



# NWS Hazards Simplification Project:

## *Repair? Reword? Revamp?*

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NWS Partners Meeting  
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# Briefing Outline

- The Watch, Warning and Advisory System (WWA): What are the issues?
- Feedback to date
- Updated Roadmap & Next Steps:
  - *What are the “3 Rs”?*
  - *How will they fit together?*



# What Are The Issues?

## Orthogonal Logic

*"How far in advance can I issue this?"*



**WATCH**

*"Watch out!"*

*"WA-WA!"*

*"Is this a downgrade?"*

**WARNING**

*"Which is worse?"*

**ADVISORY**

*"You're advising me to do - what?"*

Fixed Impact, Increasing Certainty

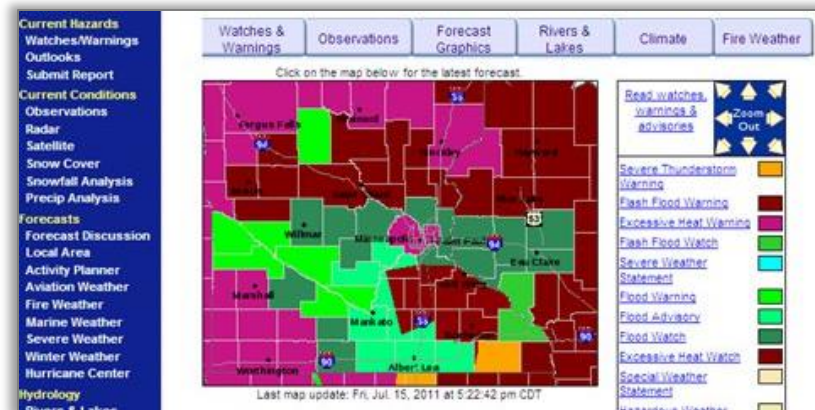
Fixed Certainty, Increasing Impact

# What Are The Issues?

## Multiple Products

- We often replace one WWA with another:

***FREEZING RAIN ADVISORY IS CANCELLED...WINTER WEATHER ADVISORY IN EFFECT UNTIL 9:30 PM...***



- And we also often upgrade/downgrade

***ICE STORM WARNING IS CANCELLED...FREEZING RAIN ADVISORY IN EFFECT UNTIL 6 PM SUNDAY...***

# **What Are The Issues?**

## **What About WWA Works Well?**

- **The term “warning” is key to our mission**
- **In some areas, the terms are ingrained and well understood:**
  - **Hurricanes**
  - **Tornadoes**
- **Accordingly, some forecasters and stakeholders may feel some products are already effective and needn't be changed**

# Feedback

## “Homegrown” Winter Weather Demo (2011-12)

**WATCH:** “NWS Forecasts the Potential for”

**ADVISORY:** “NWS Advises Caution for”

**WARNING:** “NWS has issued a Warning for a Dangerous”

## 2014: 20 Groups in 4 Cities

- Anchorage, Minneapolis, Houston, DC/Baltimore
- Broadcasters/Media, EMs, NWS Staff
- Two randomly selected public groups



# Preliminary Feedback (Cont.)

## AMS 2015

- AMS Commission on Weather Water and Climate Enterprise
- Haz Simp Town Hall
- Survey at “WeatherFest” and conference booth



# Recurring Themes From Feedback

- WWA terms: A spectrum of understanding
- Support for a color and/or numbering scheme, and symbols
- “Advisory” is generally *misunderstood*; “Watch” and “Warning” are sometimes confused
- Support for an “Emergency” tier for *“This one is different!”*
- “Is there anything you can do *quickly?*”
- Results indicating “more change” statistically significant
  - *But not yet generalizable across all populations*



# Project Goals

- **Improve User Risk Assessment**
- **Expand User Awareness**
- **Foster User Comprehension**
- **Provide Maximum Forecaster Flexibility**
- **Enable Rapid Partner Decision Making**
- **Create a Credible, Consistent Framework**



# **What We're Doing Now**

## **Internal and External Case Study Survey**



- Internal NWS survey completed on perceived strengths, weaknesses of WWA along with ideas for improvement
  - *Analysis of responses underway*
- External survey (similar focus) open until August 15
  - *Still an opportunity for partner feedback!*
  - *Over 500 surveys collected as of the end of July*
  - *Different survey branches for different partners*

# Case Study Survey



**IDEAS**

## ■ Key questions:

- Describe weather situation, your thought processes, products issued. Did WWA products appropriately convey the event?
- What were the hazard messaging challenges or limitations in using WWA for this event (or for this type of event in general)?
- Your ideas on how to resolve issues you see with WWA?

# What We're Doing Next

## ***Haz Simp Workshop: Oct. 27-29***



- Survey Results Will Go To Good Use!
- Public Information Statement to be sent 8/4; partners welcome to participate (*first-come, first-served due to limited seating*)
- Attendees to consist of NWS, EMs, broadcasters, social/behavioral scientists and other Enterprise partners.
- Attendees will review survey results and address 2 of the “3 R’s”: ***Repair?*** and ***Reward?***

# Introducing the “3 R’s”

- **REPAIR**: WWA product changes that could be implemented quickly via policy change
- **REWORD**: Changes to WWA terminology that could be made via policy change and within existing infrastructure - but that also require more careful consideration
- **REVAMP**: Overhauling and/or revisualizing NWS hazard messaging. Could require major policy and infrastructure change

# REPAIR?



- Are there changes across we can make quickly via simple policy changes? Possible examples:
  - Shorten the message, tighten bulleted text
    - *Reduce length of narratives that lead warnings?*
  - Collapse product suite to reduce confusion
    - *Freezing Rain Advisory vs. Winter Weather Advisory?*
  - Adjust criteria or product usage to better match impact
    - *Codify the use of existing products for sub-advisory cases?*

# **Possible **Repair** Example:**

## ***Does this simplify the message?***

**How we do it now:**

/O.CAN.KOUN.WS.W.0005.000000T0000Z-010129T0000Z/ (P-VTEC line 1)

/O.NEW.KOUN.IS.W.0005.010128T1030Z-010129T0000Z/ (P-VTEC line 2)

**...Winter Storm Warning is Cancelled...**

**...Ice Storm Warning in Effect Until 6pm CST Sunday...**

**NWS currently soliciting feedback on an alternative approach starting this winter:**

/O.UPG.KOUN.WS.W.0005.000000T0000Z-010129T0000Z/ (P-VTEC line 1)

/O.NEW.KOUN.IS.W.0005.010128T1030Z-010129T0000Z/ (P-VTEC line 2)

**...Ice Storm Warning in Effect Until 6pm CST Sunday...**

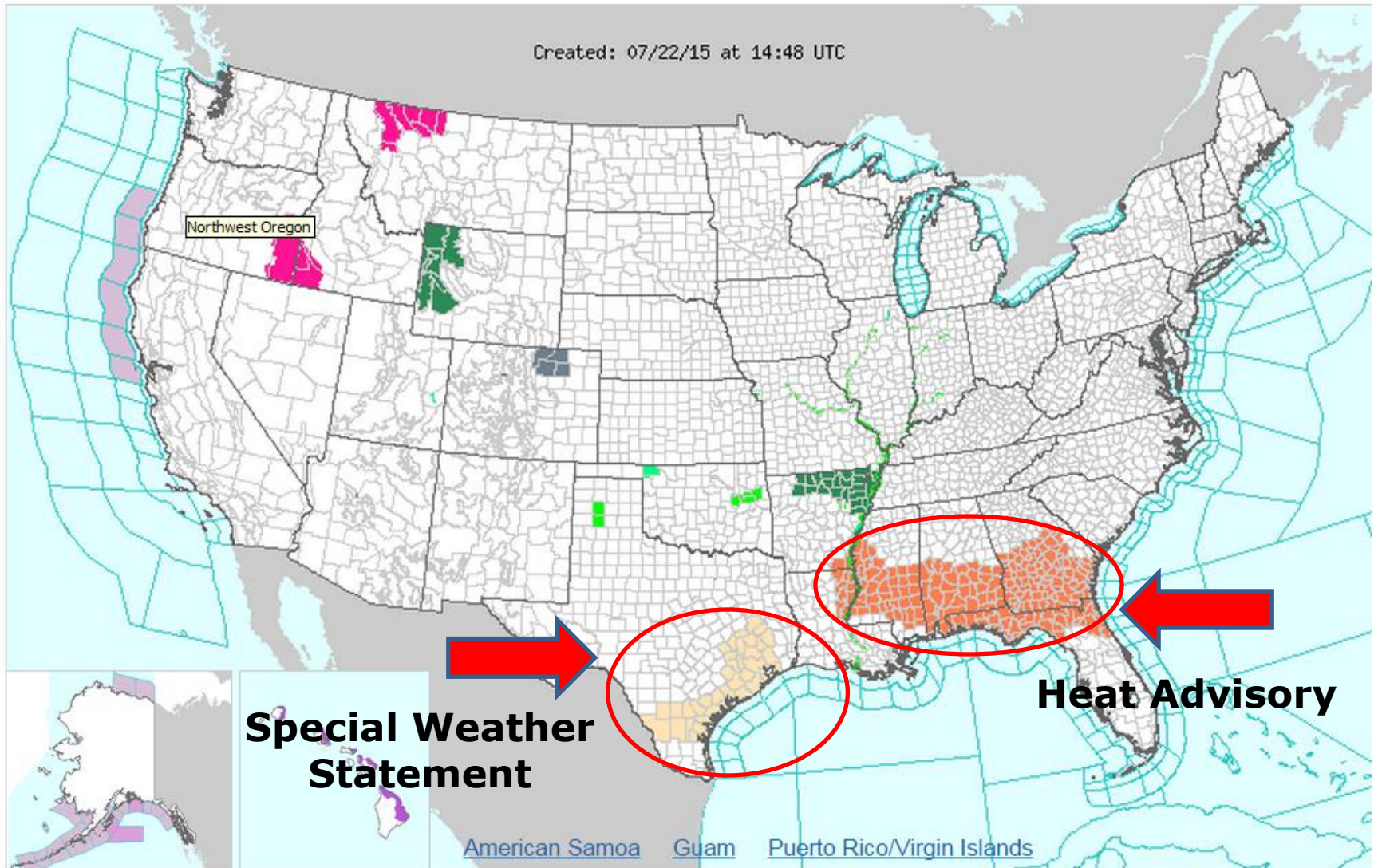
# REWORD?



- Should we consider a name change for the WWA terms themselves? Possible examples:
  - Replace “Advisory” with a different term – or use an existing product to emulate the sense of “Advisory”?
  - Consider an alternative to “Watch” to relieve the “W-A” confusion with respect to “Warning” (alliteration issues)?
  - Consider an enhanced means to convey the sense of “Emergency” within the product suite?



# Possible Reword Example: *Confusion between similar products?*



# Mississippi (Heat Advisory)

**. . . HEAT ADVISORY REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 7 PM CDT THIS EVENING . .**

- \* TEMPERATURES . . . AFTERNOON HIGHS BETWEEN 95 AND 100 DEGREES AT MOST LOCATIONS**
- \* HEAT INDEX . . . MAXIMUM READINGS BETWEEN 108 AND 112 DEGREES**
- \* A HEAT ADVISORY MEANS THAT A PERIOD OF HOT TEMPERATURES AND HIGH HUMIDITY WILL COMBINE TO CREATE A SITUATION IN WHICH HEAT ILLNESSES ARE POSSIBLE . . . DRINK PLENTY OF FLUIDS . . . STAY IN AN AIR CONDITIONED ROOM . . .(ETC)**

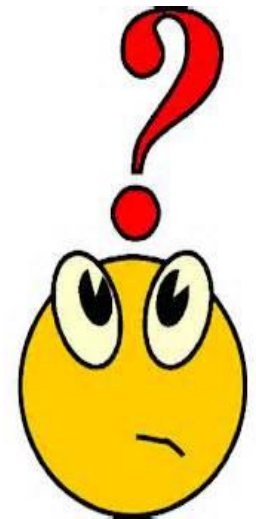
# Texas (Special Weather Statement)

**... HEAT INDEX VALUES OF BETWEEN 100 TO 106 DEGREES ARE EXPECTED DURING THE LATE MORNING THROUGH THE LATE AFTERNOON HOURS EACH DAY THIS WEEK. A HEAT ADVISORY MAY BE REQUIRED IF THE AREA BEGINS TO EXPERIENCE HEAT INDICES THAT REACH ... OR EXCEED ... 108 DEGREES.**

**RESIDENTS WITH ANY OUTDOOR ACTIVITY PLANS ARE URGED TO DRINK PLENTY OF WATER ... WEAR LIGHT WEIGHT AND LIGHT COLORED CLOTHING....(ETC)**

# Questions for the Public

- 1. What's the difference between a Heat Advisory and Special Weather Statement?**
- 2. Which is worse?**
- 3. How do the impacts differ?**



# Haz Simp Workshop: *Why Not Consider “Revamp” Too?*



- Taking on all aspects of change at once may be overly ambitious
- In addition, the “Repair” and “Reword” processes may serve to inform any “Revamp” process that follows
- Via the “3R” plan, we can:
  - Implement “Repair” and test selected “Reword” by winter 2016-17
  - Still consider more significant WWA changes for long term

# Process Criteria & Timeline for “Repair”

**Criteria: Changes are possible via adjustments to NWS policy alone, do not involve changes to WWA terms, and can be easily communicated via outreach and education**

- Jan - Mar 2016: Integrate feedback from Workshop, IAEM and AMS conferences, and finalize prototype changes for comment
- Mar - Jul 2016: Coordinate internally to evaluate proposed changes. Collect partner and public feedback via WCMs/comment collection
- Aug - Sep 2016: Analyze results. If positive, coordinate specific policy changes and conduct in-reach and outreach
- Oct 2016: Implement initial “Repair”

# Process Criteria & Timeline for “Reword”

**Criteria: Changes also possible via policy change, but are potentially large enough to require generalizable public input & assurance they will not adversely impact partners**

- Jan - Mar 2016: Integrate feedback from Workshop & conferences; finalize proposed changes for testing
- Mar - Sep 2016: Conduct wide-ranging, generalizable survey to assess viability of suggested Reword changes for winter/flooding only. Analyze survey results
- Oct 2016 - Mar 2017: If results are positive, conduct non-operational public demonstration and collect feedback

# Key Questions: Fork in the Road



- Are winter/flooding results extensible to all long-duration hazards?
- Do results indicate that changes to convective and tropical hazards are not required (e.g., only changes to “Advisory” are indicated)?
- If answer to both are “Yes”, implementation of **“Reword”** could be fully tested and implemented as early as Winter 2017-18.
  - *Otherwise, additional surveys and collaboration will be needed*



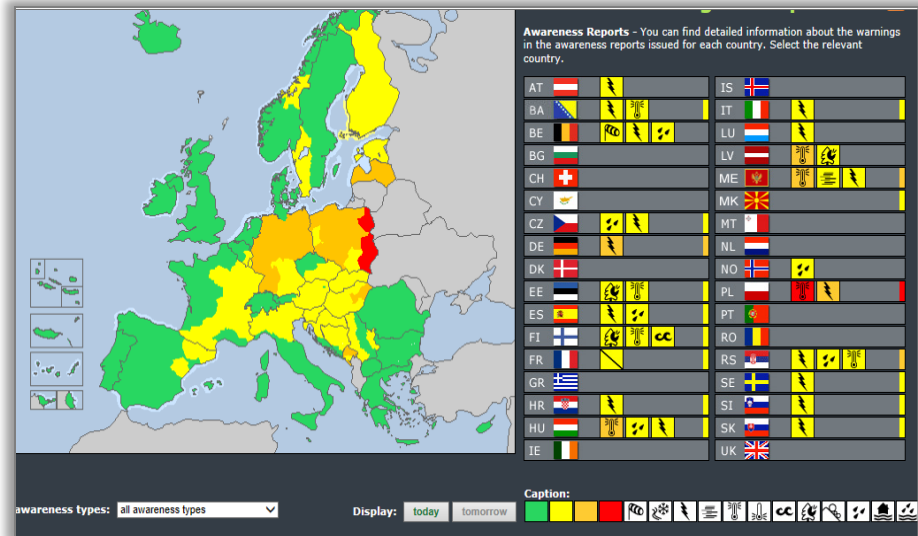
# REVAMP?



- **Should we consider an overhaul/revisualization of hazard messaging system altogether? Examples:**
  - A combination of color, symbols and new terms?
  - Replace our current “orthogonal” system with a “hierarchical” system in consideration of certainty and impact?
  - What else?

# Just as an Example: Meteoalarm

- Meteoalarm used by 34 countries for over 6 years
- 4-color hierarchical scale
  - *Includes impact & certainty in UK*
- Short, focused hazard terms
- Hazard pictograms



# Process Criteria & Timeline for “Revamp”

**Criteria: Could require wholesale changes to software, dissemination and policy. Wide-ranging coordination and validation required from partners and public**

- Hold a follow-on workshop to address “Revamp” with agenda informed by “Repair” and “Reword” phases
- Scope for Revamp could include:
  - *Moving from an orthogonal to a hierarchical system*
  - *Change to information visualization (color schemes, symbols)*
- In parallel with “Revamp” continue “Reword” & “Repair” as needed

# Final Comments

- **This updated plan represents an evolution of our original roadmap – but still has similar path**
  - *Additional adjustments possible as process unfolds*
- **Community participation continues to be critical**
  - *We will continue to keep you engaged and apprised*
- **This remains uncharted territory**
  - *We welcome your creative thoughts and ideas as to how to evolve our roadmap to achieve our goals*



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Thank You!

## Questions? Feedback?

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