Center Overview

January 2014

www.wpc.ncep.noaa.gov
Outline

• Overview of WPC mission, vision, and roles

• WPC Partners and Customers

• WPC Products and Services

• Plans for the future
• **Mission:** WPC will remain a leader in the collaborative weather forecast process delivering responsive, accurate, and reliable national forecasts and analyses.
A New Strategic Position for WPC

A New Building
NWS, NESDIS, OAR

A New Name
The Weather Prediction Center

A New Vision
America’s Go-To Center for high-impact precipitation events and forecast guidance out to 14 days for a Weather-Ready Nation
WPC: A Resource for Partners and Customers

- Starting point for local forecasts
- Unifying influence for nationally consistent forecasts
- Focal point for NWS collaboration
- Emergency backup
WPC Partners and Customers

- NWS field offices: WFOs, RFCs, CWSUs
- NCEP Centers: NHC, SPC, AWC, OPC, EMC, NCO, CPC
- Federal Agencies: DHS/FEMA, USAID
- State Agencies: water and flood management, emergency services
- Media: TV, radio, print and electronic media
- Private sector
- Academic Community
- International
- Public
WPC Products and Services

- WPC produces a wide range of national weather forecast and analysis products:
  - Quantitative precipitation forecasts (QPFs)
  - Flash flood forecast products
  - Medium-range guidance
  - Winter weather guidance
  - Probabilistic rainfall and winter weather guidance
  - Surface analysis
  - Daily weather map
  - International forecasts for training
WPC Operational Desks

QPF

Winter Weather

Medium Range

Alaska Med. Range

Met Watch

Model Diagnostics

Short Range

Surface Analysis

International

Tropical
WPC Activities during High-Impact Events

- WPC forecasters routinely interact with partners and customers leading up to high-impact precipitation events, including tropical cyclones, winter storms, and flash floods
  - Internal NWS collaboration for forecast consistency and accuracy
  - Media interactions to effectively communicate forecast impacts to public
- WPC serves as the service backup for the National Hurricane Center and issues tropical cyclone advisories for tropical cyclones after landfall
WPC forecasters assimilate and add value to numerical model forecasts.

QPFs during Sandy (2012)

WPC QPF

Observed Precipitation
Each day, WPC forecasters have access to over 100 unique numerical model forecasts, which are used to develop a suite of WPC forecasts.
Long-Term WPC QPF Verification

WPC QPF verification
1-inch threat score

Current Day 3 WPC forecast skill is nearly equal to Day 1 forecast skill in 2000.
In addition to traditional single-value deterministic forecasts, WPC is leading the NWS in the development of probabilistic QPF products, which increasingly play a significant role in weather decision support service (DSS) activities. Probabilistic forecasts are derived using statistical techniques that combine human-generated forecasts and numerical model forecasts.

Probabilistic Forecasts

- Probabilities can provide information about forecast certainty.
WPC products are disseminated both within NOAA and to the public via:

- AWIPS to NWS field offices
- Internet
- FTP data hosting (GRIB2 and GIS formats)
- Video Teleconferencing
- DSS for high-impact events

Dissemination of WPC’s Products and Services
Hydrometeorological Testbed at WPC (HMT-WPC)

A component of the NOAA HMT

Goal: Transfer research innovations into operations (R2O) to improve prediction of heavy precipitation

Roles:

• Identify and test new datasets to improve WPC forecasts
• Develop tools and techniques for operational use
• Provide training in new techniques to forecasters and partners
The HMT-WPC facilitates R2O through real-time forecasting experiments, with diverse participation from operations, research, and academia.

**Real-Time Collaborative Experiments**

- Test New Datasets
- Develop New Tools/Techniques
- Train Forecasters & Researchers

**Warm-Season**

**Winter Weather**
WPC International Desks

- Supported by WMO, funded by US DoS, and Met Services in Regions III/IV
- Promote a training program that enhances the scientific capacity of the participating National Meteorological Centers
  - Prepare an international cadre of meteorologists who can face the challenges of a modern forecast office. Over 300 meteorologists trained.

Weather forecast products with emphasis on precipitation forecast

Provides early warning of severe events:
- Flooding, Strong Thunderstorms
- Assistance following natural disasters such as the earthquake in Haiti.
WPC Staff and Resources – FY14

- **Organization** – 46 FTEs (3 vacancies) and 3 contractors
  - Acting Director, Acting Deputy Director, Administrative Officer, Secretary
  - **Forecast Operations Branch (34)**
    - Branch Chief
    - 33 Operational Forecasters, 1 Met Tech
  - **Development and Training Branch (8)**
    - Branch Chief
    - Science and Operations Officer
    - 5 Meteorologist Developers
    - International Desk Coordinator
    - Contract International Training Asst
    - 2 HMT Contractors

### Budget (estimate)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>$6410K</td>
</tr>
<tr>
<td>Base non-labor</td>
<td>$83K</td>
</tr>
<tr>
<td>International support</td>
<td>$135K</td>
</tr>
<tr>
<td>Sandy Supplemental</td>
<td>$80K</td>
</tr>
<tr>
<td><strong>Total Budget</strong></td>
<td>$6708K</td>
</tr>
</tbody>
</table>


WPC Future Plans, cont.

• Continue to serve the weather enterprise by providing a seamless suite of national forecast and analysis products
  • FY14 Q2: Increase resolution of WPC medium-range grids from 5 km to 2.5 km
  • FY14 Q4: Contribute to development and implementation of a National Gridded Blend for land and marine parameters
  • FY14 Q4: Team member to develop plan to extend NWS forecasts to Day 8-10

• Establish WPC as America’s Go-To Center for high-impact precipitation events and forecast guidance out to 14 days for a Weather-Ready Nation
  • FY14 Q3: Develop prototype Winter Storm Watch Recommender to foster spatially-consistent Watch issuances
WPC Future Plans

• Continue successful R2O activities, via the HMT-WPC, by testing, evaluating, and transitioning state-of-the-art forecast techniques into WPC operations
  • **FY14**: Integrate field participation in test bed experiments to support R2O, including the Winter Weather Experiment (Q2), HWT Spring Experiment (Q3), Flash Flood Experiment (Q4) and Summer Aviation Experiment (Q4) (shared with SPC, AWC)

• Expand and improve probabilistic forecasting techniques
  • **FY14 Q2**: Develop prototype graphical Day 4-7 Winter Outlook