Even when observing systems are not designed and acquired for a “common use,” the data they provide typically has value for applications (including both basic and supporting research) beyond the needs for which the system was designed and acquired initially. By agreeing on voluntary standards in how the observational data are formatted, processed, communicated, managed, and held in accessible repositories (data stewardship), FWE participants can maximize the value of observational data.

Frequently, weather changes during or in the immediate aftermath of a significant event. Optimizing the *timeliness* of sharable data often comes down to minimizing *data latency*—the time between taking an observation and getting the information derived from that observation to those who need to respond.

Observational data need to be interpreted to get the most information value from them. A wide array of information technologies, including sophisticated computer-based models for weather, water, and climate analysis and prediction, contribute to extracting information from observing data. Therefore, sharing and collaborating on technology development and implementation, are important means for improving the overall value derived from federal investments in observing systems.

The goal of this coordination is to encourage practices that make the FWE better at mitigating events that cause degradation without losing capability to deliver essential services and products. Degradation could

**Goal 2. Make federal forecasting processes more resilient for all relevant time and spatial scales.**

**Objective 2.1:** Strengthen interoperability among interagency forecasting centers in producing accurate, timely, and precise weather products, information, and services.

**Objective 2.2:** Ensure interagency utility (data types, precision, web services, etc.) of short-term to long-term forecasts.

**Objective 2.3:** Support agency efforts to plan and develop the cooperative use of processing resources to increase the Nation’s computing power for enhancing data assimilation and modeling systems.

mean the loss of network capability or the loss of an operational processing center or other major contributor—whether that loss is accidental or due to deliberate attack. By having multiple entities collaborate on backup operations and contingency plans, often resiliency objectives can be met efficiently and effectively.

Objective 2.2 gets at another aspect of resiliency: the value of commensurability in data series across data sources and data repositories, particularly for extracting information about decadal and longer trends in atmospheric, terrestrial, and oceanic conditions from key meteorological (and other geophysical) parameters. This kind of “data resiliency” is particularly valuable for expanding the value of information (its utility) extractable from the runs of complex models and model ensembles used for weather, water, and climate (intraseasonal to interannual and longer) forecasting.

Goal 3 focuses on ensuring that the “information streams” coming from the FWE are both consistent and meaningful to whoever receives the information. In this context, an important consideration is that the feder-

**Goal 3. Improve interagency collaboration to support effective and consistent decision-support products, information, and services.**

**Objective 3.1:** Coordinate interagency outreach efforts to identify weather and water-related information needs for decision making and risk management.

**Objective 3.2:** Improve the consistency of decision support and risk management products, information, and services across the FWE.

**Objective 3.3:** Crossfeed processes and lessons learned between agencies to improve decision support tools.

al agency participants are not the only users of the decision support and risk management products, information, and services referred to in Objectives 3.2 and 3.3. The non-federal partners (academic, private-sector, and state and local public-sector partners) in the larger “weather, water, and climate” enterprise are often the immediate customers for FWE information. Understanding what those customers for FWE services and products require to meet the needs of their users is imperative. Although the federal agencies in the FWE do not control or specify what decision support and risk management tools will be used by others, they can learn what their customers are using and share (the “crossfeed” cited in Objective 3.3) processes and lessons for better serving the wider weather enterprise.

In interpreting Goal 4 and its objectives, it is important to bear in mind that “research” in the context of this

**Goal 4. Conduct productive, synergistic interagency research efforts.**

**Objective 4.1:** Exercise leadership in coordinating U.S. efforts in international weather research priorities including the current WMO Grand Challenges.

**Objective 4.2:** Foster interagency collaboration of research initiatives starting at the planning stage.

**Objective 4.3:** Support efforts among FWE participants to coordinate task definition and sponsorship of National Academies research initiatives.

**Objective 4.4:** Expand interagency use of data and information for research.

**New Objective 4.5:** Develop coordination processes that facilitate operational feedback to the research community, and that accelerate the integration of promising research from federal, commercial and academic partners into operational improvements in observing, forecasting, warning and threat communication.

Strategic Plan means supporting research: applied R&D activities conducted or supported by participating Federal entities with the immediate objective of improving weather services.

WMO Grand Challenges refers to three ongoing research efforts to which the U.S. is a party. These are: 1. Sub-seasonal to seasonal prediction. 2. High impact weather. 3. Polar prediction

As with acquisition of observing systems (see Goal 1 and Objective 1.1), sound tax dollar investments can result when FWE agencies collaborate on decisions during the planning phase of supporting research initiatives. Similarly, agencies can work together on crafting task statements when sponsoring science-based reports and evaluations by committees of the National Academies of Sciences, Engineering, and Medicine. Objective 4.4 aims at seeking ways to make the results of research more accessible and more useful to others, beyond the principal investigator and the immediate objective of a supporting research activity.

**Goal 5. Develop, recruit, and sustain a professional and diverse federal weather workforce.**

**Objective 5.1:** Coordinate OPM definitions and requirements for meteorology-related positions to ensure appropriate education and experience of the FWE workforce.

**Objective 5.2:** Coordinate opportunities to leverage outreach, including education efforts, recruiting, and diversity and inclusion initiatives.

**Objective 5.3:** Crossfeed information on career path planning, training opportunities, diversity and inclusion, professional development, and retention programs.

A common need for many FWE agencies is finding the right people to fill meteorology-related positions and getting to the right sources for finding qualified job candidates. Working together to suggest to the Office of Personnel Management (OPM) an improved set of job definitions and requirements will help coordinate these activities. It will also clarify for academic departments the qualifications needed for specific career opportunities in FWE agencies.

Every FWE agency has some kind of outreach and inclusion initiative. Coordinating with each other on common aspects of these initiatives can help both agencies and candidates for the positions. Workforce education, recruiting, and diversity/inclusion are also good areas for appropriate coordination with private-sector associations and the academic community. Sharing information on the workforce-related actions listed in Objective 5.3 will help participating agencies learn from each other and build a common set of best practices for developing, recruiting, and sustaining a professional and diverse workforce.

**Goal 6. Coordinate messaging about FWE priorities and needs.**

**Objective 6.1:** Coordinate input about FWE priorities to the Executive and Legislative branches, including communicating these priorities to federal agencies that are not FWE participants.

**Objective 6.2:** Coordinate messaging about FWE priorities to academia, professional and industry associations, non-federal governmental entities, and the general public.

Objective 6.1 aims at providing mechanism and venues through which FWE agencies can work together to craft legislative and budgetary agendas that support priorities that cut across the enterprise. In working with the Office of Management and Budget and with the Office of Science and Technology Policy, FWE participants can strengthen the case for their priority programs by showing interagency coordination on formulating and resourcing them. FWE priorities and the programs and projects implementing them also need to be communicated to Federal agencies that do not participate directly in the FWE through the FCMSSR and the OFCM coordination infrastructure.

The intent of “coordinated messaging” in Objective 6.2 is to foster a shared understanding of themes and purposes when communicating with the public, the Congress, and our non-Federal partners in the wider U.S. weather, water, and climate enterprise. Officials and representatives from FWE agencies need not say the same thing, following some common script, but there is value for the enterprise and its participants in at least having consistent and mutually supportive messages when communicating with those outside the federal government.

## OFCM PROCEDURES

1. Agencies supported by OFCM services voluntarily contribute (in funding and/or manpower) to the cost of maintaining OFCM's ability to actively facilitate and manage coordination, subject to the availability of resources within the Agencies to support this effort.
2. OFCM, under the guidance of the Interdepartmental and Federal Committees for Meteorological Services and Supporting Research (ICMSSR and FCMSSR), will offer administrative assistance and management support, in the form of Executive Secretary services, to coordinate multi-agency efforts on specific issues. Generally, OFCM involvement is appropriate when at least three federal agencies are involved. In bilateral arrangements, OFCM will engage only at the expressed request of both agencies.
3. Opportunities for cooperation and coordination will be considered when developing new, or altering existing, products and services. Coordination may be initiated at any point on the timeline of developing or altering products and services.
4. When a decision is made that interagency coordination is neither possible nor effective, documentation for the record of that decision is preferred.
5. Cooperative efforts will be documented and socialized (documentation made accessible, as appropriate, in public venues including social media) in order to characterize the “responsible stewardship” functions of participating agencies.
6. Working through FCMSSR and/or ICMSSR, as appropriate, OFCM will seek first to assign coordination tasks to established committees, working groups and joint action groups before establishing a new group.