National Weather Service Office of Dissemination Status Update

August 9, 2018

NWS Summer Partners Meeting
AMS Summer Meeting
Boulder, CO

Weather Dissemination Chain
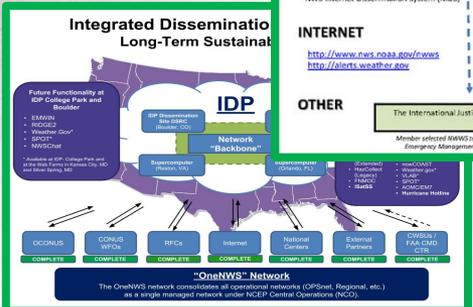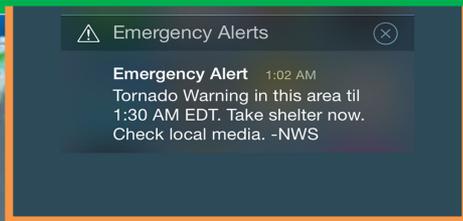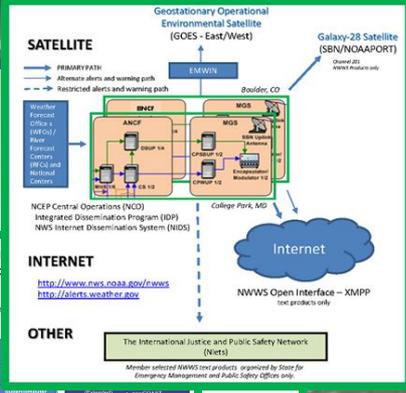
NWS High Performance Supercomputer WCOSS Metrics
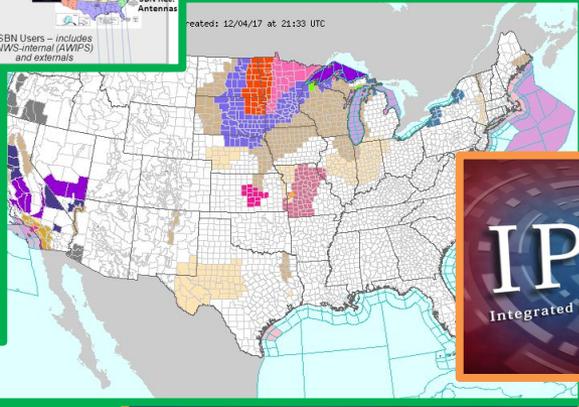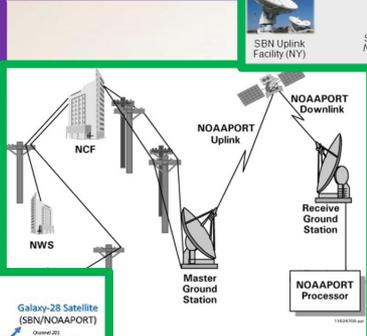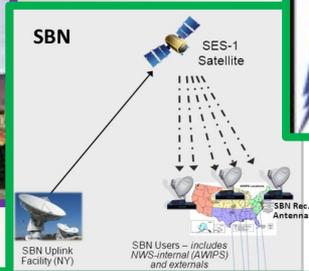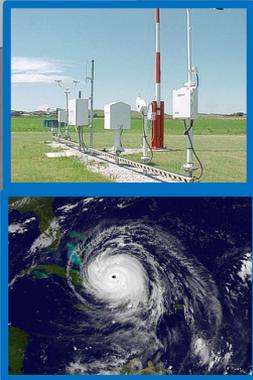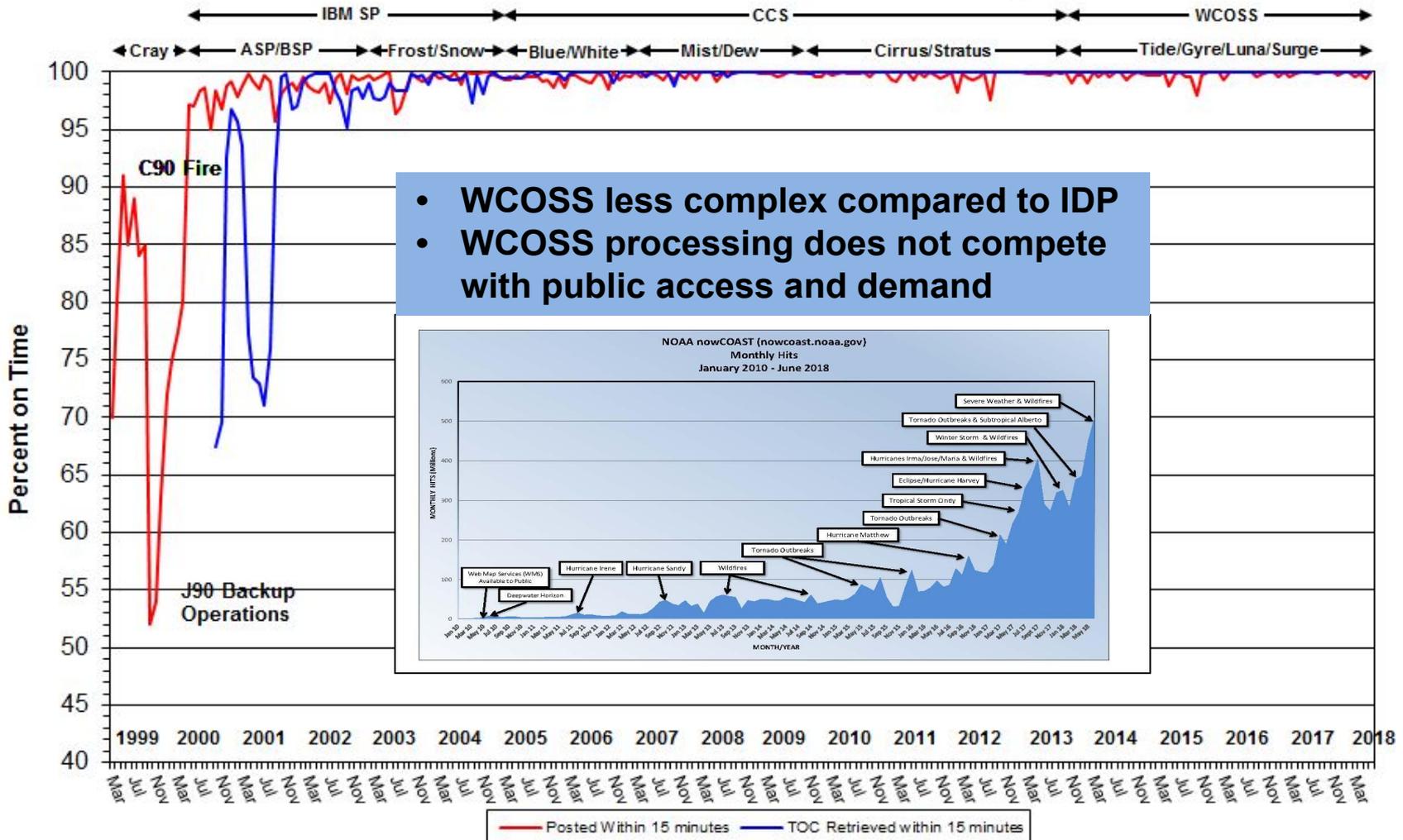

Product Generation Summary

- **WCOSS less complex compared to IDP**
- **WCOSS processing does not compete with public access and demand**

Integrated Dissemination Program (IDP)
Long-Term Sustainable Solution
(as of August 2018)

Current Functionality at IDP College Park Future Functionality at IDP Boulder

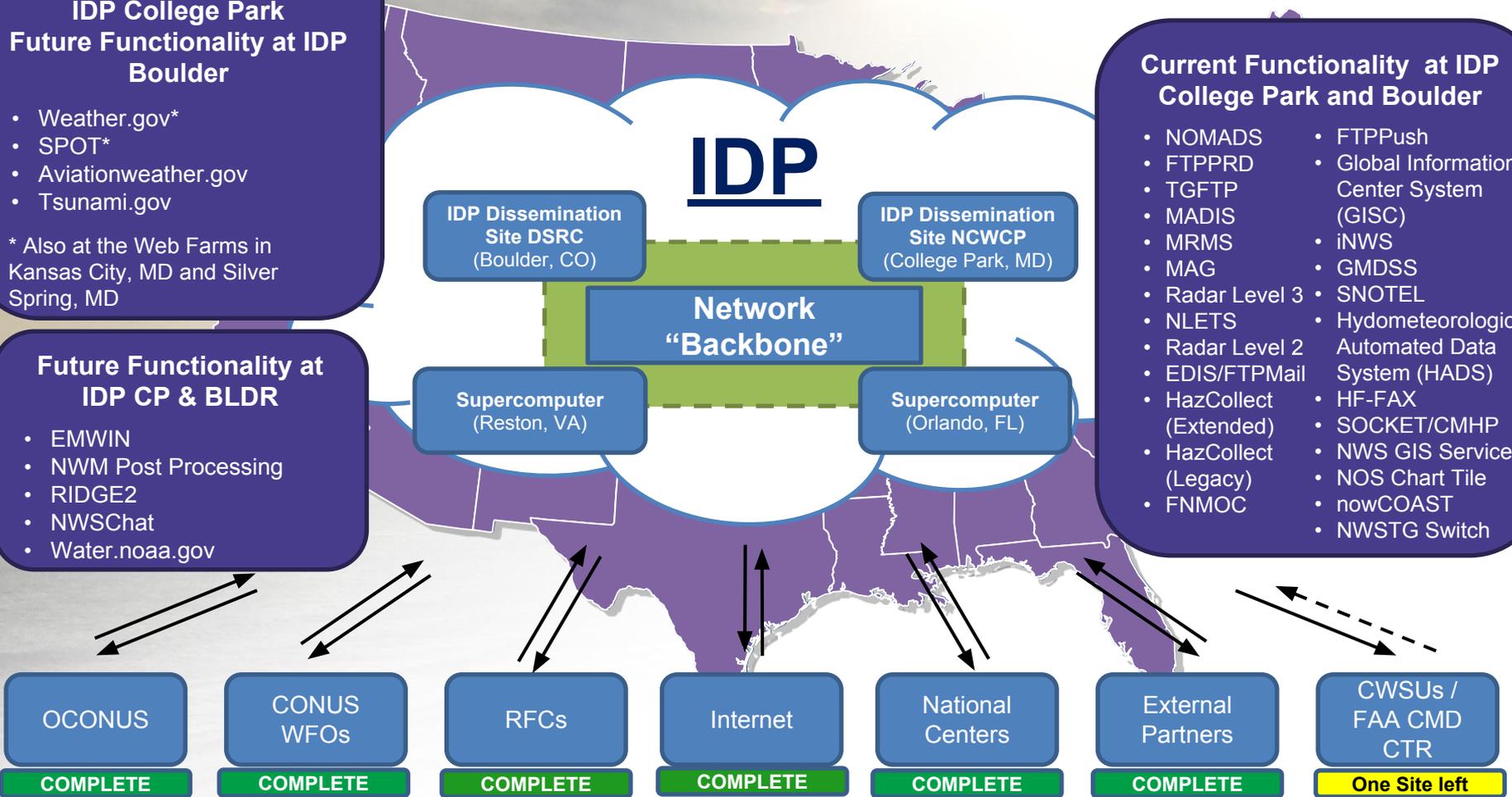- Weather.gov*
- SPOT*
- Aviationweather.gov
- Tsunami.gov

* Also at the Web Farms in Kansas City, MD and Silver Spring, MD

Future Functionality at IDP CP & BLDR

- EMWIN
- NWM Post Processing
- RIDGE2
- NWSChat
- Water.noaa.gov

IDP

| IDP Dissemination Site DSRC (Boulder, CO) | | IDP Dissemination Site NCWCP (College Park, MD) |

Network "Backbone"

| Supercomputer (Reston, VA) | | Supercomputer (Orlando, FL) |

Current Functionality at IDP College Park and Boulder

- NOMADS
- FTPPRD
- TGFTP
- MADIS
- MRMS
- MAG
- Radar Level 3
- NLETS
- Radar Level 2
- EDIS/FTPMail
- HazCollect (Extended)
- HazCollect (Legacy)
- FNMOC
- FTPPush
- Global Information Center System (GISC)
- iNWS
- GMDSS
- SNOTEL
- Hydrometeorological Automated Data System (HADS)
- HF-FAX
- SOCKET/CMHP
- NWS GIS Services
- NOS Chart Tile
- nowCOAST
- NWSTG Switch

OCONUS	CONUS WFOs	RFCs	Internet	National Centers	External Partners	CWSUs / FAA CMD CTR
COMPLETE	**COMPLETE**	**COMPLETE**	**COMPLETE**	**COMPLETE**	**COMPLETE**	**One Site left**

"OneNWS" Network
The OneNWS Network consolidates all operational networks (OPSnet, Regional, etc.) as a single managed network under NCEP Central Operations (NCO).

August 2018 Status of IDP Applications

Currently Being On-boarded

Successfully Onboarded

- EMWIN
- NWM Post Processing
- RIDGE-2

L-band (1692.7 MHz)
19.2 KBPS
OQPSK, FEC

SES-1: SBN / NWWS

Future Functionality at IDP CP & BLDR

- Water.noaa.gov
- NWSChat

Future

Current Functionality at IDP College Park
Future Functionality at IDP Boulder

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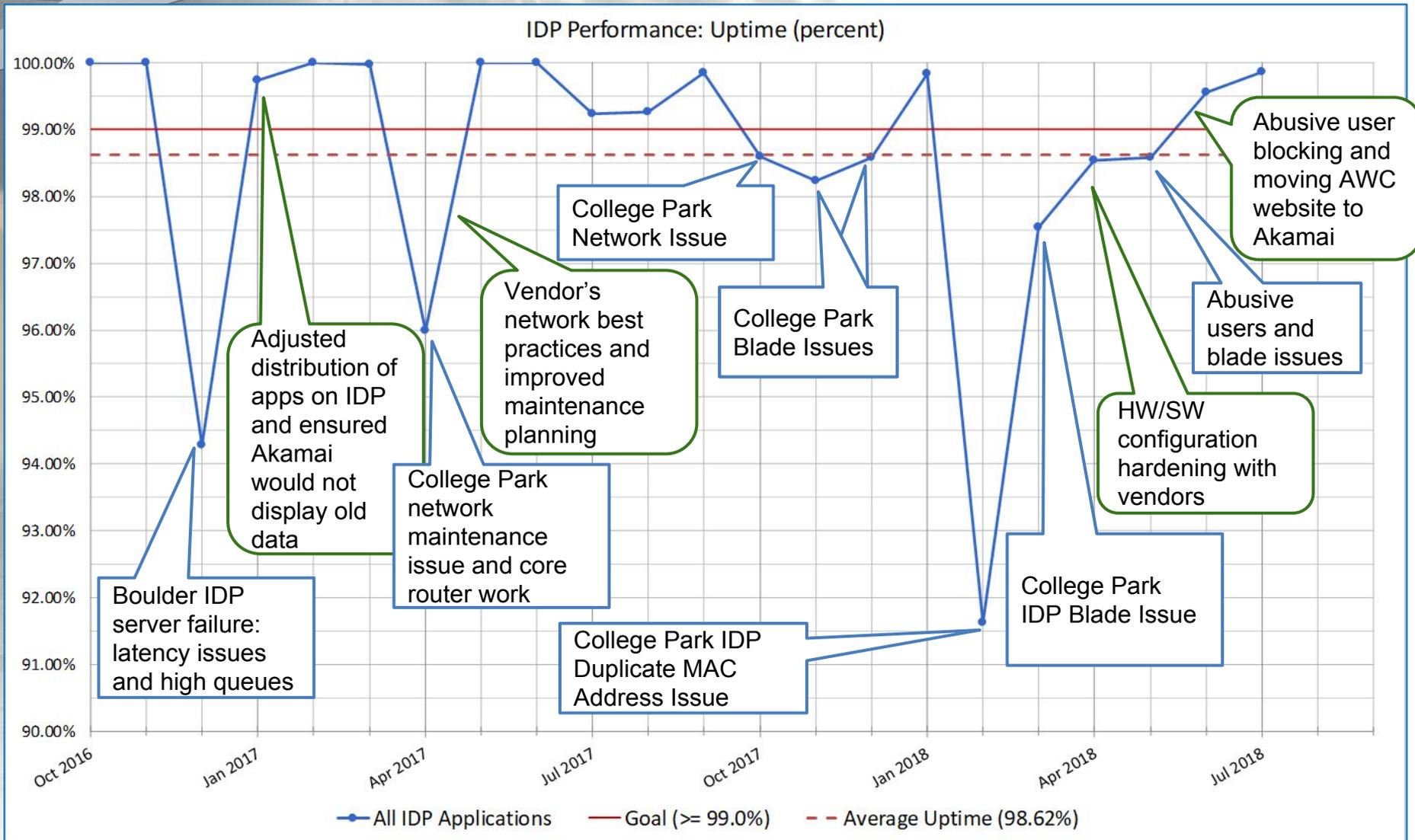- SPOT*
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IDP Monitoring & Data Availability

IDP Performance: Uptime (percent)

Abusive user blocking and moving AWC website to Akamai

College Park Network Issue

Vendor's network best practices and improved maintenance planning

College Park Blade Issues

Abusive users and blade issues

Adjusted distribution of apps on IDP and ensured Akamai would not display old data

College Park network maintenance issue and core router work

HW/SW configuration hardening with vendors

Boulder IDP server failure: latency issues and high queues

College Park IDP Duplicate MAC Address Issue

College Park IDP Blade Issue

Legend: All IDP Applications — Goal (>= 99.0%) - - Average Uptime (98.62%)

Reporting: 301-713-0902 - TOC.nwstg@noaa.gov or 301-683-1500 - SDM@noaa.gov
Escalation: Ben Kyger, NCO Director - Ben.Kyger@noaa.gov

NWS Response:
Managing issues across multiple dimensions
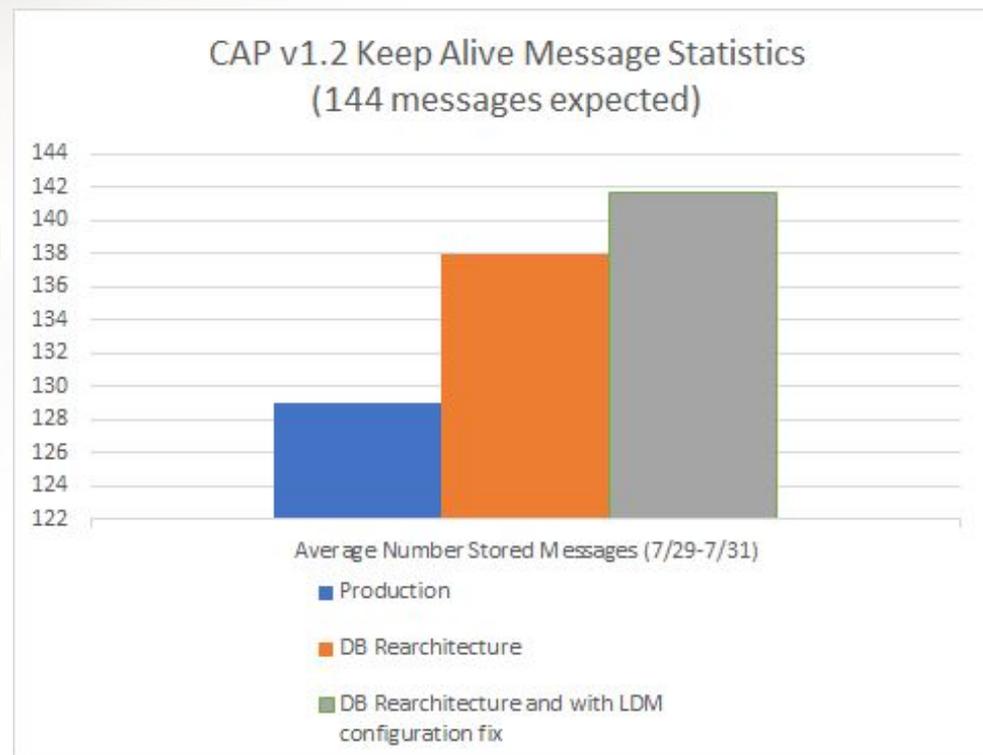
Technical	Engaging with vendors to harden configurations	• April 2017 - Cisco recommended core router configuration • April 2018 - Implemented Cisco (network), Dell (hardware), VMWare (middleware), RedHat (OS) recommendations
	Load Balancing	• Jan 2017 - Adjusted distribution of apps • May 2018 - Blocked abusive user • June 2018 - Moved Tsunami.gov and Aviationweather.gov to Akamai
Process	Slowed on-boarding	• Jan 2017 - Reduced number of concurrent applications being on-boarded
	Lessons learned	• Conduct internal reviews after every major outage • Update procedures as needed
	Monitoring improvements	• Address monitoring gaps when discovered
	Daily reporting	• NWS Status meeting with NWS Leadership • Review Senior Duty Meteorologist (SDM) 24-hour logs
	Issue tracking	• Track "Open Items" in SDM log until addressed • Configuration Management tracking changes
Resources	Realign resources for O&M	• Track and prioritize System Administration resources

Weather Dissemination Chain
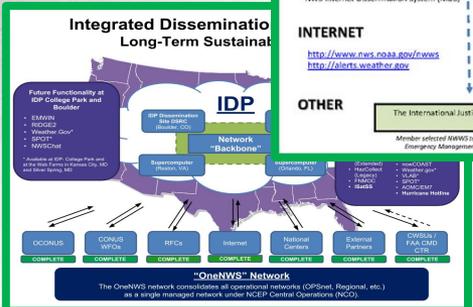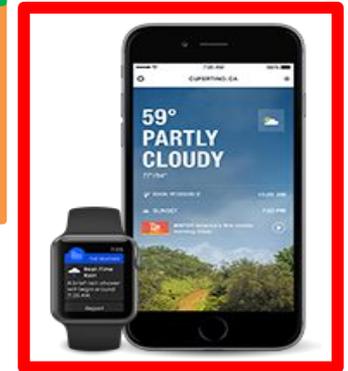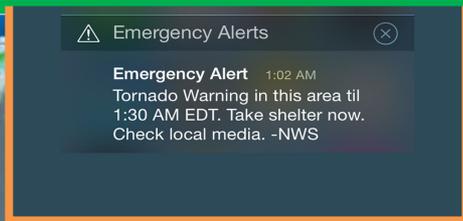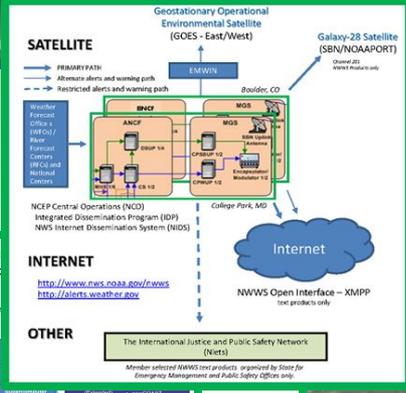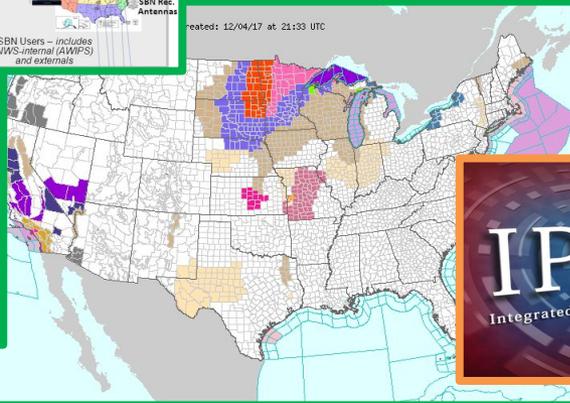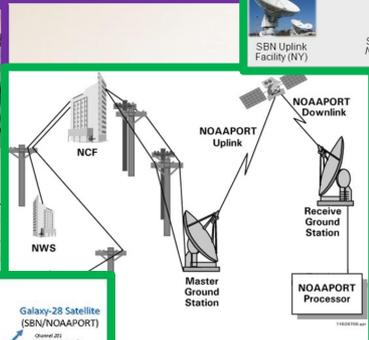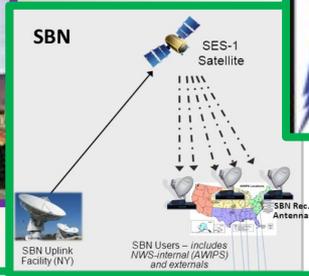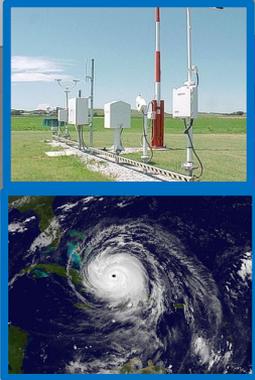
Partnering to Achieve the Full Weather Dissemination Chain

- **Collaboration with Weather Enterprise to address Common Alerting Protocol v1.2 issues**
  - ○ **Goal: Achieve full operational implementation of CAP v1.2**

  - ○ Status:
    - ■ Currently working with vendors to address dropped CAP v1.2 formatted warnings. Updated database; investigating a solution to an LDM / queueing service issue

CAP v1.2 Keep Alive Message Statistics
(144 messages expected)

Average Number Stored Messages (7/29-7/31)
- ■ Production
- ■ DB Rearchitecture
- ■ DB Rearchitecture and with LDM configuration fix

Partnering to Achieve the Full Weather Dissemination Chain

- **Collaborating with FEMA to improve the delivery of Emergency Weather Messages and Non-Weather Emergency Messages via FEMA IPAWS and EAS**

- **Advancing NOAA Weather Radio**

    - Short-Term Goals:

        - Deploy 30 IP-based circuits to replace obsolete and discontinued analog circuits

        - Enable broadcast "null" message notifying customers when connectivity to transmitter is lost

    - Long-Term Goal:

        - Transition to IP-based technology, where possible, to enable backup NWS offices to continue to issue warnings and products over NWR transmitters when the primary office is unable to perform forecast and warning operations.

Partnering to Achieve the Full Weather Dissemination Chain

- **Full Weather Dissemination Chain Testing**

  - ○ **Goal:** Regular, well-advertised, no-harm testing
    - ■ NWS would like to coordinate with the entire dissemination chain to conduct a full end-to-end test of our warning through all delivery channels.

  - ○ **Goal:** Mitigate message truncation issues
    - ■ Begin change process to move VTEC code to earlier in message with a request for public comments

THANK YOU!

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