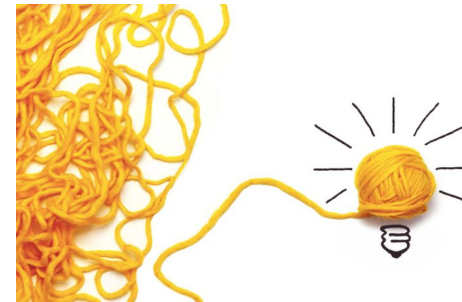




The Hazard Simplification (Haz Simp) Project:

Improving NOAA Communication of Hazardous Weather and Water Events



Eli Jacks, Chief, Forecast Services Division
Danielle Nagele, Haz Simp Project Manager
NOAA National Weather Service



Webinar Structure and Process

Webinar Process:

- Introduction: Haz Simp background and important project updates
- Feedback Session: The rest of the webinar we want to hear from you!
 - Please be sure to enter your audio pin
 - Please do not mute yourself, we'll take care of it on our end
 - All lines will remain muted until we break for discussion; at that point we'll utilize the hand raise feature
 - If you do not get to speak, please send comments to hazsimp@noaa.gov and cite the slide number you wish to refer to

Ground Rules:

- The intent of this webinar is not to consider multiple options to change the WWA system; the time for that level of input has ended
- This webinar will ask for specific feedback on a single option
- NWS staff - we'll have a separate internal webinar, please remain in listen mode only

NWS Vision - A Weather Ready Nation!



Be a Force of Nature

Help Build a Weather-Ready Nation™



GOAL 1

Reduce the impacts of weather, water, and climate events by transforming the way people receive, understand, and act on information.

- 1.5. Integrate social, behavioral, and economic sciences to simplify the communication of information and improve the understanding and utility of forecasts and warnings.

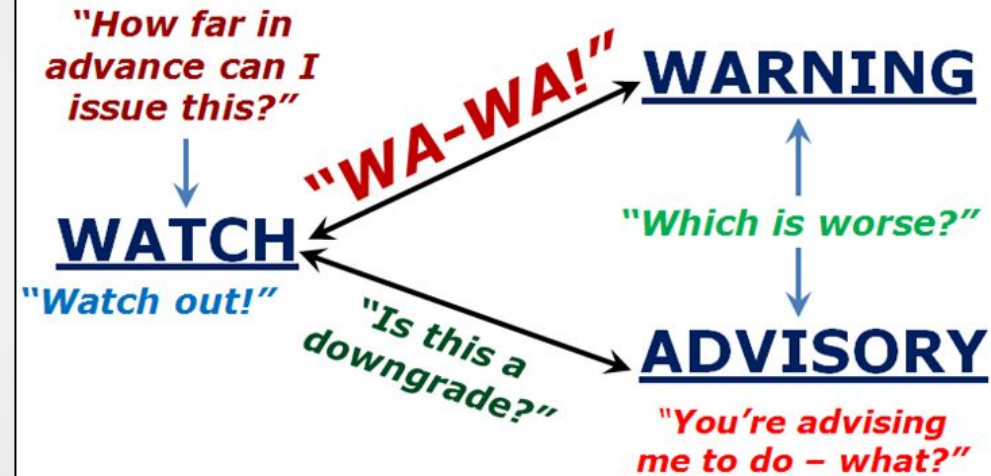
The NWS WWA System

Watch *Potential for dangerous hazard*

Warning *Imminent/occurring life-threatening hazard*

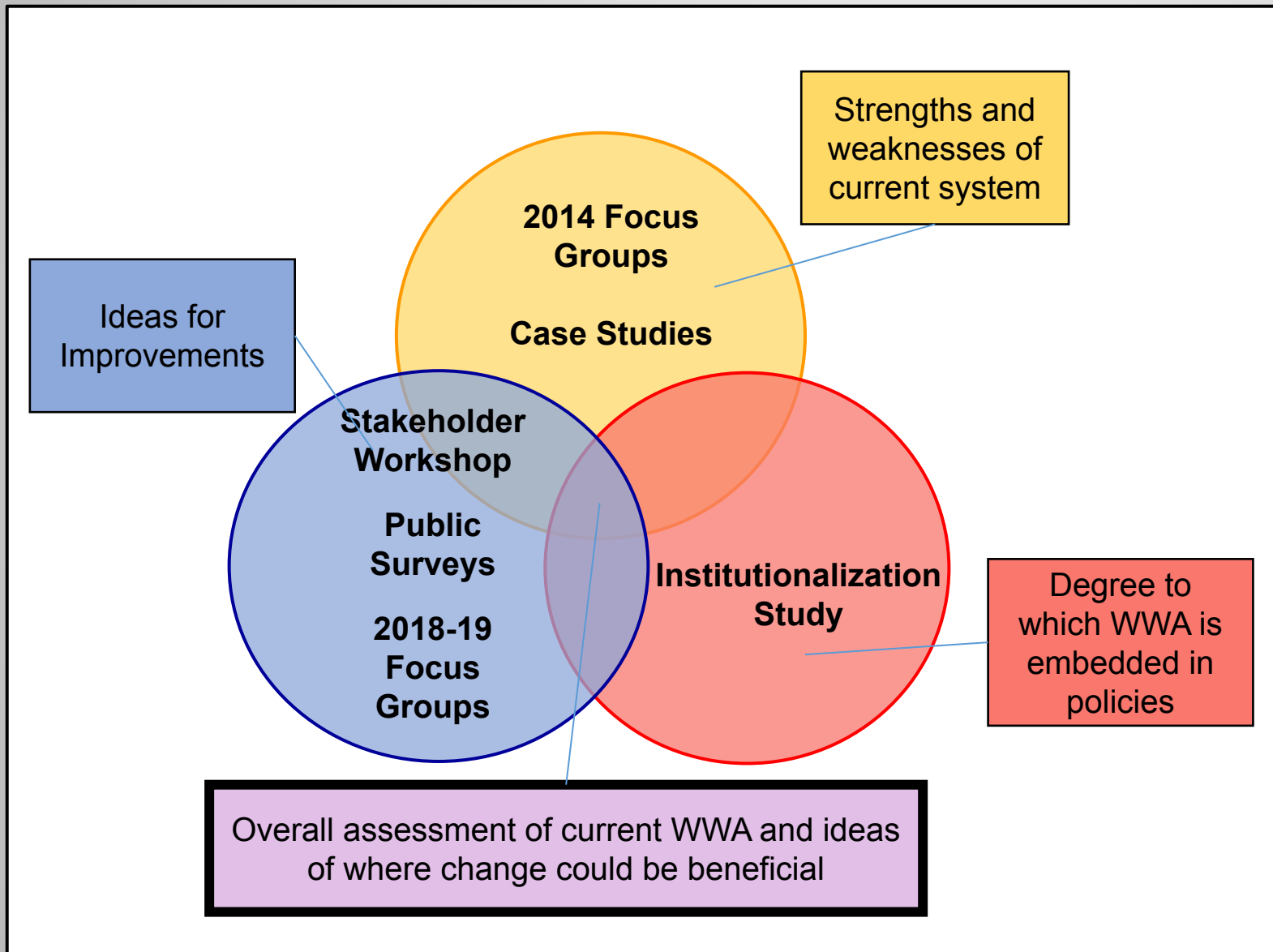
Advisory *Imminent/occurring less serious hazard*

Confusing terms

[illegible]

Too many products

Social Science Research and Engagement



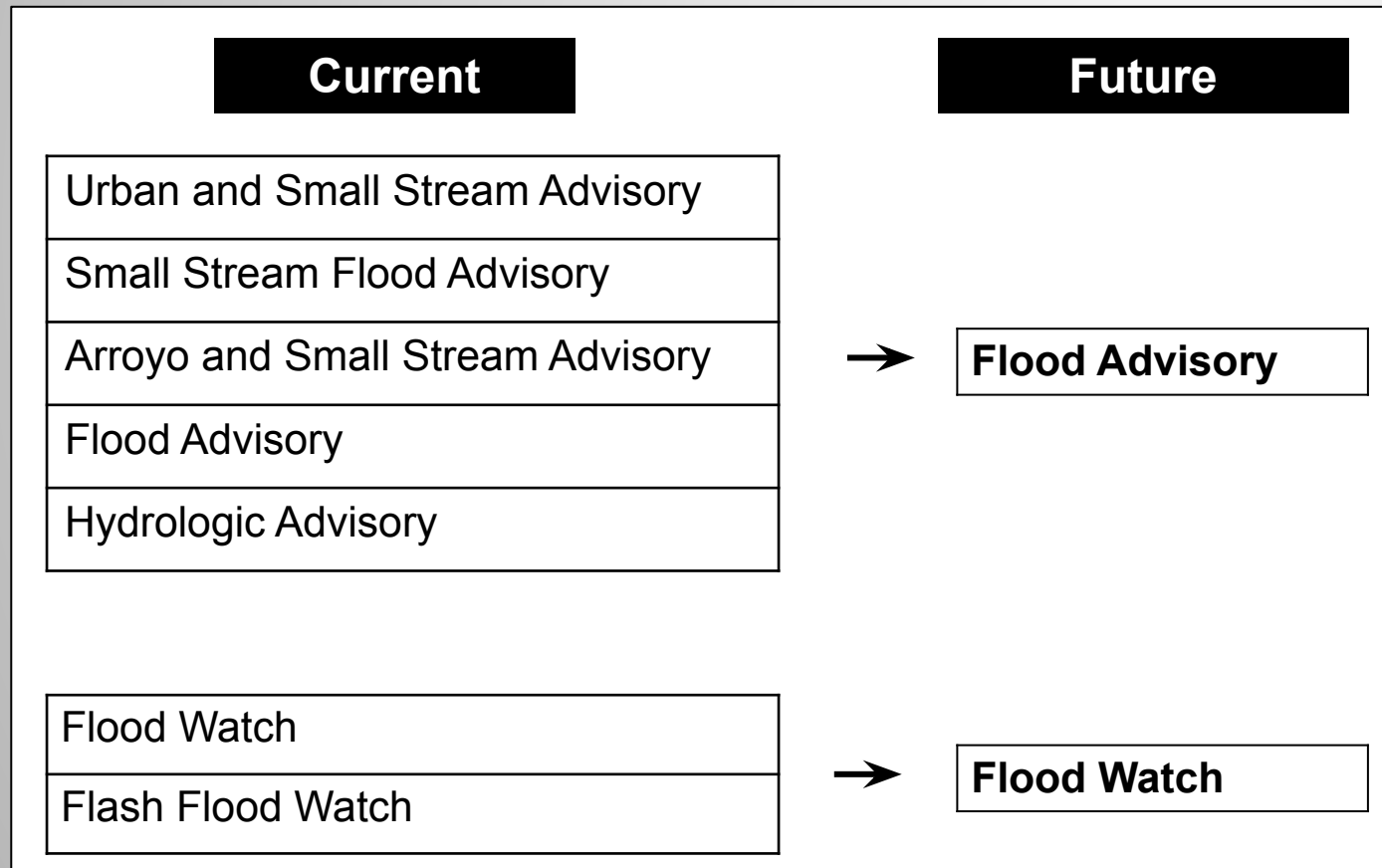
Key Feedback: *Two Phases*

“Repair”:
Low hanging fruit

“Revamp”:
Assessment of
larger change

WWA Repair Examples

Consolidation



Reformatting



Long-Fused Format

Small Craft Advisory

- * **WHAT**...Sustained winds 15-25 kts
- * **WHERE**...Inland waters
- * **WHEN**...Until 3pm Thursday
- * **IMPACTS**...Conditions hazardous to small craft

Short-Fused Format

Flash Flood Warning

- HAZARD**...Life threatening flash flooding caused by a potential uncontrolled release at Oroville Dam.
- SOURCE**...Oroville Dam operators.
- IMPACT**...Low areas around the Feather River will experience rapid river rises.

Five Years of Social Science

- **Refine the current WWA system**
 - Simplify product text
 - Reduce number of WWA products
- **Test hierarchical schemes to replace or supplement WWA terms**
 - Color (e.g. Rainbow or stoplight)
 - Numbers (e.g. 1-5)
 - Adjectives (e.g. Moderate, Severe, Extreme)
- **Adjust or replace Advisory - most confusing term**
 - Public and partners badly misunderstand Advisory and some even see it as a synonym to Watch
- **Support for expanded use of Emergency (judiciously)**



Here's What We Found Doesn't Work

- Numbers present potential confusion - unclear whether 1 is worst or best
- Hierarchical adjectives (e.g., “Moderate Winter Storm Warning”, “Extreme Thunderstorm Warning”) did not test well with the public
- Color performed poorly as headline language (“Red Warning for Heavy Snow”)
 - Varying use of color in messaging systems by other agencies
 - Color alone does not intuitively explain the risk
 - Red color strongly associated with tornado warnings
 - Potential confusion with Red Flag Warning



Here's What We Found Doesn't Work

- “Advisory” while misunderstood, can’t be removed entirely
 - Partners still need that level of alerting (imminent but less serious than a “Warning”) within the system, but not necessarily through the term
- Replacing the Watch term - not enough evidence to change
 - Potential for international inconsistency
 - Highly institutionalized in severe and tropical realms
 - Benefits may not outweigh the costs



NWS-Approved Concept for Further Exploration

Current Products

Proposed Products

Possible

Watch

Watch

Imminent/Happening

Advisory*

Descriptive Message

Warning

Warning

Emergency^

Emergency

* Each Advisory is unique - some could be removed entirely, others could be upgraded to Warnings

^ Emergency currently only used for Tornado and Flash Flood - its use would be expanded

Advisory to Descriptive Message Transition Examples

...**Dense Fog Advisory** In Effect Until 10 AM CDT...

...Dense Fog Expected This Morning...

...**Winter Weather Advisory** In Effect Until 7 PM EDT...

...Light Snow Occurring Through the Afternoon...

...**Flood Advisory** In Effect Until 6 PM MDT...

...Small Stream Flooding Expected Today...

It conveys the key message, but does not require you to understand the definition of a term

Benefits of the Change

- **Reduces to just two headline terms:** “Watch” and “Warning” convey “Prepare” and “Act” for high-impact events - consistent with emergency management operations
- **More intuitive system:** Eliminates “Advisory” and “Watch” confusion
- **Facilitates easier education** on two headline terms
- **Removes 24 Advisories:** Supports consolidation, simplifies our hazard map, and streamlines our system

Listing of 24 Current Advisories

Winter Weather Advisory	Lake Wind Advisory	Air Stag. Advisory	High Surf Advisory
Wind Chill Advisory	Frost Advisory	El Nino Advisory	Small Craft Advisory
Dense Fog Advisory	Blowing Dust Advisory	Tsunami Advisory	Lakeshore Flood Advisory
Dense Smoke Advisory	Dust Advisory	Freezing Spray Advisory	Coastal Flood Advisory
Wind Advisory	Ashfall Advisory	Low Water Advisory	Flood Advisory (Areal)
Heat Advisory	Freezing Fog Advisory	Brisk Wind Advisory	Flood Advisory (River)

Expanding the Concept of Descriptive Message

Current Products

Proposed Products

Possible

Watch

Watch

Imminent/Happening

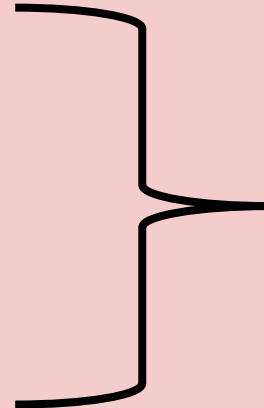
Special Weather Statement (SPS)

Short Term Forecast (NOW)

Advisory*

Warning

Emergency^



Descriptive Message ?

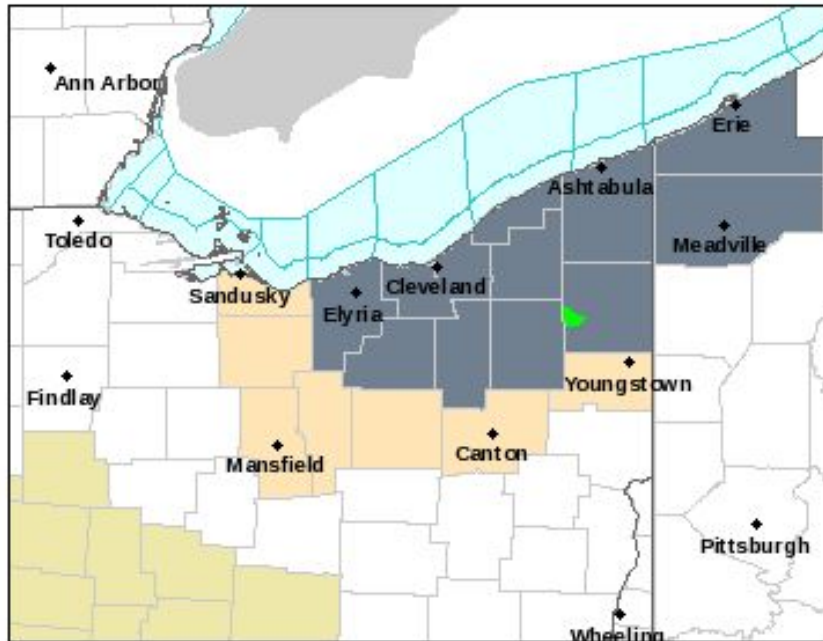
Warning

Emergency

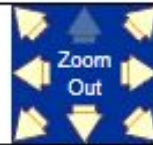
* Each Advisory is unique - some could be removed entirely, others could be upgraded to Warnings

^ Emergency currently only used for Tornado and Flash Flood - its use would be expanded

Special Weather Statement: Sub-Advisory Situations



[Watches,
Warnings &
Advisories](#)



[Flood Warning](#)

[Dense Fog Advisory](#)

[Special Weather
Statement](#)

[Hazardous Weather
Outlook](#)

Last Map Update: Thu, Jun. 6, 2019 at 8:47:28 am EDT

/O.NEW.KCLE.FG.Y.0003.190606T0815Z-190606T1300Z/

...DENSE FOG ADVISORY IN EFFECT UNTIL 9 AM EDT THIS MORNING...

The National Weather Service in Cleveland has issued a Dense Fog Advisory, which is in effect until 9 AM EDT this morning.

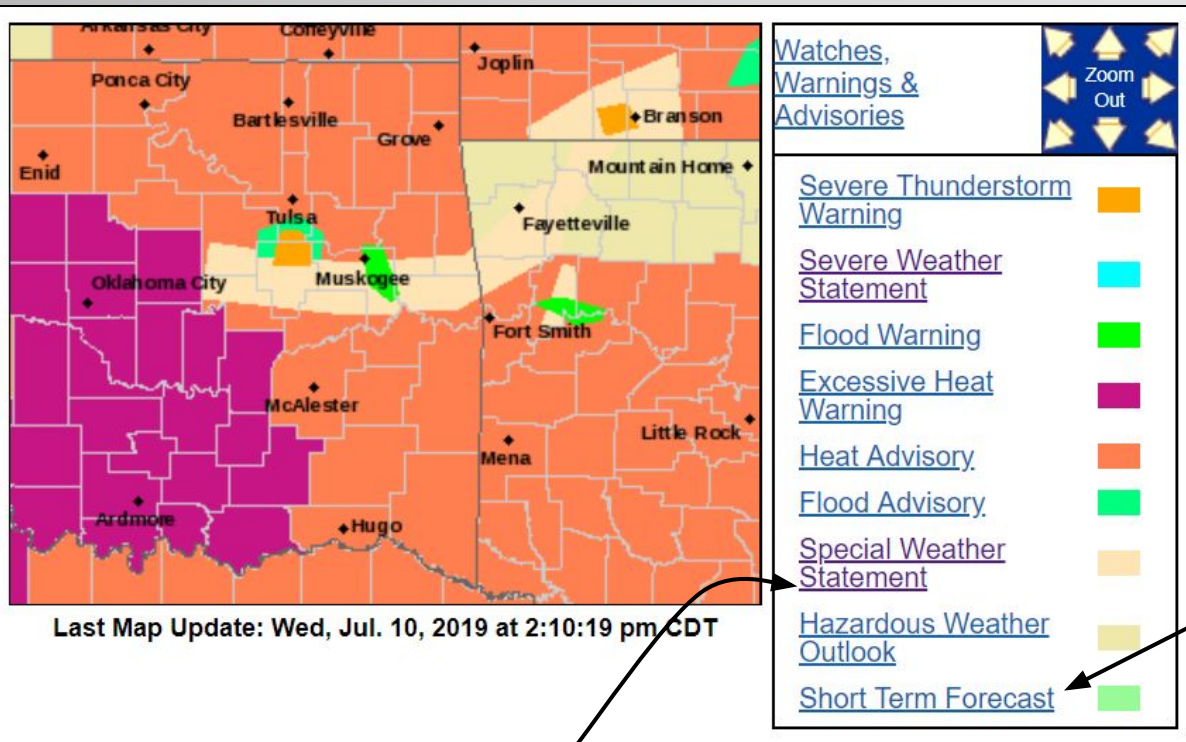
* VISIBILITY...less than one quarter of a mile at times.

* IMPACTS...reduced visibility will make travel difficult.

...Areas of Fog Across the Area During the Morning Commute...

Areas of fog will be in place across portions of North Central and Northeast Ohio this morning. Most locations listed in this statement will have visibility of one half mile to one mile. Localized areas of a quarter of a mile or less visibility is possible. Motorists should use caution and be ready for rapidly changing visibility.

Short Term Forecast: Sub-Advisory Situations



.NOW.

At 12:38 PM...National Weather Service doppler radars detected scattered showers and thunderstorms ongoing across portions of eastern Oklahoma and northwest Arkansas. An outflow boundary was preceding the convection across northeast Oklahoma, with new showers and storms developing along and just ahead of this boundary. All of the showers and storms were moving off to the southeast at around 20 mph.

Through 2:30 PM...Scattered showers and thunderstorms will continue to expand southward across the area. Locations most likely to be impacted during this time are those along and north of a Milfay Oklahoma to Washburn Arkansas line. Gusty winds of 40 to 50 mph, heavy downpours and small hail are possible with the stronger storms that occur. Dangerous cloud to ground lightning can also be expected in and close to thunderstorms.

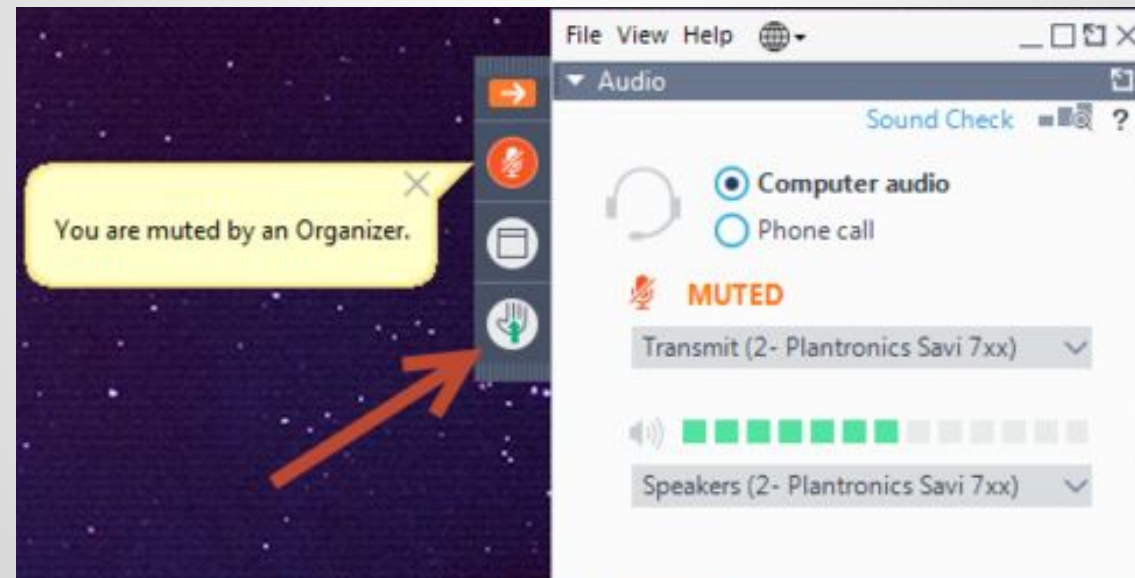
...SIGNIFICANT WEATHER ADVISORY FOR WESTERN MADISON...NORTHERN CRAWFORD...WASHINGTON...SOUTHWESTERN CREEK...NORTHERN MCINTOSH... SEQUOYAH...SOUTHERN ADAIR...SOUTHEASTERN CHEROKEE...MUSKOGEE... OKMULGEE AND NORTHERN OKFUSKEE COUNTIES UNTIL 245 PM CDT...

At 158 PM CDT, strong thunderstorms were located along a line extending from 2 miles east of Hobbs State Park to 8 miles southeast of Stilwell to 5 miles north of Oktaha to 2 miles southeast of Depew. Movement was south at 35 mph.

Wind gusts of 50 to 55 mph will be possible with these storms.

**Any questions on process or rationale
that led to this decision?**

Raise your hand via webinar



or email later: hazsimp@noaa.gov

Feedback Session

We'll step you through a sample, current Advisory, SPS, and Emergency:

Each message has multiple components we wish to ask you about:

- **State and local governments, emergency managers:** Consider how you use our text products and the impacts a change to Advisory would have on your operations
- **Broadcast media, private vendors:** Consider how you ingest and display our current products and the technical implications of change.

Webinar Management/Logistics:

- 5 minutes per question (2-3 participants)
- Use raise hand feature and we'll unmute you
- Questions will be either poll or verbal
- During verbal - option to reply by "Question Box"
- If we don't get to you, email hazsimp@noaa.gov

**Open Questions
(comment now or email later):**

Poll Questions (Y/N or MC):

Current Special Weather Statement (SPS)

Special Weather Statement

National Weather Service Cleveland OH

731 AM EDT Thu Jun 6 2019

OHZ009-019-029>033-061300-

Erie-Huron-Richland-Ashland-Wayne-Stark-Mahoning-

Including the cities of Sandusky, Norwalk, Mansfield,
Ashland,

Wooster, Canton, and Youngstown

731 AM EDT Thu Jun 6 2019

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mile to one mile. Localized areas of a quarter of a mile
or less visibility is possible. Motorists should use
caution and be ready for rapidly changing visibility.

Current Winter Weather Advisory

WSWLWX

URGENT - WINTER WEATHER MESSAGE

National Weather Service Baltimore MD/Washington DC

207 PM EST Wed Jan 3 2018

MDZ011-013-014-016-507-508-VAZ057-040500-

/O.EXA.KLWX.WW.Y.0001.180104T0300Z-180104T1600Z/

Southern Baltimore-Prince Georges-Anne Arundel-Charles-

Northwest Harford-Southeast Harford-King George-

207 PM EST Wed Jan 3 2018

...WINTER WEATHER ADVISORY IN EFFECT FROM 10 PM THIS EVENING TO
11 AM EST THURSDAY...

* WHAT...Total snow accumulations of 1 to 3 inches are expected.

* WHERE...Portions of central, northern and southern Maryland
and central Virginia.

* WHEN...From 10 PM this evening to 11 AM EST Thursday.

* IMPACTS...Snow will quickly stick on roads and sidewalks, making
the Thursday morning commute dangerous. Visibility will be
reduced to under 1 mile at times in snow. Bitterly cold
conditions will follow for late Thursday through the weekend
causing snow to remain on untreated surfaces.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Be prepared for snow covered roads and limited visibilities, and
use caution while driving. The latest road conditions for the
state you are calling from can be obtained by calling 5 1 1.

Current Product: Winter Weather Advisory

Open Questions (comment now or email later):

How do you use the product title as shown here?

Poll Questions (Yes/No):

Do you need this line of the message (product title)?

Should our Advisory level message include the word “Urgent”?

WSWLWX

URGENT - WINTER WEATHER MESSAGE

National Weather Service Baltimore MD/Washington DC
207 PM EST Wed Jan 3 2018

MDZ011-013-014-016-507-508-VAZ057-040500-
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caution while driving. The latest road conditions for the state you
are calling from can be obtained by calling 5 1 1.

Current Product: Winter Weather Advisory

Open Questions
(comment now or email later):

How do you use the VTEC as
shown here?

Poll Questions (Yes/No):

Do you apply VTEC for
Advisory level products?

WSWLWX

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caution while driving. The latest road conditions for the state you
are calling from can be obtained by calling 5 1 1.

Current Product: Winter Weather Advisory

Open Questions (comment now or email later):

How do you use the product
headline?

How would you operate
without a 'name' in the
headline?

Poll Questions (MC):

What information is most
important to you in a headline?
(*hazard, location, timing,
source*)

WSWLWX

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National Weather Service Baltimore MD/Washington DC

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caution while driving. The latest road conditions for the state you
are calling from can be obtained by calling 5 1 1.

Current Product: Winter Weather Advisory

Open Questions (comment now or email later):

How do you use the product
body text?

Poll Questions (Yes/No & MC):

What format do you prefer?
(*bullets, paragraph, other*)

Do you need a call to action
statement at the Advisory
level?

WSWLWX

URGENT - WINTER WEATHER MESSAGE

National Weather Service Baltimore MD/Washington DC

207 PM EST Wed Jan 3 2018

MDZ011-013-014-016-507-508-VAZ057-040500-

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on untreated surfaces.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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caution while driving. The latest road conditions for the state you
are calling from can be obtained by calling 5 1 1.

Final Advisory Question

What impact would it have on your operations if NWS expressed the Advisory level in a different way?

- 1 - Extremely Beneficial**
- 2 - Beneficial**
- 3 - Indifferent/Little Impact**
- 4 - Harmful**
- 5 - Extremely Harmful**

Current Product:
Special Weather Statement (SPS)

Special Weather Statement
National Weather Service Cleveland OH
731 AM EDT Thu Jun 6 2019

OHZ009-019-029>033-061300-
Erie-Huron-Richland-Ashland-Wayne-Stark-Mahoning-
Including the cities of Sandusky, Norwalk, Mansfield, Ashland,
Wooster, Canton, and Youngstown
731 AM EDT Thu Jun 6 2019

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Current Product:

Special Weather Statement (SPS)

**Open Questions
(comment now or email later):**

How do you use our SPS?

Poll Questions (Yes/No & MC):

Should a product such as this
(describing sub-Advisory
situations) have a VTEC
associated with it?

What format do you prefer?
(*bullets, paragraph, other*)

Special Weather Statement

National Weather Service Cleveland OH

731 AM EDT Thu Jun 6 2019

OHZ009-019-029>033-061300-

Erie-Huron-Richland-Ashland-Wayne-Stark-Mahoning-

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Final SPS Question

What impact would it have on your operations if NWS expressed the SPS (Sub-Advisory information) in a different way?

- 1 - Extremely Beneficial**
- 2 - Beneficial**
- 3 - Indifferent/Little Impact**
- 4 - Harmful**
- 5 - Extremely Harmful**

Emergency Level

Poll Questions (Yes/No):

Do you feel the Emergency level has been beneficial for Tornadoes and Flash Floods?

...TORNADO EMERGENCY FOR southern Lee County and northern Russell County...

...A TORNADO WARNING REMAINS IN EFFECT UNTIL 245 PM CST FOR SOUTHEASTERN LEE AND NORTHWESTERN RUSSELL COUNTIES...

At 209 PM CST, a confirmed large and destructive tornado was located near Griffen Mill, or 11 miles southeast of Auburn, moving east at 60 mph.

TORNADO EMERGENCY for southern Lee County and northern Russell County. This is a PARTICULARLY DANGEROUS SITUATION. TAKE COVER NOW!

HAZARD...Deadly tornado.

SOURCE...Radar confirmed tornado.

IMPACT...You are in a life-threatening situation. Flying debris may be deadly to those caught without shelter. Mobile homes will be destroyed. Considerable damage to homes, businesses, and vehicles is likely and complete destruction is possible.

Locations impacted include...

Phenix City, Smiths, Smiths Station, Ladonia, Bleecker, Griffen Mill, Bibb City, Monterey Heights, Ladonia Sports Complex, Marvyn and Bartletts Ferry Dam.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

To repeat, a large, extremely dangerous, and potentially deadly tornado is on the ground. To protect your life, TAKE COVER NOW! Move to an interior room on the lowest floor of a sturdy building. Avoid windows. If in a mobile home, a vehicle or outdoors, move to the closest substantial shelter and protect yourself from flying debris.

Emergency Level

Open Questions

(comment now or email later):

Should this level be extended to other hazards? If so, in what situations?

Poll Questions (MC):

Should “Emergency” remain a ‘tag’ within the Warning or should the Emergency level have its own headline/VTEC?
(tag, new VTEC)

...TORNADO EMERGENCY FOR southern Lee County and northern Russell County...

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Next Steps and Opportunities



- If you didn't get a chance to speak today, please email us with your thoughts:
 - These slides will be posted on the “Revamp” tab of our [Haz Simp webpage](#) and the slides will be emailed to everyone who registered for the webinars
 - For any comments or questions you have, please cite the slide number in the presentation you wish to refer us to
 - Please send comments to “hazsimp@noaa.gov”. We will email a response document to you when ready
- All of your comments will be integrated into our *internal* Haz Simp Technical Workshop to be held this September.
 - We will keep you posted on progress after the workshop

YOUR PARTICIPATION IS CRITICAL TO SUCCESS!



Thank you!

hazsimp@noaa.gov

<https://www.weather.gov/hazardsimplification/>

