

**Fiscal Year 2012
IMPLEMENTATION PLAN FOR
NATIONAL WEATHER SERVICE TRAINING AND EDUCATION
Update #1**

**In Support of
NOAA and National Weather Service Human Capital Strategic Plans and Goals
(11/14/11)**

Table of Contents

<u>Section/Title</u>	<u>Page</u>
1. Introduction.....	3
2. Plan Actuals/Assumptions	5
3. Appendices.....	5
 <u>Appendices</u>	
<i>Appendix 1: OCWS Training Division (OS6) Activities</i>	<i>6</i>
I. OS6 Managed Training	6
II. OS6 Infrastructure	6
 <i>Appendix 2: NWS Training Center– Reference Table 2</i>	 <i>8</i>
I. In-Residence Training	8
II. Distance Learning Training Development / Delivery.....	9
III. NWSTC Infrastructure	10
 <i>Appendix 3: Warning Decision Training Branch</i>	 <i>12</i>
I. Distance Learning Training Development / Delivery	12
II. WDTB Infrastructure	13
 <i>Appendix 4: Forecast Decision Training Branch</i>	 <i>14</i>
I. In-Residence Training	14
II. Virtual Training	14
III. Distance Learning Training	14
IV. FDTB Infrastructure.....	15
 <i>Appendix 5: Cooperative Program for Meteorology, Education and Training (COMET®) Training</i>	 <i>16</i>
I. Virtual Training.....	16
II. In-Residence Training.....	16
III. Distance Learning Training.....	16
IV. COMET Infrastructure	17
 <i>Appendix 6: Out Year Training Needs (FY 2013)</i>	 <i>18</i>
 <i>Appendix 7: Overview of the National Strategic Training and Education Plan (NSTEP) Process & Unfunded Training</i>	 <i>19</i>

Fiscal Year (FY) 2012 Implementation Plan for Training and Education **DRAFT Update #1 – November, 2011**

1. Introduction

This Implementation Plan (IP12) 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 2012 (referred to as FY12 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 FY12. 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 FY12 budget of **\$9.5 million (M) will fund 79 of 141 (56%)** National Strategic Training and Education Plan (NSTEP) process derived requirements. The process facilitates both mandated requirements and the highest priority training needs identified. Funding for the initial version of IP12 (released in September, 2011) was based on the final FY 2011 (FY11) budget.

In October, 2011, the Office of Operational Systems (OPS) informed TD that the FY12 funding allocation would be \$250,000 (\$250K) less than what was provided in FY11. Similarly, The Office of the Chief Financial Officer (CFO) imposed cuts to all Base budgets, which resulted in an additional \$250K cut to Base funding. The specifics of these cuts are shown in Figure 1 on the next page, and will be indicated in red text throughout this IP.

Figure 1
NSTEP Team Recommendations
FY12 Training Budget - \$500K Cut

<i>Item</i>	<i>Fund Source</i>	<i>Cut (\$K)</i>	<i>Comments/Impacts</i>
COMET Operating Costs	Base	\$100	Total - \$150K less than FY11.
RRS/NWR Classes – 2 RRS and 1 NWR Armstrong	Base	\$46	Loss of 2 NWSTC instructors. Classes canceled are Armstrong – 11/28-12/2; RRS – 5/16-24 & 8/15-23. This leaves 2 offerings of each course in FY12.
Cooperative Network Operations	Base	\$60	Cuts the second of two offerings. First and only FY12 offering held 10/25-11/3.
DLOC Travel	NEXRAD	\$31	Savings due to 21 less students enrolled than projected.
IMET Workshop	Base	\$25	Reduce to \$155K based on FY11 actual cost of \$151K.
Training for DSS and Simulations TBD	Base	\$84	\$15K remains in budget for DSS PDS mtg. Defer new training development to FY13.
WDTB External Collaboration-Hazardous Weather Testbed	NEXRAD	\$37	OCWWS Director to ask OST Director to fund Research to Operations Transition.
Regional Training Funds	Base	\$20	Reduce to \$155K. Does not impact OCONUS / \$5K cut for each CONUS Region. Updated Breakout is (\$K) – AR: \$7; CR: \$38.3; ER: \$24.8; PR: \$8.8; SR: \$37; WR: \$26.5; NCEP: \$9.6
Service Assessments TBD	Base	\$52	WDTB cannot execute (no staff time) – Defer all new SA recommendations to FY13.
TD Admin Budgets	Base	\$45	Updated Breakout is (\$K) – OS6 (HQ) – \$26K (\$5K cut); NWSTC - \$170K (\$30K cut); WDTB - \$10K (\$5K cut); FDTB - \$15K (\$5K cut).
		\$500K	

The overall goal of the [2011 NWS Strategic Plan](#) is to “Sustain a highly-skilled, professional workforce equipped with the training, tools, and infrastructure to accomplish our mission.” Specifically, for training:

- Train workforce in climate science to make NWS a strong partner in the delivery of NOAA climate services;
- Enhance development and training programs to improve and expand leadership, management, and technical competencies of the entire NWS workforce;
- Implement new and enhanced methods and technologies for training delivery, such as simulations and on-demand training integrated into applications and other systems.

IP12 strives to meet the above goals by allocating funding to maintain a highly trained, professional workforce in the NWS that performs at the required levels to protect life and property. Funding is also set aside for planning for decision support services, enhanced simulations, and for expanding the NOAA/NWS Leadership Academy.

2. Plan Actuals/Assumptions

IP12 is based on the following:

1. OCWWS Base non-labor funding is **\$4,830K**.
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 IP12. This requires OST to fund all student travel to AWIPS-funded residence training and meetings, as well as provide support (staff and hardware) for the Cooperative Program for Operational Meteorology, Education and Training (COMET[®]) Numerical Weather Prediction support and for the Warning Decision Training Branch’s (WDTB’s) Weather Event Simulator (WES).
3. OST Dual-Polarization (Dual-Pol) funding only provides for NWS Training Center (NWSTC) Maintenance Training of \$274K.
4. Office of Operational Systems (OOS) Next Generation Weather Radar (NEXRAD) non-labor funding is **\$736K**, 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 FY12. 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 denotes major training activities which are planned in FY13, or have been deferred to FY13 due to resource limitations. Appendix 7 provides details on the NSTEP process used to prepare training requirements, set priorities and allocate resources to develop IP12.

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

Appendix 1: OCWWS Training Division (OS6) Activities

I. OS6 Managed Training

- Training for Decision Support Services (DSS) and Enhanced Simulations: Funding is set aside for TD to hold an initial meeting to develop plans to incorporate DSS and simulations into all training. Funding is reduced by \$84.3K to \$15K in IP12.
- Incident Meteorologist (IMET) Workshop: NWS policy mandates that IMETs receive yearly training to fulfill their duties in the NWS and within NOAA. This is an annual workshop hosted in Boise, ID by the OCWWS Fire and Public Weather Services Branch. Note: IP12 funding for this workshop is reduced by \$25K to \$155K due to FY11 actual costs.
- Funding to Address Training Recommendations for Service Assessments (TBD): Due to budget considerations and resource limitations, this item (previously \$52K) is **no longer funded** in IP12, and any training development associated with Service Assessment recommendations will be deferred to FY13.
- Development and Operations Hydrologist (DOH) Hydro Science Workshop (Forecast Decision Training Branch (FDTB) Coordinated): A follow on in-residence workshop to the Advanced Hydrologic Science course where DOHs and key subject matter experts could discuss technical and scientific challenges faced by each River Forecast Center (RFC), then develop possible solutions over a range of issues.

II. OS6 Infrastructure

- Regional Training Funds: Funds are allocated directly to the Regions for use in meeting unique training requirements in mission-critical areas such as Information Technology (IT) and project management. Note: IP12 funding is reduced by \$20K to a total of \$155K. The revised regional/NCEP allocations are listed in Table 1.
- American Meteorological Society (AMS) Journal Access: For FY12, the TD partnered with the NOAA Central Library to provide all NWS staff access to all [AMS online journals](#).
- International Travel: Funding is set aside for TD travel to selected international meetings (to be determined) during FY12. Note: Funding has been reduced from \$9K to \$5K in IP12.
- NWS Learning Management System (LMS) License: TD pays for the [NWS LEARN Center](#) on the [Department of Commerce \(DOC\) Learning Center \(CLC\)](#) in addition to partially redirecting the work of two TD instructors. Funds are set aside for system administration support Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) staff at WDTB and NWSTC to support LMS-related activities and travel. A

small annual charge to transfer data between the LMS and COMET[®]'s Meteorology and Education ([MetEd](#)) website is also funded.

- **Non-Travel: Provides day-to-day operating funds to support key activities within OS6 at NWS Headquarters. Note: OS6 Funding was reduced by \$11.1K to \$19.9K in IP12.**
- NSTEP Meetings/Non-OCWWS Travel: Funds are set aside for Regional and other NWS Headquarters personnel to travel to annual NSTEP meetings.
- OCWWS Staff Administrative Travel: Funds are set aside for TD staff travel, to include NSTEP meetings and Heads of Training Group meetings. Similar funding is provided for NWSTC, WDTB and FDTB.
- Phone/Telecommunications Charges: 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 are notable courses being hosted by the NWSTC in FY12. For course descriptions and information, refer to the [NWS Training Portal](#).

- AWIPS:
 - AWIPS II System Administration (SA): 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)).

- Hydrology
 - Weather Forecast Office (WFO) Hydrology Program Managers Course

- IT
 - Linux Administration for WFOs/RFCs

- Maintenance:
 - ASOS Maintenance

 - Weather Radio Improvement Program (WRIP) Maintenance and Support
 - WRIP Focal Point Deployment

 - **NOAA Weather Radio (NWR) Armstrong Transmitter Maintenance.** Training is provided for the 2010 version of the Armstrong transmitter. **Note: Training previously scheduled on the legacy Armstrong transmitter in FY12 (1 class) is canceled due to budget and resource limitations.**
 - NWR Crown Transmitter Maintenance. Training is provided for both the legacy and Continental/Crown 2011 versions of the transmitter.
 - WSR-88D Maintenance
 - WSR-88D Dual-Pol Maintenance
 - **Radiosonde Replacement System (RRS) Maintenance.** **Note: Two classes are canceled due to budget and resource limitations. There will be two offerings of this course in FY12.**
 - NWR Nautel Transmitter Maintenance

Management and Leadership – NOAA/NWS Leadership Academy:

- 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.
 - Field Operations Management: Team Leads that are bargaining unit employees including WFO/RFC/National Center or equivalent Senior Forecasters, regional team lead and headquarters program team leads (GS 12-14).
 - NWS Headquarters Operations Management Course: NWSTC instructors will provide in-residence training to NWS Headquarters personnel in Silver Spring, MD.
- Meteorology:

- Cooperative Network Operations. Note: One offering of this course is canceled due to budget limitations. The one and only FY12 offering of this course occurred in October.
- Warning Coordination Meteorologist (WCM) / Service Coordination Hydrologist (SCH) Course: Staff time will be spent updating the course for its next scheduled offering in FY13.
- Safety/Environmental:
 - Environmental Compliance
 - Safety Training
 - Fall Protection and Rescue – Initial/Attrition and Recertification Training

II. Distance Learning Training Development / Delivery

- AWIPS:
 - AWIPS II Hydro Updates and User Training: Will provide 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.
- Decision Support:
 - Communicating Risks in High Impact Events (WDTB assists): Develop distance learning modules on the LMS which address several aspects of threat communication in the context of providing impact-based decision support services.
- Hydrology:
 - Community Hydrologic Prediction System (CHPS) Training for RFCs: Funds contract support at NWSTC to assist in training development, using funding previously paid in FY11.
 - Simulation Capabilities for RFCs: Develop simulations using CHPS in support of a Service Assessment recommendation.
 - Simulation Capabilities for WFO Hydrology (WDTB and FDTB assist): TD will develop simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
 - [Professional Development Series \(PDS\)](#) – Hydrology (COMET[®] and FDTB assist): Begin the process of developing / revising a Hydrology PDS (see hyperlink for more information on the PDS process).
- Information Technology:
 - Introduction to NWS Systems: Distance Learning (DL) course will be updated in FY12.
- Management/Leadership:
 - Leadership Foundations: In place of the Executive Leadership Seminar which was slated to be held in FY12, funds are set aside for the NWSTC to begin plans to expand the NWS leadership academy to all staff, from those just entering the

agency, to those who are bargaining unit members who have limited opportunities for agency-sponsored leadership training.

- Advanced Warning Operations Course (AWOC) Facilitation Workshop (with WDTB): NWSTC provided support for a section of the workshop, which has already occurred in FY12.
- Observations:
 - A three year program which began in FY11 to develop Cooperative Network Operations distance learning modules to provide course prerequisites in field references and refresher training in an effort to optimize residence training with hands-on skills will continue in FY12. The objective is to combine the Data Acquisition Course (not offered in FY12 due to budget limitations) and Cooperative Network Observations course in-residence portions, eliminating overlap, reducing travel costs and providing distance learning pre-requisite distance learning modules and post course references. For FY12, this effort will focus on developing training on meteorological observation siting expertise, and continuing development for DL training on the Cooperative Network program for Meteorologist Interns and Hydrometeorological Technicians (HMTs).
- Program Deployment Support:
 - Wind Profiler Deployment Support: Support the development and deployment of wind profiler, including providing technical support of system development and training materials.
- Space Weather:
 - NWSTC has been working with Space Weather Prediction Center (SWPC) and the NOAA Central Regional Collaboration Team to develop DL training on space weather specifically tailored as an introduction for NWS employees. This course, "Handling Space Weather Inquiries", will prepare NWS staff for questions they may receive related to increased solar activity. The course objectives will center on providing an explanation of space weather and its impacts; an overview of SWPC, contacts, website and products; and answering inquiries related to space weather. The course will is scheduled to be completed in early FY12. Additional modules are planned for later in FY12.
- Tsunami Program:
 - Tsunami Warning System Training: In order to transition the Tsunami Warning System training workshop held at the NWS / West Coast and Alaska Tsunami Warning Center in Palmer, Alaska to the NWSTC, NWSTC will develop a training team comprised of the current trainers and program managers to look into developing an FY 2013 solution. Funding for this initiative is provided from the Tsunami program.

III. NWSTC Infrastructure

- CIMMS AWIPS software trainer: Funds have been requested from the AWIPS Program Office to hire a CIMMS software expert to develop training on the new quarterly Build releases.

- FTE staff travel: Travel funds for NWSTC staff not associated with specific training deliverables.
- IT/Web Infrastructure: Funds are set aside for a dedicated contractor to support NWSTC IT needs and performing Certification and Accreditation (C&A) activities.
- LMS CIMMS support: Funds for CIMMS staff to support NWS LMS management with contractor and interface with NOAA, DOC and Regions to optimize CLC productivity.
- **Operating Costs/Non-travel: Funds for operating the NWSTC infrastructure. Note: Funding has been reduced by \$28K to \$172K in FY12.**
- National Logistics Support Center (NLSC) Costs: The NEXRAD program reimburses NWSTC for costs incurred for parts from NLSC to maintain its equipment used in its classroom maintenance classes.

Appendix 3: Warning Decision Training Branch– Reference

Table 3

I. Distance Learning Training Development / Delivery:

- **AWIPS:**
 - Weather Event Simulator (WES) Development and Support:
 - WES-II Bridge for AWIPS II: Continues to provide resources for design and development work.
 - WES Capabilities Using AWIPS I: Continued updates to the WES software in concurrence with the AWIPS and AWIPS II training environment.
- **Decision Support:**
 - Communicating Risks in High Impact Events (NWSTC assists): Develop distance learning modules on the LMS which address several aspects of threat communication in the context of providing impact-based decision support services.
- **Hydrology:**
 - Simulation Capabilities for WFO Hydrology (FDTB and NWSTC assist): TD will develop simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
- **Integrated Warning Process:**
 - **WSR-88D initial radar operator training via the WSR-88D Distance Learning Operations Course (DLOC). Note: Travel costs associated with the Workshop portion of DLOC have been reduced by \$31K based on less than anticipated course enrollment. In addition, these travel costs (\$174K) are now funded out of Base funds instead of NEXRAD funds. NEXRAD will continue to fund the CIMMS support of DLOC.**
 - WSR-88D Performance Updates: Training will be released/updated as new radar Builds are released.
 - Advanced Warning Operations Course (AWOC): The Core, Severe and Winter Weather Tracks will be offered in FY12, but not updated until FY13 due to budget and resource limitations. In addition, a facilitator workshop (an offering deferred from FY11) was held in October for new Science and Operations Officers (SOOs) and training officers who did not receive this training when it was initially offered in 2004.
 - Coordination, Collaboration and Communication During Warning Events: Provides support for the 2012 Annual Severe Weather Workshop, the continued development of modules for NWS forecasters, and an education and outreach module for NWS WCMs. This effort continues to be supported by the NOAA SeaGrant program.
 - Recognizing High Impact Hydromet Weather Events (COMET[®], FDTB assists): Training will be developed for operational forecasters on pattern recognition for extreme events and use of anomaly data in the forecast process in an effort to better predict rare or record events.

- Dual-Pol Upgrade to the WSR-88D:
 - Dual-Pol Operations Course: To be primarily delivered as online modules through the LMS with support from local facilitators, the course will address principles of Dual-Pol radar, products, and other related science and applications.
 - Dual-Pol Education and Outreach: Provide Web-based module(s) addressing the capabilities and limitations of the various WSR-88D Dual-Pol products which will be made available to the public.

II. WDTB Infrastructure

- **External Collaboration:** NEXRAD provided funds for Collaborative Adaptive Sensing of the Atmosphere (CASA) collaboration. **Note: Due to budget limitations, this item is NO LONGER funded by TD funds in FY12 (was \$37K). The OCWWS Director plans to discuss this with the OST Director to see if alternative funding can be found.**
- CIMMS AWIPS Software Developers: Funds have been requested from the AWIPS Program Office to fund and support four dedicated CIMMS staff fully devoted to developing training modules as AWIPS II is 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.
- IT Infrastructure: Base and NEXRAD Funds to support the IT infrastructure and C&A activities.
- LMS CIMMS support: NEXRAD Funds for CIMMS staff to support NWS LMS management with contractor and interface with NOAA, DOC and Regions to optimize CLC productivity.
- CIMMS Professional Development: NEXRAD Funds for CIMMS Individual Development Plan (IDP) activities which are job related.
- 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 rent.
- Web Server Administration: NEXRAD funds to support Web activities.
- **Website Development and Maintenance: Funds to support website. Note: For this update to IP12, funding for this item has been split between Base (\$11K) and NEXRAD (\$7K).**

Appendix 4: Forecast Decision Training Branch–Reference Table 4

I. In-Residence Training (held at COMET® with FDTB assisting):

- Flash Flood/Quantitative Precipitation Estimation (QPE) Course: Focuses on the hydrology of flash floods. This activity is funded by the NWS Office of Hydrologic Development (OHD).
- Meteorological Services of Canada (MSC)/COMET® Winter Weather Workshop: Travel funds were provided for five NWS students and three NWS guest instructors participated in this MSC-funded course held in October.
- Advanced Climate Variability and Change Course: COMET®, in coordination with the OCWWS Climate Services Division, will offer a follow-on in-residence course which will build on the skills learned in the Climate Variability course, which began as an in-residence course and is now offered as a virtual course. Note: This course was originally scheduled in FY11, but was deferred to FY12 due to budget limitations.
- DOH Hydro Science Workshop (funds under OS6): A follow on in-residence workshop to the Advanced Hydrologic Science course where DOHs and key subject matter experts could discuss technical and scientific challenges faced by each RFC, then develop possible solutions over a range of issues.

II. Virtual Training (with COMET® assistance):

- Climate Variability and Change Course (only FY12 offering held in October): Teaches staff climate services skills necessary for providing climate services to local office climate customers. Note: This course was originally scheduled in FY11, but was deferred to FY12 due to budget limitations.

III. Distance Learning Training

- AWIPS:
 - AWIPS II Focal Point Training: FDTB staff will work with NWSTC and WDTB staff to develop and provide AWIPS Focal Points with revised training on the new AWIPS II system.
- Hydrology:

In addition to the residence training being hosted by COMET®, the following hydrology-related activities will occur during FY12:

 - Simulation Capabilities for WFO Hydrology (WDTB, NWSTC assists): TD will develop simulations using the WES or other methods for hydrologic events in support of a recent Service Assessment recommendation.
 - Hydrology PDS (COMET®, NWSTC assist): Begin the process of developing / revising a Hydrology PDS.
- 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®'s Environmental Satellite Resource Center with needs identified at an annual satellite training workshop.
- Marine:
 - Effectively Communicating the Impacts of Extreme Weather Hazards: A web-based distance learning module incorporating cases and best practices for responding to various marine hazards will be developed.
 - Effective Operational Use of the Nearshore Wave Prediction System (NWPS): A web module will be developed on how to use the Graphical Forecast Editor (GFE) in AWIPS II to provide input forcing fields into the NWPS wave system and correctly use the output from the NWPS model for proper use and efficiency.
- Meteorology
 - Integrated Public Alert Warning Systems (IPAWS) GeoTargeted Alerting System (GTAS). Funded by Global Systems Division (GSD), training will be given on the GTAS, the goal of which is to use NOAA numerical modeling data, high performance computing, and warning infrastructure to provide geo-targeted safety information to specific city neighborhoods that are under a life-threatening condition.

IV. FDTB Infrastructure

- NWS Travel to COMET: Funds for NWS staff travel to COMET to work on modules.
- MSC Travel: Funds for NWS students to attend MSC funded winter weather training class (described under the MSC/COMET® Winter Weather Workshop bullet earlier in this section).
- **Non-Travel: FDTB non-travel expenses / operating budget. Note: Funding was reduced by \$5K to \$15K in IP12.**
- Staff Travel: Travel by FDTB staff not covered in specific training activities.
- 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 (CIRA) 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. Virtual Training (with FDTB assistance):

- Climate Variability and Change Course: Teaches staff climate services skills necessary for providing climate services to local office climate customers. Note: This course was originally scheduled in FY11, but was deferred to FY12 (held in October) due to budget limitations.

II. In-Residence Training

- Flash Flood/QPE Course (FDTB assists): Focuses on the hydrology of flash floods. This activity is funded by NWS OHD.
- MSC/COMET® Winter Weather Workshop (Travel funds under FDTB): Travel funds were provided for five NWS students and three NWS guest instructors who participated in this MSC-funded course held in October.
- Advanced Climate Variability and Change Course (Travel costs under FDTB): COMET®, in coordination with the OCWWS Climate Services Division, will offer a follow-on in-residence course which will build on the skills learned in the Climate Variability course, which began as an in-residence course and is now offered as a virtual course. Note: This course was originally scheduled in FY11, but was deferred to FY12 due to budget limitations.

III. Distance Learning Training

- Aviation: With funds provided by the OCWWS Aviation Services Branch, COMET® will develop:
 - A module on space weather impacts to aviation weather.
 - Distance Learning Aviation Course (DLAC) III: Improving Aviation Weather Services: Module production of the third in a series of the highly successful DLAC courses will continue in FY12.

Additional aviation training activities will be determined as an Aviation PDS is defined and finalized.

- Fire Weather:
 - COMET® will continue work on the Fire Weather PDS which provides a training curriculum for fire weather forecasters, fire weather focal points and IMETs.

- 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.
- Meteorology:
 - Maintaining Workforce Knowledge and Skills / Currency of DL Materials: COMET[®] will continue an effort begun in FY11 to analyze the contents of its entire DL library to determine dated materials and ensure existing DL materials are up to date.
 - Recognizing High Impact Hydromet Weather Events (FDTB, WDTB assists). Training will be developed for operational forecasters on pattern recognition for extreme events and use of anomaly data in the forecast process in an effort to better predict rare or record events.
- Numerical Weather Prediction (NWP):
 - One project scientist at the National Centers for Environmental Prediction (NCEP) is dedicated to NWP training development. Development will continue on a new NWP course consisting of seven instructional components, each focusing on the different uses of NWP in the forecast process and hands-on training through WES simulations. Updates to the NWP Operational Models Matrix will also continue in FY12 as the models change.
- Space Weather:
 - Working with SWPC, COMET[®] is updating its existing Space Weather Basics module. The module will now refer to SWPC not Space Environment Center (SEC) (as it did when originally published) and have a modest amount of new content about the solar max and space weather impacts. It will be completed in the first quarter of FY12. COMET[®] will also develop a module on space weather impacts to aviation during FY12.

IV. COMET Infrastructure

- Rapid Response/Module Updates: Funds for maintaining the relevancy of the instructional materials in the modules developed by NOAA/NWS.
- **COMET[®] Operations:** Funds per the new 5-year NOAA cooperative agreement with the University Corporation for Atmospheric Research (UCAR), TD annually provides the core funding for the COMET[®] Program. **Note: Funding was reduced by \$100K to \$1,163.7K in IP12.** This funding supports the following costs:
 - 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: Out Year Training Needs (FY 2013)

As has been done with previous Training Implementation Plans, the Heads of Training Group (HOTG) held a series of meetings with key NOAA Program Managers to educate them about existing NWS training activities within their programs and planned training activities. We expect to have a continuing dialogue with these key decision makers to find ways to resource needed training for the years beyond FY12. These managers also have the opportunity to review this IP and provide feedback before it is signed by the OCWWS Director.

The following training items were agreed to be deferred to, or will be strongly considered in FY 2013:

- **Training associated with Service Assessments. Any new Service Assessments done in FY12 which recommend training be developed will be done in FY13.**
- Decision Support Services Training.
- Enhanced Simulations.
- Societal Impacts Training.
- Wind Profiler Training.
- NOAA Leadership Academy Training, including offering the Executive Leadership Seminar (ELS).
- NWSTC WCM/SCH Course.

Appendix 7: Overview of the National Strategic Training and Education Plan (NSTEP) Process & Unfunded Training – Reference Table 6

IP12 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 FY12 training requirements. The HOTG, composed of representatives from OS6, the Directors of the NWSTC, FDTB, WDTB, and COMET[®], recommended the execution methods of the prioritized training requirements, taking into account available FTE and non-FTE staff resources. FY12 training requirements were determined and prioritized during a series of meetings and conference calls which included the OCWWS NSTEP Program Leader, the FRG, HOTG, program managers, and other training representatives.

The FY12 NSTEP process began with soliciting training requirements submitted in the form of a Performance Needs Statement (PNS). A total of 141 PNSs were submitted for both existing and new training requirements. The HOTG analyzed all PNSs to determine the best delivery method (in-residence, DL, blended, etc.), along with the training needs analysis.

Table 6 documents over \$5M of unfunded training needs for FY12. This is a result of ongoing funding reductions for training during the past decade and increasing training requirements.