NWS Summer Partners Meeting

Dissemination Update
August 1, 2017

Michelle Mainelli
Acting Director, NWS Office of Dissemination
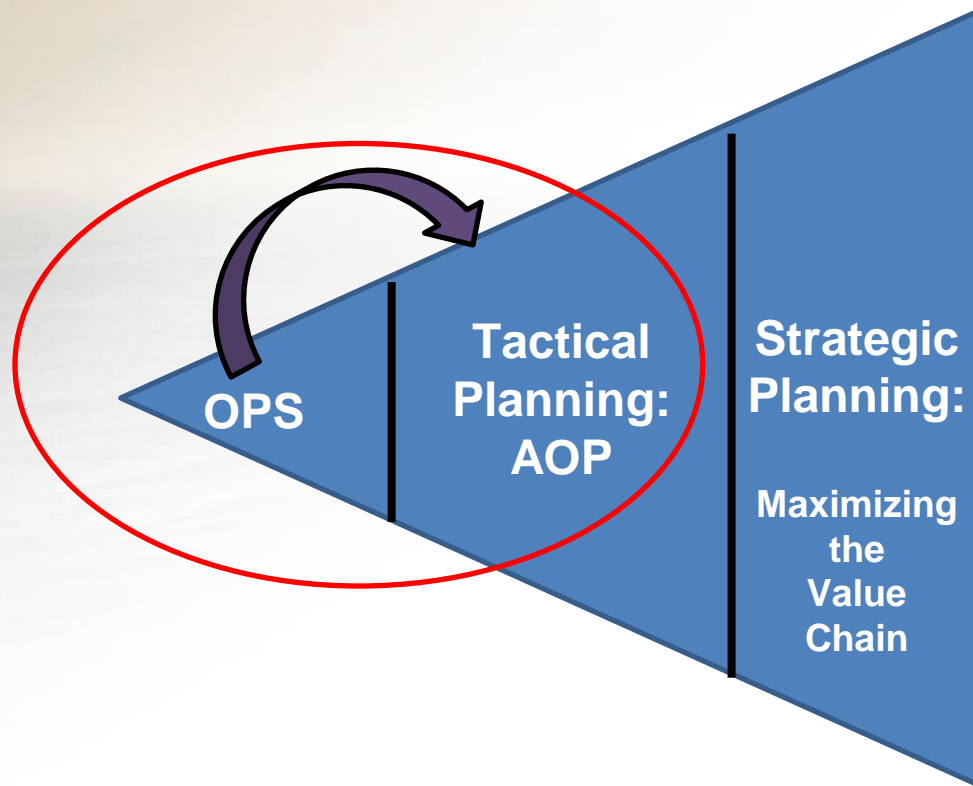
Agenda

- ## The Tactical
    - IDP – OneNWS Network – Dissemination Services of Today
    - IDP System availability / Data availability

- ## The Strategic
    - Hazard Services
    - GIS / Web Services
    - Weather Information Mass Dissemination (WIMD) Transformational Change
    - Discussion … where do we go from here?

The Tactical

Where are we right now and where will we be in a year from now….

OPS

Tactical Planning: AOP

Strategic Planning:

Maximizing the Value Chain

3

Tactical – Big Picture

IDP System & Data Availability

- NCEP Central Operations continues to be your primary POC to report operational issues.

- Focused efforts on refining procedures, testing backup functionality, load testing

- Monitoring of the systems and applications continue to be enhanced

Reporting / Escalation Procedures remain <u>unchanged</u>

301-713-0902
TOC.nwstg@noaa.gov or
301-683-1500 /
SDM@noaa.gov

Ben Kyger, NCO Director,
Ben.Kyger@noaa.gov

TGFTP/FTPPRD/RADAR Perf. Metrics: Feb – July 2017 – 99.8% (10 hrs of "downtime")

IDP Perf. Metrics: February 2017 - July 2017 – 99% (43.5 hrs of "downtime")

* Metrics do not include issues with Weather.Gov – application still running on legacy hardware in Kansas City and Silver Spring. (29.5 hours of "downtime")

The Strategic

Based on where we are right now, where do we want to be in 2-5 years....

OPS

Tactical Planning: AOP

Strategic Planning:

Maximizing the Value Chain

Advancing Hazard Services

• Implement new capabilities to better generate hazards

• Streamlines the warning process w/in the forecast office

• Enables modern communications protocol (CAP/ XML) and future capabilities

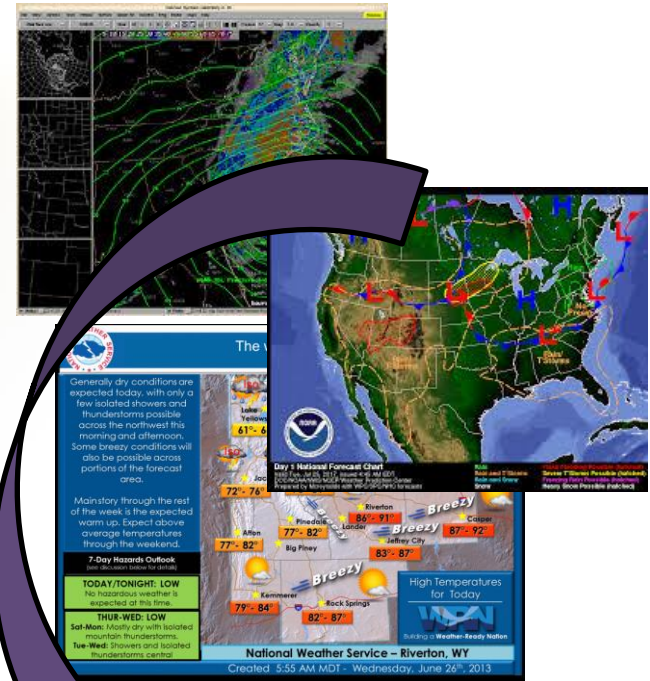• Reduces the cost of O&M for the watch, warning and advisory applications
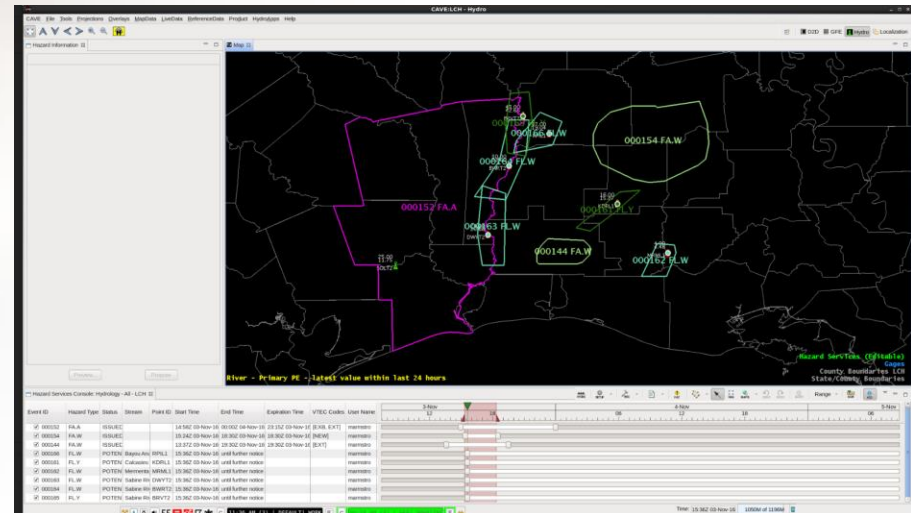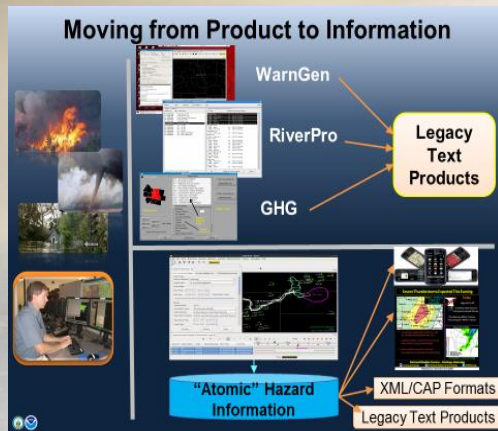
• **Tentative Schedule:**

— **Hydrologic & Winter Weather Hazards in 2019**

— **CAP v2.0 created at the source for Winter Wx & Hydro in 2019**

— **Remaining watches and warnings in 2020**

— **Decommissioning of the "post processing" method in 2021**
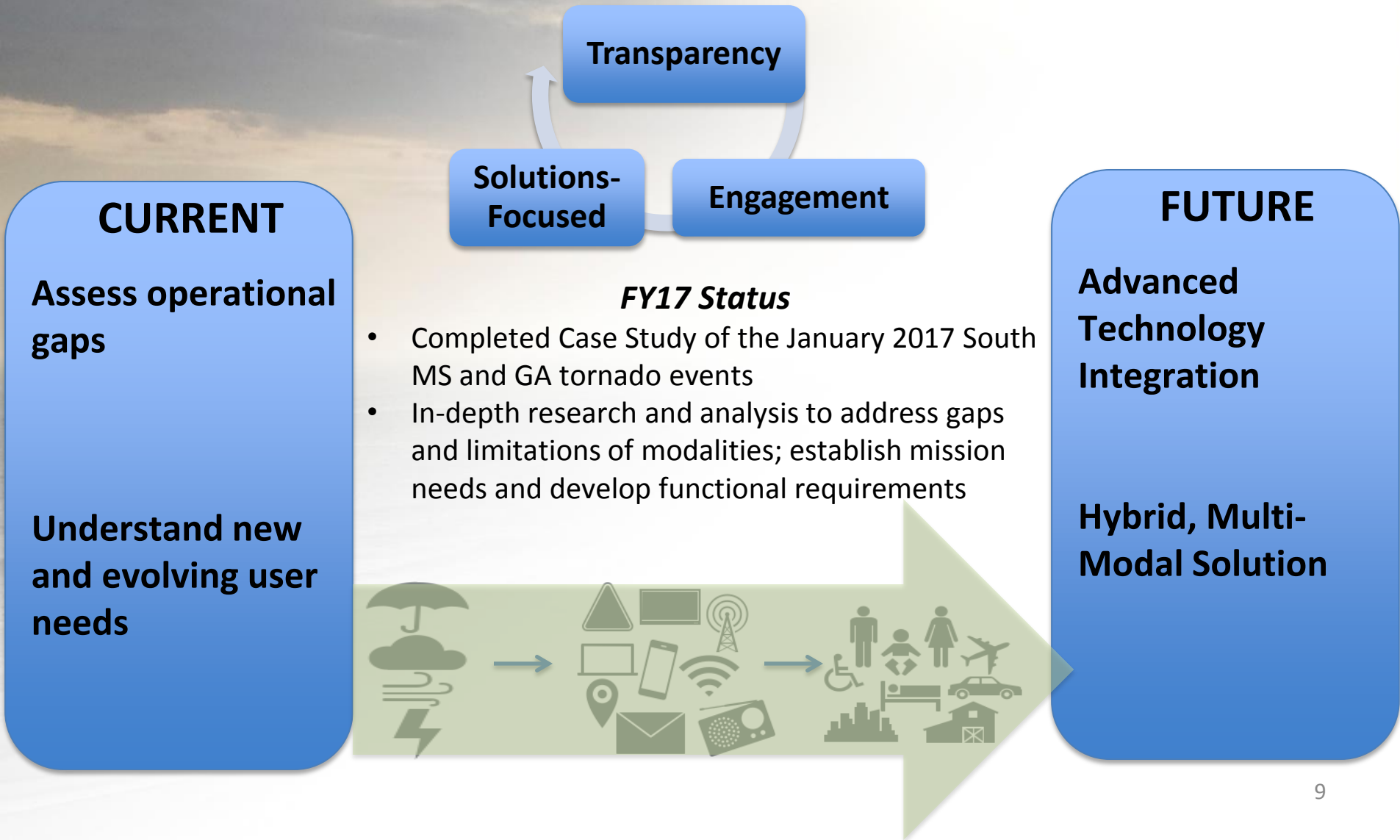
Advancing GIS and Web Services

- Consolidate NWS web based GIS maps and geospatial services onto IDP GIS platform

    - Reduces the cost of O&M for maintaining multiple web based GIS codes

    - Ensures consistency in data and user experience

- Tentative Schedule

    - Create Consistent User Experience with NWS web based interactive maps 2018

    - Migrate NDFD web services and graphical interface to IDP 2018 – 2019

    - Implement interactive web based map for numerical weather models 2019

    - Create OGC compliant web services for additional NWS products based on partner requests and feedback 2018-2022

Weather Information Mass Dissemination (WIMD) Transformational Change

Transparency

Solutions-Focused

Engagement

CURRENT

Assess operational gaps

Understand new and evolving user needs

FY17 Status

- Completed Case Study of the January 2017 South MS and GA tornado events
- In-depth research and analysis to address gaps and limitations of modalities; establish mission needs and develop functional requirements

FUTURE

Advanced Technology Integration

Hybrid, Multi-Modal Solution

Discussion…

- **Common goal to advance the weather services for the U.S.**

- **NWS Dissemination Internal Efforts**
  - Improve consistency
  - Enhance IDSS Products to Core Partners

- **Weather Enterprise – Key to Service Delivery**
  - What are the boundary conditions?
  - How do we develop consistency and enable you to best serve your customers?
  - How best to facilitate collaboration in dissemination focused services?

Keep the conversation going!

Contact: Michelle.mainelli@noaa.gov
301-427-9760

The Tactical: Detailed Slides

The Tactical

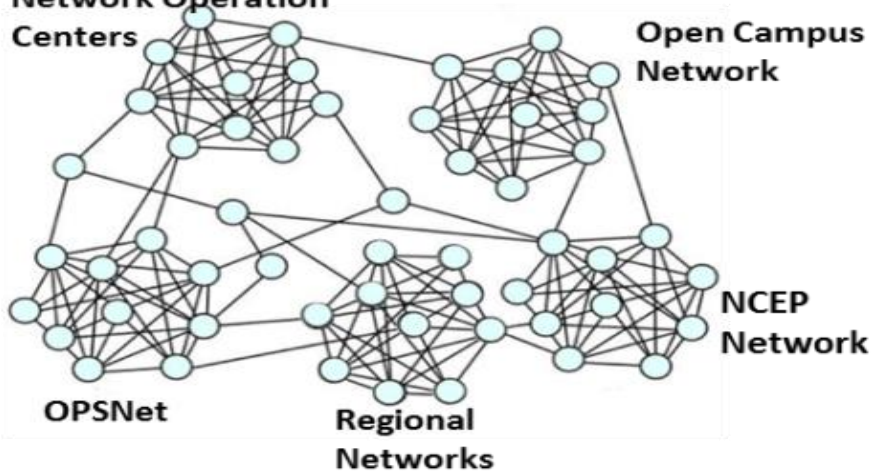## Where are we right now and where will we be in a year from now….

OPS

Tactical Planning: AOP

Strategic Planning:

Maximizing the Value Chain
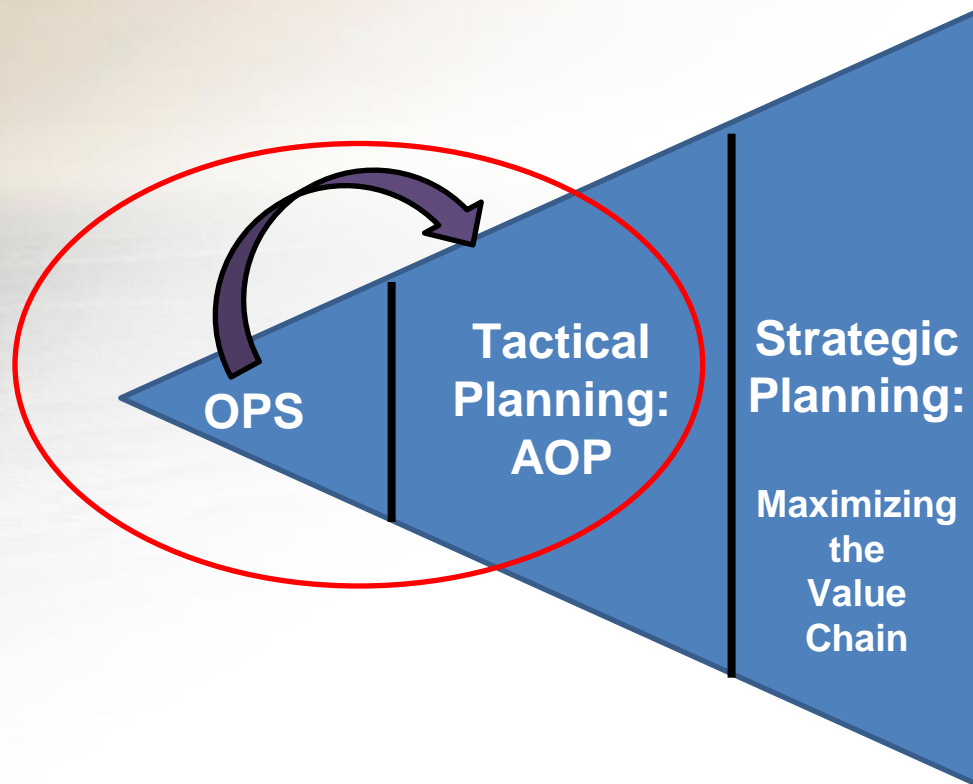
Integrated Dissemination Program

Future Functionality at IDP College Park and Boulder

- Weather.Gov*
- SPOT*
- NWSChat

  * Available at IDP- College Park

IDP

IDP Dissemination Site DSRC (Boulder, CO)

IDP Dissemination Site NCWCP (College Park, MD)

Network "Backbone"

Supercomputer (Reston, VA)

Supercomputer (Orlando, FL)

Functionality in place at IDP College Park and Boulder (as of August 2017)

- NOMADS
- FTPPRD
- TGFTP
- MADIS
- MRMS
- MAG
- Radar Level 3
- NWSTG Switch
- BUFR Migration Tool (BMT)
- NLETS
- Radar Level 2
- EDIS/FTPMail
- HazCollect (Extended)
- HazCollect (Legacy)
- FNMOC

- FTPPush
- GlobalInformation Center System (GISC)
- IRIS/iNWS
- GMDSS
- SNOTEL
- Hydometeorological Automated Data System (HADS)
- HF-FAX
- SOCKET/CMHP
- NWS GIS Services
- NOS Chart Tile
- nowCOAST
- Weather.gov
- VLAB
- SPOT
- AOMC/EM7

OCONUS	CONUS WFOs	RFCs	Internet	National Centers	External Partners	CWSUs / FAA CMD CTR
COMPLETE	IN PROGRESS	IN PROGRESS		COMPLETE	COMPLETE	IN PROGRESS

"OneNWS" Network

The future OneNWS network will consolidate all operational networks (OPSnet, Regional, etc.) as a single managed network under NCEP Central Operations (NCO).

14

Legacy Network => OneNWS Network
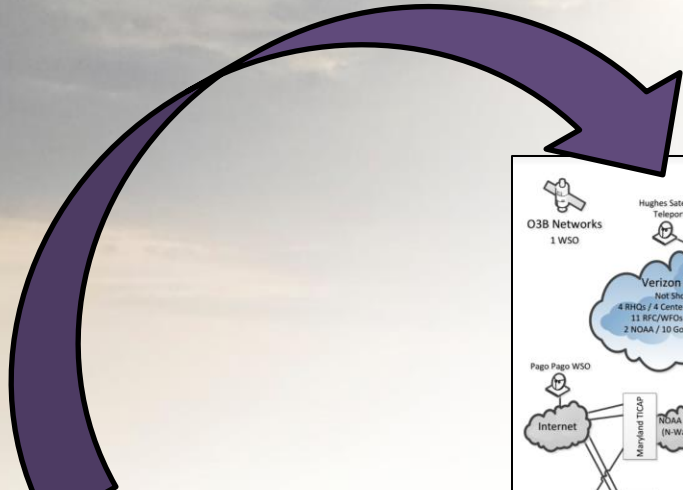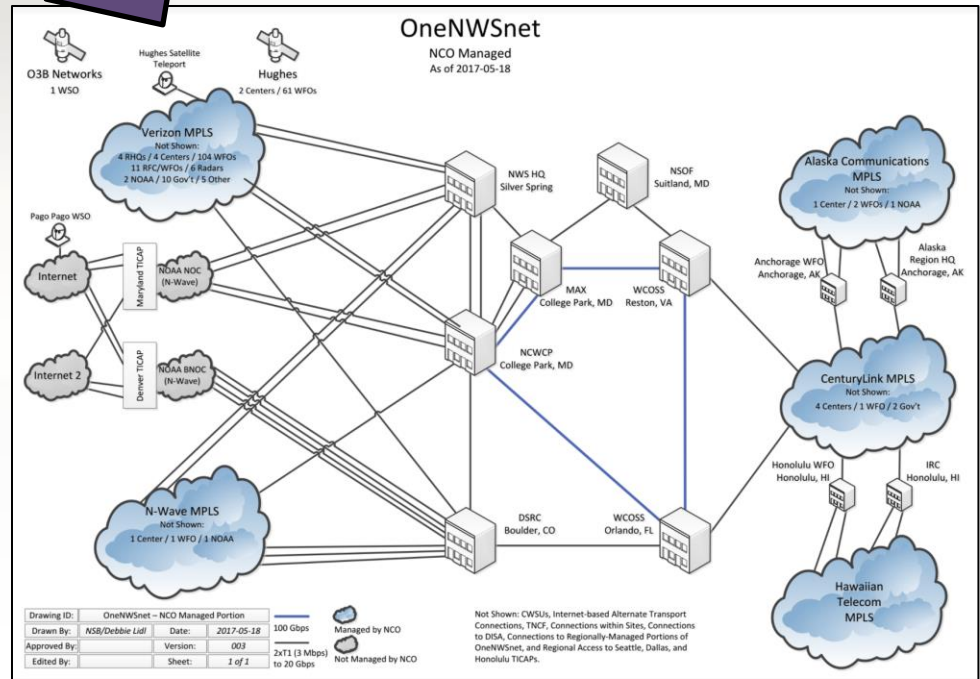
OneNWS Network Upgrade Status
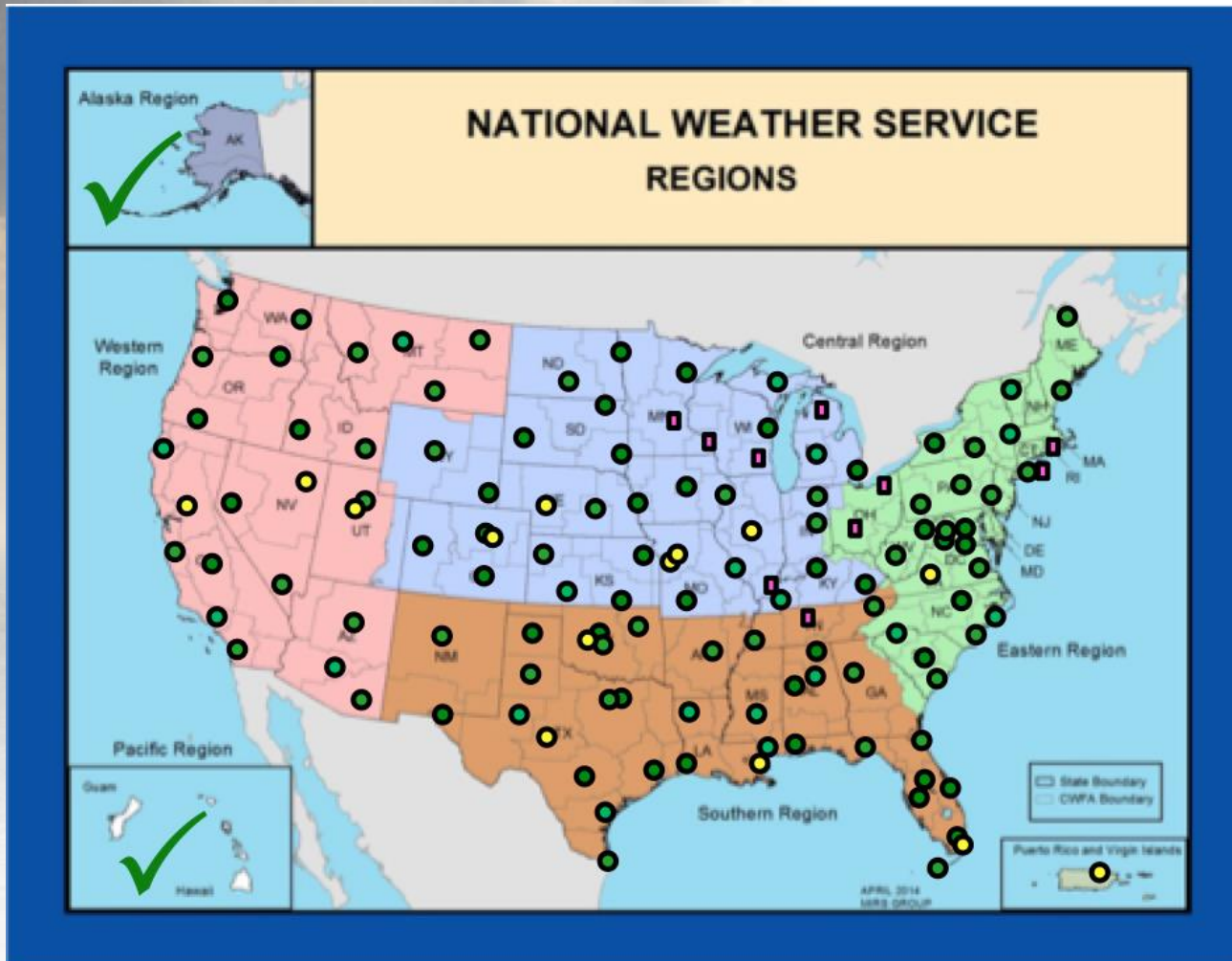
LEGEND:
- ● Completed Upgrades (100 CONUS NWS Offices) as of 7/28/2017
- ● Upgrades planned in FY17Q4 (14 NWS Offices)
- ■ Upgrades planned in FY18Q1 – FY18Q2 (10 NWS Offices)

*61 sites upgraded 1/25/2017

Common Alerting Protocol (CAP)
v.1.1 vs v.1.2 – Dissemination Channels

Channel	v.1.1	v.1.2
1. NOAAport/SBN XOUS5x/XOAK5x WMO headers		✓
2. IDP File Systems Seven day archive		✓

3. FEMA IPAWS
    WEA Channel
    Public Feed Channel
    No Non-Weather Emergency Messages
		✓

4. alerts.weather.gov / alerts-v2.weather.gov
    Seven day archive
    Custom feeds via RESTful service
	✓	✓

5. api.weather.gov
    CAP fields served in JSON format
    RESTful service
		✓

Transitioning fully to CAP v1.2 by the end of 2017…

Status of Common Alerting Protocol v1.2 Updates (we listened!)

CAP-related Issues reported by Partners	Status
WMO Products and headlines are not parsed correctly and/or data is missing in output	October 2016
CAP message does not properly display precautionary / preparedness information that is listed in the WMO message	October 2016
During the process to add WMO headers to the CAP messages, the processing fails resulting in messages failing to be disseminated	October 2016
Alerts are not distributed or are inadequately distributed for some watch, warning, advisories that have multi-line VTEC codes	Completed – April
CAP output is not generated for some OCONUS and NCEP products. Not all information is contained in the product as expected by the IRIS Decoder	Completed – April
CAP messages for Tsunami Warnings may have missing fields due to non-standard formatting of the original WMO message	Completed – April
The CAP messages do not contain all the WMO-formatted parameter elements	Completed – April
HCE Software Defect Update (critical bugs associated w/CAP v1.2 post-production generation)	Completed – April

Note: CAP v1.2 issue related to the duplication of messages on EAS requires extensive cross-portfolio and external (FEMA) coordination due to the technical challenges and level of effort associated with the fix.

NOAA Weather Radio
Sustain and Upgrade Legacy NWR Systems

Sustainment includes:
- Upgrades
- Relocations
- Lease Negotiations

Upgrade point-to-point analog to IP audio
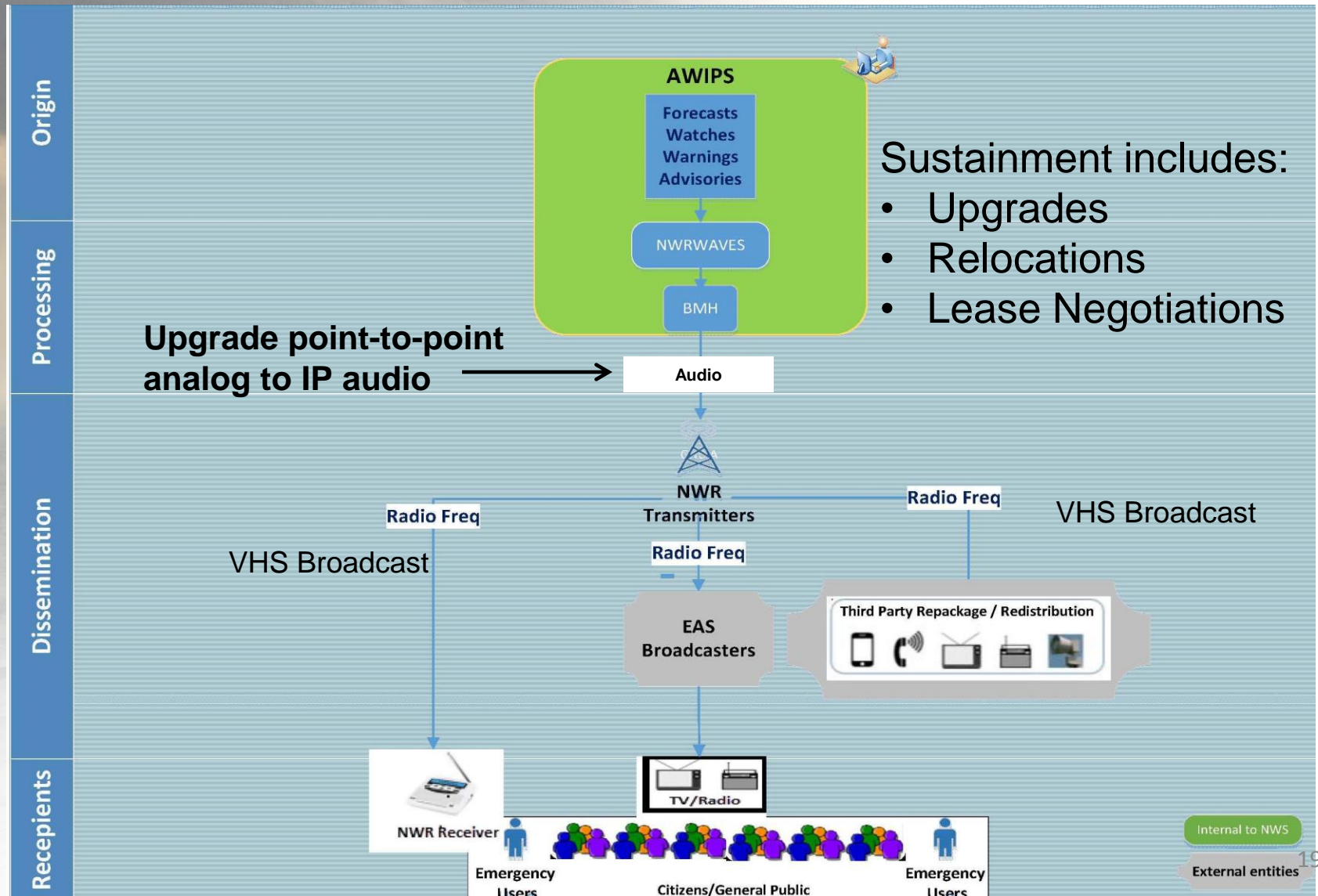
NOAA Weather Radio
Sustain and Upgrade Legacy NWR Systems

- Completed remaining 352 Transmitter upgrades for replacement of obsolete "Tube" technology with Solid State hardware – increasing the mean time between failure by 4 times the legacy transmitters

- NWS is developing prototype IP Based connections to replace current analog circuit technology

- Current status for current prototypes (testing in parallel with current operational analog circuits)
  - WFO Network to Wireless at Site distribution (8)
  - WFO to Site over IP Radio/Microwave (7)
  - WFO to Site over Commercial DSL (11)

- Plan to conduct System Acceptance Testing for both Network to Wireless and IP Radio in FY18
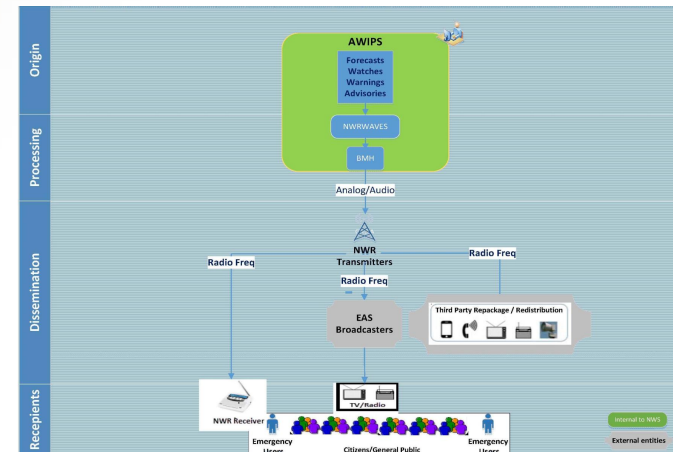
WEA Transmission Diagram
How do alerts get to the phones?
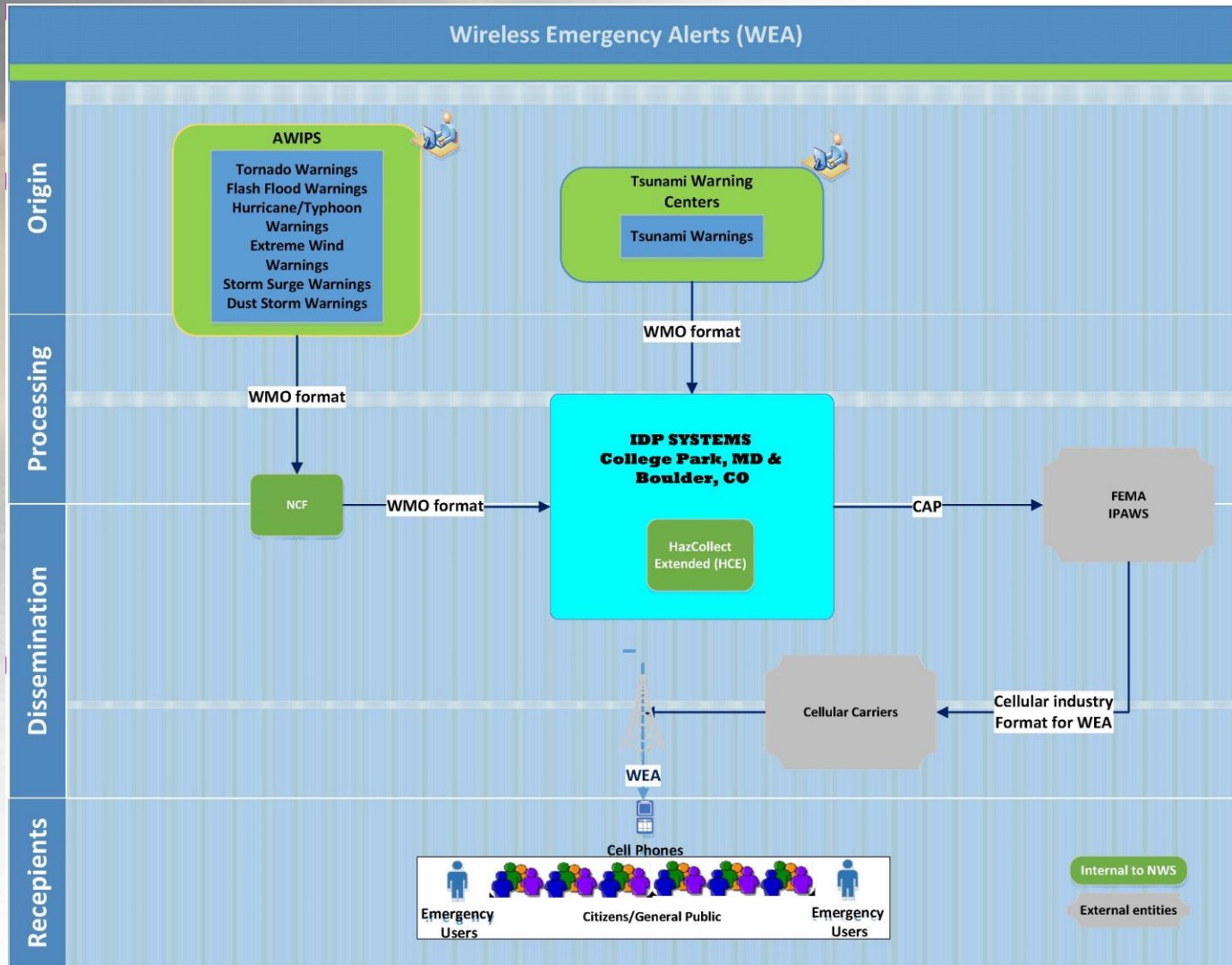
Status on MADIS

- Now available in the current operational MADIS:

  – EDR data added to aircraft dataset

  – Expanded National Mesonet providers*

- Going operational by end of August 2017

  – SNOTEL -- snowfall data in SHEF format

  – Data display for Aircraft data
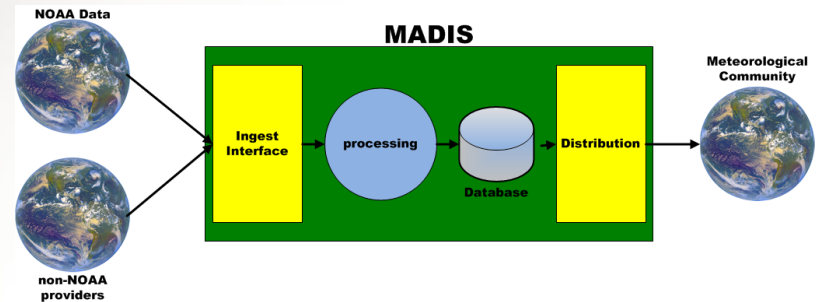
- Going operational by end of 2017 (*More specifics provided by request)

  – Expanded National Mesonet providers*

  – More DOT providers*

  – AFWS expanded providers*

  – RWIS dataset -- DOT road data set. Increases the number of road weather observations and adds the Clarus (DOT) quality control

  – MOBILE dataset -- Dataset for high frequency mobile data

  – SHOUT -- Unmanned aircraft data. This is part of the Gap-filling Upper-air dataset

  – Full compliment of 1 minute ASOS binary data – previously only providing 20% of sites.

Status of Snow Squall & Dust Storm Polygon Warning Product

- Plans are to conduct a rolling implementation of the new polygon-based snow squall and dust storm products

- The first 8 sites for snow squall and 2 sties for dust storm will be made operational via ATAN starting in December. The sites are as follows:

  - **Dust Storm**
    Phoenix, Tucson

  - **Snow Squall**
    State College, Buffalo, NY, Binghamton, Burlington, Pittsburgh, Cheyenne, St Louis, Detroit, MI

- The capability for all remaining sites nationwide will be rolled out between February - April via AWIPS 17.3.1.
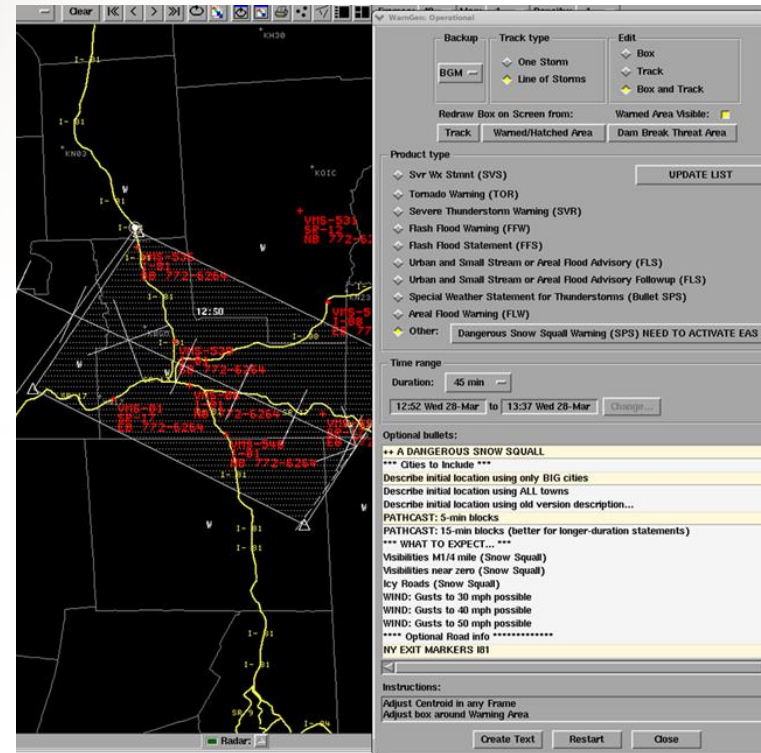
IDP GIS Web Services
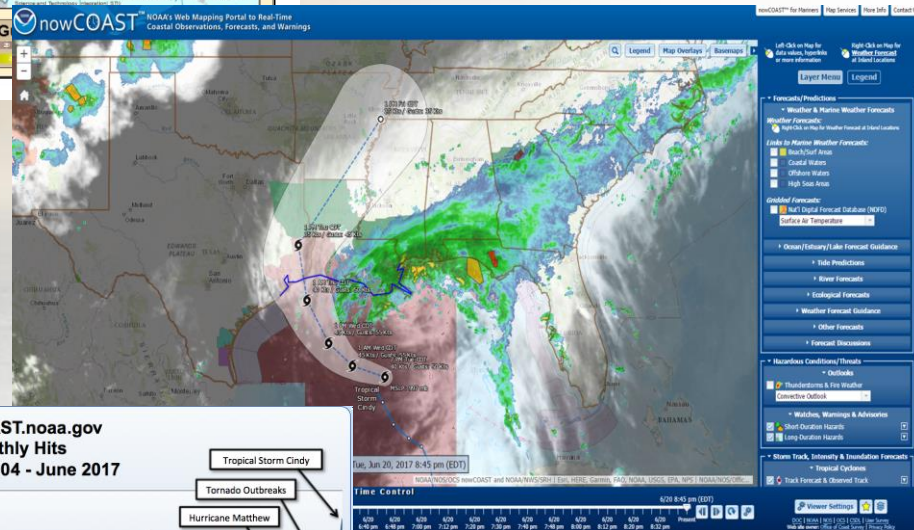
- Implemented Geographic Redundancy (College Park & Boulder)
- Added new Open Geospatial Consortium (OGC) web services
    - radar base reflectivity
    - National Digital Guidance Database (NDGD) Air Quality Data
    - Alaska RFC Ice Break-Up
    - NHC Storm Surge Watches & Warnings (via nowCOAST)
- Upgraded back-end software (ArcGIS 10.5)
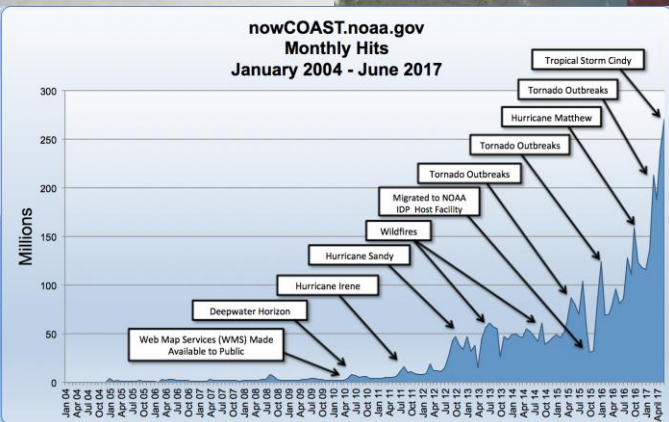
IDP Radar Level 3 – Latency Report

- In early April, DTN/Schneider Electric and Unisys complained of data latencies of ~15 minutes on College Park IDP system.

- Timeline to resolution:

  - NCO staff worked the issue through May and June. The issue was not impacting internal Radar 3 customers, just these external ones.

  - Network issue was beyond NCO's boundary.

  - In late June, network improvements were made.

- Since that time DTN has confirmed the latencies stopped. Unisys has not reported additional latencies.

- For any issues with Radar 3, please contact NCO's Dataflow Team at ncep.list.pmb-dataflow@noaa.gov or Rebecca.Cosgrove@noaa.gov

IDP System & Data Availability

- NCEP Central Operations continues to be your primary POC to report operational issues.

- Focused efforts on refining procedures, testing backup functionality, load testing

- Monitoring of the systems and applications continue to be enhanced

Reporting / Escalation Procedures remain <u>unchanged</u>

301-713-0902
TOC.nwstg@noaa.gov or
301-683-1500 /
SDM@noaa.gov

Ben Kyger, NCO Director,
Ben.Kyger@noaa.gov

TGFTP/FTPPRD/RADAR Perf. Metrics: Feb – July 2017 – 99.8% (10 hrs of "downtime")

IDP Perf. Metrics: February 2017 - July 2017 – 99% (43.5 hrs of "downtime")

* Metrics do not include issues with Weather.Gov – application still running on legacy hardware in Kansas City and Silver Spring. (29.5 hours of "downtime")

IDP Notification Procedures

- General notifications sent to the users
  - NOUS42 announcements from NCO Senior Duty Meteorologists (SDM)
  - NOXX01 announcements from NCO Tech Control

- Application-specific notifications sent to specific user lists
  - NOMADS/ftpprd list
  - MRMS user list
  - nowCOAST user list
  - MADIS user list

  Contact: Rebecca.Cosgrove @noaa.gov

- Application-specific monitoring
  - All applications running on IDP are monitored 24x7 for system performance
  - One specific request has been for NWS to add monitoring of NDFD delivery. This will happen when it is ported to run on IDP – roughly in the FY18Q2 time frame

Hyrdo & Winter Hazard Types

- **Hydro Hazard Types**
  - FF.A - Flash Flood Watch
  - FF.W - Flash Flood Warning
  - FA.Y - Flood Advisory
  - FA.A - Flood Watch
  - FA.W - Areal Flood Warning
  - FL.Y - Flood Advisory (point)
  - FL.A - Flood Watch (point)
  - FL.W - Flood Warning (point)

- **Winter Weather hazard types:**
  - 'BZ.W' # BLIZZARD WARNING
  - 'IS.W' # ICE STORM WARNING
  - 'LE.W' # LAKE EFFECT SNOW WARNING
  - 'WS.W' # WINTER STORM WARNING
  - 'ZR.Y' # FREEZING RAIN ADVISORY
  - 'LE.Y' # LAKE EFFECT SNOW ADVISORY
  - 'WW.Y' # WINTER WEATHER ADVISORY
  - 'BZ.A' # BLIZZARD WATCH
  - 'LE.A' # LAKE EFFECT SNOW WATCH
  - 'WS.A' # WINTER STORM WATCH
  - 'WC.W' # WIND CHILL WARNING
  - 'WC.Y' # WIND CHILL ADVISORY
  - 'WC.A' # WIND CHILL WATCH