Final Report

NWS Hazard Simplification Project: Results from the Institutionalization Survey

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Arlington, Virginia

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Eastern Research Group, Inc. (ERG)

ERG provides environmental, social science, and engineering solutions to climate, weather, and coastal management issues. Learn more at *www.erg.com*.

NOAA's Office for Coastal Management "Coastal management" is the term used by communities and organizations striving to keep the nation's coasts safe from storms, rich in natural resources, and economically strong. The national lead for these efforts is NOAA's Office for Coastal Management, an organization devoted to partnerships, science, and good policy. This agency, housed within the National Ocean Service, oversees major initiatives that include the National Coastal Zone Management Program, Coral Reef Conservation Program, Digital Coast, and National Estuarine Research Reserve System.

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The NWS Hazard Simplification Project: Results from the Institutionalization Survey

BACKGROUND

NOAA's National Weather Service (NWS) issues watch, warning, and advisory (WWA) products to help communities prepare for and respond to hazardous weather. These various WWA products (e.g., Flash Flood Warning, Heat Advisory, Hurricane Warning) are communicated to the public through many mechanisms, including websites, smartphones, television programs, radio broadcasts, and NOAA Weather Radio-All Hazards. Besides the public, NWS users include transportation and aviation officials, emergency management personnel, public works officials, private/broadcast meteorologists and other media, and many others.

Under contract with the NWS, Eastern Research Group, Inc. (ERG) designed an online survey (ICR Reference Number 201504-0648-015, 8/26/16) to gather feedback from organizations that use hazardous weather warning information to discern the degree to which types of WWA products or the actual terms "watch," "warning," and "advisory" are embedded or "institutionalized" in their decision-making, laws, policies, operating procedures, bylaws, or other activities or processes.

The target audience for the survey was individuals who use or have knowledge of how NWS weather information is used within their organizations to make decisions, develop laws or policies, create standard operating procedures, or conduct other tasks. These individuals may include representatives from emergency management agencies (at the local, state, and federal levels), departments of transportation, utilities, insurance companies, schools and universities, and others.

This effort builds on and furthers social science research conducted in the summer of 2014 that involved focus groups with emergency managers, broadcast meteorologists, NWS Weather Forecast Office (WFO) staff, and the public. The focus groups explored the current understanding and utility of the WWA system and possible enhancements to a new or modified system (ICR Reference Number 201103-0690-001, 3/14/14). This work indicated that it would be beneficial to gain a better understanding of the degree to which the WWA products and terms are potentially institutionalized in different sectors of society so the NWS can factor this information into any consideration of potential changes to the present WWA system.

PRETESTING

To design the survey, ERG developed an initial list of questions to guide a set of one-on-one interviews with individuals representing agencies and organizations in different sectors that use weather information to make decisions:

- Federal Sector/Transportation: Department of Transportation Federal Highway Administration
- Federal Sector/Emergency Management: Federal Emergency Management Administration
- State Sector/Transportation: American Association of State Highway and Transportation Officials
- Local Government Sector/Emergency Management: Morgan County, AL, Emergency Management Division
- Private Sector/Energy: Duke Energy
- Private Sector/Insurance: Insurance Council of Texas
- Private Sector K-12 Schools: Pennsylvania School Boards Association
- Private Sector Colleges/Universities: University of Santa Barbara, CA

These interviews revealed that sectors are generally more concerned with the information embedded *within* the body text of the WWA products rather than with the WWA headline terms themselves. Therefore, we included questions in the survey reflecting this distinction. We also found that interviewees could not always initially remember if their policies included WWA terms, but with further prompting, they began to reveal how their policies included the terms. As such, the survey opened with an intrapersonal dialogue prompting respondents to think about how they use WWA terms before answering specific questions about how these terms might be embedded in their organizations' policies.

Additionally, we learned through the interviews that WWA terms and information can be embedded in organizations in other ways as well, such as in their software programs, so we broadened the scope and type of questions asked in the survey accordingly. The revised survey was then sent to the interviewees for their review. We incorporated input from this review to finalize the survey.

The NWS formatted and deployed the survey using the software package called SurveyMonkey (the survey is included in Appendix A). The NWS distributed a link (generated by this software) to the survey through an invitation email sent to select email lists, as described below.

- Each of the 122 WFOs maintains detailed email lists of partners in their jurisdictions that utilize NWS information for decision-making. These lists vary from office to office but typically contain a few hundred names. The individuals on the lists represent various agencies and organizations across multiple sectors, including transportation officials, emergency managers, first responders, aviation officials, parks and recreation officials, public works officials, health officials, and many others. The survey was distributed to the individuals whose names appear on these WFO lists.
- The survey link was also distributed to federal agency officials either directly or through the coordination of the Office of the Federal Coordinator for Meteorology (OFCM), an

interdepartmental office that facilitates the systematic coordination of operational weather services and supporting research among federal agencies.

- The survey was shared with the members of various membership-based organizations representing a wide-range of sectors that use meteorological information. The NWS also personally contacted relevant membership organizations and federal agencies and asked them to distribute the survey. This personal contact helped to ensure that these organizations understood the scope and purpose of the survey and would direct it appropriately within their organizations.
- Finally, the NWS sent several reminders to potential survey participants to encourage them to fill out the survey.

SAMPLE

In all, 4,597 respondents across 32 sectors took the survey. Of these, 4,493 met the NWS inclusion criteria (described on the next page) for analysis. Table 1 lists the number of respondents from each sector that met the inclusion criteria.

Table 1. Sectors Represented in the Sample

Agriculture	63	**Health Care and Social Assistance**	305	**Parks and Outdoor Recreation**	107
Air Transportation	39	**Hotel and Food Services**	3	**Rail/Surface Transportation**	16
Construction	30	**Humanitarian/Disaster Relief**	25	**Religious**	10
Education – College/University	168	**Manufacturing**	23	**Research, Science & Technology**	15
Education – Pre-K -12	663	**Marine Transportation**	43	**Retail**	16
Emergency Management	1,015	**Media and Broadcasting**	123	**Telecommunications**	36
Emergency Responders	580	**Military**	47	**Transportation/Transit Agency**	307
Energy Production	13	**Mining/Drilling**	3	**Utilities and Public Works**	138
Entertainment – Indoor Venue	22	**Natural Resources/Land Management**	107	**Water Management**	38
Entertainment – Outdoor Venue	89	**Other**	393	**Weather/Climate Industry**	19
Finance, Insurance, and Reinsurance	31			**Wholesale**	6

Inclusion Criteria

The NWS applied the following criteria to the survey responses. Any response that met one (or more) of the following criteria were not included in dataset or as part of the analysis.

1. **NWS offices.** Responses from NWS offices were not included. However, responses from other NOAA line offices; SKYWARN volunteers; Community Collaborative Rain, Hail and Snow Network volunteers; and HAM radio volunteers were included.
2. **"Tests."** Responses made to test the survey instrument were not included.
3. **Individuals.** Responses that clearly indicated the participant was completing the survey as an individual, rather than an organizational representative, were not included. However, individuals who responded as small business owners, farmers, independent contractors, or on behalf of volunteer/civic groups were included.
4. **Unnamed organizations.** Similar to #3, except for organizations that preferred to not be named; these organizations were included.
5. **Retirees.** Retirees speaking on behalf of an organization were included; those responding as an individual were excluded.
6. **Students/parents.** Only responses from students and parents that clearly indicated they were involved in the operations of a school were included.
7. **Gibberish.** Responses that contained gibberish (random characters) as answers to open-ended questions were not included.
8. **Foreign organizations.** Responses from international organizations were not included.

Survey Limitations

Two key sample limitations require careful consideration when examining the survey results. First, the sample distribution is disproportionate across sectors. For instance, 1,015 emergency managers (EMs) and 580 first responders took the survey, while less than 10 individuals each from the wholesale (6 responses), hotel and food services (3 responses), and mining/drilling (3 responses) sectors responded to the survey. Given the uneven distribution, the results cannot be used to determine if WWA is more institutionalized in one sector than another or if it is institutionalized in sectors with small sample sizes; larger samples would be needed to make this determination. Another limitation to the survey is that there is no way to discern if the "right" people with enough knowledge of his or her organizational policies took the survey. The opening section of the survey instructed respondents to pass along the survey to the "right" individual(s) within their organization, but there is no way to determine if this occurred. ***Due to these limitations, the findings from this study should be used as guiding information, not as generalizable, final conclusions.***

Summary of Key Findings

The survey revealed the following key findings:

- Nearly a third (30%) of the total sample was classified in the "Yes" category, which means WWA terms are specifically written into the respondents' institutional policies and statutes, as shown in Figure 1.
- Nearly 70% of the total sample was classified in the "No" and "Don't Know" categories, which means it is less likely that WWA terms are institutionalized in these respondents' policies and statutes or that they were not the right individuals to take the survey, meaning they may not have complete knowledge of their organizations' policies.
- WWA terms are more embedded in policies than in statutes.
- Warnings are the most institutionalized of the WWA terms while advisories are the least institutionalized. Consistent with these results, respondents depend on warnings the most, followed by watches, and then advisories.
- Many respondents use the information contained in WWA products even if the terms are less likely to be written in their policies and statutes. Of the respondents who were classified in the "No" or "Don't Know" category, 17.1% still use the information contained in watches, 14.8% in warnings, and 10.9% in advisories.
- Of the respondents who stated that WWA terms are written into their institutional policies and statutes, most need three months to adapt to any potential changes to WWA terms.
- WWA terms are most institutionalized in severe weather events, followed by winter weather and extreme cold weather events. WWA is least institutionalized in tsunami events, followed by rough water and coastal flooding events.

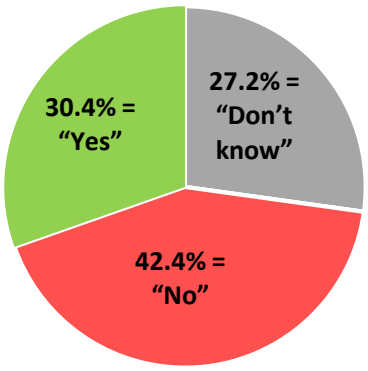

Figure 1. Classification of Total Sample

Given the sampling limitations, however, these findings should be used as *guiding information*, not as generalizable, final conclusions.

Detailed Analysis of Key Findings

The survey responses were analyzed to glean answers to the following research questions:

1. Is WWA institutionalized in organizational structures (i.e., different types of policies and statutes)?
2. Is WWA institutionalized for different hazard areas (e.g., tropical cyclones, severe weather, tsunamis, extreme heat, etc.)?
3. How long will it take for organizations to adapt to a potential change in the current WWA system?

Research Question 1. Is WWA institutionalized in Organizational Structures?

Method

To determine if WWA terms are institutionalized in organizational structures, ERG analyzed the responses to two specific survey questions:

- Is the NWS term [*watch/warning/advisory*] specifically written into any of your organization's **policies, contracts, operating procedures, or bylaws**? (Q9 for *watch*, Q15 for *warning*, and Q21 for *advisory)*
- Is the NWS term [*watch/warning/advisory*] specifically written into any **statutes, ordinances, or executive orders** enacted by a separate body that your organization must follow? (Q10 for *watch*, Q16 for *warning*, and Q22 for *advisory*)

The response combinations were categorized into three main groups (see Table 2) using a conditional relationship approach:

a. **Don't Know:** Respondents that answered "don't know" to *both* questions OR left *both* questions blank were categorized as "Don't Know."
b. **No:** Respondents that said "no" to *both* questions OR "don't know" to *one* question and "no" OR "not applicable" to the other were categorized as "No."
c. **Yes:** Respondents that said "yes" to *either* of the two questions were categorized as "Yes."

Table 2. Conditional Relationship Method Used to Classify Survey Responses

Questions	(POLICIES) Is the NWS term [watch/warning/advisory] specifically written into any of your organization's **policies, contracts, operating procedures, or bylaws**?					
	Answers	**Yes**	**No**	**N/A**	**Don't Know**	**Blank**
	Yes	YES	YES	YES	YES	YES

(STATUTES) Is the NWS term [watch/warning/advisory] specifically written into any **statutes, ordinances, or executive orders** enacted by a separate body that your organization must follow?	**No**	YES	NO	NO	NO	NO
	Don't Know	YES	NO	NO	DON'T KNOW	DON'T KNOW
	N/A	YES	NO	NO	NO	NO
	Blank	YES	NO	NO	NO	DON'T KNOW

Results

Using this classification system, the responses were aggregated as follows (see Figure 2):

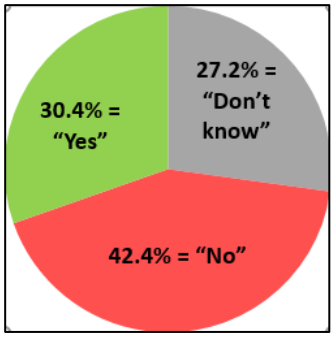

Figure 2. Breakdown of Respondents by Response

- **(Don't Know)** 27.2% of the total respondents indicated they don't know if WWA is institutionalized.
- **(No)** 42.4% of the sample was classified as "no," which means it is less likely they WWA terms institutionalized.
    - *Because this category includes respondents who answered "don't know" to one set of questions, results for the "No" category have a higher level of uncertainty compared to other categories.*
- **(Yes)** 30.4% of the sample was classified as "Yes," which means WWA terms are specifically written into their organizations' policies or statutes.

Breakdown of Responses by WWA Terms

Using the classification scheme described above, advisory (with 54% of respondents classified in the "No" category as shown in Figure 3) was less likely to be specifically written into any organizational policies, contracts, operating procedures, or bylaws or into any statutes, ordinances, or executive orders enacted by a separate body that an organization follows. Warning was more likely to be institutionalized (with 41%t of respondents in the "Yes" category; see Figure 3).

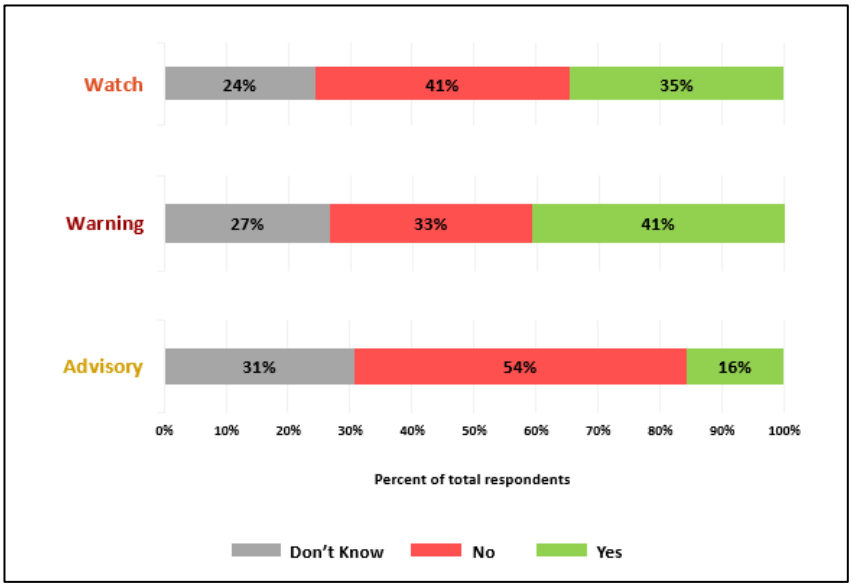

Figure 3. Breakdown of Respondents by WWA Term

Breakdown of Responses by Policy/Statute Category

WWA terms are more embedded in policies than statutes, and warning is the term most institutionalized (consistent with the results above) as demonstrated by the higher "yes" response rate (40%) compared to its "no" counterpart (32.8%), as depicted in Figure 4. Among the three WWA terms, *advisory* is the least likely to be written in institutional policies and statutes, as illustrated by the high and low values in the "Advisory not used" and the "Advisory used" columns respectively (Figure 4).

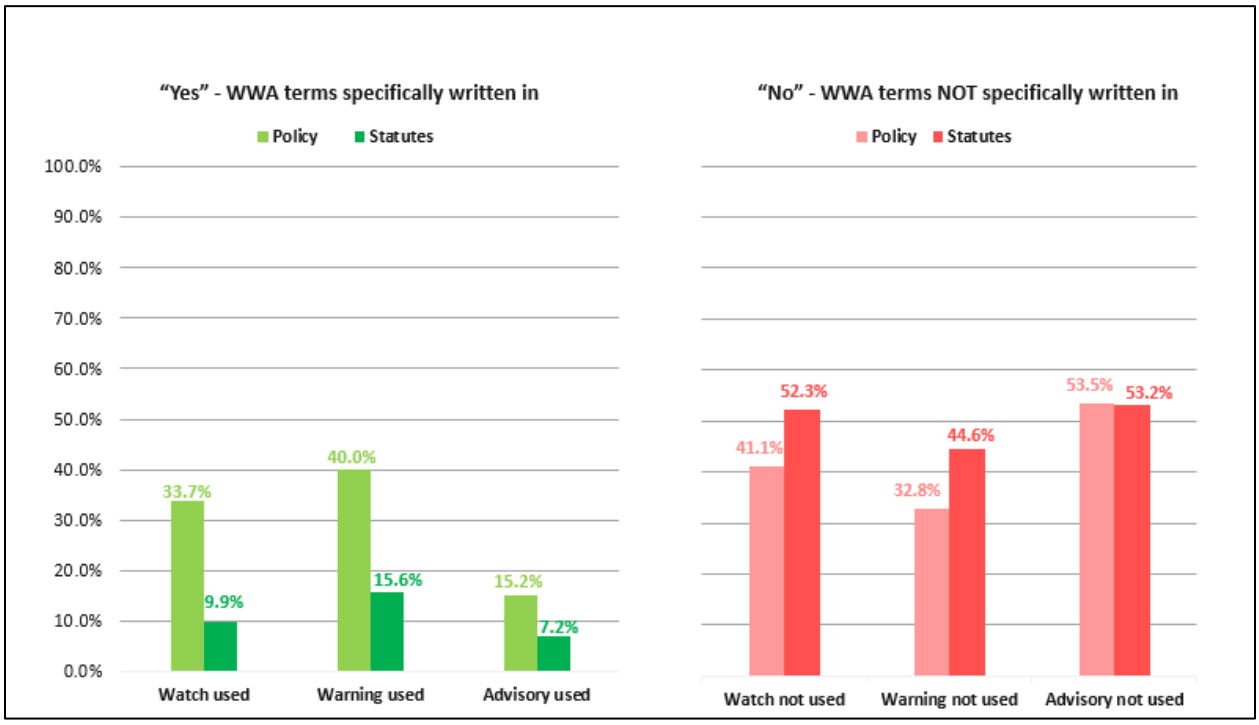

Figure 4. Breakdown of Responses by Policy/Statute Categories

Breakdown of Use of WWA Information

Looking closer at the "No" and "Don't Know" categories, respondents use the information contained in WWA products even if the terms are less likely to be written in their policies and statutes. Of the respondents who were classified in the "No" or "Don't Know" category, 17.1% still use the information contained in watches, 14.8% in warnings, and 10.9% in advisories. These results were obtained by counting respondents who answered "no," "n/a," "don't know," or did not provide an answer to the two institutionalization questions (Q9 and Q10 for watch, Q15 and Q16 for warning, and Q21 and Q22 for advisory) **but** responded "yes" to questions related using information contained in WWA products (Q13 for watch, Q19 for warning, and Q25 for advisory).

Research Question 2: Is WWA Institutionalized by Different Hazard Areas?

Method

Survey respondents were asked which WWA terms they depend upon for 11 different types of hazards (termed "weather events" in the survey; see Figure 5). We counted the responses received for each hazard area by looking at answers to Q14 for watches, Q20 for warnings, and Q26 for advisories. (The NWS does not issue advisories for tropical cyclones and fire weather, and thus there are no data points for advisory in these hazard areas.)

- ☐ Tropical cyclones (tropical storms, hurricanes)
- ☐ Severe weather (thunderstorms, damaging winds, tornadoes/waterspouts, hail)
- ☐ Winter storms (snow, freezing rain, ice)
- ☐ Inland flooding (including flash and river/stream flooding)
- ☐ Coastal flooding (including storm surge)
- ☐ Tsunamis
- ☐ Extreme heat
- ☐ Extreme cold and wind chills
- ☐ Poor visibility (dust storms, fog)
- ☐ Fire weather conditions
- ☐ Rough waters (high surf, gales, rough seas, choppy waters, rip currents)

Figure 5. Types of Hazard Areas (i.e., Weather Events)

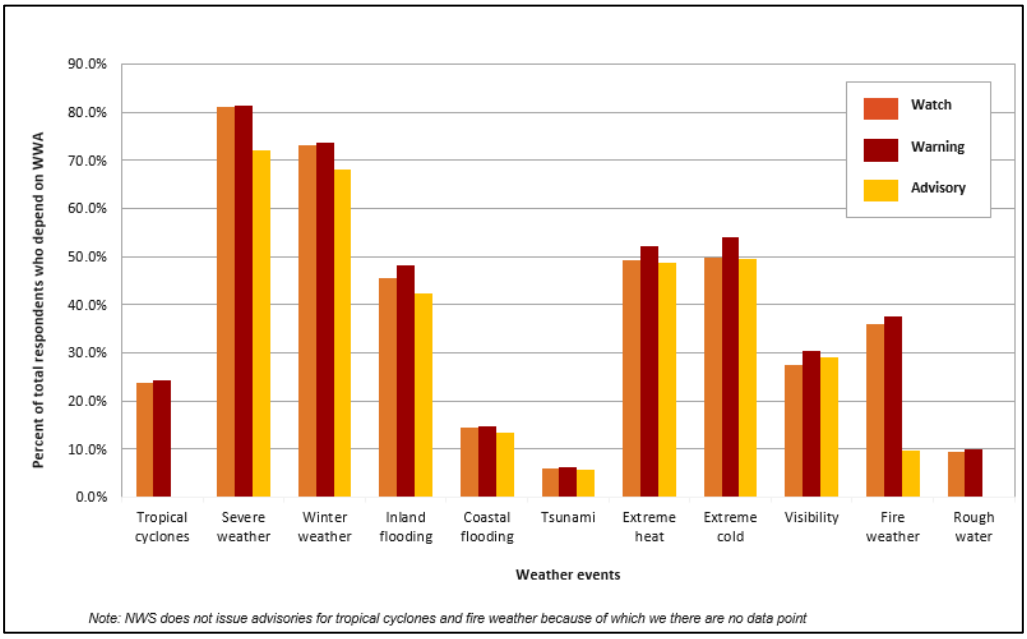

Figure 6. Dependence on WWA terms by weather event.

Results

WWA is most institutionalized in severe weather events, followed by winter weather and extreme cold weather respectively. WWA is least institutionalized in tsunami events, followed by rough water and coastal flooding (see Figure 6).

Research Question 3. How Long Will It Take for Organizations to Adapt to a Potential Change in the Current WWA System?

Method

This analysis focused on the time needed to adapt to any potential change in the current WWA system. First, we restricted the sample selection to respondents who answered "yes" to the institutional statutes or policies questions (Q9 and Q10 for *watch*, Q15 and Q16 for *warning*, and Q21 and Q22 for *advisory*). After restricting the sample selection, we analyzed data from questions where respondents were asked how much time would they need to adapt their organizational policies, contracts, operating procedures, or bylaws if the NWS were to alter the WWA terms (Q12 for *watch*, Q18 for *warning,* and Q24 for *advisory.*) Respondents were presented with six alter-time options for each WWA term (see Figure 7). We also looked specifically at how difficult it would be for organizations to adapt software, technology, and/or alerting system to change (Q27).

- ☐ ___ 0-3 months
- ☐ ___ 4-6 months
- ☐ ___ Over 6 months to 1 year
- ☐ ___ Over a year, but not more than 2 years
- ☐ ___ More than 2 years
- ☐ ___ N/A

Figure 7. Alter Times Presented to Survey Participants

Results

Of the respondents who have WWA terms written in their institutional policies and statutes, most need up to three months to adapt to any potential changes to WWA terms (see Figure 8). Additionally, of the respondents that answered Q27 (which asked in two different ways about organizations' ability to adapt software, technology, and/or alerting systems to potential changes in WWA terms), most found it would be easy to adapt their software, technology and/or alerting system (see Figure 9 on the next page.)

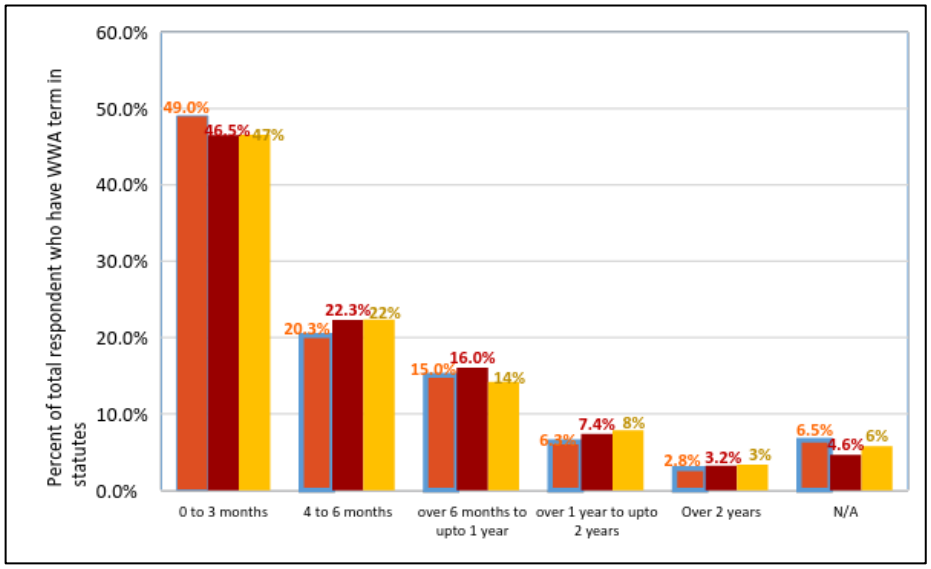

Figure 8. Alter Times Required for Adapting to Potential Changes in WWA Terms

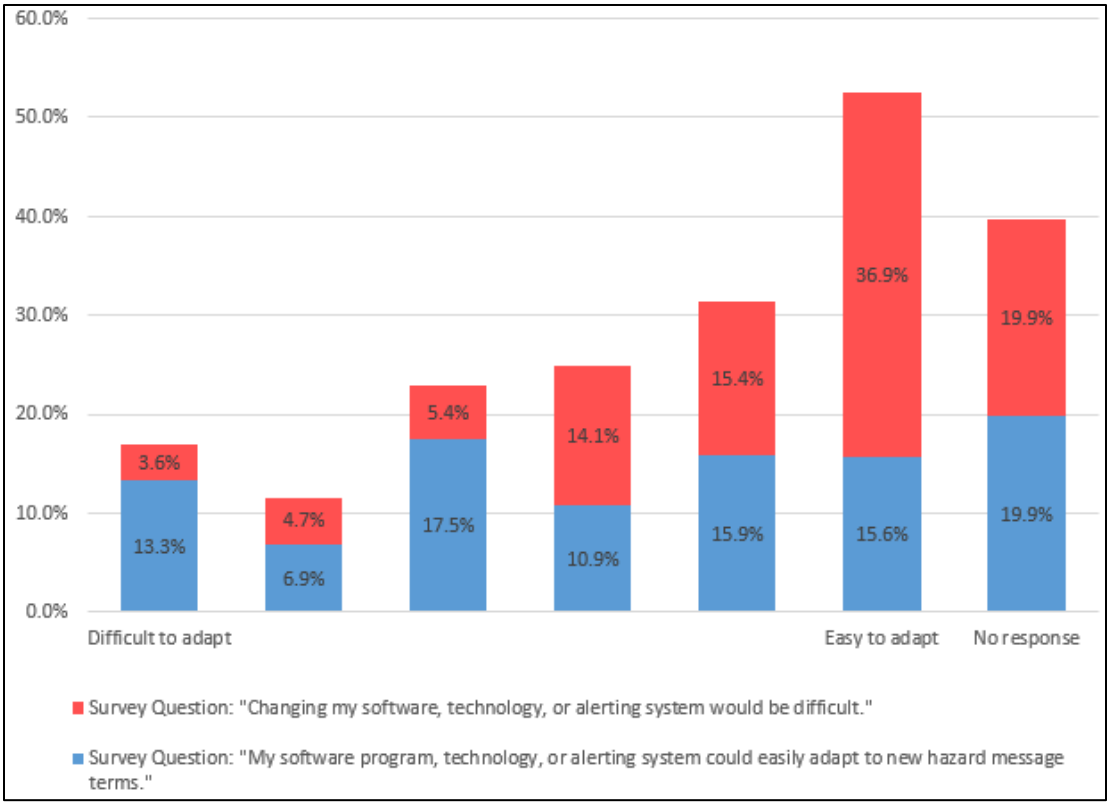

Figure 9. Respondents' Ability to Adapt Software, Technology, and/or Alerting System to Potential WWA Changes

Discussion of Results

The following are reflections and limitations on the key findings of this study.

- ***Analyzing the "Don't Know's."*** The large percentage of respondents who do not know if WWA is institutionalized may indicate that some of the individuals taking the survey were not the "right" people (i.e., they were not the individuals who use weather information in their organizations or had limited or incomplete knowledge of organizational policies). Another factor may be reflected in the findings from some of our initial exploratory interviews where interviewees who initially said WWA terms weren't institutionalized in their policies changed their response after 5-10 minutes of dialogue and prompting. Although the survey was specifically designed to create intrapersonal dialogue to prompt respondents to think about how they use WWA terms *before* answering specific policy questions, the survey may not have been a true replacement for the interviewee dialogue.

- ***Using WWA information***. As discussed in the methods section, the exploratory interview results showed that interviewees were more concerned with the information embedded *within* the body text of the WWA products rather than with the WWA headline terms themselves. As such,

we hypothesized that those survey respondents who said that WWA was not institutionalized in their organizations would still have a dependence on WWA information. The results showed that of the respondents who were classified in the "No" or "Don't Know" category, 17.1% still use the information contained in watches, 14.8% in warnings, and 10.9% in advisories. Despite extensive pretesting on survey wording, it is possible that respondents did not understand the question or read it too quickly and assumed if they answered "no" to prior questions about whether the terms were embedded in policies or statute, the answer to this question would also be "no." It is also again possible that the survey respondents may not have been the individuals in their organizations who use weather information.

- ***Looking closer at WWA by hazard.*** The results show that severe and winter weather events are most institutionalized whereas rough water, coastal flooding, and tsunami events are the least institutionalized. Given the sampling limitations, however, the respondents may have largely represented the hazards that occur most frequently, whereas other hazards may have had less representation. These findings should not be used to assume that WWA is not institutionalized in these other hazard areas, such as tropical, where emergency operation triggers are tied to tropical storm and hurricane watches and warnings.

- ***Assessing time needed to adapt to WWA changes.*** Although the survey results state that most organizations need three months to adapt to any potential changes to WWA terms, this time only reflects changes to existing policies. During the exploratory interviews, participants suggested that while terminology changes can often be readily incorporated into existing policies, it can take many more months to embed these changes in guidance and outreach, to secure review and approval of changes, and to implement the organizational changes (such as in software/technology or training) needed to fully adopt new terms. For example, during the interviews, the nuclear power sector stated its industry changes procedures very slowly and it typically takes three to five years to review all documented procedures, identify which ones need to be changed, identify departments to make the changes, and then train all staff. Additional time may also be needed to educate the public and partners on any changes. Interviewees also implied that these changes may have associated costs that would require advanced budgeting. For these reasons, a three-month timeframe might not be realistic for many organizations.

- ***Relying less on advisories.*** While the results from this study indicate that advisory is the *least* institutionalized term among the WWA terms, this does not mean that stakeholders do not use the term or that the information embedded in the advisories is not useful. As the Hazard Simplification Case Study Report showed, "There was no consensus that any of the individual WWA terms should be eliminated or replaced" (p13). This survey suggests, however, that *if* the NWS decides to replace advisory with a new term, it may not have a large institutional impact on stakeholders' policies.

POTENTIAL NEXT STEPS

Given some of the limitations of this survey data, the following are suggestions for potential next steps for the NWS:

- ***Conduct additional research with underrepresented sectors and/or hazards.*** Because of the uneven distribution of sectors responding to this survey, the NWS may want to follow-up with sectors that were underrepresented in the survey, such as the insurance industry. Additionally, the NWS may also want to conduct follow-up research on hazard areas that were not well represented in the sample, such as tropical weather. Using the same survey, the NWS could reach out to these stakeholders at conferences targeted toward these sectors and hazard areas.

- ***Gather more information on requirements and timeframes for change*****.** Although most respondents stated their organizations need three months to adapt to any WWA change and could easily adapt their software/technology/alerting system, there are likely outlier respondents who require more time. The NWS could conduct additional research with strategic sectors to gather more information on their requirements and timeframes for implementing potential changes to the WWA system. This research should not only encompass policy changes, but also should extend to associated technology, outreach, and training needs both internal and external to the organization.

- ***Analyze relevant policies and statutes****.* Some respondents provided open-ended responses describing policies and statutes that depend on WWA. The NWS could investigate these policies (and others identified through research) to determine if certain sectors need more time and assistance to adapt to potential change.

APPENDIX A: SURVEY

Assessing the Use of NWS Watch, Warning, and Advisory Terms by Decision-Makers

Is your organization a government agency, private company, nonprofit group, or other entity that uses information from NOAA's National Weather Service (NWS) in its policies, procedures, or decision-making? For example, do you represent an emergency management agency that uses watches to prompt actions? Do you represent an insurance company that uses specific warnings in your insurance policies?

If so, please consider taking this survey or sending the survey web link to your colleagues who use or communicate NWS information.

The NWS is looking to improve how it communicates weather and water hazard information to the public. As part of this effort, the NWS needs feedback from people such as yourself on the extent to which your organization uses three specific types of NWS products: watches, warnings, and advisories. We'll describe these terms later.

Completing this survey is voluntary, and your responses to the questions are anonymous. Please note that the "save and continue" feature allows you to exit the survey and return to it at another time. Your responses will be saved for one week. Be aware that your saved responses may be viewed by others when using a public computer. For any questions or comments regarding this process, please email them to hazsimp@noaa.gov.

To begin the survey, please click "Next."

Paperwork Reduction Act Statement: Public reporting burden for this collection of information is estimated at 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Sarah Brabson, NOAA National Weather Service, SSMC 2, Room 17205, 1325 East West Highway, Silver Spring, MD. Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subjected to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

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General Background

1.) Which of the following categories best represents your organization? (choose one)

- ___ Agriculture
- ___ Air Transportation
- ___ Construction
- ___ Education – College/University
- ___ Education – Pre-K—12
- ___ Emergency Management
- ___ Emergency Responders (includes Fire, Emergency Medical Services, Law Enforcement, Search and Rescue, etc.)
- ___ Energy Production
- ___ Entertainment – Indoor Venue
- ___ Entertainment – Outdoor Venue
- ___ Finance, Insurance, and Reinsurance
- ___ Health Care and Social Assistance
- ___ Hotel and Food Services
- ___ Humanitarian/Disaster Relief
- ___ Manufacturing
- ___ Marine Transportation
- ___ Media and Broadcasting
- ___ Military
- ___ Mining/Drilling
- ___ Natural Resources/Land Management
- ___ Parks and Outdoor Recreation
- ___ Rail/Surface Transportation
- ___ Religious
- ___ Retail
- ___ Research, Science, and Technology
- ___ Telecommunications
- ___ Transportation/Transit Agency
- ___ Utilities and Public Works
- ___ Water Management
- ___ Weather/Climate Industry
- ___ Wholesale
- ___ Other (Please Specify)

2.) What level does your organization represent?

__ Federal government
__ State government
__ Local government
__ Tribal government
__ My organization is not a government agency

3.) What is the name of your organization?

4.) Which of the following best describes your role in your organization?

__ Upper management
__ Middle management
__ Junior management
__ Administrative staff
__ Support staff

__ Field operator
__ Undergraduate student
__ Graduate student
__ Consultant
__ Researcher
__ Self-employed
__ Other (Please Specify)

5.) In what states/territories do you primarily operate? (Check all that apply. If you work nationwide, check "Nationwide.")

__ Nationwide
__ AL
__ AK
__ AR
__ AS
__ AZ
__ CA
__ CO
__ CT
__ DC
__ DE
__ FL
__ GA
__ GU
__ HI
__ IA
__ ID
__ IL
__ IN
__ KS
__ KY
__ LA
__ MA
__ MD
__ ME
__ MI
__ MN
__ MO
__ MP (CNMI)
__ MS
__ MT
__ NC
__ ND
__ NE
__ NH
__ NJ
__ NM
__ NV
__ NY
__ OH
__ OK
__ OR
__ PA
__ PR
__ RI
__ SC
__ SD
__ TN
__ TX
__ UT
__ VA
__ VI
__ VT
__ WA
__ WI
__ WV
__ WY
__ Other (Please Specify)

6.) What type of area does your organization represent (Check all that apply)?

__ Urban
__ Suburban
__ Rural/wilderness
__ N/A
__ Other (Please Specify)

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Background on NWS Watches, Warnings and Advisories

The NWS issues watches, warnings, and advisories for a diverse set of hazardous weather and water events, such as severe thunderstorms, tropical storms, winter weather, flooding, and extreme heat. The questions in the next section of this survey focus on your organization's use of NWS watches, warnings, and/or advisories in policies, protocols, laws, contracts, operating procedures, guidance documents, or other formal or informal activities. Here are the general definitions of these terms:

Watch: A watch is used when the risk of a hazardous weather or water event has increased, but its occurrence, location, and/or timing is still somewhat uncertain. This term is intended to provide enough lead-time so those who need to set their plans in motion can do so.

Warning/Advisory: A warning or advisory is used when a hazardous weather or water event is imminent, or is already occurring. A **warning** is used for conditions that pose a threat to life and property. An **advisory** is used for less serious conditions that cause significant inconvenience and, if proper precautions are not taken, could pose a threat to life and property. When a warning or advisory is issued, preparations should be completed or rushed to completion.

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7.) Does your organization use NWS watches, warnings, or advisories in its activities, operations, or decision-making?

___ Yes
___ No [Exit survey]
___ Don't know

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8.) How important are NWS watches, warnings, and advisories to your organization for the following activities?

Making staffing decisions (placing people on call, adding staff, etc.)

__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Activating an emergency operations center

__ Not at all important

__ Somewhat important
__ Very important
__ The *deciding* factor

Sounding outdoor sirens
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Making evacuation decisions
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Moving people to safety/sheltering
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Allocating or pre-positioning resources (vehicles, salt/sand, etc.)
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Scheduling or canceling events (school, outdoor events, etc.)
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Carrying out standard operating procedures
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Communicating information to the public
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

Other: _____
__ Not at all important
__ Somewhat important
__ Very important
__ The *deciding* factor

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We now want to ask you about each of these NWS products (watches, warnings, and advisories) individually and get a sense of whether these terms are used in official documents or policies. Let's start with the term ***watch***. A ***watch*** is used when the risk of a hazardous weather event has increased, but its occurrence, location, and/or timing is still somewhat uncertain. This term is intended to provide enough lead-time so those who need to set their plans in motion can do so.

9.) Is the NWS term *watch* specifically written into any of your organization's policies, contracts, operating procedures, or bylaws?

___ Yes
___ No
___ Don't know

___ N/A

10.) Is the NWS term *watch* specifically written into any statutes, ordinances, or executive orders enacted by a separate body that your organization must follow?

___ Yes
___ No
___ Don't know
___ N/A

11.) Which of your organization's policies, contracts, operating procedures, or bylaws uses the NWS term *watch*? Please include any statutes, ordinances, or executive orders enacted by a separate body that your organization must follow. Please use as few words as possible to describe. Please leave blank if you don't know or do not have any.
[Open -ended]

12.) In your best estimation, if the NWS were to alter the term *watch* (but continue to convey the same information), how much time would your organization need to adapt your policies, contracts, operating procedures, or bylaws? *(Check one.)*

__ 0-3 months
__ 4-6 months
__ Over 6 months to 1 year
__ Over a year, but not more than 2 years
__ More than 2 years
__ N/A

13.) Do your organization's policies, contracts, operating procedures, or by-laws use the information contained in NWS *watches*?

___ Yes
___ No
___ Don't know
___ N/A

14.) For what types of weather events do you depend on a *watch*? *(Check all that apply)*

__ Tropical cyclones (tropical storms, hurricanes)
__ Severe weather (thunderstorms, damaging winds, tornadoes/waterspouts, hail)
__ Winter storms (snow, freezing rain, ice)
__ Inland flooding (including flash and river/stream flooding)
__ Coastal flooding (including storm surge)

__ Tsunamis
__ Extreme heat
__ Extreme cold and wind chills
__ Poor visibility (dust storms, fog)
__ Fire weather conditions
__ Rough waters (high surf, gales, rough seas, choppy waters, rip currents)

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Now let's turn to ***warnings***. A ***warning*** is used when a hazardous weather event is imminent, or is already occurring. A warning is used for conditions that pose a threat to life and property. When a ***warning*** is issued, preparations should be completed or rushed to completion.

15.) Is the NWS term *warning* specifically written into any of your organization's policies, contracts, operating procedures, or bylaws?

___ Yes
___ No
___ Don't know
___ N/A

16.) Is the NWS term *warning* specifically written into any statutes, ordinances, or executive orders enacted by a separate body that your organization must follow?

___ Yes
___ No
___ Don't know
___ N/A

17.) Which of your organization's policies, contracts, operating procedures, or bylaws uses the NWS term *warning*? Please include any statutes, ordinances, or executive orders enacted by a separate body that your organization must follow. Please use as few words as possible to describe. Please leave blank if you don't know or do not have any.

[Open -ended]

18.) In your best estimation, if the NWS were to alter the term *warning* (but continue to convey the same information), how much time would your organization need to adapt your policies, contracts, operating procedures, or bylaws? *(Check one.)*

__ 0-3 months
__ 4-6 months
__ Over 6 months to 1 year

__ Over a year, but not more than 2 years
__ More than 2 years
__ N/A

19.) Do your organization's policies, contracts, operating procedures, or bylaws use the *information* contained in NWS ***warnings***?**

___ Yes
___ No
___ Don't know
___ N/A

20.) For what types of weather events do you depend on a ***warning***?** *(Check all that apply.)*

— Tropical cyclones (tropical storms, hurricanes)
— Severe weather (thunderstorms, damaging winds, tornadoes/waterspouts, hail)
— Winter storms (snow, freezing rain, ice)
— Inland flooding (including flash and river/stream flooding)
— Coastal flooding (including storm surge)
— Tsunamis
— Extreme heat
— Extreme cold and wind chills
— Poor visibility (dust storms, fog)
— Fire weather conditions
— Rough waters (high surf, gales, rough seas, choppy waters, rip currents)

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Finally, let's discuss ***advisories***. An ***advisory*** is used when a hazardous weather event is imminent, or is already occurring. An ***advisory*** is used for less serious conditions than those associated with a warning, but that cause significant inconvenience and, if proper precautions are not taken, could pose a threat to life and property. When an ***advisory*** is issued, preparations should be completed or rushed to completion.

21.) Is the NWS term ***advisory* specifically written into any of your organization's policies, contracts, operating procedures, or bylaws?**

___ Yes
___ No
___ Don't know
___ N/A

22.) Is the NWS term *advisory* specifically written into any statutes, ordinances, or executive orders enacted by a separate body that your organization must follow?

___ Yes
___ No
___ Don't know
___ N/A

23.) Which of your organization's policies, contracts, operating procedures, or bylaws uses the NWS term *advisory*? Please include any statutes, ordinances, executive orders enacted by a separate body that your organization must follow. Please use as few words as possible to describe. Please leave blank if you don't know or do not have any.
[Open -ended]

24.) In your best estimation, if the NWS were to alter the term *advisory* (but continue to convey the same information), how much time would your organization need to adapt your policies, contracts, operating procedures, or bylaws? *(Check one.)*

— 0-3 months
— 4-6 months
— Over 6 months to 1 year
— Over a year, but not more than 2 years
— More than 2 years
— N/A

25.) Do your organization's policies, contracts, operating procedures, or bylaws use the *information* contained in NWS *advisories*?

___ Yes
___ No
___ Don't know
___ N/A

26.) For what weather events do you depend on an advisory? *(Check all that apply.)*

— Severe weather (thunderstorms, damaging winds, tornadoes/waterspouts, hail)
— Winter storms (snow, freezing rain, ice)
— Inland flooding (including flash and river/stream flooding)
— Coastal flooding (including storm surge)
— Tsunamis
— Extreme heat
— Extreme cold and wind chills
— Poor visibility (dust storms, fog)
— Rough waters (high surf, gales, rough seas, choppy waters, rip currents)

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27.) In the table below, please rate the extent that you agree or disagree with each statement. In these statements, the term "policy" should be interpreted broadly to mean policies, contracts, guiding documents, laws, or operating procedures.

	Not at all					Very Much
My organization relies more on the fact that a watch, warning, or advisory is issued than it does the information conveyed by these words.	1	2	3	4	5	6
One or more of the terms watch, warning, or advisory are embedded in my organization's policies.	1	2	3	4	5	6
If the NWS changed the terms watch, warning, or advisory, this would have major impacts on my organization's policies.	1	2	3	4	5	6
The information conveyed in the text of a watch, warning, or advisory message is more important to my organization than the terms themselves.	1	2	3	4	5	6
My software program, technology, or alerting system could easily adapt to new hazard message terms.	1	2	3	4	5	6
I rely on the terms watch, warning, or advisory *and* the information conveyed by these terms.	1	2	3	4	5	6

Changing my software, technology, or alerting system would be difficult.	1	2	3	4	5	6
Introducing new terms into my organization's policies would be difficult.	1	2	3	4	5	6
Changing the terms watch, warning, or advisory would have very little impact on me and my organization.	1	2	3	4	5	6

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Thank you for taking the time to complete this survey. Your input will be very helpful to NOAA's National Weather Service as it considers enhancements to the current watch, warning, and advisory system. Please feel free to share the survey link with your colleagues, especially if you know they rely upon NWS watches, warnings, and advisories.

If you want to learn more about the NWS Hazard Simplification Project, please visit http://www.weather.gov/hazardsimplification/

If you have any questions or comments regarding this survey, feel free to email us at hazsimp@noaa.gov.