

THE FEDERAL PLAN FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH

FISCAL YEAR 2000 EXECUTIVE SUMMARY

For Fiscal Year (FY) 2000, the President's budget requests \$2.71 billion for meteorological services and supporting research. Of the total requested, \$2.31 billion is designated for operations and \$402 million for supporting research. Table ES-1 lists a breakout of the FY 2000 budget proposal.

Consistent with previous year's requests, the Departments of Commerce (DOC), Defense (DOD), and Transportation (DOT) are projected to receive 91 percent of the funds. The distribution among these three departments is the DOC, with the largest portion, accounts for 50.7 percent, DOD 24.5 percent, and DOT 15.8 percent. The remaining 9 percent

is distributed among the other federal agencies.

In comparison to the \$2.46 billion appropriated in FY 1999, the FY 2000 request represents an increase of 10.1 percent. DOC's request represents an increase of 3.5 percent, DOD's an increase of 43 percent, and DOT's a decrease of 1.1 percent. The DOC increase is attributable to the 146.3 percent increase for Procurement, Acquisition, and Construction first-year funding for GEOSTORM. GEOSTORM is the Administration's follow-on to the Advanced Composition Explorer satellite and will enable NOAA to double the warning lead time for geomagnetic storms headed toward Earth. The

DOD increase is attributable to a 196 percent increase in DMSP operations and 33.4 percent increase in Army operational support for systems acquisition. DOT's decrease is associated mainly with reductions in FAA costs for operations.

The budget requests for the other departments are as follows: The Department of the Interior an increase of 37.5 percent, the Environmental Protection Agency (EPA) an increase of 12.3 percent, the National Aeronautics and Space Administration (NASA) an increase of 2.7 percent, no change for the Department of Agriculture (USDA) and the Nuclear Regulatory Commissions (NRC) a decrease of 36.4 percent.

Table ES-1. Federal Budget for Meteorological Operations and Supporting Research, FY 2000 (in thousands of dollars)

<u>Agency</u>	<u>Operations</u>	<u>% of TOTAL</u>	<u>Supporting Research</u>	<u>% of TOTAL</u>	<u>TOTAL</u>	<u>% of TOTAL</u>
Agriculture	\$12,600	0.5	\$15,500	3.9	28,100	1.0
Commerce	1,300,982	56.4	74,241	18.5	1,375,223	50.7
Defense	589,240	25.5	75,208	18.7	664,448	24.5
Interior	1,100	0.0	0	0.0	1,100	0.0
Transportation	401,633	17.4	26,457	6.6	428,090	15.8
EPA	0	0.0	6,400	1.6	6,400	0.2
NASA	2,440	0.1	204,150	50.8	206,590	7.6
NRC	70	0.0	0	0.0	70	0.0
TOTAL	2,308,065	100.0	401,956	100.0	2,710,021	100.0

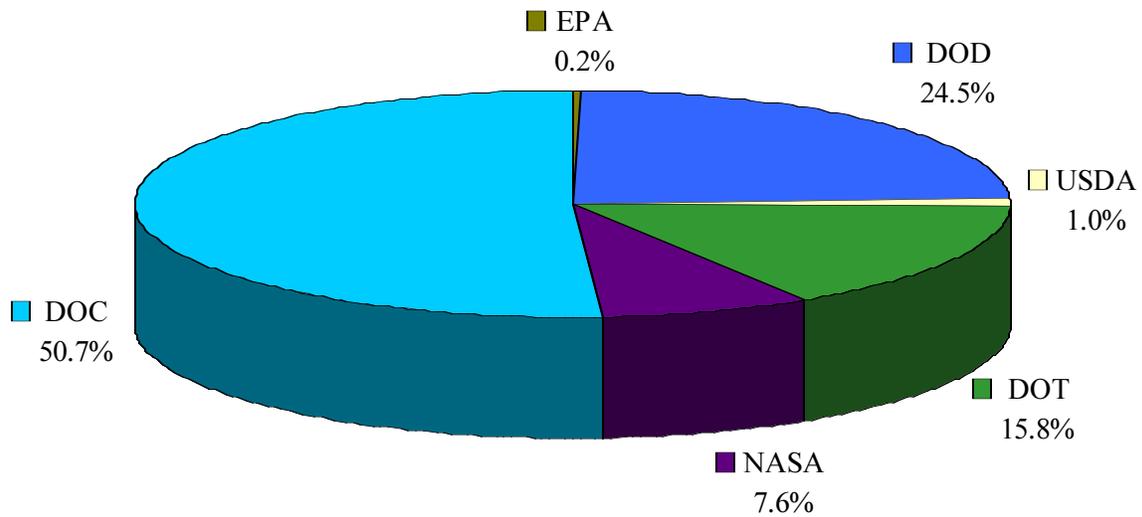


Figure ES-1. Agency Percent of Total Federal Budget for Meteorological Operations and Supporting Research, FY 2000

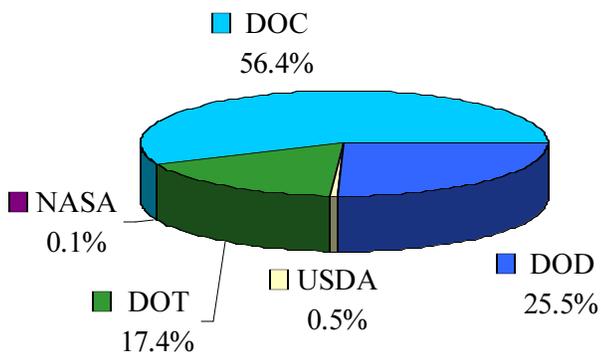


Figure ES-2. Agency Percent of Federal Budget for Meteorological Operations, FY 2000

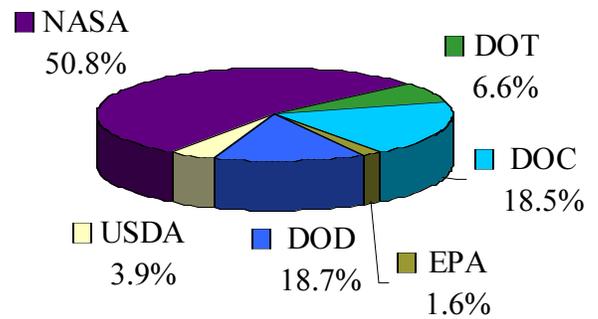


Figure ES-3. Agency Percent of Federal Budget for Supporting Research, FY 2000

Figure ES-1 depicts each agency's proportion of the requested FY 2000 federal budget for meteorological operations and supporting research. Each agency's portion of the requested funding for meteorological operations is shown in Figure ES-2. Of the \$2.31 billion requested for meteorological operations, DOC, DOD, and DOT account for slightly over 99 percent of the funds. Overall, operational costs increased by 11.9 percent. Figure ES-1 depicts each agency's portion of the requested proposed federal supporting research budget. Unlike operations, DOC, DOD, and NASA account for the major share (88 percent) of the supporting research budget. Requests for increases in supporting research funds are: DOC 2.8 percent, DOT 49.9 percent, EPA 12.3 percent, and NASA 3.0 percent. The DOD request for supporting research funds decreases by 15.6 percent.

All agencies project a personnel total of 16,204 full-time equivalent (FTE) to be employed in federal meteorological operations in FY 2000. This figure represents a decrease of 2.2 percent from the 16,566 FTE employed in FY 1999.

Major Programs of DOC, DOD, and DOT

Next Generation Weather Radar (NEXRAD). The NEXRAD Program which began in FY 1981 was responsible for procurement, installation, and operation of the Weather Surveillance Radar-1988 Doppler (WSR-88D). The first limited production WSR-88D system was installed at Oklahoma City, Oklahoma in May 1990 and commissioned 4 years later in February 1994. The original program plan called for a total of 161 radars. In response to a National Research Council report, three additional radars were added and raised the total to 164 radar sites. The last system in the basic procurement schedule was installed in June 1996.

By agency, as of June 1999, the DOC/National Weather Service had

commissioned 123 sites, the DOD/USAF had commissioned 19 sites, and the DOT/FAA had commissioned 11 sites. DOD has three systems at Keesler AFB, Mississippi, for training; DOC/NWS has one each at the National Reconditioning Center, and NWS Training Center in Kansas City, Missouri and at the Operational Support Facility, Oklahoma City, Oklahoma.

Automated Surface Observing System (ASOS). The ASOS program, began in 1983, as a joint development effort between the DOC, DOD, and DOT/FAA. Installation of ASOS units started in 1991. As of June 1999, a total of 993 units have been purchased. The NWS has purchased 314 units, and accepted 314 units, and commissioned 311 sites. The FAA has purchased 569 units, accepted 554 units, and commissioned 426 sites. The Navy has purchased 76 units, accepted 76 units, and commissioned 76 sites. The Air Force has purchased 34 units, accepted 32 units, and commissioned 31 sites. Collectively, a total of 844 ASOS sites have been commissioned. Automated Weather Information Systems (AWIS).

The DOC, DOD, and DOT require AWISs to facilitate the collection, processing, and interpretation of meteorological data. AWISs are being procured to provide an automated, high-speed, user-friendly man/machine interface to access and process large volumes of sophisticated meteorological data. AWIS supports the timely production of accurate and geographically precise warnings, forecasts, and special tailored products. They also provide the communications capability for expeditious product dissemination.

Major agency systems classified as AWISs are: NOAA's Advanced Weather Interactive Processing System (AWIPS), FAA's Weather and Radar Processor (WARP), Air Force's Tactical Observing and Forecasting System (TOFS), and Navy's Naval Integrated Tactical Environmental Subsystem (NITES).

In February 1997, the Secretary of Commerce approved the limited deployment of AWIPS. This decision authorized NOAA to procure and deploy 21 systems. The group of 21 limited deployment systems were installed in November 1997 through March 1998. A second group of 19 limited deployment systems were installed in June through August 1998. On April 9, 1998, the Secretary authorized full scale production and deployment of AWIPS, through Build 4.2, for the remaining 95 systems. Installation of these 95 systems began in September 1998 and was completed in June 1999. An Operational Test and Evaluation of the commissioning software (Build 4.2) was successfully conducted from mid-May through June 1999. AWIPS commissioning is expected to begin in January 2000.

The FAA's Weather and Radar Processor (WARP) will greatly enhance the dissemination of aviation weather information throughout the NAS. WARP will automatically create unique regional, WSR-88D-based, mosaic products and send these products, along with other time-critical weather information, to controllers through the Advanced Automation System (AAS) as well as to pilots via the aeronautical data link.

The Air Force is modernizing and improving strategic, operational, and combat level systems. Modernization programs include the Tactical Observing and Forecasting System (TOFS) which provides a single system for both garrison and deployed operations. TOFS will replace AWDS and consists of two components: the Tactical Forecast System (TFS) and the Manual Observing System (MOS). TOFS will serve as an in-garrison system as well as a deployable "first-in" combat weather forecast capability. MOS is a single-person portable observing system containing essential, basic observing equipment.

The Navy continues procurement or upgrades of the five subsystems to the

Naval Integrated Tactical Environmental System (NITES). These subsystems include: NITES I – Tactical Environmental Support System (TESS/NC), NITES II - Joint TESS Remote Workstation (J-TRWS) and Joint METOC Segment (JMS), NITES III - METOC Integrated Data Display System (MIDDS), NITES IV - Interim Mobile Oceanography Support System (I-MOSS), and NITES V - Allied Environmental Support System (AESS).

Other Agency Programs

For FY 2000, the Department of Agriculture (USDA) requested \$28.1 million for meteorological operations (\$12.6 million) and supporting research (\$15.5 million). Operationally, the USDA supports specialized weather observation networks and also conducts an active supporting research program to ensure an abundance of high-quality agricultural commodities while minimizing the adverse effects of agriculture on the environment. Under supporting research, USDA focuses on the interactions of weather and climate with plant and animal production and water resources management.

The Department of Interior's (DOI) FY 2000 request is \$1.1 million primarily to support the Bureau of Land Management's remote automatic weather station (RAWS) program.

The budget request for the Environmental Protection Agency (EPA) remains level at \$6.4 million to provide user-appropriate and scientifically credible air-quality meteorological programs to support regulatory applications.

NASA's FY 2000 request is for \$206.6 million. Of the total, \$176.3 million is primarily for supporting research associated with the Mission to Planet Earth (MTPE) program. These funding levels are composed of the estimated meteorology share of the supporting research and analysis programs, to include the Earth

Observing System (EOS) and Earth Probe instruments, EOS science, and the EOS Data and Information Systems (EOSDIS). Included in NASA's request is \$30.25 million for special programs under the category of aviation weather supporting research.

The Nuclear Regulatory Commission's (NRC) request for \$70,000 is mainly for operations. The NRC will dedicate these funds to obtain and analyze meteorological data and information related to the safe operation of nuclear facilities, and the protection of the environment, public health, and safety.

Federal Coordination Activities

During FY 1999, OFCM implemented a restructuring of the interagency coordinating process which reduces the number of groups and results in a better fit with agencies' perspectives and 21st Century focus areas and priorities. Under the restructuring, the FCMSSR and ICMSSR continue to provide policy and program guidance to OFCM on the most important cross-cutting issues and support for those initiatives where the end value has a clear societal benefit. The National Space Weather and National Aviation Weather Program Councils remain the same. The standing committees become: Environmental Services, Operations and Research Needs; Climate Monitoring and Services; Operational Processing Centers; Integrated Observing Systems; Environmental Information Systems and Communications; and Cooperative Research. Working Groups were reduced in number and cover broader areas; Joint Action Groups are established for limited periods of time to focus on specific issues. Implementation included identifying Chairpersons and members for OFCM's standing committees, Working Groups, and Joint Action Groups to get stronger participation from many agencies; preparing Terms

of References for each group; identifying important issues; and arranging for meetings of the interagency groups.

The expanded responsibilities of the office related to the recently approved changes to OFCM's interagency coordinating structure include high pay-off areas such as natural disaster reduction, aviation safety, urban meteorology and air quality, marine and ocean environmental services, weather support to surface transportation, climate services, the Year 2000 computer problem, radio spectrum policy, information dissemination technologies, integrated observing systems, and ensuring a long-term climate record.

OFCEM worked very closely with the FHWA Director of Operations and senior staff to discuss coordination of weather requirements for surface transportation. On behalf of the Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR), OFCEM formed a Joint Action Group for Weather Information for Surface Transportation (WIST) to focus on requirements for surface transportation. OFCEM is planning a National Symposium for WIST on November 30 - December 2, 1999, that will include participants from federal agencies, state DOTs, urban transit authorities, trade associations, and the private sector to address needs and requirements for WIST. A draft consolidated requirements document for WIST will be completed by next summer.

On February 8-12, 1999, OFCEM hosted the 53rd Interdepartmental Hurricane Conference (IHC) in Biloxi, Mississippi. The IHC objectives were to: (1) build the conference around the theme of natural disaster reduction; (2) increase federal agency participation; (3) include, for the first time, members of the user community, specifically, the emergency management community; and (4) create a forum (breakout sessions) for all conference participants to provide input/feedback into the forecast and warning process. The conference was highly successful and the action

items from the breakout sessions, which were structured after the natural disaster reduction theme, will help shape the hurricane forecast and warning agenda into the next century. Overall, conference attendance increased by 67 percent. The 54th IHC is scheduled for February 14-18, 2000, in Houston, Texas.

The FY 2000 feature article is entitled "Natural Disaster Reduction--Reducing the Impacts of Natural Hazards" and focuses attention on the impacts of meteorological natural hazards and disasters.

During FY 1999, OFCM continued its mutually beneficial interactions with the National Research Council/National

Academy of Sciences. OFCM's activities in aviation weather have been influenced by the earlier NRC Committee on National Aviation Weather Services report *Aviation Weather Services - A Call for Federal Leadership and Action*. Staff Directors of the NRC National Weather Service Modernization Committee and Board on Atmospheric Sciences and Climate (BASC) attend OFCM's FCMSR and ICMSR meetings. At its December 1998 ICMSR meeting, NRC reports and recommendations were given on the Future of the National Weather Service Cooperative Observer Network and The Atmospheric Sciences Entering the Twenty-First Century, including the

recommendation that OFCM take a leadership role in developing a strategic viewpoint to shape an increasingly distributed national structure for providing atmospheric information from a variety of governmental and private sector organizations. OFCM provided funding for and participated in the BASC Summer Study (June 29 - July 2, 1999, Woods Hole, Massachusetts) on transition from research to operations. OFCM and BASC have also arranged to hold a joint FCMSR/BASC meeting. It will held October 25, 1999, in the National Academy of Sciences Building on Constitution Avenue, Washington, DC.