Summer Partners Meeting

NWS Provision of Impact-Based Decision Support Services (IDSS)

August 1, 2017

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Agenda

- Preview: Input and Discussion areas
- Policy Context for IDSS
- Evolving NWS to Build a Weather-Ready Nation (WRN)
- IDSS Policy and Service Guidelines
- Who Receives NWS IDSS
- NWS Service Levels
- Discussion
- Next Steps
- Vignettes

Preview: Input/ Discussion Areas

- How can Enterprise partners contribute to NWS IDSS implementation efforts? E.g., tools, technology, performance measurement

- How can Enterprise partners expand Weather-Ready Nation efforts? E.g., Inform the public, target new customers

- Input on IDSS and Deep Relationship Core Partner Philosophy

Policy Context for IDSS
Legal Authorities/Statutes

- Weather Research and Forecasting Innovation Act of 2017 - Public Law (No: 115-25)
    - Focus on key government partners who share similar objectives
    - Interact with partners at highest level, reaching as many as possible who are potentially in harm's way
    - Focus on ensuring public safety
    - Support Disaster Management efforts of federal, state, local, tribal and territorial governments
- Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) - DOC/NOAA has statutory requirement to support the Emergency Management community

Policy Context for IDSS
What IDSS Is

IDSS - The provision of relevant information and interpretative services to enable core partners' decisions when weather, water, or climate has a direct impact on the protection of lives and livelihoods

Core Partner - Government and non-government entities who are directly involved in the preparation, dissemination and discussions involving weather, water, or climate related National Weather Service information that supports decision making for routine or episodic, high impact events

Policy Context for IDSS
Types of IDSS

- Episodic IDSS
  - Support to core partner for a particular event/incident
  (Ex. webinars, NWSChat, on-site deployment)

- Recurring IDSS
  - Ongoing support to (a subset of) core partners <u>throughout the year</u> to improve partner mitigation, preparation, response, and recovery related to event/incidents; or to support routine-high value decisions
  (Ex. joint training, scenario planning, table-top exercises, and daily coordination regarding routine high-value decisions such as aviation operations or reservoir releases)

Evolving NWS to Build a WRN

The Need for Change
- Congressionally Mandated Studies (NAPA, NAS)
- Service Assessments

Operations and Workforce Analysis
- Internal and External Review OHI and FEVS detailed study
- External assessment
- Idea generation
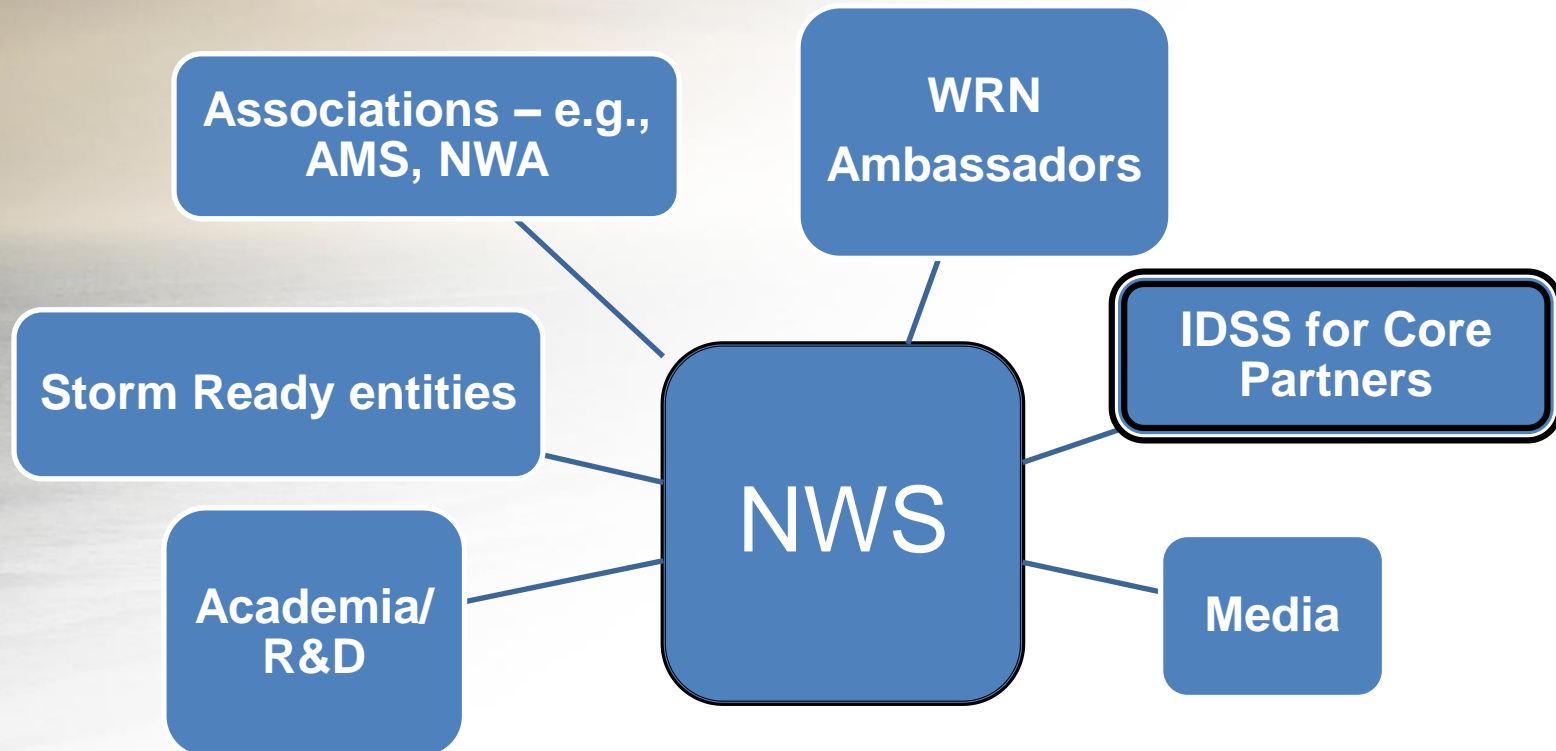- Actionable ideas
- Senior leadership prioritization

EVOLVE Implementation
- Unified Program Management Office
- Five Evolve Objectives
- Focused implementation efforts

Evolving NWS to Build a WRN Interaction with Enterprise Partners

- Many critical areas of NWS interaction with Enterprise partners in building a Weather-Ready Nation
- Focus of IDSS is helping core partners make their decisions

Associations – e.g., AMS, NWA

WRN Ambassadors

Storm Ready entities

IDSS for Core Partners

NWS

Academia/R&D

Media

Evolving NWS to Build a WRN
Enhancing IDSS Quality/Consistency

Five Evolve Objectives, each containing a set of Initiatives:

✓ **Enhancing quality and consistency of IDSS**

✓ Build a workforce to deliver science based services

✓ Improve effectiveness of forecasting in support of IDSS – the Collaborative Forecast Process (CFP)

✓ Match workforce to workload

✓ Support Innovation Science and Technology

⟹

Enhancing Quality and Consistency of IDSS

✓ IDSS Policy
✓ IDSS Training
✓ IDSS Planning and Core Service
✓ IDSS Measuring Impact
✓ Impacts Catalog

Evolving NWS to Build a WRN
Enhance IDSS Quality/Consistency

Goal

Enhancing the ability to provide accurate, consistent, timely, and relevant IDSS throughout all Field Offices and levels of the organization

Initiatives

IDSS Policy

Agency understanding of Core and Deep Relationship Partner definitions and policy issued accordingly

IDSS Planning and Core Service Level

Implement IDSS Core Service Level Planning and Minimum IDSS Service Level Standards

IDSS Training

Provide the resources needed for an effective release of the IDSS Professional Development Series

Impacts Catalog

Centralized database of NWS Core Partner decision and contact information to support increased NWS IDSS consistency, situational awareness, and alert capabilities

Measuring IDSS Impact

Develop and test a set of internal and external performance measures that effectively communicate service quality of NWS IDSS to partners

Evolving NWS to Build a WRN
IDSS Planning and Core Service Level

- OWA finding: IDSS delivered inconsistently and to varying degrees across the Field

  - Inconsistency in IDSS levels among neighboring WFOs

- Bringing all Field Offices and Centers to a minimum IDSS baseline & performance level

- Establishing IDSS templates

  - Field Offices identifying partners and plans to serve from pre- to post-event

  - Building a baseline IDSS look and feel

Evolving NWS to Build a WRN
Major Pieces to Building Consistency

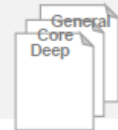| Partner onboarding	Training and resources	Recurring	Episodic
Onboarding checklist	**IDSS online portal/google page**	**Shift checklist**	**WX story template**
To ensure that every partner has our contact information, is subscribed to email notifications, has access to iNWS.	A location to access graphics, webinars, calendars, and the latest Deployment-Ready training status.	A checklist to run through at the beginning of each shift to review major upcoming events and deploy staff	A consistent, professional power-point slide that offices can utilize for high impact weather messaging and graphic generation.
Onboarding script	**IDSS Guidebook**	**IDSS desk duty checklist**	**Email briefing templates**
With the major talking points around what is the NWS and the range of services we can provide.	To ensure that offices have other IDSS successes to leverage and also material for simulations, tabletops, and exercises.	A list of items that are routinely covered for IDSS during each shift. Includes triggers for episodic IDSS duties.	A template that outlines how to deliver a concise, effective high impact weather briefing via email.
Onboarding partner form	**NWS 101 presentation/ template**	**Deployment checklists**	**Playbooks**
To ensure partner's contact information is clear and to allow partners to have reference of the services we provide.	An IDSS-focused presentation with talking points to give to new partners.	Lists of the items that are required to be used by an employee that deploys.	Guidelines on how to provide IDSS for episodic (oil spill) and planned (Super Bowl) events.

Evolving NWS to Build a WRN
IDSS Training and Development

- Building proficiencies in delivering and providing IDSS
- Whole-office concept of understanding and competency in IDSS
- Strengthening our ability to provide onsite support when needed
  - Establishing a Deployment-Ready program

Evolving NWS to Build a WRN
Training Program: *IDSS <u>is</u> a Skill*

Introduction to IDSS
<u>For all NWS personnel</u>

IDSS Baseline Training
<u>For Operational NWS personnel</u>

IDSS/ICS Foundation
Partner-focused Support
Effective Communication

Deployment Training
<u>Optional for NWS Employees</u>

Preparing for Deployment
Communicating During Deployment
Risk Assessment & Deployment Tools
Exercises and Evaluation

Deployment Endorsements

Deployment for Complex Incidents
Deployment Endorsements

Evolving NWS to Build a WRN
Impacts Catalog (IC)

- Centralized database of NWS Deep Core Partner decision and contact information to support increased NWS IDSS consistency and situational awareness

Potential IC Capabilities:

Event/impact database to increase forecaster situational awareness to notify deep core partners of threatening conditions

Hazard alert functionality (internal and possibly external)

Provide customer development and support metrics – logging and tracking deep core partner activities and IDSS feedback

Centralized database allows continuity in providing IDSS during office backups

Evolving NWS to Build a WRN
Measuring IDSS Effectiveness

- Establishing the process to review and ensure internal IDSS performance levels
- Identifying and measuring external IDSS performance
  - What is the impact of IDSS on partner actions and ultimately protection of lives and livelihoods?
  - Moving beyond measuring success based on POD, FAR, and lead time
- Weather Enterprise contribution to decision making
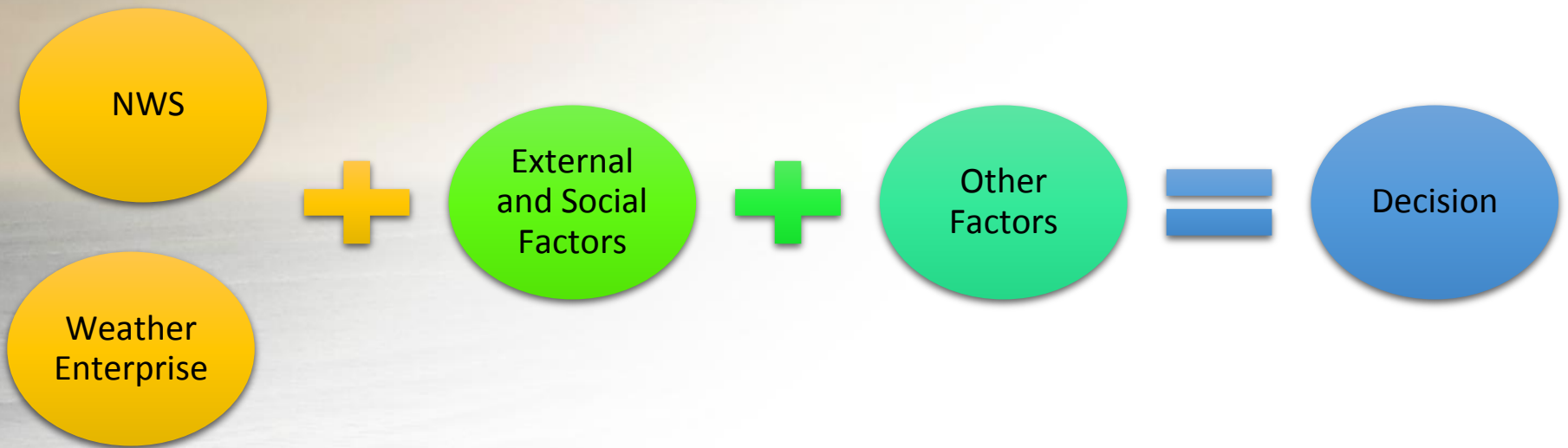 - Decision feedback can benefit all

Los Angeles County Public Works deploying K-Rails below burn area prior to expected heavy rains (Photo credit: Getty Images)

Evolving NWS to Build a WRN
What Do We Consider a Success?

Partner and ultimately public response depends on numerous factors

NWS

Weather Enterprise

$+$

External and Social Factors

$+$

Other Factors

$=$

Decision

Greater emphasis on understanding societal response factors

Evolving NWS to Build a WRN Discussion

How can Enterprise partners contribute to IDSS Evolve efforts?

IDSS Policy and Service Guidelines Focus Areas

- Building internal NWS and external Enterprise understanding of Core and Deep Relationship Partner definitions

- Clarification of "gray areas" relating to WHO will be provided IDSS

- Policy issued accordingly

IDSS Policy and Service Guidelines Background

- 2013 - Partners and NAPA Report express need for additional clarity on Impact-based Decision Support Services (IDSS)

- 2013-15 – Comments collected on Service Description Document (SDD) describing IDSS

- April-May 2016 – Comment/review on IDSS Philosophy framework based on OWA activities

- Recent focus on clarifying "gray areas" -- who is/is not supported by NWS as core partner

- May 2017 – NWS leadership validated guidance for "gray areas"; updated SDD in preparation

IDSS Policy and Service Guidelines
Best Practices for Providing IDSS

- NWS IDSS for EM community focuses on support to government emergency operations, including those ESFs for which NOAA is identified as playing a federal support role

- Recognize that NWS is one provider of services among many Enterprise partners

  - Follow existing guidance – Support for Special Events; Support for State/local DOTs

  - Provide an opportunity for coordination with other service provides supporting our core partners

IDSS Policy and Service Guidelines
Best Practices for Providing IDSS

- Support to non-core partners within ICS context
  - NWS support is focused on our government EMs. Specialized requests are referred to AWCI partners
- Support to non-core partners outside of ICS context
  - General support level only. Refer to AWCI partners for more
  - NWS may consider requests for IDSS to non-core partners, if made by core partner and critical to public safety
- IDSS may be provided either remotely or on-site
  - Local management decision, depending on nature of event and available resources.
  - Deep relationship core partners will have more instances of on-site deployment or full-time embedding

IDSS Policy and Service Guidelines
Best Practices for Providing IDSS

- Decision-specific information
  - NWS may provide decision/event-specific information to core partners to meet their immediate needs.
  - As resources allow and if safety/security considerations don't prohibit, these enhanced data/products will be made available for broader distribution (e.g., via NWS webpages, NWSChat)
  - If a new/enhanced product/service is expected to be used in the future, standard NWS policy will apply (experimental comment/review period)
- Training will focus on consistency of messaging between local/national offices and any deployed staff

IDSS Policy and Service Guidelines
Guiding Principles for IDSS

Weather Act Context:

- Focus on supporting key government partners
- Interact at highest level with greatest impact
- Ensure Public Safety
- Support Disaster Management

Weather Enterprise Context:

- Recognition that Enterprise may serve same partners
- NWS Needs to be Flexible

Who Receives NWS IDSS Clarifying Core Partner Categories

- <u>Emergency Management Community</u> – identify "emergency management function" in various sectors

- <u>Water Resources Management Community</u> – define new core partner category to characterize current support level

- <u>Government partners</u> – identify narrower scope of those supported

- <u>Electronic media</u> – clarify that while media is a core partner, NWS does not provide IDSS to media; may include private weather service providers

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Who Receives NWS IDSS
New Core Partner Category

Water Resources Management (WRM) Community

- Government WRM officials at federal, state, local, tribal, or territorial levels charged with managing the nation's water resources for the public good, including infrastructure (e.g., dams, levees, reservoirs, etc.) supporting these management activities.

- Extends <u>functionally</u> to quasi- and non-government organizations which routinely exercise authorities similar to government WRM officials.

Who Receives NWS IDSS "Gray Areas"

- Gray Areas: Where NWS policy is unclear about who is considered a Core Partner

- Common Gray Areas:
  - Health sector – Hospitals and other public health entities
  - Utilities and infrastructure providers
  - Education sector – K-12 and college/universities
  - Non-government organizations

Who Receives NWS IDSS Validated NWS Guidance

Sector	Considered Core	Not Considered Core
Education	[EM Community] Emergency management function for a school district or college/university	Other personnel within a school district or college/university who request support which does not fall under the umbrella of protection life/property as a public safety function (e.g., individual teachers/professors, transportation depot, grounds operations, event organizers, venue operators)
Health	• [EM Community] Emergency dispatch centers • [EM Community] EM function of hospital/long term care facilities (upon request of deep core partner) • [Gov't Partners] Federal/State/local depts of health (public health and health care related)	• EMS/ambulance/paramedic personnel • All other care facilities (urgent care, clinics, surgi-centers, etc.)

Who Receives NWS IDSS Validated NWS Guidance

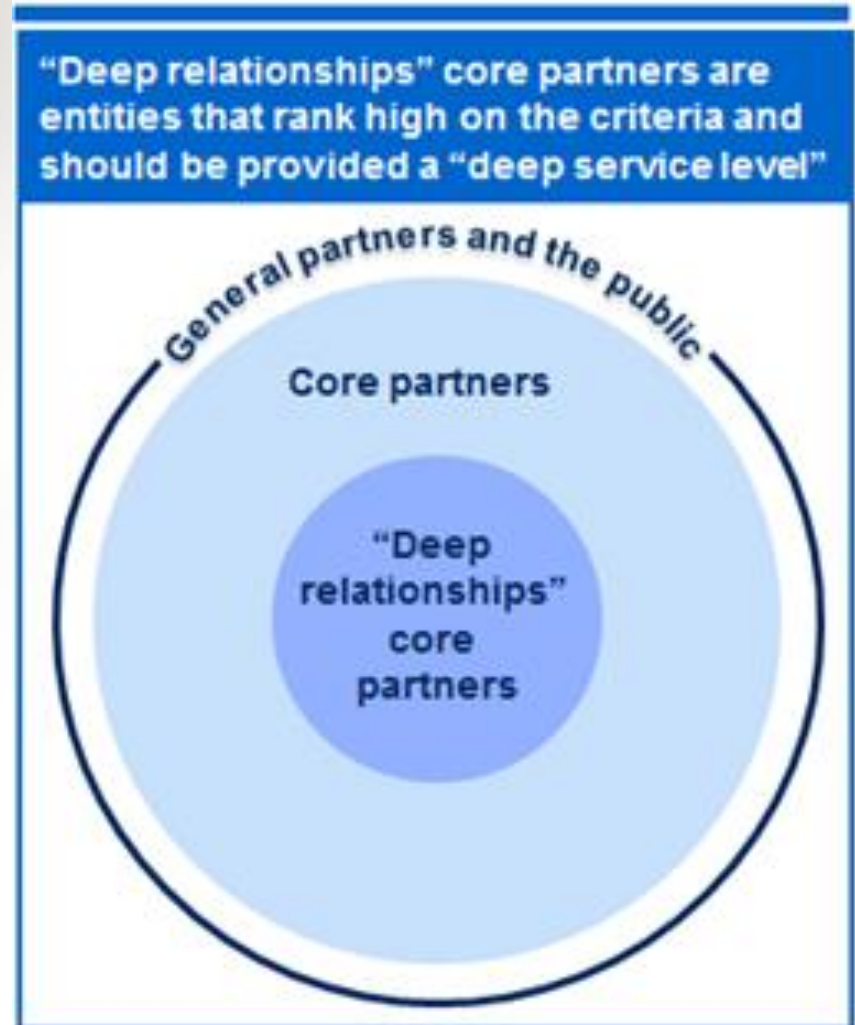| Sector	Considered Core	Not Considered Core
Utilities	• [WRM Community] Utilities that fall within Water Resources Management Community (WRM) (Includes but not limited to hydroelectric power, dam operator, water supply, etc.) • [EM Community]The EM function of other utilities may be core in very rural locations, considered "market failures."	Other Utilities not part of Water Resources Management Community : • Includes phone, electric, wind, solar, etc. where NWS is jointly interacting with utilities as part of overall support to EM community in response to an event/incident impacting public safety.
VOADs/ COADs/ NGOs	• [EM Community] If/when working within ICS coordination structure or is a non-profit entity with a specific MOU in place to provide support	All others

Who Receives NWS IDSS Validated NWS Guidance

Sector	Considered Core	Not Considered Core
Govern-ment	• [Gov't Partners] Federal, state, local, tribal, territorial government organizations o Limited to organizations with existing nexus of allied mission or critical interdependency on each other's data/actions which impact the missions of both organizations • [Gov't Partners]Includes international governments and organizations where existing formal agreements are in place for NWS to provide a specialized level of support. • [Gov't Partners]Quasi-government (quasi-private) organizations - may receive core level service if the organization's primary mission responsibility is related to public safety.	• Those government organizations with no mission nexus
Private Sector	• [Electronic media] - No IDSS provided. May include private weather service providers who routinely and rapidly relay NWS alerts to a large segment of an office's area • [WRM Community]- Utilities, (e.g., private dam operator)	• Most private sector entities are not considered core partners (e.g., businesses, resorts, farmers, shipping, airlines (unless per FAA direction))

NWS Service Levels

- General Partners
- Core Partners
- Deep Relationship Core Partners

"Deep relationships" core partners are entities that rank high on the criteria and should be provided a "deep service level"

General partners and the public

Core partners

"Deep relationships" core partners

NWS Service Levels
How Service Levels Differ

General Partner/Public (General Level of Support)	Core Partner (Focus on Episodic IDSS)	Deep Relationships Core Partner (Added focus on Recurring IDSS, deployment/embedding)
• General forecasts/ warnings via standard NWS dissemination media • Response to calls from the public • Education about how to access and interpret NWS data/products • Outreach/interaction for preparedness • Interaction as part of NWS StormReady program and NOAA WRN Ambassador Initiative	• Pre-event webinar/ conference call • iNWS; NWSChat • Spot forecasts; plume modeling; event-specific display • Annual training/exercises • Occasional on-site deployment	• Recurring specialized briefings/forecast to support routine high-value decisions (e.g., aviation, reservoir operations) • Multiple pre-event planning/ exercises • Recovery activities • After-action reviews • On-site deployment/ embedding more often

IDSS

NOTE: Media may be included in NWS interactions related to IDSS (core or deep relationship core), but NWS doesn't provide decision making support (IDSS) to the media

NWS Service Levels
How to Identify Deep Core Partners

- Must be within core partner definition

- Must be a core partner that receives IDSS

- Local office makes determination based on:
  - Comparative assessment on common criteria
    - Legal mandate or national security concern
    - Degree of authority on public safety or WRM decisions
    - Vulnerability of population served
    - Ability to amplify NWS message to other partners
  - Level of service needed to meet user need

Next Steps

- Update to Service Description Document (SDD) is in preparation

- Internal NWS and legal review

- Update IDSS training materials with "Gray Area" guidance

- Development of internal policy and implementation documents underway with SDD as basis

Discussion

Any additional input on IDSS and Deep Relationship Core Partner Philosophy?

IDSS Vignettes

- US Open Golf Tournament (June, 2017)
- Norman Regional Health System
- NWS Support to Education Sector
- NWS Support to Utah DOT

IDSS Vignettes
2017 US Open Golf Tournament

- Two on-site NWS MKX meteorologists in Joint Operations Center (per request by Washington County EM) serving EM, State Patrol, Wisc DOT, & hospital liaison group
  - 45,000+ people spread out and far from parking
  - Main threats were lightning, wind (hospitality tents), heat exposure
- Private company, Thor Guard, contracted by USGA for lightning detection and wind/rain forecasts to help w/ course management (placement of pins/tees)

IDSS Vignettes
Norman Regional Health System

- Hospital System in Norman/Moore area receiving IDSS for coordination as well as preparedness outreach
  - Several POCs on WFO Norman email/webinar list; primary contact is Director of Safety, Security, and Emergency Preparedness
  - Weekly weather webinars & special significant event webinars
  - Participate in Integrated Warning Team (IWT) workshops

- WFO also works with other gov't agencies affiliated w/ health services
  - OK Health Department's Regional Medical Response System Coordinators
  - Medical Emergency Response System Coordinator

IDSS Vignettes
NWS Support to Education Sector

Central Iowa schools – NWS provides remote briefings/email to over 750 school superintendents.
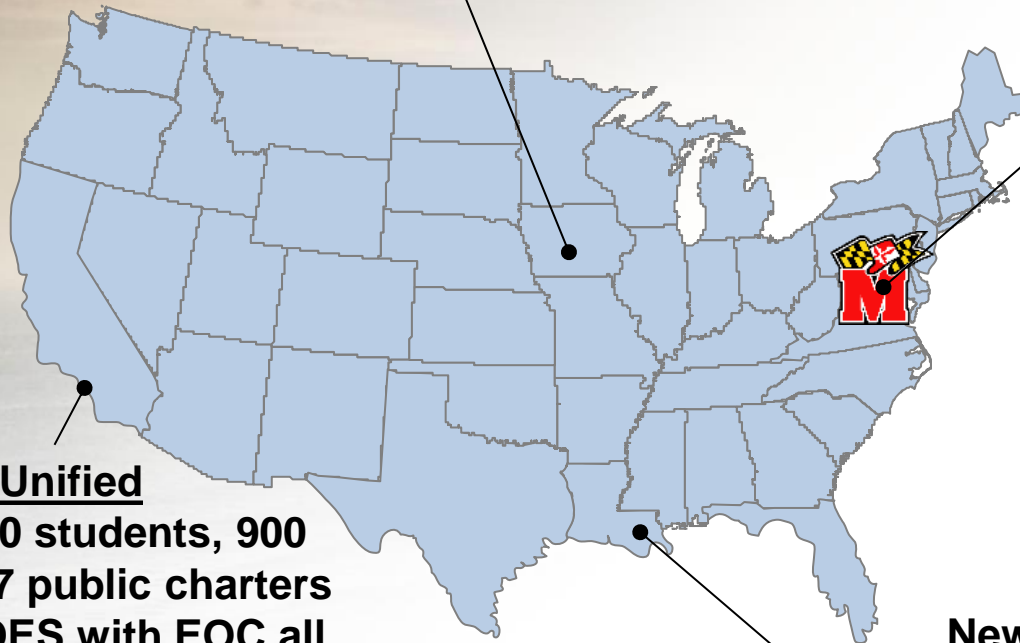
University of MD College Park
- **University has private weather services support**
- **University EM included in NWS event-specific emails, webinars**
- **Works with NWS on preparedness**

Los Angeles Unified
- **Over 640,000 students, 900 schools, 187 public charters**
- **Dedicated OES with EOC all within Division of District Operations**
- **School district EM included in NWS event-specific emails, webinars**

New Orleans - **Local emergency management communicates weather updates to schools; told to shelter in place during Tornado Warnings**

IDSS Vignettes
NWS Support to Utah DOT

- Multi-partner collaborative environment
  - NWS WFO Salt Lake City
  - Utah Department of Transportation
  - Weathernet, LLC

- Focus on consistency of public messaging on event timing and impacts
  - NWS text products, Weather Story graphic, and social media
  - UDOT Variable Messaging Signs, Road Weather Alert graphics, 511 service, and social media
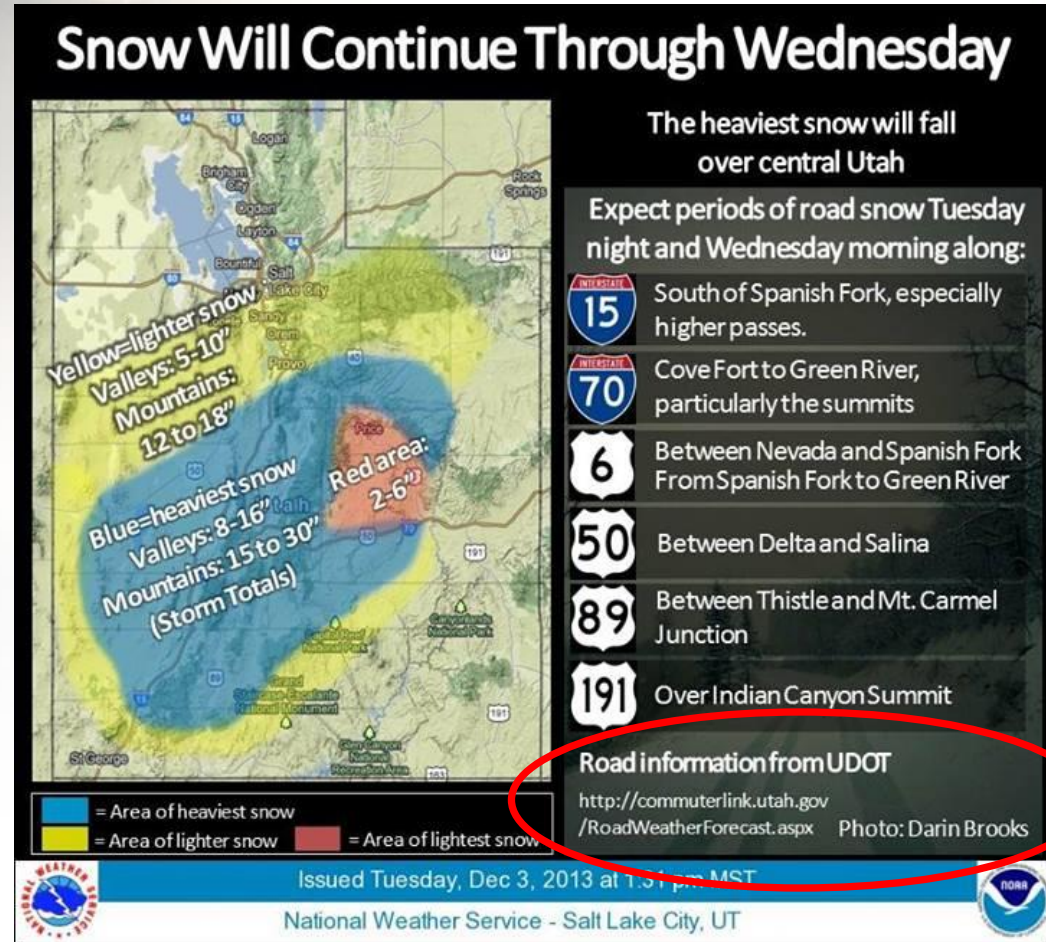

NWS Weather Story Graphic

IDSS Vignettes
NWRFC IDSS for Hydroelectric Utilities

- Rely on NWRFC IDSS to guide day-to-day operations and inform planning decisions (e.g., reservoir releases).
- Support areas needed:
  - hydropower generation
  - flood prevention /mitigation
  - drought mitigation
  - water resource management
- Decision-making based on:
  - River / Reservoir / Natural Flow Forecasts
  - Water Supply Forecasts
  - Natural Runoff Estimates
  - Weather Summary Graphics
- These utilities provide NWS with critical data
  - Gage output
  - Reservoir inflow data
  - Planned reservoir releases
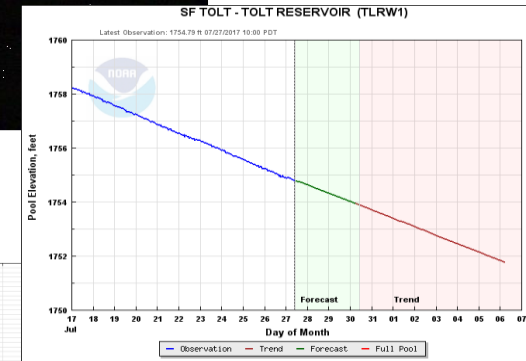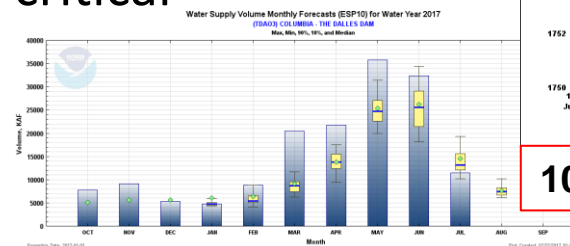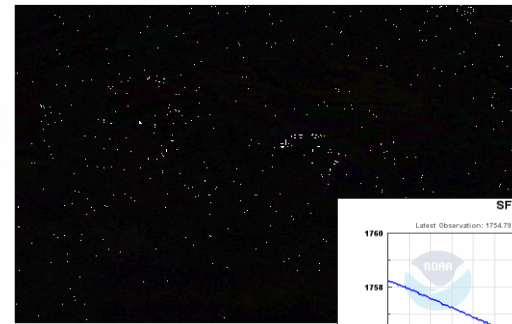
10 Day Pool Elevation Fcst

Water Supply Forecast and Obs Runoff