



NWS Hazard Simplification Project

A Proposal to Revamp the NWS Watch, Warning, and Advisory System



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Definitions: The NWS WWA System

Watch

Potential for life-threatening hazard

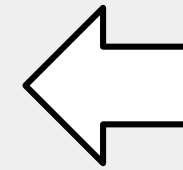
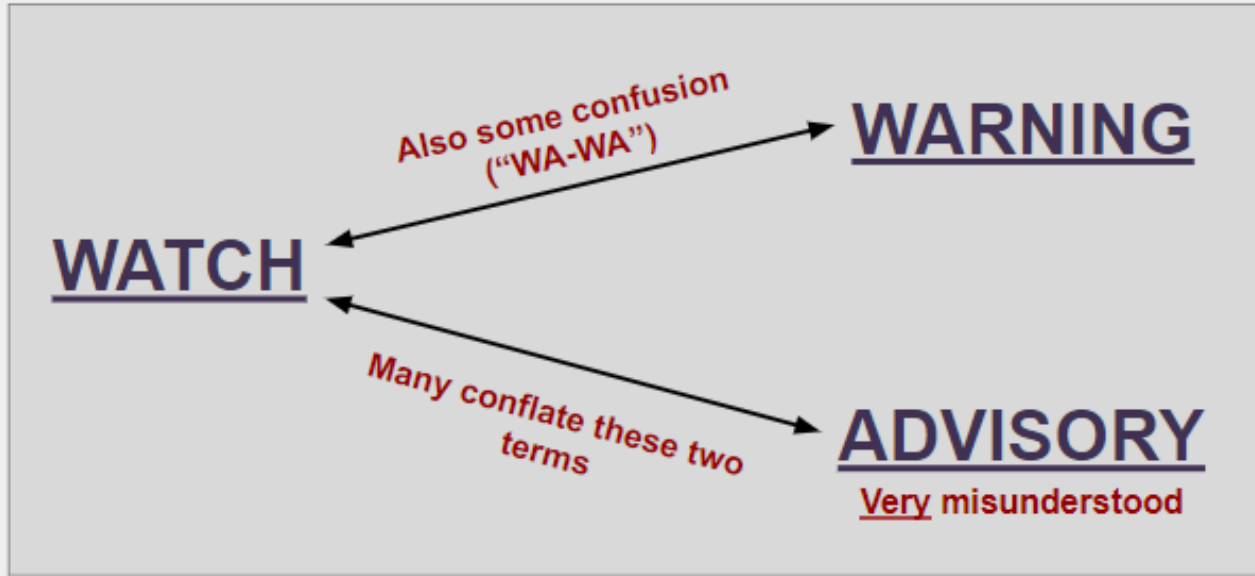
Warning

Imminent/occurring life-threatening hazard

Advisory

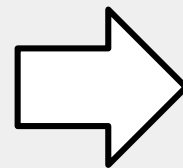
Imminent/occurring less serious hazard

Currently: The NWS WWA System



**Headline
Confusion**

**Too Many
Products &
Product Types**



TO Tornado Warning	TO Tornado Watch	SV Severe Thunderstorm Warning	SV Severe Thunderstorm Watch	SV Severe Thunderstorm Warning	SV Severe Thunderstorm Watch	TV Tornado Warning	TV Tornado Watch	EW Extreme Wind Warning	HL Hurricane Local Statement	HL Hurricane Local Statement	HL Hurricane Local Statement	HL Hurricane Local Statement	FF Flash Flood Warning	FF Flash Flood Warning	FF Flash Flood Warning	WC Winter Storm Warning	WC Winter Storm Warning	WC Winter Storm Warning	WC Winter Storm Warning	BZ Blizzard Warning	BZ Blizzard Warning	BZ Blizzard Warning	BZ Blizzard Warning	
HU Hurricane Warning	HU Hurricane Watch	HU Hurricane Warning	HU Hurricane Watch	HU Hurricane Warning	HU Hurricane Watch	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	ESF Extreme Snowfall Forecast	CF Coastal Flood Warning	CF Coastal Flood Warning	CF Coastal Flood Warning	LS Lake Effect Snow Warning	LS Lake Effect Snow Warning	LS Lake Effect Snow Warning	LE Lake Effect Snow Warning	LE Lake Effect Snow Warning	LE Lake Effect Snow Warning	IS Ice Storm Warning	
TS Tropical Storm Warning	TS Tropical Storm Watch	SS Storm Surge Warning	SS Storm Surge Watch	SS Storm Surge Warning	SS Storm Surge Watch	TV Tornado Warning	TV Tornado Watch	EW Extreme Wind Warning	HL Hurricane Local Statement	HL Hurricane Local Statement	HL Hurricane Local Statement	HL Hurricane Local Statement	FF Flash Flood Warning	FF Flash Flood Warning	FF Flash Flood Warning	WC Winter Storm Warning	WC Winter Storm Warning	WC Winter Storm Warning	WC Winter Storm Warning	BZ Blizzard Warning	BZ Blizzard Warning	BZ Blizzard Warning	BZ Blizzard Warning	
FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	FL Flash Flood Warning	ESF Extreme Snowfall Forecast	CF Coastal Flood Warning	CF Coastal Flood Warning	CF Coastal Flood Warning	CF Coastal Flood Warning	CF Coastal Flood Warning	CF Coastal Flood Warning	LS Lake Effect Snow Warning	LS Lake Effect Snow Warning	LS Lake Effect Snow Warning	LE Lake Effect Snow Warning	LE Lake Effect Snow Warning	LE Lake Effect Snow Warning	LE Lake Effect Snow Warning	IS Ice Storm Warning	IS Ice Storm Warning	IS Ice Storm Warning	IS Ice Storm Warning	
SU High Surf Warning	SU High Surf Warning	BH Beach Hazard Warning	MA Marine Weather Warning	MA Marine Weather Warning	MA Marine Weather Warning	AF Avalanche Warning	AF Avalanche Warning	AF Avalanche Warning	AF Avalanche Warning	AF Avalanche Warning	AF Avalanche Warning	AF Avalanche Warning	GL Glaciers Warning	GL Glaciers Warning	GL Glaciers Warning	SE Severe Ice Warning	SE Severe Ice Warning	SE Severe Ice Warning	SE Severe Ice Warning	UP Unusually High Water Warning	UP Unusually High Water Warning	UP Unusually High Water Warning	UP Unusually High Water Warning	
HF Heavy Freezing Rain Warning	LO Low Water Warning	SC Small Craft Warning	SC Small Craft for Severe Weather Warning	SC Small Craft for Rough Sea Warning	SC Small Craft for Woods Warning	SR Small Craft Warning	SR Small Craft Warning	SR Small Craft Warning	SR Small Craft Warning	SR Small Craft Warning	SR Small Craft Warning	SR Small Craft Warning	FW Fire Weather Warning	FW Fire Weather Warning	FW Fire Weather Warning	FW Fire Weather Warning	HMO Hazardous Material Warning	HMO Hazardous Material Warning	HMO Hazardous Material Warning	NOW Nowcast Warning	NOW Nowcast Warning	NOW Nowcast Warning	SPS Special Weather Alert	AQA Air Quality Alert
AS Air Quality Warning	DU Dust Warning	DU Dust Warning	EH Extreme Heat Warning	EH Extreme Heat Warning	EH Extreme Heat Warning	EC Extreme Cold Warning	EC Extreme Cold Warning	FZ Frost Warning	FZ Frost Warning	FZ Frost Warning	FZ Frost Warning	FZ Frost Warning	HZ Heat Warning	HZ Heat Warning	HZ Heat Warning	HT Heat Warning	HT Heat Warning	HT Heat Warning	HT Heat Warning	HW High Water Warning	HW High Water Warning	HW High Water Warning	HW High Water Warning	WI Wind Warning
AV Aviation Warning	AV Aviation Warning	AV Aviation Warning	TOE Tornado Outage Warning	ADR Advisory Warning	ADR Advisory Warning	CAE Child Abduction Emergency	CDW Child Welfare Warning	CEM Child Emergency Warning	EQ Earthquake Warning	EQ Earthquake Warning	EQ Earthquake Warning	EQ Earthquake Warning	HM Hazardous Materials Warning	LEW Law Enforcement Warning	LAE Local Area Emergency	NUP Nuclear Power Plant Warning	RH Radiation Hazard Warning	RH Radiation Hazard Warning	RH Radiation Hazard Warning	SP Storm in Place Warning	SP Storm in Place Warning	SP Storm in Place Warning	SP Storm in Place Warning	VO Volcano Warning

Key Social Science Findings Leading to Proposal

- Current WWA system confusing due to terminology & presumed 3-term hierarchy
 - *Almost no one understands “Advisory” - but the level is still important!*
- Too many products (and types of products)
 - *Product consolidation and reformatting continues*
 - *Current Types: WWA, Special Weather Statements, Short Term Forecasts*
- There are no perfect words - but “Watch” & “Warning” must remain
- A color-based scheme was tempting, but colors failed as headlines
- EM’s either “Prepare” or “Act” - the rest is just information!



Proposal: Matching the “Prepare” or “Act” paradigm

WATCH

WARNING



**Prepare for a possible
significant event**

**Take Action for an
imminent or occurring
significant event**

Matches that **Prepare** or **Act** paradigm used by emergency managers.

Proposal: We “Raise the Flag” Only for the Big Events



So, What's Under the Water?

The Proposal

“**Advisory**”, “**Special Weather Statement (SPS)**”, and “**Short Term Forecast (NOW)**” headlines would be discontinued in favor of a single, streamlined **plain language statement**.

This Statement Would:

- Provide information on hazards that don't reach the “Watch/Warning” level (information previously contained in the above headlines)
- Use the "What, Where, When, Impacts" bulleted format in all cases
- Use computer codes in the message to enable NWS partners to easily "read" the information with computer software (You may know this as Valid Time Event Codes (VTEC))

Proposed Transition: Advisory Example

Current

WSWBMX

URGENT - WINTER WEATHER MESSAGE

National Weather Service Birmingham AL
815 PM CST Fri Feb 7 2020

ALZ020-081100-
/O.NEW.KBMX.WW.Y.0001.200208T1000Z-200208T1700Z/
Cherokee-
Including the city of Centre
815 PM CST Fri Feb 7 2020

...WINTER WEATHER ADVISORY IN EFFECT FROM 4 AM TO 11 AM CST SATURDAY...

* WHAT...Snow expected. Total snow accumulations of up to one inch in northernmost areas of Cherokee County.

* WHERE...Northern Cherokee County.

* WHEN...From 4 AM to 11 AM CST Saturday.

* IMPACTS...Plan on slippery road conditions.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Slow down and use caution while traveling. The latest road conditions for the state you are calling from can be obtained by calling 5 1 1.

Proposed

WSWBMX

Winter Weather Statement

National Weather Service Birmingham AL
815 PM CST Fri Feb 7 2020

ALZ020-081100-
/O.NEW.KBMX.WW.S.0001.200208T1000Z-200208T1700Z/
Cherokee-
Including the city of Centre
815 PM CST Fri Feb 7 2020

...Light snow accumulations from 4 AM to 11 AM CST Saturday...

* WHAT...Snow expected. Total snow accumulations of up to one inch in northernmost areas of Cherokee County.

* WHERE...Northern Cherokee County.

* WHEN...From 4 AM to 11 AM CST Saturday.

* IMPACTS...Plan on slippery road conditions.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Slow down and use caution while traveling. The latest road conditions for the state you are calling from can be obtained by calling 5 1 1.

Proposed Transition: SPS Example

Current

SPSCYS

Special Weather Statement

National Weather Service Cheyenne WY
1143 PM MDT Mon Sep 23 2019

WYZ110-250000-

North Snowy Range Foothills-

Including the cities of Arlington and Elk Mountain
1143 PM MDT Mon Sep 23 2019

...Strong westerly winds until this evening...

Strong westerly winds will pick up this morning by 7 AM and continue through the day, finally diminishing by 6 PM. Sustained winds around 30 mph with gusts of 45 to 50 mph are possible, especially first thing this morning and again this evening as a weak boundary passes over the mountain region.

Impacts: Light weight and high profile vehicles will be most impacted, especially along north to south oriented roads. Pay attention to the roadways for windy conditions that could cause a potential threat to you along your trip.

Proposed

NPWCYS

Weather Statement

National Weather Service Cheyenne WY
1143 PM MDT Mon Sep 23 2019

WYZ110-250000-

/O.NEW.KCYS.WI.S.0001.190923T0543Z-190923T0000Z/

North Snowy Range Foothills-

Including the cities of Arlington and Elk Mountain
1143 PM MDT Mon Sep 23 2019

...Strong westerly winds until this evening...

* **WHAT**...Sustained winds of 30 mph with gusts of 45 to 50 mph.

* **WHERE**...North Snowy Range Foothills.

* **WHEN**...Tuesday 7 AM to 6 PM.

* **IMPACTS**...Light weight and high profile vehicles will be most impacted, especially along north to south oriented roads.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Pay attention to the roadways for windy conditions that could cause a potential threat to you along your trip.

Does an “Advisory” Just Become a “Statement”?

No! We suggest just using plain language...

So instead of:

“A Winter Weather Advisory
has been Issued for...”

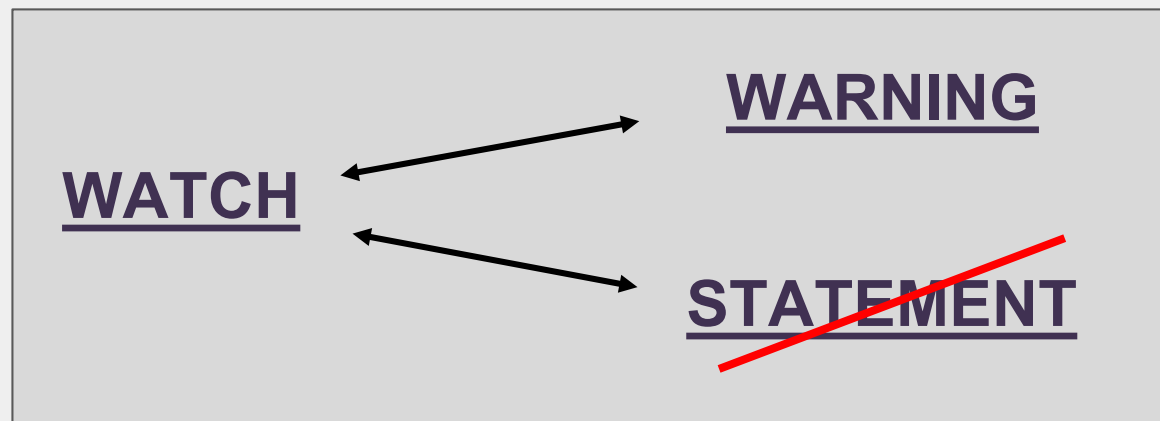
You could say:

“NWS expects 2-4” of snow for...”

Or

“NWS says expect a light snowfall today...”

Key Message: We Don't Want to Introduce a *New Third Term!*



Full List of Current NWS Advisories

Winter Weather Advisory	Lake Wind Advisory	Air Stagnation Advisory	High Surf Advisory
Wind Chill Advisory	Frost Advisory	El Nino/La Nina 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)

***Avalanche Advisory Issued External to NWS**

Common Alerting Protocol (CAP): U-S-C Values

CAP Element	Allowable Values*
Urgency	Immediate Expected Future Past Unknown
Severity	Extreme Severe Moderate Minor Unknown
Certainty	Observed Likely Possible Unlikely Unknown

Considerations:

- We don't use "unknown"
- Not in WMO message (must ingest CAP message to read)
- Potential confusion with Urgency and Certainty
- Use 2 levels only for urgency? (IBW versus 3W?)

*Allowable Values for CAP U-S-C Elements ([OASIS CAP v1.2 Standard](#))

Leveraging Common Alerting Protocol (CAP)

Articulating Urgency, Severity, Certainty (U-S-C) Element of the CAP Message

Current

Pre-defined U-S-C;
criteria-based products

Proposed

Forecasters edit CAP;
impact-based information

Alert Name	CAP Urgency	CAP Severity	CAP Certainty
Wind Chill Watch	Future	Severe	Likely
Wind Chill Warning	Expected	Severe	Likely
Wind Chill Advisory	Expected	Moderate	Likely
Winter Storm Watch	Future	Severe	Possible
Winter Storm Warning	Expected	Severe	Likely
Winter Weather Advisory	Expected	Moderate	Likely

Situation #1: Quick inch of snow with cold front overnight → **CAP Severity: Minor**

Situation #2: 2-4 inches of snow overnight on a weekend → **CAP Severity: Moderate**

Situation #3: 2-4 inches of snow during rush hour → **CAP Severity: Severe**

Opportunities for Feedback

- Review [weather.gov](https://www.weather.gov) or [weather.gov/hazardsimplification](https://www.weather.gov/hazardsimplification) for more information
- **Take our public survey here:** <http://www.surveymonkey.com/r/publicchazsimp>
- Review these slides and pass along any questions or comments to: hazsimp@noaa.gov
- Please feel free to explore our project website as well: [weather.gov/hazardsimplification](https://www.weather.gov/hazardsimplification)

**PLEASE TAKE AND SHARE THE SURVEY!
YOUR PARTICIPATION IS CRITICAL TO SUCCESS!**