NWS Partners Webinar
Spring 2021
Office of Organizational Excellence (OOE)
April 23, 2021
Today’s Webinar Agenda

- Welcome and Logistics
- NWS Strategic Updates
- Q/A and Open discussion

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Director
Office of Organizational Excellence
National Weather Service

Andrea Bleistein
Partner Engagement Lead
Office of Organizational Excellence
National Weather Service

- NWS Programmatic Updates
- Q/A and Open discussion
- Wrap-up
Webinar Logistics
How to join the discussion!

• If using the phone for audio, please be sure to enter your audio pin. If you did not do it when you called in, type #PIN# into your phone now.

• All lines will remain muted until the open discussion.

• We are **recording** the webinar for posting later.
Welcome to Our Presenters

Dr. Louis Uccellini
Assistant Administrator for Weather Services, NOAA and Director, National Weather Service

Mary Erickson
Deputy Director, National Weather Service

Dr. Mike Farrar
Director, NWS NCEP and 2021 AMS President

Kevin Cooley
Director, NWS OPPSD

Michelle Mainelli
Director, NWS Office of Dissemination
NOAA and New Administration

- Climate Change
- Social Equity and Serving Underserved
- Rate of Activity with New Political Leadership
President’s Budget Requested vs. Enacted Amounts
Expands Observations, Research, and Climate Services

- Provides an increase of more than $1.4 billion over the 2021 enacted level, for the National Oceanic and Atmospheric Administration (NOAA)
- Increase includes $800 million to expand investments in climate research, support regional and local decision-making with climate data and tools, and improve community resilience to climate change.
Celebrating 10 Years: A Weather-Ready Nation

“Ready, Responsive, Resilient”

Becoming a Weather-Ready Nation is about building community resilience in the face of increasing vulnerability to extreme weather, water and climate events, by touching every county every day AND supporting national security and public safety.

This Requires

- Better forecasts and warnings
- Consistent products and services
- Actionable environmental intelligence
- Connecting to decision makers through IDSS

Involves the entire US Weather, Water and Climate Enterprise WORKING TOGETHER.
NWS Partnership Strategy

Goals for the NWS Partnership Strategy

1. Improve the overall NWS partnership experience

Further enhance and develop new ways of leveraging and using partnership capabilities to help realize the NWS vision

3. Understand the landscape of NWS partnerships and develop a clear strategic vision of which key partnerships to enhance and develop

Priorities

1. Communicate the net value of partnerships

2. Identify and develop specific NWS partnership objectives

3. Pursue key partnerships to pursue or enhance

4. Implement partnership mechanisms or approaches

5. Maintain situational awareness of how the Enterprise is changing and evolving

6. Gather and spread best practices

7. Guide partnership-relevant programs or projects

8. Measure and monitor partnership outcomes
NWS Priorities 1-3 Years

People! Policies, Processes, Procedures

Transform Services
- Impact Based Service Delivery
- Building Resilience
  - Equitable Services
  - Hazard Simplification

Fortify Robust Infrastructure
- Dissemination
- Cloud, Engineering
- Advanced High Performance Computing

Advance Science
- Improved Models, Assimilation
- Community Modeling UFS/EPIC
- Precip Grand Challenge

Focuses

FY21 AOP Milestones
- QPF Collaborative Forecast Process Demo
- IDSS Instructions, Training, Tools
- Real-time Flood Common Operating Picture (FIM)

NAWIPS/AWIPS Integration
- New Weather/Climate Supercomputing System
- NWSChat

GFS v16 — Done!
Water Model v2.1 — Done!
New Weather/Climate Supercomputing System

NWS D&I Action Plan
COVID-19 Reintegration
Defining New Normals, Best of Both Worlds

Timing of Reintegration
Timing will be steady, data driven and locally informed to maintain the integrity of NWS mission capability.

Flexibility & Expanded Connectivity
Slow, flexible, safe increase in onsite crews of essential personnel at our Ops locations, scaling up for extreme weather events. Virtual meetings have in some cases improved partner communication.

Prioritizing Health & Safety
Our top priority is the health and well-being of our workforce, workplaces and partners. NOAA Public Health Officers and CDC provide guidelines for masks, vaccines, and office protocols.
AMS Annual Meeting 2022

● **Time/Place:** January 23-27, 2022 in Houston, TX (George R. Brown Convention Center)

● **Theme:** “Environmental Security: Weather, water and climate for a more secure world.”

● **Motivation:** We are seeing a growing influence of *weather, water and climate* on *human* and *national security* due to a rapidly increasing global population, coupled with evolving human and national security impacts from disruption of weather and climate norms
  ○ Inform the broad AMS membership on the connections of our scientific field to larger societal impacts
  ○ Demonstrate how important our science contributions are to the security needs of the citizens of the U.S. and the world, particularly on its most vulnerable groups
  ○ Bring world-class experts on impacts of climate and extreme weather on water quality/scarcity, energy, food and health to share their experiences w/AMS members
Theme sessions organized around 5 Environmental Security pillars

1. Extreme Weather & Climate events
2. Health Security
3. Energy Security
4. Water Security
5. Food Security

Additional theme sessions planned that cross-cut the 5 Env. Sec. pillars

- Disproportionate impact on vulnerable populations
- Engagement with local Houston public & private sectors
- Environmental diplomacy… and more (still TBD)

For any that would like to engage, please contact me directly.
AMS Washington Forum 2022

- The annual AMS Washington Forum provides a platform to examine public policy issues across the weather, water, and climate enterprise.
  - Forum held under modified Chatham House rules to encourage openness and the sharing of information.

- This meeting is open for anyone interested in learning more about how weather, water, and climate information can help support risk management across the public and private sectors. This includes agencies and companies whose operations and planning are reliant on environmental factors.

- The AMS Washington Forum is organized by the AMS Board on Enterprise Economic Development (BEED), a part of the AMS Commission on the Weather, Water, and Climate Enterprise (CWWCE).

Thanks for our sponsors; your contributions to the AMS are most appreciated!
Mission
NCEP delivers national and global operational weather, water and climate products and services essential to protecting life, property and economic well-being.

Vision
The trusted source for environmental predictions from the sun to the sea, when it matters most.
Break for Questions and Discussion

Please use the **question box** or **hand-raise option**.

If we don’t get to you, enter your comment in the “Questions” box or email **andrea.bleistein@noaa.gov** after the webinar.
IDP: Bottom Line Up Front

- The NWS Integrated Dissemination Program (IDP) four-phase plan (requested by Senate Appropriations and delivered October 2020) charts the course for 21st century services for the nation - making them robust, flexible and high capacity. This is a top priority for NWS.

- Over the past 6 months - a series of unrelated building, network, and application-related issues unacceptably impacted the dissemination of NWS data, products and services.

- $1.5M increase in FY21 is now being executed to start addressing the known weaknesses in the critical national dissemination IT infrastructure - specifically the IDP network bandwidth and to upgrade network routers and load balancers.

- The IDP Plan: Phase 1 completed, Phase 2 by end of CY22, and new public cloud initiatives are being demonstrated and applied now.
NWS Integrated Dissemination Program (IDP)
Four-Phase Plan: A Long Term Solution

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- **Phase 1: Completed**
  - Establish Private Cloud Architecture
  - Convert and transition top 1/3 of applications – original scope of NWS Telecommunications Gateway
  - 34% of PMEF applications migrated to IDP

- **Phase 2: Through CY21**
  - Enhance Reliability
  - Optimize for ongoing sustainability
  - 60% of Primary Mission Essential Function (PMEF) applications will be converted and migrated to IDP

- **Phase 3**
  - Additional Capacity for remaining PMEF applications
  - Additional contractor support to sustain system
  - 100% PMEF applications converted and migrated to IDP

- **Phase 4: Public Cloud**
  - Evaluate applications for move to public cloud
  - Shift IDP Development Efforts to the Public Cloud
  - Conduct demonstrations with a goal to migrate services to the public cloud
  - Create a hybrid solution of both IDP and public cloud
Integrated Dissemination Program (IDP)

Dissemination Services Supports NWS Offices/Programs throughout the U.S

- 122 Weather Forecast Offices
- 6 Regional Ops Centers
- 22 Center Weather Service Unit (Aviation)
- 13 River Forecast Centers
- 9 National Centers
- 1 Water Prediction Center

Using
- Two private IDP on-site cloud infrastructure systems
- Two legacy webfarms
- Public cloud infrastructure to demonstrate the “art of the possible”
- 57 different dissemination-related applications that all need to be upgraded, updated, tested, and meet strict security requirements

IDP: operationally supported on 24x7 basis with a goal to deliver at 99% reliability!
IDP Operational Applications

IDP Backbone includes the IDP Dissemination Sites in Boulder, CO, and College Park, MD, and the Legacy Webfarms in Kansas City, MO and College Park, MD (new)

38 Applications on IDP (April 2021)

- FTPS In / FTPS Out
- WMO GISC
- IRIS/iNWS
- GMDSS
- SNOTEL
- HADS
- HF-FAX
- SOCKET
- NWS GIS Services
- nowCOAST
- AOMC/EM7 Monitoring
- Water.weather.gov
- Aviationweather.gov
- SPADES
- Api.weather.gov
- EMWIN
- NOS Chart Tile
- VLAB
- Tsunami.gov

- NOMADS
- FTPPRD
- TGFTP
- MADIS
- MRMS
- MAG
- Radar Level 2
- Radar Level 3
- NWSTG Switch
- BUFR Migration Tool
- NLETs
- EDIS/FTPMail
- HazCollect Extended
- ISatSS
- FTP / SFTP
- NGITWS
- FTPPPUSH
- RIDGE2 (Dec 20)
- CAPHandler (Feb 21)

Complete Phase 2

Future Functionality at IDP College Park and Boulder:

- NWSChat – FY22Q1
- AHPS – FY22Q1

Upcoming Phase 3 Steps (Private IDP Cloud)

- Weather.gov Requirements Scoping
- Legacy Web Farm (NIDS) app analysis for future home
- Increasing the network bandwidth capacity to allow improved customer access to data and services

Upcoming Phase 4 Steps (NOAA Public Cloud)

- Initial Launch of Enterprise NWS National Viewer Q3 – Q4
- Model data public cloud demonstration Q3 – Q4
- NWSChat COTS Demonstration
Bandwidth issues result from our success. Better model resolution = more data used by more people more frequently. Improvements outpaced our plans and funds.

To minimize sporadic overload and ensuing crashes, NWS proposed limiting access to 60 hits per minute on its major data-generating web pages.

Based on customer feedback and further assessment of infrastructure, NWS enacted model-related rate limit access to 120 hits per minute, ONLY for NOMADS and FTPPRD, not impacting other IDP applications on April 20.
Planning for Success: Cloud Opportunities

Continue with cautious and deliberate demonstrations and implementations in the **public cloud** following the IDP Phased Approach

### Demonstration... Validation ... Implementation in 3 Distinct Phases

<table>
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<tr>
<th>Timing</th>
<th>May 2021 - Sep 2021: Phase 1</th>
<th>Oct 2021 - Jan 2022: Phase 2</th>
<th>+ 12 - 24 Months</th>
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<td><strong>Target Users</strong></td>
<td>Long-term NWSChat Project Team</td>
<td>Project Team + small subset of offices for demonstration and testing</td>
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<td><strong>Outcomes</strong></td>
<td>* Launch Project</td>
<td>* Launch COTS</td>
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<td>* Enable targeted audience</td>
<td>* Complete dev implementation</td>
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<td>* Integrated and development roadmap for long-term Chat</td>
<td>* Documentations</td>
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<td>* Initial design, policies, and configurations for COTS solution</td>
<td>* Create external videos, and training</td>
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**Long-Term NWSChat**: Demonstrate new COTS solution for NWSChat

**GIS VIEWER**: IOC planned in Q3FY21 with new layers added throughout FY22 based on resources and prioritization by the NWS governance process

### Phase 4: Public Cloud

- Evaluate applications for move to public cloud
- Shift IDP Development Efforts to the Public Cloud
- Conduct **demonstrations with a goal to migrate services to the public cloud**
- Create a hybrid solution of both IDP and public cloud
Open Discussion

Please use the question box or hand-raise option.

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Wrap Up - What’s coming

- WRN Ambassadors Roundtable: April 27, 2021
- NWS-Academia Partners Roundtable: May 24-25, 2021
- Hazard Simplification Webinars: May 5, 6, 12, and 19, 2021
- Partner calls with NWS Deputy Director

THANK YOU!!

weather.gov/wrn/calendar