



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL WEATHER SERVICE**  
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MEMORANDUM FOR: Directors, NWS Headquarters Offices  
Directors, NWS Regions  
*David B. Caldwell*  
FROM: David B. Caldwell  
Director, Office of Climate, Water, and  
Weather Services  
SUBJECT: FY 2013 Implementation Plan for National  
Weather Service (NWS) Training and Education

Attached is the FY 2013 Implementation Plan for NWS Training and Education (IP13).

I thank everyone involved for the collaborative effort that has produced an exceptional training plan.

Attachment



**Fiscal Year 2013  
IMPLEMENTATION PLAN FOR  
NATIONAL WEATHER SERVICE TRAINING AND EDUCATION  
(7/12/12)**

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## **Fiscal Year (FY) 2013 Implementation Plan for Training and Education**

7/12/12

### **1. Introduction**

This Implementation Plan (IP13) is the guiding document for the national training and education activities within the National Oceanic and Atmospheric Administration's (NOAA's) National Weather Service (NWS) for Fiscal Year 2013 (referred to as FY13 herein). The purpose of this plan is to specify the national training activities necessary to support the wide range of mission critical operations. It is coordinated and executed by the Office of Climate, Water, and Weather Services (OCWWS), Training Division (TD) for FY13. It includes detailed resource cost analyses including allocations for Division full-time equivalent (FTE) time and course dollar costs, as well as the unfunded training requirements.

The activities funded in IP13 were driven by two main priorities:

- Train electronics staff to maintain NWS-unique equipment and software
- Train forecasters with warning and forecast responsibilities:
  - Use Dual-Pol radar
  - Issue severe weather warnings

### **2. Plan Actuals/Assumptions**

IP13 is based on the following:

1. OCWWS Base non-labor funding is \$3,640K.
2. It is assumed that the Office of Science and Technology (OST) Advanced Weather Interactive Processing System (AWIPS) Program Office will fund the AWIPS II activities as requested in IP13. This requires OST to fund all student travel to AWIPS-funded residence training and meetings.
3. OST Dual-Polarization (Dual-Pol) funding only provides for NWS Training Center (NWSTC) Maintenance Training (To Be Determined (TBD) based on deployment schedule).
4. Office of Operational Systems (OOS) Next Generation Weather Radar (NEXRAD) non-labor funding is \$725K, and also continues to fund the Automated Surface Observing System (ASOS) maintenance course.

### **3. Appendices**

Appendices 1 through 5 describe the training deliverables to be accomplished in FY13. These deliverables are delineated by the organization responsible for developing and delivering each training activity. References to the appropriate funding tables are also cited. Appendix 6 provides details on the NSTEP process used to prepare training requirements, set priorities and allocate resources to develop IP13.

For further information on the courses and initiatives described below, as well as for additional updates to this plan, please go to the [Printable Schedules](#) portion of the [NWS Training Portal](#).

## ***Appendix 1: OCWWS Training Division (OS6) Activities***

### **I. OS6 Managed Training**

- Incident Meteorologist (IMET) Workshop for new IMETs: NWS policy mandates that IMETs receive yearly training to fulfill their duties in the NWS and within NOAA. IP13 funds 5 new IMETs to attend a 1-week workshop in Boise, ID, and provides funds for existing IMETs to get their safety recertifications locally.

### **II. OS6 Infrastructure**

- International Travel: Funding is set aside for TD travel to selected international meetings (to be determined).
- Learning Management System (LMS) License: The IP funds the [NWS LEARN Center license](#) on the [Department of Commerce \(DOC\) Learning Center \(CLC\)](#) in addition to partially redirecting the work of two TD instructors. This will fund system administration support by Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) staff at the Warning Decision Training Branch (WDTB) and NWSTC to support LMS-related activities and travel.
- OCWWS Staff Administrative Travel: The IP Funds set aside for TD staff travel. Similar funding is provided for NWSTC, WDTB and the Forecast Decision Training Branch (FDTB).
- Operating Costs / Non-Travel: Provides day-to-day operating funds to support key activities within OS6 at NWS Headquarters.
- Phone / Telecommunications Costs: Pays for TD conference call costs to support field coordination and training webinars.

## ***Appendix 2: [NWS Training Center](#)– Reference Table 2***

### **I. In-Residence Training**

The following courses will be hosted by the NWSTC in FY13. For course descriptions and information, please refer to the Printable Schedules portion of the NWS Training Portal.

- **AWIPS:**
  - AWIPS II System Administration (SA) Deployment Training: Provides AWIPS II SA support training to support national deployment of AWIPS II. This training will be provided to two people per site (typically the Electronic Systems Analyst (ESA) and the Information Technology Officer (ITO)).
  - AWIPS II SA Attrition Training
- **Information Technology (IT):**
  - Linux Administration for Weather Forecast Offices (WFOs) / River Forecast Centers (RFCs)
- **Maintenance:**
  - ASOS Maintenance
  - Console Replacement System (CRS) Maintenance
  - NOAA Weather Radio (NWR) Armstrong Transmitter Maintenance: Training is provided for the Armstrong and the Armstrong 2010 transmitters.
  - NWR Crown Transmitter Maintenance: Training is provided for both the legacy and Continental / Crown 2011 versions of the transmitter.
  - NWR Nautel Transmitter Maintenance
  - NWR Scientific Radio Systems (SRS) Transmitter Maintenance
  - WSR-88D Maintenance
  - WSR-88D Dual-Pol Maintenance
  - Radiosonde Replacement System (RRS) Maintenance.
  - Management and Supervision: Training for new supervisors (those who sign performance reviews) which fulfill the Office of Personnel Management's requirement for management training within the first year of becoming a supervisor.
- **Safety/Environmental:**
  - Fall Protection and Rescue – Initial/Attrition Training. Note: Fall Protection Recertification will NOT be offered in FY13.

### **II. Distance Learning Training Development / Delivery**

- **Aviation**
  - Forecaster Knowledge of the National Airspace System (NAS): NWSTC will update its online Aviation Operations Course to include detailed information on the NAS.

- AWIPS:
  - AWIPS II RFC Hydro Updates and User Training: Provides training on changes as AWIPS II Builds are released.
  - Field Requirements Team (FRT) for AWIPS II Local Applications: Allows for regional and field personnel to travel to NWSTC to perform a curriculum review for this training.
  - AWIPS II Extended: Data Delivery Paradigm: Develop user training on access to new data streams and IT/system requirements to support the new streams.
  - NWSTChat: Online modules will be developed to accompany and reinforce current documentation-only training for new users and yearly refresher training covering universal functionality and policy.
  - FRT for AWIPS II SA: Allows for regional and field personnel to travel to NWSTC to perform a curriculum review for this training.
  
- Hydrology:
  - Community Hydrologic Prediction System (CHPS) Training for RFCs: Funds travel for contract support at NWSTC to assist in training development.
  - Simulation Capabilities for RFCs: Develop simulations using CHPS in support of a Service Assessment recommendation.
  - Hydrologic Weather Operations Training (WDTB and FDTB assist): Continue development of simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
  
- Space Weather:
  - Space Weather Impacts Distance Learning Training Module for World Meteorological Organization (WMO): Using funding provided by the Space Weather Prediction Center (SWPC), NWSTC will develop a series of modules on the basic of Space Weather.
  
- Weather Radio Improvement Program (WRIP):
  - WRIP-2 Development Support: As WRIP-2 activities get underway, the WRIP-2 program will provide funding for travel to meetings, design reviews, etc.

### **III. NWSTC Infrastructure**

- CIMMS AWIPS Software Trainer: The AWIPS Program Office funds a CIMMS software expert to develop training on the new quarterly Build releases.
- Equipment and Software: Administrative funds used to maintain equipment and keep software packages up to date.
- Facility Costs: Administrative funds used for facility maintenance.
- FTE Staff Travel: Travel funds for NWSTC staff not associated with specific training deliverables.
- IT Support Contractor: Funds the hiring of IT support for the NWSTC.
- LMS Support / Travel: Funds a CIMMS staffer to support NWS LMS management.
- National Logistics Support Center (NLSC) Costs: Funding from Base and

NEXRAD reimburses NWSTC for costs incurred for parts from NLSC to maintain its equipment used in its classroom maintenance classes.

- Supplies: Administrative funds used for NWSTC supply costs.



## **Appendix 3: Warning Decision Training Branch– Reference Table 3**

### **I. Distance Learning Training Development / Delivery**

- Aviation:
  - Federal Aviation Administration (FAA) Air Route Traffic Control Center (ARTCC) Controller Weather Training: Staff time to continue to develop modules for the Center Weather Service Unit (CWSU)-ATC Training Library.
  
- AWIPS:
  - Weather Event Simulator (WES) Capabilities Using AWIPS I: Provides support to update the WES software in concurrence with AWIPS and AWIPS II training environment.
  
- Hydrology:
  - Hydrologic Weather Operations Training (NWSTC and FDTB assist): Continue development of simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
  - Simulation Capabilities for WFO Hydrology: Paid for using Advanced Hydrologic Prediction System (AHPS) funds, funds are provided for CIMMS support to develop Hydrologic WES Simulations.
  
- Integrated Warning Process:
  - WSR-88D initial radar operator training via the WSR-88D Distance Learning Operations Course (DLOC).
  - WSR-88D Performance Updates: Training will be released/updated as new radar Builds are released.
  - Advanced Warning Operations Course (AWOC): The Core and Severe Tracks will be offered and updated.
  - Watch-By-County Refresher Training (FDTB assists): Staff time to develop a short asynchronous e-Learning course on best practices for watch issuance/extension protocol.
  - Forecast and Warning Decision Practices using Multiple-Radar Multiple-Sensor (MRMS) Severe Weather and Precipitation Applications: Training will be developed on how the MRMS products are built, details on associated strengths and limitations of the derived products, and examples of how to use the products for an actual forecasting/warning exercise.
  - Coordination, Collaboration, & Communication During Warning Events: Using funding from the NOAA SeaGrant program, WDTB will continue work on a distance learning module on roles in the Integrated Warning Team.
  
- Dual-Pol Upgrade to the WSR-88D:
  - Dual-Pol Radar Training: WDTB will continue to develop Dual-Pol knowledge within the NWS workforce through four Dual-Pol training courses: Operations Course; Operations Course for RFC Hydrologists; Dual-Pol Radar

## Principles; Dual-Pol Radar Training for NWS Partners.

### **II. WDTB Infrastructure**

- CIMMS AWIPS Software Developers (5): The AWIPS Program Office funds five dedicated CIMMS staff fully devoted to developing training modules as AWIPS II continues to be deployed.
- FTE Staff Travel: Travel funds for WDTB staff not associated with specific training deliverables.
- GoToMeeting Licenses for OS6: Provides funding for the licenses required for the Division to use GoToMeeting software to conduct training, meetings, etc.
- Web Server Administration: Funds to support Web activities.
- Website Development and Maintenance: Funds to support website.
- CIMMS Professional Development: NEXRAD Funds for CIMMS Individual Development Plan (IDP) activities which are job related.
- IT Infrastructure: NEXRAD Funds to support IT infrastructure and Certification and Accreditation (C&A) activities.
- LMS Support / Travel: Funds a CIMMS staffer to support NWS LMS management.
- Operating Costs / Non-travel: NEXRAD Funds for operating the WDTB infrastructure.
- Real-Time Data Feed: NEXRAD funds to support real-time data feed for simulations.
- Rent: NEXRAD funds for WDTB rent at the National Weather Center.

## **Appendix 4: Forecast Decision Training Branch–Reference Table 4**

- I. In-Residence Training** (held at the Cooperative Operational Meteorology, Education and Training (COMET<sup>®</sup>) classroom with FDTB assisting):
- Meteorological Services of Canada (MSC) / COMET<sup>®</sup> Winter Weather Workshop: Travel funds are provided for five NWS students and three NWS guest instructors to participate in this MSC-funded course.
- II. Distance Learning Training**
- Hydrology:
    - Hydrologic Ensembles: Addresses the training needs related to the implementation of the Hydrologic Ensemble Forecast System (HEFS).
    - Hydrologic Weather Operations Training (NWSTC and WDTB assist): Continue development of simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
  - Integrated Sensor Training:
    - In collaboration with the Virtual Institute for Satellite Integration (VISIT) program, the National Environmental Satellite Data and Information Service (NESDIS) continues funding the expansion of the Satellite Hydrometeorology (SHyMet) courses for NWS interns, forecasters, and SHyMet for Hydrologists. The Geostationary Orbiting Environmental Satellite (GOES) program and the Joint Polar Satellite System (JPSS) provides funding for development of satellite training modules on COMET<sup>®</sup>'s Environmental Satellite Resource Center with needs identified at an annual satellite training workshop.
  - Integrated Warning Process:
    - Watch-By-County Refresher Training (with WDTB): Staff time to develop a short asynchronous e-Learning course on best practices for watch issuance/extension protocol.
- III. FDTB Infrastructure**
- NWS Travel to COMET<sup>®</sup>: Funds NWS staff travel to COMET<sup>®</sup> to work on modules.
  - FTE Staff Travel: Travel by FDTB staff not covered in specific training activities.
  - Operating Costs / Non-Travel: FDTB non-travel expenses / operating budget.
  - VISIT Team: TD provides funds for VISIT staff in Fort Collins, CO and Madison, WI. The VISIT team includes staff from NWS, NESDIS, and two NOAA Cooperative Institutes: The Cooperative Institute for Research in the Atmosphere (CIARA) and the Cooperative Institute for Meteorological Satellite Studies (CIMSS). The VISIT team supports satellite and related remote sensing training and provides assistance with live and recorded teletraining. VISIT and FDTB help develop a series of SHyMet courses that are also supported by NESDIS funds.

***Appendix 5: Cooperative Program for Meteorology, Education and Training (COMET®) Training– Reference***  
***Table 5***

**I. In-Residence Training**

- MSC/COMET® Winter Weather Workshop (Travel funds under FDTB): Travel funds are provided for five NWS students and three NWS guest instructors to participate in this MSC-funded course held in October.

**II. Virtual Training (FDTB Assists)**

- Flash Flood Operations: A virtual course adaptation of previously conducted workshops at COMET® designed primarily for forecasters and Service Hydrologists at WFOs. Funded using AHPS funds.

**III. Distance Learning Training**

- Aviation:
  - Distance Learning Aviation Course-3: Topic to be determined by the Aviation Professional Development Series (PDS) team defining priorities for CWSUs, Aviation Weather Center (AWC) and WFOs with links to Decision Support Services. Funds for this effort are provided by the OCWS Aviation Services Branch.
- Hydrology:
  - COMET® will continue work on the Hydrology PDS, which provides a training curriculum for hydrology. Funded using AHPS funds.
- Integrated Sensor Training:
  - The GOES and JPSS programs provide funding for development of satellite training modules on COMET®'s Environmental Satellite Resource Center with needs identified at an annual satellite training workshop.

**IV. COMET® Infrastructure**

- Numerical Weather Prediction (NWP) Team: One project scientist at the National Centers for Environmental Prediction (NCEP) is dedicated to NWP training development. Updates to the NWP Operational Models Matrix will continue as the models change, and a newly formed NWP Advisory Team will be working to determine priorities for development in FY13.
- COMET® Operations: NWS provides the core funding for the COMET® Program per a NOAA cooperative agreement with the University Corporation for Atmospheric Research (UCAR). This funding supports the following costs:
  - Administration: Covers Infrastructure and administrative costs.
  - Support for the COMET® [Meteorology, Education, and Training \(MetEd\) Website](#) for over 200,000 uses worldwide.
  - Support for COMET® IT infrastructure and data feed to deliver training.

## ***Appendix 6: Overview of the National Strategic Training and Education Plan (NSTEP) Process & Unfunded Training – Reference Table 6***

IP13 is the end result of the NSTEP process ([NWS Manual 20-102](#)). The NSTEP Team’s Field Requirements Group (FRG), consisting of Regional Scientific Services Division (SSD) Chiefs/Regional Scientists or their designate(s), and the NCEP Operations Officer, prioritized FY13 training requirements. The Heads of Training Group (HOTG), composed of representatives from OS6, the Directors of the NWSTC, FDTB, WDTB, and COMET<sup>®</sup>, recommended the execution methods of the prioritized training requirements, taking into account available FTE and non-FTE staff resources. FY13 training requirements were determined and prioritized during a series of conference calls which included the OCWWS NSTEP Program Leader, the FRG, HOTG, program managers, and other training representatives.

The FY13 NSTEP process began with soliciting training requirements submitted in the form of a Performance Needs Statement (PNS). A total of 151 PNSs were submitted for both existing and new training requirements. The HOTG analyzed all PNSs to determine the best delivery method (in-residence, distance learning, blended, etc.), along with the training needs analysis. Table 6 documents \$5.2M of unfunded training needs associated for FY13. This is a result of ongoing funding reductions for training during the past decade and increasing training requirements.

In addition to the \$5.2M of unfunded PNS requirements, there are also unfunded infrastructure costs, which are described below:

<b>Item</b>	<b>Funding Needed in IP13</b>	<b>Actual FY13</b>	<b>Funding Shortfall</b>
COMET <sup>®</sup> Operating Costs	\$1,850K	\$1,100K	\$750K
VISIT Team	\$400K	\$200K	\$200K
LMS Enhancements	\$40K	0	\$40K
Regional Training Funds	\$155K	0	\$155K
HOTG Meeting	\$15K	0	\$15K
NSTEP Meeting	\$20K	0	\$20K
TD Shortfall in Administrative Travel/Non-Travel	\$348K	\$298K	\$50K
Total Infrastructure Funding Shortfall			\$1.23M
PNS Funding Shortfall			\$5.2M
<b>TOTAL IP13 Funding Shortfall</b>			<b>\$6.43M</b>