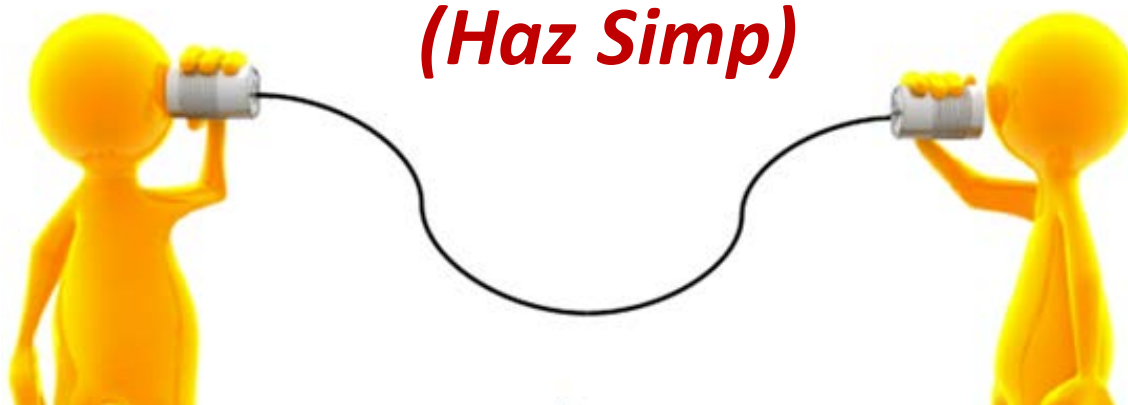




# Improving NWS Communication:

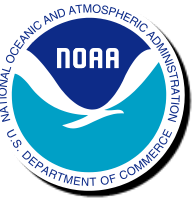
## *Winter Hazards Simplification Demonstration*

### *(Haz Simp)*



Eli Jacks, Andy Horvitz, Andrew J. Ansorge, Kim J. Runk,  
John Keyes, Somer A. Erickson, Gregory M. Schoor, John M. Margraf,  
Melody Magnus, Craig C. Schmidt, Dr. Vankita Brown, John T. Ferree





# Motivation: Confusion



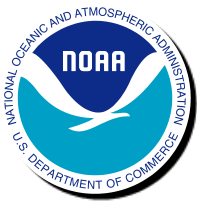
- **Misunderstanding among “Watch”, “Warning” and “Advisory” (WWA) terms**
  - *Watch and Warning both begin with “W-A”*
  - *Too many individual “products”*
- **Surveys and NWS Service Assessments**
  - *A Warning is a “heads-up”, as when a policeman lets me off with a warning*
  - *Watch is severe and urgent, as in “Hey! Watch out! Duck!”*



# What did we propose?



- **Plain English for the hazard terms**
- **A non-operational demonstration to test-drive the language and get feedback**



# Proposed Alternative Approach



## Official

THE NATIONAL WEATHER SERVICE HAS ISSUED A **WINTER STORM WATCH**.

THE NATIONAL WEATHER SERVICE HAS ISSUED A **WINTER WEATHER ADVISORY**.

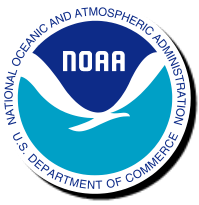
THE NATIONAL WEATHER SERVICE HAS ISSUED A **WINTER STORM WARNING**.

## Alternative

THE NATIONAL WEATHER SERVICE IS **FORECASTING THE POTENTIAL** FOR A SIGNIFICANT WINTER STORM.

THE NATIONAL WEATHER SERVICE **ADVISES CAUTION** FOR SNOW.

THE NATIONAL WEATHER SERVICE HAS ISSUED A **WARNING FOR A DANGEROUS** SNOW STORM.



# Demonstration Infrastructure



- **Displayed official WWA message and created alternative message in real-time at 26 WFOs**

# Winter Hazards Simplification Experiment Locations

## 26 Participating NWS Weather Forecast Offices

### Western Region

- 1. Medford, OR
- 2. Pocatello, ID
- 3. Missoula, MT
- 4. Great Falls, MT
- 5. Billings, MT
- 6. Glasgow, MT

**Central Region:** 7. Bismarck, ND; 8. Grand Forks, ND; 9. Rapid City SD; 10. Aberdeen, SD; 11. Duluth, MN; 12. Minneapolis, MN  
13. Grand Rapids, MI; 14. Gaylord, MI; 15. Detroit, MI

### Eastern Region

- 16. Burlington, VT
- 17. Grey, ME
- 18. Caribou, ME
- 19. Charleston, WV
- 20. Blacksburg, VA

### Alaska Region

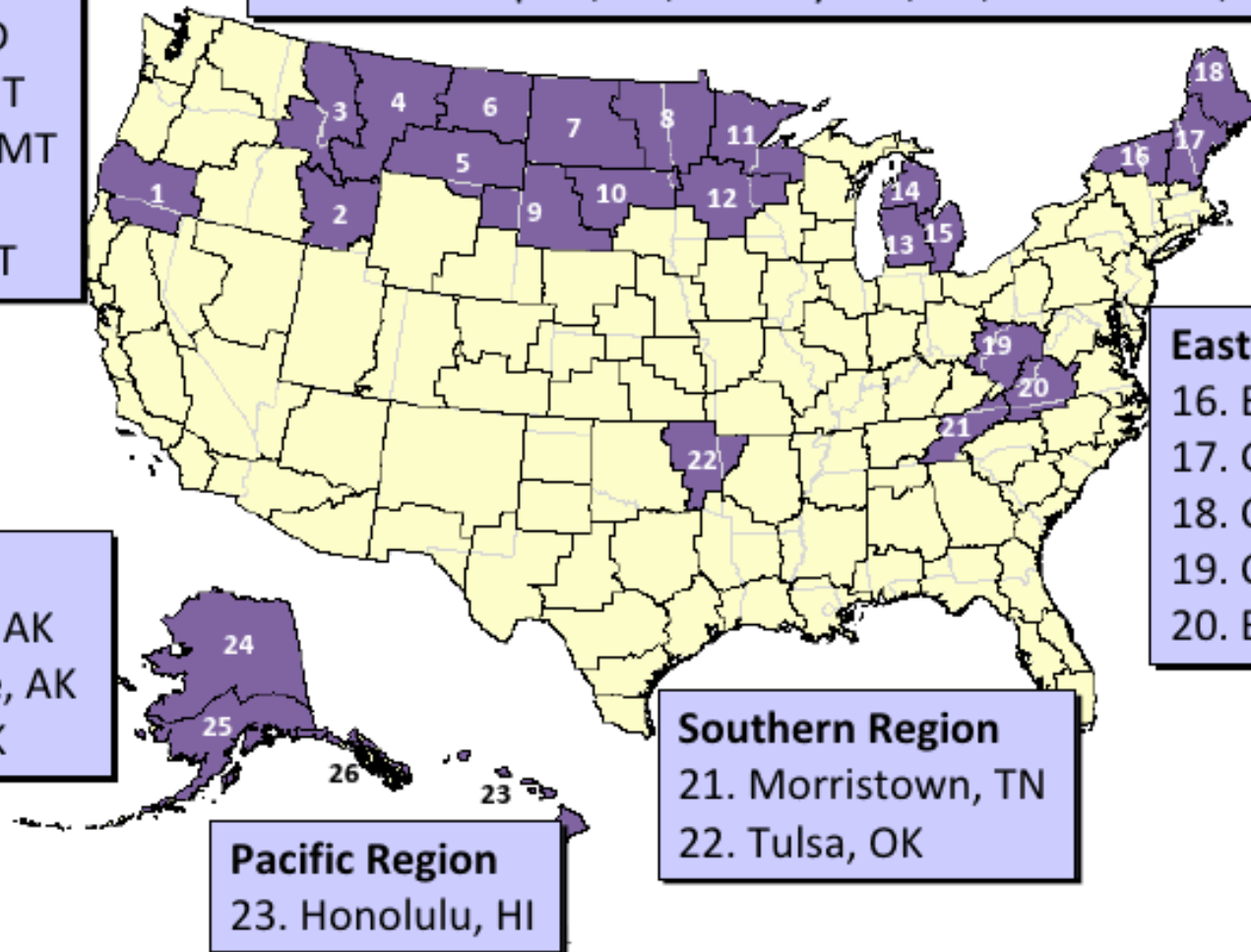
- 24. Fairbanks, AK
- 25. Anchorage, AK
- 26. Juneau, AK

### Southern Region

- 21. Morristown, TN
- 22. Tulsa, OK

### Pacific Region

- 23. Honolulu, HI





# Demonstration Infrastructure



- **Displayed official WWA message and created alternative message in real-time at 26 WFOs**
  - *Requested comments from December 11, 2012 through March 31, 2013*
- **Entire demonstration on a dedicated web site**
  - *Ensured no operational impact*
  - *Contained materials explaining the demonstration*
  - *Requested comments via survey form and email address*



The National Weather Service (NWS) is collecting feedback on a proposal for alternative headline text in our winter weather hazard messages.

Place your cursor [here](#) for a brief description, or learn more at our [web page](#)

To provide comments on this specific message comparison, please email us at [hazsimp@noaa.gov](mailto:hazsimp@noaa.gov)

To provide overall comments on this demonstration, [please comment](#)

### Shortened Official Message

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE JUNEAU AK  
1035 PM AKST WED DEC 12 2012

HAINES BOROUGH AND LYNN CANAL-  
INNER CHANNELS FROM KUPREANOF ISLAND TO ETOLIN ISLAND-  
INCLUDING THE CITIES OF...HAINES...PETERSBURG...WRANGELL...KAKE  
1035 PM AKST WED DEC 12 2012

...WINTER WEATHER ADVISORY REMAINS IN EFFECT UNTIL 6 AM AKST  
THURSDAY...

A WINTER WEATHER ADVISORY FOR SNOW REMAINS IN EFFECT UNTIL 6 AM AKST  
THURSDAY.

\* TIMING...SNOW WILL CONTINUE THROUGH THE NIGHT...HEAVIEST NEAR  
PETERSBURG AND ON THE HAINES HIGHWAY WEST OF KLUKWAN. SNOW WILL  
DIMINISH EARLY THURSDAY MORNING.

\* SNOW...7.4 INCHES HAS FALLEN AT PETERSBURG AS OF 9 PM WEDNESDAY  
EVENING AND SNOW HAS BEEN OBSERVED ON WEB CAM IMAGES ALONG THE  
HAINES HIGHWAY. AN ADDITIONAL 3 TO 5 INCHES IS EXPECTED THROUGH  
THURSDAY MORNING...HIGHEST AMOUNTS ARE EXPECTED NEAR PETERSBURG  
AND ALONG THE HAINES HIGHWAY WEST OF KLUKWAN.

\* OTHER IMPACTS...VISIBILITY WILL BE REDUCED TO LESS THAN 1 MILE  
DURING PERIODS OF HEAVIER SNOWFALL. ICE AND SNOW ON ROADWAYS  
WILL CREATE HAZARDOUS DRIVING CONDITIONS. THIS WILL ALSO  
CREATE REDUCED BREAKING ACTION ON RUNWAYS.

### Proposed Alternative Message

URGENT - WINTER WEATHER MESSAGE  
NATIONAL WEATHER SERVICE JUNEAU AK  
1035 PM AKST WED DEC 12 2012

HAINES BOROUGH AND LYNN CANAL-  
INNER CHANNELS FROM KUPREANOF ISLAND TO ETOLIN ISLAND-  
INCLUDING THE CITIES OF...HAINES...PETERSBURG...WRANGELL...KAKE  
1035 PM AKST WED DEC 12 2012

THE NATIONAL WEATHER SERVICE IN JUNEAU CONTINUES TO ADVISE CAUTION  
FOR SNOW UNTIL 6 AM AKST THURSDAY.

\* TIMING...SNOW WILL CONTINUE THROUGH THE NIGHT...HEAVIEST NEAR  
PETERSBURG AND ON THE HAINES HIGHWAY WEST OF KLUKWAN. SNOW WILL  
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\$\$



# Feedback – Survey and Email



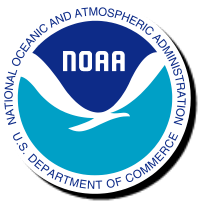
- **Provided link to standard NWS experimental product survey**
  - *Yielded 5201 responses*
- **Created dedicated email account for this demonstration**
  - *Received 965 emails*
- **Our social scientist recommended separate approaches for analyzing surveys and emails**



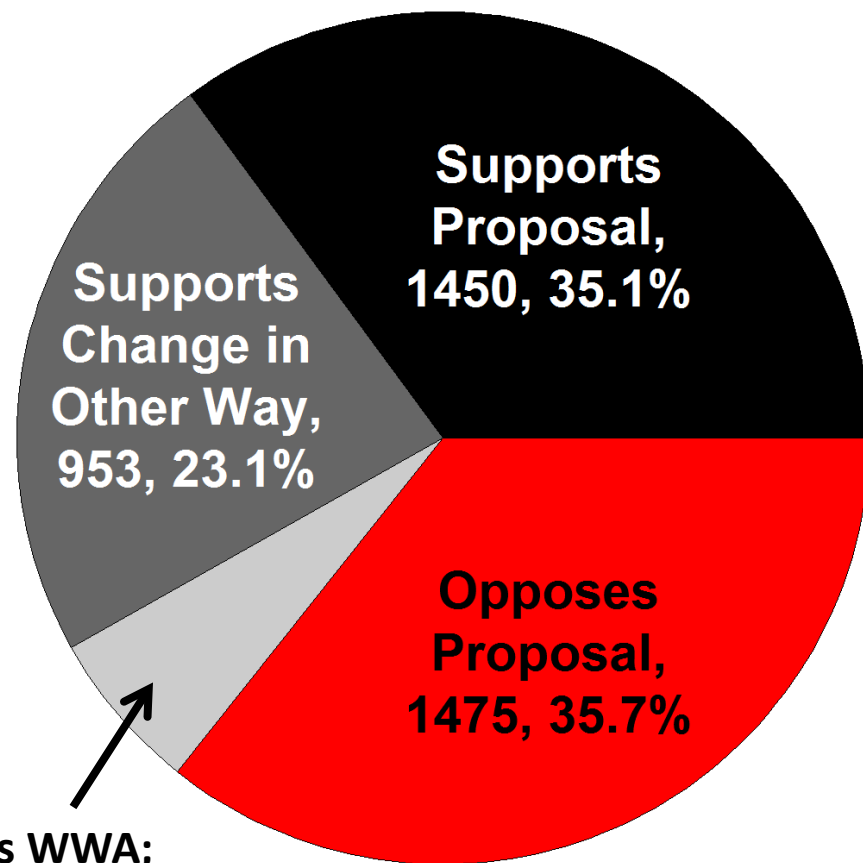
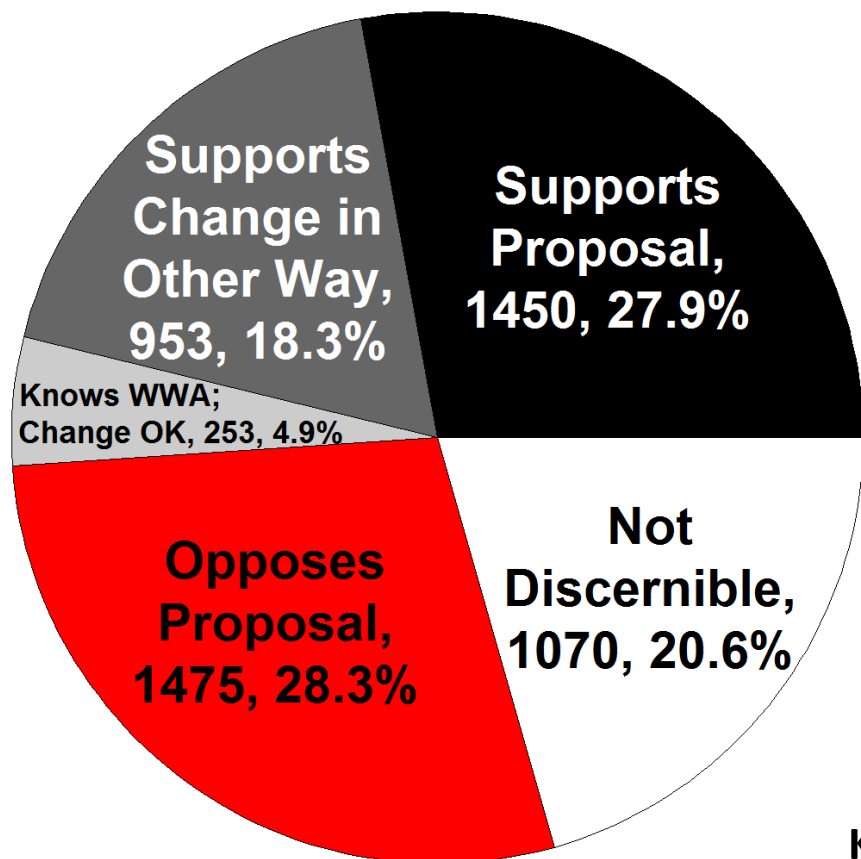
# Survey Analysis Process



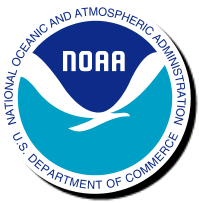
- **Standard analysis methodology used by a team of 16 NWS meteorologists**
- **The team stratified responses to gauge level of support for change**
- **Recurring comments were also collected**



# What do you think about the Hazard Simplification Demo?



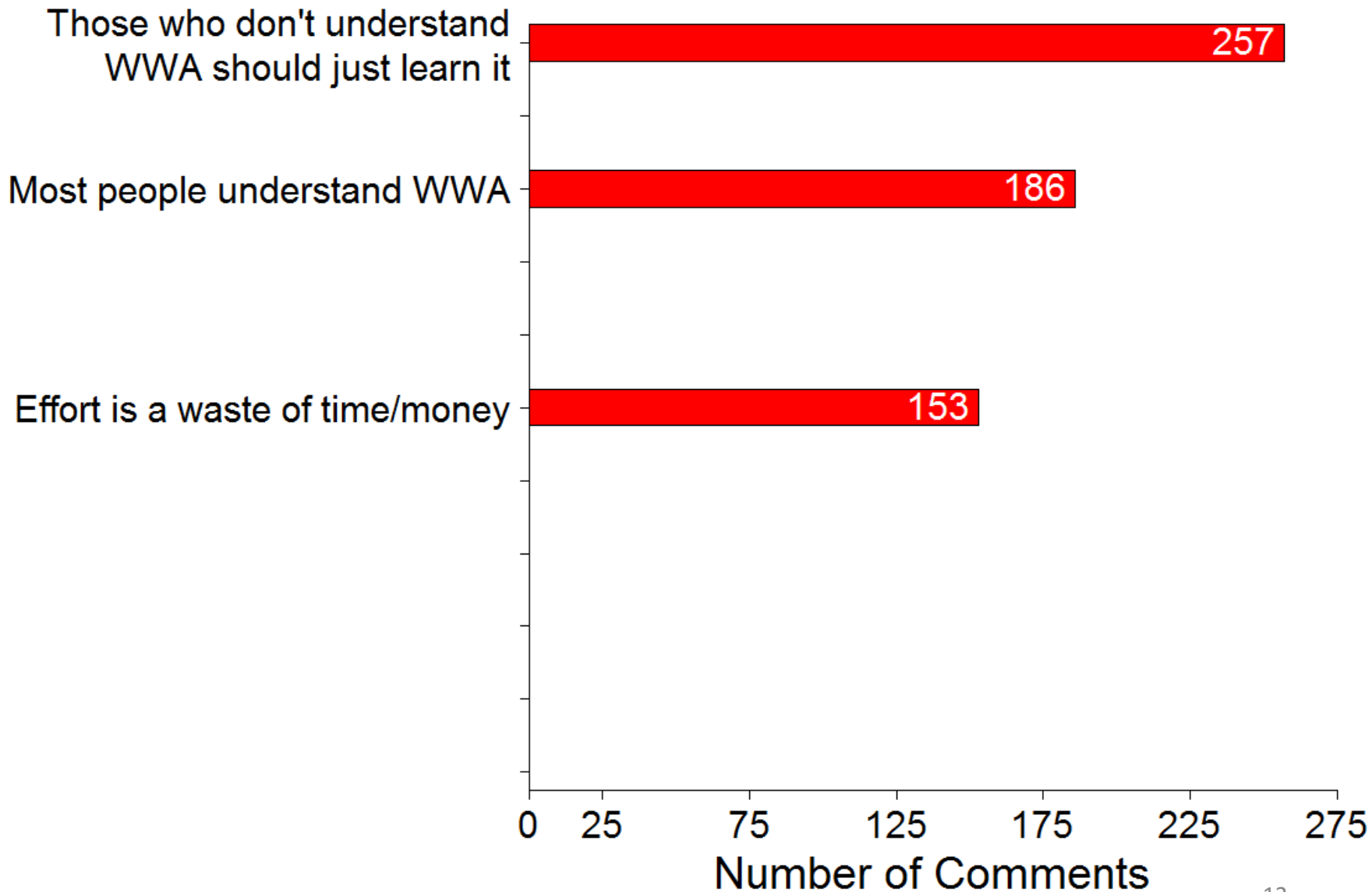
Knows WWA;  
Change OK, 253, 6.1%

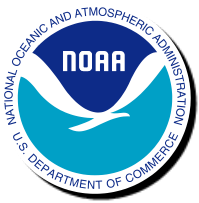


# Recurring Comments



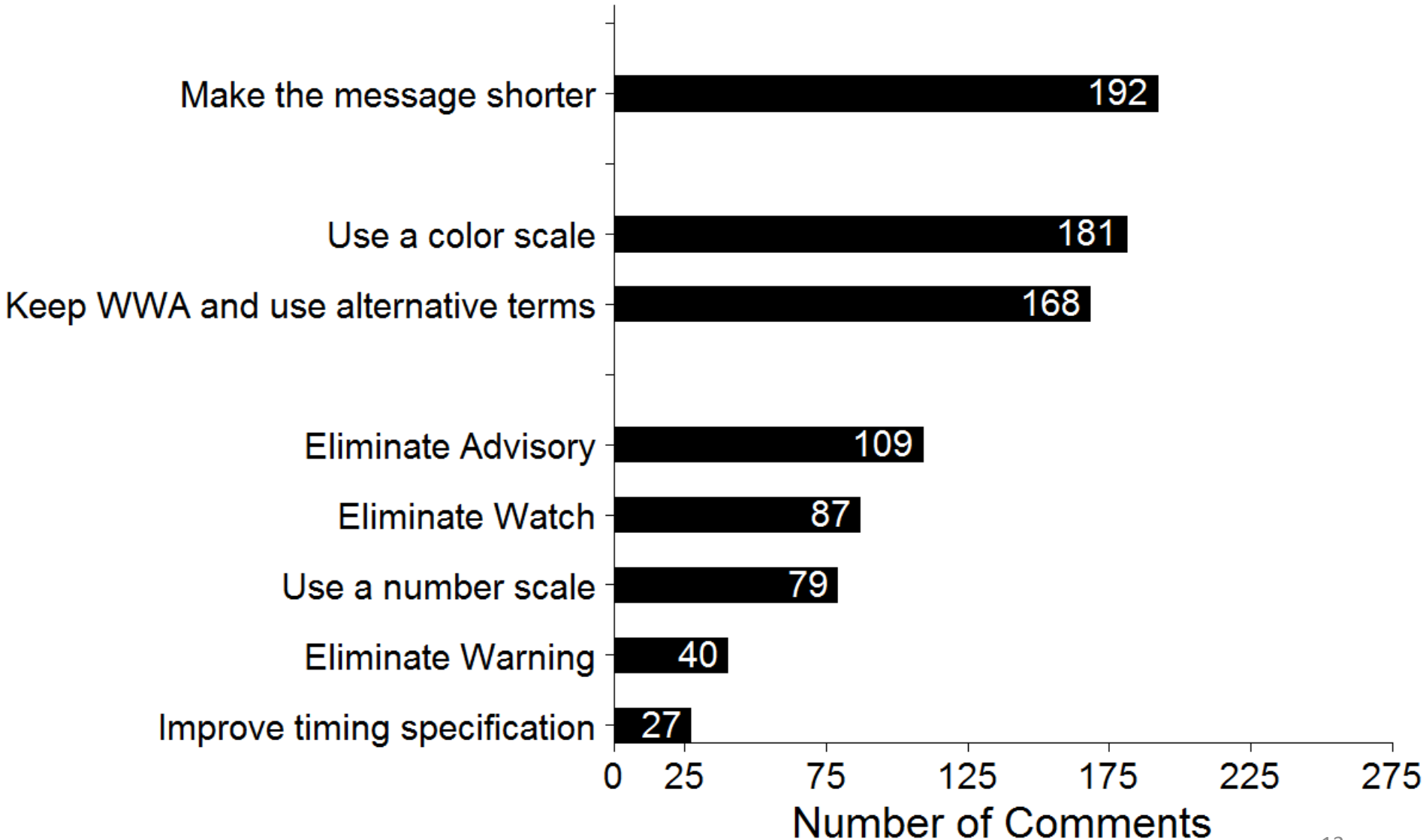
Number of recurring comments  $\neq$  Number of respondents





# Recurring Comments

Number of recurring comments  $\neq$  Number of respondents

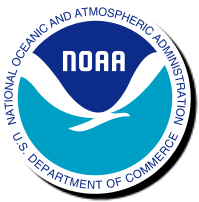




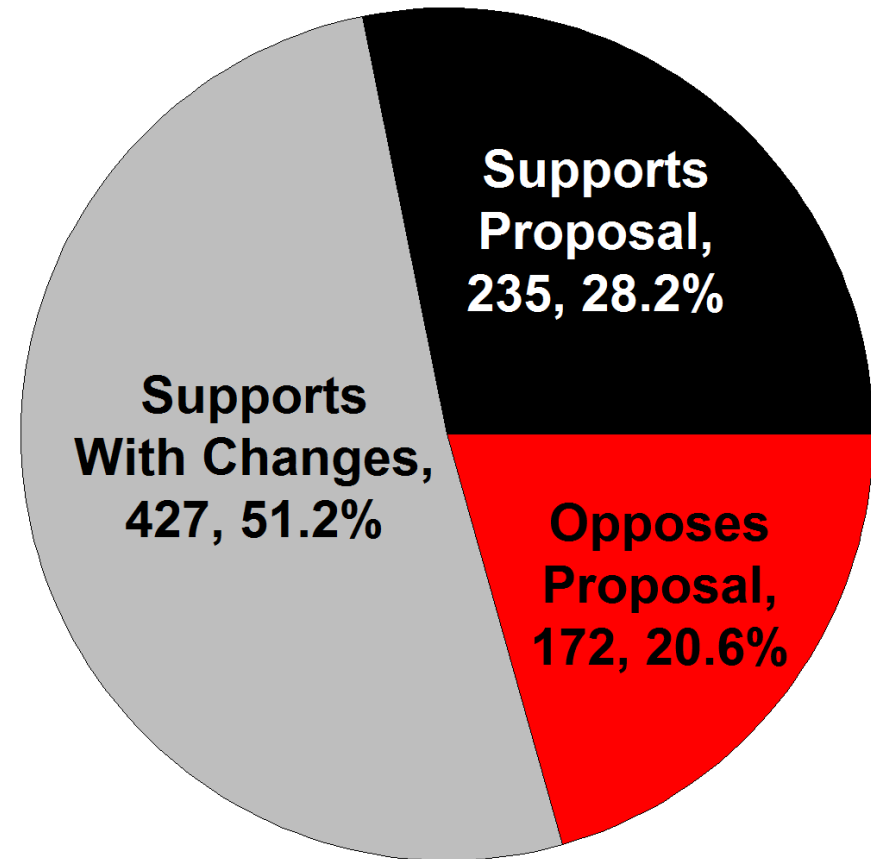
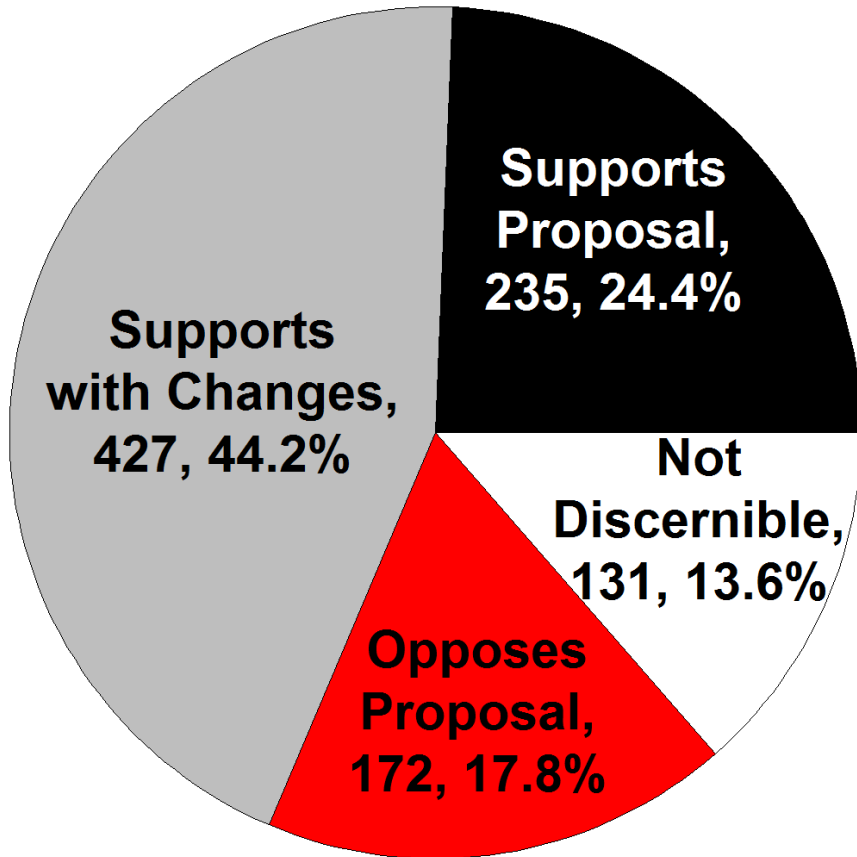
# Email Analysis Process

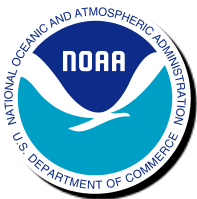


- **Four different NWS meteorologists analyzed the emails**
- **Used a subset of emails to identify repetitive, significant comments**
  - **Categorized comments accordingly**

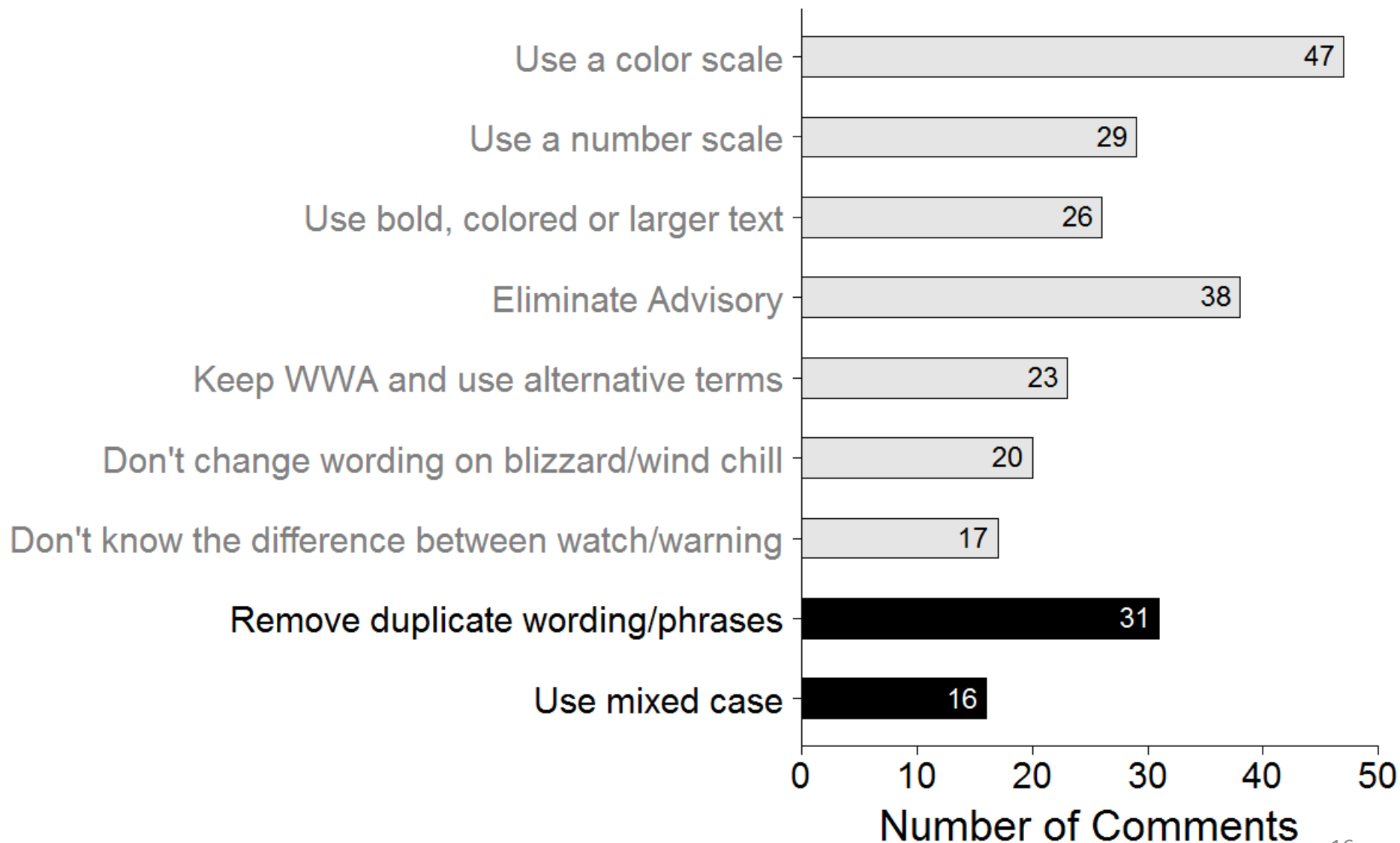


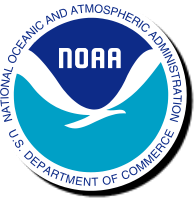
# Email Results





# Email Suggestions

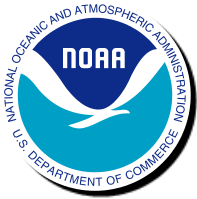




# Results/Next Steps



- **Majority of respondents supported change of some sort**
- **Top three comments**
  - Use a color scale, make the message shorter, keep WWA and use alternative terms
- **Social scientists assisting with next steps**
  - Options: Prototype development for a follow-on survey, possibly using side-by-side approach again



# Thank you!



## Survey Analyzers

<b>Jim Sieveking</b>	NWS St. Louis, MO
<b>Paul Stokols</b>	OCWWS
<b>Andy Noel</b>	OCWWS
<b>Dave Hintz</b>	NWS Aberdeen, SD
<b>Jim Keysor</b>	NWS Gaylord, MI
<b>John Lovegrove</b>	NWS Medford, OR
<b>Louise Fode</b>	NWS Alaska Region HQ
<b>David Kochevar</b>	NWS Anchorage, AK
<b>David Kramer</b>	NWS Anchorage, AK
<b>Chris Foltz</b>	NWS Great Falls, MT
<b>Todd Foisy</b>	NWS Caribou, ME
<b>Michael Sporer</b>	NWS Blacksburg, VA

## Email Analyzers

<b>Dr. Steve Lyons</b>	NWS San Angelo, TX
<b>Andy Nash</b>	NWS Burlington, VT

## IT/Web Support

<b>Michael Johnson</b>	NWS Central
<b>Bill Gery</b>	Region HQ
<b>Steve Berry</b>	
<b>Kolly Mars</b>	NOAA NIDS
<b>Dan Arnold</b>	

A. J. Ansorge and S. A. Erickson  
are funded through CIMMS  
Cooperative Agreement  
#NA11OAR4320072.





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***Email: [andrew.ansorge@noaa.gov](mailto:andrew.ansorge@noaa.gov)  
[elliott.jacks@noaa.gov](mailto:elliott.jacks@noaa.gov)***