

THE FY 2003 IMPLEMENTATION PLAN FOR NWS TRAINING AND EDUCATION

I. OVERVIEW

The purpose of this document is to specify training and education activities for all National Weather Service (NWS) staff in fiscal year (FY) 2003. The requirement for the FY 2003 Implementation Plan for NWS Training and Education (IP03) is specified by the NWS National Strategic Training and Education Plan (NSTEP).

The NSTEP process of determining and prioritizing training requirements within available discretionary budgets was coordinated by the NSTEP Field Requirements Group (FRG). The FRG representatives for the IP03 process included the Regional Scientific Services Division Chiefs or Regional Scientists and the National Centers for Environmental Prediction's (NCEP) Executive Officer. Members of the NSTEP Team's FRG and other experts participated in conference calls during spring 2002 to specify the highest priority NWS training to be accomplished in FY 2003. Tables 1 and 2 show the final in-residence classes and FY 2003 training expenditures, respectively, as determined by the FRG process. This document provides the requirements for the NSTEP Heads of Training Group (HOTG) to develop and/or offer the instructional components indicated herein during FY 2003. The coordination of the entire NSTEP process, including development of this plan, was facilitated by the NSTEP National Headquarters Group (NHG). For more information on NSTEP, go to www.nwstc.noaa.gov/nwstrn/d.ntp/nstepOV.html.

The remainder of this document is structured as follows. New training requirements are discussed in Section II. Information on the Weather Event Simulator and the Learning Management System is given in Section III. A summary of definitions and terms used in conjunction with the Professional Development Series process is provided in Section IV. A detailed summary of training plans for FY 2003 is provided in Section V. These plans include Professional Development Series (PDS)-related residence courses and distance-learning development, in addition to non-PDS programmatic training activities for which funds have been identified. Finally, Section VI contains information on new and unfunded training requirements.

There are several attachments to this document. Table 1 contains a summary of all in-residence classes to be offered in FY 2003. This summary provides details related to class size and length, funding source, slot allocation by Region, and itemized costs (including contract and supply costs for all classes). Table 2 contains the complete listing of activities associated with the discretionary portion of the training budget as prioritized by the FRG. Table 3 contains the non-discretionary portion of the training budget, including labor, telecommunications, and other necessary operating charges.

Table 4 provides an integrated workload analysis of HOTG resources. Table 5 depicts the complete set of all PDSs and their development status. Table 6 contains a list of unfunded requirements as determined by the FRG. Finally, Attachment 1 provides a description and notes

the intended audience of all FY 2003 residence courses. The labor costs of the government FTEs in the Office of Climate, Water and Weather Services (OCWWS) Training Division are not listed, nor is the non-classroom support provided by the Automated Surface Observing System (ASOS), Next Generation Weather Radar (NEXRAD), and Advanced Weather Interactive Processing System (AWIPS) programs to the NWS Training Center (NWSTC) and the Warning Decision Training Branch (WDTB).

II. NEW TRAINING REQUIREMENTS

Each year, the OCWWS Training Division receives new training requirements from NWS Headquarters offices and the National Oceanic and Atmospheric Administration (NOAA) without an increase in funding to support their activities. Therefore, as part of the prioritization process, the FRG must carefully consider each new requirement, and which will have the most benefit to NWS personnel. For example, a request was made for a new "Fall Protection and Rescue Recertification" course to be offered for those employees who have previously completed the initial Fall Protection training. After much research, recertification of climbing personnel is being provided by the Departments of Defense, Energy, Interior, private industry and the American National Standards Institute at intervals not to exceed two years. In order to meet this requirement, a cost of approximately \$650,000 would be required, or roughly 15 percent of the entire training budget. In addition, the lost productivity time for travel and training for all affected employees would approximately double the total costs for this requirement to well over \$1,000,000. The IP03 allocates \$50,000 for this effort to begin, and the NWS Office of Operational Systems (OPS), NWSTC and the Regions will work together to examine alternative cost-effective strategies to accomplish this training such as using local/regional vendors, having the NWSTC hire a contractor to visit regional sites, etc.

Additional new requirements which funding was provided are for Regional System Administration, Networking and Security (SANS) training (\$62,000), Safety training (\$67,000), Advanced Leadership Development (ALD) program (\$100,000), and Leadership Competencies Development Program (LCDP, \$60,000).

To accommodate the new requirements listed above, many training activities had to be reduced or eliminated. The funding for Unidata Case Studies, which provides 8 to 10 case studies in National Centers AWIPS (N-AWIPS) format for universities for \$113,000, along with the \$2,000 per office funding for the Science and Operations Officer (SOO)/Development and Operations Hydrologist (DOH)/ Warning Coordination Meteorologist (WCM) discretionary funds totaling \$284,000 were both not funded in IP03.

III. NEW TRAINING TECHNOLOGIES

The OCWWS Training Division is overseeing the implementation of two new training technologies to enhance training activities: The Weather Event Simulator (WES) and the Learning Management System (LMS).

A. WES

The core mission of the NWS is to protect lives and property. Thus, it is critical to ensure all forecast staff are highly trained in warning operations.

The WES, similar in concept to the flight simulators used to train pilots, was developed by the NWS Regions and OCWWS Training Division and installed throughout the country in each NWS field office during the summer of 2001. It allows offices to archive and view case studies in displaced real time (DRT). It has been hailed as a powerful training tool and provides forecasters critical experience in severe weather operations, thereby assisting NWS in meeting its performance measures for improved warnings. A draft NWS Instruction 20-201 was developed for the WES whereby every NWS Weather Forecast Office (WFO) forecaster must complete two simulations per significant weather season with at least two significant weather seasons per year. To enable offices to meet this policy, the FRG gave high priority to give offices the means to develop and distribute case studies. Expected WES accomplishments in FY 2003 are described in the following subsections.

A.1 WES Simulations

WDTB will deliver two Simulation Guides containing 6 to 8 WES simulations. NWS/Cooperative Program for Operational Meteorology, Education and Training (COMET) may convert up to 9 existing AWIPS-compatible case studies to WES format. NWS staff at COMET will work with the Regions and SOOs to help produce Simulation Guides for these cases. Simulation Guides assist SOOs and training focal points with integrating WES simulations into their local training program and facilitating the transfer of concepts they learn in WDTB Warning Decision Making (WDM) workshops into forecast and warning operations. A single simulation guide may include multiple WES simulations, with each simulation including a training objective, training methodology, and evaluation criteria for completion. WDTB will develop the training objectives to ensure simulations are useful for as wide an audience as possible. Release of the guides will follow completion of their Severe Weather/Flash Flood WDM and Winter Weather WDM series of workshops.

A.1.1. Winter Weather Simulation Guide

This Simulation Guide will provide training focal points who attended Winter Weather WDM Workshops with the event used during the labs. This guide will contain up to six simulations associated with this event. As the event took place over three days and impacted 9 County Warning Areas, WDTB and COMET plan on distributing the case data using Digital Video Display (DVD) media.

A.1.2. Severe Weather/Flash Flood Simulation Guide

This simulation guide will provide the training focal points who attended Severe Weather/Flash Flood WDM Workshops with events used during the labs. This guide will contain up to four

simulations, and will be produced only if the Meteorological Development Laboratory (MDL) provides a LINUX version of Severe Convective Analysis and Nowcasting (SCAN) and the Flash Flood Monitoring and Prediction System (FFMP).

A.2. WES Releases

WDTB will release a new version of the WES to enhance the effectiveness of this critical training tool to deliver hardware for local WES archive functionality by the start of FY 2003 for AWIPS. The Office of Science and Technology (OST) is working to develop hardware for local WES archive functionality by the start of FY 2003 for AWIPS. OST is working to develop WES software functionality on AWIPS during FY 2003.

A.2.1 Enhancements

WDTB plans on releasing a new version of the WES to include FFMP and SCAN functions. As with the Severe Weather/Flash Flood Simulation guide, WDTB will be able to integrate these features into WES only if the MDL provides a LINUX version of SCAN and FFMP. WDTB will also develop a WES Scripting Language to allow WES simulations the capability of providing information from other than AWIPS data sets (e.g., spotter reports).

A.2.2. Open WES

The cost to install the two needed INFORMIX licenses on each new WES workstation will increase 25 fold in FY 2003 from \$400 to \$10,000. To mitigate the cost impact, WDTB will develop a "Open" version of the WES during FY 2003 which does not require INFORMIX. WDTB anticipates the "Open WES" will have the same capabilities of the full version of WES, except WARNGEN will not be available.

B. Learning Management System (LMS)

With an increased amount of training now available via so many different media, it has become increasingly complex to schedule attendance and slot assignments for classes and teletraining sessions; generate course evaluations, tests and certificates; provide course-related logistical information. It is also increasingly important for the NWS to track and record training accomplishments by its staff. The scheduling, planning, and tracking procedures are currently accomplished through a labor-intensive email, phone call, and paper exchange process. LMS software is now available commercially to facilitate this need electronically, and is being used by many federal agencies and corporations. The NWS has entered into a partnership with the Department of Transportation's Training Virtual University (TVU) to purchase a web-based LMS hosted by Geolearning Corporation. This system will provide the facility for students to keep track of their own training records, and allow local managers to track the training progress of staff at their office. Regional and Headquarters staff can also review summaries of training progress. The software also provides access to over 1,500 online learning modules for \$125. per person per year. The new LMS will include a feature called "My Plan" which is similar to the

current paper-based Individual Development Plans (IDPs). The NWS Strategic Plan requires all NWS employees to have IDPs in place in FY 2003. The LMS should be operational at the beginning of FY 2003. The OCWWS Training Division will work to provide instructions and training to all offices on using the new NWS LMS.

IV. Professional Development Series (PDS) PROCESS - DEFINITIONS AND TERMS

NSTEP defines a PDS as “a set of integrated instructional components and presentations which describe the skills, knowledge, and abilities necessary to fulfill a major job responsibility.” Each PDS is made up of a series of Professional Competency Units (PCUs) and Instructional Components (ICs), which are defined as follows:

PCU: Taken together, PCUs make up the integrated set of related job skills and abilities required to fulfill a major job responsibility (i.e., a PDS). Each PCU specifically defines the skills or abilities individual staff are expected to attain in a given area of job performance. Table 5 shows the number of PCUs for each PDS, along with their development status.

IC: ICs are the specific training modalities used to train the job skills outlined in a specific PCU (e.g., classroom, teletraining, online). A number of different training modalities may be used to accomplish required training within each PDS and even within each PCU. All PDS information is contained as part of the NWS Training Internet home page (NWSTRN). NWSTRN is a cross-cutting reference source for all NWS training activities. This page can be accessed at:

<http://www.nwstc.noaa.gov/nwstrn/>

A facsimile of Table 5 is accessible via the “Professional Development Series” hyperlink on NWSTRN, with hyperlinks provided for each PCU box to access specific PDS definitions and available training.

NWSTRN is designed so staff in any NWS position can easily identify the suite of basic job skills they are expected to master.

The listing of areas in which PDSs have been developed is provided below:

- (1) Aviation Weather Prediction
- (2) Convective
- (3) Numerical Weather Prediction
- (4) Integrated Sensor Training
- (5) Forecaster Development Program
- (6) Management, Supervision, and Leadership
- (7) Quantitative Precipitation Forecasting
- (8) Hydrology
- (9) Advanced Weather Interactive Processing System
- (10) Engineering, Electronics, and Facilities

- (11) Cooperative Observer/Hydrometeorological Technician Duties
- (12) Marine Weather Services
- (13) Fire Weather
- (14) Climate Prediction
- (15) Administrative
- (16) Interactive Forecast Preparation System Training
- (17) Winter Weather

Listed for each PDS in Table 5 are the associated number of PCUs, along with their developmental status. A green box with an “F” indicates all initial training materials for the PCU have been developed/finished and are available for use. These materials undergo periodic updating to ensure consistency with new science and technology. A yellow box with a “U” indicates training development for the PCU is under development but not yet complete. A red box with an “N” denotes training development has not yet started for the PCU.

V. TRAINING PLANS FOR FY 2003

In this section, detailed training plans for FY 2003 are presented. Per the PDS list provided at the end of Section IV, subsections (A) through (Q) in Section V cover training activities in the respective PDSs. Other training activities funded are covered in subsections (R) and (S).

A. Aviation Forecasting PDSs

COMET has developed a distance-learning aviation course using computer-based learning modules, webcasts, and teletraining on the topic of improving ceilings and visibility forecasts of fog and stratus. Current plans are to offer this course to all aviation focal points as top priority, and 200 to 300 other forecasters in FY 2003. The teletraining will be delivered by COMET staff and other subject matter experts in the NWS. The teletraining sessions will be archived as a webcast for those forecasters who want to take it all on-line.

A series of regional aviation workshops will continue to be held in FY 2003, and funding is provided to hold up to three workshops. These workshops will be organized by the appropriate regional aviation meteorologist and a focal point from NCEP’s Aviation Weather Center. Participants will include NWS forecasters, and representatives from the Federal Aviation Administration and the private sector.

B. Convective PDS

In March 2002, a meeting was held to discuss updates made to two existing Convective PDSs, (entitled Convective Warning Process and Forecasting Severe Convection). As a result of this meeting, it was decided to consolidate these two PDSs into a single Convective PDS.

The goal of the Convective PDS is to elicit a better scientific understanding of the elements involved in the convective warning process which will improve skills in decision making and

ultimately lead to better service.

Many instructional components for this PDS are either currently available or under development via CD-ROM or the Internet. WDTB will conduct distance-learning training on the following topics:

- AWIPS training on new functionality associated with new Builds.
- Warning methodology training to bridge the gap between WDM workshops and WSR-88D Distance Learning Operations Course (DLOC) training. Particular focus will be on four methodologies: tornadoes, flash floods, hail, and high winds.

The WDTB will offer four additional Severe Weather/Flash Flood WDM workshops utilizing DRT scenarios at COMET.

In addition to distance learning and residence workshops, the WDTB plans to continue to develop and enhance the WES software, as described in Part III, Section A.2.1. This will include software updates as needed for LINUX and INFORMIX data base changes, as well as new programs such as the Flash Flood Monitoring and Prediction system (FFMP), and new AWIPS builds. WDTB will also develop new simulations with simulation guides for flash flood and winter weather scenarios, and will continue regional WES support. NEXRAD funds are provided to pay for six employees at the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) to work with WDTB staff on this effort.

C. Numerical Weather Prediction (NWP) PDS

Providing NWS forecast staff with a working knowledge of NWP models is important because the overall skill of the NWS forecast program beyond the 12-hour forecast projection is driven primarily by the operational models and the skill of the forecasters to correctly interpret and use the models. At the same time, numerical models are constantly undergoing upgrades and enhancements.

Two COMET Project Scientists are assigned to NCEP's Environmental Modeling Center (EMC) and Hydrometeorological Prediction Center (HPC) to accomplish development work for the NWP PDS (shown in Table 3). Funds are also included for NCEP to provide computer support for these two positions. These positions support development and updating of NWP training materials with COMET staff support. They also assist the meteorologists and instructional designers at COMET with updating the NWP distance-learning materials for PCUs 1 and 2, especially in areas such as operational marine, ensemble, and hurricane models. Development of PCU 3: "Using Numerical Guidance in the Forecast Process", will continue during FY 2003. Training will be provided via a series of online case studies and teletraining sessions developed to address a variety of operational skills, such as using observations to evaluate model analyses and forecasts. Additional training on dispersion modeling will be developed to support homeland security. A NWP "list server" has been established at COMET to answer field office NWP questions.

D. Integrated Sensor Training (IST) PDS

The IST PDS addresses the need to make available to field users easily accessible, short training modules on the characteristics of new and derived data sets, how to utilize these data sets on AWIPS, and how to best integrate these data sets with other AWIPS data sets in order to improve the warning and forecast process.

Within the IST PDS PCUs, the areas of highest priority for development in FY 2003 are:

- Using Radar Data and Products
- Using Satellite Data and Products
- AWIPS Multi-Source Data Displays
- Model Data Assessment
- Using AWIPS in the Forecast Process

Funds are provided to pay salaries/benefits for employees at the Cooperative Institute for Research in the Atmosphere (CIRA) and the Cooperative Institute for Meteorological Satellite Studies (CIMSS). These employees develop distance-learning materials associated with the IST PDS, and develop and provide teletraining sessions via Virtual Institute for Satellite Integration Training (VISIT)View software to NWS staff. These staff will also work to incorporate new and existing IST PDS training into WES simulations, and will provide support for development of new simulations including user guides. The VISIT program is a combined NWS, National Environmental Satellite, Data, and Information Service (NESDIS), and University effort to provide science infusion and training in a low-cost, effective manner directly to forecasters. This software provides animation and enhancement capabilities which closely match AWIPS, such as full-resolution image fading and linked animation, and features live instructor voice via telephone lines. This funding provides for continued support and development of VISITView. All VISITView sessions are captured as archived teletraining sessions available for use by all weather forecasters.

The WDTB will continue to offer an AWIPS-based WSR-88D DLOC for those NWS meteorologists and hydrologists who have either not taken the original 4-week, in-residence WSR-88D Operations Course or the previous DLOC training offered by the WDTB. This course includes a 1-week workshop at COMET.

The WDTB will conduct distance learning training on Doppler Weather Surveillance Radar (WSR-88D) Open Radar Product Generator (ORPG) Delta Training focusing on Build 2 delivery, Build 3 development and delivery, Build 4 development, and new products. WDTB will also begin development on training for Open Radar Data Acquisition (ORDA) expected to be deployed in FY 2004.

The National Polar-Orbiting Operational Environmental Satellite System (NPOESS) program will provide NWS with funding to continue development of an NPOESS information and

training web site at COMET. NESDIS will continue to provide funding to the NWS for COMET to provide additional Geostationary Operational Environmental Satellite (GOES) and Polar-Orbiting Environmental Satellite (POES) updates on the COMET Meteorology, Education and Training (MetEd) website.

Funding will also be provided for Forecast Systems Laboratory (FSL) personnel to revise wind profiler training materials. A series of four training manuals and associated videotapes were released in the late 1980s associated with this program. The first two manuals: "Principles of Wind Profiler Operation" and "Quality Control of Wind Profiler Data" will be updated for online versions in FY 2003. The organization and format of the new manuals will lend themselves to future teletraining sessions utilizing the material contained in the manuals. Revised manuals will be available in both hard copy and electronic form suitable for online implementation.

Future phases for related profiler topics for teletraining will cover the temperature profiling system of the National Profiler Network (NPN) known as the Radio Acoustic Sounding System (RASS), and the moisture monitoring system utilizing the Global Positioning System (GPS) and known as GPS-IPWV (Integrated Precipitable Water Vapor). Manuals would be prepared equivalent to those in the initial phase. Following completion of this, the next phase would be preparation of the equivalent Manuals 3 and 4, which cover warm- and cold-season forecast applications of profiler data.

E. Forecaster Development Program PDSs

The Forecaster Development Program (FDP) provides a training plan for new meteorologist interns (referred to as interns hereafter) to prepare them for a career as a meteorologist. The FDP contains three phases:

- Operational Basics - Ensures interns have the skills needed to perform the duties of an Hydrometeorological Technician (HMT) position.
- Forecast Familiarization - Provides interns with a set of forecast-related training material to be completed while working standard HMT rotation. Allows interns to gain a common base of knowledge on operational topics.
- Professional Development - Encourages continuing education for meteorologists and helps to decide the career path based on the interns' interests.

The latest version of the FDP resides on the NWSTRN web page. As a related activity in FY 2003, NWSTC will convert the majority of paper-based modules from the previously held Forecaster Development Course to the World Wide Web (WWW). This activity requires no financial resources. In addition, NWSTC staff will also meet with the United States Navy and Air Force Weather staff to see what common training materials can be shared and developed for NWS Interns, HMTs, and Department of Defense enlisted forecasters.

F. Management, Supervision, and Leadership PDSs

The NWS Strategic Plan indicates leadership training will be completed for all supervisors and leaders by 2005. Much of this training will be accomplished through the Management, Supervision, and Leadership PDSs.

There are four PDSs defined in this area:

- Office Management and Administration
- Leadership
- Human Resource Management
- Customer/Partner Service Management

In order to fulfill training requirements associated with the above PDS topics, two courses will continue to be offered by the NWSTC. The “Management and Supervision” course for Meteorologists-in-Charge (MICs); Hydrologists-in-Charge (HICs); Electronics Systems Analysts (ESAs), Data Acquisition Program Managers (DAPMs) and NCEP, Regional, and National Headquarters supervisory personnel fulfills the NOAA 80-hour requirement for management and supervision training. The 1-week “Field Operations Management” course for the first-line management team at field offices provides basic management concepts for those staff who act as office manager when the MIC/HIC or NCEP Center Director is out of the office. The first-line management team includes the SOO, WCM, DOH, Lead Forecasters, Senior Hydrologic Forecasters, and Senior Hydrometeorological Analysis and Support (HAS) Forecasters at each field office. However, first line management team members may attend the “Management and Supervision” course at the discretion of Regional/NCEP management as slot vacancies arise.

In addition, the NWSTC will offer an Executive Leadership Seminar (ELS) for managers and Headquarters program leaders. This course was designed to replace NWS participation in the Army’s Personnel Management for Executives (PME) course. The NWSTC will also offer a new ALD program as a follow-on to ELS. The ALD is a 6 to 9 month program designed to replace the Senior Leadership Potential Program (SLPP). It will consist of two, 1-week workshops, rotational assignments, shadowing and executive coaching. It will be targeted for GS-13s and above and will be a competitive program with a program announcement. The NWSTC Management and Leadership staff are also available to teach management and leadership tools and techniques to Regional and national meetings, and assist local offices when necessary.

The NWS will fund and allocate 4 slots to NOAA’s Leadership Competencies Development Program (LCDP), an 18-month program for those at the GS-13 level and above who wish to broaden their careers within NOAA (shown in Table 3). This is also a competitive program with selection by the NWS Deputy Assistant Administrator for Weather Services.

Contract on-site team training and centralized team facilitator training will continue for about 30 new sites. This means 43 sites will still require team training in FY 2004.

Related to the Customer/Partner Service Management PDS, the WDTB will offer a new “WDM for MICs” seminar. This 4- to 8-hour seminar will be provided at Regional MIC meetings. There will also be additional sessions provided for NWS/NCEP Headquarters Managers. Also, funding is provided for a “WCM course” at the NWSTC, which trains new WCMs in their job duties and responsibilities. This course will provide training and background information on the WCM Initiatives Team (WIT), whose goal is to "Increase the representation of Women, Minorities and Persons with Disabilities (WMD) in the NWS" by 1 percent annually. The goals of the WIT are to provide WCMs with the training to enhance the understanding of the issues inhibiting the entrance of WMD into the traditional NWS educational and career paths, and to explore methods of overcoming inhibiting issues.

G. Quantitative Precipitation Forecasting (QPF) PDS

Continued development of training and techniques to improve QPF is a priority addressed in the NWS Strategic Plan. The goal of the QPF PDS is to address improvement of precipitation estimation and forecasts which will contribute to improved watch and warning accuracy.

The highest priority PCU for development in FY 2003 is “Evaluate NWP and Value-Added Guidance for Precipitation Forecasting”. To meet the training needs associated with this PCU, COMET will continue the “RFC/HPC Hydromet” course at COMET. This course, attended by HAS Forecasters from River Forecast Centers (RFCs) and NCEP’s HPC QPF staff, focuses on changes required to implement the new QPF process.

H. Hydrology PDSs

Seven PDSs are identified for the NWS Hydrologic Services Program:

- Managing the Hydrology Program
- Hydrologic Forecasting
- Model Calibration and Hydrologic Procedure Development
- Forecasting Flash-Flood Events
- Assessing Near-Term Hydrologic Guidance and Issuing Public Forecasts
- Ensemble Hydrologic Forecasting
- Assimilating Hydrometeorological Data

The highest priority activities for FY 2003 were determined from these PDSs. First, a “Basin Customization/Localization” course will continue to be offered at COMET. This course, attended by WFO Service Hydrologists (SHs) and hydrologic or Geographic Information System (GIS) focal points, will include an overview to the FFMP approach and the basin delineation process, along with guidance to customize and localize original delineated basin sets. Training

is provided on identifying areas where the basin data set would be modified to enhance services, detailing the process necessary to perform and implement these enhancements.

NWSTC will continue to offer a “WFO Hydrology Program Management” course, which provides training to all SHs and hydrologic focal points on basic concepts specific to management of office hydrology programs. In addition, two WFO Hydrologic Forecasting System (WHFS)-related courses will be provided at NWSTC. The initial “WHFS Workshop” provides training for new SHs, hydrologic focal points, and one other WFO attendee. A new “Advanced WHFS Workshop” will be offered for the SH and RFC forecasters to focus on the implementation of the site-specific forecast functionality and the multi-sensor precipitation estimation (MPE) function within the AWIPS WHFS software. The goal is to provide this training to the prior attendees of the “WHFS Workshop”. As in the past, any new WHFS software developments will be taught via teletraining to past participants of the WHFS workshop.

FY 2003 will also focus on the development of the Ensemble Hydrologic Forecasting PDS (formerly known as the Extended-Range Hydrologic Forecasting PDS). Training is needed for both RFC and WFO staff on ensemble forecasting techniques for hydrologic forecasting. Funding is provided for development of an “Ensemble Hydrologic Forecasting” residence course, designed for the SH, hydrology focal points, and RFC hydrologists. The first offering of this course will likely occur in FY 2004.

Funding will also be continued to support travel to 6 workshops provided by subject matter experts in the Office of Hydrologic Development. These workshops could include:

- RFC HAS Forecaster workshop
- ThreshR/Flash Flood Guidance (FFG) workshop
- Ensemble Streamflow Prediction (ESP) workshop
- Reservoir operations workshop
- Basic Operational Forecast System (OFS) workshop
 - Advanced OFS workshop
 - FLDWAV model workshop
- Model Calibration workshop
- Hydrologic Database workshop
- DOH Science Workshop
- Hydrologic Routing/Hydraulics workshop
- Statistical Hydrology workshop
- Snow Modeling workshop

A “Cold Region Workshop” will be held in FY 2003 to facilitate a better understanding of the factors which affect the hydrologic cycle in northern climates. The intent of this workshop is to present and discuss possible topics such as ice formation, ice jam forecasting, cold weather hydrologic equipment, ice data collection, snow physics, wintertime river forecasting, ice modeling and snow data to an audience of operational hydrologic forecasters and engineers. The

workshop will also present an opportunity for all attendees and presenters to follow up on topics presented at the last “Cold Region Workshop” held in November 2000.

As in past years, funding is available for WFO, RFC, and NCEP staff to take hydrology and hydrometeorology correspondence courses at local universities. This funding is part of the “Regional Training Funds” entry in Table 2.

I. AWIPS PDSs

The training requirements in this area emanate from the three AWIPS PDSs: Operating AWIPS, AWIPS System Administration and Maintenance, and Implementing Local Applications on AWIPS. Since these PDSs were amongst the first developed back in 1999, a follow-up PDS meeting will be held during 2002 to revise the materials contained in these PDSs.

After examining the exact nature of the training needs through the individual PCUs, the FRG determined some of these needs could continue to be addressed via the following courses at NWSTC:

“AWIPS Operations Support” is a course for SOOs, DOHs, and AWIPS Focal Points designed to ensure all sites have a trained focal point available to provide operational support to AWIPS and ensure its proper use.

The “AWIPS Applications” course objective is to optimize local developers’ ability to design and utilize AWIPS local applications, including important software and Local Data Acquisition and Dissemination (LDAD) utilization training.

The “Intermediate UNIX for ETs” course provides Electronics Technicians (ETs) with an appropriate level of UNIX training to prepare them for all ensuing systems maintenance courses. This course will be revised for FY 2003 to incorporate relevant LINUX information.

In order to meet training requirements related to attrition, “AWIPS Systems Manager” courses for ESAs will continue to be offered at the NWSTC. This course is intended to provide ESAs (and/or RFC/NCEP equivalents) with an understanding of AWIPS hardware, communications, software components, and dataflow.

The NWSTC will continue to work with the NWS Office of Science and Technology and the AWIPS contractors to develop teletraining sessions for any AWIPS Build software release(s) as required.

Finally, funding is provided to facilitate local provision of contractor-provided Information Technology (IT) systems training related to AWIPS. These funds, described in subsection (J), will also be used to procure contract training for various local systems administration training needs.

J. Engineering, Electronics, and Facilities PDSs

There are 11 PDSs identified in this area:

- Facilities Maintenance
- Facilities Management
- Environmental Compliance
- WSR-88D Maintenance
- NWR Maintenance
- Upper Air (Profiler) Maintenance
- Data Acquisition / Dissemination Systems Maintenance
- IT Systems and Network Support
- General Engineering Skills
- Safety and Health
- ASOS (PACE) Maintenance

As indicated by these PDSs, critical training needs focus on systems personnel being able to understand, utilize, and properly integrate the many new and derived data sets now available; make the transition of the work force from hands-on to systems support; and take responsibility for ensuring adequate and economical facility maintenance to meet operational requirements.

Much of the training will be accomplished via classes offered by the NWSTC. Training will include the continuation of courses on new and currently used systems. These courses include “ASOS Maintenance,” “Introduction to NWS Systems,” “Automated Radio Theodolite (ART) Rawinsonde System Maintenance,” “WSR-88D Maintenance,” “WSR-88D Microwave Line-Of-Sight (MLOS) Maintenance,” “WSR-88D Dual Thread Adjunct Maintenance,” “WSR-88D Open RPG Maintenance,” “Console Replacement System (CRS) Maintenance,” “Crown Transmitter Maintenance”, “CRS Network Operations,” “Fall Protection and Rescue”, and “Environmental Compliance”, which has been revamped for FY 2003. Descriptions of the above classes can be accessed via the NWSTRN Home Page at:

<http://www.nwstc.noaa.gov/nwstrn/classes.html>

A “Safety Training” course which was previously funded by OPS will be funded by national training funds in FY 2003. This course provides guidance to office safety focal points on how to implement the NWS Safety Procedures published in Engineering Handbook Number 15 (EHB-15). Also, to address a potential requirement for “Fall Protection and Rescue” recertification training, \$50,000 has been provided for Pacific Region attrition Fall Protection training and to begin local recertification efforts. The NWSTC, Regions and OPS will work together to develop cost-effective alternatives for recertification training.

In addition to the “Crown Transmitter Maintenance” course, two other courses related to NOAA Weather Radio (NWR) transmitters will be offered in FY 2003: the “Scientific Radio Services (SRS) Transmitter Maintenance” course and the new “Armstrong Transmitter Maintenance”

course. The “SRS Transmitter Maintenance” course, not taught during FY 2002 due to the high demand of the “Crown Transmitter Maintenance” course, has been reinstated since many SRS transmitters remain in service and will not be replaced until the demand for the expansion of NWR is satisfied. The “Armstrong Transmitter Maintenance” course is required due to the additional SRS and Armstrong NWR transmitters being procured and installed. These courses, both to be attended by ESAs and ETs, are being offered in accordance with NWS Strategic Plan Item 1.1; “Increase coverage of NWR transmitter network to 95 percent of the United States population”.

Two new courses will be developed and offered to support the new Radiosonde Replacement System (RRS). An “RRS Maintenance” course will be offered to provide ESAs and ETs with sufficient familiarization with the system to perform operation, maintenance and repair. Also, development of a “RRS Operations” distance learning course will begin by the OCWWS Observing Services Division and handed off to the NWSTC. This course will provide site operators with sufficient familiarization with the system to perform successful radiosonde flights. Funding for these courses will be provided by the RRS program.

Concurrently, funding has been identified to support local facilities maintenance and IT systems training to ensure field staff know how to repair vital mechanical and electrical systems; are aware of good maintenance practices; and possess a clear knowledge of how to comply with building, electrical, mechanical, environmental, and safety codes and regulations. These funds will also be used to provide necessary training for the recently created IT Officer position at WFOs and are included in the “Regional Training Funds” portion of Table 2, which will be transferred to the Regions for implementation.

K. Cooperative Observer/HMT PDSs

Three PDSs are identified in this area:

- Cooperative Program Management
- Surface Observing Program
- Upper Air Program

Training in FY 2003 will focus on the Cooperative Program Management and Surface Observing Program PDSs. A “Data Acquisition Operations” course will be offered at NWSTC to teach all NWS operational and management staff involved in data acquisition to address identified training deficiencies associated with equipment operation, and to review the latest NWS policies and procedures of the data acquisition process. The NWSTC attrition course entitled “Cooperative Network Operations” provides training for those managing the Cooperative Observing Program. The course includes details on program requirements, purposes, and objectives with topics including observer recruitment, equipment installation and maintenance, and network data quality control.

L. Marine Weather Services PDS

To address the training needs identified in the Marine Weather Services PDS, funds will be provided to continue Regional marine workshops. The Western Region marine workshop and one other Regional marine workshop will be funded for FY 2003. The Regional marine program manager and an NCEP Marine Prediction Center focal point, as appropriate, will define curricula for these workshops, and will engage local academic experts to complete training based on requirements specified by this PDS. Funds are also provided for Marine PDS Producers to travel to meetings to help develop new materials. A COMET development team will work with the Marine PDS Producers to take wind and waves training materials on a CD-based marine module developed by COMET in the mid-1990s and convert them to the WWW. The Meteorological Services of Canada (MSC) is interested in collaborating with the NWS and COMET in this.

The Hurricane Liaison travel for spring Federal Emergency Management Agency training at the Tropical Prediction Center for Eastern and Southern Region meteorologists, and the travel for activation of the Hurricane Liaison team was not funded. Eastern and Southern Regions agreed they will continue this in FY 2003 but fund travel out of Regional funds.

M. Fire Weather PDSs

The Fire Weather PDS and the Incident Meteorologist (IMET) PDSs comprise the Fire Weather PDSs. Materials or courses to address the majority of training requirements for both the Fire Weather and IMET PDSs are already available, and continue to be amalgamated for access on NWSTRN by the PDS Producers. An "IMET Workshop" will be offered in FY 2003 to train IMETs on technology advances and techniques.

N. Climate Prediction PDS

In order to meet critical training requirements defined in the Climate Prediction PDS, two "Climate Symposia" will be conducted at COMET in FY 2003, with one being funded by the OCWS Climate Services Division (CSD) using non-NWS funds. This workshop for SOOs, climate focal points, and new personnel from the Climate Prediction Center (CPC) will provide background on all NWS climate products, and will address the training requirements of PCU 2: "Demonstrate Understanding of Climate Variability Sufficient to Apply to Local Services". This will provide forecasters with the resources to answer questions from the public on how climate fluctuations affect local weather variability, as well as information on the latest developments in the climate analysis and forecasting.

There will also be an effort in FY 2003 to convert Climate Symposium lectures into webcasts to address PCU 4: "Interpret and Apply CPC Products." COMET will record Climate Symposium lectures and convert them to webcasts for this purpose. CSD will work with the VISIT program to develop 2-3 teletraining sessions on materials not in the Climate Symposium. The majority of other climate training will be accomplished via public outreach materials during FY 2003, some of which is already available.

O. Administrative PDS

The majority of training materials for the Administrative PDS are already available and are being amalgamated for access on NWSTRN by the PDS Producers. The FRG will continue to allocate funds for Regions to conduct formal Administrative Support Assistant (ASA) training during FY 2003. This training will include travel/per diem costs to attend residence and correspondence courses, and commercially available training. This funding is included as part of the "Regional Training Funds" line in Table 2.

P. IFPS Training PDS

A meeting was held in February 2002 to develop a new Interactive Forecast Preparation System (IFPS) Training PDS. Prior to this meeting being held, national IFPS training consisted of two NWSTC residence courses - "IFPS Managers", and "IFPS Focal Point", of which the final offerings were completed by March 2002. Other training to supplement these courses was being done at the Regional level in the absence of a national IFPS training plan. This new PDS encompasses various Regional training, and better addresses the major paradigm shift IFPS poses for NWS staff.

The IFPS Training PDS is comprised of 8 PCUs:

1. Vision
2. Operator Interface
3. Forecast Methodology
4. Collaboration
5. Operations Management
6. Local Applications
7. Focal Point Duties
8. Application of IFPS Techniques

To accomplish the training associated with these PCUs in FY 2003, a variety of in-residence courses and distance learning techniques will be used. First, the NWSTRN web site now has a link to a new "IFPS Training Information Page (ITIP)" which contains links to all IFPS training documentation, teletraining schedules, and other current training information. In addition, teletraining sessions will address topics contained in PCU 1: "Vision", PCU 3: "Forecast Methodology", PCU 4: "Collaboration", and PCU 5: "Operations Management". These sessions will be recorded and linked from the ITIP on the NWSTRN web page. To accompany these sessions, experts will be made available at various times to answer live questions on the recorded presentations via conference call. The NWSTC will maintain a "threaded discussion" feature on the ITIP to allow for near-real-time question and answer interaction among all IFPS users. Finally, the Rapid Prototype Project (RPP) and IFPS "list servers" will be utilized by a new, 5-person IFPS training team to answer questions which arise on a near real-time basis.

In addition, there will be a new “Boundary Layer Meteorology” symposium held at COMET in FY 2003. This symposium, for SOOs, will focus on training in micrometeorology and boundary layer process in order to fully use IFPS capabilities, especially smarttools, to provide value-added forecast products to the public. It will also provide scientific background on IFPS algorithms and tools.

Q. Winter Weather PDS

The WDTB has developed a new Winter Weather PDS as a result of holding “Winter Weather Workshops”, which began in FY 2002. The goal of this PDS is to address the skills needed to perform winter weather forecasting duties and supporting activities in accordance with the NWS Mission.

This new PDS has 8 PCUs:

1. Assess Customer Requirements and Use of Winter Weather Products
2. Applying Climatology to the Forecasting of Winter Weather Events
3. Analyzing the Synoptic Scale Environment
4. Analyzing Mesoscale Forcing Mechanisms
5. The Watch/Warning Decision
6. Dissemination and Communication of the Products
7. Monitoring System Evolution
8. Verification of Events

The WDTB will continue to offer “Winter Weather Workshops” at COMET in FY 2003 to deliver training on winter weather WDM, focusing on the job tasks associated with the process of developing and disseminating winter weather products.

R. Other Training Activities - Table 2

Regional training funds: These funds are allocated to support the following kinds of activities, and are transferred directly to the Regions and NCEP for distribution to their respective field offices/centers:

- Hydrology correspondence courses: Described in Section V, subsection (H).
- Local facilities / IT funds: Described in Section V, subsection (J).
- ASA training: Described in Section V, subsection (O).
- Regional Collaborative Projects: This supports NWS/university collaborative projects, workshops, and associated computer and travel for collaborative research.
- SANS training: Local IT training to meet security requirements for those who have root password access.

Note the respective amounts shown for each of these purposes are simply recommended amounts. Individual Regions and NCEP may allocate these regional training funds as they see fit.

LMS - new functionality: Funding is provided for establishing new LMS functionalities as they arise. The LMS is described in detail in Section III, subsection (B) of this document.

American Meteorological Society (AMS) journals: This supports purchasing the AMS journals “Monthly Weather Review,” “Weather and Forecasting,” and “Journal of Hydrometeorology” for all field offices via Internet access only, and Regions and NCEP Service Centers via hard copy and Internet access.

Arctic Meteorology/Winter Weather Workshop: This funds an annual workshop held alternately in Canada and Alaska. The workshop includes topics dealing with the science of preparing forecasts and warnings in the northern latitudes. A PDS will be developed in this area, and Canada has agreed to provide resources to COMET for continued development of a High Latitude Weather Forecasting website.

S. Other Training Activities - Table 3

COMET/University Corporation for Atmospheric Research (UCAR) Staff Grant: The COMET/UCAR Cooperative Agreement supports the costs of supporting the COMET classroom; costs of building and archiving case studies for use in the classroom and with the WES; costs of fulfilling data requirements for SOOs; costs for creating COMET distance-learning modules; costs for supporting the SOO program and SOO training and WCM resource sites; and costs of maintaining the COMET MetEd Internet site.

NWSTC Administrative funds: Supports annual operating expenses and staff travel and training at the NWSTC.

NWSTC Non-FTE Staff: Supports additional non-government personnel to assist NWSTC staff.

COMET van for students: Supports the use of three vans for student use and transportation during COMET residence courses.

COMET NWS Subject Matter Expert (SME) travel: This supports SME travel in association with COMET meetings and distance-learning development. Costs of \$4,000 per week are built into each COMET residence class costs to cover government guest instructors.

LMS software - Recurring cost: Funding is provided for recurring maintenance costs of the NWS LMS. The LMS is described in detail in Section III, subsection (B) of this document.

NSTEP/PDS coordination meetings: This supports participant travel to training and NSTEP Team meetings as needed during the year.

Training Division (OS6) Budget: This supports Training Division employee travel and training activities during the year.

COMET Branch Budget: This supports COMET Branch employee travel and training activities during the year.

Teletraining communications: This supports routine commercial communications and bridging costs for provision of teletraining sessions by the three NWS training facilities and other providers, such as NESDIS, Regional Headquarters offices, and local offices.

VI. UNFUNDED TRAINING REQUIREMENTS FOR FY 2003

Table 6 is a listing of all unfunded training requirements for FY 2003 resulting from the yearly prioritization and budget balancing processes. The FRG will review, update and prioritize these requirements to meet the NWS Corporate Board or Financial Investment Review Board unfunded request deadlines.

TABLE 1 - Residence Training Requirements: FY 2003 (5/15/02) - dollar figures in K

Stud.	Class	Days	Source	ER	SR	CR	WR	AR	PR	NP	Other	Extra Slots	Total Student costs per class	Supplies, Cont./ Guest In. Costs per class	Total Cost/ Class No.	Class No.	Class Total Cost	
																		Req.
NWSTC																		
ASOS Maint.	8	13	ASOS	12	8	8	8	2	1	0	3	6	48	23	1	24	6	144
Intro to NWS Systems	12	3	AWIPS	5	5	8	6	3	1	0	8	0	36	13	1	14	3	42
ART Rawinsonde Sys. Maint.	6	13	Base	5	4	5	5	2	1	0	2	0	24	17	1	18	4	72
Fall Prot. & Rescue (attr.)	16	3	Base	8	9	8	8	4	1	0	7	3	48	18	15	33	3	99
88D Maint.	8	27	NEX	5	8	8	8	0	0	0	6	5	40	47	2	49	5	245
88D MLOS Maint.	8	3	NEX	0	0	0	2	0	0	0	2	4	8	9	13	22	1	22
88D Dual-Thread Adj. Maint.	8	3	NEX	0	0	1	3	0	0	0	2	2	8	9	1	10	1	10
88D Open RPG Maint.	11	6	NEXPAC	42	25	15	12	3	0	0	13	0	110	17	1	18	10	180
CRS Maint.	8	6	Base	25	25	23	20	5	0	0	4	2	104	12	1	13	13	169
AWIPS Systems Manager	16	12	AWIPS	4	10	5	5	1	0	2	5	0	32	43	1	44	2	88
AWIPS Ops. Support	16	8	AWIPS	9	11	15	15	6	2	5	1	0	64	32	2	34	4	136
AWIPS Applications	16	3.5	AWIPS	12	10	16	12	3	2	5	1	3	64	18	2	20	4	80
Intermediate UNIX for ETs	12	8	AWIPS	10	13	7	8	1	1	0	4	4	48	24	1	25	4	100
ELS	35	8.5	Base	10	15	12	12	2	3	5	11	0	70	70	104	2	208	
Management & Supervision	20	9.5	Base	6	7	6	9	3	2	3	3	1	40	42	10	52	2	104
Field Operations Management	24	4	Base	18	20	24	21	3	3	7	0	0	96	29	14	43	4	172
Coop Network Ops.	16	8	Base	9	6	4	5	2	6	0	0	0	32	32	4	36	2	72
CRS Network Ops.	8	3	Base	6	11	9	8	3	1	0	0	2	40	9	1	10	5	50
WFO Hydro. Pgm. Management	16	8	Base	3	8	10	4	2	1	0	4	0	32	32	8	40	2	80
WHFS Workshop	8	3.5	AWIPS	2	5	5	3	2	1	0	2	4	24	9	1	10	3	30
Advanced WHFS workshop	8	3.5	AWIPS	1	1	1	1	1	0	1	1	1	8	9	4	13	1	13
Env. Comp. Training (revamped)	45	3	Base	23	35	38	24	3	2	4	6	0	135	50	2	52	3	156
Data Acquisition Ops.	16	4	Base	20	16	15	12	3	4	0	0	10	80	19	14	33	5	165
WCM course	22	8	Base	4	4	8	6	0	0	0	0	0	22	44	2	46	1	46
Crown Transmitter Maint.	4	3	Base	6	7	11	8	10	0	0	0	2	44	5	1	6	11	66
Safety Training	44	3.5	Base	6	10	10	8	8	2	0	0	0	44	49	18	67	1	67
SRS Transmitter Maint. - new	4	3	Base	5	0	3	4	1	1	0	0	2	16	5	1	6	4	24
Armstrong Transmitter Maint.- new	5	3	Base	12	6	2	9	3	3	0	0	0	35	6	1	7	7	49
RRS Maintenance - new	6	6	RRS	5	9	5	3	4	0	0	4	0	30	9	1	10	5	50
COMET																		
RFC/HPC Hydromet	18	6	Base	0	8	2	3	3	0	1	1	0	18	31	32	63	1	63
Climate Symposium	27	4.5	Base	9	15	17	9	1	0	1	2	0	54	35	20	55	2	110
Basin Cust./Localization	18	3	AWIPS	6	18	15	13	2	0	0	0	0	54	22	23	45	3	135
Boundary Lyr COMAP Symposium-new	27	4.5	AWIPS	5	6	8	5	1	1	0	0	0	27	35	28	63	1	63
Canada Winter Wx course	6	10.5	Base	1	0	1	1	3	0	0	0	0	6	15	0	15	1	15
WDTB (at COMET)																		
DLOC Wkshp.	27	3.5	NEX	12	19	14	29	2	2	3	0	0	81	32	8	40	3	120
Svr. Wx. WDM Wkshp.	27	3.5	NEX	13	21	24	14	0	0	6	3	0	81	32	8	40	3	120
Svr. Wx. WDM Wkshp.	27	3.5	AWIPS	2	3	6	5	1	0	1	0	9	27	32	8	40	1	40
Winter Wx. WDM Wkshp. (AWIPS)	27	3.5	AWIPS	6	7	15	10	2	0	1	1	12	54	32	8	40	2	80
												Cost/Student						
Summary		Funding		Days		NWSTC		COMET/WDTB										
NWSTC - OCWWS Base		1599		2	or	2.5	\$1,000											
COMET - OCWWS Base		188		3	or	3.5	\$1,100	\$1,200										
WDTB - OCWWS Base		0		4	or	4.5	\$1,200	\$1,300										
TOTAL OCWWS Base		1787		5			\$1,300											
				6			\$1,500	\$1,700										
				8	or	8.5	\$2,000	\$2,200										
				9.5			\$2,100											
TOTAL AWIPS		807		10.5			\$2,200	\$2,400										
TOTAL RRS		50		11			\$2,300											
NWSTC NEXRAD O&M		277		12			\$2,700											
WDTB NEXRAD O&M		280		13			\$2,800											
TOTAL NEXRAD O&M		327		27			\$5,800											
TOTAL NEXPAC		180		35			NA	\$6,200										
TOTAL ASOS		144																
TOTAL RESIDENCE COSTS		3295																

Per diem rates:
 KC (NWSTC):
 127 (85 and 42)
 Boulder (COMET):
 135 (93 and 42)

TABLE 2: FY 2003 NWS Training and Education Expenditures (5/15/02)

Note: Dollar Amounts in K

DISCRETIONARY FUNDING

	FY03 Budget
Non-Labor/Other	
Learning Management System - new functionality	40
AMS Journals	100
Aviation	
Regional Aviation Workshops	90
Integrated Sensor Training - IST CI Salaries	
Profiler Training (FSL) - new	38
Management, Supervision & Leadership	
On-site Team Training	100
Advanced Leadership Development (ALD) - new	100
Hydrology	
Hydrology Workshops	100
Development of Ensemble Hydro. Fcstg. course - new	20
Development of Advanced WHFS Workshop - new	15
Cold Regions Workshop	45
Marine Weather Services	
Regional Marine Workshops	50
Marine PDS Support	20
Fire Weather	
Incident Meteorologist (IMET) workshop	60
Winter Weather	
Arctic Meteorology/Winter Wx. Workshop	15
Engineering, Electronics and Facilities	
Fall Protection and Rescue Training	50
Regional Training Funds - Includes:	
Collaborative funds	583
ASA funds	101
Facilities funds	60
IT funds	40
Hydro Correspondence funds	300
SANS Training	20
Table 1 Base Residence classes	62
Table 1 AWIPS Residence Classes	1787
Table 2 Items	807
TOTAL DISCRETIONARY BUDGET	1851

TABLE 3 - FY 2003 NWS Training and Education Expenditures (5/15/02)

**Note: Dollar Amounts in K
NON-DISCRETIONARY BASE FUNDING**

	FY03 Budget
Non-PDS Costs	
COMET/UCAR Staff-Grant (non-FTE)	1800
NWSTC Admin.	336
COMET Van for students	27
COMET NWS SME Travel	25
Learning Management System - Recurring cost	100
NSTEP/PDS Coordination Meetings	30
Training Division (OS6) Budget	40
COMET Branch Budget	49
NWSTC non-FTE staff	78
Teletraining Comms	40
PDS Costs	
NWP - COMET Staff at NCEP	265
Leadership Competencies Development Program (LCDP) - new	60
Total Non-PDS Costs	2525
Total PDS Costs	325
TOTAL NON-DISCRETIONARY BUDGET	2850

TABLE 4A: FY 2003 COMET STAFF MATRIX

STAFF:	Front Office	Basic Program Infrastructure	Outreach Program & Infrastructure	DL Production	DL Infrastructure	Classroom	UCAR Indirects						
<i>Front Office</i>													
Spangler	0.60			0.10			0.30						
Lamos, J	0.75						0.25						
Lessard	0.75						0.25						
<i>Admin. Group</i>													
Fyffe		0.55				0.45							
Penina (temp)		0.15		0.15		0.70							
Slagel		0.50	0.30		0.20								
<i>Meteorologists</i>													
Abshire				1.00									
Bua				1.00									
Bvrd		0.60				0.40							
Dills				1.00									
Fuell				1.00									
Jascourt				1.00									
Kelsch				0.20		0.80							
Kiessling				0.60		0.40							
Wesley			0.05	0.90		0.05							
Page (NWS)		0.20		0.40		0.40							
Rozumalski (NWS)		0.05		0.95									
Cianflone (NWS)				1.00									
Lewis (MSC)				0.50									
Toth (MSC)				0.50									
<i>Instructional Designers</i>													
Bol				1.00									
Johnson			0.30	0.70									
Miller (temp)				0.80									
Parrish		0.82		0.18									
Wang				1.00									
<i>Graphic Artisits</i>													
Devo					0.95	0.05							
Godsil					0.95	0.05							
<i>QA</i>													
Smith		0.20			0.70	0.10							
<i>Software Engineers</i>													
Alberta		0.05		0.15		0.80							
Drake		0.50				0.50							
Whitehurst		0.10			0.83	0.07							
<i>Developers</i>													
Lamos, S					0.75	0.25							
Multimedia (TBD)					0.70	0.30							
<i>System Administrators</i>													
Hanzel		0.85				0.15							
Hamm		0.75				0.25							
Vacant		0.40		0.05		0.55							
<i>Students</i>													
Drogorub				0.50									
Vacant				0.50									
Parris		0.40				0.10							
Hevl													
Total	2.10	6.12	0.65	15.18	5.08	6.37	0.80						

TABLE 4B: FY 2003 WDTB STAFF MATRIX

STAFF:	Administration	Integrated Sensor Training	Convective Warning Process	Management Leadership Supervision	Winter Weather	Weather Event Simulator	Learning Management System	Other Non-PDS					
Mahoney	0.70				0.10	0.10		0.10					
Baalke		0.70					0.10	0.20					
Boettcher		0.80					0.10	0.10					
Curtis	0.90							0.10					
Ferree		0.35	0.30	0.15			0.10	0.10					
Grant		0.35	0.25		0.10	0.20		0.10					
LaDue		0.35	0.25		0.10	0.20		0.10					
Quoetone		0.35	0.40	0.10		0.05		0.10					
Rinderknecht		0.60	0.05		0.05	0.10	0.10	0.10					
Total	1.60	3.50	1.25	0.25	0.35	0.65	0.40	1.00					
<i>CIMMS Employees:</i>													
Hoggard	0.60	0.10				0.20		0.10					
Magsig	0.10	0.05	0.35			0.40		0.10					
Tan (vice)	0.40	0.10				0.40		0.10					
Wood		0.40	0.10		0.10	0.30		0.10					
Yu		0.40	0.05		0.15	0.30		0.10					
New RA - Vacant		0.10	0.30			0.30		0.30					
Total	1.10	1.15	0.80	0.00	0.25	1.90		0.80					

TABLE 4C: FY 2003 NWSTC STAFF MATRIX

STAFF:	Administration	Integrated Sensor Training	NWP	Hydrology	Engineering, Electronics, and Facilities	Leadership, Management & Team Training	Aviation Forecasting	AWIPS/IFPS	Forecaster Development Program	Cooperative PDS	Marine	Facilities	Miscellaneo PDS
Baker				1.00									
Beckman								1.00					
Bode	1.00												
Clark				0.10		0.80				0.10			
Estes						0.80						0.20	
Griffin					0.30			0.30	0.40				
Hamilton								0.80					0.20
Harding					0.20			0.60				0.20	
Haskins					1.00								
Hatch					0.20			0.80					
Kaplafka				0.10	0.50	0.10				0.10			0.20
Lavton						1.00							
Lewis,D	1.00												
Lewis, J					1.00								
Vice Nedved	0.30				0.20			0.20				0.10	0.20
Polston					0.50			0.50					
Quillen					0.30			0.30				0.40	
Vice Quillen					0.80							0.20	
Reed	0.50												
Retzlaff					1.00								
Richards					1.00								
Rowell					0.30	0.10		0.30					0.30
Ryman					0.80							0.20	
Schupbach					0.10			0.70				0.20	
Teer					1.00								
Vandelo	0.50												
Vogel	0.70					0.10				0.10		0.10	
Wilbur					1.00								
Wvatt				0.10						0.90			
Total	4.00	0.00	0.00	1.30	10.20	2.90	0.00	5.50	0.40	1.20	0.00	1.40	0.50

TABLE 4D: FY 2003 OCWWS TRAINING DIVISION STAFF MATRIX

STAFF:	Administration	Integrated Sensor Training	NWP	Hydrology	Engineering, Electronics, and Facilities	Leadership, Management & Team Training	Aviation Forecasting	AWIPS/IFPS	Forecaster Development Program	Cooperative PDS	Marine	Facilities	Miscellaneo PDS
Dion	1.00												
Epps	1.00												
Franklin	1.00												
Jacks	1.00												
Mostek		1.00											
Motta								1.00					
Spayd	1.00												
Thomas	1.00												
White								1.00					
Total	6.00	1.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00

Table 5: NWS PDS Status

Professional Development Series (PDS)	Professional Competency Units (PCUs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Aviation PDSs (Weiss)												
* Forecasting Aviation Icing	N	N	N	N	U	U	N	N	N			
* Forecasting Turbulence	N	N	N	N								
* Impact on Aviation Weather on Customers	N	N	N	N								
* CWSU On-Station Systems / Operations	N	N	N	N	N	N						
* Issuing Effective CWSU Products	N	N	N	N								
* Forecasting Low-Altitude Clouds and Fog for Aviation Operations	U	N	U	U								
Convective PDS (Mahoney)												
	U	U	U	U	U	U	U	U	U	N		
Numerical Weather Prediction (Edman/Staudenmaier)												
	F	U	U									
Integrated Sensor Training (Mostek)												
	U	U	N	N	F	U	U	U	U			
Forecaster Development Program (FDP) PDSs (TBD)												
* FDP Phase 1 - Operational Basics	F	F	F	F								
* FDP Phase 2 - Forecast Familiarization	F	F										
* FDP Phase 3 - Professional Development	F	U	F	F								
Management / Leadership / Supervision PDSs (Clark)												
* Office Management and Administration	N	N	N	N								
* Leadership	F											
* Human Resource Management	F	F	F									
* Customer / Partner Service Management	N	N										
Hydrology PDSs (Zimmerman/Helble)												
* Quantitative Precipitation Forecasts (Graziano)	U	U	U	U	U	U						
* Managing the Hydrology Program	F	F	U	F	F	F	F	F	F	F		
* Hydrologic Forecasting	U	U	U	U	U	U	N	U	U	U	N	U
* Forecasting Flash Flood Events	N	N	N	N	N	N						
* Model Calibration/Hydrologic Procedure Development	U	U	N	U	U	U	U	U	U	U	N	
* Assessing Near-Term Hydrologic Guidance & Issuing Public Forecasts	U	U	U	U	U							
* Ensemble Hydrologic Forecasting	U	U	N	U	U	U	U					
* Assimilating Hydrometeorological Data	U	U	U	N	U							
AWIPS PDSs (NWSTC)												
* Implementing Local Applications on AWIPS	F	F	F	F	F							
* AWIPS System Administration and Maintenance	F	F	F	F	F	F	F	F	F	F	F	F
* Operating AWIPS	N	U	U	U	N	U	U					

F = Finished
 U = Under Development
 N = Not Started

Table 5: NWS PDS Status (cont.)

Professional Development Series (PDS)	Professional Competency Units (PCUs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Engineering PDSs	F = Finished U = Under Development N = Not Started											
* Facilities Maintenance (Duxbury / Grahl)	U	U	U	U								
* Facilities Management (Beeman)	U	U	U	U	U							
* Environmental Compliance (M. Jacob)	F	F	F									
* WSR-88D Maintenance (Richards / Ballard / Wissman)	U	U	U	U	U	U	N	N	N	N	N	N
* NWR Maintenance (Haskins)	F	F	F	F	F	F	F	F	F	F	F	F
* Upper Air (Profiler) Maintenance (Zichy)	F	F	F	U	U	U	U	U	U			
* Data Acquisition / Dissemination Sys. Maint. (Ryman)	U	U	U	U	U	U	U	U				
* IT Systems and Network Support (Murray / Walker)	U	U	U	U	U	U	N	N	N	N	N	
* General Engineering Skills (All EPMs)	F	F	F	F	F							
* Safety and Health (M. Jacob)	U	U	U	U								
* ASOS (PACE) Maintenance (Retzuff / Haskins)	N	N	N	N	N	N	N	N				
DAPM / HMT PDSs												
* Coop Program Management (Horvitz)	F	F	F	F	F	F	F					
* Surface Observing Program (Ross)	F	F	F	F	F	F	F					
* Upper Air Program (Bower)	U	U	U	U	U							
Marine Weather Services (Ainsworth)	U	U	U	U	U	U	U	U	U	U	U	U
Fire Weather PDSs (Billingsley)												
* Fire Weather	F	F	U	U								
* Incident Meteorologist (IMET)	F											
Climate Services (Livezey/Timofeyeva)	U	U	U	U	U							
Administrative (ASA) (Dickenson)	U	U	U	U	U	U	U	U				
IFPS Training (Motta)	U	U	U	U	U	U	U	U				
Winter Weather (Mahoney)	F	F	U	U	U	F	U	F				

Table 6: FY 2003 Unfunded List (unprioritized)

<u>Item</u>	<u>Item Amount</u>	<u>Cumulative Amount</u>
<u>Residence classes</u>		
<u>NWSTC:</u>		
1 Introduction to NWS Systems class	\$14K	\$14K
1 ART Rawinsonde System Maintenance class	\$18K	\$32K
2 Fall Protection and Rescue attrition classes	\$66K	\$98K
21 Fall Protection and Rescue recertification classes	\$651K	\$749K
1 AWIPS Operations Support class	\$34K	\$783K
1 AWIPS Applications Support class	\$20K	\$803K
3 HP-UX Systems Administration classes	\$78K	\$881K
2 Intermediate UNIX for ETs classes	\$50K	\$931K
2 IFPS Focal Point classes	\$42K	\$973K
1 Management and Supervision class	\$52K	\$1025K
2 Field Operations Management classes	\$86K	\$1111K
1 Cooperative Network Operations class	\$36K	\$1147K
3 CRS Network Operations classes	\$30K	\$1177K
1 WFO Hydrology Program Management class	\$40K	\$1217K
1 WHFS Workshop	\$10K	\$1227K
1 Extended Range Hydrologic Forecasting pilot class	\$21K	\$1248K
2 SRS Transmitter Maintenance classes	\$12K	\$1260K
1 Armstrong Transmitter Maintenance class	\$7K	\$1267K
<u>COMET:</u>		
1 COMAP class	\$271K	\$1538K
4 Boundary Layer COMAP Symposia	\$252K	\$1790K
<u>Non-Residence items</u>		
SOO/DOH/WCM funds	\$284K	\$2074K
Regional Aviation Workshops	\$90K	\$2164K
Integrated Sensor Training - Cooperative Institute Salaries	\$13K	\$2177K
Profiler Training (FSL)	\$14K	\$2191K
On-Site Team Training	\$155K	\$2346K
Advanced Leadership Development (ALD)	\$119K	\$2465K
Hydrology Workshops	\$50K	\$2515K
Development of Ensemble Hydro. Forecasting course	\$50K	\$2565K
Development of Advanced WHFS Workshop	\$15K	\$2580K
Cold Regions Workshop	\$5K	\$2585K
Hurricane Liaison Training	\$10K	\$2595K
COMET Marine PDS Support Team	\$350K	\$2945K
Regional Training Funds	\$181K	\$3126K
Total residence items		\$1790K
Total non-residence items		\$1336K
TOTAL FY 2003 UNFUNDED LIST ITEMS		\$3126K