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Trans-97-2

National Implementation Plan

For Modernization

Of the National Weather Service

For Fiscal Year 1998

Department of Commerce

National Oceanic and Atmospheric Administration

May 1997

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

JUN 16 1997

In accordance with Section 703(a) of Public Law 102-567, I am transmitting the National Implementation Plan for Modernization of the National Weather Service for Fiscal Year 1998 for consideration by the Congress. This modernization of our Nation's weather warning and forecast program will provide improved services to the public and save lives and property.

Sincerely,

William M. Daley

Enclosure

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MODERNIZATION TRANSITION COMMITTEE

Completion of Consultation on
FY 98 National Implementation Plan

The Modernization Transition Committee (Committee) has consulted during preparation of the National Implementation Plan for Modernization of the National Weather Service for Fiscal Year 1998. The Committee generally endorses the Plan with the following reservations:

Whereas, the NWS has developed a modernization plan to improve service to the public, reduce the size of the NWS, and increase the productivity of the agency. This plan was accepted by Congress and P.L. 102-567 was enacted to ensure there would be no degradation of service in implementing this plan. To accomplish the goals of the modernization, the NWS requires a stable infrastructure to support the transition and final modernized operations.

Therefore, the Committee has serious concerns about the ongoing reductions in the operations and maintenance budgetary accounts of the NWS. Further reductions place the overall modernization and associated restructuring at great risk and threaten the safety of life and property. Furthermore, other federal agencies rely on the integrity of the NWS infrastructure. For example, the national aviation weather strategic initiatives and other existing and planned operations are placed at risk.

Additionally, the Committee recognizes the successful operational test and evaluation of the AWIPS system and urges its rapid deployment to support a cost effective transition to modernized NWS operations.

The Committee expresses these reservations to ensure the timely and successful completion of the modernization process.

Peter R. Leavitt
Chair, Modernization
Transition Committee

Dec 12, 1996
Date

Summary of Changes Since the Fiscal Year 1997 National Implementation Plan

Since the publication of the fiscal year 1997 National Implementation Plan, there have been several significant changes. These changes are synopsized below:

- Sites for the additional three NEXRAD radars (Western Arkansas, Northeastern Alabama, and Northern Indiana) and one WFO (Northern Indiana) identified in the Secretary of Commerce's Report have been determined. Schedules for deployment of the radars, completion of the WFO, and related activities are included in Table 6.

- Stage 1 of the NWS modernization is essentially complete. With the exception of the three new NEXRADs and one new WFO described above:
  - All modernized facilities are either already occupied or under design/construction;
  - All NWS NEXRADs have been installed;
  - All base program ASOSs have been installed; and
  - Stage 1 staffing is complete.

- Stage 2 of the NWS modernization has begun:
  - AWIPS development systems were installed at twelve sites with the first incremental software build;
  - An Operational Test & Evaluation was conducted at nine of these sites;
  - The NRC determined that the AWIPS system was sufficient to progress to nationwide deployment;
  - A deployment decision package was prepared for the Secretary's approval, however, the Secretary deferred this decision until January 1997; and
  - The first NOAA Weather Radio Console Replacement System (CRS) development platform was delivered.

- Automation and closure certification criteria have been approved by the Modernization Transition Committee (MTC). Six Consolidation Certifications have been approved by the Secretary. Seventy additional Consolidation Certifications have been endorsed by the MTC and NWS and forwarded for approval. Schedules for most remaining certifications, including closures, are shown in Table 6.

Executive Summary

Results of Status Assessments

As reported in last year's National Implementation Plan, the Secretary of Commerce had completed his assessment of the National Weather Service modernization plan and had determined what adjustments were needed to be implemented to the plan. The assessments drew upon actual operational experience with the modernization, concerns expressed by the public and users of weather services, and criteria developed by the National Research Council (NRC) in their study, *Toward a New National Weather Service -- Assessment of NEXRAD Coverage and Associated Weather Services*. The results of the assessments are provided below.

The Secretary recommended the acquisition and siting of three additional NEXRADs and one Weather Forecast Office (WFO) to provide additional coverage for six identified areas of concern. The siting for these radars and WFO have been completed and the National Weather Service is proceeding with the acquisition of the radars and construction of the WFO. For the **Fort Smith, Arkansas** area of concern a NEXRAD will be installed at Chaffee Ridge, Arkansas. The NEXRAD will have dedicated communications to WFOs Tulsa and Little Rock. For the **Chattanooga, Tennessee and Huntsville, Alabama** areas of concern, a NEXRAD will be installed at Hytop, Alabama. It will have dedicated communications to WFOs Birmingham and Knoxville. For the **Fort Wayne and South Bend, Indiana, and Toledo, Ohio** areas of concern a NEXRAD and WFO will be installed at North Webster, Indiana. All of the radars will be operational by the end of fiscal year 1997.

The Secretary also directed that office and/or radar operations continue at 5 offices until the completion of specific assessments recommended by the NRC. These offices are **Caribou, Maine, Key West, Florida, Erie, Pennsylvania, South Bend, Indiana, and Williston, North Dakota**. These assessments will be completed by the fall of 1997. At that time, hydrometeorological experts from NWS as well as the Secretary's Report Team will examine the information and a recommendation will be made through the Assistant Administrator for Weather Services to the Secretary.

Modernized Systems

Several significant activities were completed with the Advanced Weather Interactive Processing System (AWIPS). The AWIPS program completed development of the first incremental software build of the system, which was installed at 12 sites. Nine of the field sites were utilized to conduct the Operational Test and Evaluation (OT&E). The OT&E was monitored by the NRC which determined that the system was sufficient to progress to nationwide deployment. A decision

memorandum was forwarded to the Secretary for approval of Key Decision Point IV, authorizing nationwide deployment. The Secretary has deferred that decision until January 1997, or full testing of the new proposal is completed and fully evaluated. His concerns are presently being addressed by the AWIPS program. Contract Modification Number 74 was negotiated and signed with the AWIPS Contractor. This modification details the activities and schedules required for the AWIPS production and deployment phase.

The NWS installed 19 NEXRAD systems. This completed the installation of the 117 systems procured under the original contact. The NEXRAD Information Dissemination Service (NIDS) program that provides NEXRAD data to external NWS users has continued to expanded with service available from all commissioned NEXRADs to over 2,800 users. Additionally the NIDS special subscriber program implemented last year has expanded to a total of 48 subscribers. This includes 46 state government agencies, the District of Columbia, and the Canadian Atmospheric Environment Service. Additionally, 74 conventional radars for a total of 98 were decommissioned after services were transferred to NEXRAD offices.

For the Automated Surface Observing System (ASOS), 138 interagency units were installed for a total of 772 units. 211 NWS and FAA units are now commissioned. All ASOS sites were upgraded to support the July 1, 1996 United States conversion to the international METAR format for hourly surface weather reports. The disposal plan for equipment replaced by the implementation of ASOS has been approved.

Modernization Transition Committee

The Modernization Transition Committee (MTC) has served a useful purpose in support of the modernization. In the past year, the MTC reviewed the Secretary's Report and was complimentary of the work that was done. The MTC consulted on and approved the Automation and Closure Certification criteria. All four certification criteria, Relocation, Automation, Consolidation, and Closure, are now approved. Six Consolidation Certifications were approved by the Secretary this past year. The MTC endorsed 70 additional Consolidation Certifications and NWS concurred and forwarded them for approval.

Research Programs

The NOAA Forecast Systems Laboratory continued their development of WFO-Advanced for integration into the AWIPS program. This system approximates the AWIPS Software Build 4 level of functionality and runs on the AWIPS hardware platform. WFO-Advanced was installed at NEXRAD Weather Service Forecast Office (NWSFO) Denver. The system was also installed at the Air Force Global Weather Central Operations Center. The center supports the Air Force's worldwide weather missions, including Bosnia. In another effort, the Local Analysis and Prediction System was installed at NWSFO Atlanta to support the 1996 Summer Olympics.

The Environmental Modeling Center (EMC), in support of the National Center for Environmental Prediction (NCEP) operational forecasting mission, concentrated its research activities in four major areas: regional and mesoscale modeling, global weather modeling, ocean modeling, and climate modeling. This research aids in improving numerical weather, marine, and climate predictions.

Addendum to Executive Summary

AWIPS

The Secretary of Commerce approved a limited-rate deployment of AWIPS in February 1997, authorizing the NWS to deploy up to twenty one systems through December 1997. The exact number of systems to be deployed, in this fiscal year and subsequent fiscal years, is in the process of being determined at this time. The deployment may begin as soon as August 1997. These sites will join the 17 AWIPS sites being deployed as part of the Development Phase.

AWIPS software Release 1.3 is now being installed at the currently deployed field sites. Build 2.0 has been delivered and is being installed in systems delivered during the development phase of the program.

The Forecast Systems Laboratory has completed development of an updated version of the WFO-Advanced (WFO-A) software installed in the pre-AWIPS system at Denver, and tested in February. This version of WFO-A will be furnished to the AWIPS contractor for integration with their infrastructure software from Builds 1 and 2 to form AWIPS Build 3. Build 3 is expected to be complete and ready for field test in September.

Certifications

Seventy (70) consolidation certifications, and the first eleven (11) automation certifications were approved by the Under Secretary for Oceans and Atmosphere, submitted to Congress, and a notice of final certification published in the Federal Register. Five (5) additional combined consolidation and automation certifications are awaiting approval by the Under Secretary.

NWS provided detailed briefings on the certification process and current status to the Senate Authorization and Appropriation Committee staff, as well as to the Department of Commerce.

Modernization Transition Committee

At the request of the community, the MTC met in Astoria, Oregon on March 18 to consider the proposed consolidation of WSO Astoria. Sixteen (16) public comments were received and reviewed by the MTC on this proposed action prior to the meeting. The Meteorologist-in-Charge of WSFO Portland briefed the MTC on this proposed consolidation. During the public comment

period at the meeting, the MTC heard concerns expressed by five speakers, including the emergency manager, the airport manager, and several Columbia River bar pilots. After consideration of the information presented, the MTC voted to endorse the proposed consolidation certification. In doing so, the MTC identified potential future degradation of services associated with automation and closure of WSO Astoria, and charged the Portland office to work with the community to define the remaining concerns and develop and implement procedures to ensure no degradation of service.

In addition, the MTC considered the first group of closure certifications, which had been proposed in various combinations with consolidations and automations. The MTC endorsed 81 closure certifications and tabled one proposed combined automation closure and certification.

1.0 Introduction

As the National Weather Service (NWS) enters its second century as a civilian agency, a new era begins for severe weather and flood warning and forecast services. Advances in meteorology and hydrology as well as in the technology for observing and analyzing the atmosphere already are providing unprecedented improvements in weather services. The NWS of the 21st century will operate one of the most advanced hydrometeorological warning and forecast systems in the world.

This National Implementation Plan (NIP) is required by Public Law 102-567 and House Resolution 3814, Commerce, Justice, State, Judiciary Appropriations Act, Section 605, and is tied to the fiscal year 1998 Presidential budget. This NIP describes modernization goals for fiscal years 1998 and 1999. To provide a more comprehensive picture of the transition, this NIP includes progress achieved during fiscal year 1996 as well as actions planned for fiscal year 1997. The transition from today's operation to the modernized NWS requires an agency-wide transformation. When the NWS has completed the transformation to the fully modernized NWS, i.e., achieved national implementation, it will have retooled all major systems, established all Weather Forecast Offices (WFO), closed all field offices scheduled for closure under the strategic plan, and will provide a new service and product line that focuses on the mesoscale level of meteorology. During the transition, the NWS will maintain its current high level of service.

1.1 NWS Mission Statement

The mission of the National Weather Service is:

> **To provide weather and flood warnings, public forecasts and advisories for all of the United States, its territories, adjacent waters and ocean areas, primarily for the protection of life and property. NWS data and products are provided to private meteorologists for the provision of all specialized services.**

To achieve this mission, the NWS will continue to:

- Coordinate programs with state, local and federal agencies involved with meteorology and hydrology to attain maximum cost effectiveness. For example, NWS will work with aviation safety and Federal and State forest fire prevention and management officials to ensure efficient and effective weather support
- Provide a spectrum of weather and hydrologic services to the private hydrometeorological community
- Provide data and products to the private sector and encourage growth of the private weather industry
- Work closely with the mass media as the chief means of communicating weather and flood warnings and forecasts to the public

- Fulfill international hydrometeorological obligations
- Conduct applied research with other agencies and the scientific community to improve warnings and forecasts based upon scientific and technological advances
- Enhance dissemination and information exchange service
- Facilitate improvements in the emergency management decision process.

1.2 Improved Service

Thunderstorms, tornadoes, hurricanes, blizzards and floods pose serious hazards to life and property. Hundreds of lives and billions of dollars worth of property are lost every year from these ravages of nature. Weather and flood conditions affect the economy directly and indirectly.

Some of the most destructive weather events are short-lived, local disturbances. In the past, the NWS focused on slowly changing, large-scale features of the atmosphere. This emphasis on the synoptic (larger) scale reflected the limits of operational systems still used to observe the atmosphere and the current level of weather-related sciences.

In addition, NWS forecasters had only rudimentary computer systems to assimilate, analyze and communicate complex weather information in near real-time. Usually, NWS was only able to react to events providing warnings of severe weather or flash floods after detecting these events or after reports of visual sightings. It was difficult for NWS forecasters to predict small-scale violent weather, resulting in short lead times for warnings.

The impetus for major changes in NWS was twofold: First, the existing technology for weather observations, information processing and communication was obsolete and costly to maintain. Second, new scientific and technological breakthroughs provided, for the first time, an opportunity to analyze and predict the most destructive weather patterns with longer lead times. These factors provided a clear mandate to improve services.

Tests of new observation and information processing systems showed that NWS could improve its services. The results of these tests yielded new operational concepts for the NWS. New systems require restructuring NWS field offices. For the first time, meteorologists and hydrologists prepare warnings and forecasts based on new, sophisticated data analysis and forecasting processes. The new prediction process has these distinct advantages:

- Field office forecasters are better able to understand the complementary aspects of meteorology and hydrology. Predicting severe storms and floods requires knowledge of both disciplines.
- Forecasters, assisted by technical staff, focus on meteorological and hydrological events developing within the next 24 hours. NWS meteorologists prepare warning and forecast products working as an integrated unit. The current approach divides responsibilities among forecasters for programs such as public warnings and aviation weather.

- Every field office and National Center has or soon will have rapid access to all sources of and will be able to integrate and analyze all meteorological and hydrological data pertinent to that office.

New hydrometeorological observation, information processing and collection systems provide data and the tools required by forecasters in the future. The following new systems are interlocking components of the modernized NWS:

- **Next Generation Weather Radar (NEXRAD):** A network of advanced Doppler radars that measures atmospheric motion, responsible for tracking severe weather such as tornadoes, increasing lead times for predicting severe weather events, and detecting heavy rainfall.

- **Automated Surface Observing System (ASOS):** An automated electronic sensor instrument system designed to replace manual weather observations now taken at 250 NWS sites.

- **Advanced Weather Interactive Processing System (AWIPS)/NOAAPORT:** An advanced computer/telecommunication system that will help forecasters assimilate weather data, analyze fast-breaking storms and quickly prepare and communicate warnings and forecasts. NOAAPORT will provide the broadcast link between the national guidance centers and NWS field offices, and will be the source of NWS data to private sector users.

- **Satellite Upgrades:** A new series of geostationary meteorological satellites that will generate higher spatial- and temporal-resolution imagery and data to improve short-range warnings and forecasts. A new series of polar orbiting meteorological satellites will generate better all-weather atmospheric data, improving long-term forecasting.

- **National Center Computer Upgrades:** New supercomputers producing more accurate numerical modeling of the atmosphere to improve national guidance for short-range warnings and forecasts and offer better guidance for medium- and long-range forecasts.

1.3 General Approach to Transition Planning

Transition planning is flexible because goals are based on the need to extensively test and refine new equipment. Plans focus on fairly certain near-term events, such as installing AWIPS. Plans are updated frequently as long-range events become more certain. The long-range outlook, which covers 6 years, provides a broad look at modernization and associated restructuring (MAR) targets and their greatest uncertainties. The medium-range projection, covering 3 years, offers more detail for events that will occur with greater certainty. Medium-range projections form the basis for short-range action plans. The short-range action plan, covering the next year, lists specific activities based on known events. As required by Public Law 102-567, this report includes dates of planned activities and serves to notify the public of proposed actions to change operations or certify field offices (See Table 6).

1.4 Hierarchy of Transition Planning Documents

NWS has tiered transition plans. The Deputy Assistant Administrator for Modernization and the National Implementation Staff (NIS) prepare and update the NIP annually and coordinate it with the rest of the agency. It is a broad, guidance document for internal and external use, and is based on the *Strategic Plan for the Modernization and Associated Restructuring of the National Weather Service*. The NIP guides the agency in planning for and completing the transition. Key objectives of the NIP include setting basic goals and objectives, providing a framework and general strategies for a smooth transition and setting basic management principles to be used during the transition.

The NIP, intended as an overview of the modernization, is backed by more detailed materials. The first versions of the NIP outlined how NWS would complete the transition. The NIP's audiences are the Executive Branch, Congress, cooperating agencies, users, the public and NWS employees. The NIP now provides these groups with a progress report and outlooks on upcoming activities.

Regional transition documents are the second tier of the transition planning hierarchy. Regional plans offer managers flexibility and recognize the decentralized nature of the NWS. The plans explain the Regions' responsibility to maintain operations during the transition. These documents set a course that will achieve the goals set forth in the NIP, while accounting for differences between the Regions and the unique conditions at each site.

The final tier in the planning hierarchy is the Site Implementation Plan (SIP), which contains specific, detailed actions and schedules for an office. Orginally, a separate document was created for each WFO and WFO/River Forecast Center (RFC) to address site transitions in its area of responsibility. This paper copy plan has been replaced, and information contained in the National Transition Data Base (NTD) is now used as a SIP to track transition events.

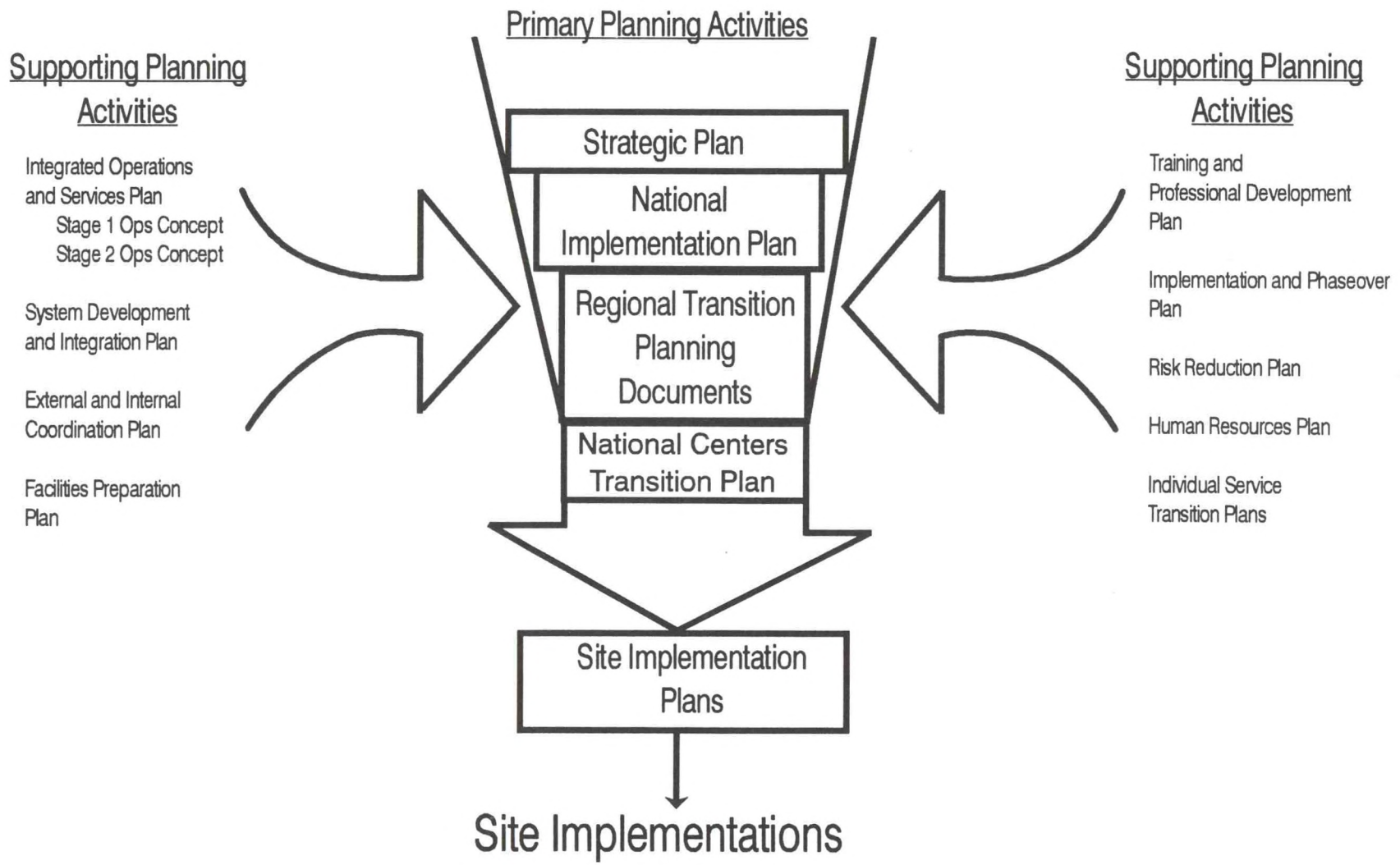
On October 1, 1995, the National Meteorological Center was reorganized into the National Centers for Environmental Prediction (NCEP). The NCEP has prepared a National Centers Transition Plan as a counterpart to the regional planning documents. In addition, the NCEP has prepared an NCEP Planning Document that addresses the transition activities and schedules related to the spinup or reorganization of each of the National Centers. The nine National Centers are the Hydrometeorological Prediction Center (HPC), Tropical Prediction Center (TPC), Storm Prediction Center (SPC), Marine Prediction Center (MPC), Aviation Weather Center (AWC), Climate Prediction Center (CPC), Space Environment Center (SEC), Environmental Modeling Center (EMC), and NCEP Central Operations (NCO).

National, Regional/National Center and site level plans form the main planning path. As depicted in Figure 1, these plans integrate efforts that focus on areas such as future operations and services, training and professional development, staffing, system development and integration, and implementation and phaseover.

Appendix A provides a more detailed list of transition planning documents. Appendix B provides other specific information pertinent to transition planning, such as WFO, RFC, NEXRAD, ASOS and AWIPS maps and locations.

Figure 1

HIERARCHY OF TRANSITION PLANS



2.0 Modernization Goals and Objectives

The Department of Commerce (DOC) has set an ambitious goal for the National Oceanic and Atmospheric Administration's (NOAA) agency, the NWS:

> **To modernize the NWS through the deployment of proven observational, information processing and communications technologies and to establish an associated cost-effective operational structure. The modernization and associated restructuring of the NWS shall assure that the major advances that have been made in our ability to observe and understand the atmosphere are applied to the practical problems of providing weather and hydrologic services to the Nation.**

Within this context, more specific goals of the NWS MAR, broadly stated, are to:

- Operate a predictive warning program focusing on mesoscale meteorology and hydrology
- Advance the sciences of meteorology and hydrology
- Provide training and professional development for NWS employees to help achieve maximum benefit from scientific and technological advances
- Earn user acceptance and support for NWS service improvement objectives
- Strengthen relations with the mass media, universities, the research community and the private hydrometeorological industry to jointly fulfill the nation's weather information needs: provide severe weather warnings and general forecasts to the public, a Government responsibility, and provide detailed, customer-specific weather information, a private sector responsibility
- Improve productivity through automation and by the replacement of obsolete systems
- Operate an optimum warning and forecast system consistent with service needs, user acceptability and cost.

The NWS move into the future will meet its goals in two stages. In Stage 1, NWS deployed new observing systems, such as ASOS and NEXRAD. Stage 1 gave field office staff time to adjust to and become familiar with the new Doppler radar and high-resolution surface observation data. In Stage 2, NWS will install a new information processing and communications system, AWIPS.

The major feature of Stage 1 was improvement of severe weather detection capability. NWS achieved this goal through meteorological interpretation of new and enhanced observational data made available by deploying technology such as NEXRAD and ASOS. NWS compiled and analyzed these observational and operational data before commissioning new weather service technology.

The major feature of Stage 2 is to operate the predictive warning program. Forecasters will have the tools needed to integrate, analyze and interpret data sets and to rapidly release information. For the first time, the NWS will be able to forecast severe weather events with lead times of tens of minutes and with more geographical specificity.

2.1 Stage 1 Goals and Objectives

During Stage 1, there was an immense increase in the quantity and quality of data. The primary goal of Stage 1, to use these enhanced data to better detect if severe weather, was achieved. In Stage 1, NWS continued its two-tier field office structure. The 52 Weather Service Forecast Offices (WSFOs) were responsible for statewide forecasts. Each WSFO received a NEXRAD. NEXRAD Weather Service Forecast Offices (NWSFOs) and NEXRAD Weather Service Offices (NWSOs) now provide severe weather warnings. The 13 RFCs now provide improved hydrologic forecasts and guidance. National Centers continued to provide synoptic and mesoscale guidance and numerical modeling products. System support for NWS field offices was a critical factor in maintaining a reliable warning and forecast program 24 hours a day. This support involved the full spectrum of hardware and software systems.

Listed below are the Stage 1 objectives for field offices and centers; many of which have been completed. This is not an all-inclusive list of office types, but represents most NWS offices. Regional transition documents detailed specific Stage 1 objectives for office types not listed below, such as Tsunami Warning Centers.

NEXRAD Weather Service Forecast Offices (NWSFOs) and NEXRAD Weather Service Offices (NWSO)

- Continue current programs
- Coordinate internal and external programs
- Increase the number of meteorologists and provide training to enable staff to more fully use the new technologies and observational data (See Table 1 and 2 at the end of this section. The Human Resources Plan contains more information.)
- Take part in the individual site calibration of the NEXRAD
- Compile and analyze observational and operational data from the new technologies during the commissioning process
- Use the new technologies to improve detection of severe weather. Assume new County Warning Area under NEXRAD umbrella, consolidating warning functions for each office
- At selected locations, accept or transfer responsibility for observational and other programs
- Prepare for Stage 2.

Weather Service Forecast Offices (WSFOs)

- Receive NEXRAD, continue as an NWSFO (see above).

Weather Service Offices (WSOs)

- Coordinate internal and external programs
- Automate the surface observation program using ASOS
- Support the planning and smooth transfer of assigned warning and forecast responsibility, upper air functions, NOAA Weather Radio (NWR), and other programs to designated NWSFOs and NWSOs
- Certify to Congress that automating and/or consolidating will not degrade services
- Adjust staffing, as required, to operate community preparedness, liaison and other local community support programs throughout Stage 1.

River Forecast Centers (RFCs)

- Continue current programs
- Collocate with NWSFO/NWSO (future WFO)
- Coordinate internal and external programs
- Perform Hydrometeorological Analysis and Support (HAS) functions at collocated WFO/RFC facilities, and integrate meteorological information into hydrologic products and services
- Use NEXRAD and ASOS data to enhance products and services to the extent possible given the limits of staffing resources and existing information processing systems
- Prepare for Stage 2.

Weather Service Meteorological Observatories (WSMOs)

- Provide automated or transfer observing functions.

Weather Service Contract Meteorological Observatories (WSCMOs)

- Provide automated or transfer observing functions; continue upper air observations at selected locations.

National Centers

- Continue all current programs
- Assume responsibility for high seas warning and forecast services as follows:
  - MPC is responsible for an area in the Atlantic Ocean west of 35 degrees west longitude between 30 and 60 degrees north latitude, and in the Pacific Ocean, east of 160 degrees east longitude between 30 and 60 degrees north latitude.
  - TPC is responsible for an area in the Atlantic Ocean west of 35 degrees west longitude between three and 30 degrees north latitude, and in the Pacific Ocean, east of 140 degrees west longitude between the equator and 30 degrees north latitude. In this area, the National Centers plan to enhance the current support for the off-shore and coastal forecasts areas.

- Prepare and disseminate national products using NEXRAD data
- Prepare for Stage 2.

Center Weather Service Units (CWSUs)

- Continue support to Federal Aviation Administration (FAA) Air Route Traffic Control Centers and prepare for Stage 2
- Install the CWSU Principal User Processor (PUP).

2.2 Stage 2 Goals and Objectives

The primary goals of Stage 2 are to use new technologies and a trained staff to operate a fully modernized NWS and to deliver improved warning and forecast services nationwide. Upon national implementation as described in the *Strategic Plan for the Modernization and Associated Restructuring of the National Weather Service,* the modernized NWS will consist of a network of WFO's, RFC's, and National Centers. Current plans call for 119 WFO's and 13 RFC's. WFOs will replace the current structure of WSFOs and WSOs to provide a uniform level of warning and forecast services. WFOs will issue watches, warnings and forecasts. A WFO will concentrate meteorological expertise to provide products and services for its area of responsibility. A WFO will quickly analyze data, provide accurate forecasts of mesoscale weather and flood phenomena and rapidly disseminate warnings and forecasts. The emphasis on short-range and local-area forecasting in the WFOs will require that National Centers provide WFOs with improved guidance on long-range and large-area forecasts. This guidance will be used as input for initialization of an Interactive Forecast Preparation System (IFPS) which will support production of local forecast products.

For service areas previously served by a WSO that has been certified and closed, NWS will designate a liaison officer for at least two years after closure. This liaison officer will serve as a facilitator between the WFO and weather service users in the area. The liaison officer will provide timely information on NWS activities that may affect service to the community, including modernization. The liaison officer will ensure that weather service users, including general aviation, civil defense and emergency preparedness staff, and members of the news media are prepared to receive weather warnings and forecasts.

In Stage 2, RFC operations will change in several ways. RFCs will use the new NWS River Forecast System on AWIPS to interactively assimilate the huge volumes of high-resolution data from multiple NEXRAD and ASOS systems and to execute advanced hydrologic forecast models. RFC flash-flood guidance procedures will provide WFOs with much higher resolution information than that currently produced by the area-average procedures. RFCs will better coordinate and integrate meteorological data and forecasts into hydrologic products and services. Modernized RFCs will update hydrologic guidance and information for use in WFO flash flood procedures more frequently than today. Real-time operational coordination with other water resource agencies is another critical dimension of RFC functions that will increase in Stage 2.

During Stage 2, system support will be more centralized. Field offices will have more consistent hardware and software once new systems are installed. More consistent systems will help standardize technical support procedures. The two major system support goals are to minimize costs by using integrated maintenance and logistics support concepts more efficiently and to achieve the best mix of Government and private industry system support. Cost comparisons proved that it is cost effective for the Government to maintain and logistically support the NEXRAD and ASOS systems. AWIPS will be supported under contract.

More specific Stage 2 objectives are given below for field offices and centers. This is not a complete list of office types, but it represents most NWS offices. Specific Stage 2 objectives for office types not listed below are detailed in the appropriate regional transition documents.

Weather Forecast Offices (WFOs)

- Coordinate internal and external programs
- Operate a reliable predictive warning program; issue watches, warnings and forecasts for 24-hour periods and beyond
- Deliver improved warning and forecast services
- Operate the WFO with staff trained in mesoscale meteorology and the new technologies (See Table 3 at end of this section. More information is in the Human Resources Plan.)
- Prepare warning and forecast products using the integrated forecast mode of operation
- Send warning products to the media more quickly
- Work with emergency agency officials and municipalities to prepare and conduct weather-related disaster response programs for public safety
- Manage observational data networks operated by cooperators and volunteers
- Ensure modernized NWS warning and forecast products meet public and user needs
- Prepare quantitative precipitation and temperature forecasts to serve as input to RFCs' hydrologic models.

Weather Service Offices (WSOs)

- Coordinate internal and external programs
- Certify to Congress that closing a non-NEXRAD WSO will not degrade services
- Close the non-NEXRAD WSO
- Designate a liaison officer for at least two years to serve as a link between the WFO and weather service users in the community.

Data Collection Offices (Alaska and Hawaii) (DCOs)

- Convert existing upper air WSOs in Alaska and Hawaii to Data Collection Offices (DCOs). These offices will continue observation programs and provide local service offices at Annette, Barrow, Bethel, Cold Bay, King Salmon, Kodiak, Kotzebue, McGrath, Nome, St. Paul Island and Yakutat, AK, and Lihue and Hilo, HI.

River Forecast Centers (RFCs)

- Coordinate internal and external communication
- Supplement staff to provide nominal 16-hour-a-day RFC operations (See Table 4 at the end of this section. The Human Resources Plan contains more information.)
- Implement interactive hydrologic modeling operations made possible by more powerful computers and enhanced data collection and graphical assimilation capabilities
- Provide more frequent hydrologic forecasts and guidance to WFOs and water resource cooperators
- Improve analysis and forecasting of hydrometeorological phenomena.
- Implement advanced hydrologic modeling, including probabilistic-based water resources forecasting procedures.

National Centers

- Provide improved guidance products by using the latest numerical weather prediction models run on advanced supercomputers
- Produce digital forecast data bases for WFOs to use in preparing forecasts for 24-hour periods and beyond
- Use data available from advanced geostationary and polar orbiting satellites as direct input for numerical weather prediction models, as guidance for high seas and aviation forecasts, and to interpret and forecast hurricanes
- Provide national severe-weather guidance products and issue advisories to WFOs
- Improve forecasts and guidance of hurricanes, thunderstorms and flash floods by using improved numerical models of the atmosphere and improved assimilation methods for pertinent atmospheric and oceanic data.

Center Weather Service Units (CWSUs)

- Provide improved aviation products and services.

Table 1
STAGE 1 NEXRAD WSFO STAFFING ACHIEVED

CURRENT STAFFING PLUS:	NO.	GRADE
Science and Operations Officer	1*	13/14
Warning Coordination Meteorologist	1*	13/14
Core Meteorologists (shift)	0**	12
Service Hydrologist	1***	12/13
Data Acquisition Program Manager	1	12
Hydrometeorological Technicians (shift)	5****	9/11
Electronic Systems Analyst	1*****	12

* Number of meteorologists added dependent on whether a WSFO already had a Warning Coordination Meteorologist. At network radar WSFOs, three existing positions were reprogrammed into three meteorologist positions (including a Science and Operations Officer and a Warning Coordination Meteorologist).

** Exceptions to this policy (i.e., additional meteorologist position(s)) were considered on a site-by-site basis.

*** As assigned; most NWSFOs already had this position.

**** Most NEXRAD WSFO's had these positions on station. If not, these positions were added at NEXRAD delivery.

***** Most NWSFO's had one or more Electronics Technicians. Total Electronics Technician staffing was based on the most cost effective mix of contractor and Government maintenance.

Table 2
STAGE 1 NEXRAD WSO STAFFING ACHIEVED

	NO.	GRADE
Meteorologist-In-Charge (MIC)	1	13/14
Science and Operations Officer	1	13
Warning Coordination Meteorologist	1	13
Core Meteorologists (shift)	5	11/12
Service Hydrologist	1*	12/13
Data Acquisition Program Manager	1	12
Hydrometeorological Technicians (shift)	5**	9/11
Electronic Systems Analyst	1***	12
TOTAL	16	

* As assigned.

** Most NEXRAD WSOs had these positions on station; if not, these positions were added at NEXRAD delivery.

*** Most NWSOs have one or more Electronics Technicians. Total Electronics Technician staffing was based on the most cost effective mix of contractor and Government maintenance.

Table 3
STAGE 2 WFO STAFFING TARGETS

	NO.	APPROVED GRADE
Meteorologist-In-Charge (MIC)	1	14/15
Science and Operations Officer	1	13/14
Warning Coordination Meteorologist	1	13/14
Core Meteorologist (shift)	8*	12/13
Data Acquisition Program Manager	1	12
Hydrometeorological Technicians (shift)	5	9/11
Electronic Systems Analyst	1**	12/13
TOTAL	18***	

* Actual number of meteorologists may vary depending on WFO responsibilities.

** Most WFOs will also have one or more Electronics Technicians. Total Electronics Technician staffing will be based on the most cost effective mix of contractor and Government maintenance.

*** Some WFOs will have additional base staff (i.e., Service Hydrologist, Secretary).

Table 4
*STAGE 2 RFC STAFFING TARGETS**

COMMON BASE STAFF FOR RFCs IN THE CONTERMINOUS 48 STATES

	NO.	APPROVED GRADE
Hydrologist-In-Charge (HIC)	1	15
Development and Operations Hydrologist	1	14
Hydrologists/Hydrometeorologists (Hydrologic Forecasters)	8-13	12/13
Secretary and/or Technician	1-2	5/6, 7/8
Hydrometeorologists (HAS Forecasters)	3	12/13
TOTAL	14-19**	

* The current complement of hydrologic forecasters will not be augmented until six months prior to AWIPS delivery for extended 16 hr/day operations (nominal) with one to two hydrologic forecasters on shift in accordance with the Strategic Plan. The number of staff performing the non-real-time operations will depend on the number of hydrologic forecasters per shift and total RFC staff at individual sites.

** No RFC will ever have the maximum number of each position. The maximum number will not be higher than 19.

3.0 Transition Strategy

This section defines the general transition strategy NWS is using to modernize and restructure. The terms risk reduction and demonstration are used to define internal and external validation, respectively. This section emphasizes the importance of programs that reduce risk and demonstrate effectiveness. Summarized in this section is the process NWS will use to comply with the certification requirement of Public Law 102-567.

3.1 General Transition Strategy

The fundamental transition strategy is an integrated, office-by-office approach. Changes in operations and services related to modernization and restructuring are the guiding force of the transition. Modernized services define system outputs, staffing type and mix of an office, and the field structure needed to efficiently provide these services.

These services, in turn, set requirements for training and education, facility preparation and other aspects of modernizing and restructuring. A realistic view of technology, schedules and the NWS environment help shape the scope and pace of service changes.

The agency's mission and advances in science and technology bound the breadth of future operations and services. The transition strategy incorporates these factors and retains flexibility to respond to change. This approach is based on the assumption that plans for modernized operations and services may require adjustments. The NWS has and will continue to use the knowledge and experience it gains during the transition.

Restructuring the NWS field organization, offices and staff has and must continue to be done with internal and external support. The agency has and will continue to gain this support by keeping individuals and organizations informed about its goals. Support from staff and users requires that they understand the goals of modernization and have proof of NWS's ability to reach them. This support has and will continue to be won only through planning, good management and close coordination between staff and users. A comprehensive internal and external coordination program is in place to:

- Ensure users are made aware of changes promptly
- Provide a constant flow of information about the modernization
- Establish and maintain internal and external communications during the transition
- Explain realistic and substantial improvements in weather services
- Exchange attitudes and expectations for carrying out the modernization program.

General Stage 1 and Stage 2 strategies described in this section primarily address WSFOs, WSOs and meteorological observatories. Transition activities are also taking place at RFCs, National Centers, Tsunami Warning Centers, CWSUs, future DCOs in Alaska and Hawaii, and other types of field offices. The National Center Transition Plan, SIPs and regional transition documents detail activities for these offices.

3.2 Stage 1 Strategy

Stage 1 targeted efficient use of NEXRAD technology at RFCs, NWSFOs, NWSOs, and National Centers. In this stage, NWS transformed these offices to improve services and operations. Equipment delivery schedules paced the transition of offices. NWS also based staff changes and training on delivery schedules, with the dual goals of providing the people needed to operate new systems and of maintaining uninterrupted weather services.

Most NEXRAD offices required more staff in Stage 1. To the extent possible, NWS drew these extra people from WSOs not scheduled to receive a NEXRAD. NWS made these staff changes without degrading current services.

WSOs that had surface observation or local warning radar programs retained enough staff to carry out these programs until an ASOS was commissioned with the required level of human augmentation and backup and/or NEXRAD coverage was proved satisfactory for the area. In reassigning a WSO's responsibilities, regional managers ensured that community leaders and affected groups were informed of significant changes and given evidence that changes did not degrade warning services and required observations.

NWS transformed non-NEXRAD offices in steps. First, NWS contracted surface observations at some WSOs, using freed resources to staff NEXRAD offices. NWS further reassigned WSO resources only when a NEXRAD office(s) assumed responsibility for the area served by the WSO. NWS did not transfer positions at some WSOs to NEXRAD offices because the staff was needed to continue services until additional NEXRAD systems were operational.

The National Centers used NEXRAD data in several ways. Velocity and Direction (VAD) winds were incorporated into both the mesoscale and regional analyses in 1996. The mesoscale analysis also made direct use of radial velocities beginning in 1996.

Reflectivity mosaics will be included in the National Precipitation Analysis beginning in 1996 or 1997. These hourly analyses will in turn be used for model initialization.

The NCEP Service Centers, such as the Tropical Prediction Center, Storm Prediction Center, etc., used NEXRAD data obtained from the NEXRAD Information Dissemination Service (NIDS) vendors to monitor severe weather. This data source was critical to support the National Centers in the provision of short-term guidance products to the WFOs and RFCs.

Headquarters staff oversaw the transition to Stage 1, with regional offices performing an extensive amount of detailed, site specific planning and implementation. NWS developed national standards to define operational capabilities that it must confirm. A successful transition required assuring that services continued during transition to Stage 1 and offices could perform Stage 1 operations. NWS presented this assurance in reports confirming operational capabilities.

3.3 Stage 2 Strategy

Stage 2 is based on attaining the following modernization and associated restructuring goals:

- Establishing WFOs and modernizing RFCs
- Completing deployment of all new technologies
- Integrating systems and operations.

The transition strategy treats these as defined goals, but they may be adjusted to reflect changes in resources, schedules, technology capabilities and the supporting sciences.

Transition to Stage 2 generally will follow the strategy outlined for Stage 1. NWS will synchronize WFO operations and WSO program changes with dates for acquiring, deploying and commissioning new systems. NWS is timing and adjusting staff allocation and training to ensure personnel are in place and prepared to use the new technologies when they are available. Modernized operations and services will be the impetus for Stage 2 transition planning.

At the outset of Stage 2, some WFOs and RFCs will operate with AWIPS computer systems that have been deployed with a limited set of capabilities. As additional systems are installed, sites will receive the most advanced set of capabilities available. Introducing system capabilities in phases will allow staff to assess system maturity and provide time to develop and validate advanced capabilities while the forecaster becomes familiar with operation of the new systems. AWIPS capabilities will be upgraded as an ongoing process to allow introduction of planned capabilities and to introduce changes learned from operational experiences.

As with Stage 1, NWS headquarters will maintain oversight, but Stage 2 will require extensive planning and close regional management. NWS will develop national standards to define all the capabilities it must confirm. A successful transition requires assurance that services will continue during the transition to Stage 2 and that offices will be able to perform all Stage 2 operations. NWS will provide this assurance in reports confirming operational capabilities. Regions will meet these national standards through programs confirming operational capabilities.

Below is a list of activities NWS must complete to move to Stage 2, followed by a checklist of operational capabilities NWS must confirm. These lists are not all inclusive, but provide a sample of major activities and conditions. The complete list will be derived from SIPs, transition plans for areas such as operations and services, systems development and integration, training and professional development, and implementation and phaseover.

Stage 2 Preparation Activities

- Non-NEXRAD WSO Activities
  - Coordinate with external users
  - Certify to Congress that services will not degrade as a result of closing a non-NEXRAD WSO
  - Close the non-NEXRAD WSO
  - Retain a liaison officer in the service area for at least two years after closing.

- WFO Activities
  - Adjust staff levels
  - Deploy AWIPS
  - Train staff on AWIPS
  - Commission AWIPS
  - Confirm user services are maintained
  - Redistribute forecast responsibilities.

- RFC Activities
  - Prepare operational forecast system for transfer to on-site, interactive operations
  - Coordinate upcoming service changes with water resources and cooperators
  - Supplement staff
  - Establish nominal 16-hour-per-day operations
  - Deploy AWIPS
  - Train staff on AWIPS
  - Commission AWIPS
  - Confirm user services are being maintained and document areas of improvements

- NCEP Activities
  - Consolidate SPC personnel in Norman, Oklahoma
  - Consolidate AWC personnel in Kansas City, Missouri
  - Install the NCEP Class VIII supercomputer system
  - Deploy AWIPS

- Decommission AFOS System Z at WFO locations.

Stage 2 WFO Operational Capabilities Checklist

- Complete facility preparation
- Ensure Stage 2 staff is on site
- Complete system training and hydrometeorological training and education
- Establish system support mechanisms and complete maintenance training
- Establish operations directives and procedures
- Prove ability of staff and office to provide defined Stage 2 operations and services
- Complete coordination with external cooperators and users
- Commission Stage 2 technologies.

Stage 2 RFC Operational Capabilities Checklist

- Complete facility preparation
- Ensure Stage 2 staff is on site
- Complete system training and hydrometeorological training and education
- Establish system support mechanisms and complete maintenance training
- Establish operations directives and procedures
- Prove ability of staff and office to provide defined Stage 2 operations and services
- Complete coordination with external cooperators and users
- Commission Stage 2 technology

Stage 2 NCEP Operational Capabilities Checklist

- Complete facility preparation
- Complete personnel relocations
- Establish system support mechanisms
- Establish operations directives and procedures
- Demonstrate ability to provide defined Stage 2 operations and services
- Continue coordination with external cooperators and users

3.4 Site Transition Model

The Site Transition Model, shown in Figure 2, shows the order in which events should occur or have occurred at non-NEXRAD WSOs and NEXRAD sites for Stage 1 and Stage 2. Not all events must occur in the order given. For example, some sites may receive NEXRAD before ASOS; however, there are specific events that must occur in order. A building must be complete before staff and new technology arrive. ASOS must be at non-NEXRAD WSOs before surface observations can be augmented by contractor personnel, some programs transferred and staff reallocated.

3.5 Training and Professional Development

The NWS established an Integrated Training and Professional Development Program to ensure employees thoroughly understand the new technologies and to keep forecasters current on recent scientific advances in mesoscale forecasting techniques. NWS places the highest priority on concepts that apply to operational forecasting.

As the program title implies, there are two distinct parts of the NWS strategy to prepare staff for the transition: technological systems training and professional development/continuing education. Systems training tends to be a one-time effort triggered when an office installs new technology; professional development continues throughout an employee's career.

Systems Training

NWS will train staff primarily on site. Centralized training generally will be reserved for the most complex technologies having the greatest impact on the transition, such as NEXRAD. For example, the NEXRAD Operational Support Facility (OSF) in Norman, OK, has provided a four-week Operations course for more than 2,000 meteorologists and hydrologists. NWS required all meteorologists and hydrologists (except interns) at future WFOs and hydrologists/hydrometeorologists at RFCs to pass the four-week NEXRAD Operations Training Course before a NEXRAD is commissioned.

For other highly complex technologies such as AWIPS, NWS plans centralized courses for office experts who will then lead structured, on-site training, particularly for AWIPS applications such as the IFPS. In addition, AWIPS contractors will provide limited on-site training for all staff. For simpler technologies such as ASOS, training has been primarily on site with a few centralized classes. The NWS Training Center (NWSTC) will continue to offer centralized maintenance courses for electronics technicians and basic training courses for new employees.

Professional Development

Ideally, NWS would provide professional development by sending employees to centrally located courses; however, logistical and budgetary constraints rule this option out. Except for some courses for specialized personnel, most professional development will be conducted on site. The NWS is trying to maximize opportunities for on-site learning, which provides needed training while reducing costs. NWS believes the two key elements for successful on-site professional development are an effective expert in the office to coordinate the program and interesting, informative and relevant learning materials.

In order to take advantage of the advances in electronics and telecommunications, and in response to staffing and budgetary limitations, the NWS is initiating establishment of an infrastructure to accomplish the training. The initial teletraining system utilizes existing personal computers and telephone lines to facilitate instruction with live audio and interactive graphics to several remote locations simultaneously. Plans are to replace this system to incorporate real-time video at all NWS offices. This system will result in savings of time and money by greatly reducing travel and time out of the office. This technology has already been effectively utilized by other governmental agencies to accomplish major training goals.

The Science and Operations Officer (SOO) and Development and Operations Hydrologist (DOH) are functioning as resident experts for professional development in each WFO and RFC, respectively. They transfer technology on-station, determine hydrometeorologic topics worthy of local research, initiate and serve as liaisons for research projects with universities, and incorporate research results into NWS offices. The NCEP also employs a SOO within each Forecast Center.

Centralized courses are being conducted by the Cooperative Program for Operational Meteorology, Education and Training (COMET) of the University Corporation for Atmospheric

Research in Boulder, CO. For example, COMET conducts an eight-week Operational Mesoscale Analysis and Prediction course, primarily for SOOs. Other specialized courses are being offered for DOHs. The NWS Training Center offers courses in hydrometeorological forecast and the latest management techniques.

The goal of the COMET distance learning program is to prepare a comprehensive curriculum through highly interactive Computer-Based Learning (CBL) materials played on specially developed Professional Development Workstations. Experts at NOAA, the Department of Defense (DOD), universities, FAA and other agencies have and will continue to develop materials. CBL Modules are providing the most cost-effective and efficient method for professional development for NWS meteorologists and hydrologists.

The University Assignment Program is available to NWS staff members who wish to upgrade their scientific or computer skills. The program enables employees to study full- or part-time at a university, while receiving salary and benefits.

3.6 Risk Reduction

To modernize, NWS must complete all objectives while ensuring that services are not degraded. To a great extent, future programs rely on new systems developed with highly advanced science and technology. NWS has and will continue to refine and update these systems throughout the transition. NWS has conducted limited tests of some new operational technologies. Additional opportunities for testing are recognized in the system acquisition plan for AWIPS, which allows for staged development. At each stage, AWIPS can incorporate new scientific knowledge and the latest requirements. Systems based on known and existing technology, such as NEXRAD, have undergone extensive field testing.

NWS expects to conduct more risk-reduction projects in the Stage 2 transition period and possibly beyond. To date, risk-reduction efforts have largely targeted technology issues. Other critical areas that must be explored range from staffing levels for Stage 2 offices, to the feasibility of integrating all warning and forecast functions in future WFOs.

In fiscal year 1997, a risk reduction and evaluation of interactive forecast preparation capabilities will be undertaken. To carry out this risk reduction, Interactive Computer Worded Forecast (ICWF) software will be implemented at four AWIPS sites. The ICWF is a prototype of the IFPS. A pilot training workshop and evaluation activities at the four test sites will help to refine procedures for nationwide implementation of IFPS capabilities and to determine where continued development in this area is needed. Risk reduction using IFPS will continue in 1998.

The early stage of modernized operations and the transition process itself will reveal other areas where NWS can reduce risk. Well-defined risk-reduction projects are critical to a successful transition. This transition strategy calls for agency support and response to significant risk-reduction activities and their associated results.

3.7 Demonstration

The NWS has already and will continue to improve services through new technologies operated by trained staff. NWS and external users must continue active roles to ensure success. Users are more likely to support changes if they understand why they are needed. Demonstrating improved services is a critical element in obtaining support.

For example, at each site, NWS has and will continue to demonstrate and test the operational capabilities of the new technologies as part of the system commissioning process. The results of these tests form a significant part of the certifications to Congress that services will not be degraded. As test results cumulate as modernization proceeds, the certification process is expected to accelerate.

AWIPS Operational Test and Evaluation (OT&E)

Current planning calls for an incremental development of six software builds before AWIPS contains all its originally envisioned capabilities. Each build will be tested in an operational environment before being released to other field sites. There will be an OT&E for each build with one ending as the next begins.

The AWIPS testing process will evaluate not only the system performance for each version of software, but the impact on the operational processes within the various offices and the resultant ability to provide quality weather services to the public.

One focus of the OT&E will be on system performance and its impacts on the forecasting analysis tasks. Not all capabilities will be present initially, but will be evaluated as they are implemented. The broad areas of the OT&E system evaluation include:

- AWIPS Communications Network
- Local/Remote Data Acquisition
- Dissemination Systems
- Applications Processing
- Monitoring and Control
- Contractor Support Services
- System and User Training
- Service Backup & Reconfiguration
- Local Software Development
- Data Base
- User Interface
- Display and Interaction
- Product Generation
- Training Scenarios
- Systems Software
- System Documentation

- System Management
- Growth Capability

The other part of the OT&E is the service evaluation. One aspect evaluates the impacts of AWIPS on the overall internal operations of the office. Specifically, how do the new datasets and other aspects of the system integrate into the office environment and allow the forecasters to do their job? A second part of the service evaluation examines the quality of our products as perceived by our users.

AWIPS has been installed at a number of sites as a part of the development process to validate the suitability of the system, prior to the decision to proceed with national deployment. These OT&E sites listed below, are a cross section of the kind of offices that will be in the AWIPS network.

- Network Control Facility
- RFC Missouri Basin (Kansas City)
- NWSFO Topeka
- RFC Colorado Basin (Salt Lake City)
- NWSO Dodge City
- National Modernization Test and Integration System
- NWSO Kansas City
- NWSO Tulsa
- NWSFO Salt Lake City
- NWSO Wichita
- NWSO Goodland
- NWSTC Kansas City

A key component of the evidence that will be used in the decision for the deployment of AWIPS, will be the results of the Build 1 OT&E. An intensive analysis was done to validate that AWIPS meets expectations. The Build 1 OT&E will continue until the deployment of Build 2. An OT&E will be conducted after the deployment of each build.

The National Weather Service Modernization Committee (NWSMC) of the National Research Council (NRC) was tasked to conduct an assessment of the OT&E. Their report confirmed that the OT&E process was appropriate to the introduction of AWIPS, and that this introduction already promises to facilitate new methods of operation. The committee found that site personnel displayed a positive attitude while using AWIPS as an operational tool to ingest and display satellite and NEXRAD data for preparing forecasts and other products. The committee also noted that the functionality of AWIPS Build 1 has already significantly improved NWS operations by providing an integrated view of data from NEXRAD, Geosationary Operational Environmental Satellite (GOES), and the gridded data products from the NCEP weather models. The findings and conclusions were positive with a few recommendations for improving the OT&E process.

Modernization and Associated Restructuring Demonstration (MARD)

In Stage 2, NWS will demonstrate its ability to deliver services from offices with new technology as a model for nationwide operations. The MARD process will apply new technology and techniques and convert (restructure) current offices into WFOs. NWS will collocate some WFOs with an RFC. Hydrometeorological Analysis and Support (HAS) functions will be added in each RFC to help assimilate large volumes of data from NEXRAD, ASOS and other sensors; encourage hydrometeorological support and interactions with WFOs; and ensure continuity in hydrologic forecasts across WFO boundaries. The RFCs will reap the benefits of the new technologies to improve main-stream river flooding forecasts and flash flood guidance. The new technologies will help RFCs support WFOs.

The proposed demonstration area and the overall design of MARD respond to Section 703(a)(4) of Public Law 102-567. The MARD is a cost-effective way to verify the quality of service improvements before restructuring the entire country.

The following should be met to test the new operating configuration; involve sufficient WFOs and RFCs to test new hydrometeorological support and forecasting operations, and coordination and support functions in realistic situations and provide warning and forecast services over a significant area.

To ensure a successful demonstration, NWS must first staff MARD offices with meteorologists and hydrologists who can interpret new data sources, such as Doppler radar, and use mesoscale forecasting techniques. In addition, NWS will install and integrate the new technology systems with each other and with existing technology at MARD offices.

The core MARD WFOs (Kansas City (MO), Topeka (KS), Goodland (KS); Dodge City (KS) and Wichita (KS)) are also AWIPS development phase sites and were a major focus of the OT&E activities for AWIPS. The MARD evaluation will rely heavily on this AWIPS (field) operational test and evaluation especially the evaluation of operations and services. In addition, other aspects of restructured operations, such as, coordination, workload, training and backup operations will be evaluated in the MARD. NCEP and the RFCs at Kansas City and Tulsa will provide modernized guidance and support for the MARD WFOs. Other office will be added to the MARD to test and validate other aspects of the modernization (services in coastal or mountainous areas).

A complement of operational meteorologists (10) had been deployed at MARD offices by early 1996. Other positions had been previously added. The last major technology -- AWIPS was delivered with initial capabilities in late summer 1996.

Warning services were assumed by future WFOs for their area of responsibility early in Stage 1. Additionally a limited number of forecast products and services were transferred from the existing WSFOs as Stage 1 progressed including in the MARD area. Early in 1997 additional forecast responsibility will be transferred to the MARD "spin-up offices" as a pre-MARD activity. The MARD evaluation is expected to begin in fiscal year 1998 after AWIPS

"Build 3" capabilities are deployed if, as expected, office technological and operational capabilities supports modernized and restructured operations.

The NRC's NWSMC will be consulted as the process unfolds.

To summarize, in preparing for and conducting the operational demonstration, the NWS has already or will:

- Deploy new technologies and integrate them into operations
- Staff restructured offices with the required number and mix of personnel
- Develop and apply procedures related to warnings and forecasts
- Train staff to fully use the new technologies and scientific advances
- Restructure selected NWS field offices into WFOs to realign areas of service responsibilities in close coordination with emergency management groups and others
- Evaluate service performance and responses of users

3.8 Certification Process

Public Law 102-567, the NOAA Authorization Act of 1992, took effect October 29, 1992. Title VII of this law, the Weather Service Modernization Act, establishes certification requirements and procedures. This section summarizes these certification requirements. In December 1993, NWS published regulations in the *Federal Register* describing the certification process in detail.

Certification Requirement—The Secretary of Commerce must certify to Congress that closing, consolidating, automating or relocating a field office (WSO or WSFO) to implement the Strategic Plan will not degrade service to the affected area. Each certification will:

- Describe local weather characteristics and weather-related concerns that affect the weather services provided within the service area
- Offer a detailed comparison of the services provided within the service area and the services to be provided after such action
- Describe recent or expected modernization of NWS operations that will enhance services in the service area
- Identify areas within a State that would not receive coverage (at an elevation of 10,000 feet) by the NEXRAD network
- Provide evidence, based upon a local demonstration of modernized NWS operations, used to conclude that services would not be degraded from such action
- Provide any report of the Modernization Transition Committee (MTC) that evaluates the proposed certification.

Special Circumstances—No field office may be closed or relocated at any airport unless the Secretary of Commerce, in consultation with the Secretary of Transportation and the MTC, conducts an air safety appraisal, determines that such action will not degrade service affecting aircraft safety, and includes such determination in the certification.

The sole field office in a State will not be closed until the Secretary of Commerce evaluates the effect on weather services provided to in-State users such as State agencies, civil defense officials and public safety offices, and determines in the certification the in-State users will retain a comparable level of weather services.

Liaison Officer—Public Law 102-567 requires that when closing, consolidating, automating or relocating a field office, the Secretary of Commerce maintain a liaison officer in the service area for at least two years. Section 2.2 of this report describes this liaison officer.

Review of Modernization Criteria— The NRC reviewed the scientific and technical criteria by which the Secretary of Commerce proposes to certify action to close, consolidate, automate or relocate a field office and issued a report in July 1993. This review:

- Assessed requirements and procedures for commissioning new weather observation systems, decommissioning outdated NWS radars and evaluating staff needs for field offices in an affected service area
- Assessed the statistical and analytical measures that should be taken to determine if service will degrade in an area
- Included other recommendations the NRC deemed appropriate to ensure public safety.

The Secretary of Commerce, in consultation with the NRC and the MTC, and after notice and opportunity for public comment, published final modernization criteria in the *Federal Register* as follows: in March 1994 for relocation and consolidation certifications and criteria common to all types of certification; in July 1996 for selected classes of automation certifications; and in October 1996 for closure certifications. Final modernization criteria for the remaining class of automation certifications is expected to be published in the next year.

Modernization Transition Committee (MTC)—Public Law 102-567 establishes the MTC with representatives from NWS, DOD, the FAA, the Federal Emergency Management Agency, civil defense and public safety organizations, news media, labor organizations (certified by the Federal Labor Relations Authority as an exclusive representative of weather service employees), meteorological experts and private sector users of weather information.

The Secretary of Commerce may request the MTC to review any proposed certification and should do so if there is a significant possibility service will degrade within the service area. The committee may submit to the Secretary of Commerce, before publishing the proposed certification, a report evaluating the certification with respect to modernization criteria and the requirement that services not degrade.

Publication and Submission of a Certification—Before closing, consolidating, automating or relocating a field office, a certification will be:

- Published in the *Federal Register* for a 60-day comment period as a proposed certification

- Published in the *Federal Register* as a final certification after considering public comments, consultation with the MTC, and being approved by the Secretary of Commerce
- Submitted to the Senate Committee on Commerce, Science and Transportation and the House Committee on Science.

Certification Process - Based on the requirements of Public Law 102-567, NWS has developed a process for certifying that services will not degrade during the modernization. During Stage 1, key events will be commissioning a NEXRAD and/or ASOS. Introducing these technologies will enhance weather services and allow NWS to consolidate operations at NEXRAD offices and/or automate surface observations at existing field offices. With one exception discussed below, certifications will be based on the documents supporting commissioning and on additional documents that support decommissioning of a radar and/or automating surface observations.

After installing a NEXRAD or ASOS unit, NWS will confirm the capabilities of each new unit in a field setting. Before commissioning a unit, the meteorologist-in-charge will prepare a Commissioning Report reviewing engineering and performance tests for the system, documenting field results for this unit, documenting that the new technology has been integrated into office operations and assuring maintenance support is in place.

After commissioning, the meteorologist-in-charge will prepare the Confirmation of Services Report. This report's intent is to ensure that NWS has communicated with users and that services remain intact and accessible. Depending on the technology involved, the meteorologist-in-charge also will prepare a Radar Decommissioning Report and/or a Surface Aviation Observation Transition Checklist. The first report will show that the area served by the old radar is covered by one or more commissioned NEXRADs and the old radar can be turned off; the checklist will document completion of the actions necessary to automate the surface observation (i.e. verifies the ASOS can provide required aviation services when augmented as necessary by non-NWS personnel).

Based on these reports, which will incorporate criteria reviewed by the NRC and MTC, and other information required by Section 706 of Public Law 102-567, the meteorologist-in-charge will prepare a certification recommendation to be published for comment, reviewed by the MTC, approved by the Secretary, and submitted to Congress.

The required sequence of events certifying that services will not degrade for a typical WSO consolidating or automating during Stage 1 will be:

- Install and conduct an acceptance test of the NEXRAD and/or ASOS unit
- Demonstrate the unit and coordinate with users
- Prepare the Commissioning Report
- Commission the unit for full operational use
- Transfer service responsibility to the NEXRAD field office while continuing to operate an existing radar at the old office (if it currently operates a radar)
- Confirm that services are maintained and prepare the Confirmation of Services Report

- Prepare Radar Decommissioning Report and/or Surface Aviation Observation Transition Checklist
- Decommission existing NWS radar
- Certify "No Degradation" of services
- Consolidate and/or automate.

For WSFOs becoming WFOs, the sequence is more complex because these offices have forecast responsibilities. Initially, these WSFOs will separate their service responsibilities from their observation responsibilities, transferring the former to the new WFO site while continuing to handle observations. During this first step of the transition, the sequence of events will include coordinating technical issues with affected users, transferring service responsibilities (warnings and forecasts) to the future WFO and changing staff levels as personnel responsible for issuing warnings and forecasts (but not observations) are transferred to the future WFO.

These actions during this first step of a WSFO transition are "changes in field office operations" subject to the provisions of Section 705 of the Act, but not Section 706. After the WSFO completes this step, the office will operate exactly as the WSO described in the first type of certification and will be known as a "residual WSO." The sequence of events will be the same as that described previously except that the service transfer already will have occurred.

Closing a field office is the final step in an often complex transition process in which a field office is carefully phased out at the same time as one or more associated WFOs assume the full service responsibility for that office. Before closing an office, NWS will have to certify no degradation of services based on local operational demonstration, and meeting other established closure criteria. Although in general, closure of a WSO or residual WSO is not dependent on AWIPS being operational at the associated WFOs, AWIPS deployment and Stage 2 activities will be occurring during the same time period as WSOs and residual WSOs are being certified for closure.

Change in Operations—Many of the actions that lead to a certification are defined by Public Law 102-567 as a change in operations. These actions include:

- Transferring service responsibility
- Commissioning weather observation systems
- Decommissioning an NWS radar
- Changing staff levels significantly
- Moving a field office to a new location inside the local commuting and service area.

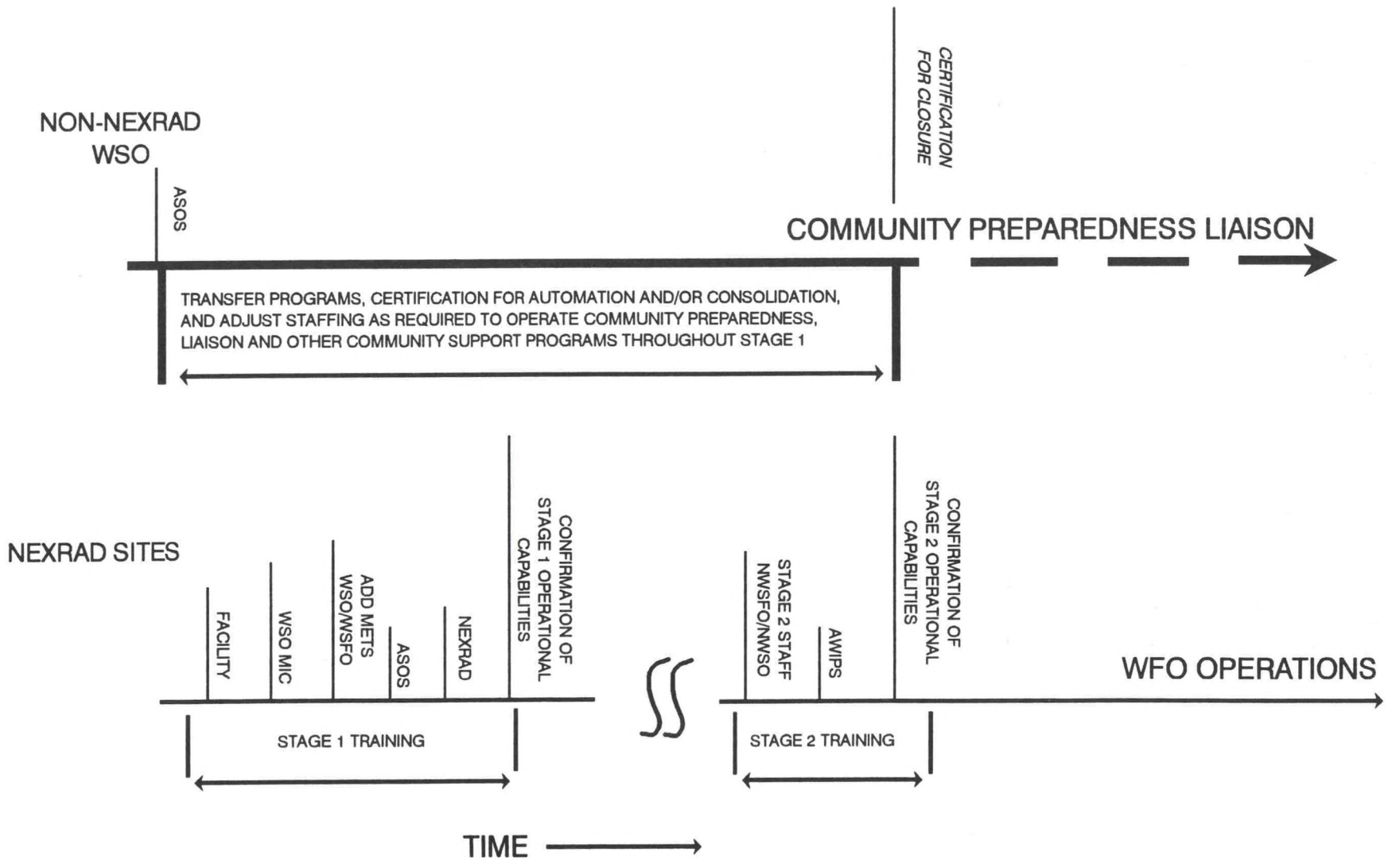
Specific operations changes required to phase out a WSO include commissioning one or more NEXRADs and an ASOS, transferring warning responsibility from the old office to the offices with the NEXRADs and decommissioning the old radar. In the sequence for WSFOs, additional specific changes in operations are the initial transfer of forecasting and warning responsibility to the future WFOs, and the significant change in staffing levels as NWS transfers forecasters and other service personnel to the new office.

Notifications for Changes in Operations Occurring After September 30, 1993—Public Law 102-567 requires advanced notification in this report. The NIP must also identify any field office that the Secretary intends to certify for major change and the intended date of such certification. This report notifies Congress and users of agency services. Table 6 provides site-by-site notifications of when NWS has scheduled changes in operations and certification.

Notifications of planned changes of operations and intent to certify field offices are provided in this table on a month/year basis. The establishment of a specific date for an action, such as a system commissioning or a transfer of service responsibility, is dependent upon many factors, e.g., completion of technical coordination with external users, system and office readiness and severe weather season considerations. The Meteorologist-In-Charge (MIC) of the cognizant future WFO is in the best position to judge these factors and schedule the specific date for the action. The specific date for an action will be provided by the MIC to external users and affected NWS employees at least 60 days in advance of the action.

Figure 2

SITE TRANSITION MODEL



4.0 Research Programs

NOAA, the academic community and other federal agencies are conducting research projects that already have and will continue to transfer scientific and technical knowledge to the NWS modernization program. These projects range from research in the atmospheric and hydrologic sciences to developing products and techniques to improve warnings and forecasts. Research also is underway in computer systems to assimilate data from the diverse observational systems in use nationally, as input to numerical prediction scales and locally, for short-term/mesoscale forecasting.

NOAA has concentrated the bulk of its weather research program in the office of Oceanic and Atmospheric Research's (OAR), Environmental Research Laboratories (ERL), the NWS and the National Environmental Satellite, Data and Information Service (NESDIS). Section 6 addresses budgets for research programs associated with NWS modernization and restructuring. The end of Section 6 includes figures showing research and modernization schedules.

4.1 Environmental Research Laboratories Research Programs

ERL provides fundamental research to develop technology and improve NOAA services to the public through dedicated laboratory facilities across the nation. Programs include research on observational systems, modeling and prediction, severe storms, hurricanes, clouds and precipitation processes, synoptic and mesoscale meteorology, processing, display, and dissemination and information systems. ERL staff often work within the operational NWS environment (e.g., Phoenix, AZ, and Norman, OK); operational forecasters rotate through assignments in certain laboratories.

Forecast Systems Laboratory (FSL)

The ERL Forecast Systems Laboratory (FSL) in Boulder, CO, is a major contributor to the NWS modernization. The focus is to conduct research and to develop and transfer new technologies and scientific advancements to the NWS and other operational organizations. One principal FSL activity is to provide technical expertise for, design, and develop real-time meteorological workstations, such as WFO-Advanced.

A major milestone was accomplished with the installation of the WFO-Advanced system at the Denver NWSFO. This system approximates the AWIPS Build 4 level of functionality and runs on the AWIPS hardware platform. An initial complement of two workstations was installed in Denver in May 1996 which facilitated user training and system familiarization. The remaining workstations were installed near the end of June, and the WFO-Advanced System is now providing 24-hour coverage.

A transition process was implemented that involved the Denver staff working several operational shifts using WFO-Advanced. This gave FSL the opportunity to identify and resolve problems before the existing Denver AWIPS Risk Reduction and Requirements Evaluation (DAR^3E) system was removed. It was known in advance that the initial WFO-Advanced software installed had some bugs and deficiencies which the forecasters were willing to tolerate in order to accelerate the evolution of the system, based on their feedback. The forecasters were particularly eager to use some of the advanced display capabilities during the severe weather season.

Major achievements in the data acquisition area were also completed recently. The AWIPS Satellite Broadcast Network (SBN) was successfully connected to the WFO-Advanced system at FSL and at the Denver forecast office. The SBN delivers all of the NWS central datasets including GOES-8 and 9 satellite products, high resolution gridded model data, text, and observations. AWIPS-formatted meso-Eta grids from the SBN were also incorporated into the workstation.

In July, FSL installed a WFO-Advanced workstation at the Air Force Global Weather Central (AFGWC) operations center. This new technology will support the Air Force's worldwide weather mission and its Global Theater Weather Analysis and Prediction System program.

AFGWC provides real-time forecasts for Europe in support of the United Nations and the NATO Bosnian peacekeeping efforts. The Air Force needs increasingly more complex, higher resolution datasets to present weather products that can be easily assimilated by the non-meteorological theater planner. These forecasters require real-time data visualizations on finely tuned interactive displays in order to provide these mission-critical forecasts in a timely fashion.

For many years, FSL has been producing two- and three-dimensional real-time forecast products using the gridded output from several operational models such as the FSL-developed Local Analysis and Prediction System (LAPS). In support of the Air Force's real-time forecasting task, FSL has ported the LAPS and MM5 (Air Force System) models to the European Theater with a focus on the Bosnian area. Gridded spectral model data, upper air observations, and surface observations from AFGWC's database provide the initial data fields for LAPS and MM5. Using FSL's WFO-Advanced D2D workstation application and the AVS Express commercial software, two- and three-dimensional visualizations are created with the LAPS and MM5 gridded output data. FSL continued to support the system through the end of the fiscal year.

The LAPS system was also successfully installed at NWSFO in Peachtree, GA, in support of the Olympics. This effort was closely collaborated with the NWS, the Colorado State University and Mission Research Corporation.

National Severe Storms Laboratory (NSSL)

The National Severe Storms Laboratory (NSSL) in Norman, OK, conducts a broad program of research to improve understanding, prediction, detection and forecasting of severe weather phenomena. The laboratory conducts research, develops potential applications, prototype

decision aids and support systems, enhances observational systems (particular Doppler radar), and interacts directly with NWS components to test and transfer results in support of the Modernization. Research is focused on mesoscale convective systems and associated precipitation, severe thunderstorms and hazardous winter storms as well as model-based studies of these weather systems.

NSSL's research provides a sound scientific foundation on which the NWS can build. The Laboratory:

- Develops prototype Severe Weather Warning Decision Support Systems and tests them in NWS offices
- Works directly with the SPC to enhance their capability to predict severe weather and provide new guidance products
- Processes radar signals and develops advanced hardware/analysis techniques, including methods to enhance precipitation estimation through polarization diversity
- Examines integrated data streams (Doppler radar, satellite, lighting, numerical model output, etc.) to determine the utility of the integrated data set to help predict and detect severe weather
- Develops radar and satellite applications, assesses and improves algorithms used with the NWS NEXRAD Doppler radars
- Examines the prediction of weather systems using numerical models

NSSL works directly with NWS field offices, the four continental Regional Headquarters, and the NCEP to improve weather services and contribute to training programs. Much of the joint work is done within the framework of experimental forecasts at the NWS field offices and with the SPC in Norman. Close working relationships with NCEP has resulted in several changes to the operational models and participation in the evaluation of similar mesoscale models to determine the models' abilities to produce a significant improvement in simulating convective events. In addition, a collaborative pilot study is investigating the use of ensemble techniques in short-range (0-48 hour) numerical weather prediction. NSSL User Groups comprised of NWS field and center meteorologists continue to provide extremely important guidance for NSSL research aimed at important NWS operational problems.

Environmental Technology Laboratory (ETL)

OAR's Environmental Technology Laboratory (ETL), focuses on improving the Nations geophysical research and services by developing, demonstrating, and transferring new remote sensing instruments and systems. ETL addresses all scales that are relevant to NWS operations

and modernization. For example, ETL is:

- Installing profilers at critical sites along the west coast to test their ability to fill gaps in coastal radar coverage, and to help improve coastal forecasts.
- Testing dual polarization radar technology, used to observe cloud parameters important in forecasting icing and hail versus rain conditions.
- Developing a system based on low frequency sound detection that is capable of locating the position of tornado formation and touch-down.
- Developing mobile observing systems that can be used for fire weather support and hazardous waste spills.
- Developing algorithms that will remove interference caused by birds and insects.
- Testing the first 449 MHZ wind profilers that will be needed to replace the existing 404 MHZ design.
- Exploring the use of ocean remote sensors to detect heat flux, internal waves and currents.

In another technology area, ETL has developed over-the-horizon radar applications for mapping ocean surface conditions and tracking hurricanes.

Geophysical Fluid Dynamics Laboratory (GFDL)

OAR's Geophysical Fluid Dynamics Laboratory (GFDL) develops, tests, and evaluates mesoscale and synoptic scale atmospheric models to improve the skill and utility of forecasts ranging from one week to a season. Research to develop mathematical models for improved weather prediction contributes to the understanding of such fundamental meteorological phenomena as fronts, hurricanes, severe storms and persistent weather regimes.

Improved data sets provided by the NWS modernization are being used to gain a better understanding of mesoscale phenomena and their predictability through the use of a newly designed mesoscale prediction model.

4.2 NWS Research Programs

Research supporting the modernization program within the NWS is diverse and in several areas.

Office of Hydrology (OH)

The Hydrologic Research Laboratory (HRL) provides applied hydrologic research and development for the NWS operational hydrologic forecast mission. HRL works with Office of Hydrology's (OH) Hydrologic Operations Division and other NWS offices, including:

RFCs, NWSFOs, the NWS Regions, Office of Systems Development (OSD) Techniques Development Laboratory (TDL), NCEP and NOAA's Office of Global Programs (OGP), and U.S. Weather Research Program. Furthermore, HRL conducts cooperative activities with universities and other Federal, state and local agencies.

Within the NWS modernization framework, HRL is providing the integration of hydrologic forecasting scientific and systems software within the AWIPS site architecture for NWS field offices. This activity includes ongoing work to design and implement the most efficient integration strategy for existing hydrologic forecasting software. Issues being addressed are the smooth evolution from existing fielded procedures onto AWIPS, a database integration and transition to allow extensive existing data bases at field sites to migrate onto AWIPS, and the need to specify and implement a User Interface that works coherently within an effective service delivery operations concept while providing the capabilities required for RFC and WFO hydrologic forecasting.

The NWS modernization of its weather, water and climate services is enabling HRL to take the lead in providing seamless hydrologic forecasting across time frequencies from hours to days to seasons. This is the main goal of a project managed by the HRL, known as the Advanced Hydrologic Prediction System. This requirement must be supported by a hydrologic forecasting system that is integrated in data management, scientific and service delivery capabilities across all NWS field offices (i.e., RFCs and WFOs). HRL's Integrated Hydrologic Forecast System project meets this requirement and will build upon the scientific basis of the NWS River Forecast System (NWSRFS) and the current computer science capabilities of object oriented design and development tools to provide an integrated system for hydrologic data management, modeling, forecasting, and product preparation in WFOs and RFCs.

HRL is also placing significant emphasis on hydrometeorological applications to capitalize on interrelationships between operational hydrology and meteorology. This includes a focus on improving the accuracy of Stage I through III rainfall products by fully using recent scientific and technological advances in rainfall estimation using NEXRAD, GOES, and rain gage data, that were not available when the existing suite of algorithms were designed well over a decade ago. The tasks ensure NWS the greatest return for the investment in accuracy improvement in Stages I through III rainfall products under the current as well as planned (AWIPS, open systems Radar Products Generator [RPG]) operational environment.

In parallel with this work, NWS is emphasizing comprehensive modeling of the hydrologic cycle. Co-operative NWS research will range from efforts to model the transfer of soil moisture to the atmosphere (for use in both short-range numerical weather prediction models, long-range global climate models and for predicting the impact of global climate change on water resources), to several activities directed towards improved forecasts and warnings for short-fused mesoscale events.

With these efforts, NWS will use advances in computer technology, graphical user interfaces and geographical information systems to complete the new data technologies. These new

technologies, coupled with improved understanding of mesoscale weather processes, will allow forecasters to use improved hydrologic forecasting systems and distributed forecast models to forecast events effecting smaller areas such as flash-flood prone watersheds and urban areas.

Office of Meteorology (OM)

NOAA has had a long history of entering into cooperative activities with colleges and universities; the number and types of interactions have been growing steadily. As a result, the Collaborative Science, Technology, and Applied Research (CSTAR) program was established by the Office of Meteorology (OM) to bring the current variety of NWS-supported collaborative activities with the academic community into a structured program and to create a cost-effective transition from basic and applied research to operations and services. This service-science linkage provides a foundation for the ongoing modernization of the NWS.

The benefits derived from collaborative research activities initiated in CSTAR are numerous. NWS and university resources are leveraged, which will accelerate application of new science to operational forecasting. Collaborative research enables mutual sharing of information and data that may have been previously unavailable. Numerous opportunities for diverse partnerships are created, and these opportunities contribute to the scientific education of current and future workforce.

All CSTAR efforts are geared toward enhancing scientific interactions leading to a transfer of improved scientific understanding and technological advancements into the total forecast system. These efforts support the United States Weather Research Program's goal of advancing weather observing capabilities and fundamental understanding of weather and using this understanding to improve numerical weather prediction and enhance weather services provided to the Nation. In close association with that organization, the NWS has established a set of science priorities in support of the Advance Short-Term Forecast and Warning Services element of the NOAA Strategic Plan around which research in the CSTAR program is currently focused. These NWS science priorities are as follows:

- Improve quantitative precipitation forecasts
- Investigate the effects of topography on local weather regimes (e.g., the Great Lakes)
- Improve the predicted evolution and movement of tropical cyclones
- Determine conditions conducive for rapid wildfire development
- Improve forecasts of explosive cyclogenesis, especially within the marine environment.

Cooperative, operationally-oriented, collaborative research ventures between NWS and the university community are strongly emphasized. These efforts consist of activities funded directly between NWS and university facilities, as well as activities funded through the COMET in

Boulder, Colorado (a component of the University Corporation for Atmospheric Research [UCAR]). The following sections describe briefly the activities within the CSTAR program.

Cooperative Institutes (CIs) are generally long-term agreements with financial commitments on the part of NOAA and a university to share administrative and faculty costs. The CI develops an overall theme that is centered around a limited number of agreed-upon research topics as set forth in a memorandum of understanding. In some cases, CIs are collocated with Weather Service Forecast Offices. The NWS has five CIs that it currently administers: the CI for Applied Meteorological Studies at Texas A&M University, the CI for Tropical Meteorology at Florida State University, and the CI for Climate Studies at the University of Maryland, the CI for Regional Prediction at the University of Utah and the CI at the Pennsylvania State University. The CIs conduct applied research, coordinated by NWS Regions and Centers, and serve as a mechanism for transferring cutting-edge research into operations.

The COMET Outreach Program fosters partnerships between the academic research community and operational weather forecasters by funding collaborative research projects that benefit both groups. Its underlying objectives are to:

- Facilitate the transfer of research results to operational forecasting through the development and testing of forecast techniques

- Provide a mechanism for the participation of operational forecasters, research scientists, and academic scholars in advancing the weather services of the nation

- Stimulate further basic and applied research in the science of forecasting and nowcasting techniques.

The COMET Outreach Program is a particularly important component of CSTAR. Its objective is to increase opportunities for mesoscale and synoptic-scale education and research and improve local forecasts by fostering partnerships between operational weather forecasters and university faculty and students. COMET sponsors Cooperative projects between a university department and a weather office and Partners projects between individual forecasters and researchers focused on the study of a particular forecast problem. COMET has also begun awarding Forecasting Research Fellowships and Postdoctoral students which initiate further collaborative research opportunities within the university community and the NWS. Funds for COMET Outreach activities are obtained through a competitive, peer-reviewed process.

The NWS is also engaged in a multi-disciplinary (oceanic and atmospheric) program focused on improving and enhancing forecast capability for coastal regions. These activities encompass the end-to-end forecast process by including the following elements: 1) new observations for NWS forecast offices and modeling centers; 2) diagnostic and analysis studies geared toward understanding phenomena peculiar to the coastal environment; 3) accelerated development and operational assessment of model and forecast technique improvements designed for the coastal zone; and 4) preparation of implementation plans for operational utilization.

The NWS has played an important role in establishing the Atmospheric Sciences Programs at Jackson State University and the Earth Science Systems Program at Clark Atlanta University, two historically black colleges. The NWS has entered into several interagency personnel agreements with university scientists to address specific areas of research need. The NCEP and UCAR have a grant in force that permits university and UCAR scientists to visit NCEP for up to a year for the purpose of working on topics related to numerical weather prediction (NWP). University scientists may also receive grants from the National Science Foundation to support transition of mature NWP-related developments to NCEP.

Environmental Modeling Center (EMC)

The Environmental Modeling Center (EMC) improves numerical weather, marine and climate predictions at the NCEP through a broad program of research in data assimilation and modeling. In support of the NCEP operational forecasting mission, and in collaboration with universities and other research centers, the EMC modifies and refines operational atmospheric, oceanic and climate models, and develops new and improved forecast models, objective analysis methods and data assimilation systems intended for operational implementation. EMC's research is concentrated into four major areas: regional and mesoscale modeling, global weather modeling, ocean modeling, and climate modeling.

The regional and mesoscale modeling activities are:

- Mesoscale four-dimensional data assimilation of satellite, conventional (e.g. upper air, surface, aircraft), and indirect ground-based (e.g., profilers, NEXRAD radar) observations, in support of the NWS Modernization
- Advanced numerical techniques applied to mesoscale modeling problems
- Parameterization of mesoscale processes in the atmosphere and interactions between the atmosphere, ocean and land surfaces
- Diagnostic studies of mesoscale weather phenomena and model performance with emphasis on quantitative precipitation forecasting, estimation and verification.
- Data impact studies to evaluate the impact on forecast skill of new and extant observing systems (e.g., the North American Atmospheric Observing System Program (NAOS)
- Domestic aviation product development
- Support for hurricane prediction
- Mesoscale data quality control
- Non-hydrostatic modeling

- Development of advanced strategies such as ensemble forecasting and the utilization of adaptive observations.

The global modeling activities are:

- Global four-dimensional data assimilation of satellite and conventional observations
- Advanced numerical techniques for modeling the atmosphere and interactions between the atmosphere, ocean, and land surface
- Parameterization of sub-grid scale processes in the atmosphere, and interactions between the atmosphere, ocean, and land surfaces
- Diagnostic studies of global model performance
- Collaboration with other centers on extended range prediction research, including the use of ensemble forecast techniques
- Development of a climate data assimilation system and reanalysis studies for archival and use by scientific community
- Data quality control and impact studies to evaluate the impact on forecast skill of new and extant observing systems (e.g., NAOS)
- International aviation product development
- Support for general tropical prediction
- Development of advanced strategies such as ensemble forecasting and the utilization of adaptive observations.

The ocean modeling activities are:

- Surface wind modeling over the global oceans, coastal seas and the Great Lakes area
- Development of deep and shallow water wave forecast models
- Sea ice modeling
- Quality control of marine observations
- Coastal ocean modeling and data assimilation of ocean data.

The climate modeling activities are:

- Development of an ocean model and data assimilation system for the coupled ocean-atmosphere forecast system
- Collaboration on the development of climate prediction methodologies
- Collaboration with other institutions on the development of global ocean observing and analysis systems
- Data quality control for coupled ocean-atmosphere models.

In all its development activities, EMC focuses on short-range forecasting (0 to 48) hours over both limited and global domains, medium-range forecasting (3 to 10) days over global, and seasonal to interannual time scales globally. Advanced data assimilation techniques are applied to both atmospheric and oceanic data, and both operational and experimental observing systems are considered. Techniques development for advanced super-computer systems are an underlying activity supporting all model development.

Office of Systems Development (OSD)

The Techniques Development Laboratory (TDL) researches and develops promising techniques in weather forecasting and analysis to provide more objective forecasting of basic weather elements used in public and aviation forecasts, such as clouds, temperature and visibility. Emphasis is placed on marine-related forecasts, forecasts associated with mesoscale processes and techniques to be implemented at AWIPS-equipped NWS field offices.

The supporting research at TDL covers forecast applications for synoptic scale, mesoscale, marine environmental and field offices. The synoptic activities focus on procedures to be run on centralized computer systems in contrast to mesoscale weather techniques and local applications designed for use at modernized NWS field offices.

Local applications include interactive techniques supporting a digital data base, product formatters preparing specific products from the digital database, data decoders and verification techniques. TDL, with participation form FSL, NCEP, and OH, leads the development of the IFPS which will provide tools to support WFO and NCEP forecasters in forecast preparation. Mesoscale weather prediction includes techniques to predict short-lived thunderstorms, severe local storms and heavy precipitation. Short-term forecasting techniques apply sensor-produced information, such as data from NEXRAD, lightning detection systems and the experimental profiler system, to develop thunderstorm forecasting procedures and specialized radar algorithms.

The TDL developed and continues to improve a numerical model forecasting oceanic flooding over coastal areas when hurricanes hit land. The TPC uses this storm surge model to provide critical guidance on flooding to watch and warning areas of a hurricane prior to landfall. NWS

also uses the program extensively as a tool for hurricane evacuation planning; a series of computer simulations of hypothetical hurricanes shows areas of potential flooding. NWS is developing a similar model to predict flooding along coastal areas caused by intense extra-tropical cyclones.

The Integrated Systems Laboratory (ISL) develops, demonstrates, and integrates systems and system improvements in support of the NWS modernization. The Laboratory evaluates system performance, identifies critical problem areas, and analyzes the impact of proposed changes in operational system integrity as well as performance. The Laboratory facilitates implementation of new technology systems and the transition to using them in operation.

The ISL is supporting the tri-agency (DOC, DOD, DOT) NEXRAD Evolution and Integration Project providing improved communications and dissemination capabilities through the prototyping and development of the Open Radar Product Generation (ORPG) Gateway and Communications Server (G&CS). The G&CS subsystem must enable an ORPG Communication system to handle a broad spectrum of evolving communications requirements. The G&CS functional requirements are derived from the NEXRAD System/Segment Specification (NSSS) and satisfy the radar Base Data Distribution and Evolutionary Interfaces requirements of the ORPG.

4.3 NESDIS Research Programs

NESDIS research programs are conducted by its Office of Research and Application. Its goal is to maximize the use of data derived from satellite sensors to improve meteorological analysis and prediction. These satellite applications range from the lower levels of the atmospheric boundary layer to tracking and monitoring synoptic and mesoscale systems and monitoring stratospheric ozone.

Numerical weather prediction efforts at NESDIS have focused on developing enhanced moisture and stability products, wind fields and three-dimensional vertical soundings of temperature and moisture. NESDIS also is developing surface vegetation, temperature and snow-cover products from satellite sensors to be used in initializing boundary conditions for the models.

Research to improve sea surface temperature products has resulted in a new atmospheric aerosol product. NESDIS can track warming and cooling effects from volcanic eruptions and airborne sand and adjust/correct the sea surface temperature products essential to initialize numerical models. The service has developed a satellite cloud observation algorithm to supplement ASOS.

NESDIS supports the NWS warning and forecast program with research on tropical storms, clear air turbulence, wind and stability products; improved detection of nighttime fog over oceans and land; severe weather signatures and quantitative precipitation estimates for flash flood warnings. Scientists continue to document the use of polar satellite and geostationary data. These publications are part of an intensive training program ranging from visits to NWS forecast

offices, to workshops, to developing training modules at COMET. The Regional and Mesoscale Meteorology (RAMM) Advanced Meteorological Satellite Demonstration and Interpretation System (RAMSDIS), has brought digital satellite data to select NWS sites as a prototype service. Forecasters and NESDIS scientists are developing advanced techniques for satellite data utilization in local forecast and warning responsibilities. Applications development is emphasizing quantitative products, that can assist forecast operations at National Centers and the local forecast offices.

NESDIS scientists also are involved in data assimilation projects that merge the new technologies, e.g., profilers and Doppler radar, and satellite data. These mergers result in enhanced products with high information content. In addition, several "expert system" projects are underway for high plains convection, heavy precipitation and winter storm forecasting. Cooperative development and field testing with NWS staff are key elements of these projects. One ongoing project is the lake effect of snowstorm studies.

Planning, in cooperation with NWS, is also underway for future spacecraft. NESDIS scientists are involved with sensor development and improved data sensing to meet observational requirements of planned high temporal requirements of NCEP models.

5.0 Transition Program Management

The NWS has never undertaken a systematic modernization and restructuring effort of the magnitude described in this report. Virtually every NWS activity is changing in some way during the transition. Management is complex, involving all levels of the NWS. This section presents the NWS transition philosophy.

To coordinate these changes, NWS established the Office of the Deputy Assistant Administrator for Modernization. Reporting to the Assistant Administrator for Weather Services, the Deputy Assistant Administrator for Modernization provides a sustained organizational focus on the MAR Program. The NIS supports the Deputy Assistant Administrator for Modernization. In each Headquarters Office and Region, NWS designated Transition Managers who focus transition activities within their unit.

NOAA has established a Systems Acquisition Office (SAO) reporting to the Deputy Under Secretary for Oceans and Atmosphere. The SAO acquires the major new systems: NEXRAD, ASOS, AWIPS, GOES, and Polar satellites.

5.1 Introduction

Two key principles define NWS transition management philosophy. The first is to use the existing structure to implement the transition whenever possible. The second is to ensure transition planning and implementation do not disrupt current operations and service.

The Assistant Administrator for Weather Services and Deputy Assistant Administrator for Modernization have statutory and procedural authority for budgeting, staffing and modifying field offices. Every action required to modernize the NWS can be done, in theory, through mandated procedures. In practice, acquiring approvals for action such as changing field office status may be difficult because of cost factors; however, the NWS has substantial leverage to make changes, on a case-by-case basis, that improve services.

5.2 Transition Work Breakdown Structure

The management approach to the transition is to plan, execute, monitor and report on activities necessary to modernize and restructure. This approach involves all NWS organizational units.

NWS uses a formal Work Breakdown Structure (WBS) to track these activities. Figure 3 at the end of this section shows the major elements of the Transition WBS.

The WBS explains planning, implementation, project management, and control and reporting. Not all elements are presented for the same purpose, nor is the assignment of lead office responsibilities necessarily consistent with normal job responsibilities. The Transition WBS document and dictionary are available for reference.

5.3 Phasing of NWS Modernization

The modernization of the NWS is a multi-faceted effort requiring integration of new equipment into new offices, two stages of operations at field offices, decommissioning of antiquated equipment, as well as the spin down of current smaller offices. Figure 4, at the end of this section, is a time-line depiction of the various components required to accomplish the phasing of these elements into the modernized NWS. Section 6 of this document further discusses both a present status and future plans that are associated with the modernization phase in.

5.4 Transition Program Monitoring and Control System

NWS has developed a transition monitoring and control system to provide concise, accurate and prompt transition status information. NWS will keep its audiences informed through the following methods:

- Regular Transition Program Reviews are conducted for the Assistant Administrator, Deputy Assistant Administrators for Modernization and Operations, Office Directors and Transition Representatives
- Periodic Progress and Technical Reports are published and distributed throughout the agency to provide all NWS employees with transition information
- Semiannual Transition Management Meetings are conducted for the Assistant Administrator, Deputy Assistant Administrators for Modernization and Operations, and the Office/Regional Directors
- Transition Progress Reports are included as a standard agenda item for the spring and fall Directors' Conferences.

The heart of the program monitoring and control system is a computer-based project management and information system. The information contained in this system is accessible to all parts of the agency. NWS has installed security measures to restrict access to sensitive data. The Transition Program Monitoring and Control System description and procedures document is available for reference.

5.5 Transition Change Management

The transition consists of a complex series of separable but tightly interrelated activities. Once plans are approved and set in motion, requests to adjust actions will be the rule. NWS has structured transition management to handle these requests in a disciplined and coordinated manner. The Transition Change Management (TCM) process deals with proposed changes. The Deputy Assistant Administrator for Modernization oversees the process and is supported by the Transition Change Manager in each Headquarters Office and Transition Managers in each Region. TCM managers:

- Evaluate the impact on areas potentially affected by proposed transition changes
- Consider implementation, schedule and cost in evaluating proposed transition changes
- Ensure maximum use of existing agency change/configuration management systems for screening and evaluating proposed transition changes
- Provide levels of approval: The Deputy Assistant Administrator for Modernization, acting for the Assistant Administrator for Weather Services, normally is the final authority in the TCM process
- Document and communicate the results of all change requests, and report status of change requests while they are being evaluated or implemented.

5.6 Transition Management Meetings

Transition Management Meetings are attended by the Assistant Administrator, Deputy Assistant Administrators for Modernization and Operations and Office and Regional Directors. NWS holds the meetings semiannually in addition to the spring and fall Directors' Conferences. Standard agenda items for the transition management meetings are the following:

- Review transition progress
- Focus on specific transition problems/issues
- Review/approve transition change proposals
- Define/adjust 3-year outlooks and 1-year action plans, setting the agency's course for the coming year.

Figure 3

TRANSITION WORK BREAKDOWN SCHEDULE

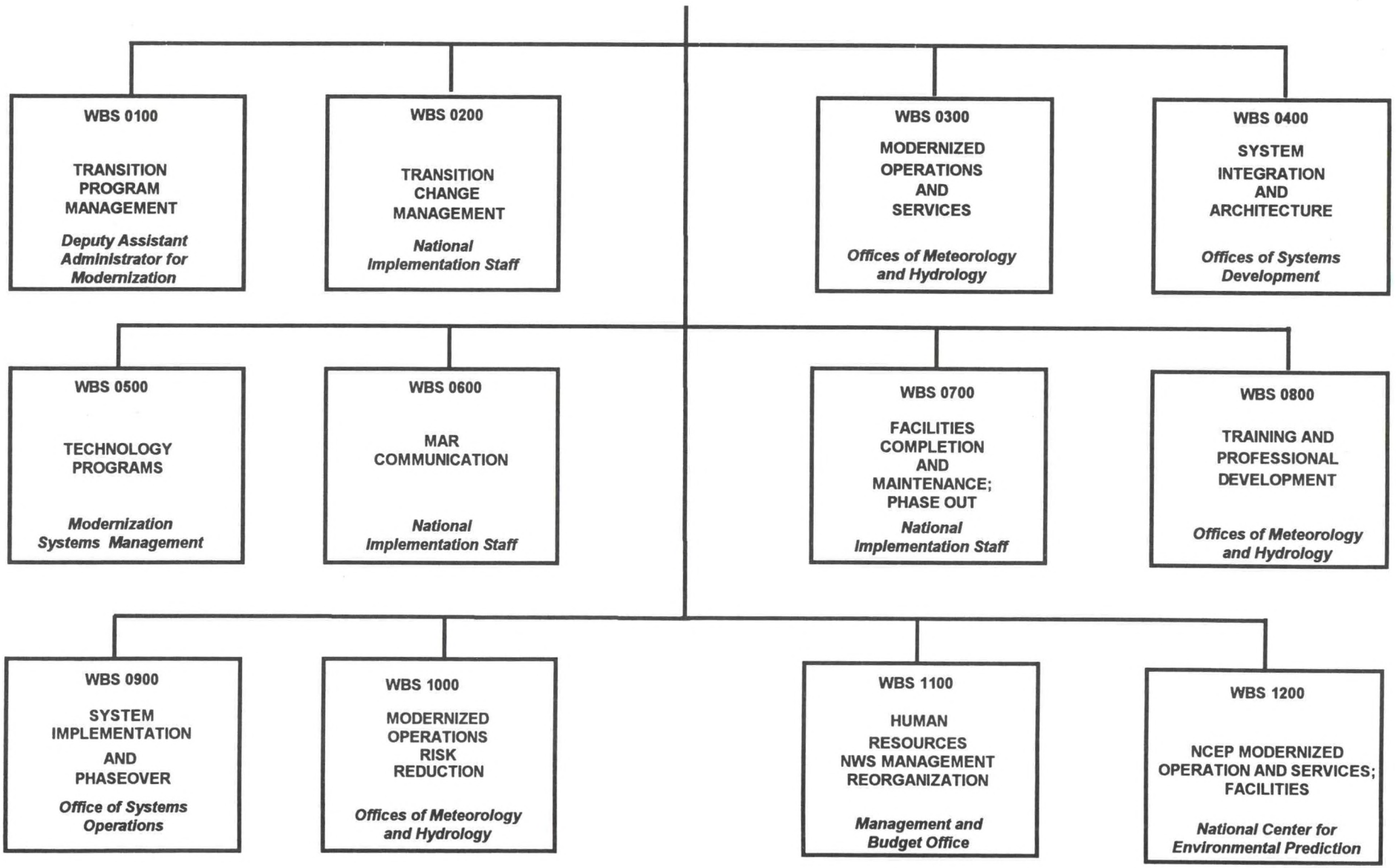
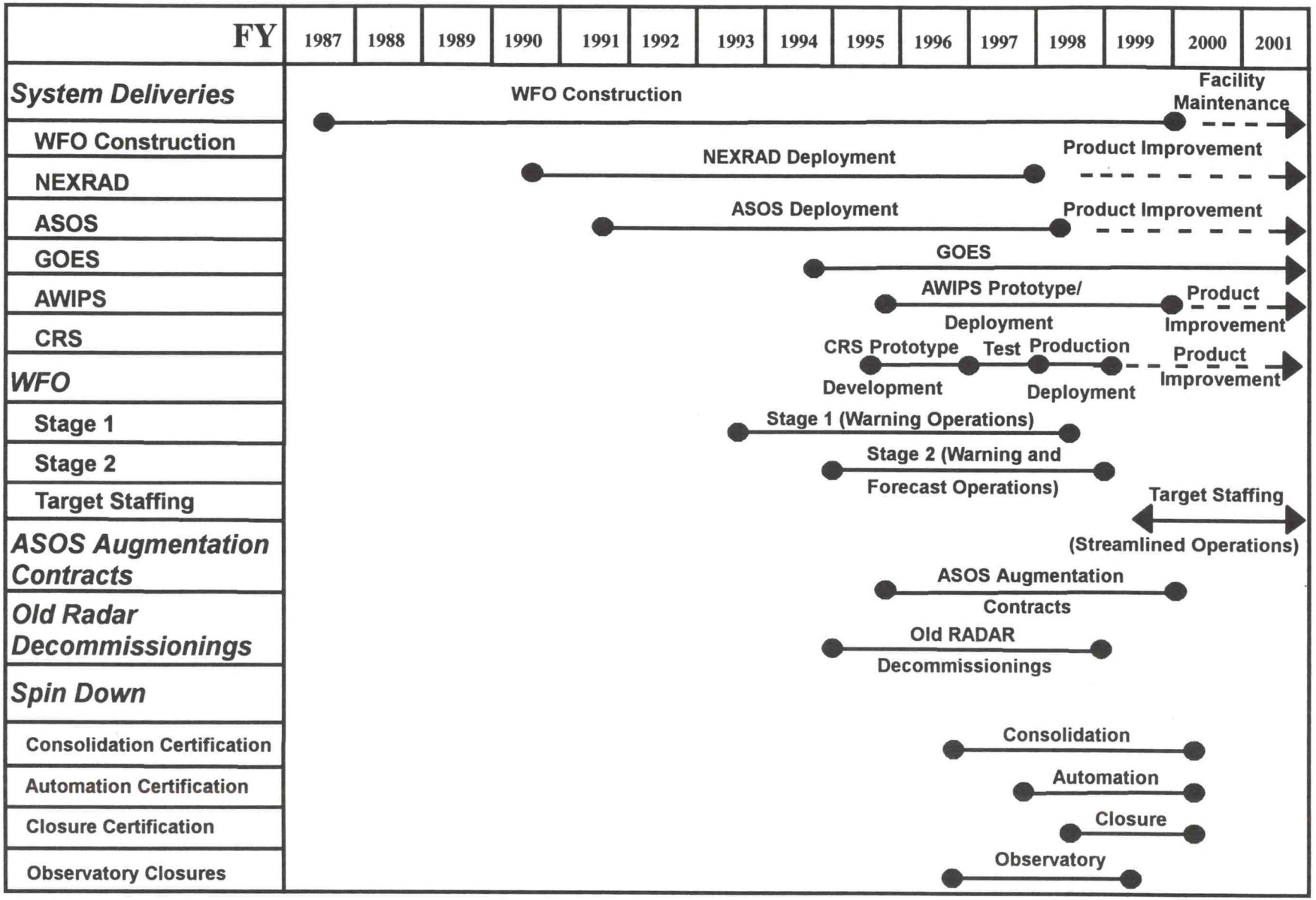


Figure 4

NATIONAL WEATHER SERVICE PHASING OF MODERNIZATION



6.0 Transition Program Status and Outlook

This section reviews fiscal year 1996 progress and plans for fiscal years 1997-1999. Table 5 at the end of this section provides detailed budgets for fiscal years 1997 and 1998. It also shows budgetary planning ceilings for fiscal year 1999 for each of the major program components. Table 5 is not intended to portray the total cost of the transition program. Figures 5 through 14 present program schedules for each major transition component. Table 6 notifies the public of proposed actions to change operations and of intent to certify, as required by Public Law 102-567.

6.1 Status of the Transition Program

During fiscal year 1996, NWS developed and integrated programs to ensure the transition was well coordinated internally and externally. NWS continued to deploy ASOS and NEXRAD systems and installed the first AWIPS systems. Specifically, NWS:

- Installed 28 ASOS, 19 NEXRAD, and 12 AWIPS systems
- Commissioned 121 ASOS and 33 NEXRAD systems
- Completed 6 Consolidation Certifications
- Received endorsement by the MTC for 70 Consolidation Certifications
- Decommissioned 74 conventional radars

Funding

The capital costs associated with the modernization of the NWS are anticipated to be approximately $4.5 billion. This includes needed funding for GOES, NEXRAD, ASOS, AWIPS/NOAAPORT, the Central Computer Upgrade, WFO Construction, and a transition budget to manage the modernization. Congress has funded the modernization primarily through cumulative appropriations for technology. Through fiscal year 1996, Congress has appropriated $1.5 billion for GOES, $770.7 million for NEXRAD, $140.0 million for ASOS,$261.3 million for AWIPS/NOAAPORT, $66.7 million for the Central Computer Upgrade, and $179.2 for WFO Construction. The transition program budget, which funds all other elements of the modernization, has received $314.5 million in appropriated funds.

Transition Program Management

NIS managed program efforts and identified and developed tools, described earlier in this report, including the hierarchy of plans, the Transition WBS, and a program monitoring and control system.

NWS continued to improve the NTD during fiscal year 1996 to support the NWS MAR Commissioning, Decommissioning, Certification and other NWS Managers to improve communications between these managers and their regional counterparts.

Modernization Transition Committee (MTC)

The Weather Service Modernization Act of 1992 requires the MTC to consult with the Secretary of Commerce on modernization criteria the agency will use for certification. The MTC consults with the Secretary of Commerce, as appropriate, on the NIP and may review any proposed certification to close, consolidate, automate or relocate a field office. The MTC was established in July 1993, when the Committee charter was filed with the Senate Committee on Commerce, Science, and Transportation and the House Committee on Science, Space and Technology. Committee members were selected in October 1993; the first meeting was held December 8-9, 1993. Four meetings were held in fiscal year 1994, three meetings in fiscal year 1995, and five meetings in fiscal year 1996. Four meetings are anticipated in fiscal year 1997.

The MTC was instrumental in assisting the NWS to move forward with its modernization in fiscal year 1996 by verifying no degradation of service in the process. On October 30, 1995 the MTC met to consult on the *Secretary's Report to Congress on Adequacy of NEXRAD Coverage and Degradation of Weather Service Modernization for 32 Areas of Concern.* The MTC was complimentary of the work that was done by the Secretary's Team. On December 14, 1995, the MTC consulted on four final consolidations for Residual WSOs; Phoenix, New Orleans, Oklahoma City, and Tulsa, and the Fiscal Year 1997 NIP. Additionally, the MTC reviewed 13 proposed consolidations, received briefings on staffing and workload, and a modernization update. The MTC streamlined the certification process by "eliminating proposed certification consultations of noncontroversial" certifications. The third MTC meeting in fiscal year 1996 was held on April 24-25, 1996 in Taunton, Massachusetts. Consultation was completed on 42 Consolidation Certifications, all 42 were accepted and submitted for the Secretary's signature. The MTC received briefings on the Aviation Service Standards, Automation Criteria Update, Modernization update and toured the Boston WFO and Northeast RFC where they saw demonstrations of the AWIPS Pathfinder system.

The fourth meeting in fiscal year 1996 was held in Washington, DC on June 11, 1996. The MTC consulted on and accepted 18 Consolidation certifications. They also consulted on Automation Criteria and approved automation certification criteria for airport service levels A, B, and C and requested additional information for service level D airports before they complete consultation. During the meeting the Committee was provided with briefings on ASOS program status, supplementary data program, climate data continuity, warning and forecast verification statistics. They were also provided with a packet of material explaining closure criteria to be consulted on at the next meeting. On September 18 and 19, 1996 the Committee met at the National Climate Data Center (NCDC) in Asheville, North Carolina. During the meeting they consulted on and accepted 10 more consolidation certifications bringing the total consolidations they have accepted to 76 of the required 146. The MTC also consulted on and accepted the remaining Automation criteria for service level D locations and accepted the Closure criteria proposed to begin the

Closure certifications. Presentations during the meeting included results of the ASOS Aviation Demonstration, status of the 27 Service Level D locations and additional criteria for automation certification, and a modernization status update briefing. The Committee also received tours of NCDC and briefings from NCDC on the archiving of data for the NEXRAD program and the surface program with emphasis on ASOS data.

The first MTC meeting in fiscal year 1997 was held on December 12, 1996 in Washington, DC. The MTC consulted on and approved the first 11 Automation Certifications and five combined consolidation/automation certifications and completed consultation on the fiscal year 1998 NIP. The MTC tentatively scheduled meetings for the rest of fiscal year 1997 for March 18, June 25, and September 24, 1997.

Transition Change Management (TCM)

The TCM process supports planning and implementation using approved procedures for evaluating policies, plans and schedules and proposed changes to procedures by NWS managers. During fiscal year 1996, NWS approved and distributed the following plans/packages:

- Service Transition Plans
  - Aviation Operations and Services
  - Marine Operations and Services
  - Public Operations and Services
  - Fire Weather Operations and Services

- ASOS Commissioning Plan Update

- Disposal Plan for Equipment Replaced by ASOS Implementation

The WBS plan for NCEP was published and individual service transition plans for each center are being drafted. These interdependent plans were integrated through a MAR planning workshop and a MAR operations tabletop exercise to confirm that the various planning activities were on a path to a coordinated end-to-end forecast process for future operations.

The OM is refining the use of the WBS process to ensure that the next phase, transition implementation, will be supported by comprehensive and coordinated policy and procedure documentation.

Future Operations and Services

The Hydrometeorological Service Operations plan has been updated and distributed for review. The Integrated Operations and Services Plan, which covers the interdependent implementation of the various service transition plans, including the still pending NCEP plans, has been completed and distributed.

System Development and Integration

In fiscal year 1996, the NWS NEXRAD program delivered 19 NEXRAD units and commissioned 33 sites, bringing the total of commissioned sites to 111. Hardware and software architecture design and prototype development efforts continued in the effort to evolve the current NEXRAD proprietary computer platforms to open systems hardware and software.

In fiscal year 1996, 28 NWS ASOS units were installed. Currently 772 interagency ASOS units are installed. Quality control and maintenance support mechanisms are in place for all commissioned ASOS units.

During fiscal year 1996, the AWIPS program completed development of the first incremental build of the system and deployed the system to nine field sites for an operational test and evaluation. The first incremental build was designed, coded, integrated, and tested during fiscal year 1996. This system was deployed to the following field sites:

- Kansas City Weather Forecast Office
- Missouri Basin River Forecast Center
- Salt Lake City Weather Forecast Office
- Colorado Basin River Forecast Center
- Topeka Weather Forecast Office
- Tulsa Weather Forecast Office
- Dodge City Weather Forecast Office
- Wichita Weather Forecast Office
- Goodland Weather Forecast Office

Three other systems were also deployed: the National Modernization Test and Integration System (NMT), the Network Control Facility (NCF) in Silver Spring, MD; and the NWSTC in Kansas City, MO.

An OT&E was conducted at each of the field sites. This OT&E was monitored and assessed by the NRC. The results of the OT&E showed that the system was sufficient to progress to nationwide deployment. A decision memorandum was forwarded to the Secretary of Commerce for approval of KDPIV, authorizing the program to commence nationwide deployment.

The Secretary deferred the decision on deploying AWIPS nationwide until January, 1997. He has deferred this decision in order to be able to respond to requirements imposed on the AWIPS program by Congress in the Fiscal Year 1997 Appropriations report. A key component of the Congressional requirements is a certification that costs through deployment will not exceed $263 million in fiscal years 1997-1999. Another concern raised by the Secretary was a need to better understand the impact on the program of the decision to integrate WFO Advanced at Build 3. The AWIPS program is working to address these concerns, to the satisfaction of the Secretary, as soon as possible to minimize the delay in implementing AWIPS.

The NCF began broadcast of the GOES-9 data stream in fiscal year 1996. It continued to support the Pathfinder sites and began 24-hour per day operation to support the AWIPS deployment. The satellite broadcast was migrated from Ku-band to C-band during fiscal year 1996.

In fiscal year 1996, NWS continued to employ the lightning data covering the CONUS acquired under contract to Atmospheric Research Systems, Inc. (ARSI) for forecasts and warning operations. The data are used in real time at the AWC directly in support of their operations. AWC also prepares the Automation of Field Operations and Services (AFOS) lightning graphics for field office use and incorporates the data into the McIDAS data stream for use within the National Centers. Also in fiscal year 1996 NWS evaluated the Maritime Long Range Lightning Detection Network, established jointly with ARSI. This network was designed to detect and report lightning over the Eastern Pacific maritime areas out more than 2000 km. However, this network was found to have limitations in NWS operational use due to changes in the ionosphere. Therefore improvements are being implemented.

In fiscal year 1996, the NWS continued to use the hourly wind profile data from the NOAA Profiler Network (NPN) both at field offices and in the preparation of numerical forecasts. The NPN has evolved to include test bed activities for the evaluation of mature atmospheric observing technology which complement the profiler. Two such technologies are the Radio Acoustic Sounding Systems (RASS) which provides hourly profiles of temperature and a GPS integrated water vapor sensing systems. Frequency coordination with the National Telecommunications and Information Administration and the United States Coast Guard to protect Space System for Search of vessels in Distress (COSPAS)/Search and Rescue Satellite Aided Tracking (SARSAT) operations has enabled the continued operation of the NPN. However there are commercial sectors who are developing communication systems in the NPN frequency band which will ultimately force the shut-down of the profiler operations if these systems are not converted to the new operational frequency. Planning for this transition and a possible redistribution of the profiler sites has been incorporated into the more general NOAA planning for the evolution of a NAOS.

Internal and External Coordination

The NWS continued its rigorous internal and external communications activities during fiscal year 1996. Specifically, the agency:

- Conducted briefings for Members of Congress, congressional committees, congressional staff, and state delegations wherever appropriate, on the status of the MAR

- Developed and refined modernization brochures, fact sheets, and maps to reflect modernization accomplishments and increase external and internal awareness and technical coordination activities

- Completed the NWS Modernization video to be distributed in fiscal year 1997

- Supported MAR awareness, at professional meetings and trade shows including the American Meteorological Society (AMS), Aircraft Owners and Pilots Association (AOPA), Fish Expo, and coordinated use of the modernization exhibits at these events

- Supported field office and radar dedications

- Conducted and supported MAR briefings to major aviation and other transportation industry groups and associations

- Published and distributed three issues of the *Critical Path,* an employees' technical report on the progress of the MAR

- Developed and brought on line the NWS Modernization Internet Home Page.

Facilities Preparation

The results of the NWS construction efforts are evident as 110 facilities were completed and occupied by the close of fiscal year 1996. Some important highlights include the following:

- Corpus Christi, Duluth, San Angelo, and Lake Charles modernized facilities were completed.

Training and Professional Development

COMET held one, 8-week COMET Mesoscale Analysis and Prediction (COMAP) class, which educated 18 SOOs in the latest understandings in mesoscale meteorology using the new NWS technologies, and one 3-week hydrometeorology class which educated 18 hydrologists (service hydrologists; HAS forecasters are hydrologic forecasters) on new forecasting techniques and tools available at modernized RFCs. COMET also educated 60 NWS managers in four 1-week Mesoscale Managers classes, and 15 NWS regional and national center meteorologists in a 3-week Mesoscale Meteorology class. Finally, COMET taught 60 SOOs and satellite focal points in the first four satellite meteorology courses, which provide instruction on interpretation and use of digital data from the new generation of GOES satellites.

During fiscal year 1996, COMET issued three CBL Modules on CD-ROMS entitled *Convective Storm Matrix: Buoyancy/Shear Dependencies, Satellite Meteorology I: Remote Sensing Using the New GOES Imager, and Hydrology for the Meteorologist.* The CBLs are utilized by thousands of meteorologists in the NWS, DOD, universities, and the private sector. COMET also funded 19 cooperative projects and 11 partner projects for applied research and training between NWS offices and universities.

The NEXRAD OSF in Norman trains NWS meteorologists and hydrologists to use and interpret the new radar and its products. The OSF taught 16 Operations Training classes in fiscal year 1996 for 366 NWS students. The OSF also taught two Unit Control Position (UCP) classes for 49 students. A majority of the NWS offices have now completed their Operations and UCP training requirements and the remaining untrained students will complete training by the end of fiscal year 1998. Finally, the OSF hosted four workshops for 98 SOOs and Lead Forecasters, including an Advanced WSR-88D Interpretation Workshop for HAS forecasters at RFCs, a Lake Effect Workshop, an Intermountain Workshop and a Coastal Mountains Workshop.

The NWSTC continued its new courses for the modernization, while continuing to phase-out old courses. The Modernization courses included MAR Management, SOO and DOH Instructional Techniques, Basic Operational Hydrology, WSR-88D Maintenance and the Hydrometeorological Technician course. Two new courses were initiated in fiscal year 1996. The first course, called "AWIPS Centralized User Training" (CUT), is a 1-week course on AWIPS system management taught by the AWIPS contractor to the SOO, Electronic Systems Analyst (ESA) and AWIPS focal points in the WFO, and the DOH, Hydrometeorological Technician (HMT) and AWIPS focal points at the RFC. The second course on "AWIPS WFO Hydrologic Forecast Systems" is a 1-week long course for SOOs and Service Hydrologists on the Hydrological Forecasting software used on AWIPS in the WFOs.

The OM continued to manage the national SOO program in fiscal year 1996. This included distributing software upgrades for research, familiarization and training the SOOs' Science Application Computers. A Visiting SOO Program was initiated to fund 26 SOOs to visit NOAA and academic research facilities towards encouraging collaboration and research between SOOs and the participating applied research facilities. OM provided funding for several regional SOO conferences during fiscal year 1996. OM also continued to support communication among SOOs and the regions by maintaining several electronic mailing lists and by participating in regional SOO conference calls.

Implementation and Phaseover

In fiscal year 1996, the NWS installed 28 additional ASOS sites for a total of 261, accepted 42 for a total of 256, and commissioned 121 for a total of 211. For the entire program, an additional 138 ASOS sites were installed for a total of 772; an additional 137 ASOS sites were accepted for a total of 740; and an additional 216 ASOS sites were commissioned (including the first 3 Alaska ASOS sites) for a total of 375.

As of the end of fiscal year 1996, the ASOS Operations and Monitoring Center was monitoring 373 ASOS locations. Of the total 740 accepted ASOS sites, 256 are NWS, 418 are FAA, and 66 are DOD sites. NWS currently supports telecommunications for 671 ASOS sites (247 NWS and 424 FAA). In addition, manual surface observing equipment at 75 sites was decommissioned.

Installation, acceptance, and commissioning of new ASOS units will continue in fiscal year 1997 with the goal of increasing the frequency and area of coverage of the basic NWS surface observations. NWS will operate and maintain the current network of ASOS units, complete the installation of interagency Base Program units (246 NWS, 537 FAA, and 86 DOD), and continue planned product improvements.

In addition to the Base Program systems, NWS has purchased 74 Other-Than-ASOS (OTA) units. These OTAs satisfy several operational requirements including: replacement of obsolete Automated Meteorological Observing Station/Remote Automated Meteorological Observing System (AMOS/RAMOS) equipment at remote locations; continuation of climate data recording at locations where NWS is no longer taking observations; and elimination of network gaps at those locations where previously it was assumed that the FAA was going to purchase ASOS systems.

In support of the United States conversion to the international METAR format for hourly surface weather reports which occurred on July 1, 1996, all ASOS sites were upgraded and standardized to software version 2.40, which is the new baseline software version for ASOS.

In fiscal year 1996, the NWS installed all of the remaining NEXRAD systems under the original procurement contract of 117. A total of 33 additional systems were commissioned and only seven systems remain to be commissioned. During fiscal year 1996, the NWS built its latest software upgrade, Build 9.0. The NWS decommissioned an additional 74 conventional radars in fiscal year 1996 bringing the total of decommissioned conventional radars up to a total of 98.

Telecommunications were provided for 32 additional NEXRAD sites during fiscal year 1996, including one in San Juan, PR, three more sites in Alaska and two more sites in Hawaii. A total of 152 sites are currently supported. A total of seven additional T1 circuits were installed for NEXRAD communications between RDAs and RPGs for fiscal year 1996. A total of 46 T1 circuits are now supported. The phase II (installation) portion of the Sprint contract is continuing for NEXRAD narrowband communications throughout the contiguous states.

Funding was approved and the site selection process was initiated for the additional NEXRAD radar installations recommended in the Secretary's report for Northern Indiana, Northern Alabama, and Western Arkansas. These systems were directed by the Secretary of Commerce as a result of the NRC's study of the adequacy of radar coverage.

The NIDS program that provides NEXRAD data to external NWS users is continuing to expand. NIDS service is available from all commissioned and most accepted NWS and U.S. Air Force NEXRADs in the United States. The NIDS special-subscriber program that was implemented last year has expanded by an additional six subscribers bringing the total number of subscribers to 48. This total includes 46 state government agencies, the District of Columbia, and the Canadian Atmospheric Environment Service. The number of regular NIDS subscribers also expanded by over 1100 users in fiscal year 1996 bringing the total to over 2800 users.

A major AWIPS milestone was reached in January 1996 with the expansion of the NOAAPORT broadcast to include satellite imagery from the GOES 9 and high resolution Meso ETA grids from the NCEP. This expanded broadcast is now provided to five installed NOAAPORT receiver system sites. This centralized data feed, developed and implemented through the ISPAN project via the NOAAPORT broadcast services, 9 AWIPS OT&E and 3 Pathfinder NWSFO's and RFC's, the NWSTC, the National Modernization Test and Integration System, and the NWSFO in Denver, CO.

Several other major AWIPS milestones were reached in fiscal year 1996. The Pathfinder NCF transitioned to the AWIPS NCF and began supporting the sites listed above. The AWIPS SBN transitioned from Ku-band to C-band to improve performance. The AWIPS NCF began 24 hour per day, seven day per week operations. The AWIPS NCF provided support for the AWIPS OT&E. The AWIPS NCF performed six software upgrades during Pathfinder and three software upgrades at AWIPS sites.

NOAA awarded the lightning data contract to Global Atmospherics Inc. (GAI) of Tucson, Arizona, on September 30, 1996. It is a one-year contract that includes four one-year renewal options. The participating agencies include NOAA, NASA, DOD, FAA, and the Interior Department. GAI will provide lightning data to NWS and approximately 500 other government user sites through satellite and telephone links. Lightning data in combination with information from NEXRAD, the GOES satellites, and other sources of weather data generate animated graphic images of lightning activity throughout the US and its coastal areas.

The first NOAA Weather Radio (NWR) Console Replacement System (CRS) prototype implementation was completed, readied, and put in for system testing.

The GOES-ASOS Cloud Product, which provides cloud information above 12,000 feet, was delivered to approximately 270 NWS field offices. The product is integrated with ASOS cloud products to produce the State-wide Weather Round-up Product.

An NWS and NESDIS total GOES End-to-End Satellite Cloud Product (SCP) Quality Assurance Product was implemented. This enabled both NWS and NESDIS to trouble shoot "bottle-necks" and improve the product delivery to the forecast offices from 60 percent to 90 percent by the end of 1996.

Experimental GOES-8 High Density Wind Sets were tested by the NCEP for evaluation in numerical prediction models during the 1995 and 1996 Atlantic Hurricane Season.

RFC Hydrology

All RFC's are now operating with scientific workstation computer capability. Acquisition of workstations for each RFC was accomplished through a number of channels. Two RFC's (Kansas City and Salt Lake City) are early deliveries on the AWIPS schedule. Others have Government Development Platforms (Tulsa and Minneapolis) or Pathfinder (Boston) equipment,

while the remaining have acquired a few workstation-class computers through a variety of temporary cooperative agreements. In all cases, except for the RFCs covered in the AWIPS delivery schedule, the numbers of workstations are well below the level planned for AWIPS and are insufficient to conduct the full spectrum of operations specified for the modernized NWS.

The HRL develops and supports the hydrologic/hydrometeorologic models that are utilized in the workstation environment at RFCs. Key components include:

- Data handling and quality control procedures
- NEXRAD precipitation processing algorithms
- An on-site interactive version of the NWSRFS
- High-resolution flash flood guidance based on NWSRFS soil moisture variable stated and a geographical information system
- Improved rainfall-runoff and snowmelt models
- Advanced river mechanics procedures for simulation of flow in complex channel configurations.

The implementation of scientific workstations at RFCs and the associated NWSRFS IFPS is essentially allowing all RFCs to serve as risk reduction sites. Activities at the Ohio RFC continue in the area of Quantitative Precipitation Forecast (QPF) and a planned test of a probabilistic QPF system will begin in 1997. The Arkansas-Red River Basin RFC continues to conduct a well-integrated hydrometeorological operation and is demonstrating several new applications of the INTERNET. As all RFCs utilize the IFPS, they coordinate with the HRL on suggested areas of improvement for the overall operational forecast system. This benefits all RFCs and further refines the system that will reside on AWIPS.

WFO Hydrology

The OH in coordination with the NWS regions, future WFOs, and AWIPS software developers, is implementing the WFO Hydrologic Forecast System (WHFS). The WHFS integrates into the workstation environment several hydrologic/hydrometeorologic operations that were formerly accomplished through manual analysis, AFOS applications, and stand-alone personal computer software packages. The WHFS includes:

- Hydrologic Database - detailed river/rain gage station information plus flood impact/history information, with interactive display capabilities
- River Product Formatter - automated ingest of RFC forecasts and formatting of WFO river forecasts and warnings

- Site-specific Hydrologic Prediction System - generation of forecasts for small, flashy stream basins

- Area-wide Hydrologic Prediction System - interactive analysis of flash flood potential

- Simplified Dam Break and Dam Catalog - detailed dam/reservoir information and specialized hydrologic modeling capabilities needed in dam failure emergencies.

The HRL supported and provided training for each of these components as they were implemented at field offices.

In fiscal year 1996, the HRL accomplished several milestones in support of future WFO and RFC operations, including:

- Development and deployment of precipitation processing algorithms for NEXRAD Build 9

- Development and deployment of an early version of the WHFS at 17 field sites

- Release and support for an interactive workstation version of NWSRFS at the 13 RFCs.

- Elimination of the RFC requirement for support from the NAS 9000 at the centralized computer facility

- Release of an improved version of the dynamic routing model (FLDWAV).

Human Resources

During fiscal year 1996, an additional 20 sites were staffed for Stage 1 operations for a total of 118. Four offices at Goodland, Kansas City, Wichita, and Dodge City, were staffed for Stage 2 operations for a total of 6 offices. During the fiscal year, a substantial number of meteorologist interns were reassigned from spin-down offices into positions at spin-up sites. The remaining HMT positions were also staffed during fiscal year 1996, primarily from within the ranks of interested existing NWS career meteorological technician work force.

6.2 Outlook for Fiscal Year 1997

NWS expects to complete the following actions in fiscal year 1997:

- Commission an additional 53 NWS ASOS systems for a total of 264
- Commission an additional 6 NWS NEXRAD systems for a total of 117

- Upgrade 3 Pathfinder sites, install 3 additional AWIPS development phase systems, and install 9 AWIPS deployment phase systems for a total of 27
- Continue systems training and scientific education
- Continue Stage 1 staffing actions for Northern Indiana
- Complete Stage 2 staffing actions at an additional 4 offices for a total of 10
- Decommission an additional 28 conventional radars for a total of 126
- Complete an additional 9 WSMO/WSCMO office closures for a total of 33
- Complete 96 additional Consolidation Certifications, 90 Automation Certifications, and 109 Closure Certifications.

Funding Requirements for Fiscal Year 1997

NWS and/or SAO need sufficient fiscal year 1997 funding to:

- Participate in the tri-agency production contract for NEXRADs. NWS will continue to modify and construct NEXRAD user sites to ensure sites are ready on the dates contracted. NWS will continue to establish the repair capabilities of initial central-depots

- Complete construction at Jackson, KY, Tucson, AZ, and Albany, NY

- Fund the full-scale production contract for ASOS and cover the NWS share of the central depot maintenance-support operations and logistics

- Fund facilities and interim operations at SPC and AWC

- Continue funding the Class VII Supercomputer

- Initiate the AWIPS deployment phase contract. Continue development of AWIPS system and hydrometeorological applications software, operate the NCF, install AWIPS at 15 sites, and complete OT&E for these sites.

The NWS Transition program will need funds in fiscal year 1997 to:

- Supplement staffs at MARD offices and NWSOs receiving AWIPS

- Move more personnel than normally budgeted for by the NWS. These increased costs are directly related to the magnitude of the modernization program

- Continue risk-reduction efforts to derive critical information needed to define, analyze and assess technical trade-offs and impacts on operations and services, and continue risk-reduction activities related to RFC prototyping

- Develop and offer NWS meteorologists and hydrologists courses on interpreting new data sources, such as Doppler radar and mesoscale forecasting techniques

- Develop and deploy the NWR CRS

- Support MARD preparation activities, develop operational procedures and evaluation guidelines, and develop materials to support technical coordination with users.

Transition Program Management

NWS will use the NTD as a means of updating the SIPS in all regions to reflect a better understanding of Stage 2 activities.

Transition Change Management

The transition change management will continue to support Stage 2 planning and implementation of the modernization. Documents prepared during Stage 1 will be updated to reflect Stage 2 requirements.

Future Operations and Services

The process of drafting and coordinating enabling policy directives and operational procedures for implementing WFO operations has begun. Initial coordination of documents (Weather Service Operations Manual Chapters, Operations Manual Letters, etc.) will begin by January 1997. Approval of directives is targeted for April and May 1997. Similar timing for hydrologic operations is expected. NCEP service transition plans should be coordinated and completed prior to final approval of field office directives.

Deployment of initial operational AWIPS capabilities and future WFO staffing at spin-up field offices will be major events in fiscal year 1997. NWSOs will undergo significant changes as a result. Once these changes are operationally implemented, these offices will resume the process of accepting the transfer of all warning and forecast responsibilities for their county warning and forecast area.

In fiscal year 1997, a risk reduction and evaluation of interactive forecast preparation capabilities will be undertaken at four AWIPS sites. Information gathered from these activities will directly impact plans for nationwide deployment of these capabilities on AWIPS. This testing will continue into fiscal year 1998.

Concurrently, coastal and great lakes offices will implement a reconfiguration of their marine warning and forecast areas to the WFO areas. The first phase of the severe weather watch decentralization process will be implemented. Demonstrations of the technology-based improvements to field office hydrologic programs will also begin.

The modernized end-to-end forecast process definition effort will be completed. Stage 2 services and operational support roles for national centers and field offices will be detailed. The interrelated product and service requirements will be defined and the strategy for meeting those requirements will be developed.

The modernized services evaluation process, including field office training, will have to receive final approval and begin implementation in conjunction with the initial deployment of AWIPS. The transition process and NWS services and products will be closely monitored and evaluated to ensure an ongoing level of satisfactory mission performance.

System Development and Integration

Hardware and software architecture design and prototype development efforts to evolve the current NEXRAD computer platforms to Open Systems hardware and software will continue in fiscal year 1997. By the end of fiscal year 1997, the Open Systems Radar Product Generation development will have reached approximately the half way point, with the prototype system being used for initial validation testing and hardware specification activities. The OSF will have become fully engaged in the implementation planning and early work. The Open Systems Radar Data Acquisition development will progress in its early design and development stage.

Current plans are to complete installation of all 868 interagency base program ASOS units at NWS, FAA, Navy, and Air Force sites in the United States, Puerto Rico, the Virgin Islands, Guam, and several international locations. These installations include both existing observing locations and expansion locations (primarily FAA) where either limited or no observations were available. Installation of 49 additional interagency ASOS units also is planned for fiscal year 1997: 45 NWS, 2 FAA, and 2 Navy.

The AWIPS program will move into the Deployment Phase in fiscal year 1997, while continuing incremental development of the system. The three operational Pathfinder sites will be upgraded to AWIPS, a National Headquarters Development System, an NCEP system, and the Norman Oklahoma NWSFO system will be deployed to complete the development phase deployments. The Secretary of Commerce is expected to approve a limited deployment of AWIPS, allowing nine systems to be deployed across the country in fiscal year 1997.

AWIPS development will continue, with the second incremental build being completed in fiscal year 1997. Development of the third incremental build will begin, with activities geared to the integration of WFO-Advanced capabilities into AWIPS.

The improved Maritime Long Range Lightning Detection Network will be evaluated during fiscal year 1997. It will provide lightning information over the Western Atlantic, Gulf of Mexico, and Eastern Pacific. In addition to continuing current applications, the contract with GAI will provide for the use of the real-time data at AWIPS equipped offices consistent with the development of the necessary ingest and display capabilities.

The NWS, ERL, and Air Force will begin a joint effort to develop, acquire, and integrate components to convert the NPN profiler design to the new operational frequency of 449 MHZ. During fiscal year 1997, a total of three redesigned NOAA Profilers will be installed in Alaska, in response to the congressional Mt. Redoubt directive.

Internal and External Coordination

As the NWS MAR enters the final stages, Congress needs to be kept informed of the latest changes and developments in the MAR. Certifications will abound during the year, and members will be briefed on the status of the MAR in their districts.

Other ways NWS will promote coordination and communication include:

- Conduct briefings for Members of congress, their staff, and appropriate committees
- Publish the *Critical Path* to facilitate internal coordination of MAR activities through electronic medium
- Provide support to the Warning Coordination Meteorologists (WCM) in communicating MAR information and status to local office user communities
- Support MAR awareness at professional meetings and trade shows
- Develop outreach material and information for field offices to use in their efforts to communicate the MAR status to local officials, industry and user groups
- Conduct MAR briefings to salient industry and user groups to ensure widespread knowledge of the status and benefits of the NWS MAR
- Revise the Internal and External Communication and Coordination Plan for the Modernization and Associated Restructuring of the NWS to focus on Stage 2 and beyond
- Support field office dedications for the final few NWS offices.

Facilities Preparation

NWS plans are to complete construction and occupy three sites at Jackson, KY, Tucson, AZ, and Albany, NY in fiscal year 1997 for a total of 113. Six sites will be under design or construction.

Training and Professional Development

At COMET a series of courses will be offered which include one COMAP class that will educate 18 SOOs, one HYDROMET class which will educate 18 hydrologists, and one GOES-9

workshop which will educate 18 SOOs and satellite focal points. COMET will also produce 4 new CBL modules on *Anticipating Convective Storm Structure and Evolution, Fire Weather, GOES Imager: Case Studies, and Hydrology for the Meteorologist: Headwater Forecast Process.* In addition, COMET will reissue CBL modules in CD-ROM format: *The Forecast Process* and *Marine Meteorology I, II and III.* COMET will also fund 16 cooperative and 15 partners projects between universities and NWS offices.

The NWSTC courseload will peak in fiscal year 1997 with courses on NEXRAD Maintenance, ASOS System Management, ASOS Maintenance, AWIPS System Management, Basic Operational Hydrology, MAR Management and Forecaster Development, as well as courses for WCMs, ESAs, SOOs, HMTs, DOHs and CPMs. The NWSTC will also administer an increasing amount of AWIPS training, correspondence and remote training material on management, UNIX programming and many other topics.

NEXRAD Operations Training at the OSF Operations Training Branch (OTB) will continue with 216 students being trained. The OTB will conduct four UCP classes for 48 radar focal points and SOOs. The OTB will also host eight advanced training workshops on topics including *Warning Decision Making, Winter Weather/Lake Effect Snows, Tropical Weather, Microbursts/Pulse Storms, and HAS/Flash Flooding.* These workshops will educate 192 SOOs and lead forecasters in the WFOs.

Efforts within the National SOO Program will continue in fiscal year 1997. The NWS continues to facilitate access to an increasing amount of experimental, near-real-time modernized data and associated software packages to analyze and display these data. Thus, the NWS OM plans to provide funds for SOOs to upgrade the operating system on the Hewlett-Packard 715 workstations, called Science Applications Computers, that are used for training and familiarization with UNIX and modernized data sets. In addition, OM is working with Unidata on a Case Study initiative, designed to produce a series of comprehensive hydrometeorological case studies that can be accessed universally by personnel in the operational, academic and research communities.

Finally, the three training centers will coordinate to develop plans to administer tele-training classes which will accomplish training for topics that, in the past, have been accomplished via residence classes. A pilot project between the OSF and the NWS Western Region to train HMTs on NEXRAD Maintenance will continue and has proven to be successful.

Implementation and Phaseover

NWS expects to complete the following actions in fiscal year 1997:

- Expand the AWIPS/NOAAPORT satellite broadcast data stream to include composite imagery from the GOES 8 and GOES 9 satellites and the initiation of various new data sets on the fourth NOAAPORT broadcast channel

- Complete the review of sites for the additional NEXRAD radar installations in Northern Indiana, Northern Alabama, and Western Arkansas; deploy new radars in mid-1997
- Deploy next NEXRAD software build, version 9.0, to the field in early fiscal year 1997
- Decommission the last network WSR-57 conventional radar in early fiscal year 1997
- Complete and field the next full operational ASOS software load, version 2.50 Commission the remaining original NEXRAD radar sites
- Complete the installation of the 45 OTA AMOS/RAMOS replacement systems
- Complete delivery of six NWR CRS Phase I prototype units in February 1997
- Convert the current GOES-ASOS SCP from a Sounder based product to an Imager based product. This will enable the Sounder to do more atmospheric profiles of temperature and moisture for NCEP model operations
- Include GOES-SCPs for Hawaii and Puerto Rico
- Develop SCP product improvements and enhancements to improve the science of the product
- Implement GOES-8 High Density Winds into NCEP routine operations
- Conduct an NWS annual GOES Assessment meeting and prepare an NWS GOES Assessment Report. The report will document current accomplishments and outline product improvement and enhancement objectives for the following year
- Conduct a Support Function Demonstration audit for NEXRAD in early fiscal year 1997 to assess the adequacy of the support functions in place
- Complete the updated Systems Implementation and Phase Over Plan (WBS 0900). The plan will map out all activities and milestones that OSO must accomplish to aid the NWS in achieving full Stage 2 operations.

WFO and RFC Hydrology

In fiscal year 1997, the OH HRL plans to accomplish the following milestones:

- Continued precipitation processing algorithm development for inclusion in NEXRAD Build 10
- Integration of the WHFS with WFO Advanced

- Addition of site-specific and are-wide hydrologic procedures to WHFS

- Continued support for the interactive workstation version of NWSRFS, including technical support for individual components; source code fixes, updates and enhancements; and on-site training

- Determine optimal path for integration of NWSRFS into the current AWIPS structure

Human Resources

During fiscal year 1997, Stage 2 staffing efforts will be completed at an additional four sites, for a total of ten sites, filling out the remaining staff required to begin Stage 2 operations at those WFOs. Activities will be conducted to implement the approved Federal meteorologist positions new qualification standards by the end of the fiscal year, including the cross-over of any remaining qualified meteorological technicians prior to implementing the standard. HMT positions will also be staffed during fiscal year 1997, primarily from within the ranks of interested existing NWS career meteorological technician work force.

6.3 Outlook for Fiscal Year 1998

The transition program's major objectives are to:

- Commission an additional 3 NEXRADs for a total of 120
- Commission an additional 42 ASOS systems for a total of 306
- Install and accept 65 AWIPS systems for a total of 92
- Complete Stage 1 Staffing at Northern Indiana for a total of 119
- Complete Stage 2 staffing at an additional 32 sites for a total of 42
- Decommission 3 conventional radars for a total of 129
- Complete 28 additional Consolidation Certifications, 43 Automation Certifications, and 44 Closure Certifications
- Continue systems training and scientific education
- Continue the OT&E activities at MARD area offices and begin the stable operations period in preparation for the MARD
- Install the NCEP Class VIII Supercomputer system

Funding Requirements for Fiscal Year 1998

NWS and/or SAO need fiscal year 1998 funding to pay for:

- Operations and maintenance support of NEXRAD and ASOS installations

- Deployment phase of AWIPS contract, and final Build 3 software development builds
- Continued funding for the Class VII Supercomputer
- Completion of facilities and move-in for the AWC
- Contracting for meteorological/computer experts to ensure efficient and effective use of the advanced supercomputer and supporting systems
- Completion of construction at Denver/Boulder, CO, and Northern Indiana, IN. Continue construction at the last four sites.

The NWS Transition program will require funds in fiscal year 1998 to continue to:

- Supplement staffs at NWSOs and new WFOs receiving AWIPS with additional personnel
- Move more personnel than normally budgeted for by the NWS. These increased costs are directly related to the magnitude of the modernization program
- Reduce risks by deriving critical information needed to define, analyze and assess technical trade-offs and impacts on operations and services, and continue RFC prototyping and precipitation processing risk-reduction activities
- Develop and offer scientific education on interpreting new data sources, such as Doppler radar and mesoscale forecasting techniques required for meteorologists and hydrologists at NWS field offices
- Complete the deployment of the NWR CRS.

6.4 Outlook for Fiscal Year 1999

In fiscal year 1999, the transition program's major objectives are to:

- Continue systems training and scientific education
- Commission an additional 14 ASOS systems for a total of 320
- Complete the three remaining office systems WSMO/WSCMO closures for a total of 36
- Build and occupy the last three WFOs for a total of 119
- Complete AWIPS deployment with the installation and acceptance of an additional 60 AWIPS for a total of 152
- Complete 4 Automation Certifications, 5 Consolidation Certifications and 5 Closure Certifications
- Complete Stage 2 staffing at 23 sites for a total of 65

Funding Requirements for Fiscal Year 1999

NWS and/or SAO need fiscal year 1999 funding to pay for:

- Operations and maintenance support of NEXRAD and ASOS installations
- Initial funding for the Class VIII Supercomputer
- Completion of the development and deployment phases of AWIPS
- Continued ASOS and NEXRAD product improvement initiatives
- Completion of all modernized facilities

The NWS Transition program will require funds in fiscal year 1999 to continue to:

- Support an increase in the number of office and personnel moves at several locations. These increased costs are directly related to the magnitude of the modernization and associated restructuring program
- Reduce risks by deriving critical information needed to define, analyze and assess technical trade-offs and impacts on operations and services, and continue RFC prototyping and precipitation processing risk-reduction activities
- Complete construction at Guam, Tallahassee, FL, Fairbanks, AK, and Northern Indiana, IN
- Develop and offer scientific education on interpreting new data sources, such as Doppler radar and mesoscale forecasting techniques, which must be provided for meteorologists and hydrologists at NWS field offices

6.5 Notification of Actions to Change Operations at and to Certify Field Offices

In accordance with Sections 703 and 705 of Public Law 102-567, Table 6 provides notification of actions, anticipated to occur during fiscal years 1997 through 1999, that change operations at or certify field offices. To provide a more complete picture of the transition, the table also:

- Identifies actions completed prior to the publication of this fiscal year's NIP
- Identifies actions to change operations affecting NWS offices not included under the law's definition of field offices and therefore not subject to certification requirements
- Provides clarifying information through footnotes

Additionally, the modernization of the Nation's weather services includes the use of FAA-sponsored ASOSs and DOD- and FAA-owned NEXRADs. See Appendix B for a listing of these installations.

Table 5
MODERNIZATION BUDGETS (Fiscal Year 1997-1999)

MODERNIZATION INITIATIVES ($M)	FY97 Appropriation	FY98 President's Budget	FY99 Planning Level
NEXRAD	**53.1**	***51.0**	**51.1**
ASOS	**10.1**	***9.8**	**9.9**
AWIPS/NOAAPORT	**100.0**	***116.9**	**82.0**
SATELLITE UPGRADE (GOES I-M)	**103.7**	**89.9**	**102.1**
CENTRAL COMPUTER FACILITY UPGRADE	**14.0**	***13.9**	**13.4**
NWS TRANSITION (MARDI)	**91.5**	**73.7**	**67.5**
WFO FACILITIES AND MAINTENANCE	**10.0**	**15.8**	**11.2**
RESEARCH ($M)			
ERL	**16.3**	**------**	**------**
NWS (AWIPS)	**18.9**	**11.8**	**3.9**
NESDIS	**8.0**	**------**	**------**

Note: These columns reflect the President's budget submission..

*The FY 98 budget amounts represent a combination of the Operations, Research & Facilities Account and the Capital Assets Acquisition Account.

Figure 5

FACILITIES PREPARATION SCHEDULE

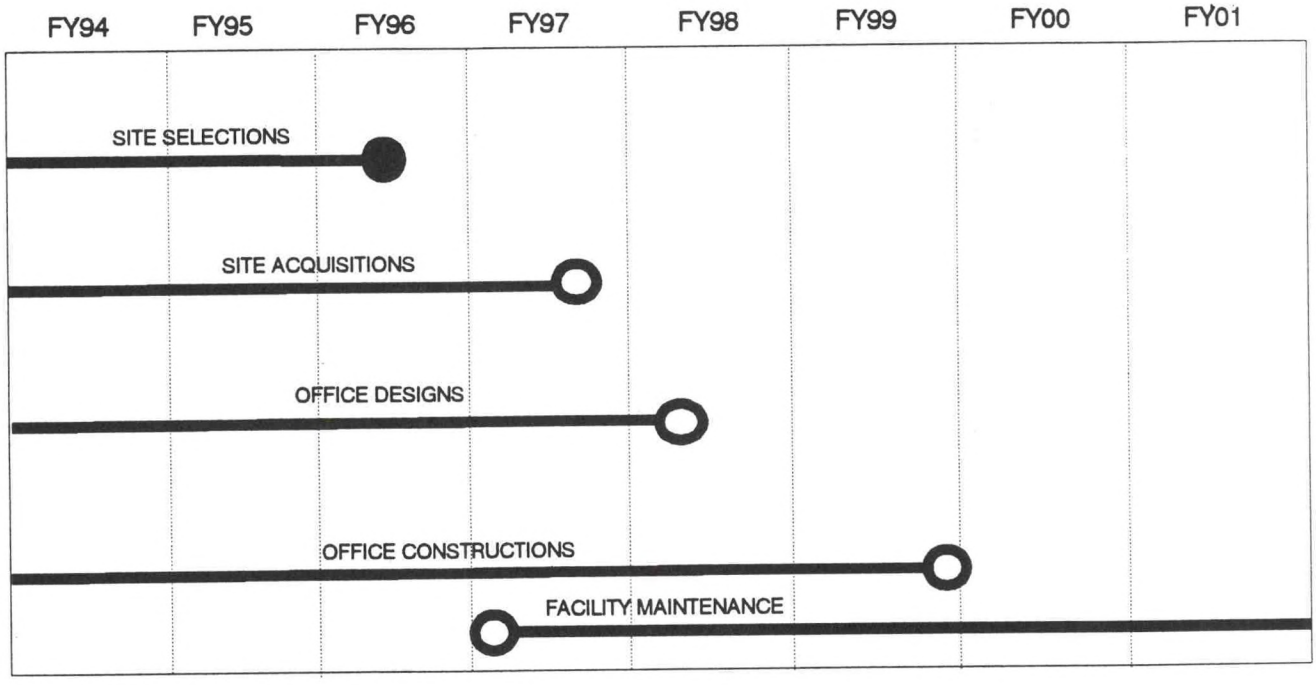


Figure 6

NEXRAD SCHEDULE

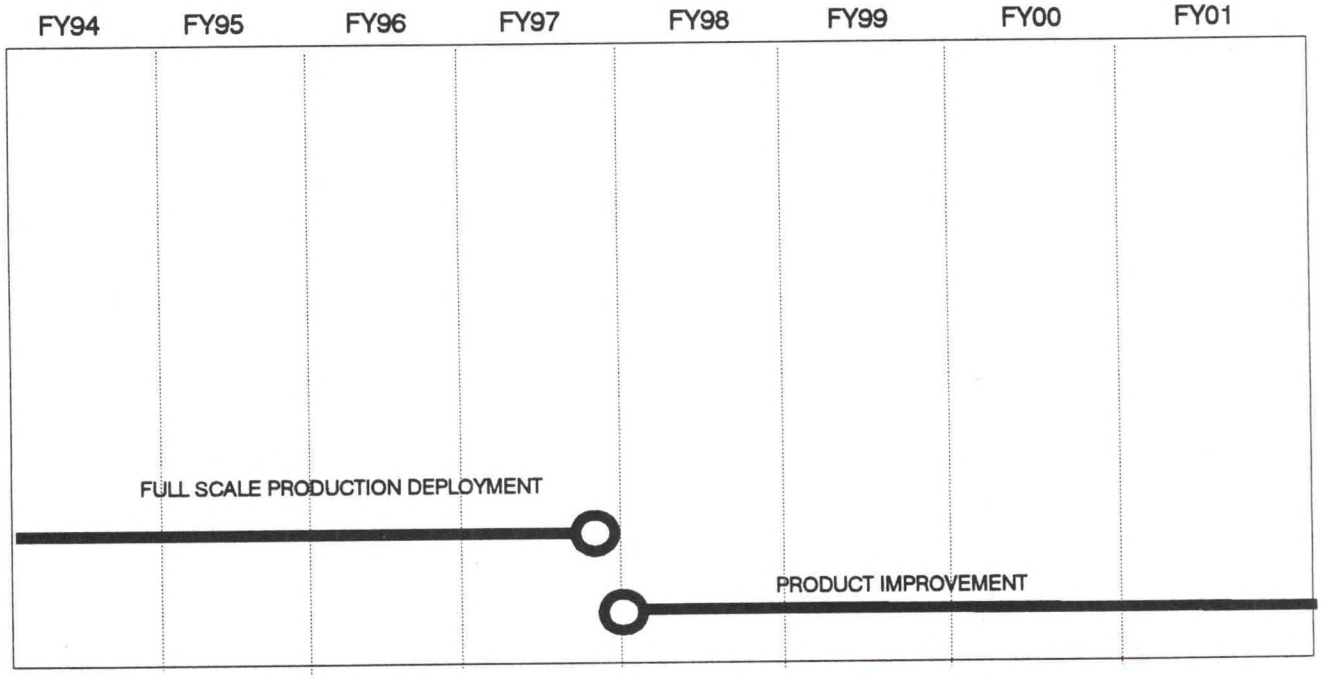


Figure 7
ASOS SCHEDULE

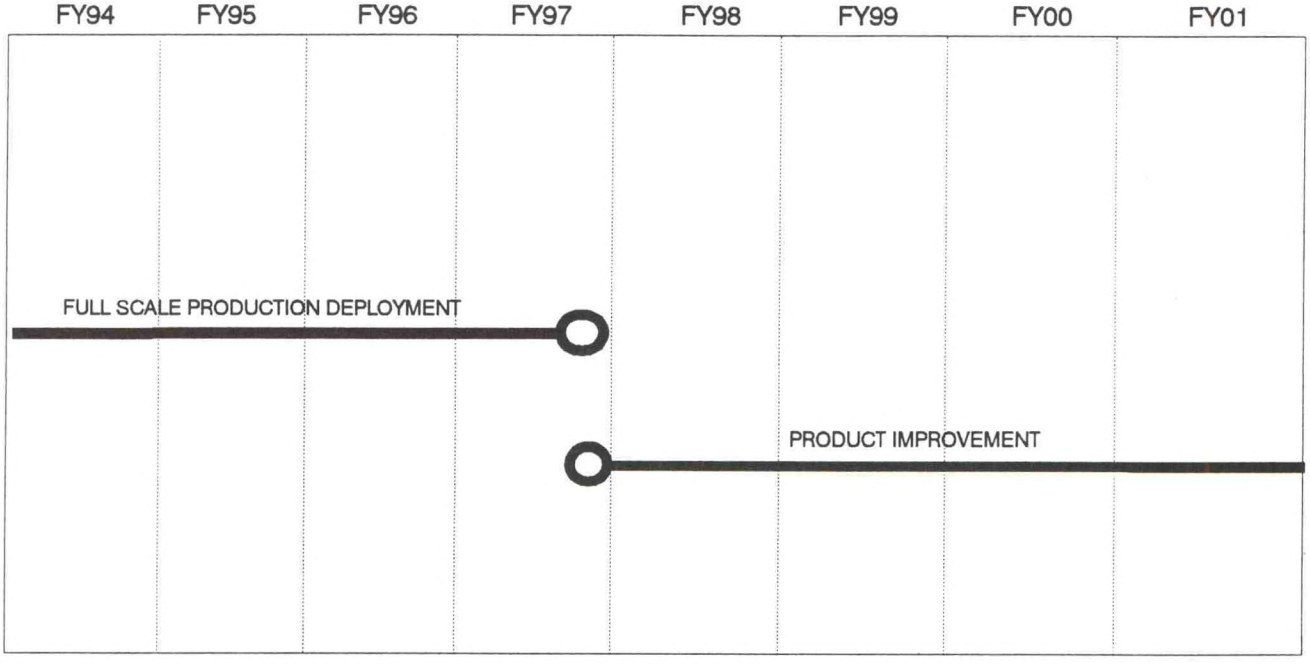


Figure 8
AWIPS/NOAAPORT SCHEDULE

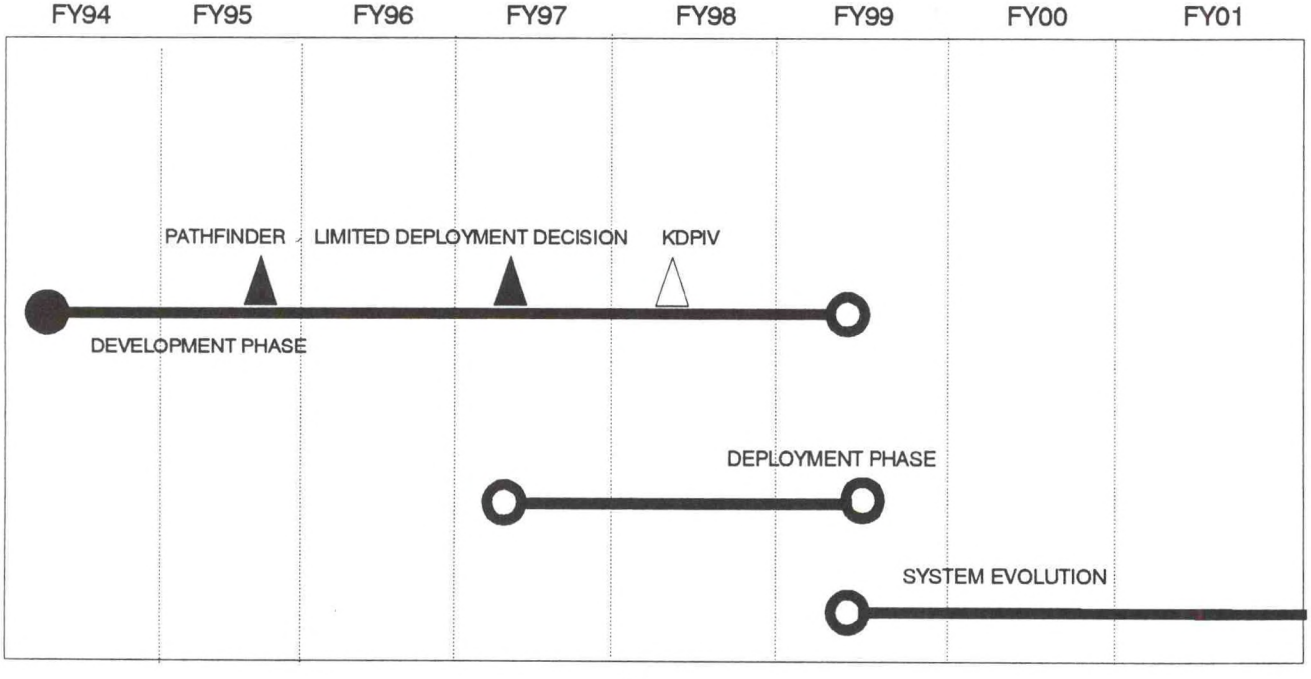


Figure 9
SATELLITE UPGRADE SCHEDULE

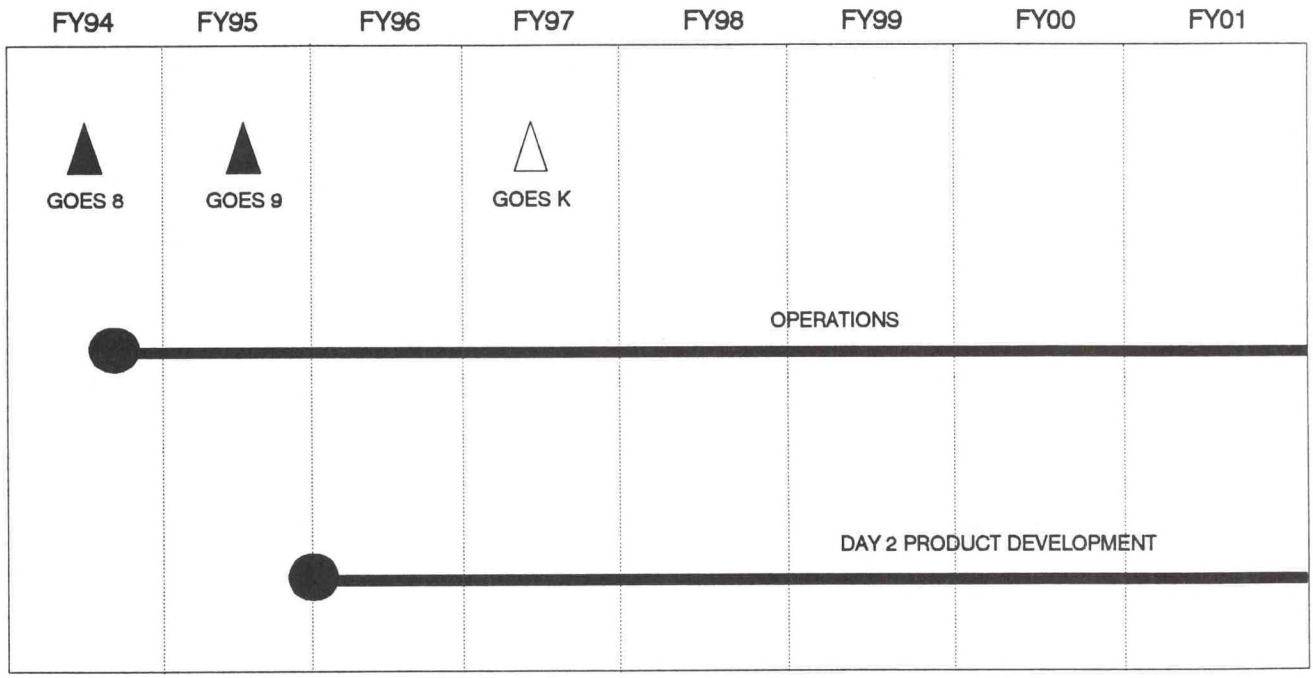


Figure 10
NATIONAL CENTER COMPUTER UPGRADE SCHEDULE

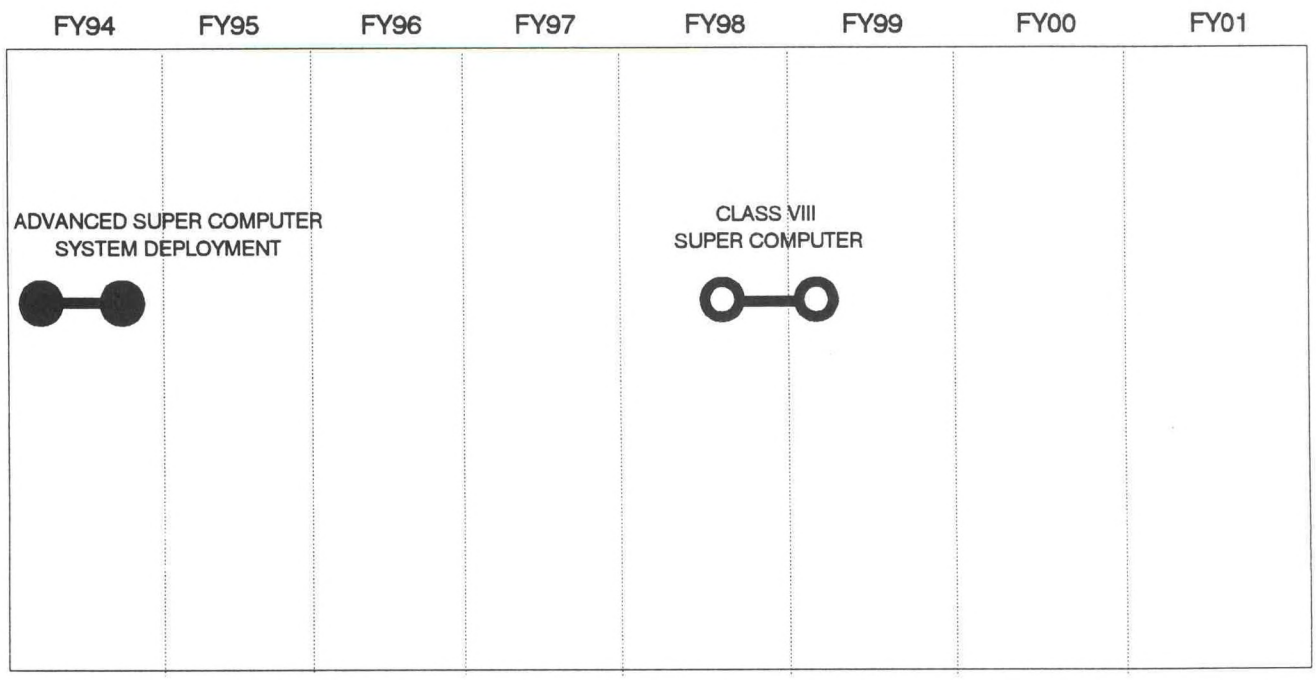


Figure 11
SCIENTIFIC EDUCATION AND PROFESSIONAL DEVELOPMENT SCHEDULE

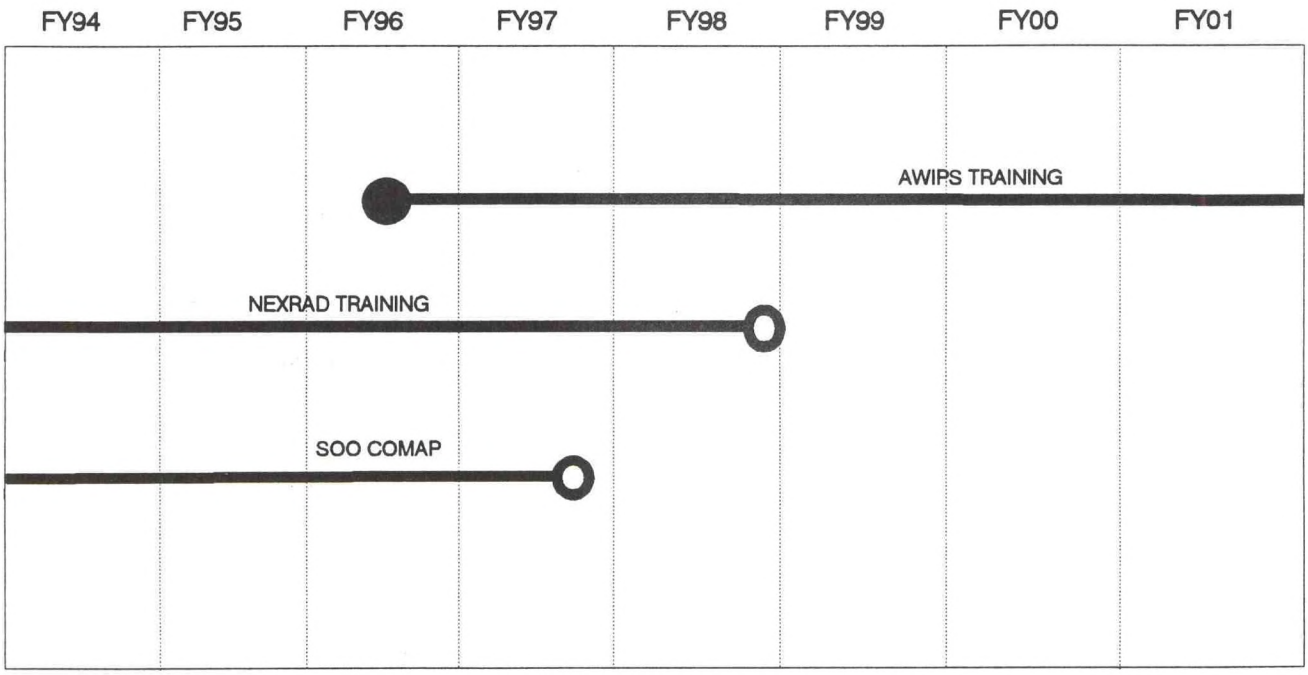


Figure 12
NWS RESEARCH PROGRAM SCHEDULE

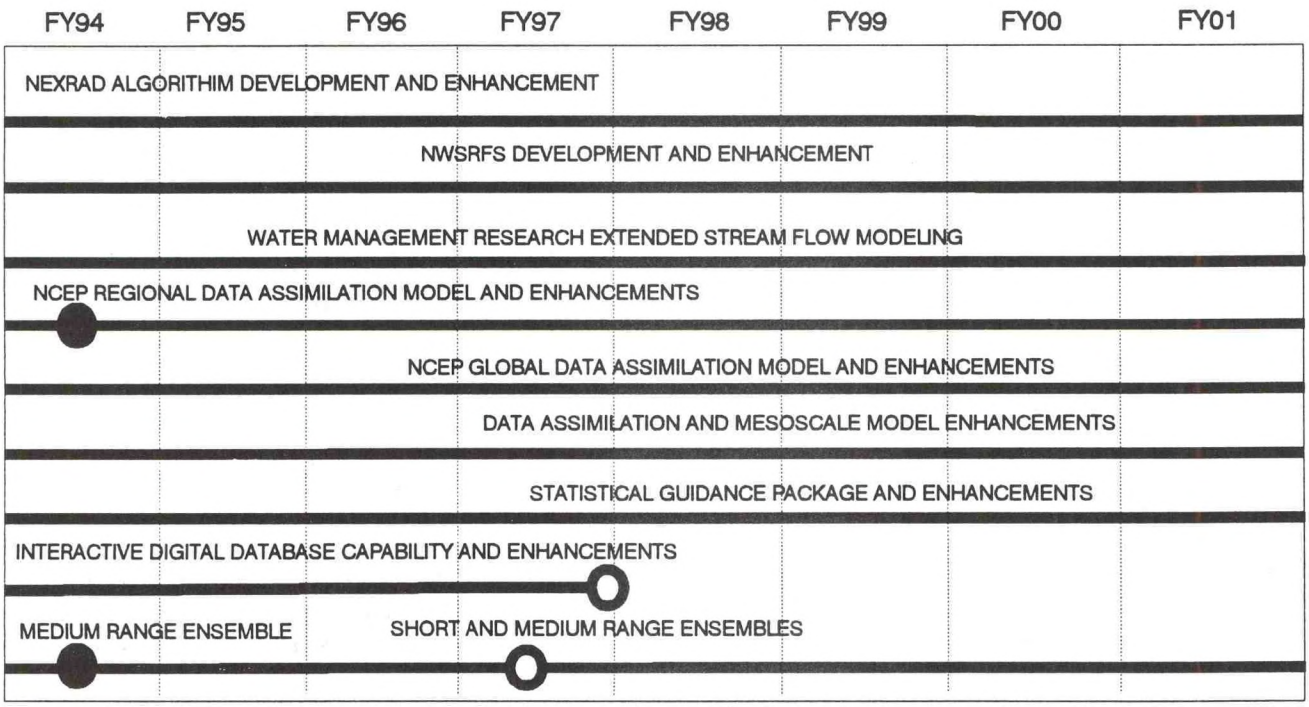


Figure 13
ERL RESEARCH PROGRAM SCHEDULE

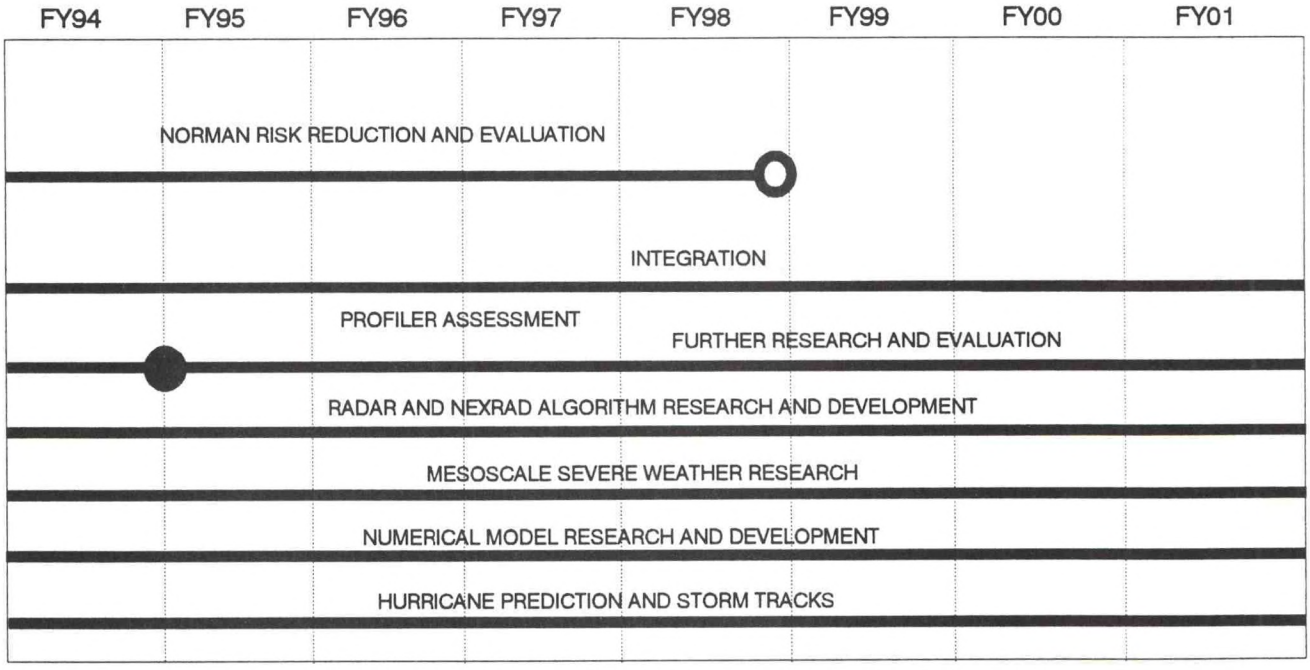


Figure 14
NESDIS RESEARCH PROGRAM SCHEDULE

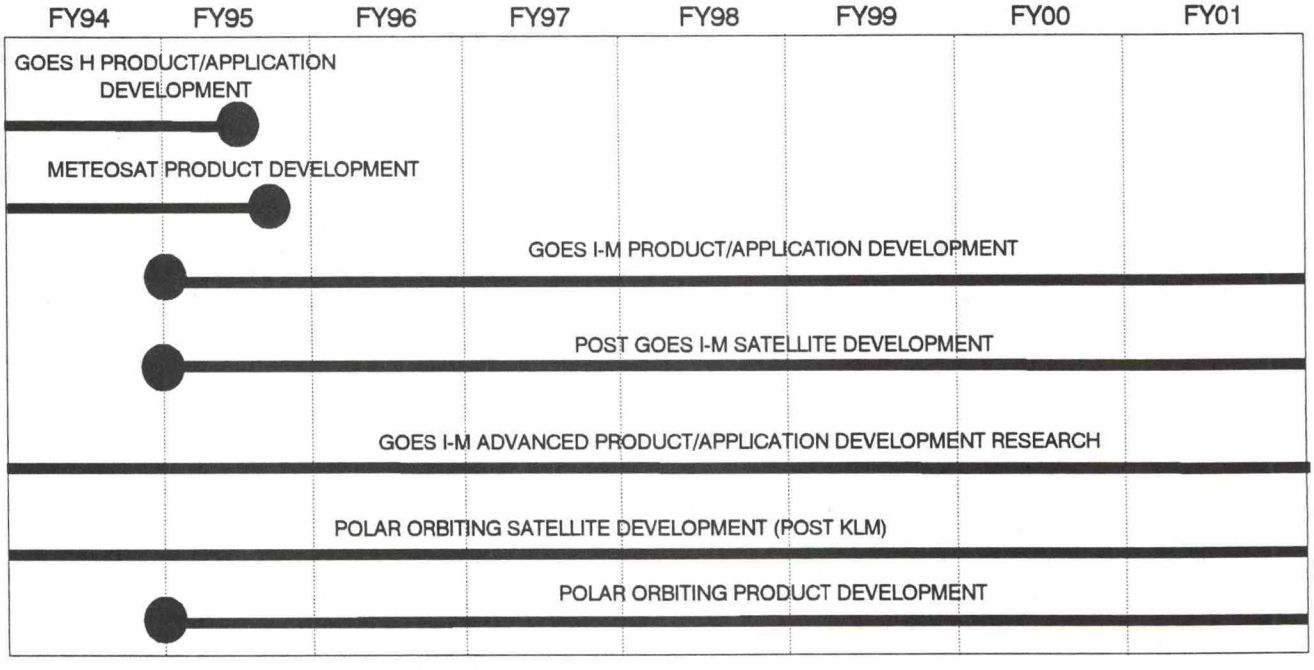


Table 6

Notifications of Actions to Change Operations at Field Offices and to Certify Field Offices

In accordance with Sections 703 and 705 of Public Law 102-567, this table provides notification of NWS modernization transition actions, anticipated to occur during fiscal years 1997 through 1999, that change operations at or certify NWS field offices, [i.e., Weather Service Forecast Offices (WSFO) and Weather Service Offices (WSO)]. To provide a more complete picture of the transition, the table also (a) identifies actions completed prior to the publication of this fiscal year's National Implementation Plan (NIP), (b) identifies actions to change operations affecting NWS offices not included under the law's definition of field offices, and therefore not subject to notification or certification requirements, and (c) provides clarifying information through the use of footnotes.

Notifications are organized by state and within each state by the WFOs that are to provide service to the state. WFOs are identified by name in bold letters followed by (a) the type of field office transitioning to that WFO, [e.g., **GRAND RAPIDS, MI** (WSO to WFO), **BIRMINGHAM, AL** (WSFO to WFO)]; or (b) "New" to indicate that the WFO is a newly established office, [e.g., **MELBOURNE, FL** (New WFO)].

NWS Offices. All NWS offices associated with a WFO are identified whether or not they are defined as field offices under the law:

A. NWS Field Offices, as defined by the law, are:

- **WSFOs** and **WSOs** that transition to WFOs.
- **WSOs** that phase down and/or eventually close.
- **"Residual" WSOs** that are brought into being, [i.e., designated as WSOs, on an as required basis to maintain radar and/or surface observation functions at locations at which the administrative and other service operations of a WSFO or WSO are transferred to the facility of the future WFO].

B. **NWS Offices included for completeness, though not addressed by the law, are:**

- **Weather Service Meteorological Observatories (WSMO).** Activities identified for these offices include, as applicable, the commissioning of an ASOS, the decommissioning of a current radar, a decrease in staff and transfers of upper air functions to WFOs or WSCMOs. Certifications do not apply to these offices.

- **Weather Service Contract Meteorological Observatories (WSCMO).** ASOS commissioning will occur at subset of these offices. In addition, upper air functions will transfer from a number of these offices to locations at WFOs, while a number will be retained for the purpose of maintaining upper air functions at the current location. A limited number of new WSCMOs will be established to maintain the integrity of the upper air network. Decreases in staffing are not reported as no NWS staff is involved. Certifications are not applicable to these offices.

- **River Forecast Centers (RFC).** There are 13 such offices, each to be collocated with a WFO. These offices are listed in the table immediately following their associated WFO using the format of the WFO name followed by the name of the RFC, [e.g., **SACRAMENTO, CA** California-Nevada RFC]. Activities associated with these offices are occupancy of the RFC facility (such moves may be independent of the occupancy of the WFO portion of the facility), the commissioning of non-associated NEXRAD Principal User Processors (NPUP), the commissioning of AWIPS, and significant staffing increases. Certifications are not applicable to these offices.

Conventions Used In Presentation of Notifications. Conventions used in the presentation of notifications and clarifying information are as follow:

A. **Notifications Within Current Reporting Period.** Notifications of actions anticipated to occur during the current reporting period are indicated by the month and year in which they are anticipated to occur (e.g., 06/97) in the appropriate change of operations and/or certification column(s) for the office. In the case of actions to change operations by the commissioning of a system, the type of system being commissioned is included (e.g., ASOS 07/97).

These dates should be interpreted as the earliest date for the action or certification. The actual date, however, is dependent upon many factors, [e.g., completion of technical coordination with external users, system and office readiness and severe weather season consideration]. The Meteorologist-In-Charge (MIC) of the cognizant future Weather Forecast Office (WFO) is in the best position to judge these factors and schedule the specific date for the action/certification. The specific date for an action/certification will be provided by the MIC to external users and affected NWS employees at least 60 days in advance of the action.

B. **Notifications Beyond Current Reporting Period.** Notifications of actions anticipated to occur after fiscal year 1999 are indicated by an asterisk (*).

C. **Shading of Non-Applicable Actions.** Shading indicates that a particular change of operations or certification is not applicable to the office.

D. **Completed Actions.** Actions completed as of publication of the current National Implementation Plan are indicated in bold, (i.e., **06/94).**

E. **Additional/Clarifying Information.** Footnotes are used to (a) clarify actions and (b) provide other relevant information on transition activities.

Descriptions of Notifications. As indicated above, notifications are of actions to change operations at field offices and of the intent to certify field offices. These changes/certifications are as follow:

A. **Actions Requiring Notifications to Change Operations.** Notifications of changes to operations are presented under the following headings:

- **Facility Occupancy.** Notifications are of the month and year in which the occupancy of a future WFO or of a new RFC occurred or is anticipated to take place.

  - For a WFO, occupancy will result in a change in operations at a field office due to:

    - Moving an entire field office, including personnel and equipment, from its current facility to the facility of the future WFO located within the field office's commuting and service area.
    - Transferring a portion of a WSFO or a WSO, (i.e., personnel and equipment associated with the delivery of forecast and warning services and its administrative functions as a WSFO or WSO, from the office's current location to the facility of the future WFO.)
    - Staffing newly created positions at a "new" WFO.

  - For an RFC, occupancy is the result of the entire current RFC (i.e., personnel and equipment), moving to its new facility.

- **Systems Commissionings.** Notifications are of the month and year in which:

  - The commissioning of an ASOS, NEXRAD or AWIPS at a given office occurred or is anticipated to take place. (Note that "88D" is used to indicate a NEXRAD commissioning).
  - The commissionings occurred or are anticipated to take place of (a) NWS-owned associated PUPs (APUP) and (b) NWS-owned non-associated PUPs (NPUP) at RFCs. (APUPs are those which provide, by means of a direct communications link, dedicated access to a specific DOD or FAA NEXRAD. NPUPs are those which allow access to any NEXRAD in the network by means of a dial-up communications link).

- **Decommissionings.** Notifications are of the month and year in which:

  Radar:
  - Replaced NWS Radars were or are anticipated to be decommissioned as a result of the commissioning of one or more NEXRADs.

  AFOS (Automation of Field Operations and Services):
  - Replaced Automation of Field Operations and Services (AFOS) equipment is anticipated to be decommissioned at WFO locations as a result of the commissioning of an AWIPS installation.

- **Service Transfer.** Notifications are of the month and year in which the transfer of the following services occurred or are anticipated to occur:

  Warnings:
  - In Stage 1, the warning or warning and forecast responsibilities for the County Warning Area (s) (CWA) of a WSO transferred to a future WFO. (In several instances the CWA of the WSO is distributed among two or more future WFOs with transfers to each occurring at different times).

  Forecasts:
  - In Stage 2, completion of forecast transfers and remaining service responsibilities from NEXRAD WSFOs (NWSFO) and non-NEXRAD WSOs to appropriate WFOs.

- **Significant Staff Changes.** Notifications are of the month and year in which the following significant staff changes occurred or are anticipated to occur.

Increases:

- The completion of staffing associated with the delivery of NEXRADs in Stage 1.

Decreases:

- A decrease in staff at WSFOs at which residual WSOs are left behind, corresponding to the transfer of forecast, warning and administrative responsibilities from the current location of the WSFO to its new location at the facility of the future WFO.
- A decrease in staff associated with the replacement, by commissioned ASOSs and non-NWS personnel, of manual surface observations. Such decreases are noted, by law, for non-NEXRAD WSOs and at WSMOs for completeness in describing NWS staff changes. Decreases at non-NEXRAD WSOs require prior certifications for automation.
- A decrease in staff associated with the transfer of warning and/or forecast responsibilities in Stage 1. Such decreases are noted, by law, for non-NEXRAD WSOs and at WSMOs for completeness in describing NWS staff changes. Such decreases at non-NEXRAD WSOs require prior certification for consolidation.
- A decrease in staff associated with the transfer of remaining services at non-NEXRAD WSOs. Such decreases require prior certification for closure.

Stage 2 Adjustment:

- For new WFOs and NWSOs, the Stage 2 adjustment will be an increase in staff to meet modernized end-state staff levels. The full staffing is expected approximately four months prior to AWIPS delivery.
- For NWSFOs, the Stage 2 Adjustment is a decrease in staff to meet modernized end-state staff levels. This decrease is anticipated to occur by completion of Forecast Transfer.

These notifications are of the earliest planned decreases in staff related to creation of a residual; or the first certification. Unplanned decreases, such as employees transferring positions in response to opportunities presented by the modernization or employee retirements, are treated as temporary reductions and are therefore not addressed.

B. **Actions Requiring Certification.** Notifications of the intent to certify are presented under the column headings of automate, consolidate, and close. The notification of the already completed relocation certification for WSFO San Francisco is referenced by a footnote.

- **Automation Certification.** Notifications are of the month and year in which the approved certification occurred or is anticipated to take place. Automation Certification verifies the replacement of weather service personnel with automated weather service equipment, with the required level of non-NWS personnel providing augmentation and backup, will not degrade services.

- **Consolidation Certification.** Notifications are of the month and year in which the approved certification occurred or is anticipated to take place. Consolidation Certification verifies the transfer or reassignment of weather service personnel responsible for radar support to a future WFO will not degrade services.

- **Closure Certification.** Notifications are of the month and year in which the approved certification occurred or is anticipated to take place. Closure Certification verifies that closing a field office by transferring any remaining personnel and reassigning any remaining weather services to a WFO will not degrade services.

- **Relocation Certification.** The notification is the month and year certification was approved to relocate WSFO San Francisco to the facility of the future WFO which was outside of its commuting area. As indicated above, this notification is footnoted in the table.

Changes to Notifications. Actions to change operations or to certify, which are anticipated to occur within the period during which the approved NIP is authoritative (i.e., until the following NIP is submitted to Congress), will not occur earlier than the month and year provided. For actions that require the advancement to an earlier date prior to the approval of the next NIP, the Secretary of Commerce will provide special notifications to Congress through an amendment to the schedule.

STATE OF ALABAMA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Alabama will be provided by two in-state WFOs--Birmingham and Mobile--and by WFO Tallahassee, Florida. WFO Tallahassee will serve five counties in Alabama. WFO Birmingham will serve four counties in Georgia; and WFO Mobile will serve three counties in Florida and five counties in Mississippi.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BIRMINGHAM, AL (WSFO to WFO)	**11/93**[1]	**88D 12/94 APUP 12/95**[2] 88D 08/97 AWIPS *		*		*	**09/94**	*				
•WSO Columbus, GA		**ASOS 05/94**	**04/96**		**09/95**				**01/97**	**03/97**	**01/97**	04/97
•WSO Huntsville, AL		**ASOS 08/94**	12/97		08/97				04/98	04/98	04/98	04/98
•WSO Meridian, MS		**ASOS 07/95**	**12/96**		**04/95**				04/97	04/97	04/97	04/97
•WSO Montgomery, AL		**ASOS 07/95**	**06/96**		**09/95**				**01/97**	04/97	**01/97**	04/97
•WSMO Centreville, AL[3]			**06/95**						**06/95**			
MOBILE, AL (WSO to WFO)	**02/94**	**88D 04/95 ASOS 02/96** AWIPS *	**10/95**	*		*	**10/94**	11/98				
•WSO Meridian, MS		**ASOS 07/95**	**12/96**		**04/95**				04/97	04/97	04/97	04/97
•WSO Montgomery, AL		**ASOS 07/95**	**06/96**		**09/95**				**01/97**	04/97	**01/97**	04/97
•WSO Pensacola, FL			**01/96**		**04/95**				**01/97**		**01/97**	04/97

1. Upper air function was transferred from WSMO Centreville to the site of WFO Birmingham in August 1994.
2. WFO Birmingham also uses, by means of an associated PUP (APUP), data from the DOD East Alabama WSR-88D.
3. This WSMO closed in June 1995. No certification required.

STATE OF ALABAMA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
TALLAHASSEE, FL (WSO to WFO)	01/99	**88D 08/95 APUP 12/95** AWIPS *	[redacted]	*	[redacted]	*	**10/94**	01/99	01/99	[redacted]	[redacted]	[redacted]
•WSO Montgomery, AL	[redacted]	**ASOS 07/95**	**06/96**	[redacted]	**09/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97

STATE OF ALASKA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Alaska will be provided by three in-state WFOs--Anchorage, Fairbanks and Juneau.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ANCHORAGE, AK (WSFO to WFO)	**09/95**[6]	APUP 05/97[1] AWIPS 04/99				04/99	**06/94**	04/99				
•WSO Bethel, AK (DCO)		ASOS 05/97			05/97[4]							
•WSO Cold Bay, AK (DCO)[2]		ASOS 05/97			04/99[3]				*[5]		*	
•WSO Homer, AK		ASOS 07/97			**01/96**				*[5]	*	*	*
•WSO King Salmon, AK (DCO)[2]		ASOS 05/97			05/97[4]							
•WSO Kodiak, AK (DCO)[2]		**ASOS 01/97**			04/99[3]				*[5]		*	
•WSO McGrath, AK (DCO)[2]		ASOS 04/97			04/99[3]				*[5]		*	
•WSO St. Paul Island, AK (DCO)[2]		**ASOS 01/97**			04/99[3]				*[5]		*	
•WSO Valdez, AK					04/99[3]				*[5]		*	*
•WSCMO Anchorage, AK[6]		ASOS 06/97										
•WSCMO Talkeetna, AK[7]		ASOS 05/97										

1. There are four associated PUPs (APUP) at Anchorage. Connections are to the FAA WSR-88Ds at Nikiski, King Salmon, Bethel, and Middleton Island.
2. Upper air function will remain with this office.
3. Service transfer will take place upon the commissioning of the AWIPS at WFO Anchorage.
4. Service Transfer will take place upon the commissioning of the WSR-88Ds for Anchorage.
5. No change in staffing will occur at these offices until after the commissioning of an AWIPS at the Anchorage WFO.
6. Upper air function transferred to WFO Anchorage in November 1995. This WSCMO is scheduled to close in October 1998. No certification required.
7. This WSCMO is scheduled to close in October 1998. No certification required.

STATE OF ALASKA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
ANCHORAGE, AK Alaska RFC	**09/95**	NPUP 05/97 AWIPS 04/99					**10/94**					
FAIRBANKS, AK[8] **(WSFO to WFO)**	11/97[9]	APUP 05/97[10] AWIPS 04/99				04/99	**09/94**	04/99				
•WSO Barrow, AK (DCO)[11]		ASOS 04/97			04/99[13]				*[14]		*	
•WSO Fairbanks, AK[12]		ASOS 02/98							*[14]	*	*	*
•WSO Kotzebue, AK (DCO)[11]		ASOS 05/97			04/99[13]							
•WSO Nome, AK (DCO)[11]		ASOS 05/97			05/97[15] 09/97				04/99[14]		10/98	
•WSO Unalakleet, AK					04/99[13]				10/98		10/98	10/98

8. An ASOS is scheduled to be commissioned in May 1997 at an unstaffed site at Nenana Municipal Airport, Nenana, Alaska, in the administrative area of WFO Fairbanks.
9. The entire WSFO, including upper air, will move to the facility of the future WFO located in the WSFO's current commuting and service areas.
10. There are two associated PUPs (APUP) at Fairbanks, connections are to the FAA WSR-88Ds at Fairbanks and Nome.
11. Upper air function will remain with this office.
12. Upper Air function will be transferred to WFO Fairbanks in February 1998.
13. Service transfer will take place upon the commissioning of the AWIPS at WFO Fairbanks.
14. There will be no change in staffing until after the commissioning of an AWIPS at the Fairbanks WFO.
15. Service Transfer will take place upon commissioning of the Nome WSR-88D.

STATE OF ALASKA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
JUNEAU, AK (WSFO to WFO)	09/98[16]	APUP 05/97[17] AWIPS 05/99	[redacted]	[redacted]	[redacted]	05/99	**09/96**	05/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Annette, AK (DCO)[19]	[redacted]	**ASOS 09/96**	[redacted]	[redacted]	05/99[18]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Yakutat, AK (DCO)[19]	[redacted]	ASOS 05/97	[redacted]	[redacted]	05/99[18]	[redacted]	[redacted]	[redacted]	*[20]	[redacted]	*	[redacted]

16. The entire WSFO will move to the facility of the future WFO located in the WSFO's current commuting and service areas.
17. There will be one associated PUP (APUP) at Juneau connected to an FAA WSR-88D in Sitka.
18. Service transfer will take place upon the commissioning of the AWIPS at WFO Juneau.
19. Upper air function will remain with this office.
20. There will be no change in staffing until after the commissioning of an AWIPS at the Juneau WFO.

STATE OF ARIZONA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Arizona will be provided by three in-state WFOs--Flagstaff, Phoenix and Tucson--and by WFO Las Vegas, Nevada. WFO Las Vegas will serve one county in Arizona. WFO Phoenix will serve two counties in California.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
FLAGSTAFF, AZ[1,2] (WSO to WFO)	**08/95[3]**	**88D 05/96** AWIPS 07/99		09/99		07/99	**08/95**	06/98				
•WSO Winslow, AZ[3]		**ASOS 07/95[4]**			**04/95**				04/97			04/97
PHOENIX, AZ (WSFO to WFO)	**05/91[6]**	**88D 04/94[5]** **88D 01/97[5]** AWIPS 07/99		09/99		07/99	**09/92**	07/99	**05/91[6]**			
•Res WSO Phoenix, AZ[6]		**ASOS 03/94**	**08/94**						**03/96**	**03/97**	**03/96**	04/97
•WSO Riverside (FW), CA					07/99[7]				*			*
•WSO Yuma, AZ					**04/95**				07/97			07/97

1. An ASOS will be commissioned in February 1997 at an unstaffed site at Page Municipal Airport, Page, AZ. ASOS's were commissioned at unstaffed sites Pulliam Airport, Flagstaff, AZ in July 1994 and at Kingman Airport, Kingman, AZ in September 1995 in the administrative area of WFO Flagstaff.
2. WSO Flagstaff vacated its facility on the airport in July 1994 at the request of the airport manager, office occupied temporary facilities at the site of the future WFO Flagstaff before occupying permanent quarters in August 1995.
3. Upper air function transferred from WSO Winslow to the site of WFO Flagstaff in August 1995.
4. This ASOS replaced an automated system, AUTOB, at this site.
5. A second WSR-88D, located in the vicinity of Yuma, AZ, is operated out of the Phoenix WFO.
6. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
7. Service will be transferred upon the commissioning of an AWIPS at WFO Phoenix.

STATE OF ARIZONA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
TUCSON, AZ (WSO to WFO)	**02/97**[8]	**88D 12/95** AWIPS 07/99		09/99		07/99	**04/95**	06/98	**02/97**[8]			
•Res WSO Tucson, AZ[8,9]		**ASOS 01/96**	**03/96**						07/97	07/97	07/97	07/97
WFOs Out Of State:												
LAS VEGAS, NV (WSO to WFO)	**03/95**	**88D 09/95** AWIPS 09/99		*		09/99	**05/95**	08/98	**03/95**			

8. Forecast and warning services of transitioning WSO transferred to facility of future WFO in February 1997.
9. Upper air function was contracted out and remains at RWSO Tucson until rooftop launch capability is available at site of WFO Tucson.

STATE OF ARKANSAS (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Arkansas will be provided by one in-state WFO--Little Rock--and by WFOs Jackson, Mississippi; Memphis, Tennessee; Shreveport, Louisiana; and Tulsa, Oklahoma. WFO Jackson will serve two counties in Arkansas; WFO Memphis, 12 counties; WFO Shreveport, nine counties; and WFO Tulsa, six counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
LITTLE ROCK, AR (WSFO to WFO)	**02/93**[1]	**88D 06/94** AWIPS *	**06/95**	*		*	**02/94**	*				
•WSO Fort Smith, AR		**ASOS 08/94**	10/97		**07/94**				01/98	01/98	01/98	01/98
WFOs Out Of State:												
JACKSON, MS (WSFO to WFO)	**04/93**	**ASOS 07/93** **88D 02/95** AWIPS *	**06/95**	*		*	**03/94**	*				
MEMPHIS, TN (WSFO to WFO)	**08/93**	**88D 01/95** **APUP 12/95** AWIPS *	**06/95**	*		*	**06/94**	*				
SHREVEPORT, LA (WSO to WFO)	**02/95**	**ASOS 10/95** **88D 10/95** AWIPS 08/99	**06/96**	*		08/99	**06/95**	07/98				

1. WSFO Little Rock transitioned to WFO Little Rock at its current site. Upper Air function remains in place.

STATE OF ARKANSAS (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
TULSA, OK (WSO to WFO)	**03/92**	**88D 05/94** AWIPS 07/98 88D@ #	[redacted]	09/98	[redacted]	12/98	**06/94**	**06/94**	**03/92**	[redacted]	[redacted]	[redacted]
•WSO Fort Smith, AR	[redacted]	**ASOS 08/94**	10/97	[redacted]	**07/94**	[redacted]	[redacted]	[redacted]	01/98	01/98	01/98	01/98

STATE OF CALIFORNIA (Page 1 of 5)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in California will be provided by six in-state WFOs--Eureka, Los Angeles, Sacramento, San Diego, San Francisco Bay Area and San Joaquin Valley--and by WFOs Las Vegas, Nevada; Medford, Oregon; Phoenix, Arizona; and Reno, Nevada. WFO Las Vegas will serve two counties in California; WFO Medford, two counties; WFO Phoenix, two counties; and WFO Reno, nine counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
EUREKA, CA (WSO to WFO)	**10/94**	**88D 07/95** AWIPS 09/99		*		09/99	**05/95**	08/98				
•WSO Redding, CA		**ASOS 07/96**			**04/96**				10/97	10/97	10/97	*
LOS ANGELES, CA[1] (WSFO to WFO)	**10/93[2]**	**88D 12/94 APUP 01/96[3]** AWIPS *		*		*	**02/94**	*	**10/93[2]**			
•Res WSO Los Angeles, CA[2]			**05/95**						**11/95**		**11/95**	04/97
•WSO Los Angeles (AV), CA		**ASOS 03/97**							*	*		*
•WSO Riverside (FW), CA[5]					*[4]				*			*
•WSO Santa Maria, CA[5]		**ASOS 08/96**			**04/95**				07/97	07/97		07/97
•WSCMO Long Beach, CA[6]		**ASOS 09/96**										

1. An additional ASOS was commissioned on April 1, 1996 at an unstaffed, non-airport site at Sandberg, California, in the administrative area of WFO Los Angeles.
2. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Radar observation function transferred, and staff decreased upon Consolidation Certification.
3. WFO Los Angeles also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D at Vandenberg AFB.
4. Service transfer will take place upon the commissioning of an AWIPS at WFO Los Angeles.
5. Consolidation certification requirement has been dropped as the agricultural weather function is no longer a NWS responsibility.
6. This WSCMO is scheduled to close in September 1997. No certification required.

STATE OF CALIFORNIA (Page 2 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SACRAMENTO, CA[7] **(WSO to WFO)**	**08/95**[8]	**88D 12/94** **APUP 10/96**[9] AWIPS 04/99		06/99		04/99	**06/94**	03/98	**08/95**[8]			
•Res WSO Sacramento, CA			**08/95**						04/97		04/97	04/97
•WSO Redding, CA		**ASOS 07/96**			**11/96**				10/97	10/97	10/97	*
•WSO Stockton, CA		**ASOS 11/96**							04/97	04/97		04/97
•WSCMO Blue Canyon, CA		**ASOS 01/93**										
SACRAMENTO, CA **California-Nevada RFC**	**08/95**	**NPUP 10/96** AWIPS 04/99					**01/94**					

7. An additional ASOS was commissioned at an unstaffed site at Red Bluff Municipal Airport, Red Bluff, California, in the administrative area of WFO Sacramento in October 1995.
8. Forecast and warning services of transitioning WSO transfered to facility of future WFO. Radar observation function retained at original WSO location and office redesignated a residual WSO.
9. WFO Sacramento also uses, by means of an Associated PUP(APUP), data from the DOD WSR-88D at Beale AFB.

STATE OF CALIFORNIA (Page 3 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SAN DIEGO, CA[10] **(WSO to WFO)**	**10/95**[11]	**88D 09/96** **88D 02/97**[12] AWIPS *		*		*	**05/96**	10/98	**10/95**[11]			
•Res WSO San Diego, CA		**ASOS 08/96**							04/97	04/97		04/97
•WSO Riverside (FW), CA					*[13]				*			*
•WSCMO San Diego, CA[14]												
SAN FRANCISCO BAY AREA, CA (WSFO to WFO)	**08/94**[15]	**88D 05/95** AWIPS 04/99		06/99		04/99	**11/94**	04/99				
•WSO San Francisco, CA		**ASOS 10/96**							07/97	07/97		07/97
•WSO Santa Maria, CA[16]		**ASOS 08/96**			**09/95**				07/97	07/97		07/97
•WSCMO Oakland, CA[17]												

10. An ASOS was commissioned, in February 1997, at an unstaffed site at Brown Municipal Airport, San Diego, California, in the administrative area of WFO San Diego.
11. Local adaptive forecasts and warning services of transitioning WSO transferred to facility of future WFO. Surface weather observations retained at original WSO and office redesignated a residual WSO.
12. A second WSR-88D, located in the Santa Ana mountains, will be operated out of the San Diego WFO.
13. Service will be transferred upon the commissioning of an AWIPS at WFO San Diego.
14. Upper air function will remain at WSCMO San Diego.
15. Occupancy of the facility of the future WFO San Francisco Bay Area took place on August 19,1994 after its Relocation Certification was approved by the Secretary of Commerce.
16. Consolidation certification requirement has been dropped as the agricultural weather function is no longer a NWS responsibility.
17. Upper air function will remain at WSCMO Oakland.

STATE OF CALIFORNIA (Page 4 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SAN JOAQUIN VALLEY, CA (WSO to WFO)	**01/95**	**88D 09/95** AWIPS *		*		*	**09/95**	10/98				
•Res WSO Fresno, CA		**ASOS 09/95**							04/97	04/97		04/97
•WSO Bakersfield, CA		**ASOS 06/96**			**10/95**				**01/97**	**03/97**	**01/97**	04/97
•WSO Riverside (FW), CA					*[18]				*			*
WFOs Out Of State:												
LAS VEGAS, NV (WSO to WFO)	**03/95**	**88D 09/95** AWIPS 09/99		*		09/99	**05/95**	08/98	**03/95**			
•WSO Riverside (FW), CA					09/99				*			*
MEDFORD, OR (WSO to WFO)	**06/95**	**88D 04/96** ASOS 06/97 AWIPS *	**08/96**	*		*	**05/96**	12/98				
•WSO Redding, CA		**ASOS 07/96**			**06/96**				10/97	10/97	10/97	*

18. Service will be transferred upon the commissioning of an AWIPS at WFO San Joaquin Valley.

STATE OF CALIFORNIA (Page 5 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PHOENIX, AZ (WSFO to WFO)	**05/91**	**88D 04/94 88D 01/97** AWIPS 07/99		09/99		07/99	**09/92**	07/99	**05/91**			
•WSO Riverside (FW), CA					07/99				*			*
RENO, NV (WSFO to WFO)	**07/94**	**88D 06/95** AWIPS 09/99		*		09/99	**07/94**	09/99	**07/94**			
•WSO Redding, CA		**ASOS 07/96**			**05/96**				10/97	10/97	10/97	*

STATE OF COLORADO (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Colorado will be provided by three in-state WFOs--Denver/Boulder, Grand Junction and Pueblo--and by WFO Goodland, Kansas. WFO Goodland will serve three counties in Colorado. WFO Grand Junction will serve three counties in Utah.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
DENVER/BOULDER, CO (WSFO to WFO)	10/98[1,2]	**88D 07/94** AWIPS 07/99		09/99		07/99	**02/94**	07/99				
•WSO Colorado Springs, CO		**ASOS 11/92**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSMO Limon, CO[3]		**ASOS 12/95**	**12/95**						**12/95**			
•WSCMO Denver, CO[4]		**ASOS 02/94**										
GRAND JUNCTION, CO (WSO to WFO)	06/95[5]	**ASOS 04/96** **88D 06/96** AWIPS *		*		*	**10/95**	12/98				
•WSO Alamosa, CO		**ASOS 09/92**			**06/95**				10/97	10/97	10/97	10/97

1. The entire WSFO will move to the facility of the future WFO in the WSFO's current commuting and service area.
2. The upper air function will be contracted out and remain at the WSFO Denver location.
3. This WSMO closed in December 1995. No certification required.
4. This WSCMO was established in October 1993 at the new Denver International (Front Range) Airport.
5. Upper air function transferred with WSO Grand Junction to the site of WFO Grand Junction in June 1995.

STATE OF COLORADO (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PUEBLO, CO (WSO to WFO)	**09/94**	**ASOS 10/92 88D 08/95** AWIPS *		*		*	**12/94**	01/99				
•WSO Alamosa, CO		**ASOS 09/92**			**06/95**				10/97	10/97	10/97	10/97
•WSO Colorado Springs, CO		**ASOS 11/92**			**06/95**				**01/97**	04/97	**01/97**	04/97
•WSMO Limon, CO[6]		**ASOS 12/95**	**12/95**						**12/95**			
WFOs Out Of State:												
GOODLAND, KS (WSO to WFO)	**03/90**	**ASOS 09/92 88D 04/95** AWIPS 07/98	**10/95**	09/98		**01/97**	**12/93**	**01/96**				
•WSO Colorado Springs, CO		**ASOS 11/92**			**03/94**				**01/97**	04/97	**01/97**	04/97

6. This WSMO closed in December 1995. No certification required.

STATE OF CONNECTICUT (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Connecticut will be provided by WFOs Albany, New York; Boston, Massachusetts; and New York City, New York. WFO Albany will serve one county in Connecticut; WFO Boston, three counties; and WFO New York City, four counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
ALBANY, NY (WSFO to WFO)	04/97	**88D 04/95** AWIPS *		*		*	**12/94**	*	04/97			
•WSO Hartford, CT		**ASOS 04/96**	**11/95**		**09/94**				**01/97**	07/97	**01/97**	07/97
BOSTON, MA (WSFO to WFO)	**11/93**	**88D 12/94** AWIPS 07/98		09/98		12/98	**07/94**	12/98	**11/93**			
•WSO Hartford, CT		**ASOS 04/96**	**11/95**		**09/94**				**01/97**	07/97	**01/97**	07/97
NEW YORK CITY, NY (WSFO to WFO)	**10/93**	**88D 01/95** AWIPS 08/98		10/98		12/98	**01/95**	12/98	**10/93**			
•WSO Bridgeport, CT		**ASOS 05/96**			**09/94**				**01/97**	07/97	**01/97**	07/97
•WSO Hartford, CT		**ASOS 04/96**	**11/95**		**09/94**				**01/97**	07/97	**01/97**	07/97

STATE OF DELAWARE (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Delaware will be provided by WFO Philadelphia, Pennsylvania. WFO Philadelphia will serve three counties in Delaware.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
PHILADELPHIA, PA (WSFO to WFO)	**08/93**	**88D 02/95** AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	**01/95**	12/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Wilmington, DE	[redacted]	**ASOS 10/94**	[redacted]	[redacted]	**10/94**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97

DISTRICT OF COLUMBIA (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in District Of Columbia will be provided by WFO Baltimore MD/Washington, DC, . WFO Baltimore MD/Washington, DC will serve one county in District Of Columbia.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BALTIMORE, MD/ WASHINGTON, DC (WSFO to WFO)	**04/90**	**88D 06/94** AWIPS 08/99		*		08/99	**05/93**	08/99				

STATE OF FLORIDA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Florida will be provided by five in-state WFOs--Jacksonville, Melbourne, Miami, Tallahassee and Tampa Bay Area--and by WFO Mobile, Alabama. WFO Mobile will serve three counties in Florida. WFO Jacksonville will serve 14 counties in Georgia; and WFO Tallahassee will serve five counties in Alabama and 25 counties in Georgia.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
JACKSONVILLE, FL (WSO to WFO)	**01/95**	**88D 08/95 ASOS 03/96** AWIPS *		*		*	**02/95**	01/99				
•WSO Daytona Beach, FL		**ASOS 06/95**	**12/95**		**06/95**				**01/97**	04/97	**01/97**	04/97
•WSO Savannah, GA		**ASOS 04/96**	**02/97**		**06/95**				04/97	04/97	04/97	04/97
•WSMO Waycross, GA[1]			**01/96**						**01/96**			
MELBOURNE, FL (New WFO)	**08/89**	**88D 03/94** AWIPS 12/98		02/99		12/98	**02/93**	11/97				
•WSO Daytona Beach, FL		**ASOS 06/95**	**12/95**		**04/94**				**01/97**	04/97	**01/97**	04/97
•WSO Orlando, FL					**10/89**							04/97
•WSO West Palm Beach, FL[2]		**ASOS 04/93**	**10/95**		**04/94**				**01/97**	04/97	**01/97**	04/97
•WSCMO Orlando, FL[3]		**ASOS 07/96**										

1. Upper air function transferred from WSMO Waycross to the site of WFO Jacksonville in January 1995. This WSMO closed in January 1996. No certification required.
2. Upper air function transferred from WSO West Palm Beach to the site of WFO Miami in July 1995.
3. This WSCMO is scheduled to close in October 1998. No certification required.

STATE OF FLORIDA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MIAMI, FL (WSFO to WFO)	**05/95**[4]	**88D 04/95**[5] **88D 11/96**[5] AWIPS 02/99	**12/95**	04/99	[redacted]	02/99	**10/94**	02/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Key West, FL[6]	[redacted]	**ASOS 03/96**	11/97	[redacted]	**07/96**	[redacted]	[redacted]	[redacted]	#	#	#	#
•WSO West Palm Beach, FL[4]	[redacted]	**ASOS 04/93**	**10/95**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSCMO Miami, FL[7]	[redacted]	**ASOS 07/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TALLAHASSEE, FL (WSO to WFO)	01/99[8,9]	**88D 08/95** **APUP 12/95**[10] AWIPS *	[redacted]	*	[redacted]	*	**10/94**	01/99	01/99[8]	[redacted]	[redacted]	[redacted]
•Res WSO Tallahassee, FL[8,9]	[redacted]	**ASOS 04/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	07/98	07/98	[redacted]	07/98
•WSO Apalachicola, FL	[redacted]	ASOS 05/97	**01/96**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	[redacted]	**01/97**	04/97
•WSO Columbus, GA	[redacted]	**ASOS 05/94**	**04/96**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Macon, GA	[redacted]	**ASOS 05/94**	**04/96**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Montgomery, AL	[redacted]	**ASOS 07/95**	**06/96**	[redacted]	**09/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Pensacola, FL	[redacted]	[redacted]	**01/96**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	[redacted]	**01/97**	04/97
•WSO Savannah, GA	[redacted]	**ASOS 04/96**	**02/97**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSMO Waycross, GA[11]	[redacted]	[redacted]	**01/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**01/96**	[redacted]	[redacted]	[redacted]

4. The upper air function transferred from WSO West Palm Beach to the site of WFO Miami in July 1995.
5. This radar, located at Key West, FL, will be operated out of WFO Miami.
6. Upper air function at WSO Key West contracted out in July 1995. Existing WSO will remain in service during assessment of the adequacy of communications, maintenance, and outreach. Results available fall 1997. Schedule for related activities will be determined after results of the assessment.
7. This WSCMO closed in March 1997. No certification required.
8. Forecast and warning services of transitioning WSO will be transferred to facility of future WFO. Surface observation function will be retained at original WSO location and office redesignated a residual WSO.
9. Upper air function will remain at RWSO Tallahassee until availability of roof launch capability at WFO Tallahassee.
10. WFO Tallahasse also uses by means of an associated PUP (APUP), data from the DOD WSR-88D at Eglin AFB.
11. Upper air function transferred from WSMO Waycross to the site of WFO Jacksonville in January 1995. This WSMO closed in January 1996. No certification required.

STATE OF FLORIDA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
TAMPA BAY AREA, FL (WSO to WFO)	02/95[12]	88D 04/95 AWIPS *	11/95	*		*	09/94	11/98				
•WSO Fort Myers, FL[13]					04/95				04/97			04/97
•WSCMO Tampa, FL[14]		ASOS 11/95										
WFOs Out Of State:												
MOBILE, AL (WSO to WFO)	02/94	88D 04/95 ASOS 02/96 AWIPS *	10/95	*		*	10/94	11/98				
•WSO Pensacola, FL			01/96		04/95				01/97		01/97	04/97

12. Upper air function remains and is collocated with WFO Tampa Bay Area.
13. WSO Fort Myers, which is collocated with the Lee County Emergency Manager, is staffed with personnel from WSO/WFO Tampa Bay, only in response to predictions of severe weather (e.g. hurricanes).
14. This WSCMO closed in April 1996. No certification required.

STATE OF GEORGIA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Georgia will be provided by one in-state WFO--Atlanta--and by WFOs Birmingham, Alabama; Charleston, South Carolina; Columbia, South Carolina; Greenville/Spartanburg, South Carolina; Jacksonville, Florida; and Tallahassee, Florida. WFO Birmingham will serve four counties in Georgia; WFO Charleston, 12 counties; WFO Columbia, five counties; WFO Greenville/Spartanburg, six counties; WFO Jacksonville, 14 counties; and WFO Tallahassee, 25 counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ATLANTA, GA (WSFO to WFO)	**04/94**[1,2]	**88D 02/95** **APUP 02/96**[3] AWIPS 12/98	[redacted]	02/99	[redacted]	12/98	**09/94**	12/98	**04/94**[1]	[redacted]	[redacted]	[redacted]
•Res WSO Atlanta, GA[1]	[redacted]	**ASOS 08/95**	**02/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Athens, GA[2]	[redacted]	**ASOS 02/96**	**09/96**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Augusta, GA	[redacted]	**ASOS 05/94**	**07/96**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Chattanooga, TN	[redacted]	**ASOS 09/95**	12/97	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	04/98	04/98	04/98	04/98
•WSO Columbus, GA	[redacted]	**ASOS 05/94**	**04/96**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Macon, GA	[redacted]	**ASOS 05/94**	**04/96**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Savannah, GA	[redacted]	**ASOS 04/96**	**02/97**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

1. Forecast and warning service of the transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
2. Upper air function was transferred from WSO Athens to the site of WFO Atlanta in August 1994.
3. WFO Atlanta also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D at Robbins AFB.

STATE OF GEORGIA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
ATLANTA, GA Southeast RFC	04/94	NPUP 11/96 AWIPS 12/98					01/94					
WFOs Out Of State:												
BIRMINGHAM, AL (WSFO to WFO)	11/93	88D 12/94 APUP 12/95 AWIPS *		*		*	09/94	*				
•WSO Columbus, GA		ASOS 05/94	04/96		09/95				01/97	03/97	01/97	04/97
CHARLESTON, SC (WSO to WFO)	11/94	ASOS 10/95 88D 06/96 AWIPS *	12/96	*		*	07/94	09/98				
•WSO Augusta, GA		ASOS 05/94	07/96		06/95				04/97	04/97	04/97	04/97
•WSO Savannah, GA		ASOS 04/96	02/97		06/95				04/97	04/97	04/97	04/97
•WSMO Waycross, GA			01/96						01/96			
COLUMBIA, SC (WSFO to WFO)	09/93	88D 06/95 ASOS 12/95 AWIPS *	10/95	*		*	08/94	*				
•WSO Augusta, GA		ASOS 05/94	07/96		12/94				04/97	04/97	04/97	04/97

STATE OF GEORGIA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
GREENVILLE/SPARTANBURG, SC (WSO to WFO)	05/95	88D 03/96 ASOS 04/96 AWIPS *	[redacted]	*	[redacted]	*	10/94	10/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Athens, GA	[redacted]	ASOS 02/96	09/96	[redacted]	10/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
JACKSONVILLE, FL (WSO to WFO)	01/95	88D 08/95 ASOS 03/96 AWIPS *	[redacted]	*	[redacted]	*	02/95	01/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Savannah, GA	[redacted]	ASOS 04/96	02/97	[redacted]	06/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSMO Waycross, GA	[redacted]	[redacted]	01/96	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	01/96	[redacted]	[redacted]	[redacted]
TALLAHASSEE, FL (WSO to WFO)	01/99	88D 08/95 APUP 12/95 AWIPS *	[redacted]	*	[redacted]	*	10/94	01/99	01/99	[redacted]	[redacted]	[redacted]
•WSO Columbus, GA	[redacted]	ASOS 05/94	04/96	[redacted]	06/95	[redacted]	[redacted]	[redacted]	01/97	03/97	01/97	04/97
•WSO Macon, GA	[redacted]	ASOS 05/94	04/96	[redacted]	06/95	[redacted]	[redacted]	[redacted]	01/97	03/97	01/97	04/97
•WSO Savannah, GA	[redacted]	ASOS 04/96	02/97	[redacted]	06/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSMO Waycross, GA	[redacted]	[redacted]	01/96	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	01/96	[redacted]	[redacted]	[redacted]

TERRITORY OF GUAM (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Guam will be provided by one in-state WFO--Guam.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
GUAM, GU[1,2] **(WSO to WFO)**	10/98	**APUP 10/96** ASOS 09/97 AWIPS 05/99				05/99	**09/96**	04/98				

1. WSMO Guam and WSO (AV) Guam are both to be assumed by the establishment of WFO Guam.
2. Former WSOs Chuuk, Koror, Majuro, Pohnpei and Yap are now funded by Department of Interior's Compact of Free Association. WSO Pago Pago remains unchanged. WSO Wake Island will close on May 15, 1997 due to budget reductions not related to modernization.

STATE OF HAWAII (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Hawaii will be provided by one in-state WFO--Honolulu.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
HONOLULU, HI (WSFO to WFO)	06/95[1]	APUP 05/97[2] APUP 05/97[2] AWIPS 05/99				05/99	09/94	05/99	06/95[1]			
•Res WSO Honolulu, HI[1]		ASOS 06/97							10/97	10/97		10/97
•WSO Hilo, HI (WSO to DCO)[3]		ASOS 06/97			05/99[4]				05/99[5]		04/98	
•WSO Kahului, HI		ASOS 06/97			05/99[4]				05/99[5]	01/99	01/99	01/99
•WSO Lihue, Kauai, HI (WSO to DCO)[3]		ASOS 06/97			05/99[4]				05/99[5]		04/98	

1. Forecast and warning services of the transitioning WSFO transferred to facility of future WFO. Surface observation function retained at original WSFO location and office redesignated a residual WSO.
2. There will be two associated PUPs (APUPs) at Honolulu for operation of FAA WSR-88Ds at Molokai, Kamuela, South Kauai, and South Hawaii.
3. Upper air function will remain with this office.
4. Service transfer will take place upon the commissioning of the AWIPS at WFO Honolulu.
5. No decrease in staff will occur until after the commissioning of the AWIPS at WFO Honolulu.

STATE OF IDAHO (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Idaho will be provided by two in-state WFOs--Boise and Pocatello/Idaho Falls--and by WFOs Missoula, Montana; Salt Lake City, Utah; and Spokane, Washington. WFO Missoula will serve three counties in Idaho; WFO Salt Lake City, two counties; and WFO Spokane, eight counties. WFO Boise will serve three counties in Oregon.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BOISE, ID (WSFO to WFO)	**07/93**[1]	**88D 01/95 ASOS 12/95** AWIPS 09/98		11/98		12/98	**05/94**	12/98				
•WSO Twin Falls, ID[2]									**04/96**			
•WSMO Burns, OR[3]		**ASOS 07/95**							**10/96**			
POCATELLO/IDAHO FALLS, ID (WSO to WFO)	**03/95**	**88D 02/96 ASOS 03/96** AWIPS *		*		*	**09/95**	01/99				
WFOs Out Of State:												
MISSOULA, MT (WSO to WFO)	**07/94**	**88D 06/95 ASOS 09/96** AWIPS 01/99	**12/95**	03/99		01/99	**12/94**	12/97				
•WSO Lewiston, ID		**ASOS 07/95**			**10/95**				04/97	04/97	04/97	04/97

1. Upper air function remains in place and is collocated with WFO Boise.
2. One person Agricultural Weather Office closed due to non-modernization related action (i.e. elimination of the agricultural weather program.) No certification required.
3. This WSMO closed in October 1996. No certification required.

STATE OF IDAHO (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SALT LAKE CITY, UT (WSFO to WFO)	**08/94**	**88D 06/95** **88D 03/97** ASOS 05/97 AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	**05/94**	12/98	[redacted]	[redacted]	[redacted]	[redacted]
SPOKANE, WA (WSO to WFO)	**09/95**	**88D 07/96** AWIPS 02/99	[redacted]	04/99	[redacted]	02/99	**10/95**	01/98	**09/95**	[redacted]	[redacted]	[redacted]
•WSO Lewiston, ID	[redacted]	**ASOS 07/95**	[redacted]	[redacted]	**01/96**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

STATE OF ILLINOIS (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Illinois will be provided by two in-state WFOs--Central Illinois and Chicago--and by WFOs Paducah, Kentucky; Quad Cities, Iowa; and St. Louis, Missouri. WFO Paducah will serve 19 counties in Illinois; WFO Quad Cities, 13 counties; and WFO St. Louis, 17 counties. WFO Chicago will serve five counties in Indiana.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CENTRAL ILLINOIS, IL (New WFO)	09/95[1]	88D 01/96 AWIPS 05/99		07/99		05/99	09/95	04/98				
•WSO Evansville, IN		ASOS 02/96	07/96		02/96				04/97	10/97	04/97	10/97
•WSO Peoria, IL[2]		ASOS 10/95			09/95				04/97	04/97	04/97	04/97
•WSO Springfield, IL		ASOS 12/95	07/96		09/95				04/97	04/97	04/97	04/97
CHICAGO, IL (WSFO to WFO)	12/91	88D 12/94 AWIPS 05/99		07/99		05/99	12/94	05/99				
•WSO Chicago-O'Hare (AV), IL		ASOS 02/96							04/97	04/97		04/97
•WSO Rockford, IL		ASOS 07/95			10/94				01/97	04/97	01/97	04/97
•WSO South Bend, IN[3]		ASOS 07/96	#		10/94				#	#	#	#
•WSMO Marseilles, IL[4]			01/96						01/96			

1. Upper air function transferred from WSO Paducah, Kentucky to the site of WFO Central Illinois in February 1995.
2. Upper air function transferred from WSO Peoria, Illinois to the site of WFO Quad Cities, Iowa in February 1995.
3. Existing radar will remain during ongoing Lake Effect Snow Study the results of which will be available Fall 1997; schedules for related activities will be determined based on results of the study.
4. This WSMO closed in January 1996. No certification required.

STATE OF ILLINOIS (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
PADUCAH, KY (WSO to WFO)	**02/95**	**ASOS 08/95** 88D 09/95 AWIPS 11/98	**02/96**	01/99	[redacted]	12/98	**12/94**	10/97	[redacted]	[redacted]	[redacted]	[redacted]
QUAD CITIES, IA (WSO to WFO)	**02/95**	88D 09/95 AWIPS 09/99	[redacted]	*	[redacted]	09/99	**09/95**	08/98	**02/95**	[redacted]	[redacted]	[redacted]
•Res WSO Moline, IL	[redacted]	**ASOS 07/95**	**01/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Peoria, IL	[redacted]	**ASOS 10/95**	[redacted]	[redacted]	03/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Rockford, IL	[redacted]	**ASOS 07/95**	[redacted]	[redacted]	**10/94**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
ST. LOUIS, MO (WSFO to WFO)	**09/90**	88D 07/94 AWIPS 06/99	[redacted]	08/99	[redacted]	06/99	**11/92**	06/99	**09/90**	[redacted]	[redacted]	[redacted]
•WSO Springfield, IL	[redacted]	**ASOS 12/95**	**07/96**	[redacted]	**09/94**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

STATE OF INDIANA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Indiana will be provided by two in-state WFOs--Indianapolis and Northern Indiana--and by WFOs Chicago, Illinois; Cincinnati, Ohio; Louisville, Kentucky; and Paducah, Kentucky. WFO Chicago will serve five counties in Indiana; WFO Cincinnati, eight counties; WFO Louisville, ten counties; and WFO Paducah, six counties. WFO Northern Indiana will serve five counties in Michigan and eight counties in Ohio.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
INDIANAPOLIS, IN (WSFO to WFO)	**08/93**[1]	**88D 05/95** AWIPS 10/98		12/98		12/98	**04/94**	12/98	**08/93**[1]			
•Res WSO Indianapolis, IN[1]		**ASOS 01/96**	**02/96**						**01/97**	04/97	**01/97**	04/97
•WSO Evansville, IN		**ASOS 02/96**	**07/96**		**02/96**				04/97	10/97	04/97	10/97
NORTHERN INDIANA, IN[2] **(New WFO)**	05/98	88D 03/98 AWIPS 06/99				06/99	03/98	05/98				
•WSO Fort Wayne, IN		**ASOS 07/96**	05/97		03/98				10/98	10/98	10/98	10/98
•WSO South Bend, IN[3,4]		**ASOS 07/96**	#						#	#	#	#

1. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observations were retained at original WSFO location and office redesignated a residual WSO.
2. Northern Indiana County Warning Area(CWA) responsibilities are scheduled to transfer from WFOs Chicago, Grand Rapids, Indianapolis, Central Illinois, and Cleveland in March 1998.
3. Existing radar will remain during ongoing Lake Effect Snow Study the results of which will be available Fall 1997; schedules for related activities will be determined based on results of the study.
4. South Bend counties were initially transferred to future WFO Chicago and will be transferred to the temporary Northern Indiana Facility in March 1998.

STATE OF INDIANA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
CHICAGO, IL (WSFO to WFO)	12/91	88D 12/94 AWIPS 05/99		07/99		05/99	12/94	05/99				
•WSO South Bend, IN		ASOS 07/96	#		10/94				#	#	#	#
CINCINNATI, OH (New WFO)	06/94	88D 06/95 AWIPS 10/98		12/98		12/98	07/94	09/97				
•WSO Fort Wayne, IN		ASOS 07/96	05/97		10/94				10/98	10/98	10/98	10/98
LOUISVILLE, KY (WSFO to WFO)	02/93	88D 11/94 AWIPS 11/98		01/99		12/98	09/94	12/98	02/93			
•WSO Evansville, IN		ASOS 02/96	07/96		02/96				04/97	10/97	04/97	10/97
PADUCAH, KY (WSO to WFO)	02/95	ASOS 08/95 88D 09/95 AWIPS 11/98	02/96	01/99		12/98	12/94	10/97				
•WSO Evansville, IN		ASOS 02/96	07/96		02/96				04/97	10/97	04/97	10/97

STATE OF IOWA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Iowa will be provided by two in-state WFOs--Des Moines and Quad Cities--and by WFOs La Crosse, Wisconsin; Omaha, Nebraska; and Sioux Falls, South Dakota. WFO La Crosse will serve eight counties in Iowa; WFO Omaha, eight counties; and WFO Sioux Falls, 11 counties. WFO Quad Cities will serve 13 counties in Illinois.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
DES MOINES, IA (WSFO to WFO)	**08/93**[1]	**88D 06/95** AWIPS 09/99		*		09/99	**06/94**	09/99	**08/93**[1]			
•Res WSO Des Moines, IA[1]		**ASOS 12/95**	**05/96**						**01/97**	04/97	**01/97**	04/97
•WSO Waterloo, IA		**ASOS 04/96**	**01/97**		**03/95**				10/97	10/97	10/97	10/97
QUAD CITIES, IA (WSO to WFO)	**02/95**[2]	**88D 09/95** AWIPS 09/99		*		09/99	**09/95**	08/98	**02/95**[2]			
•Res WSO Moline, IL[2]		**ASOS 07/95**	**01/96**						**01/97**	04/97	**01/97**	04/97
•WSO Dubuque, IA		**ASOS 09/95**			**09/95**				**01/97**	10/97	**01/97**	10/97
•WSO Peoria, IL[3]		**ASOS 10/95**			**03/95**				04/97	04/97	04/97	04/97
•WSO Rockford, IL		**ASOS 07/95**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Waterloo, IA		**ASOS 04/96**	**01/97**		**03/95**				10/97	10/97	10/97	10/97

1. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
2. Forecast and warning services of transitioning WSO transferred to facility of future WFO. Surface and radar observation functions retained at original WSO location and office redesignated a residual WSO.
3. Upper air function transferred from WSO Peoria, Illinois to the site of WFO Quad Cities, Iowa in February 1995.

STATE OF IOWA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
LA CROSSE, WI (WSO to WFO)	08/95	88D 09/96 AWIPS *		*		*	03/96	10/98				
•WSO Waterloo, IA		ASOS 04/96	01/97		08/96				10/97	10/97	10/97	10/97
OMAHA, NE (WSFO to WFO)	04/94	88D 07/95 AWIPS 08/99		*		08/99	07/94	08/99	04/94			
•WSO Sioux City, IA		ASOS 06/95			03/95				01/97	04/97	01/97	04/97
SIOUX FALLS, SD (WSFO to WFO)	09/93	88D 10/95 ASOS 04/96 AWIPS *	10/96	*		*	08/94	*				
•WSO Sioux City, IA		ASOS 06/95			03/95				01/97	04/97	01/97	04/97

STATE OF KANSAS (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Kansas will be provided by four in-state WFOs--Dodge City, Goodland, Topeka and Wichita--and by WFOs Hastings, Nebraska; Kansas City/Pleasant Hill, Missouri; and Springfield, Missouri. WFO Hastings will serve six counties in Kansas; WFO Kansas City/Pleasant Hill, seven counties; and WFO Springfield, three counties. WFO Goodland will serve three counties in Nebraska and three counties in Colorado.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
DODGE CITY, KS (WSO to WFO)	**10/90**[1]	**ASOS 09/92 88D 04/94 AWIPS 07/98**		09/98		**01/97**[4]	**06/93**	**01/96**				
•WSMO Garden City, KS[2]			**09/94**						**10/94**			
GOODLAND, KS (WSO to WFO)	**03/90**	**ASOS 09/92 88D 04/95 AWIPS 07/98**	**10/95**	09/98		**01/97**[4]	**12/93**	**01/96**				
•WSO Colorado Springs, CO		**ASOS 11/92**			**03/94**				**01/97**	04/97	**01/97**	04/97
TOPEKA, KS (WSFO to WFO)	**06/90**[3]	**ASOS 12/92 88D 01/95 AWIPS 07/98**	**11/95**	09/98		12/98	**10/93**	12/98				
•WSO Concordia, KS		**ASOS 09/92**	**11/95**		**09/94**				**01/97**	10/97	**01/97**	10/97

1. Upper air function was transferred with WSO Dodge City to the site of WFO Dodge City in October 1990.
2. This WSMO closed in October 1994. No certification required.
3. Current office building modified to accomodate WFO Topeka operations. Upper air remains in place.
4. Public forecasts were transferred to three(3) NWSOs, primarily from Topeka, as a part of the Kansas Pre-MARD forecast initiative.

STATE OF KANSAS (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WICHITA, KS (WSO to WFO)	**01/92**	**ASOS 11/92 88D 04/94 AWIPS 07/98**	**11/95**	09/98		**01/97**[5]	**06/93**	**01/96**				
•WSO Concordia, KS		**ASOS 09/92**	**11/95**		**03/94**				**01/97**	10/97	**01/97**	10/97
WFOs Out Of State:												
HASTINGS, NE (New WFO)	**11/92**	**88D 12/94** AWIPS 07/98		09/98		12/98	**03/94**	06/97				
•WSO Concordia, KS		**ASOS 09/92**	**11/95**		**09/94**				**01/97**	10/97	**01/97**	10/97
KANSAS CITY/PLEASANT HILL, MO (WSO to WFO)	**12/93**	**88D 02/95** AWIPS 07/98		09/98		12/98	**06/93**	**10/95**	**12/93**			
SPRINGFIELD, MO (WSO to WFO)	**11/94**	**88D 09/95 ASOS 11/95** AWIPS 05/99		07/99		05/99	**01/95**	04/98				

5. Public forecasts were transferred to three(3) NWSOs, primarily from Topeka, as a part of the Kansas Pre-MARD forecast initiative.

STATE OF KENTUCKY (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Kentucky will be provided by three in-state WFOs--Jackson, Louisville and Paducah--and by WFOs Charleston, West Virginia; and Cincinnati, Ohio. WFO Charleston will serve seven counties in Kentucky; and WFO Cincinnati, 12 counties. WFO Louisville will serve ten counties in Indiana; and WFO Paducah will serve 19 counties in Illinois, six counties in Indiana and 11 counties in Missouri.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
JACKSON, KY (WSO to WFO)	**12/96**	**ASOS 12/95 88D 10/96** AWIPS 11/98	05/97	01/98		12/98	**06/96**	10/97				
•WSO Huntington, WV		**ASOS 09/96**			**10/94**				**01/97**	07/98	**01/97**	07/98
•WSO Lexington, KY		**ASOS 03/96**			**02/96**[1]				**01/97**	04/98	**01/97**	04/98
LOUISVILLE, KY (WSFO to WFO)	**02/93**[2]	**88D 11/94** AWIPS 11/98		01/99		12/98	**09/94**	12/98	**02/93**[2]			
•Res WSO Louisville, KY[2]		**ASOS 08/94**	**07/94**						**01/97**	04/97	**01/97**	04/97
•WSO Evansville, IN		**ASOS 02/96**	**07/96**		**02/96**				04/97	10/97	04/97	10/97
•WSO Lexington, KY		**ASOS 03/96**			**02/96**				**01/97**	04/98	**01/97**	04/98

1. Seven counties were transferred to WFO Louisville, KY in February 1996; final transfer to WFO Jackson, KY occured in October 1996.
2. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.

STATE OF KENTUCKY (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PADUCAH, KY[3] (WSO to WFO)	02/95	ASOS 08/95 88D 09/95 AWIPS 11/98	02/96	01/99	[redacted]	12/98	12/94	10/97	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Evansville, IN	[redacted]	ASOS 02/96	07/96	[redacted]	02/96	[redacted]	[redacted]	[redacted]	04/97	10/97	04/97	10/97
WFOs Out Of State:												
CHARLESTON, WV (WSFO to WFO)	05/95	88D 08/95 AWIPS 03/99	[redacted]	05/99	[redacted]	03/99	12/94	03/99	05/95	[redacted]	[redacted]	[redacted]
CINCINNATI, OH (New WFO)	06/94	88D 06/95 AWIPS 10/98	[redacted]	12/98	[redacted]	12/98	07/94	09/97	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Cincinnati, OH	[redacted]	ASOS 10/95	06/96	[redacted]	10/94	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Lexington, KY	[redacted]	ASOS 03/96	[redacted]	[redacted]	10/94	[redacted]	[redacted]	[redacted]	01/97	04/98	01/97	04/98

3. Upper air function transferred from WSO Paducah to the site of WFO Central Illinois in February 1995.

STATE OF LOUISIANA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Louisiana will be provided by three in-state WFOs--Lake Charles, New Orleans/Baton Rouge and Shreveport--and by WFO Jackson, Mississippi. WFO Jackson will serve nine counties in Louisiana. WFO Lake Charles will serve six counties in Texas; WFO New Orleans/Baton Rouge will serve eight counties in Mississippi; and WFO Shreveport will serve nine counties in Arkansas, one county in Oklahoma and 21 counties in Texas.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
LAKE CHARLES, LA (WSO to WFO)	**02/96**[1]	**88D 05/95** **ASOS 01/96** **APUP 01/96**[2] AWIPS 08/99	**10/95**	*		08/99	**10/94**	07/98				
•WSO Baton Rouge, LA		**ASOS 05/93**	**05/96**		**05/95**				**01/97**	04/97	**01/97**	04/97
•WSO Port Arthur, TX		**ASOS 07/95**			**05/95**				**01/97**	**03/97**	**01/97**	04/97
NEW ORLEANS/BATON ROUGE, LA (WSFO to WFO)	**02/94**[3,4]	**88D 02/95** AWIPS 07/98		09/98		12/98	**10/94**	12/98	**02/94**[3]			
•Res WSO New Orleans, LA[3]			**08/95**						**03/96**		**03/96**	04/97
•WSO Baton Rouge, LA		**ASOS 05/93**	**05/96**		**04/95**				**01/97**	04/97	**01/97**	04/97
•WSCMO New Orleans, LA[4]		**ASOS 05/96**										

1. WSO Lake Charles becomes WFO Lake Charles at its current location. Upper air function remains in place.
2. WFO Lake Charles also uses, by means of an associated PUP (APUP), data from the DOD Ft. Polk WSR-88D.
3. Forecast and warning service of the transitioning WSFO transferred to facility of future WFO. Radar observation function transfered, and staff decreased upon consolidation certification.
4. Upper air function was relocated in January 1994 on Slidell Airport to be collocated on the site of WFO New Orleans/Baton Rouge. This WSCMO closed in August 1996. No certification required.

STATE OF LOUISIANA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
NEW ORLEANS/BATON ROUGE, LA Lower Mississippi RFC	02/94	NPUP 11/96 AWIPS 07/98					07/94					
SHREVEPORT, LA (WSO to WFO)	02/95[5]	ASOS 10/95 88D 10/95 AWIPS 08/99	06/96	*		08/99	06/95	07/98				
•WSO Port Arthur, TX		ASOS 07/95			05/95				01/97	03/97	01/97	04/97
•WSMO Longview, TX[5]			03/96						03/96			
WFOs Out Of State:												
JACKSON, MS (WSFO to WFO)	04/93	ASOS 07/93 88D 02/95 AWIPS *	06/95	*		*	03/94	*				
•WSO Baton Rouge, LA		ASOS 05/93	05/96		04/95				01/97	04/97	01/97	04/97

5. Upper air function transferred from WSMO Longview to the site of WFO Shreveport in February 1995. This WSMO closed in March 1996. No certification required.

STATE OF MAINE (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Maine will be provided by one in-state WFO--Portland. WFO Portland will serve eight counties in New Hampshire.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
PORTLAND, ME (WSFO to WFO)	09/94[1,2]	88D 05/95[3] 88D 02/96[3] AWIPS *		*		*	10/94	*	09/94[1]			
•Res WSO Portland, ME[1]		ASOS 08/94	09/95						01/97	07/97	01/97	07/97
•WSO Caribou, ME[4,5]		ASOS 08/96			#				#	#	#	#
•WSO Concord, NH		ASOS 03/96			11/94				01/97	10/97	01/97	10/97

1. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated residual WSO.
2. Upper air function transferred with WSFO Portland to the site of WFO Portland in September 1994.
3. This WSR-88D, located in the vicinity of Houlton, ME, is also operated by Portland WFO.
4. Upper air function at WSO Caribou will be contracted upon closure of the WSO.
5. Existing WSO will remain in service during assessment of the adequacy of communications, maintenance, and outreach. Results will be available fall 1997. Schedule for related activities will be determined after results of the assessment.

STATE OF MARYLAND (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Maryland will be provided by WFOs Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; and Wakefield, Virginia. WFO Philadelphia will serve five counties in Maryland; WFO Pittsburgh, one county; and WFO Wakefield, four counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BALTIMORE, MD/ WASHINGTON, DC (WSFO to WFO)	**04/90**	**88D 06/94** AWIPS 08/99		*		08/99	**05/93**	08/99				
•WSO Baltimore, MD		**ASOS 04/96**			**04/94**				**01/97**	04/97	**01/97**	04/97
•WSMO Patuxent River, MD[1]			**11/95**						**11/95**			
PHILADELPHIA, PA (WSFO to WFO)	**08/93**	**88D 02/95** AWIPS 07/98		09/98		12/98	**01/95**	12/98				
•WSO Baltimore, MD		**ASOS 04/96**			**10/94**				**01/97**	04/97	**01/97**	04/97
PITTSBURGH, PA (WSFO to WFO)	**05/93**	**88D 01/95** AWIPS 07/98	**05/95**	09/98		12/98	**09/94**	12/98				

1. This WSMO closed in November 1995. No certification required.

STATE OF MARYLAND (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WAKEFIELD, VA (New WFO)	**05/94**	**88D 08/95** **APUP 11/95** ASOS 02/98 AWIPS 09/99	[redacted]	*	[redacted]	09/99	**12/94**	08/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Baltimore, MD	[redacted]	**ASOS 04/96**	[redacted]	[redacted]	**02/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSMO Patuxent River, MD	[redacted]	[redacted]	**11/95**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**11/95**	[redacted]	[redacted]	[redacted]

STATE OF MASSACHUSETTS (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Massachusetts will be provided by one in-state WFO--Boston--and by WFO Albany, New York. WFO Albany will serve one county in Massachusetts. WFO Boston will serve three counties in Connecticut, five counties in Rhode Island and two counties in New Hampshire.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BOSTON, MA (WSFO to WFO)	**11/93**[1]	**88D 12/94** AWIPS 07/98		09/98		12/98	**07/94**	12/98	**11/93**[1]			
•Res WSO Boston, MA[1]		**ASOS 04/96**							04/97	07/97		07/97
•WSO Concord, NH		**ASOS 03/96**			**11/94**				**01/97**	10/97	**01/97**	10/97
•WSO Hartford, CT		**ASOS 04/96**	**11/95**		**09/94**				**01/97**	07/97	**01/97**	07/97
•WSO Providence, RI		**ASOS 09/95**			**09/94**				**01/97**	07/97	**01/97**	07/97
•WSO Worcester, MA		**ASOS 07/95**	**04/95**		**06/94**				**01/97**	07/97	**01/97**	07/97
•WSMO Chatham, MA[2] (WSMO - WSCMO)			**04/95**						**10/95**			
•WSMO Milton-Blue Hill, MA		ASOS 02/98										
BOSTON, MA Northeast RFC	**07/93**	**NPUP 11/96** AWIPS 07/98					**08/94**					

1. Forecast and warning service of the transitioning WSFO transferred to facility of future WFO. Surface observation function retained at original WSFO location and office redesignated a residual WSO.
2. Upper air function at WSMO Chatham was contracted out after decommissioning the WSR-74S at Chatham. This WSMO closed in October 1995 and redesignated a WSCMO. No certification required.

STATE OF MASSACHUSETTS (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
ALBANY, NY (WSFO to WFO)	04/97	88D 04/95 AWIPS *	[redacted]	*	[redacted]	*	12/94	*	04/97	[redacted]	[redacted]	[redacted]

STATE OF MICHIGAN (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Michigan will be provided by four in-state WFOs--Detroit, Grand Rapids, Marquette and North Central Lower Michigan--and by WFO Northern Indiana, Indiana. WFO Northern Indiana will serve five counties in Michigan.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
DETROIT, MI (WSFO to WFO)	**11/92**[1]	**88D 03/95** AWIPS 02/99		04/99		02/99	**07/94**	02/99				
•WSO Detroit, MI		**ASOS 07/95**	**11/95**		**07/94**				**01/97**	04/97	**01/97**	04/97
•WSO Flint, MI[1]		**ASOS 06/95**			**07/94**				04/97	04/97		04/97
GRAND RAPIDS, MI (WSO to WFO)	**08/95**	**ASOS 08/95** **88D 02/96** AWIPS 02/99		04/99		02/99	**09/95**	01/98				
•WSO Houghton Lake, MI		**ASOS 04/96**	**12/96**		**02/96**				10/97	10/97	10/97	10/97
•WSO Lansing, MI		**ASOS 06/96**			**10/95**				**01/97**	04/97	**01/97**	04/97
•WSO Muskegon, MI		**ASOS 05/96**	**08/96**		**02/96**				04/97	04/97	04/97	04/97
•WSO South Bend, IN[2]		**ASOS 07/96**	#		**04/96**				#	#	#	#

1. Upper air function was transferred from WSO Flint to the site of WFO Detroit in September 1994.
2. Existing radar will remain operational during ongoing Lake Effect Snow Study results of which will be available Fall 1997; schedules for related activities will be determined based on results of the study.

STATE OF MICHIGAN (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MARQUETTE, MI (WSO to WFO)	**08/95**	**88D 02/96** AWIPS 02/99	**07/96**	04/99		02/99	**07/95**	01/98				
•WSO Sault Ste. Marie, MI					**05/95**				10/97	10/97	10/97	10/97
NORTH CENTRAL LOWER MICHIGAN, MI (New WFO)	**04/96**[3]	**88D 08/96** AWIPS 02/99		04/99		02/99	**04/96**	01/98				
•WSO Alpena, MI		**ASOS 04/96**	**12/96**		**04/96**				10/97	10/97	10/97	10/97
•WSO Houghton Lake, MI		**ASOS 04/96**	**12/96**		**04/96**				10/97	10/97	10/97	10/97
•WSO Muskegon, MI		**ASOS 05/96**	**08/96**		**04/96**				04/97	04/97	04/97	04/97
•WSO Sault Ste. Marie, MI[3]		**ASOS 01/97**			**04/96**				10/97	10/97	10/97	10/97
WFOs Out Of State:												
NORTHERN INDIANA, IN (New WFO)	05/98	88D 03/98 AWIPS 06/99				06/99	03/98	05/98				

3. Upper air function transfered from WSO Sault Ste. Marie to the site of WFO North Central Lower Michigan on April 24, 1996.

STATE OF MINNESOTA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Minnesota will be provided by two in-state WFOs--Duluth and Minneapolis--and by WFOs Aberdeen, South Dakota; Eastern North Dakota, North Dakota; La Crosse, Wisconsin; and Sioux Falls, South Dakota. WFO Aberdeen will serve two counties in Minnesota; WFO Eastern North Dakota, 18 counties; WFO La Crosse, seven counties; and WFO Sioux Falls, eight counties. WFO Duluth will serve eight counties in Wisconsin; and WFO Minneapolis will serve nine counties in Wisconsin.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
DULUTH, MN (WSO to WFO)	**04/96**	**ASOS 04/96** **88D 05/96** AWIPS 07/98	**03/97**	09/98	[redacted]	12/98	**07/95**	06/97	[redacted]	[redacted]	[redacted]	[redacted]
•WSO International Falls, MN[1]	[redacted]	**ASOS 11/96**	[redacted]	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]	07/97	01/98	07/97	01/98
MINNEAPOLIS, MN (WSFO to WFO)	**03/95**[2,3]	**88D 11/95** AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	**08/94**	12/98	**03/95**[2]	[redacted]	[redacted]	[redacted]
•Res WSO Minneapolis, MN[2]	[redacted]	**ASOS 06/96**	**04/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**01/97**	01/98	**01/97**	01/98
•WSO Fargo, ND	[redacted]	**ASOS 11/95**	**11/96**	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Rochester, MN	[redacted]	**ASOS 06/96**	**01/97**	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO St. Cloud, MN[3]	[redacted]	**ASOS 06/95**	[redacted]	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97

1. Upper air function at WSO International Falls will be contracted out after April 1997 and will be redesignated a WSCMO upon closure certification.
2. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
3. Upper air function transferred from WSO St. Cloud to the site of WFO Minneapolis in March 1995.

STATE OF MINNESOTA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MINNEAPOLIS, MN **North Central RFC**	03/95	NPUP 12/96 AWIPS 07/98					02/94					
WFOs Out Of State:												
ABERDEEN, SD **(WSO to WFO)**	11/94	ASOS 11/94 88D 09/95 AWIPS *		*		*	09/95	02/99				
•WSO St. Cloud, MN		ASOS 06/95			04/95				10/97	10/97	10/97	10/97
EASTERN NORTH DAKOTA, ND **(New WFO)**	03/96	88D 07/96 AWIPS *		*		*	06/96	02/99				
•WSO International Falls, MN		ASOS 11/96			03/96				07/97	01/98	07/97	01/98
LA CROSSE, WI **(WSO to WFO)**	08/95	88D 09/96 AWIPS *		*		*	03/96	10/98				
•WSO Rochester, MN		ASOS 06/96	01/97		08/96				10/97	10/97	10/97	10/97

STATE OF MINNESOTA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SIOUX FALLS, SD (WSFO to WFO)	09/93	88D 10/95 ASOS 04/96 AWIPS *	10/96	*	[redacted]	*	08/94	*	[redacted]	[redacted]	[redacted]	[redacted]

STATE OF MISSISSIPPI (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Mississippi will be provided by one in-state WFO--Jackson--and by WFOs Memphis, Tennessee; Mobile, Alabama; and New Orleans/Baton Rouge, Louisiana. WFO Memphis will serve 24 counties in Mississippi; WFO Mobile, five counties; and WFO New Orleans/Baton Rouge, eight counties. WFO Jackson will serve two counties in Arkansas and nine counties in Louisiana.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
JACKSON, MS (WSFO to WFO)	04/93[1]	ASOS 07/93 88D 02/95 AWIPS *	06/95	*		*	03/94	*				
•WSO Baton Rouge, LA		ASOS 05/93	05/96		04/95				01/97	04/97	01/97	04/97
•WSO Meridian, MS		ASOS 07/95	12/96		04/95				04/97	04/97	04/97	04/97
•WSO Tupelo, MS		ASOS 06/93	12/95		04/95				01/97	10/97	01/97	10/97
•WSO Vicksburg, MS[2]									*			*
WFOs Out Of State:												
MEMPHIS, TN (WSFO to WFO)	08/93	88D 01/95 APUP 12/95 AWIPS *	06/95	*		*	06/94	*				
•WSO Tupelo, MS		ASOS 06/93	12/95		04/95				01/97	10/97	01/97	10/97

1. Upper air function remains at its current location which is located at the site of WFO Jackson.
2. WSO Vicksburg is a one person office collocated at and supporting, on a reimbursable basis, a Corps of Engineers (COE) office. Office will close if and when COE no longer needs support.

STATE OF MISSISSIPPI (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MOBILE, AL (WSO to WFO)	02/94	88D 04/95 ASOS 02/96 AWIPS *	10/95	*	[redacted]	*	10/94	11/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Meridian, MS	[redacted]	ASOS 07/95	12/96	[redacted]	04/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
NEW ORLEANS/BATON ROUGE, LA (WSFO to WFO)	02/94	88D 02/95 AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	10/94	12/98	02/94	[redacted]	[redacted]	[redacted]

STATE OF MISSOURI (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Missouri will be provided by three in-state WFOs--Kansas City/Pleasant Hill, Springfield and St. Louis--and by WFOs Memphis, Tennessee; and Paducah, Kentucky. WFO Memphis will serve two counties in Missouri; and WFO Paducah, 11 counties. WFO Kansas City/Pleasant Hill will serve seven counties in Kansas; WFO Springfield will serve three counties in Kansas; and WFO St. Louis will serve 17 counties in Illinois.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
KANSAS CITY/PLEASANT HILL, MO (WSO to WFO)	12/93[1]	88D 02/95 AWIPS 07/98		09/98		12/98	06/93	10/95	12/93[1]			
•Res WSO Kansas City, MO		ASOS 07/95	11/95						01/97	04/97	01/97	04/97
•WSO Columbia, MO		ASOS 09/95	06/96		09/94				01/97	04/97	01/97	04/97
KANSAS CITY/PLEASANT HILL, MO Missouri Basin RFC	10/91	NPUP 10/96 AWIPS 07/98					09/93					
SPRINGFIELD, MO (WSO to WFO)	11/94	88D 09/95 ASOS 11/95 AWIPS 05/99		07/99		05/99	01/95	04/98				
•WSO Columbia, MO		ASOS 09/95	06/96		09/95				01/97	04/97	01/97	04/97
•WSMO Monett, MO[2]			02/96						02/96			

1. Forecast and warning services of transitioning WSO transferred to facility of future WFO. Surface and radar observation functions retained at original WSO location and office redesignated a residual WSO.
2. Upper air function transferred in April 1995 from WSMO Monett to the site of WFO Springfield. This WSMO closed in February 1996. No certification required.

STATE OF MISSOURI (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
ST. LOUIS, MO (WSFO to WFO)	**09/90**[3]	**88D 07/94** AWIPS 06/99		08/99		06/99	**11/92**	06/99	**09/90**[3]			
•Res WSO St. Louis, MO[3]			**06/96**						**01/97**		**01/97**	04/97
•WSO Columbia, MO		**ASOS 09/95**	**06/96**		**09/94**				**01/97**	04/97	**01/97**	04/97
•WSO Springfield, IL		**ASOS 12/95**	**07/96**		**09/94**				04/97	04/97	04/97	04/97
•WSCMO St. Louis, MO[4]		**ASOS 06/96**										
WFOs Out Of State:												
MEMPHIS, TN (WSFO to WFO)	**08/93**	**88D 01/95** **APUP 12/95** AWIPS *	**06/95**	*		*	**06/94**	*				
PADUCAH, KY (WSO to WFO)	**02/95**	**ASOS 08/95** **88D 09/95** AWIPS 11/98	**02/96**	01/99		12/98	**12/94**	10/97				

3. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Radar observation function retained at original WSFO location and office redesignated a residual WSO.
4. This WSCMO closed in October 1996. No certification required.

STATE OF MONTANA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Montana will be provided by four in-state WFOs--Billings, Glasgow, Great Falls and Missoula. WFO Billings will serve one county in Wyoming; and WFO Missoula will serve three counties in Idaho.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BILLINGS, MT (WSO to WFO)	08/95[1]	88D 04/96 AWIPS *		*		*	07/96	01/99	08/95[1]			
•Res WSO Billings, MT[1]		ASOS 05/95	05/96						04/97	04/97	04/97	04/97
•WSO Sheridan, WY		ASOS 12/96			10/95				10/97	10/97	10/97	10/97
GLASGOW, MT (WSO to WFO)	08/95[2]	ASOS 04/94 88D 08/96 AWIPS *		*		*	05/96	01/99				
GREAT FALLS, MT (WSFO to WFO)	06/94[3]	88D 04/95 AWIPS 01/99		03/99		01/99	09/94	01/99				
•WSO Havre, MT		ASOS 04/94			04/95				01/97	10/97	01/97	10/97
•WSO Helena, MT		ASOS 11/94			04/95				01/97	03/97	01/97	04/97
•WSCMO Great Falls, MT[4]		ASOS 08/94										

1. Forecast and warning services of the WSO transferred to facility of future WFO. Surface and radar observation functions retained at original WSO location and office redesignated a residual WSO.
2. Upper air function moved locally to be closer to WFO Glasgow in August 1995.
3. Upper air function moved to location of WFO Great Falls in September 1994.
4. This WSCMO closed in September 1994. No certification required.

STATE OF MONTANA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MISSOULA, MT (WSO to WFO)	**07/94**	**88D 06/95 ASOS 09/96 AWIPS 01/99**	**12/95**	03/99	[redacted]	01/99	**12/94**	12/97	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Helena, MT	[redacted]	**ASOS 11/94**	[redacted]	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Kalispell, MT	[redacted]	**ASOS 02/94**	[redacted]	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Lewiston, ID	[redacted]	**ASOS 07/95**	[redacted]	[redacted]	**10/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

STATE OF NEBRASKA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Nebraska will be provided by three in-state WFOs--Hastings, North Platte and Omaha--and by WFOs Cheyenne, Wyoming; Goodland, Kansas; and Sioux Falls, South Dakota. WFO Cheyenne will serve eight counties in Nebraska; WFO Goodland, three counties; and WFO Sioux Falls, two counties. WFO Hastings will serve six counties in Kansas; and WFO Omaha will serve eight counties in Iowa.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
HASTINGS, NE (New WFO)	**11/92**	**88D 12/94** AWIPS 07/98		09/98		12/98	**03/94**	06/97				
•WSO Concordia, KS		**ASOS 09/92**	**11/95**		**09/94**				**01/97**	10/97	**01/97**	10/97
•WSO Grand Island, NE		**ASOS 10/92**	**01/96**		**09/94**				**01/97**	**03/97**	**01/97**	04/97
NORTH PLATTE, NE (WSO to WFO)	**06/95**[1]	**ASOS 02/96** **88D 08/96** AWIPS 07/99	**11/96**	09/99		07/99	**02/96**	06/98				
•WSO Norfolk, NE		**ASOS 04/96**	**03/97**		**03/96**				10/97	10/97	10/97	10/97
•WSO Scottsbluff, NE		**ASOS 06/95**			**03/95**				10/97	10/97	10/97	10/97
•WSO Valentine, NE		**ASOS 10/95**			**08/95**				10/97	10/97		10/97
•WSMO Alliance, NE[2]			**01/97**						**01/97**			

1. Upper air function remains in place and is collocated with WFO North Platte.
2. This WSMO closed in January 1997. No certification required.

STATE OF NEBRASKA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
OMAHA, NE (WSFO to WFO)	**04/94**[3,4]	**88D 07/95** AWIPS 08/99		*		08/99	**07/94**	08/99	**04/94**[3]			
•Res WSO Omaha, NE[3,4]			**07/96**						04/97		04/97	04/97
•WSO Lincoln, NE		**ASOS 11/92**			**03/95**				**01/97**	04/97	**01/97**	04/97
•WSO Norfolk, NE		**ASOS 04/96**	**03/97**		**03/95**				10/97	10/97	10/97	10/97
•WSO Sioux City, IA		**ASOS 06/95**			**03/95**				**01/97**	04/97	**01/97**	04/97
WFOs Out Of State:												
CHEYENNE, WY (WSFO to WFO)	**08/93**	**88D 11/95** **ASOS 11/95** AWIPS *	**04/96**	*		*	**01/95**	*				
•WSO Scottsbluff, NE		**ASOS 06/95**			**03/95**				10/97	10/97	10/97	10/97
•WSMO Alliance, NE			**01/97**						**01/97**			
GOODLAND, KS (WSO to WFO)	**03/90**	**ASOS 09/92** **88D 04/95** AWIPS 07/98	**10/95**	09/98		**01/97**	**12/93**	**01/96**				

3. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Radar observation function retained at original WSFO location and office redesignated a residual WSO.
4. Upper air function transferred in May 1994 to site of WFO Omaha.

STATE OF NEBRASKA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SIOUX FALLS, SD (WSFO to WFO)	09/93	88D 10/95 ASOS 04/96 AWIPS *	10/96	*	[redacted]	*	08/94	*	[redacted]	[redacted]	[redacted]	[redacted]

STATE OF NEVADA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Nevada will be provided by three in-state WFOs--Elko, Las Vegas and Reno. WFO Las Vegas will serve one county in Arizona, two counties in California; and WFO Reno will serve nine counties in California.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ELKO, NV (WSO to WFO)	08/95[1]	88D 04/96 AWIPS *		*		*	10/95	12/98				
•WSO Ely, NV[1]		ASOS 06/94			09/95				10/97	10/97		10/97
•WSO Winnemucca, NV[2]		ASOS 10/94			09/95				10/97	10/97		10/97
LAS VEGAS, NV[3,4] (WSO to WFO)	03/95[5]	88D 09/95[7] AWIPS 09/99		*		09/99	05/95	08/98	03/95[5]			
•Res WSO Las Vegas, NV[5]		ASOS 09/95	09/95						01/97	04/97	01/97	04/97
•WSO Riverside (FW), CA					09/99[6]				*			*

1. Upper air function transferred from WSO Ely to the site of WFO Elko in August 1995.
2. Upper air function was transferred from WSO Winnemucca to the site of WFO Reno in October 1994.
3. An ASOS was commissioned at unstaffed Bishop Airport, Bishop, California, (May 1995) in the administrative area of WFO Las Vegas.
4. An ASOS was commissioned in July 1996 at Desert Rock Airport, Mercury, Nevada, in the administrative area of WFO Las Vegas and an upper air function will continue to be maintained at Desert Rock Airport. This site supports DOE's Nuclear Office.
5. Forecast and Warning Services of transitioning WSO transferred to facility of the future WFO. Surface observation functions retained at original WSO location and office redesignated a residual WSO. Radar observation function transferred, and staff decreased upon consolidation certification.
6. Service transfer will take place upon the commissioning of an AWIPS at WFO Las Vegas.
7. WFO Las Vegas also uses, data from the DOD WSR-88D at Edwards AFB.

STATE OF NEVADA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
RENO, NV (WSFO to WFO)	**07/94**[8,9]	**88D 06/95** AWIPS 09/99	[redacted]	*	[redacted]	09/99	**07/94**	09/99	**07/94**[8]	[redacted]	[redacted]	[redacted]
•Res WSO Reno, NV[8]	[redacted]	**ASOS 09/95**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**03/97**	**03/97**	[redacted]	04/97
•WSO Redding, CA	[redacted]	**ASOS 07/96**	[redacted]	[redacted]	**05/96**	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	*

8. Forecasting and warning service of WSFO transferred to facility of future WFO. Surface observation function retained at original WSFO location and office redesignated a residual WSO.
9. Upper air function transferred from WSO Winnemucca to the site of WFO Reno in October 1994.

STATE OF NEW HAMPSHIRE (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in New Hampshire will be provided by WFOs Boston, Massachusetts; and Portland, Maine. WFO Boston will serve two counties in New Hampshire; and WFO Portland, eight counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BOSTON, MA (WSFO to WFO)	11/93	88D 12/94 AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	07/94	12/98	11/93	[redacted]	[redacted]	[redacted]
•WSO Concord, NH	[redacted]	ASOS 03/96	[redacted]	[redacted]	11/94	[redacted]	[redacted]	[redacted]	01/97	10/97	01/97	10/97
PORTLAND, ME (WSFO to WFO)	09/94	88D 05/95, 88D 02/96[1] AWIPS *	[redacted]	*	[redacted]	*	10/94	*	09/94	[redacted]	[redacted]	[redacted]
•WSO Concord, NH	[redacted]	ASOS 03/96	[redacted]	[redacted]	11/94	[redacted]	[redacted]	[redacted]	01/97	10/97	01/97	10/97

1. This WSR-88D, located in the vicinity of Houlton, ME, is also operated by Portland WFO.

STATE OF NEW JERSEY (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in New Jersey will be provided by WFOs New York City, New York; and Philadelphia, Pennsylvania. WFO New York City will serve five counties in New Jersey; and WFO Philadelphia, 16 counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
NEW YORK CITY, NY (WSFO to WFO)	**10/93**[1]	**88D 01/95** AWIPS 08/98		10/98		12/98	**01/95**	12/98	**10/93**			
•WSO Newark, NJ		**ASOS 07/96**							07/97	07/97		07/97
PHILADELPHIA, PA[2] **(WSFO to WFO)**	**08/93**	**88D 02/95** AWIPS 07/98		09/98		12/98	**01/95**	12/98				
•WSO Atlantic City, NJ[1]		**ASOS 09/95**	**09/95**		**09/94**				**01/97**	04/97	**01/97**	04/97

1. Upper air function transferred in September 1994 from WSO Atlantic City to the site of WFO New York City.
2. An ASOS was commissioned in May 1996 at an unstaffed site at Northeast Philadelphia Airport, Philadelphia, Pennsylvania, in the administrative area of WFO Philadelphia.

STATE OF NEW MEXICO (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in New Mexico will be provided by one in-state WFO--Albuquerque--and by WFOs El Paso, Texas; and Midland/Odessa, Texas. WFO El Paso will serve six counties in New Mexico; and WFO Midland/Odessa, two counties.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ALBUQUERQUE, NM[1] (WSFO to WFO)	03/94[2]	**88D 08/95 APUP 12/95[3] ASOS 03/96** AWIPS 08/99		*		08/99	**04/94**	08/99				
•WSO Roswell, NM		**ASOS 10/96**			**10/95**							04/97
WFOs Out Of State:												
EL PASO, TX (WSO to WFO)	**08/95**	**88D 07/96** AWIPS 06/99		08/99		06/99	**02/96**	05/98	**08/95**			
MIDLAND/ODESSA, TX (WSO to WFO)	**12/94**	**88D 09/95 ASOS 03/96** AWIPS 06/99	**06/96**	08/99		06/99	**11/94**	05/98				
•WSO Roswell, NM		**ASOS 10/96**			**12/94**							04/97

1. An ASOS was commissioned in June 1996 at Clayton Memorial Airpark, Clayton, New Mexico, in the adminstrative area WFO Albuquerque.
2. Upper air function at WSFO Albuquerque moved locally in March 1994 to be closer to site of WFO Albuquerque.
3. Albuquerque also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D at Cannon, AFB.

STATE OF NEW YORK (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in New York will be provided by four in-state WFOs--Albany, Binghamton, Buffalo and New York City--and by WFO Burlington, Vermont. WFO Burlington will serve four counties in New York. WFO Albany will serve one county in Connecticut, one county in Massachusetts, two counties in Vermont; WFO Binghamton will serve seven counties in Pennsylvania; and WFO New York City will serve four counties in Connecticut and five counties in New Jersey.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ALBANY, NY (WSFO to WFO)	04/97[1,2]	**88D 04/95 AWIPS ***		*		*	**12/94**	*	04/97[1]			
•Res WSO Albany, NY[1,2]		**ASOS 08/95**	**11/95**						01/98	01/98	01/98	01/98
•WSO Hartford, CT		**ASOS 04/96**	**11/95**		**09/94**				**01/97**	07/97	**01/97**	07/97
BINGHAMTON, NY (WSO to WFO)	**09/93**	**88D 03/95 ASOS 11/95 AWIPS ***	**09/95**	*		*	**10/94**	11/98				
•WSO Allentown, PA		**ASOS 11/95**			**08/94**				**01/97**	04/97	**01/97**	04/97
•WSO Rochester, NY		**ASOS 07/96**			**06/94**				07/97	07/97	07/97	07/97
•WSO Syracuse, NY		**ASOS 11/93**			**06/94**				04/98	04/98	04/98	04/98
•WSO Wilkes-Barre, PA		**ASOS 04/96**			**08/94**				**01/97**	04/97	**01/97**	04/97
•WSO Williamsport, PA		**ASOS 09/95**			**08/94**				**01/97**	04/97	**01/97**	04/97

1. Forecast and warning services of transitioning WSFO will be transferred to facility of future WFO. Surface observation functions will be retained at original WSFO location and office redesignated a residual WSO.
2. Upper air function will transfer locally in April 1997.

STATE OF NEW YORK (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
BUFFALO, NY (WSFO to WFO)	04/95[3]	88D 04/96 AWIPS *	02/96	*		*	09/95	*				
•WSO Rochester, NY		ASOS 07/96			06/94				07/97	07/97	07/97	07/97
•WSO Syracuse, NY		ASOS 11/93			06/94				04/98	04/98	04/98	04/98
•WSCMO Buffalo, NY[3]		ASOS 12/95										
NEW YORK CITY, NY[4] (WSFO to WFO)	10/93[5,6]	88D 01/95 AWIPS 08/98		10/98		12/98	01/95	12/98	10/93[6]			
•Res WSO New York, NY[6]			09/95						01/97		01/97	04/97
•WSO Bridgeport, CT		ASOS 05/96			09/94				01/97	07/97	01/97	07/97
•WSO Hartford, CT		ASOS 04/96	11/95		09/94				01/97	07/97	01/97	07/97
•WSO Newark, NJ		ASOS 07/96							07/97	07/97		07/97
•WSCMO New York/Kennedy, NY[7]		ASOS 05/96										
•WSCMO New York/La Guardia, NY[8]		ASOS 05/96										

3. Upper air function moved locally to be collocated with the site of WFO Buffalo in October 1995. This WSCMO closed in February 1996. No certification required.
4. An ASOS was commissioned at an unstaffed site at Teterboro Airport, Teterboro, New Jersey, in the administrative area of WFO New York City in November 1996.
5. Upper air function transferred in September 1994 from WSO Atlantic City to the site of WFO New York City.
6. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Radar observation function retained at original WSFO location and office redesignated a residual WSO.
7. This WSCMO closed in July 1996. No certification required.
8. This WSCMO closed in December 1996. No certification required.

STATE OF NEW YORK (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BURLINGTON, VT (WSO to WFO)	**01/96**	**ASOS 02/96 APUP 02/96 88D 03/97 AWIPS ***	05/97	*	[redacted]	*	**01/95**	12/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Syracuse, NY	[redacted]	**ASOS 11/93**	[redacted]	[redacted]	**06/94**	[redacted]	[redacted]	[redacted]	04/98	04/98	04/98	04/98

STATE OF NORTH CAROLINA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in North Carolina will be provided by three in-state WFOs--Morehead City, Raleigh/Durham and Wilmington--and by WFOs Greenville/Spartanburg, South Carolina; Knoxville/Tri-Cities, Tennessee; Roanoke, Virginia; and Wakefield, Virginia. WFO Greenville/Spartanburg will serve 28 counties in North Carolina; WFO Knoxville/Tri-Cities, two counties; WFO Roanoke, nine counties; and WFO Wakefield, nine counties. WFO Wilmington will serve eight counties in South Carolina.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
MOREHEAD CITY, NC[1] (New WFO)	05/94[2]	88D 05/95 AWIPS 06/99		08/99		06/99	08/94	05/98				
•WSO Cape Hatteras, NC[2]			12/95		12/94				01/97		01/97	04/97
•WSMO Patuxent River, MD[3]			11/95						11/95			
RALEIGH/DURHAM, NC (WSFO to WFO)	01/94[4,5]	88D 07/95 AWIPS 07/99		09/99		07/99	08/94	07/99	01/94[4]			
•Res WSO Raleigh, NC[4]		ASOS 02/96	12/95						01/97	04/97	01/97	04/97
•WSO Charlotte, NC		ASOS 04/97	09/96		09/94				10/97	10/97	10/97	10/97
•WSO Greensboro, NC[5]		ASOS 10/95			09/94				04/97	04/97	04/97	04/97
•WSMO Volens, VA[6]			12/95						12/95			

1. An ASOS was commissioned at an unstaffed site at Mitchell Field, Cape Hatteras, North Carolina, in the administrative area of WFO Morehead City in July 1995.
2. Upper air function transferred from WSO Cape Hatteras to the site of WFO Morehead City in July 1994.
3. This WSMO closed in November 1995. No certification required.
4. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
5. Upper air function will transfer in January 1998 from WSO Greensboro to the site of WFO Raleigh/Durham.
6. This WSMO closed in December 1995. No certification required.

STATE OF NORTH CAROLINA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WILMINGTON, NC (WSO to WFO)	07/94	88D 07/95 ASOS 11/95 AWIPS 07/99	11/95	09/99	[redacted]	07/99	09/94	06/98	[redacted]	[redacted]	[redacted]	[redacted]
WFOs Out Of State:												
GREENVILLE/SPARTANBURG, SC (WSO to WFO)	05/95	88D 03/96 ASOS 04/96 AWIPS *	[redacted]	*	[redacted]	*	10/94	10/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Asheville, NC	[redacted]	ASOS 06/96	[redacted]	[redacted]	10/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Charlotte, NC	[redacted]	ASOS 04/97	09/96	[redacted]	01/96	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Greensboro, NC	[redacted]	ASOS 10/95	[redacted]	[redacted]	10/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
KNOXVILLE/TRI-CITIES, TN (New WFO)	07/94	88D 06/95 AWIPS *	[redacted]	*	[redacted]	*	12/94	09/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Asheville, NC	[redacted]	ASOS 06/96	[redacted]	[redacted]	06/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
ROANOKE, VA (New WFO)	09/94	88D 08/95 AWIPS 09/99	[redacted]	*	[redacted]	09/99	10/94	08/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Asheville, NC	[redacted]	ASOS 06/96	[redacted]	[redacted]	04/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Greensboro, NC	[redacted]	ASOS 10/95	[redacted]	[redacted]	02/95	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

STATE OF NORTH CAROLINA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WAKEFIELD, VA (New WFO)	05/94	88D 08/95 APUP 11/95 ASOS 02/98 AWIPS 09/99	[redacted]	*	[redacted]	09/99	12/94	08/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Cape Hatteras, NC	[redacted]	[redacted]	12/95	[redacted]	02/95	[redacted]	[redacted]	[redacted]	01/97	[redacted]	01/97	04/97

STATE OF NORTH DAKOTA (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in North Dakota will be provided by two in-state WFOs--Bismarck and Eastern North Dakota. WFO Eastern North Dakota will serve 18 counties in Minnesota.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BISMARCK, ND (WSFO to WFO)	**08/94**[1]	**APUP 10/95**[2] **88D 10/95** **ASOS 05/96** AWIPS 07/98	02/96	09/98	[redacted]	12/98	**11/94**	12/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Fargo, ND	[redacted]	**ASOS 11/95**	**11/96**	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Williston, ND[3]	[redacted]	**ASOS 04/96**	11/97	[redacted]	**10/96**	[redacted]	[redacted]	[redacted]	07/98	07/98	07/98	07/98
EASTERN NORTH DAKOTA, ND (New WFO)	**03/96**	**88D 07/96** AWIPS *	[redacted]	*	[redacted]	*	**06/96**	02/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Fargo, ND	[redacted]	**ASOS 11/95**	**11/96**	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO International Falls, MN[4]	[redacted]	**ASOS 11/96**	[redacted]	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]	07/97	01/98	07/97	01/98

1. Upper air function remains in place and is collocated with WFO Bismarck.
2. WFO Bismarck also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D located at Minot AFB.
3. Existing WSO and radar will remain in service during operational evaluation of the adequacy of WSR-88D coverage. Result available fall 1997. Schedule for related activities will be determined based on results of the study.
4. Upper air function at WSO International Falls will be contracted out after April 1997 and will be redesignated a WSCMO upon closure certification.

STATE OF OHIO (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Ohio will be provided by two in-state WFOs--Cincinnati and Cleveland--and by WFOs Charleston, West Virginia; Northern Indiana, Indiana; and Pittsburgh, Pennsylvania. WFO Charleston will serve nine counties in Ohio; WFO Northern Indiana, eight counties; and WFO Pittsburgh, 11 counties. WFO Cincinnati will serve eight counties in Indiana, 12 counties in Kentucky; and WFO Cleveland will serve two counties in Pennsylvania.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CINCINNATI, OH (New WFO)	**06/94**[2]	**88D 06/95** AWIPS 10/98		12/98		12/98	**07/94**	09/97				
•WSO Cincinnati, OH		**ASOS 10/95**	**06/96**		**10/94**				04/97	04/97	04/97	04/97
•WSO Columbus, OH		**ASOS 02/96**	**12/95**		**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Dayton, OH		**ASOS 11/95**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Fort Wayne, IN		**ASOS 07/96**	05/97		**10/94**				10/98	10/98	10/98	10/98
•WSO Huntington, WV[1]		**ASOS 09/96**			**10/94**				**01/97**	07/98	**01/97**	07/98
•WSO Lexington, KY		**ASOS 03/96**			**10/94**				**01/97**	04/98	**01/97**	04/98
•WSO Toledo, OH		**ASOS 12/95**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSCMO Dayton, OH[2]												
CINCINNATI, OH Ohio RFC	**02/94**	**NPUP 11/96** AWIPS 10/98					**04/94**					

1. Upper air function transferred from WSO Huntington to the site of WFO Roanoke in October 1995.
2. Upper air function transferred from WSCMO Dayton to the site of WFO Cincinnati in September 1995. This WSCMO closed in October 1995. No certification required.

STATE OF OHIO (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
CLEVELAND, OH (WSFO to WFO)	04/93	88D 02/95 ASOS 12/95 AWIPS 03/99	11/95	05/99	[redacted]	03/99	11/94	03/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Akron, OH	[redacted]	ASOS 09/95	11/95	[redacted]	08/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSO Columbus, OH	[redacted]	ASOS 02/96	12/95	[redacted]	08/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSO Erie, PA[3]	[redacted]	ASOS 10/95	#	[redacted]	08/94	[redacted]	[redacted]	[redacted]	#	#	#	#
•WSO Mansfield, OH	[redacted]	ASOS 02/96	[redacted]	[redacted]	08/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSO Toledo, OH	[redacted]	ASOS 12/95	[redacted]	[redacted]	08/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSO Youngstown, OH	[redacted]	ASOS 09/95	[redacted]	[redacted]	08/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
WFOs Out Of State:												
CHARLESTON, WV (WSFO to WFO)	05/95	88D 08/95 AWIPS 03/99	[redacted]	05/99	[redacted]	03/99	12/94	03/99	05/95	[redacted]	[redacted]	[redacted]
•WSO Akron, OH	[redacted]	ASOS 09/95	11/95	[redacted]	10/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSO Columbus, OH	[redacted]	ASOS 02/96	12/95	[redacted]	10/94	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97

3. Existing RADAR will remain operational during ongoing LAKE EFFECT SNOW STUDY the result of which will be available Fall 1997; schedule for related activities will be determined based on results of the study.

STATE OF OHIO (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
NORTHERN INDIANA, IN (New WFO)	05/98	88D 03/98 AWIPS 06/99				06/99	03/98	05/98				
PITTSBURGH, PA (WSFO to WFO)	**05/93**	**88D 01/95** AWIPS 07/98	**05/95**	09/98		12/98	**09/94**	12/98				
•WSO Akron, OH		**ASOS 09/95**	**11/95**		**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Columbus, OH		**ASOS 02/96**	**12/95**		**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Youngstown, OH		**ASOS 09/95**			**10/94**				**01/97**	04/97	**01/97**	04/97

STATE OF OKLAHOMA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Oklahoma will be provided by two in-state WFOs--Oklahoma City and Tulsa--and by WFOs Amarillo, Texas; and Shreveport, Louisiana. WFO Amarillo will serve three counties in Oklahoma; and WFO Shreveport, one county. WFO Oklahoma City will serve eight counties in Texas; and WFO Tulsa will serve six counties in Arkansas.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
OKLAHOMA CITY, OK (WSFO to WFO)	05/87[1,2]	88D 02/94 APUP 01/96[3] AWIPS 07/98		09/98		12/98	02/93	12/98	05/87[2]			
•Res WSO Oklahoma City, OK[2]		ASOS 10/92	07/94						03/96	04/97	03/96	04/97
•WSO Wichita Falls, TX		ASOS 05/93	12/96		03/93				04/97	10/97	04/97	10/97
TULSA, OK (WSO to WFO)	03/92[4]	88D 05/94 APUP 06/97[5] AWIPS 07/98 88D #		09/98		12/98	06/94	06/94	03/92[4]			
•Res WSO Tulsa, OK[4]		ASOS 10/92	04/95						03/96	04/97	03/96	04/97
•WSO Fort Smith, AR		ASOS 08/94	10/97		07/94				01/98	01/98	01/98	01/98

1. Upper air function transferred to the site of WFO Oklahoma City in March 1989.
2. Forecast and Warning Services of transitioning WSFO transferred to facility of the future WFO. Surface observation functions retained at original WSFO location and office redesignated a residual WSO. Radar observation function transferred, and staff decreased upon consolidation certification.
3. WFO Oklahoma City also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D at Vance AFB.
4. Forecast and Warning Services of transitioning WSO transferred to facility of the future WFO. Surface observation functions retained at original WSO location and office redesignated a residual WSO. Radar observation function transferred, and staff decreased upon consolidation certification.
5. WFO Tulsa also uses, by means of an associated PUP(APUP), data from the Western Arkansas WSR-88D radar.

STATE OF OKLAHOMA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
TULSA, OK **Arkansas-Red Basin RFC**	**03/92**	**NPUP 04/97** AWIPS 12/98					**04/92**					
WFOs Out Of State:												
AMARILLO, TX **(WSO to WFO)**	**03/90**	**ASOS 11/92** **88D 03/94** AWIPS 01/99	**09/94**	03/99		01/99	**08/94**	**08/94**				
SHREVEPORT, LA **(WSO to WFO)**	**02/95**	**ASOS 10/95** **88D 10/95** AWIPS 08/99	**06/96**	*		08/99	**06/95**	07/98				

STATE OF OREGON (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Oregon will be provided by three in-state WFOs--Medford, Pendleton and Portland--and by WFO Boise, Idaho. WFO Boise will serve three counties in Oregon. WFO Medford will serve two counties in California; WFO Pendleton will serve seven counties in Washington; and WFO Portland will serve six counties in Washington.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
MEDFORD, OR[1] (WSO to WFO)	06/95[2]	88D 04/96 ASOS 06/97 AWIPS *	08/96	*		*	05/96	12/98				
•WSO Eugene, OR		ASOS 09/95			07/95				04/97	04/97	04/97	04/97
•WSO Klamath Falls, OR									04/97			04/97
•WSO Redding, CA		ASOS 07/96			06/96				10/97	10/97	10/97	*
•WSCMO Sexton Summit, OR		ASOS 12/92										
PENDLETON, OR (WSO to WFO)	05/95	ASOS 06/95 88D 07/96 AWIPS *		*		*	05/96	12/98				
•WSO Lewiston, ID		ASOS 07/95			06/95				04/97	04/97	04/97	04/97
•WSO Wenatchee (AG & FW), WA					*[3]				*			*
•WSO Yakima, WA		ASOS 04/96			12/95				10/97	10/97	10/97	10/97

1. An ASOS was commissioned, in August 1996, at an unstaffed, non-airport, site at Mt. Shasta, California, in the administrative area of WFO Medford.
2. Upper air function will remain at its current location which is collocated with site of WFO Medford.
3. Service will be transferred upon commissioning of an AWIPS at WFO Pendleton.

STATE OF OREGON (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PORTLAND, OR (WSFO to WFO)	08/94[4]	88D 07/95 AWIPS 09/98		11/98		12/98	06/95	12/98	08/94[4]			
•Res WSO Portland, OR[4]		ASOS 11/95	01/96						01/97	04/97	01/97	04/97
•WSO Astoria, OR		ASOS 03/93			01/96				04/97	10/97	04/97	10/97
•WSO Eugene, OR		ASOS 09/95			07/95				04/97	04/97	04/97	04/97
•WSO Olympia (FW), WA					09/98[5]				*			*
•WSO Olympia, WA		ASOS 11/95			04/95				04/97	04/97	04/97	04/97
•WSO Salem (FW), OR									04/98			04/98
•WSO Salem, OR[6]		ASOS 07/95			09/95				01/97	03/97	01/97	04/97
PORTLAND, OR Northwest RFC	08/94	NPUP 10/96 AWIPS 09/98					06/93					
WFOs Out Of State:												
BOISE, ID (WSFO to WFO)	07/93	88D 01/95 ASOS 12/95 AWIPS 09/98		11/98		12/98	05/94	12/98				
•WSMO Burns, OR		ASOS 07/95							10/96			

4. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO and office redesignated a residual WSO.
5. Service will be transferred upon commissioning of an AWIPS at WFO Portland.
6. Upper air function will be contracted at Salem location until roof launch capability is available at WFO Portland.

STATE OF PENNSYLVANIA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Pennsylvania will be provided by three in-state WFOs--Central Pennsylvania, Philadelphia and Pittsburgh--and by WFOs Binghamton, New York; and Cleveland, Ohio. WFO Binghamton will serve seven counties in Pennsylvania; and WFO Cleveland, two counties. WFO Philadelphia will serve three counties in Delaware, five counties in Maryland, 16 counties in New Jersey; and WFO Pittsburgh will serve one county in Maryland, nine counties in West Virginia and 11 counties in Ohio.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CENTRAL PENNSYLVANIA, PA (New WFO)	**09/93**	**88D 04/95** AWIPS 07/98		09/98		12/98	**09/94**	06/97				
•WSO Allentown, PA		**ASOS 11/95**			**08/94**				**01/97**	04/97	**01/97**	04/97
•WSO Erie, PA[1]		**ASOS 10/95**	#		**08/94**				#	#	#	#
•WSO Harrisburg, PA			**01/96**		**08/94**				**01/97**		**01/97**	04/97
•WSO Wilkes-Barre, PA		**ASOS 04/96**			**08/94**				**01/97**	04/97	**01/97**	04/97
•WSO Williamsport, PA		**ASOS 09/95**			**08/94**				**01/97**	04/97	**01/97**	04/97
CENTRAL PENNSYLVANIA, PA Middle Atlantic RFC	**01/93**	**NPUP 10/96** AWIPS 07/98					**08/94**					

1. Existing RADAR will remain operational during ongoing LAKE EFFECT SNOW STUDY the results of which will be available fall 1997, schedule for related activities will be determined based on results of the study.

STATE OF PENNSYLVANIA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PHILADELPHIA, PA[2] (WSFO to WFO)	**08/93**	**88D 02/95 AWIPS 07/98**		09/98		12/98	**01/95**	12/98				
•WSO Allentown, PA		**ASOS 11/95**			**08/94**				**01/97**	04/97	**01/97**	04/97
•WSO Atlantic City, NJ[3]		**ASOS 09/95**	**09/95**		**09/94**				**01/97**	04/97	**01/97**	04/97
•WSO Baltimore, MD		**ASOS 04/96**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Reading, PA									04/97			04/97
•WSO Wilmington, DE		**ASOS 10/94**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSCMO Philadelphia, PA[4]		**ASOS 12/95**										
PITTSBURGH, PA (WSFO to WFO)	**05/93[5]**	**88D 01/95 AWIPS 07/98**	**05/95**	09/98		12/98	**09/94**	12/98				
•WSO Akron, OH		**ASOS 09/95**	**11/95**		**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Columbus, OH		**ASOS 02/96**	**12/95**		**10/94**				**01/97**	04/97	**01/97**	04/97
•WSO Elkins, WV		**ASOS 05/96**			**09/94**				**01/97**	10/97	**01/97**	10/97
•WSO Erie, PA[6]		**ASOS 10/95**	#		**08/94**				#	#	#	#
•WSO Youngstown, OH		**ASOS 09/95**			**10/94**				**01/97**	04/97	**01/97**	04/97
•WSCMO Pittsburgh, PA[7]		**ASOS 07/96**										

2. An ASOS was commissioned in May 1996 at an unstaffed site at Northeast Philadelphia Airport, Philadelphia, Pennsylvania, in the administrative area of WFO Philadelphia.
3. Upper air function transferred in September 1994 from WSO Atlantic City to the site of WFO New York City.
4. This WSCMO closed in July 1996. No certification required.
5. Upper air function remains and is collocated with WFO Pittsburgh.
6. Existing RADAR will remain operational during ongoing LAKE EFFECT SNOW STUDY, the results of which will be available fall 1997; schedule for related activities will be determined based on results of the study.
7. This WSCMO closed in March 1997. No certification required.

STATE OF PENNSYLVANIA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BINGHAMTON, NY (WSO to WFO)	**09/93**	**88D 03/95 ASOS 11/95 AWIPS ***	**09/95**	*	[redacted]	*	**10/94**	11/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Allentown, PA	[redacted]	**ASOS 11/95**	[redacted]	[redacted]	**08/94**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Wilkes-Barre, PA	[redacted]	**ASOS 04/96**	[redacted]	[redacted]	**08/94**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Williamsport, PA	[redacted]	**ASOS 09/95**	[redacted]	[redacted]	**08/94**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
CLEVELAND, OH (WSFO to WFO)	**04/93**	**88D 02/95 ASOS 12/95 AWIPS 03/99**	**11/95**	05/99	[redacted]	03/99	**11/94**	03/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Erie, PA[8]	[redacted]	**ASOS 10/95**	#	[redacted]	**08/94**	[redacted]	[redacted]	[redacted]	#	#	#	#

8. Existing RADAR will remain operational during ongoing LAKE EFFECT SNOW STUDY, the results of which will be available fall 1997; schedule for related activities will be determined based on results of the study.

TERRITORY OF PUERTO RICO (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Puerto Rico will be provided by one in-state WFO--San Juan.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
SAN JUAN, PR (WSFO to WFO)	**04/94**[1]	**ASOS 05/96** APUP 05/97[2] AWIPS 08/99	05/97	*	[redacted]	08/99	**11/94**	08/99	[redacted]	[redacted]	[redacted]	[redacted]

1. Upper air function remains at its current location, which is collocated with the site of WFO San Juan.
2. The WFO will use, by means of an associated PUP (APUP), an FAA WSR-88D located in the vicinity of San Juan.

STATE OF RHODE ISLAND (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Rhode Island will be provided by WFO Boston, Massachusetts. WFO Boston will serve five counties in Rhode Island.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BOSTON, MA (WSFO to WFO)	**11/93**	**88D 12/94** AWIPS 07/98		09/98		12/98	**07/94**	12/98	**11/93**			
•WSO Providence, RI		**ASOS 09/95**			**09/94**				**01/97**	07/97	**01/97**	07/97

STATE OF SOUTH CAROLINA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in South Carolina will be provided by three in-state WFOs--Charleston, Columbia and Greenville/Spartanburg--and by WFO Wilmington, North Carolina. WFO Wilmington will serve eight counties in South Carolina. WFO Charleston will serve 12 counties in Georgia; WFO Columbia will serve five counties in Georgia; and WFO Greenville/Spartanburg will serve 28 counties in North Carolina and six counties in Georgia.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CHARLESTON, SC (WSO to WFO)	11/94[1]	ASOS 10/95 88D 06/96 AWIPS *	12/96	*		*	07/94	09/98				
•WSO Augusta, GA		ASOS 05/94	07/96		06/95				04/97	04/97	04/97	04/97
•WSO Savannah, GA		ASOS 04/96	02/97		06/95				04/97	04/97	04/97	04/97
•WSMO Waycross, GA[2]			01/96						01/96			
COLUMBIA, SC (WSFO to WFO)	09/93	88D 06/95 ASOS 12/95 AWIPS *	10/95	*		*	08/94	*				
•WSO Augusta, GA		ASOS 05/94	07/96		12/94				04/97	04/97	04/97	04/97

1. Upper air function remains at its current location.
2. Upper air function transferred from WSMO Waycross to the site of WFO Jacksonville in January 1995. This WSMO closed in January 1996. No certification required.

STATE OF SOUTH CAROLINA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
GREENVILLE/SPARTANBURG, SC (WSO to WFO)	**05/95**	**88D 03/96 ASOS 04/96 AWIPS ***		*		*	**10/94**	10/98				
•WSO Asheville, NC		**ASOS 06/96**			**10/95**				04/97	04/97	04/97	04/97
•WSO Athens, GA[3]		**ASOS 02/96**	**09/96**		**10/95**				04/97	04/97	04/97	04/97
•WSO Charlotte, NC		ASOS 04/97	**09/96**		**01/96**				10/97	10/97	10/97	10/97
•WSO Greensboro, NC[4]		**ASOS 10/95**			**10/95**				04/97	04/97	04/97	04/97
WFOs Out Of State:												
WILMINGTON, NC (WSO to WFO)	**07/94**	**88D 07/95 ASOS 11/95 AWIPS 07/99**	**11/95**	09/99		07/99	**09/94**	06/98				

3. Upper air function was transferred from WSO Athens to the site of WFO Atlanta in August 1994.
4. Upper air function will transfer in January 1998 from WSO Greensboro to the site of WFO Raleigh/Durham.

STATE OF SOUTH DAKOTA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in South Dakota will be provided by three in-state WFOs--Aberdeen, Rapid City and Sioux Falls. WFO Aberdeen will serve two counties in Minnesota; WFO Rapid City will serve three counties in Wyoming; and WFO Sioux Falls will serve 11 counties in Iowa, eight counties in Minnesota and two counties in Nebraska.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
ABERDEEN, SD (WSO to WFO)	**11/94**[1]	**ASOS 11/94 88D 09/95 AWIPS ***		*		*	**09/95**	02/99				
•WSO Fargo, ND		**ASOS 11/95**	**11/96**		**09/95**				04/97	04/97	04/97	04/97
•WSO Huron, SD[1]		**ASOS 11/96**	**11/96**		**09/95**				10/97	10/97	10/97	10/97
•WSO St. Cloud, MN		**ASOS 06/95**			**04/95**				10/97	10/97	10/97	10/97
RAPID CITY, SD (WSO to WFO)	**11/95**[2,3]	**88D 07/96 AWIPS ***		*		*	**10/95**	02/99	**11/95**[2]			
•Res WSO Rapid City, SD[2,3]		**ASOS 09/95**	**11/96**						04/97	04/97	04/97	04/97
•WSO Casper, WY		**ASOS 04/96**			**04/96**				10/97	10/97	10/97	10/97
•WSMO Alliance, NE[4]			**01/97**						**01/97**			

1. Upper air function transferred in November 1994 from WSO Huron to the site of WFO Aberdeen.
2. Forecast and warning services of transitioning WSO transferred to facility of future WFO. Radar and surface observation functions retained at original WSO location and office redesignated a residual WSO.
3. Upper air function transfered locally in November 1995 to be collocated with WFO Rapid City.
4. This WSMO closed in January 1997. No certification required.

STATE OF SOUTH DAKOTA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
SIOUX FALLS, SD (WSFO to WFO)	**09/93**	**88D 10/95 ASOS 04/96 AWIPS ***	**10/96**	*	[redacted]	*	**08/94**	*	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Huron, SD	[redacted]	**ASOS 11/96**	**11/96**	[redacted]	**09/95**	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Sioux City, IA	[redacted]	**ASOS 06/95**	[redacted]	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97

STATE OF TENNESSEE (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Tennessee will be provided by three in-state WFOs--Knoxville/Tri-Cities, Memphis and Nashville. WFO Knoxville/Tri-Cities will serve two counties in North Carolina, five counties in Virginia; and WFO Memphis will serve 12 counties in Arkansas, 24 counties in Mississippi and two counties in Missouri.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
KNOXVILLE/TRI-CITIES, TN (New WFO)	**07/94**	**88D 06/95 APUP 08/97[1] AWIPS ***	[redacted]	*	[redacted]	*	**12/94**	09/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Asheville, NC	[redacted]	**ASOS 06/96**	[redacted]	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97
•WSO Bristol, TN	[redacted]	**ASOS 10/95**	**01/96**	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSO Chattanooga, TN	[redacted]	**ASOS 09/95**	12/97	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	04/98	04/98	04/98	04/98
•WSO Knoxville, TN	[redacted]	**ASOS 10/95**	[redacted]	[redacted]	**06/95**	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
MEMPHIS, TN (WSFO to WFO)	**08/93**	**88D 01/95 APUP 12/95[2] AWIPS ***	**06/95**	*	[redacted]	*	**06/94**	*	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Tupelo, MS	[redacted]	**ASOS 06/93**	**12/95**	[redacted]	**04/95**	[redacted]	[redacted]	[redacted]	**01/97**	10/97	**01/97**	10/97

1. WFO Knoxville/Tri-Cities also uses, by means of an associated PUP(APUP), data from the Northeast Alabama WSR-88D.
2. WFO Memphis also uses, by means of an associated PUP (APUP), data from the DOD WSR-88D at Columbus AFB.

STATE OF TENNESSEE (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
NASHVILLE, TN (WSO to WFO)	10/94[3]	88D 07/95 AWIPS *	01/96	*	[redacted]	*	11/94	09/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Chattanooga, TN	[redacted]	ASOS 09/95	12/97	[redacted]	06/95	[redacted]	[redacted]	[redacted]	04/98	04/98	04/98	04/98
•WSO Knoxville, TN	[redacted]	ASOS 10/95	[redacted]	[redacted]	06/95	[redacted]	[redacted]	[redacted]	01/97	04/97	01/97	04/97
•WSCMO Nashville, TN[4]	[redacted]	ASOS 06/96	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

3. Upper air function remains at its current location, which is collocated with the site of WFO Nashville.
4. This WSCMO closed in September 1996. No certification required.

STATE OF TEXAS (Page 1 of 5)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Texas will be provided by ten in-state WFOs--Amarillo, Austin/San Antonio, Brownsville, Corpus Christi, Dallas/Fort Worth, El Paso, Houston/Galveston, Lubbock, Midland/Odessa and San Angelo--and by WFOs Lake Charles, Louisiana; Oklahoma City, Oklahoma; and Shreveport, Louisiana. WFO Lake Charles will serve six counties in Texas; WFO Oklahoma City, eight counties; and WFO Shreveport, 21 counties. WFO Amarillo will serve three counties in Oklahoma; WFO El Paso will serve six counties in New Mexico; and WFO Midland/Odessa will serve two counties in New Mexico.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
AMARILLO, TX (WSO to WFO)	**03/90**[1]	**ASOS 11/92** **88D 03/94** AWIPS 01/99	**09/94**	03/99		01/99	**08/94**	**08/94**				
AUSTIN/SAN ANTONIO, TX (WSFO to WFO)	**04/94**[2]	**88D 01/95** **APUP 12/95**[3] AWIPS 03/99		05/99		03/99	**06/94**	03/99	**04/94**[2]			
•Res WSO San Antonio, TX[2]		**ASOS 06/95**							04/97	04/97		04/97
•WSO Austin, TX		**ASOS 07/95**	**10/95**		**03/95**				04/97	04/97	04/97	04/97
•WSO Del Rio, TX[4]		**ASOS 04/96**[5]			**03/95**				**01/97**		**01/97**	04/97
•WSO Victoria, TX		**ASOS 12/95**	**03/97**		**03/95**				07/97	01/98	07/97	01/98
•WSMO Hondo, TX[6]			**03/96**						**03/96**			

1. Upper air function remains at its current site, which is collocated with WFO Amarillo.
2. Forecast and warning service of the transitioning WSFO transferred to facility of future WFO. Surface observation function retained at original WSFO location and office redesignated a residual WSO.
3. WFO Austin/San Antonio also uses, by means of an associated PUP (APUP), data from the DOD Laughlin AFB WSR-88D.
4. Upper air function contracted out at its current location in March 1995.
5. This ASOS replaced a currently automated system, AUTOB, at this site.
6. This WSMO closed in March 1996. No certification required.

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
BROWNSVILLE, TX (WSO to WFO)	**03/95**[7]	**ASOS 05/94 88D 09/95** AWIPS 03/99	**02/96**	05/99		03/99	**07/95**	02/98				
CORPUS CHRISTI, TX (WSO to WFO)	**10/95**[8]	**ASOS 12/95 88D 09/96** AWIPS 03/99	**03/97**	05/99		03/99	**02/96**	02/98				
•WSO Victoria, TX		**ASOS 12/95**	**03/97**		**05/96**				07/97	01/98	07/97	01/98
DALLAS/FORT WORTH, TX (WSFO to WFO)	**11/93**[9]	**88D 12/94 APUP 10/95**[10] **APUP 10/95**[10] AWIPS 07/98		09/98		12/98	**10/94**	12/98				
•WSO Abilene, TX		**ASOS 05/96**	04/97		**01/95**				01/98	01/98	01/98	01/98
•WSO Austin, TX		**ASOS 07/95**	**10/95**		**01/95**				04/97	04/97	04/97	04/97
•WSO Waco, TX		**ASOS 07/93**	**09/95**		**01/95**				**01/97**	**03/97**	**01/97**	04/97
•WSO Wichita Falls, TX		**ASOS 05/93**	**12/96**		**03/93**				04/97	10/97	04/97	10/97
•WSMO Longview, TX[11]			**03/96**						**03/96**			
•WSMO Stephenville, TX[9]			**08/95**						**08/95**			
•WSCMO Dallas/Fort Worth, TX[12]		**ASOS 12/95**										

7. Upper air function transferred to the site of WFO Brownsville in July 1995.
8. Upper air function transferred to the site of WFO Corpus Christi in November 1995.
9. Upper air function transferred from WSO Stephenville to the site of WFO Dallas/Fort Worth in July 1994. This WSMO closed in August 1995. No certification required.
10. WFO Dallas/Fort Worth also uses, by means of APUPs, the data from the DOD WSR-88Ds at Dyess AFB and Central Texas.
11. Upper air function transferred from WSMO Longview to the site of WFO Shreveport in February 1995. This WSMO closed in March 1996. No certification required.
12. This WSCMO closed in April 1996. No certification required.

STATE OF TEXAS (Page 3 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
DALLAS/FORT WORTH, TX **West Gulf RFC**	**11/93**	**WPUP 11/96** AWIPS 07/98					**01/94**					
EL PASO, TX[13] **(WSO to WFO)**	**08/95**[14,15]	**88D 07/96** AWIPS 06/99		08/99		06/99	**02/96**	05/98	**08/95**[14]			
•Res WSO El Paso, TX[14,15]		**ASOS 06/95**							04/97	04/97		04/97
HOUSTON/GALVESTON, TX **(WSO to WFO)**	**10/90**	**88D 03/94** AWIPS 11/98		01/99		12/98	**04/94**	10/97				
•WSO Austin, TX		**ASOS 07/95**	**10/95**		**04/94**				04/97	04/97	04/97	04/97
•WSO Galveston, TX			**05/95**		**04/94**				**11/95**		**11/95**	04/97
•WSO Victoria, TX		**ASOS 12/95**	**03/97**		**04/94**				07/97	01/98	07/97	01/98
•WSO Waco, TX		**ASOS 07/93**	**09/95**		**04/94**				**01/97**	**03/97**	**01/97**	04/97
•WSCMO Houston, TX[16]		**ASOS 06/96**										

13. An ASOS was commissioned in September 1996 at unstaffed Truth or Consequences Airport, NM in the administrative area of WFO El Paso.
14. Forecast and warning service of the transitioning WSO transferred to facility of future WFO. Surface observation function retained at original WSO location and office redesignated a residual WSO.
15. Upper air function transferred from WSO El Paso to the site of WFO El Paso in September 1995.
16. This WSCMO closed in September 1996. No certification required.

STATE OF TEXAS (Page 4 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
LUBBOCK, TX (WSFO to WFO)	**12/93**[17]	**88D 09/95 AWIPS 06/99**	[redacted]	08/99	[redacted]	06/99	**06/94**	06/99	**12/93**[17]	[redacted]	[redacted]	[redacted]
•Res WSO Lubbock, TX[17]	[redacted]	**ASOS 09/95**	**04/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**01/97**	04/97	**01/97**	04/97
•WSO Abilene, TX	[redacted]	**ASOS 05/96**	04/97	[redacted]	**10/95**	[redacted]	[redacted]	[redacted]	01/98	01/98	01/98	01/98
MIDLAND/ODESSA, TX (WSO to WFO)	**12/94**[18]	**88D 09/95 ASOS 03/96 AWIPS 06/99**	**06/96**	08/99	[redacted]	06/99	**11/94**	05/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Abilene, TX	[redacted]	**ASOS 05/96**	04/97	[redacted]	**10/95**	[redacted]	[redacted]	[redacted]	01/98	01/98	01/98	01/98
•WSO Roswell, NM	[redacted]	**ASOS 10/96**	[redacted]	[redacted]	**12/94**	[redacted]	[redacted]	[redacted]	04/97	[redacted]	[redacted]	04/97
SAN ANGELO, TX (WSO to WFO)	**02/96**	**ASOS 02/96 88D 07/96 AWIPS 06/99**	12/96	08/99	[redacted]	06/99	**02/96**	05/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Abilene, TX	[redacted]	**ASOS 05/96**	04/97	[redacted]	**08/96**	[redacted]	[redacted]	[redacted]	01/98	01/98	01/98	01/98
•WSO Austin, TX	[redacted]	**ASOS 07/95**	**10/95**	[redacted]	**03/95**	[redacted]	[redacted]	[redacted]	04/97	04/97	04/97	04/97

17. Forecast and warning service of the transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
18. Upper air function remains at its current location, which is collocated with the site of WFO Midland/Odessa.

STATE OF TEXAS (Page 5 of 5)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
LAKE CHARLES, LA (WSO to WFO)	**02/96**	**88D 05/95 ASOS 01/96 APUP 01/96** AWIPS 08/99	**10/95**	*	[redacted]	08/99	**10/94**	07/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Port Arthur, TX	[redacted]	**ASOS 07/95**	[redacted]	[redacted]	**05/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
OKLAHOMA CITY, OK (WSFO to WFO)	**05/87**	**88D 02/94 APUP 01/96** AWIPS 07/98	[redacted]	09/98	[redacted]	12/98	**02/93**	12/98	**05/87**	[redacted]	[redacted]	[redacted]
•WSO Wichita Falls, TX	[redacted]	**ASOS 05/93**	**12/96**	[redacted]	**03/93**	[redacted]	[redacted]	[redacted]	04/97	10/97	04/97	10/97
SHREVEPORT, LA (WSO to WFO)	**02/95**	**ASOS 10/95 88D 10/95** AWIPS 08/99	**06/96**	*	[redacted]	08/99	**06/95**	07/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Port Arthur, TX	[redacted]	**ASOS 07/95**	[redacted]	[redacted]	**05/95**	[redacted]	[redacted]	[redacted]	**01/97**	**03/97**	**01/97**	04/97
•WSMO Longview, TX	[redacted]	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**03/96**	[redacted]	[redacted]	[redacted]

STATE OF UTAH (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Utah will be provided by one in-state WFO--Salt Lake City--and by WFO Grand Junction, Colorado. WFO Grand Junction will serve three counties in Utah. WFO Salt Lake City will serve one county in Wyoming and two counties in Idaho.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
SALT LAKE CITY, UT[1] (WSFO to WFO)	08/94[2]	88D 06/95 88D 03/97[3] ASOS 05/97 AWIPS 07/98		09/98		12/98	05/94	12/98				
SALT LAKE CITY, UT Colorado Basin RFC	08/94	NPUP 11/96 AWIPS 07/98					03/93					
WFOs Out Of State:												
GRAND JUNCTION, CO (WSO to WFO)	06/95	ASOS 04/96 88D 06/96 AWIPS *		*		*	10/95	12/98				

1. An ASOS was commissioned in August 1996 at an unstaffed site at Milford Municipal Airport, Milford, Utah, in the administrative area of WFO Salt Lake City.
2. Upper air function remains at its current site which is collocated with WFO Salt Lake City.
3. A second WSR-88D, located near Cedar City, UT, is also controlled and used by the Salt Lake City WFO.

STATE OF VERMONT (Page 1 of 1)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Vermont will be provided by one in-state WFO--Burlington--and by WFO Albany, New York. WFO Albany will serve two counties in Vermont. WFO Burlington will serve four counties in New York.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BURLINGTON, VT (WSO to WFO)	**01/96**	**ASOS 02/96, APUP 02/96[1] 88D 03/97 AWIPS ***	05/97	*		*	**01/95**	12/98				
•WSO Syracuse, NY		**ASOS 11/93**			**06/94**				04/98	04/98	04/98	04/98
WFOs Out Of State:												
ALBANY, NY (WSFO to WFO)	04/97	**88D 04/95 AWIPS ***		*		*	**12/94**	*	04/97			

1. WFO Burlington also uses by means of an Associated PUP(APUP), data from the DOD WSR-88D at Griffiss AFB.

STATE OF VIRGINIA (Page 1 of 3)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Virginia will be provided by three in-state WFOs--Baltimore MD/Washington, DC, Roanoke and Wakefield--and by WFOs Charleston, West Virginia; and Knoxville/Tri-Cities, Tennessee. WFO Charleston will serve two counties in Virginia; and WFO Knoxville/Tri-Cities, five counties. WFO Baltimore MD/Washington, DC will serve one county in District Of Columbia, 13 counties in Maryland, eight counties in West Virginia; WFO Roanoke will serve four counties in West Virginia, nine counties in North Carolina; and WFO Wakefield will serve four counties in Maryland and nine counties in North Carolina.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
BALTIMORE, MD/ WASHINGTON, DC (WSFO to WFO)	**04/90**	**88D 06/94** AWIPS 08/99		*		08/99	**05/93**	08/99				
•WSO Baltimore, MD		**ASOS 04/96**			**04/94**				**01/97**	04/97	**01/97**	04/97
•WSO Elkins, WV		**ASOS 05/96**			**04/94**				**01/97**	10/97	**01/97**	10/97
•WSO Richmond, VA		**ASOS 10/95**			**03/94**				**01/97**	04/97	**01/97**	04/97
•WSMO Patuxent River, MD[1]			**11/95**						**11/95**			
•WSMO Volens, VA[2]			**12/95**						**12/95**			
•WSCMO Washington-Dulles, DC[3]		**ASOS 05/96**										
•WSCMO Washington-National, DC[4]		ASOS 07/97										

1. This WSMO closed in November 1995. No certification required.
2. This WSMO closed in December 1995. No certification required.
3. Upper Air Function at WSCMO Washington - Dulles moved to the location of WFO Baltimore MD/Washington DC in July 1992. This WSCMO closed in July 1996. No certification required.
4. This WSCMO is scheduled to close in August 1997. No certification required.

STATE OF VIRGINIA (Page 2 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
ROANOKE, VA (New WFO)	**09/94**[5]	**88D 08/95 AWIPS 09/99**		*		09/99	**10/94**	08/98				
•WSO Asheville, NC		**ASOS 06/96**			**04/95**				04/97	04/97	04/97	04/97
•WSO Beckley, WV		**ASOS 02/96**	**01/96**		**02/95**				**01/97**	10/97	**01/97**	10/97
•WSO Bristol, TN		**ASOS 10/95**	**01/96**		**02/95**				**01/97**	**03/97**	**01/97**	04/97
•WSO Greensboro, NC[6]		**ASOS 10/95**			**02/95**				04/97	04/97	04/97	04/97
•WSO Lynchburg, VA		**ASOS 08/96**			**02/95**				**01/97**	04/97	**01/97**	04/97
•WSO Richmond, VA		**ASOS 10/95**			**02/95**				**01/97**	04/97	**01/97**	04/97
•WSO Roanoke, VA		**ASOS 05/96**			**02/95**				**01/97**	04/97	**01/97**	04/97
•WSMO Volens, VA[7]			**12/95**						**12/95**			

5. Upper air function transferred from WSO Huntington to the site of WFO Roanoke in October 1995.
6. Upper air function will transfer in January 1998 from WSO Greensboro to the site of WFO Raleigh/Durham.
7. This WSMO closed in December 1995. No certification required.

STATE OF VIRGINIA (Page 3 of 3)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WAKEFIELD, VA (New WFO)	05/94	88D 08/95 APUP 11/95[8] ASOS 02/98 AWIPS 09/99		*		09/99	12/94	08/98				
•WSO Baltimore, MD		ASOS 04/96			02/95				01/97	04/97	01/97	04/97
•WSO Cape Hatteras, NC			12/95		02/95				01/97		01/97	04/97
•WSO Norfolk, VA		ASOS 03/96			02/95				01/97	04/97	01/97	04/97
•WSO Richmond, VA		ASOS 10/95			02/95				01/97	04/97	01/97	04/97
•WSMO Patuxent River, MD			11/95						11/95			
•WSCMO Wallops Island, VA[9]		ASOS 09/96										
WFOs Out Of State:												
CHARLESTON, WV (WSFO to WFO)	05/95	88D 08/95 AWIPS 03/99		05/99		03/99	12/94	03/99	05/95			
KNOXVILLE/TRI-CITIES, TN (New WFO)	07/94	88D 06/95 AWIPS *		*		*	12/94	09/98				

8. WFO Wakefield also uses, by means of an associated PUP (APUP), data from the DOD Dover AFB WSR-88D.
9. Upper air function remains at WSCMO Wallops Island.

STATE OF WASHINGTON (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Washington will be provided by two in-state WFOs--Seattle/Tacoma and Spokane--and by WFOs Pendleton, Oregon; and Portland, Oregon. WFO Pendleton will serve seven counties in Washington; and WFO Portland, six counties. WFO Spokane will serve eight counties in Idaho.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
SEATTLE/TACOMA, WA (WSFO to WFO)	**10/93**	**88D 02/95** AWIPS 02/99		04/99		02/99	**06/94**	02/99				
•WSO Olympia (FW), WA					02/99[1]				*			*
•WSO Olympia, WA		**ASOS 11/95**			**04/95**				04/97	04/97	04/97	04/97
•WSCMO Quillayute, WA[2]		**ASOS 12/96**										
•WSCMO Seattle/Tacoma, WA[3]		**ASOS 10/96**										
•WSCMO Stampede Pass, WA		**ASOS 02/94**										
SPOKANE, WA (WSO to WFO)	**09/95**[4,5]	**88D 07/96** AWIPS 02/99		04/99		02/99	**10/95**	01/98	**09/95**[4]			
•Res WSO Spokane, WA[4]		**ASOS 09/95**								04/97		04/97
•WSO Lewiston, ID		**ASOS 07/95**			**01/96**				04/97	04/97	04/97	04/97
•WSO Wenatchee (AG & FW), WA					02/99[6]				*			*

1. Service will be transferred upon commissioning of an AWIPS at WFO Seattle/Tacoma.
2. Upper air function will remain at WSCMO Quillayute.
3. This WSCMO closed in October 1996. No certification required.
4. Forecast and warning services of transitioning WSO transferred to facility of future WFO. Surface observation functions retained at original WSO location and office redesignated a residual WSO.
5. Upper air function transferred locally to the WFO site in September 1995.
6. Service will be transferred upon commissioning of an AWIPS at WFO Spokane.

STATE OF WASHINGTON (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
PENDLETON, OR (WSO to WFO)	05/95	ASOS 06/95 88D 07/96 AWIPS *		*		*	05/96	12/98				
•WSO Wenatchee (AG & FW), WA					*				*			*
•WSO Yakima, WA		ASOS 04/96			12/95				10/97	10/97	10/97	10/97
PORTLAND, OR (WSFO to WFO)	08/94	88D 07/95 AWIPS 09/98		11/98		12/98	06/95	12/98	08/94			
•WSO Olympia (FW), WA					09/98				*			*
•WSO Olympia, WA		ASOS 11/95			04/95				04/97	04/97	04/97	04/97

STATE OF WEST VIRGINIA (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in West Virginia will be provided by one in-state WFO--Charleston--and by WFOs Pittsburgh, Pennsylvania; and Roanoke, Virginia. WFO Pittsburgh will serve nine counties in West Virginia; and WFO Roanoke, four counties. WFO Charleston will serve seven counties in Kentucky, nine counties in Ohio and two counties in Virginia.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CHARLESTON, WV (WSFO to WFO)	05/95[1]	88D 08/95 AWIPS 03/99		05/99		03/99	12/94	03/99	05/95[1]			
•Res WSO Charleston, WV[1]		ASOS 10/94	01/96						01/97	04/97	01/97	04/97
•WSO Akron, OH		ASOS 09/95	11/95		10/94				01/97	04/97	01/97	04/97
•WSO Beckley, WV		ASOS 02/96	01/96		10/94				01/97	10/97	01/97	10/97
•WSO Bristol, TN		ASOS 10/95	01/96		10/94				01/97	03/97	01/97	04/97
•WSO Columbus, OH		ASOS 02/96	12/95		10/94				01/97	04/97	01/97	04/97
•WSO Elkins, WV		ASOS 05/96			10/94				01/97	10/97	01/97	10/97
•WSO Huntington, WV[2]		ASOS 09/96			10/94				01/97	07/98	01/97	07/98
WFOs Out Of State:												
BALTIMORE, MD/ WASHINGTON, DC (WSFO to WFO)	04/90	88D 06/94 AWIPS 08/99		*		08/99	05/93	08/99				
•WSO Elkins, WV		ASOS 05/96			04/94				01/97	10/97	01/97	10/97

1. Forecast and warning services of transitioning WSFO transferred to facility of future WFO. Surface and radar observation functions retained at original WSFO location and office redesignated a residual WSO.
2. Upper air function transferred from WSO Huntington to the site of WFO Roanoke in October 1995.

STATE OF WEST VIRGINIA (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
PITTSBURGH, PA (WSFO to WFO)	**05/93**	**88D 01/95** AWIPS 07/98	**05/95**	09/98	[redacted]	12/98	**09/94**	12/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Elkins, WV	[redacted]	**ASOS 05/96**	[redacted]	[redacted]	**09/94**	[redacted]	[redacted]	[redacted]	**01/97**	10/97	**01/97**	10/97
ROANOKE, VA (New WFO)	**09/94**	**88D 08/95** AWIPS 09/99	[redacted]	*	[redacted]	09/99	**10/94**	08/98	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Beckley, WV	[redacted]	**ASOS 02/96**	**01/96**	[redacted]	**02/95**	[redacted]	[redacted]	[redacted]	**01/97**	10/97	**01/97**	10/97

STATE OF WISCONSIN (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Wisconsin will be provided by three in-state WFOs--Green Bay, La Crosse and Milwaukee--and by WFOs Duluth, Minnesota; and Minneapolis, Minnesota. WFO Duluth will serve eight counties in Wisconsin; and WFO Minneapolis, nine counties. WFO La Crosse will serve eight counties in Iowa and seven counties in Minnesota.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
GREEN BAY, WI (WSO to WFO)	04/94[1]	88D 07/95 ASOS 07/96 AWIPS *		*		*	11/94	10/98				
•WSO Madison, WI		ASOS 04/96	05/96		12/94				07/97	07/97	07/97	07/97
•WSMO Neenah, WI[2]			11/95						11/95			
LA CROSSE, WI (WSO to WFO)	08/95	88D 09/96 AWIPS *		*		*	03/96	10/98				
•WSO Madison, WI		ASOS 04/96	05/96		04/96				07/97	07/97	07/97	07/97
•WSO Rochester, MN		ASOS 06/96	01/97		08/96				10/97	10/97	10/97	10/97
•WSO Waterloo, IA		ASOS 04/96	01/97		08/96				10/97	10/97	10/97	10/97

1. Upper air function remains at current location and is collocated with WFO Green Bay.
2. This WSMO closed in November 1995. No certification required.

STATE OF WISCONSIN (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
MILWAUKEE, WI (WSFO to WFO)	12/89[3]	88D 09/95 AWIPS *		*		*	12/94	*	12/89[3]			
•Res WSO Milwaukee, WI[3]		ASOS 07/95							04/97	04/97		04/97
•WSO Dubuque, IA		ASOS 09/95			12/94				01/97	10/97	01/97	10/97
•WSO Madison, WI		ASOS 04/96	05/96		12/94				07/97	07/97	07/97	07/97
WFOs Out Of State:												
DULUTH, MN (WSO to WFO)	04/96	ASOS 04/96 88D 05/96 AWIPS 07/98	03/97	09/98		12/98	07/95	06/97				
MINNEAPOLIS, MN (WSFO to WFO)	03/95	88D 11/95 AWIPS 07/98		09/98		12/98	08/94	12/98	03/95			

3. Forecast and warning services of transitioning WSFO transferred to future WFO. Surface observation function retained at original WSFO location and office redesignated a residual WSO.

STATE OF WYOMING (Page 1 of 2)
Actions to Change Operations and to Certify Field Offices
FY 1997-1999

Modernized weather services in Wyoming will be provided by two in-state WFOs--Cheyenne and Riverton--and by WFOs Billings, Montana; Rapid City, South Dakota; and Salt Lake City, Utah. WFO Billings will serve one county in Wyoming; WFO Rapid City, three counties; and WFO Salt Lake City, one county. WFO Cheyenne will serve eight counties in Nebraska.

Shown below are notifiable actions scheduled to occur in fiscal years 1997-1999. Actions anticipated to occur after fiscal year 1999 are identified by an asterisk(*).

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs In State:												
CHEYENNE, WY (WSFO to WFO)	08/93	88D 11/95 ASOS 11/95 AWIPS *	04/96	*	[redacted]	*	01/95	*	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Casper, WY	[redacted]	ASOS 04/96	[redacted]	[redacted]	03/95	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Scottsbluff, NE	[redacted]	ASOS 06/95	[redacted]	[redacted]	03/95	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSMO Alliance, NE[1]	[redacted]	[redacted]	01/97	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	01/97	[redacted]	[redacted]	[redacted]
RIVERTON, WY (New WFO)	08/95[2]	ASOS 12/95 88D 04/96 AWIPS *	[redacted]	*	[redacted]	*	10/95	01/99	[redacted]	[redacted]	[redacted]	[redacted]
•WSO Casper, WY	[redacted]	ASOS 04/96	[redacted]	[redacted]	04/96	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Lander, WY[2]	[redacted]	ASOS 12/96	[redacted]	[redacted]	08/95	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97
•WSO Sheridan, WY	[redacted]	ASOS 12/96	[redacted]	[redacted]	04/96	[redacted]	[redacted]	[redacted]	10/97	10/97	10/97	10/97

1. This WSMO closed in November 1996. No certification required.
2. Upper air function transferred in August 1995 from WSO Lander to the site of WFO Riverton.

STATE OF WYOMING (Page 2 of 2)

OFFICES	CHANGE OF OPERATIONS									CERTIFICATIONS		
	Facility Occupancy	Systems Commission	Decommissionings		Service Transfer		Signf. Staff Changes					
			Radar	AFOS	Warnings	Forecasts	Increase Stage 1	Stage 2 Adjustment	Decrease	Automate	Consolidate	Close
WFOs Out Of State:												
BILLINGS, MT (WSO to WFO)	08/95	88D 04/96 AWIPS *		*		*	07/96	01/99	08/95			
•WSO Sheridan, WY		ASOS 12/96			10/95				10/97	10/97	10/97	10/97
RAPID CITY, SD (WSO to WFO)	11/95	88D 07/96 AWIPS *		*		*	10/95	02/99	11/95			
•WSO Casper, WY		ASOS 04/96			04/96				10/97	10/97	10/97	10/97
SALT LAKE CITY, UT (WSFO to WFO)	08/94	88D 06/95 88D 03/97 ASOS 05/97 AWIPS 07/98		09/98		12/98	05/94	12/98				

Related Transition Planning Documents

To ensure an orderly transition to the modernized NWS, a number of transition planning documents and associated publications are required. Given below is the current list of related transition planning documents along with their effective date. A blank date indicates the plan or document is still under development.

Document Title	Effective Date
NWS Regulations for Stage 1	Dec 93
Modernization Criteria for Relocation and Consolidation Certification	Dec 93
Modernization Criteria for Automation Certification (Service level A, B, and C only)	Jul 96
Modernization Criteria for Automation Certification (Service level D only)	
Modernization Criteria for Closure Certification	Oct 96
MARD Plan (Preliminary)	Oct 92
AWIPS Operational Test & Evaluation Plan	Aug 96
Integrated Operations and Services Plan	May 96
Stage 1 Operations Concept	Apr 94
AWIPS Operations Concept (Stage 2)	Jan 87
Public Services Plan	May 96
Stage 2 County Warning Forecast Area Assignments	Jul 93
Marine Services Plan	May 96
Aviation Plan	May 96
Fire Weather Operations and Services Plan	May 96
Modernized Surface Observing Concept	Jun 94
National Centers Transition Plan	Aug 90
Dissemination Transition Plan	
Quantitative Precipitation Forecasting Operations Concept (Draft)	Aug 94
Hydrometeorological Service Operations for the 1990s	Mar 96
Transition Systems Development and Integration Plan	Jun 95
ASOS Deployment Schedule	Jan 92
NEXRAD Deployment Schedule	Oct 93

AWIPS Deployment Schedule	Feb 97
Internal and External Coordination Plan	Sep 93
Integrated Training and Professional Development Plan	Mar 92
Implementation and Phase Over Plan	Apr 94
NCEP Concept of Operations for AWIPS (Draft)	Jul 96
ASOS Site Component Commissioning Plan	Jul 96
NEXRAD Systems Commissioning Plan	Aug 93
AWIPS Systems Commissioning Plan	
Decommissioning Plan for NWS Sponsored Radar Systems	Oct 93
Decommissioning Plan for NWS Sponsored Surface Observing Equipment	Jun 94
Human Resources Plan	Dec 93

Documents Incorporated in NIP by Reference:

WBS Description Document and Dictionary (Section 5.2)	Jan 89
Program Monitoring and Control System Description Document (Section 5.4)	Jul 88
Transition Change Management Policy Document (Section 5.5)	Jan 93

Other Specific Information

This appendix is intended to be an expandable appendix, and will be used to provide specific information concerning modernization and associated restructuring of NWS, as it becomes available for release. Attached are the following:

LOCATIONS OF WEATHER FORECAST OFFICES

Weather Forecast Office Locations

WFO Name—Metropolitan Area	Office Location
Aberdeen, SD	Aberdeen Regional Airport
Albany, NY	State University of New York, Albany
Albuquerque, NM	Albuquerque International Airport
Amarillo, TX	Amarillo International Airport
Anchorage, AK	Anchorage International Airport
Atlanta, GA	Falcon Drive, Peachtree City
Austin/San Antonio, TX	New Braunfels Municipal Airport, New Braunfels, TX
Baltimore, MD/Washington, DC	Sterling, VA
Billings, MT	Overland Avenue, Billings, MT
Binghamton, NY	Binghamton Regional Airport
Birmingham, AL	Shelby County Airport
Bismarck, ND	Bismarck Municipal Airport
Boise, ID	Boise Interagency Fire Center
Boston, MA	Taunton, MA
Brownsville, TX	Brownsville/South Padre Island International Airport
Buffalo, NY	Greater Buffalo International Airport
Burlington, VT	Burlington International Airport
Central Illinois, IL	Logan County Airport, Lincoln, IL
Central Pennsylvania, PA	Penn State Univesity, State College, PA
Charleston, SC	Charleston International Airport
Charleston, WV	Ruthdale, WV
Cheyenne, WY	Cheyenne Airport
Chicago, IL	Lewis University Airport, Romeoville, IL
Cincinnati, OH	Wilmington, OH
Cleveland, OH	Cleveland-Hopkins International Airport
Columbia, SC	Columbia Metropolitan Airport
Corpus Christi, TX	Corpus Christi International Airport
Dallas/Fort Worth, TX	Fort Worth, TX
Denver/Boulder, CO	Boulder, CO
Des Moines, IA	Johnston, IA
Detroit, MI	Pontiac/Indian Springs Metropark, White Lake, MI
Dodge City, KS	Dodge City Regional Airport
Duluth, MN	Duluth, MN
Eastern North Dakota, ND	near University of North Dakota, Grand Forks, ND
El Paso, TX	Dona Ana County Airport, Santa Theresa, NM
Elko, NV	Elko, NV
Eureka, CA	Woodley Island, Eureka, CA
Fairbanks, AK	University of Alaska, Fairbanks, AK
Flagstaff, AZ	Camp Navajo, Bellmont, AZ

Weather Forecast Office Locations
(continued)

WFO Name—Metropolitan Area	Office Location
Glasgow, MT	Valley County International Airport
Goodland, KS	Goodland, KS
Grand Junction, CO	Walker Field, Grand Junction Airport
Grand Rapids, MI	Kent County International Airport
Great Falls, MT	near Great Falls Int'l Airport
Green Bay, WI	Green Bay, WI
Greenville-Spartanburg, SC	Greenville-Spartanburg Airport, Greer, SC
Guam	TBD
Hastings, NE	Hastings, NE
Honolulu, HI	University of Hawaii, Honolulu, HI
Houston/Galveston, TX,	Dickinson, TX
Indianapolis, IN	Indianapolis International Airport
Jackson, KY	Julian Carroll Airport, Noctor, KY
Jackson, MS	Jackson Municipal Airport
Jacksonville, FL	Jacksonville International Airport
Juneau, AK	Juneau, AK
Kansas City/Pleasant Hill, MO	Pleasant Hill, MO
Knoxville/Tri Cities, TN	Morristown Airport Industrial District
La Crosse, WI	La Crosse, WI
Lake Charles, LA	Lake Charles Regional Airport
Las Vegas, NV	Las Vegas, NV
Little Rock, AR	North Little Rock Municipal Airport
Los Angeles, CA	Oxnard, CA
Louisville, KY	Louisville, KY
Lubbock, TX	Science Spectrum, Lubbock, TX
Marquette, MI	Marquette County Airport
Medford, OR	Medford-Jackson County Airport
Melbourne, FL	Melbourne Regional Airport
Memphis, TN	Agricenter International Complex, Germantown, TN
Miami, FL	Florida International University, Miami, FL
Midland/Odessa, TX	Midland International Airport
Milwaukee, WI	Dousman, WI
Minneapolis, MN	Chanhassen, MN
Missoula, MT	U.S. Forest Service Aerial Depot
Mobile, AL	Mobile Regional Airport
Morehead City, NC	Newport, NC
Nashville, TN	Old Hickory, TN
New Orleans/Baton Rouge, LA	Slidell Airport, Slidell, LA
New York City, NY	Brookhaven National Lab, Upton, NY

Weather Forecast Office Locations
(continued)

WFO Name—Metropolitan Area	Office Location
North Central Lower Michigan, MI	Passenheim Road, Gaylord, MI
Northern Indiana	North Webster, IN
North Platte, NE	North Platte Regional Airport
Oklahoma City, OK	University of Oklahoma, Norman, OK
Omaha, NE	Valley, NE
Paducah, KY	Barkley Regional Airport
Pendleton, OR	Eastern Oregon Regional Airport
Philadelphia, PA	Mt. Holly, NJ
Phoenix, AZ	Salt River Projects Office, Phoenix, AZ
Pittsburgh, PA	Coraopolis, PA
Pocatello/Idaho Falls, ID	Pocatello Municipal Airport, Pocatello, ID
Portland, ME	Gray, ME
Portland, OR	Portland, OR
Pueblo, CO	Pueblo Memorial Airport
Quad Cities, IA	Davenport Municipal Airport, Davenport, IA
Raleigh/Durham, NC	N.C. State University, Raleigh, NC
Rapid City, SD	South Dakota School of Mines, Rapid City, SD
Reno, NV	Desert Research Institute, Reno, NV
Riverton, WY	Riverton Regional Airport
Roanoke, VA	Blacksburg, VA
Sacramento, CA	Sacramento, CA
Salt Lake City, UT	Salt Lake City International Airport
San Angelo, TX	Mathis Field
San Diego, CA	San Diego, CA
San Francisco Bay Area, CA	Naval Post Graduate School Monterey, CA
San Joaquin Valley, CA	Hanford Municipal Airport
San Juan, PR	Luis Munoz Marin Int'l Airport
Seattle/Tacoma, WA	NOAA Western Regional Center, Seattle, WA
Shreveport, LA	Shreveport Regional Airport
Sioux Falls, SD	Joe Foss Field, Sioux Falls, SD
Spokane, WA	North Rambo Road, Spokane, WA
Springfield, MO	Springfield Regional Airport
St. Louis, MO	Research Park, St. Charles County
Tallahassee, FL	Florida State University, Tallahassee, FL
Tampa Bay Area, FL	Ruskin, FL
Topeka, KS	Philip Billard Municipal Airport
Tucson, AZ	University of Arizona, Tucson, AZ
Tulsa, OK	Guaranty Bank Building, Tulsa, OK
Wakefield, VA	Wakefield, VA
Wichita, KS	Wichita Mid-Continent Airport
Wilmington, NC	New Hanover International Airport

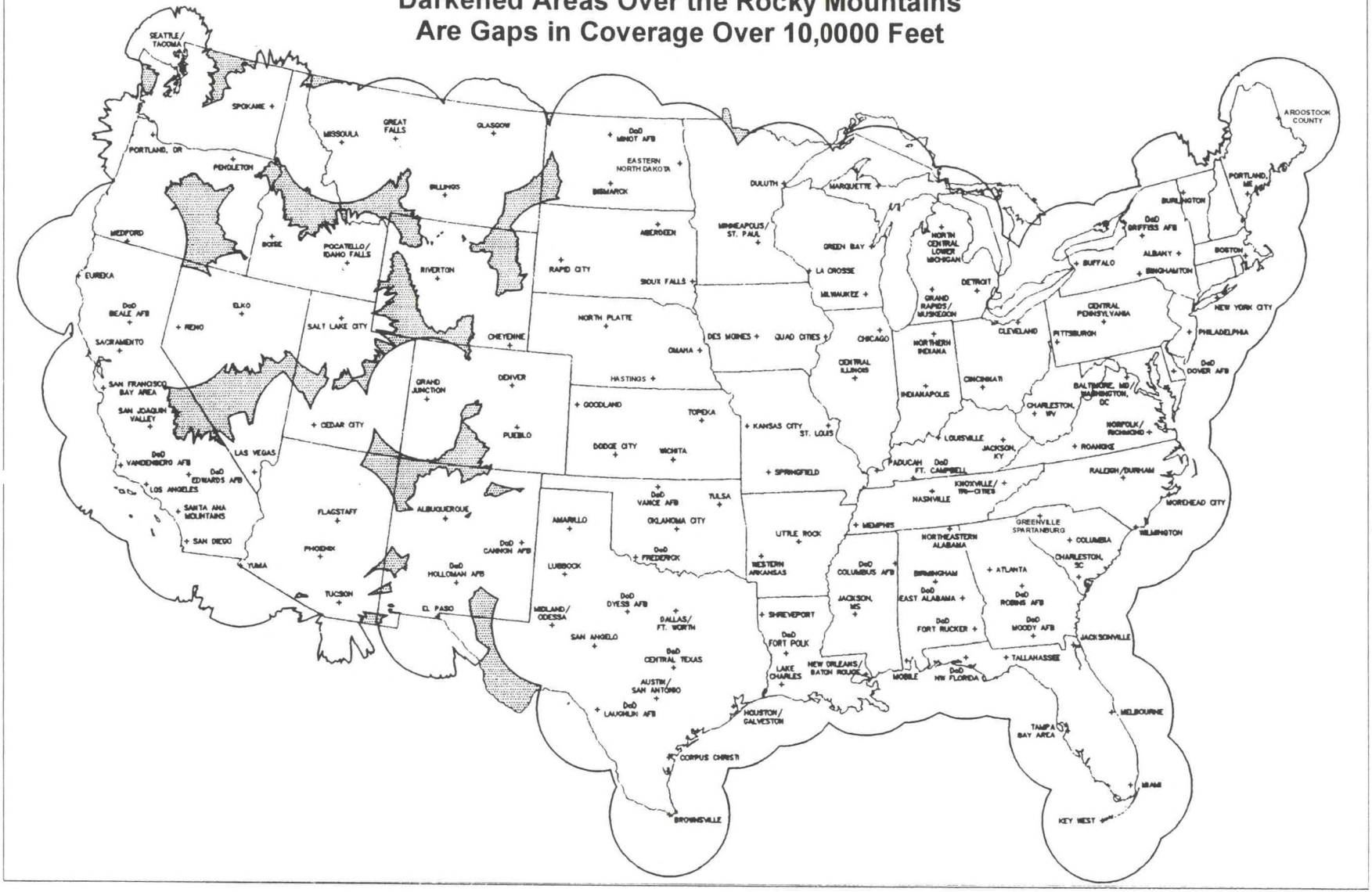
River Forecast Centers

River Forecast Center Name	Co-located Weather Forecast
Southeast RFC	Atlanta, GA
Lower Mississippi RFC	New Orleans/Baton Rouge, LA
Arkansas-Red Basin RFC	Tulsa, OK
West Gulf RFC	Dallas/Fort Worth, TX
Ohio RFC	Cincinnati, OH
Middle Atlantic RFC	Central Pennsylvania, PA
Northeast RFC	Boston, MA
Colorado Basin RFC	Salt Lake City, UT
California-Nevada RFC	Sacramento, CA
Northwest RFC	Portland, OR
North Central RFC	Minneapolis, MN
Missouri Basin RFC	Kansas City/Pleasant Hill, MO
Alaska RFC	Anchorage, AK

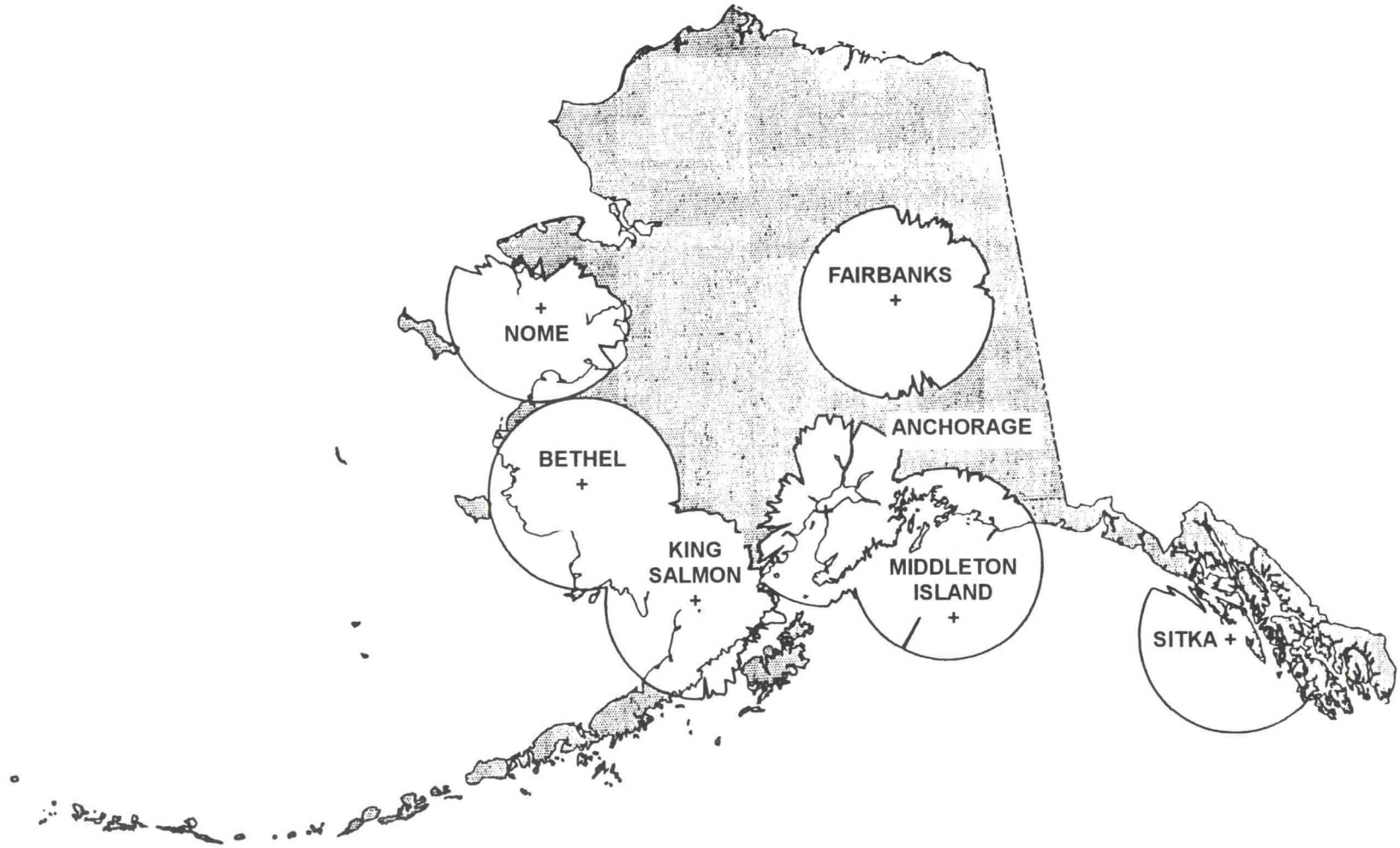
The following maps depict coverage of the NEXRAD network at the 10,000 foot level. This level corresponds to 125 nautical miles, which is the instrumented range for doppler. Additionally convective weather storms are best observed at 10,000 feet or above, and mesocyclones begin at 15,000 feet and build downward. With these factors considered, the 10,000 foot level of coverage was incorporated into the NEXRAD design.

Depiction of the Total Coverage (at 10,000 Feet) Provided by the Completed NEXRAD Network

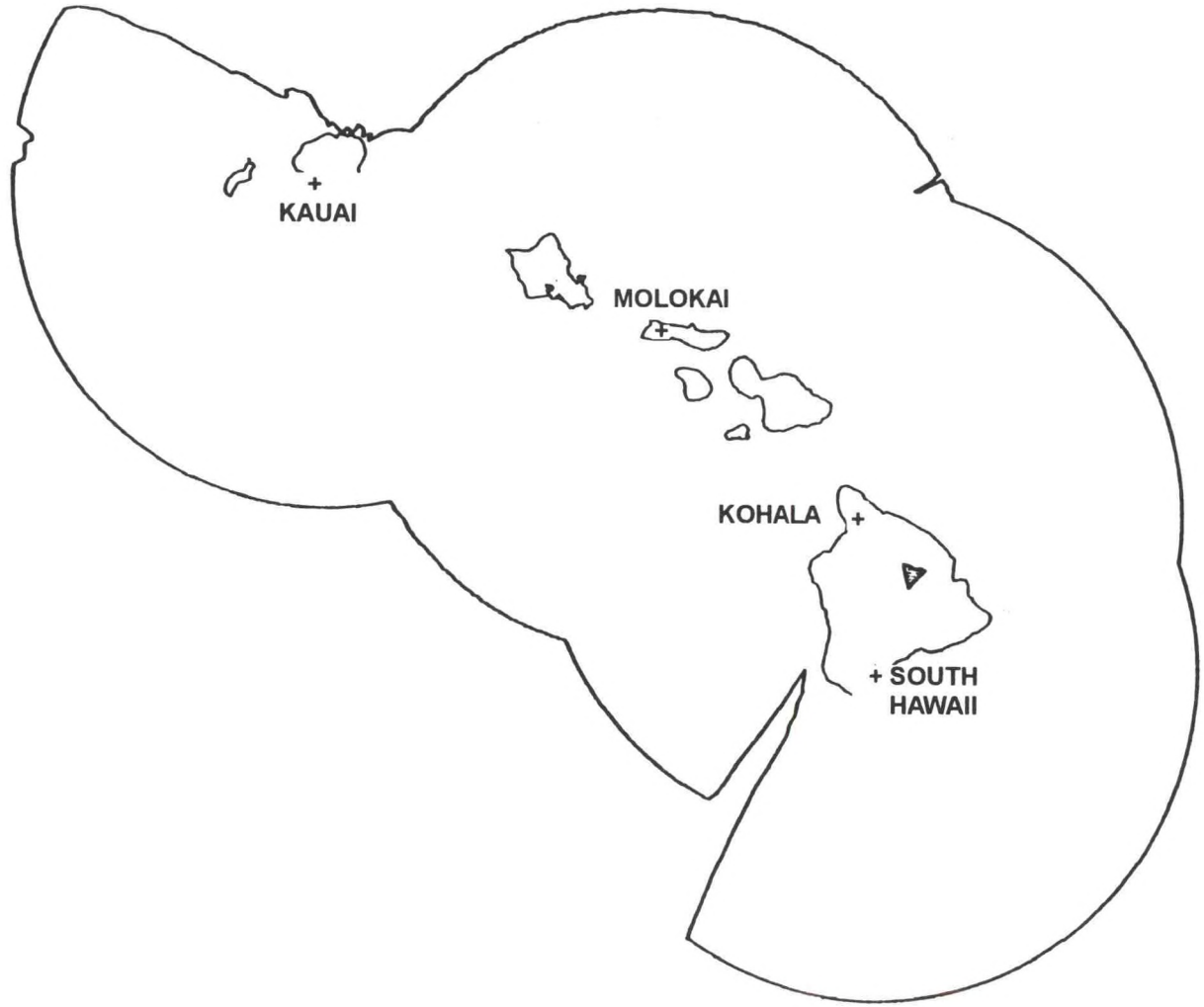
Darkened Areas Over the Rocky Mountains Are Gaps in Coverage Over 10,0000 Feet



NEXRAD Sites and Estimated Coverage (at 10,000 Feet) for Alaska



NEXRAD Sites and Estimated Coverage (at 10,000 Feet) for Hawaii



NEXRAD Locations

Metropolitan Area	NEXRAD Location
Aberdeen, SD	Aberdeen Regional Airport
Albany, NY	East Berne, NY
Albuquerque, NM	Albuquerque, NM
Amarillo, TX	Amarillo International Airport
Aroostook County, ME	Houlton, ME
Atlanta, GA	Falcon Drive, Peachtree City
Austin/San Antonio, TX	New Braunfels Municipal Airport
Baltimore, MD/Washington, DC	Sterling, VA
Billings, MT	Alkali Creek Rd, Yellowstone County
Binghamton, NY	Binghamton Regional - Edwin Link Field
Birmingham, AL	Alabaster, AL
Bismarck, ND	Bismarck Municipal Airport
Boise, ID	Wild Horse Corral, Ada County
Boston, MA	Taunton, MA
Brownsville, TX	Brownsville/South Padre International Airport
Buffalo, NY	Greater Buffalo Intl. Airport, Cheektowaga, NY
Burlington, VT	Camp Johnson, Colchester, VT
Cedar City, UT	Blowhard Mountain, Iron County
Central Illinois, IL	Logan County Airport, Lincoln, IL
Central Pennsylvania, PA	Moshannon State Forest, Rush, PA
Charleston, SC	Grays, SC
Charleston, WV	Ruthdale, WV
Cheyenne, WY	Cheyenne Airport
Chicago, IL	Lewis University Airport, Romeoville, IL
Cincinnati, OH	Wilmington, OH
Cleveland, OH	Cleveland-Hopkins Int'l Airport
Columbia, SC	Columbia Metropolitan Airport
Corpus Christi, TX	Corpus Christi Int'l Airport
Dallas/Fort Worth, TX	Fort Worth Spinks Airport
Denver/Boulder, CO	Front Range Airport, Denver, CO
Des Moines, IA	Camp Dodge Mil Reserve, Johnston, IA
Detroit, MI	Pontiac/Indian Springs Metropark, White Lake, MI
Dodge City, KS	Dodge City Regional Airport
Duluth, MN	Miller Trunk Highway, Duluth, MN
Eastern North Dakota, ND	Mayville, ND
El Paso, TX	Santa Teresa Airport, Santa Teresa, NM
Elko, NV	Sheep Creek Mountain, Lander County
Eureka, CA	Bunker Hill, Humboldt County
Flagstaff, AZ	Blue Ridge Mountain, Coconino, AZ
Glasgow, MT	Valley County International Airport

NEXRAD Locations
(Continued)

Metropolitan Area	NEXRAD Location
Goodland, KS	Goodland Municipal Airport
Grand Junction, CO	Grand Mesa, Mesa, CO
Grand Rapids/Muskegon, MI	Kent County International Airport
Great Falls, MT	Great Falls, MT
Green Bay, WI	Green Bay, WI
Greenville/Spartanburg, SC	Greenville/Spartanburg Airport
Guam	Agana, GU
Hastings, NE	Blue Hill, Webster County, NE
Houston/Galveston, TX	Dickinson, TX
Indianapolis, IN	Indianapolis International Airport
Jackson, KY	Julian Carroll Airport, Noctor, KY
Jackson, MS	Jackson Municipal Airport
Jacksonville, FL	Jacksonville International Airport
Kansas City/Pleasant Hill, MO	Pleasant Hill, MO
Key West, FL	Boca Chica Key, FL
Knoxville/Tri Cities, TN	Morristown Airport Indus. District
La Crosse, WI	La Crosse, WI
Lake Charles, LA	Lake Charles Regional Airport
Las Vegas, NV	Opal Mountain, Nelson, NV
Little Rock, AR	North Little Rock Muncipal Airport
Los Angeles, CA	Sulphur Mountain, Ventura County
Louisville, KY	Fort Knox Military Reservation
Lubbock, TX	Lubbock International Airport
Marquette, MI	Marquette County Airport, Negaunee, MI
Medford, OR	Mount Ashland, Jackson County
Melbourne, FL	Melbourne Regional Airport
Memphis, TN	Millington Naval Air Station
Miami, FL	Richmond Heights, Miami, FL
Midland/Odessa, TX	Midland International Airport
Milwaukee, WI	Dousman, WI
Minneapolis, MN	Chanhassen, MN
Missoula, MT	Pt. Six Mountain, Missoula County
Mobile, AL	Mobile Regional Airport
Morehead City, NC	Newport, NC
Nashville, TN	Old Hickory, TN
New Orleans/Baton Rouge, LA	Slidell Airport, Slidell, LA
New York City, NY	Brookhaven National Lab, Upton, NY
Norfolk/Richmond, VA	Wakefield, VA
North Central Lower Michigan, MI	Passenheim Road, Gaylord, MI
North Platte, NE	New Thomas County Airport, Thedford, NE

NEXRAD Locations

(Continued)

Metropolitan Area	NEXRAD Location
Northeastern Alabama	Hytop, AL
Northern Indiana	North Webster, IN
Oklahoma City, OK	Twin Lakes Airport, Norman, OK
Omaha, NE	Valley, NE
Paducah, KY	Barkley Regional Airport
Pendleton, OR	Eastern Oregon Regional Airport
Philadelphia, PA	Fort Dix, NJ
Phoenix, AZ	Sossanan Road, Mesa, AZ
Pittsburgh, PA	Coraopolis, PA
Pocatello/Idaho Falls, ID	Springfield, ID
Portland, ME	Gray, ME
Portland, OR	Kangas Farm, Scappoose, OR
Pueblo, CO	Boone/Highland Roads, Pueblo County
Quad Cities, IA	Davenport Municipal Airport
Raleigh/Durham, NC	Clayton, NC
Rapid City, SD	New Underwood, SD
Reno, NV	Virginia Peak, Washoe County
Riverton, WY	Riverton Regional Airport
Roanoke, VA	Coles Knob, Floyd County
Sacramento, CA	USAF Davis Communications Site
Salt Lake City, UT	Promontory Point, Elder County
San Angelo, TX	Mathis Field
San Diego, CA	Miramar Naval Air Station
San Francisco Bay Area, CA	Mt. Umunhum, Santa Clara County
San Joaquin Valley, CA	Hanford Municipal Airport
Santa Ana Mountians, CA	Orange County
Seattle/Tacoma, WA	Camano Island, WA
Shreveport, LA	Shreveport Regional Airport
Sioux Falls, SD	Joe Foss Field, Souix Falls, SD
Spokane, WA	North Rambo Road, Spokane, WA
Springfield, MO	Springfield Regional Airport
St. Louis, MO	Research Park, St. Charles County
Tallahassee, FL	Tallahassee Regional Airport
Tampa Bay Area, FL	Ruskin, FL
Topeka, KS	Wabaunsee County, Alma, KS
Tucson, AZ	Pima County
Tulsa, OK	Shreck Farm, Inola
Western Arkansas	Chaffee Ridge
Wichita, KS	Wichita Mid-Continent Airport
Wilmington, NC	Shallotte, NC
Yuma, AZ	Yuma, AZ

NEXRAD Locations

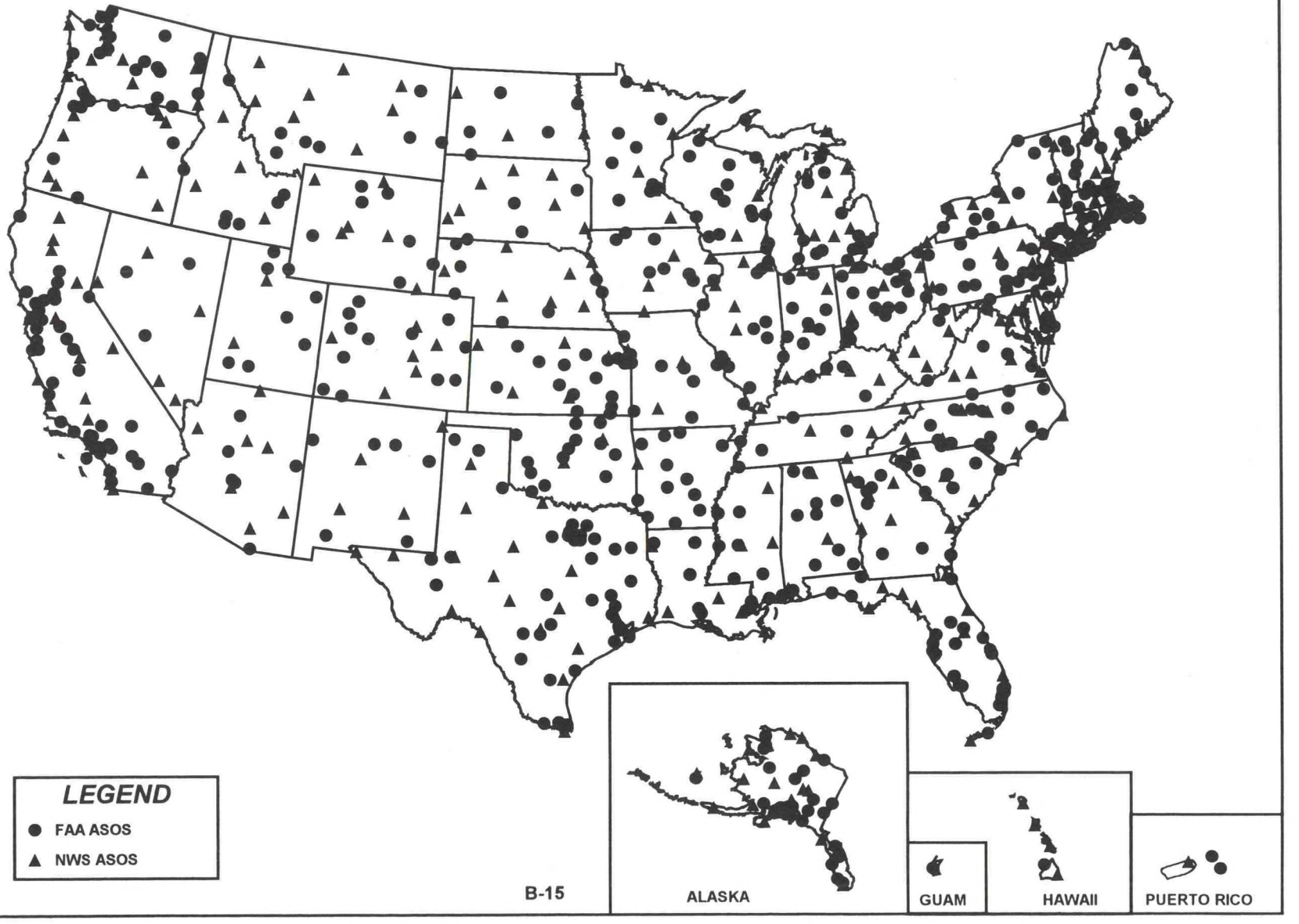
NEXRADs in Alaska and Hawaii

Metropolitan Area	NEXRAD Location
Anchorage, AK	Nikiski, AK
Bethel, AK	Bethel
Fairbanks, AK	Pedro Dome Road
Kamuela, HI	Puu Mala
King Salmon, AK	Lake Camp Road
Middleton Island, AK	Middleton Island
Molokai, HI	Kukui
Nome, AK	Nome
Sitka, AK	Biorka Island
South Hawaii, HI	Naalehu
South Kauai, HI	Numila

NOTE: Puerto Rico will have NEXRAD coverage.

Department of Defense Supplemental NEXRADs:
Beale Air Force Base, CA
Cannon Air Force Base, NM
Central Texas (Killeen), TX
Columbus Air Force Base, MS
Dover Air Force Base, DE
Dyess Air Force Base, TX
Eastern Alabama (Carrville), AL
Edwards Air Force Base, CA
Frederick, OK
Ft. Campbell, KY
Ft. Polk, LA
Ft. Rucker, AL
Griffiss Air Force Base, NY
Holloman Air Force Base, NM
Laughlin Air Force Base, TX
Minot Air Force Base, ND
Moody Air Force Base, GA
Northwest Florida (Red Bay), FL
Robins Air Force Base, GA
Vandenberg Air Force Base, CA
Vance Air Force Base, OK

NWS AND FAA ASOS LOCATIONS



ASOS Locations (NWS and FAA)

AK	Anchorage	FAA
AK	Anchorage	FAA
AK	Anchorage	NWS
AK	Annette	NWS
AK	Barrow	NWS
AK	Bethel	NWS
AK	Bettles	FAA
AK	Cold Bay	NWS
AK	Cordova	FAA
AK	Deadhorse	FAA
AK	Deering	FAA
AK	Delta Jct/Ft Greely	FAA
AK	Eagle	FAA
AK	Fairbanks	NWS
AK	Gulkana	FAA
AK	Haines	FAA
AK	Homer	NWS
AK	Iliamna	FAA
AK	Juneau	FAA
AK	Kaltag	FAA
AK	Karluk	FAA
AK	Kenai	FAA
AK	Ketchikan	FAA
AK	King Salmon	NWS
AK	Kivalina	FAA
AK	Klawock	FAA
AK	Kodiak	NWS
AK	Kotzebue	NWS
AK	McGrath	NWS
AK	Nenana	NWS
AK	Nome	NWS
AK	Northway	FAA
AK	Nuiqsut	FAA
AK	Palmer	FAA
AK	Portage	FAA
AK	Seldovia	FAA
AK	Seward	FAA
AK	Sitka	FAA
AK	Skagway	FAA
AK	St George Island	FAA
AK	St Paul Island	NWS
AK	Talkeetna	NWS
AK	Tanana	FAA
AK	Wainwright	FAA
AK	Yakutat	NWS
AL	Alabaster	FAA
AL	Anniston	FAA
AL	Birmingham	FAA
AL	Decatur	FAA
AL	Dothan	FAA
AL	Evergreen	FAA
AL	Huntsville	NWS
AL	Mobile	FAA
AL	Mobile	NWS
AL	Montgomery	NWS
AL	Muscle Shoals	FAA
AL	Troy	FAA
AL	Tuscaloosa	FAA
AR	Blytheville	FAA
AR	De Queen	FAA
AR	El Dorado	FAA
AR	Fayetteville	FAA
AR	Fort Smith	NWS
AR	Harrison	FAA
AR	Hot Springs	FAA
AR	Jonesboro	FAA
AR	Little Rock	FAA
AR	Monticello	FAA
AR	Mountain Home	FAA
AR	Pine Bluff	FAA
AR	Russellville	FAA
AR	Texarkana	FAA
AZ	Flagstaff	NWS
AZ	Grand Canyon	FAA
AZ	Kayenta	FAA
AZ	Kingman	NWS
AZ	Nogales	FAA
AZ	Page	NWS
AZ	Phoenix	FAA
AZ	Phoenix	NWS
AZ	Prescott	FAA
AZ	Scottsdale	FAA
AZ	St Johns	FAA
AZ	Tucson	NWS
AZ	Winslow	NWS
CA	Arcata/Eureka	FAA
CA	Avalon	FAA
CA	Bakersfield	NWS
CA	Bishop	NWS
CA	Blythe	FAA
CA	Burbank	FAA
CA	Carlsbad	FAA
CA	Chino	FAA

ASOS Locations (NWS and FAA)
(Continued)

CA	Concord	FAA
CA	Daggett	FAA
CA	Emigrant Gap	NWS
CA	Fresno	NWS
CA	Fullerton	FAA
CA	Hanford	FAA
CA	Hawthorne	FAA
CA	Hayward	FAA
CA	Imperial	FAA
CA	Livermore	FAA
CA	Long Beach	NWS
CA	Los Angeles	NWS
CA	Madera	FAA
CA	Marysville	FAA
CA	Modesto	FAA
CA	Monterey	FAA
CA	Mt Shasta	NWS
CA	Napa	FAA
CA	Oakland	FAA
CA	Oceanside	FAA
CA	Ontario	FAA
CA	Oroville	FAA
CA	Oxnard	FAA
CA	Palm Springs	FAA
CA	Palmdale	FAA
CA	Palo Alto	FAA
CA	Paso Robles	FAA
CA	Red Bluff	NWS
CA	Redding	NWS
CA	Riverside	FAA
CA	Sacramento	FAA
CA	Sacramento	FAA
CA	Salinas	FAA
CA	San Diego	FAA
CA	San Diego	NWS
CA	San Diego	NWS
CA	San Francisco	NWS
CA	San Jose	FAA
CA	San Luis Obispo	FAA
CA	Sandberg	NWS
CA	Santa Ana	FAA
CA	Santa Barbara	FAA
CA	Santa Maria	NWS
CA	Santa Monica	FAA
CA	Santa Rosa	FAA
CA	South Lake Tahoe	FAA
CA	Stockton	NWS
CA	Vacaville	FAA
CA	Van Nuys	FAA
CA	Watsonville	FAA
CO	Akron	FAA
CO	Alamosa	NWS
CO	Aspen	FAA
CO	Burlington	FAA
CO	Colorado Springs	NWS
CO	Cortez	FAA
CO	Craig	FAA
CO	Denver	FAA
CO	Denver	NWS
CO	Durango	FAA
CO	Grand Junction	NWS
CO	La Junta	FAA
CO	Lamar	FAA
CO	Limon	NWS
CO	Meeker	FAA
CO	Montrose	FAA
CO	Pueblo	NWS
CO	Rifle	FAA
CT	Bridgeport	NWS
CT	Danbury	FAA
CT	Groton/New London	FAA
CT	Hartford	FAA
CT	Meriden	FAA
CT	New Haven	FAA
CT	Willimantic	FAA
CT	Windsor Locks	NWS
DC	Washington DC	NWS
DC	Washington DC	NWS
DE	Georgetown	FAA
DE	Wilmington	NWS
FL	Brooksville	FAA
FL	Crestview	FAA
FL	Daytona Beach	NWS
FL	Destin	FAA
FL	Fort Lauderdale	FAA
FL	Fort Lauderdale	FAA
FL	Fort Myers	FAA
FL	Fort Myers	FAA

ASOS Locations (NWS and FAA)
(Continued)

FL	Fort Pierce	FAA
FL	Gainesville	FAA
FL	Hollywood	FAA
FL	Jacksonville	FAA
FL	Jacksonville	NWS
FL	Key West	NWS
FL	Leesburg	FAA
FL	Marathon	FAA
FL	Marianna	FAA
FL	Melbourne	FAA
FL	Miami	FAA
FL	Miami	FAA
FL	Miami	NWS
FL	New Port Richey	FAA
FL	Orlando	FAA
FL	Orlando	NWS
FL	Panama City	FAA
FL	Pensacola	FAA
FL	Pompano Beach	FAA
FL	Punta Gorda	FAA
FL	Sarasota/Bradenton	FAA
FL	St Petersburg	FAA
FL	St Petersburg	FAA
FL	Tallahassee	NWS
FL	Tampa	NWS
FL	Vero Beach	FAA
FL	West Palm Beach	NWS
FL	Winter Haven	FAA
GA	Albany	FAA
GA	Alma	FAA
GA	Athens	NWS
GA	Atlanta	FAA
GA	Atlanta	FAA
GA	Atlanta	FAA
GA	Atlanta	NWS
GA	Augusta	FAA
GA	Augusta	NWS
GA	Brunswick	FAA
GA	Cartersville	FAA
GA	Columbus	NWS
GA	Gainesville	FAA
GA	Macon	NWS
GA	Savannah	NWS
HI	Hilo	NWS
HI	Honolulu	NWS
HI	Kahului	NWS
HI	Kailu-Kona	FAA
HI	Lihue	NWS
IA	Ames	FAA
IA	Burlington	FAA
IA	Cedar Rapids	FAA
IA	Davenport	FAA
IA	Des Moines	NWS
IA	Dubuque	NWS
IA	Estherville	FAA
IA	Iowa City	FAA
IA	Marshalltown	FAA
IA	Mason City	FAA
IA	Ottumwa	FAA
IA	Sioux City	NWS
IA	Spencer	FAA
IA	Waterloo	NWS
ID	Boise	NWS
ID	Burley	FAA
ID	Idaho Falls	FAA
ID	Jerome	FAA
ID	Lewiston	NWS
ID	Mullan Pass	FAA
ID	Pocatello	NWS
ID	Rexburg	FAA
ID	Twin Falls	FAA
IL	Cahokia/St Louis	FAA
IL	Carbondale	FAA
IL	Champaign/Urbana	FAA
IL	Chicago	FAA
IL	Chicago	NWS
IL	Chicago/Aurora	FAA
IL	Chicago/West Chicago	FAA
IL	Chicago/Wheeling	FAA
IL	Decatur	FAA
IL	Lawrenceville	FAA
IL	Mattoon/Charleston	FAA
IL	Moline	NWS
IL	Peoria	NWS
IL	Rockford	NWS
IL	Springfield	NWS
IN	Bloomington	FAA
IN	Evansville	NWS
IN	Fort Wayne	NWS
IN	Goshen	FAA
IN	Indianapolis	FAA
IN	Indianapolis	NWS
IN	Lafayette	FAA
IN	Muncie	FAA

ASOS Locations (NWS and FAA)
(Continued)

IN	Shelbyville	FAA
IN	South Bend	NWS
IN	Terre Haute	FAA
IN	Valparaiso	FAA
KS	Chanute	FAA
KS	Coffeyville	FAA
KS	Concordia	NWS
KS	Dodge City	NWS
KS	Emporia	FAA
KS	Garden City	FAA
KS	Goodland	NWS
KS	Hill City	FAA
KS	Hutchinson	FAA
KS	Lawrence	FAA
KS	Manhattan	FAA
KS	Manhattan	FAA
KS	Olathe	FAA
KS	Olathe	FAA
KS	Parsons	FAA
KS	Russell	FAA
KS	Salina	FAA
KS	Topeka	FAA
KS	Topeka	NWS
KS	Wichita	FAA
KS	Wichita	NWS
KS	Winfield	FAA
KY	Bowling Green	FAA
KY	Covington/Cincinnati	NWS
KY	Frankfort	FAA
KY	Jackson	NWS
KY	Lexington	NWS
KY	London	FAA
KY	Louisville	FAA
KY	Louisville	NWS
KY	Paducah	NWS
LA	Alexandria	FAA
LA	Baton Rouge	NWS
LA	Lafayette	FAA
LA	Lake Charles	NWS
LA	Monroe	FAA
LA	New Iberia	FAA
LA	New Orleans	FAA
LA	New Orleans	NWS
LA	Shreveport	FAA
LA	Shreveport	NWS
LA	Slidell	FAA
MA	Bedford	FAA
MA	Beverly	FAA
MA	Boston	NWS
MA	Chatham	FAA
MA	Fitchburg	FAA
MA	Hyannis	FAA
MA	Lawrence	FAA
MA	Nantucket	FAA
MA	New Bedford	FAA
MA	North Adams	FAA
MA	Norwood	FAA
MA	Orange	FAA
MA	Pittsfield	FAA
MA	Plymouth	FAA
MA	Taunton	FAA
MA	Westfield	FAA
MA	Worcester	NWS
MD	Baltimore	NWS
MD	Hagerstown	FAA
MD	Ocean City	FAA
MD	Salisbury	FAA
ME	Augusta	FAA
ME	Bangor	FAA
ME	Caribou	NWS
ME	Frenchville	FAA
ME	Fryeburg	FAA
ME	Houlton	FAA
ME	Millinocket	FAA
ME	Portland	NWS
ME	Wiscasset	FAA
MI	Adrian	FAA
MI	Alpena	NWS
MI	Ann Arbor	FAA
MI	Battle Creek	FAA
MI	Benton Harbor	FAA
MI	Detroit	FAA
MI	Detroit	FAA
MI	Detroit	NWS
MI	Flint	NWS
MI	Gaylord	FAA
MI	Grand Rapids	NWS
MI	Hancock	FAA
MI	Holland	FAA
MI	Houghton Lake	NWS
MI	Iron Mountain	FAA
MI	Kalamazoo	FAA

ASOS Locations (NWS and FAA)
(Continued)

MI	Lansing	NWS
MI	Muskegon	NWS
MI	Pellston	FAA
MI	Pontiac	FAA
MI	Saginaw	FAA
MI	Traverse City	FAA
MN	Alexandria	FAA
MN	Baudette	FAA
MN	Brainerd	FAA
MN	Duluth	NWS
MN	Hibbing	FAA
MN	International Falls	NWS
MN	Minneapolis	FAA
MN	Minneapolis	FAA
MN	Minneapolis	NWS
MN	Park Rapids	FAA
MN	Redwood Falls	FAA
MN	Rochester	NWS
MN	St Cloud	NWS
MN	St Paul	FAA
MO	Cape Girardeau	FAA
MO	Columbia	NWS
MO	Jefferson City	FAA
MO	Joplin	FAA
MO	Kansas City	FAA
MO	Kansas City	NWS
MO	Rolla/Vichy	FAA
MO	Sedalia	FAA
MO	Springfield	NWS
MO	St Charles	FAA
MO	St Joseph	FAA
MO	St Louis	FAA
MO	St Louis	NWS
MO	West Plains	FAA
MS	Greenville	FAA
MS	Gulfport	FAA
MS	Hattiesburg	FAA
MS	Jackson	FAA
MS	Jackson	NWS
MS	McComb	FAA
MS	Meridian	NWS
MS	Pascagoula	FAA
MS	Tupelo	NWS
MS	Vicksburg	FAA
MT	Baker	FAA
MT	Billings	NWS
MT	Bozeman	FAA
MT	Butte	FAA
MT	Dillon	FAA
MT	Glasgow	NWS
MT	Great Falls	NWS
MT	Havre	NWS
MT	Helena	NWS
MT	Kalispell	NWS
MT	Livingston	FAA
MT	Miles City	FAA
MT	Missoula	NWS
MT	Wolf Point	FAA
NC	Asheville	NWS
NC	Beaufort	FAA
NC	Burlington	FAA
NC	Chapel Hill	FAA
NC	Charlotte	NWS
NC	Elizabeth City	FAA
NC	Fayetteville	FAA
NC	Gastonia	FAA
NC	Greensboro	NWS
NC	Hatteras	NWS
NC	Hickory	FAA
NC	Kinston	FAA
NC	Lumberton	FAA
NC	Maxton	FAA
NC	Monroe	FAA
NC	New Bern	FAA
NC	Raleigh/Durham	NWS
NC	Roanoke Rapids	FAA
NC	Rocky Mount	FAA
NC	Wilmington	NWS
NC	Winston Salem	FAA
ND	Bismarck	NWS
ND	Dickinson	FAA
ND	Fargo	NWS
ND	Grand Forks	FAA
ND	Hettinger	FAA
ND	Jamestown	FAA
ND	Minot	FAA
ND	Williston	NWS
NE	Alliance	FAA
NE	Chadron	FAA
NE	Grand Island	NWS
NE	Hastings	FAA
NE	Lincoln	NWS

ASOS Locations (NWS and FAA)
(Continued)

NE	McCook	FAA
NE	Norfolk	NWS
NE	North Platte	NWS
NE	Omaha	FAA
NE	Scottsbluff	NWS
NE	Sidney	FAA
NE	Tekamah	FAA
NE	Valentine	NWS
NH	Berlin	FAA
NH	Concord	NWS
NH	Jaffrey	FAA
NH	Lebanon	FAA
NH	Manchester	FAA
NH	Rochester	FAA
NH	Whitefield	FAA
NJ	Atlantic City	NWS
NJ	Caldwell	FAA
NJ	Lincoln Park	FAA
NJ	Millville	FAA
NJ	Morristown	FAA
NJ	Mount Holly	FAA
NJ	Newark	NWS
NJ	Robbinsville	FAA
NJ	Somerville	FAA
NJ	Sussex	FAA
NJ	Teterboro	NWS
NJ	Trenton	FAA
NM	Albuquerque	NWS
NM	Carlsbad	FAA
NM	Clayton	NWS
NM	Deming	FAA
NM	Gallup	FAA
NM	Las Vegas	FAA
NM	Roswell	NWS
NM	Santa Fe	FAA
NM	Truth or Consequence	NWS
NM	Tucumcari	FAA
NV	Ely	NWS
NV	Las Vegas	NWS
NV	Lovelock	FAA
NV	Mercury	NWS
NV	Reno	NWS
NV	Tonopah	FAA
NV	Winnemucca	NWS
NY	Albany	NWS
NY	Binghamton	NWS
NY	Buffalo	NWS
NY	Dansville	FAA
NY	Dunkirk	FAA
NY	Elmira	FAA
NY	Farmingdale	FAA
NY	Fulton	FAA
NY	Glens Falls	FAA
NY	Islip	FAA
NY	Massena	FAA
NY	Montgomery	FAA
NY	New York	NWS
NY	New York	NWS
NY	Penn Yan	FAA
NY	Plattsburgh	FAA
NY	Poughkeepsie	FAA
NY	Rochester	NWS
NY	Saranac Lake	FAA
NY	Shirley	FAA
NY	Syracuse	NWS
NY	Utica	FAA
NY	Watertown	FAA
NY	Wellsville	FAA
NY	Westhampton Beach	FAA
NY	White Plains	FAA
OH	Akron	FAA
OH	Akron	NWS
OH	Ashtabula	FAA
OH	Cincinnati	FAA
OH	Cleveland	FAA
OH	Cleveland	NWS
OH	Columbus	FAA
OH	Columbus	NWS
OH	Dayton	FAA
OH	Dayton	NWS
OH	Defiance	FAA
OH	Hamilton	FAA
OH	Lancaster	FAA
OH	Lima	FAA
OH	Lorain/Elyria	FAA
OH	Mansfield	NWS
OH	Marion	FAA
OH	New Philadelphia	FAA
OH	Newark	FAA
OH	Toledo	FAA
OH	Toledo	NWS
OH	Wooster	FAA

ASOS Locations (NWS and FAA)

(Continued)

OH	Youngstown	NWS
OH	Zanesville	FAA
OK	Bartlesville	FAA
OK	Clinton	FAA
OK	Frederick	FAA
OK	Gage	FAA
OK	Guthrie	FAA
OK	Hobart	FAA
OK	Lawton	FAA
OK	Mc Alester	FAA
OK	Muskogee	FAA
OK	Oklahoma City	FAA
OK	Oklahoma City	NWS
OK	Ponca City	FAA
OK	Stillwater	FAA
OK	Tulsa	FAA
OK	Tulsa	NWS
OR	Astoria	NWS
OR	Aurora	FAA
OR	Baker	FAA
OR	Burns	NWS
OR	Eugene	NWS
OR	Hermiston	FAA
OR	Klamath Falls	FAA
OR	McMinnville	FAA
OR	Medford	NWS
OR	Ontario	FAA
OR	Pendleton	NWS
OR	Portland	FAA
OR	Portland	FAA
OR	Portland	NWS
OR	Roseburg	FAA
OR	Salem	NWS
OR	Scappoose	FAA
OR	Sexton Summit	NWS
OR	The Dalles	FAA
PA	Allentown	NWS
PA	Altoona	FAA
PA	Bradford	FAA
PA	Clearfield	FAA
PA	Downingtown	FAA
PA	Doylestown	FAA
PA	Erie	NWS
PA	Harrisburg	FAA
PA	Harrisburg	FAA
PA	Johnstown	FAA
PA	Lancaster	FAA
PA	Meadville	FAA
PA	Monongahela	FAA
PA	Philadelphia	NWS
PA	Philadelphia	NWS
PA	Philipsburg	FAA
PA	Pittsburgh	FAA
PA	Pittsburgh	NWS
PA	Pottstown	FAA
PA	Reading	FAA
PA	Selinsgrove	FAA
PA	Wilkesbarre-Scranton	NWS
PA	Williamsport	NWS
PA	York	FAA
PR	San Juan	NWS
RI	Newport	FAA
RI	Providence	NWS
RI	Westerly	FAA
SC	Anderson	FAA
SC	Charleston	NWS
SC	Clemson	FAA
SC	Columbia	FAA
SC	Columbia	NWS
SC	Florence	FAA
SC	Greenville	FAA
SC	Greenwood	FAA
SC	Greer	NWS
SC	North Myrtle Beach	FAA
SC	Orangeburg	FAA
SC	Rock Hill	FAA
SD	Aberdeen	NWS
SD	Huron	NWS
SD	Pierre	FAA
SD	Pine Ridge	FAA
SD	Rapid City	NWS
SD	Sioux Falls	NWS
SD	Watertown	FAA
SD	Winner	FAA
TN	Bristol/Johnson	NWS
TN	Chattanooga	NWS
TN	Clarksville	FAA
TN	Crossville	FAA
TN	Jackson	FAA
TN	Knoxville	NWS
TN	Memphis	FAA
TN	Nashville	NWS
TX	Abilene	NWS
TX	Alice	FAA

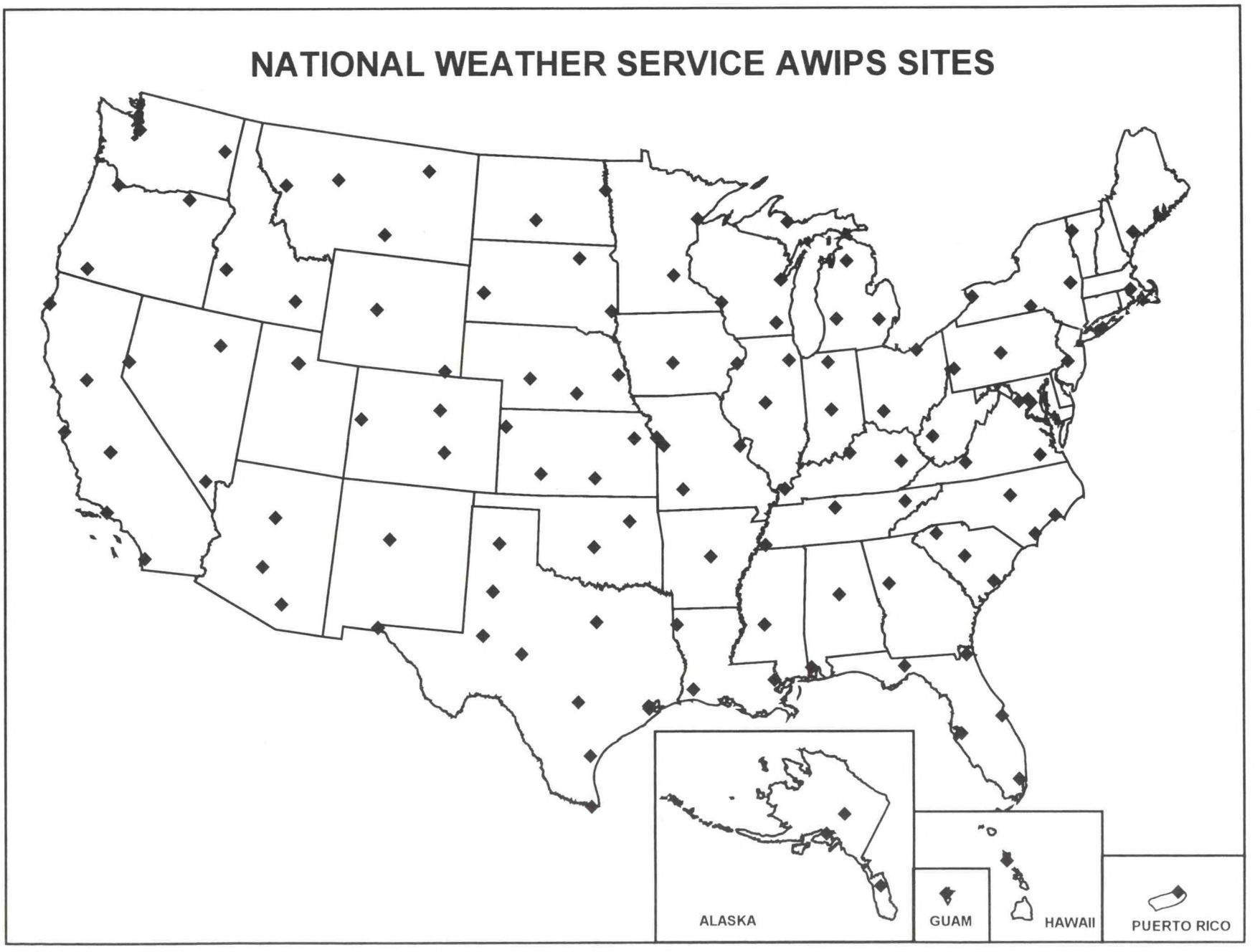
ASOS Locations (NWS and FAA)
(Continued)

TX	Amarillo	NWS
TX	Angleton/Lk Jackson	FAA
TX	Arlington	FAA
TX	Austin	NWS
TX	Beaumont/Port Arthur	NWS
TX	Borger	FAA
TX	Brownsville	NWS
TX	Burnet	FAA
TX	Childress	FAA
TX	College Station	FAA
TX	Conroe	FAA
TX	Corpus Christi	NWS
TX	Corsicana	FAA
TX	Cotulla	FAA
TX	Dalhart	FAA
TX	Dallas	FAA
TX	Dallas	FAA
TX	Dallas/Fort Worth	NWS
TX	Del Rio	NWS
TX	Denton	FAA
TX	El Paso	NWS
TX	Fort Stockton	FAA
TX	Fort Worth	FAA
TX	Fort Worth	FAA
TX	Galveston	FAA
TX	Harlingen	FAA
TX	Hondo	FAA
TX	Houston	FAA
TX	Houston	FAA
TX	Houston	FAA
TX	Houston	NWS
TX	Huntsville	FAA
TX	Longview	FAA
TX	Lubbock	NWS
TX	Lufkin	FAA
TX	McAllen	FAA
TX	McKinney	FAA
TX	Midland	NWS
TX	Mineral Wells	FAA
TX	New Braunfels	FAA
TX	Odessa	FAA
TX	Port Isabel	FAA
TX	Rockport	FAA
TX	San Angelo	NWS
TX	San Antonio	FAA
TX	San Antonio	NWS
TX	Terrell	FAA
TX	Tyler	FAA
TX	Victoria	NWS
TX	Waco	NWS
TX	Wichita Falls	NWS
TX	Wink	FAA
UT	Bryce Canyon	FAA
UT	Cedar City	FAA
UT	Logan	FAA
UT	Milford	NWS
UT	Moab	FAA
UT	Price	FAA
UT	Salt Lake City	NWS
UT	Vernal	FAA
VA	Charlottesville	FAA
VA	Danville	FAA
VA	Lynchburg	NWS
VA	Newport News	FAA
VA	Norfolk	NWS
VA	Richmond	FAA
VA	Richmond	NWS
VA	Roanoke	NWS
VA	Wallops Island	NWS
VI	Charlotte Amalie	FAA
VI	Christiansted	FAA
VT	Barre-Montpelier	FAA
VT	Bennington	FAA
VT	Burlington	NWS
VT	Morrisville	FAA
VT	Springfield	FAA
WA	Deer Park	FAA
WA	Ellensburg	FAA
WA	Ephrata	FAA
WA	Everett	FAA
WA	Friday Harbor	FAA
WA	Hoquiam	FAA
WA	Moses Lake	FAA
WA	Olympia	NWS
WA	Omak	FAA
WA	Pasco	FAA
WA	Port Angeles	FAA
WA	Pullman/Moscow	FAA
WA	Quillayute	NWS
WA	Renton	FAA
WA	Seattle	FAA
WA	Seattle	NWS

ASOS Locations (NWS and FAA)
(Continued)

WA	Spokane	FAA
WA	Spokane	NWS
WA	Stampede Pass	NWS
WA	Tacoma	FAA
WA	Toledo	FAA
WA	Walla Walla	FAA
WA	Yakima	NWS
WI	Ashwaubenon	NWS
WI	Ashland	FAA
WI	Boscobel	FAA
WI	Fond du Lac	FAA
WI	Hayward	FAA
WI	Kenosha	FAA
WI	La Crosse	FAA
WI	Lone Rock	FAA
WI	Madison	NWS
WI	Marshfield	FAA
WI	Milwaukee	NWS
WI	Oshkosh	FAA
WI	Racine	FAA
WI	Rhinelander	FAA
WI	Sheboygan	FAA
WI	Wausau	FAA
WI	Wisconsin Rapids	FAA
WV	Beckley	NWS
WV	Bluefield	FAA
WV	Charleston	NWS
WV	Clarksburg	FAA
WV	Elkins	NWS
WV	Huntington	NWS
WV	Martinsburg	FAA
WV	Morgantown	FAA
WV	Wheeling	FAA
WY	Big Piney	FAA
WY	Buffalo	FAA
WY	Casper	NWS
WY	Cheyenne	NWS
WY	Douglas	FAA
WY	Evanston	FAA
WY	Greybull	FAA
WY	Laramie	FAA
WY	Rawlins	FAA
WY	Riverton	NWS
WY	Sheridan	NWS
WY	Torrington	FAA
WY	Worland	FAA

NATIONAL WEATHER SERVICE AWIPS SITES



AWIPS Office Locations

Office Name	Office Type	Office Location
Aberdeen, SD	WFO	Aberdeen, SD
Alaska RFC	RFC	Anchorage, AK
Albuquerque, NM	WFO	Albuquerque, NM
Amarillo, TX	WFO	Amarillo, TX
Anchorage, AK	WFO	Anchorage, AK
Arkansas-Red Basin RFC	RFC	Tulsa, OK
Atlanta, GA	WFO	Peachtree City, GA
Austin/San Antonio, TX	WFO	New Braunfels, TX
Alaska Region Headquarters	RHQ	Anchorage, AK
Albany, NY	WFO	Albany, NY
Aviation Weather Center	Center	Kansas City, MO
Baltimore, MD/Washington, DC	WFO	Sterling, VA
Billings, MT	WFO	Billings, MT
Binghamton, NY	WFO	Binghamton, NY
Birmingham, AL	WFO	Alabaster, AL
Bismarck, ND	WFO	Bismarck, ND
Boise, ID	WFO	Boise, ID
Boston, MA	WFO	Taunton, MA
Brownsville, TX	WFO	Brownsville, TX
Buffalo, NY	WFO	Cheektowaga, NY
Burlington, VT	WFO	Burlington, VT
California-Nevada RFC	RFC	Sacramento, CA
Central Illinois	WFO	Lincoln, IL
Central Pennsylvania	WFO	State College, PA
Charleston, SC	WFO	Charleston, SC
Charleston, WV	WFO	Ruthdale, WV
Cheyenne, WY	WFO	Cheyenne, WY
Chicago, IL	WFO	Romeoville, IL
Cincinnati, OH	WFO	Wilmington, OH
Cleveland, OH	WFO	Cleveland, OH
Colorado Basin RFC	RFC	Salt Lake City, UT
Columbia, SC	WFO	Columbia, SC
Central Region Headquarters	RHQ	Kansas City, MO
Corpus Christi, TX	WFO	Corpus Christi, TX
Dallas/Fort Worth, TX	WFO	Fort Worth, TX
Des Moines, IA	WFO	Johnston, IA
Detroit, MI	WFO	White Lake, MI
Dodge City, KS	WFO	Dodge City, KS
Denver, CO	WFO	Denver, CO
Duluth, MN	WFO	Duluth, MN
Eastern North Dakota, ND	WFO	Grand Forks, ND
El Paso, TX	WFO	Santa Teresa, NM
Elko, NV	WFO	Elko, NV

AWIPS Office Locations

Office Name	Office Type	Office Location
Eureka, CA	WFO	Eureka, CA
Eastern Region Headquarters	RHQ	Bohemia, NY
Fairbanks, AK	WFO	Fairbanks, AK
Flagstaff, AZ	WFO	Bellemont, AZ
Forecast Systems Lab	LAB	Boulder, CO
Glasgow, MT	WFO	Glasgow, MT
Goodland, KS	WFO	Goodland, KS
Grand Junction, CO	WFO	Grand Junction, CO
Grand Rapids, MI	WFO	Grand Rapids, MI
Great Falls, MT	WFO	Great Falls, MT
Green Bay, WI	WFO	Ashwaubenon, WI
Greenville/Spartanburg, SC	WFO	Greer, SC
Guam Mariana Island	WFO	Guam
Hastings, NE	WFO	Hastings, NE
Honolulu, HI	WFO	Honolulu, HI
Houston/Galveston, TX	WFO	Dickinson, TX
Hydrometeorological Prediction Center	Center	Camp Springs, MD
Indianapolis, IN	WFO	Indianapolis, IN
Jackson, KY	WFO	Noctor, KY
Jackson, MS	WFO	Jackson, MS
Jacksonville, FL	WFO	Jacksonville, FL
Juneau, AK	WFO	Juneau, AK
Kansas City/Pleasant Hill, MO	WFO	Pleasant Hill, MO
Knoxville/Tri-Cities, TN	WFO	Morristown, TN
La Crosse, WI	WFO	La Crosse, WI
Lake Charles, LA	WFO	Lake Charles, LA
Las Vegas, NV	WFO	Las Vegas, NV
Little Rock, AR	WFO	North Little Rock, AK
Los Angeles, CA	WFO	Oxnard, CA
Louisville, KY	WFO	Louisville, KY
Lower Mississippi RFC	RFC	Slidell, MS
Lubbock, TX	WFO	Lubbock, TX
Marquette, MI	WFO	Marquette, MI
Medford, OR	WFO	Medford, OR
Melbourne, FL	WFO	Melbourne, FL
Memphis, TN	WFO	Germantown, TN
Miami, FL	WFO	Miami, FL
Middle Atlantic RFC	RFC	State College, PA
Midland/Odessa, TX	WFO	Midland, TX
Milwaukee, WI	WFO	Dousman, WI
Minneapolis, MN	WFO	Chanhassen, MN
Missoula, MT	WFO	Missoula, MT
Missouri Basin RFC	RFC	Pleasant Hill, MO
Mobil, AL	WFO	Mobil, AL

Morehead City, NC	WFO	Newport, NC

AWIPS Office Locations

Office Name	Office Type	Office Location
Nashville, TN	WFO	Old Hickory, TN
New Orleans/Baton Rouge, LA	WFO	Slidell, LA
New York City, NY	WFO	Upton, NY
North Central Lower Michigan, MI	WFO	Gaylord, MI
North Central RFC	RFC	Chanhassen, MN
North Platte, NE	WFO	North Platte, NE
Northeast RFC	RFC	Taunton, IN
Northern Indiana, IN	WFO	North Webster, IN
Northwest RFC	RFC	Portland, OR
NWS Headquarters (2)	HQ	Silver Spring, MD
NWS Training Center (3)	Center	Kansas City, KS
Ohio RFC	RFC	Wilmington, OH
Oklahoma City, OK	WFO	Norman, OK
Omaha, NE	WFO	Valley, NE
Office of Systems Development (3)	HQ	Silver Spring, MD
Paducah, KY	WFO	Paducah, KY
Pendleton, OR	WFO	Pendleton, OR
Philadelphia, PA	WFO	Mount Holly, NJ
Phoenix, AZ	WFO	Phoenix, AZ
Pittsburgh, PA	WFO	Coraopolis, PA
Pocatello/Idaho Falls, ID	WFO	Pocatello, ID
Portland, ME	WFO	Gray, ME
Portland, OR	WFO	Portland, OR
Pueblo, CO	WFO	Pueblo, CO
Pacific Region Headquarters	RHQ	Honolulu, HI
Quad Cities, IA	WFO	Davenport, IA
Raleigh/Durham, NC	WFO	Raleigh, NC
Rapid City, SD	WFO	Rapid City, SD
Reno, NV	WFO	Reno, NV
Riverton, WY	WFO	Riverton, WY
Roanoke, VA	WFO	Blacksburg, VA
Sacramento, CA	WFO	Sacramento, CA
Salt Lake City, UT	WFO	Salt Lake City, UT
San Diego, CA	WFO	San Diego, CA
San Francisco Bay Area, CA	WFO	Monterey, CA
San Joaquin Valley, CA	WFO	Hanford, CA
San Juan, PR	WFO	San Juan, PR
Seattle/Tacoma, WA	WFO	Stanwood, WA
Shreveport, LA	WFO	Shreveport, LA
Sioux Falls, SD	WFO	Sioux Falls, SD
Southeast RFC	RFC	Peachtree City, GA

AWIPS Office Locations

Office Name	Office Type	Office Location
Spokane, WA	WFO	Spokane, WA
Springfield, MO	WFO	Springfield, MO
St. Louis, MO	WFO	St. Charles, MO
San Angelo, TX	WFO	San Angelo, TX
Space Flight Meteorology Group	Center	Houston, TX
Storm Prediction Center	Center	Norman, OK
Tampa Bay Area, FL	WFO	Ruskin, FL
Topeka, KS	WFO	Topeka, KS
Tulsa, OK	WFO	Tulsa, OK
Tallahassee, FL	WFO	Tallahassee, FL
Tropical Prediction Center	Center	Miami, FL
Tucson, AZ	WFO	Tucson, AZ
Wakefield, VA	WFO	Wakefield, VA
West Gulf RFC	RFC	Fort Worth, TX
Wichita, KS	WFO	Wichita, KS
Wilmington, NC	WFO	Wilmington, NC
Western Region Headquarters	RHQ	Salt Lake City, UT

Acronyms

AFGWC	Air Force Global Weather Central
AFOS	Automation of Field Operations and Services
AMS	American Meteorological Society
AOPA	Aircraft Owners and Pilots Association
ARSI	Atmospheric Research Systems, Inc.
ASOS	Automated Surface Observing System
AWC	Aviation Weather Center (component of NCEP)
AWIPS	Advanced Weather Interactive Processing System
CBL	Computer-Based Learning
CI	Cooperative Institute
COMAP	COMET Mesoscale Analysis and Prediction Course
COMET	Cooperative Program for Operational Meteorology Education and Training
COSPAS	Space System for Search of Vessels in Distress (Translated from Russian)
CPC	Climate Prediction Center (component of NCEP)
CPM	Cooperative Program Manager
CRS	Console Replacement System (NOAA Weather Radio)
CSTAR	Collaborative Science, Technology, & Applied Research
CWSU	Center Weather Service Unit
DAPM	Data Acquisition Program Manager
DAR^3E	Denver AWIPS Risk Reduction and Requirements Evaluation
DOC	Department of Commerce
DCO	Data Collection Office
DOD	Department of Defense
DOH	Development and Operations Hydrologist
EMC	Environmental Modeling Center (component of NCEP)
ERL	Environmental Research Laboratory
ESA	Electronic Systems Analyst
ETL	Environmental Technology Laboratory
FAA	Federal Aviation Administration
FSL	Forecast Systems Laboratory
GFDL	Geophysical Fluid Dynamics Laboratory
GOES	Geostationary Operational Environmental Satellite
HAS	Hydrometeorological Analysis and Support
HMT	Hydrometeorological Technician
HPC	Hydrometeorological Prediction Center (component of NCEP)
HRL	Hydrologic Research Laboratory
ICWF	Interactive Computer Worded Forecast
IFPS	Interactive Forecast Preparation System
ISPAN	Information Stream Project for AWIPS and NOAAPORT
KDPIV	Key Decision Point IV (AWIPS)

LAPS	Local Analysis and Prediction System
MAR	Modernization and Associated Restructuring
MARD	Modernization and Associated Restructuring Demonstration
MIC	Meteorologist-In-Charge
MPC	Marine Prediction Center (component of NCEP)
MTC	Modernization Transition Committee
NAOS	North American Atmospheric Observing System
NCDC	National Climatic Data Center
NCEP	National Centers for Environmental Prediction
NCF	Network Control Facility (AWIPS)
NCO	NCEP Central Operations
NESDIS	National Environmental Satellite, Data and Information Service
NEXRAD	Next Generation Weather Radar
NIDS	NEXRAD Information Dissemination System
NIP	National Implementation Plan
NIS	National Implementation Staff
NOAA	National Oceanic and Atmospheric Administration
NOAAPORT	Data transmission system in AWIPS environment
NPN	NOAA Profiler Network
NRC	National Research Council
NSSL	National Severe Storms Laboratory
NTD	National Transition Data Base
NWP	Numerical Weather Prediction
NWR	NOAA Weather Radio
NWS	National Weather Service
NWSFO	NEXRAD Weather Service Forecast Office
NWSMC	National Weather Service Modernization Committee
NWSO	NEXRAD Weather Service Office
NWSRFS	National Weather Service River Forecast System
NWSTC	National Weather Service Training Center
OAR	Oceanic and Atmospheric Research
OGP	Office of Global Programs
OH	Office of Hydrology
OM	Office of Meteorology
OSD	Office of Systems Development
OSF	Operational Support Facility (NEXRAD)
OSO	Office of Systems Operations
OTA	Other-Than-ASOS
OTB	Operations Training Branch
OT&E	Operational Test and Evaluation
PUP	Principal User Processor (NEXRAD)
QPF	Quantitative Precipitation Forecast
RAMM	Research and Application's Regional and Mesoscale Meteorology
RAMSDIS	RAMM Advanced Meteorology Satellite Demonstration and Interpretation System
RDA	Radar Data Acquisition
RFC	River Forecast Center
RPG	Radar Products Generator

SAO	Systems Acquisition Office
SARSAT	Search and Rescue Satellite Aided Tracking
SBN	Satellite Broadcast Network (AWIPS)
SCP	Satellite Cloud Product
SEC	Space Environment Center (component of NCEP)
SIP	Site Implementation Plan
SOO	Science and Operations Officer
SPC	Storm Prediction Center (component of NCEP)
TCM	Transition Change Management
TDL	Techniques Development Laboratory
TPC	Tropical Prediction Center (component of NCEP)
UCAR	University Corporation for Atmospheric Research
UCP	Unit Control Position
WBS	Work Breakdown Structure
WCM	Warning Coordination Meteorologist
WFO	Weather Forecast Office
WHFS	WFO Hydrologic Forecast System
WSCMO	Weather Service Contract Meteorological Observatory
WSFO	Weather Service Forecast Office
WSMO	Weather Service Meteorological Observatory
WSO	Weather Service Office
WSR-88D	Weather Surveillance Radar, 1988 Doppler

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