



**Saint Cloud State University**  
**Earth & Atmospheric Sciences Department**



# Survey Questions & Test Season Responses

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# Post Storm Survey (PSS)

This survey was created by Matt Taraldsen, a meteorology student at Saint Cloud State University, under the guidance of Earth and Atmospheric Sciences professor Dr. Anthony Hansen, Communication Studies professor Suzanne Stangl-Erkens and meteorologists from the National Weather Service office in Duluth, Minnesota.

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<b>WAS*IS</b>	WORKSHOPS				
weather & society * integrated studies					
Changing from what <b>WAS</b> to what <b>IS</b> the future of integrated weather studies					

This survey does not constitute an endorsement by the NWS of any information, products or services within this project.



# Post Storm Survey (PSS)



## Motivation

*“Need a process by which WFO [Weather Forecast Offices] can systematically gather local customer input and local research results ... and turn that information into improved products and services”*

**Ray Wolf – Science and Operations Officer NWS WFO Davenport, IA**

## Goal

**Improve communication & effectiveness of winter weather information and threat by gaining insight into perceptions and decision making processes related to hazardous winter weather.**



# Post Storm Survey

Please Refer to the All About the PSS Slideshow for details into the Post Storm Survey and background on its development.

[http://www.crh.noaa.gov/Image/dlh/slideshows/PSS\\_background.pdf](http://www.crh.noaa.gov/Image/dlh/slideshows/PSS_background.pdf)

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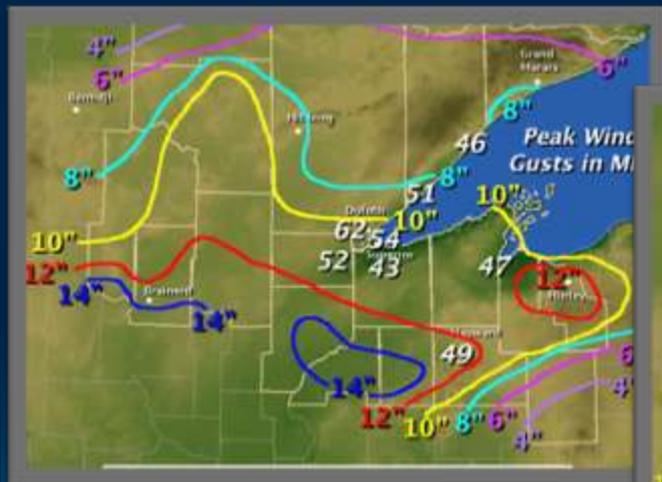
# Test Season Events

## March-April 2008



### Wide Range of Winter Storms (All Affected NE Minnesota & NW Wisconsin)

Blizzard, 2008 April 11<sup>th</sup>



Snow Advisory, March 18<sup>th</sup>  
*Non-Warning Event*



Winter Storm, 2008 April 6<sup>th</sup>



# Survey Responses and Results

Blizzard of April 11th	303 Respondents
Winter Storm of April 6 <sup>th</sup>	103 Respondents
Snow Advisory of March 18 <sup>th</sup>	100 Respondents

-----  
**503 total respondents!**



# The Post Storm Survey Questions



# PSS Questions



*what it looks like*

## Post Storm Survey

### 1. Default Section

#### 1. Where do you get weather information on a regular basis? (Select all that apply).

- |  |   |
|--|---|
| <input type="checkbox"/> Telephone                         | <input type="checkbox"/> Friends                |
| <input type="checkbox"/> Cell Phone                        | <input type="checkbox"/> Newspaper              |
| <input type="checkbox"/> NOAA Weather Radio                | <input type="checkbox"/> Public/Commercial      |
| <input type="checkbox"/> National Weather Service webpages | <input type="checkbox"/> Radio Cable Television |
| <input type="checkbox"/> Other internet webpages           | <input type="checkbox"/> Local Television       |
| <input type="checkbox"/> Other                             |   |

#### 2. During this storm, where did you get your weather information? (Select all that apply).

- |  |  |
|--|--|
| <input type="checkbox"/> Telephone                         | <input type="checkbox"/> Friends   |
| <input type="checkbox"/> Cell Phone                        | <input type="checkbox"/> Newspaper   |
| <input checked="" type="checkbox"/> NOAA Weather Radio     | <input type="checkbox"/> Public/Commercial Radio   |
| <input type="checkbox"/> National Weather Service webpages | <input type="checkbox"/> Cable Television (e. g. The Weather Channel, CNN, Weather Plus) |
| <input type="checkbox"/> Other internet webpages           | <input type="checkbox"/> Local Television  |
| <input type="checkbox"/> Other                             |  |



# PSS Questions

*what it looks like*



## Post Storm Survey

### 1. Default Section

5. Based on the forecast, what special preparations did you take for this storm? (Select as many as apply).

- |   |  |
|---|--|
| <input type="checkbox"/> Purchased/created/updated an emergency survival kit. | <input type="checkbox"/> Purchased salt/shovel.                          |
| <input type="checkbox"/> Purchased extra water/food.                          | <input type="checkbox"/> Purchased a generator.                          |
| <input type="checkbox"/> Filled prescription.                                 | <input type="checkbox"/> Increased communication with friends/relatives. |
| <input type="checkbox"/> Filled vehicle with a full tank of gas.              | <input type="checkbox"/> None.   |
| <input type="checkbox"/> Other  |  |

6. How did you alter your daily routine during this storm? (Select as many that apply.)

- |  |   |
|--|---|
| <input type="checkbox"/> Left work/school early/late.                                | <input type="checkbox"/> Made special arrangements (such as carpooling, |
| <input type="checkbox"/> Cancelled scheduled plans, appointments, and/or activities. | <input type="checkbox"/> Postponed or cancelled travel plans.           |
| <input type="checkbox"/> Did not attend work/school.                                 | <input type="checkbox"/> I did not alter my regular routine.            |

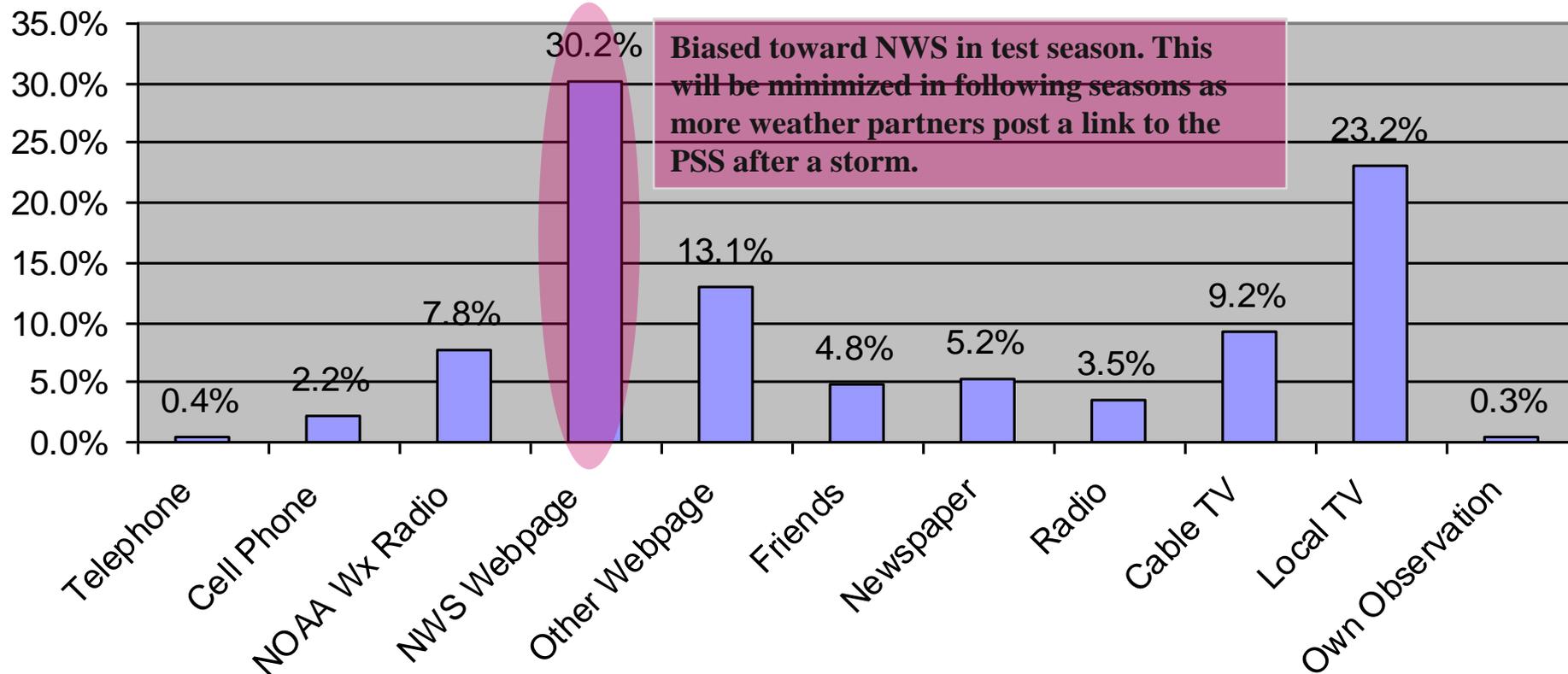


# All Responses



*Question: Where do you get your weather information on a regular basis? (Select all that apply)*

*\* Combined responses from all 3 events*



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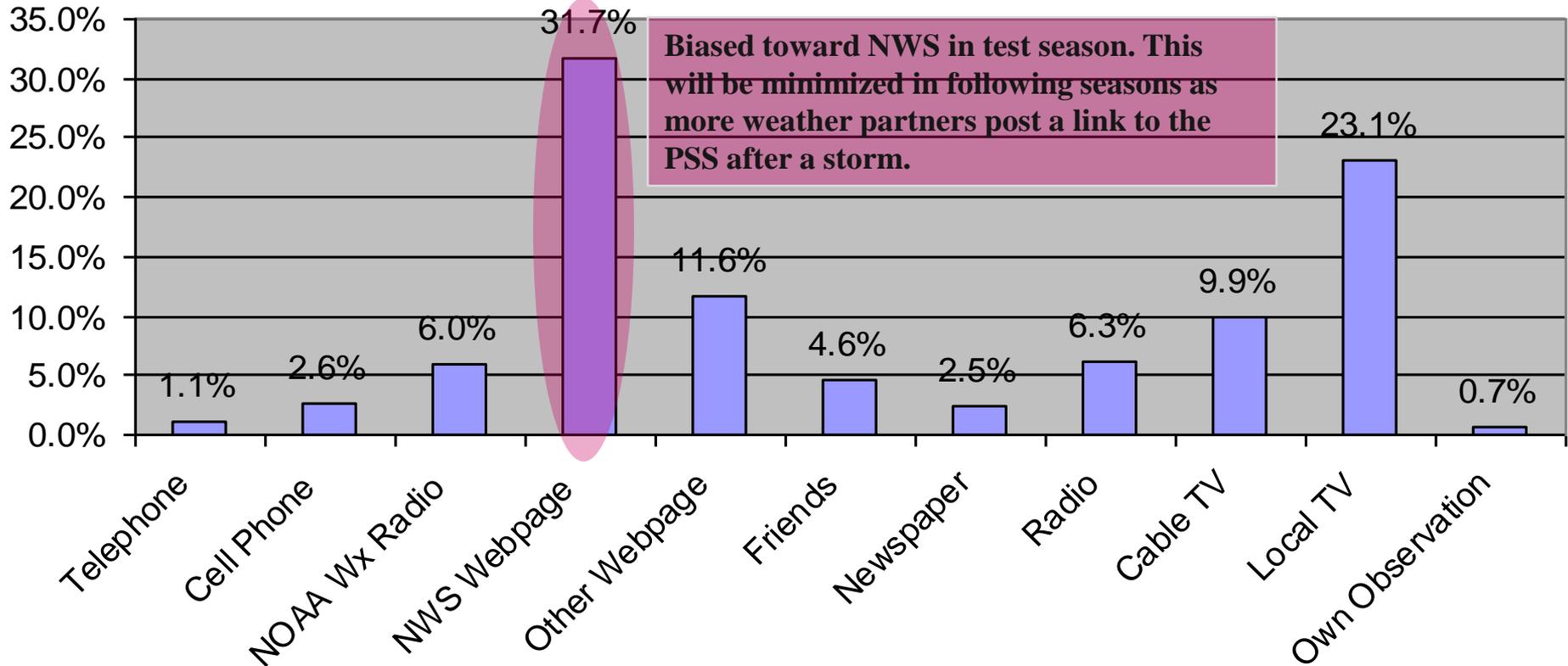


# All Responses



*Question: During this storm, where did you get your weather information? (Select All that Apply)*

*\* Combined responses from all 3 events*



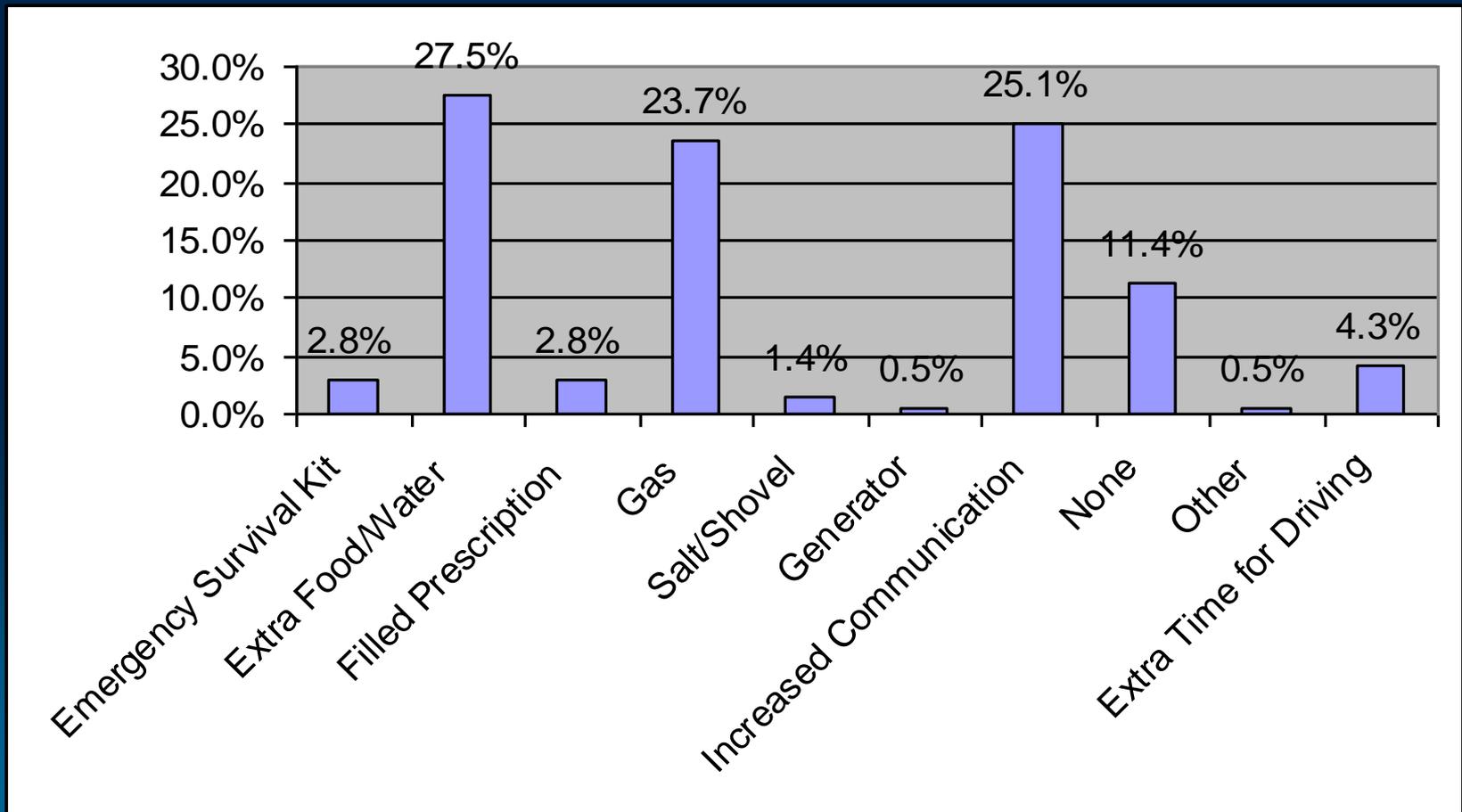


# Responses by Event

## Blizzard 2008 April 11<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



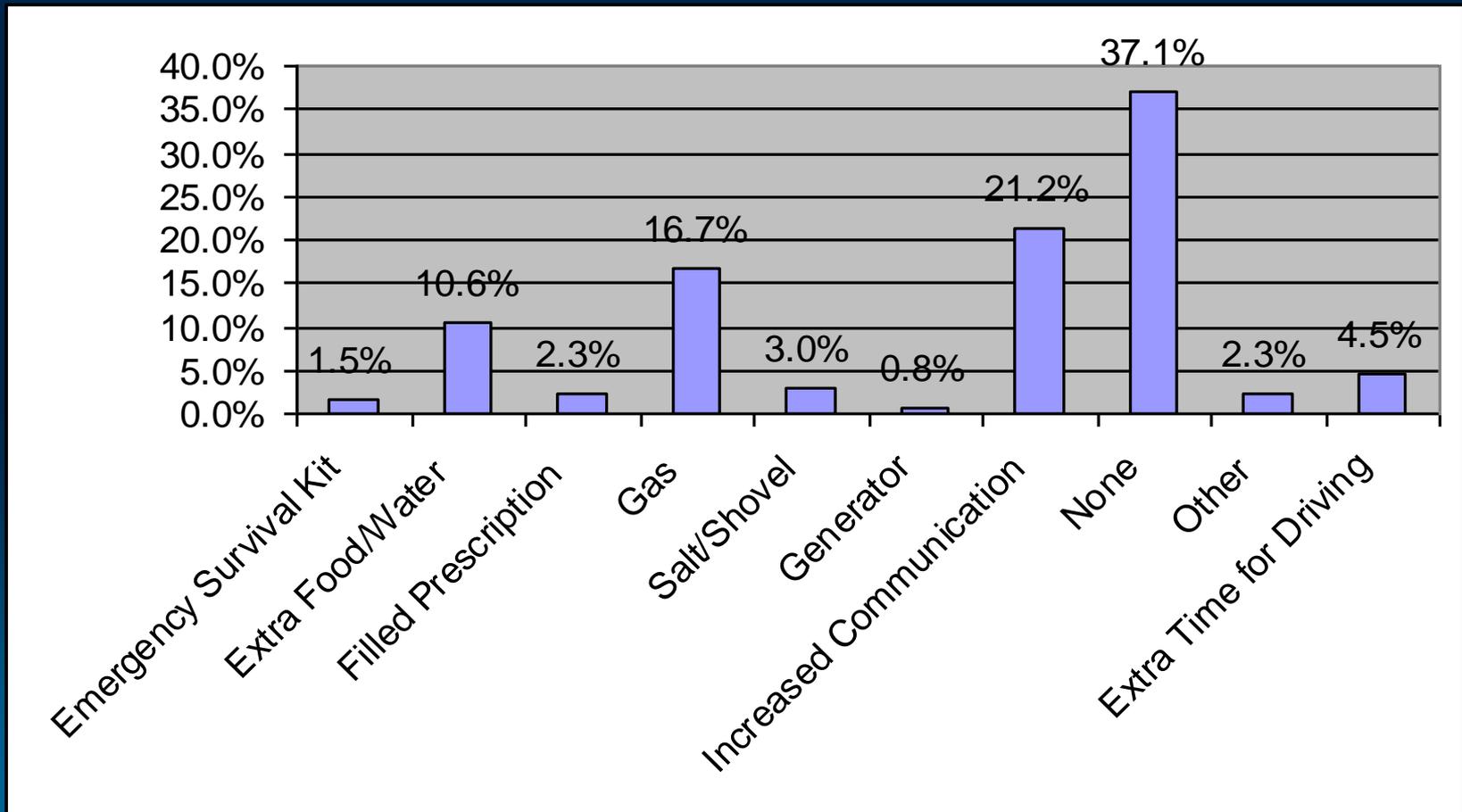


# Responses by Event

## Winter Storm 2008 April 6<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



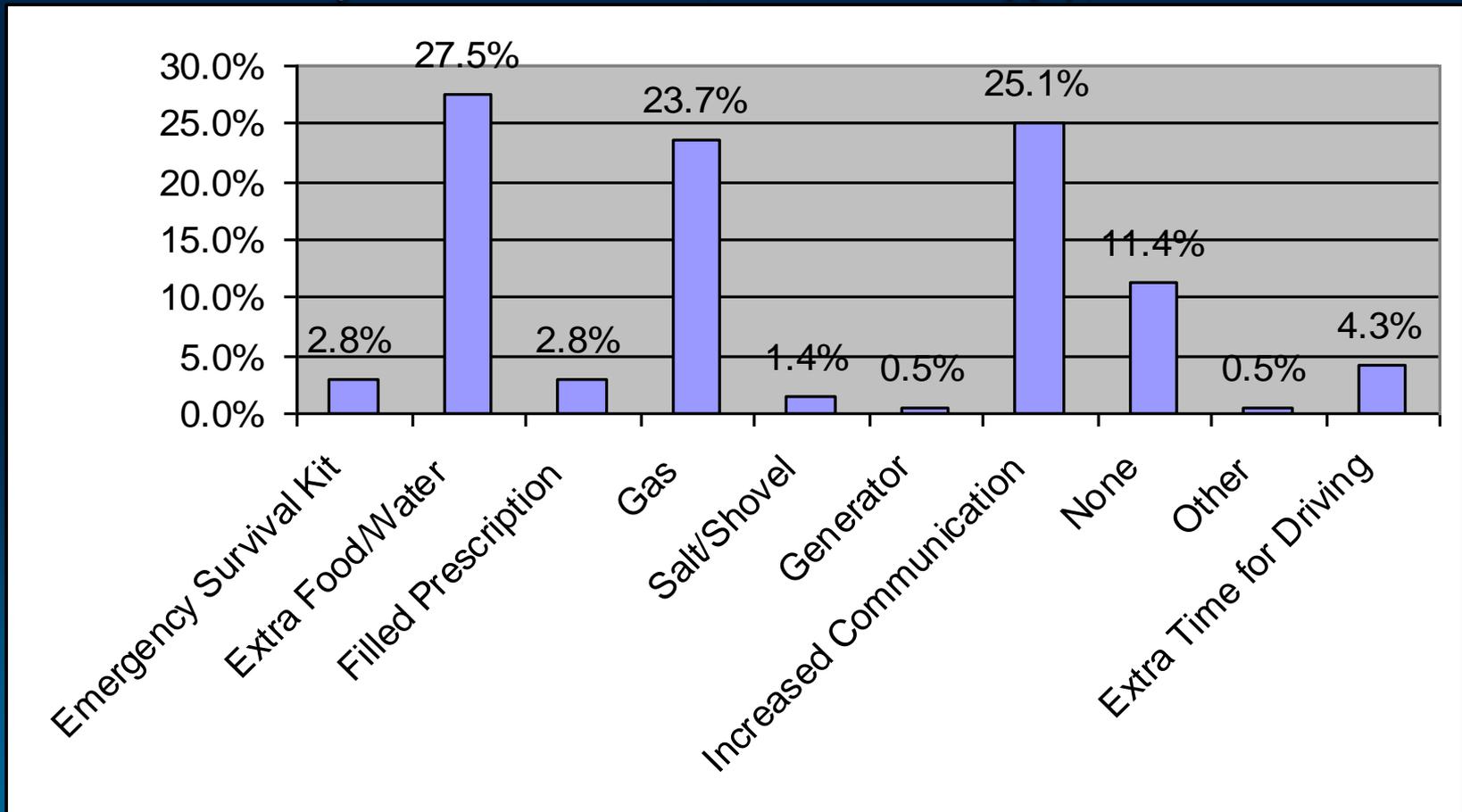


# Responses by Event

## Blizzard 2008 April 11<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



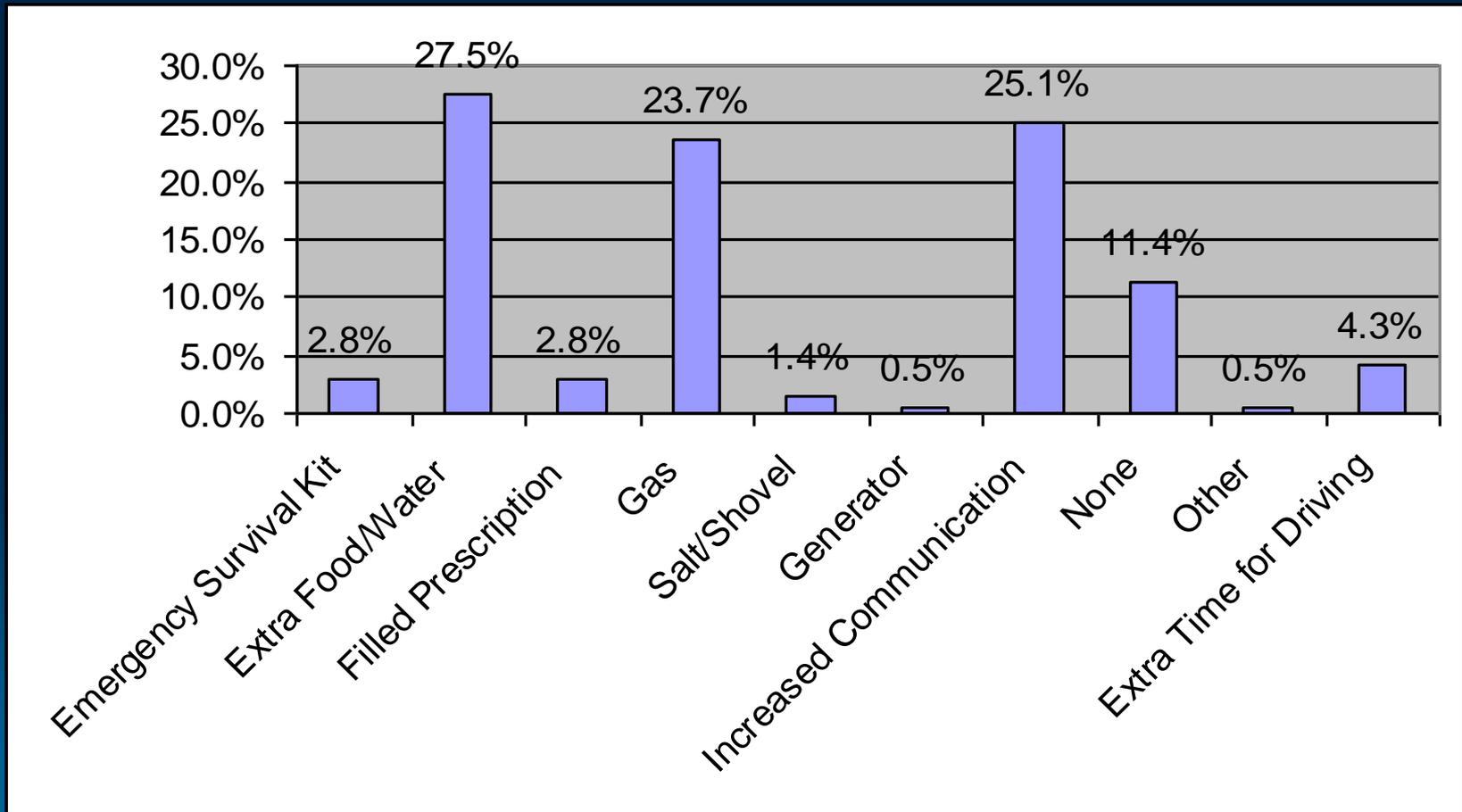


# Responses by Event

## Blizzard 2008 April 11<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



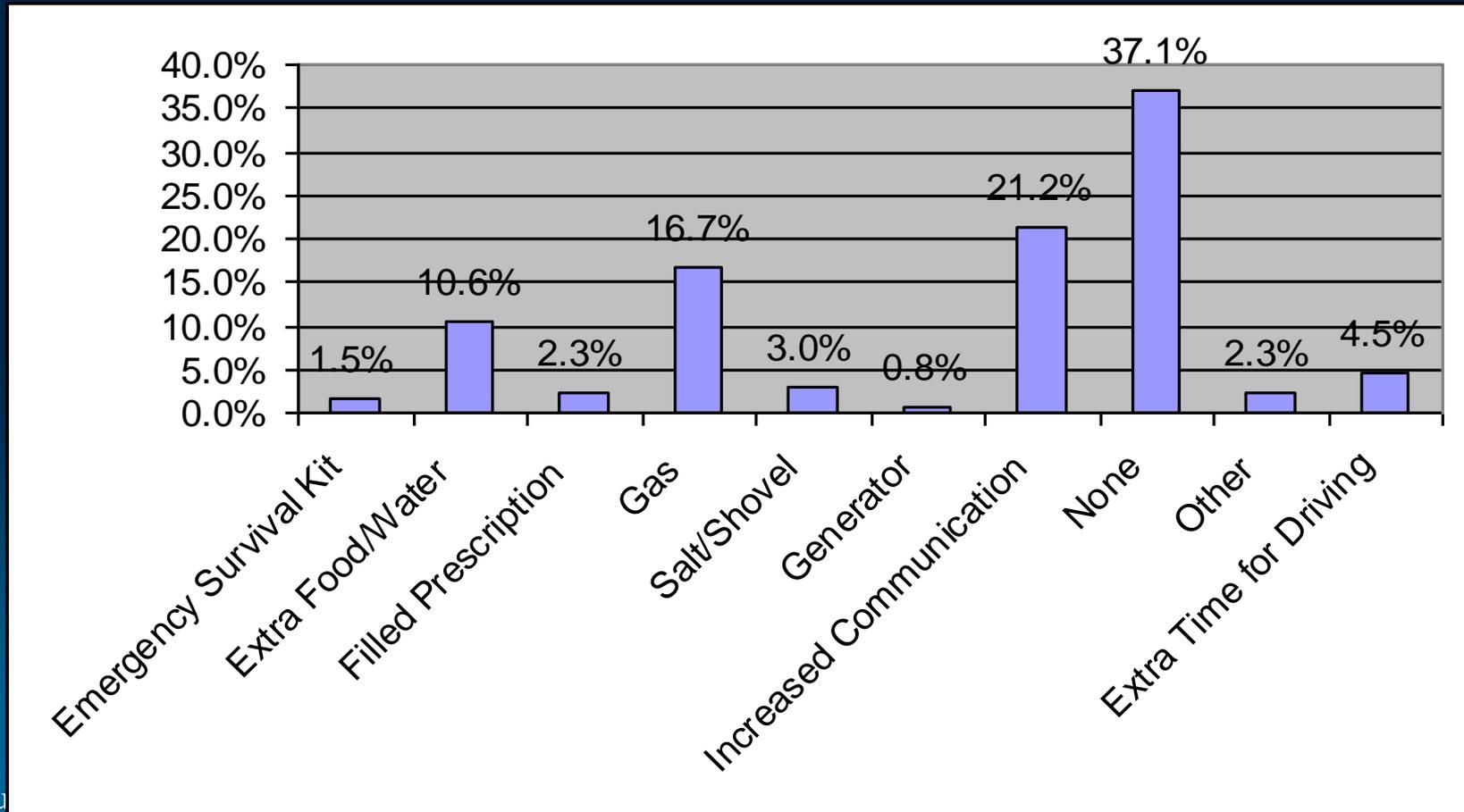


# Responses by Event

## Winter Storm 2008 April 6<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



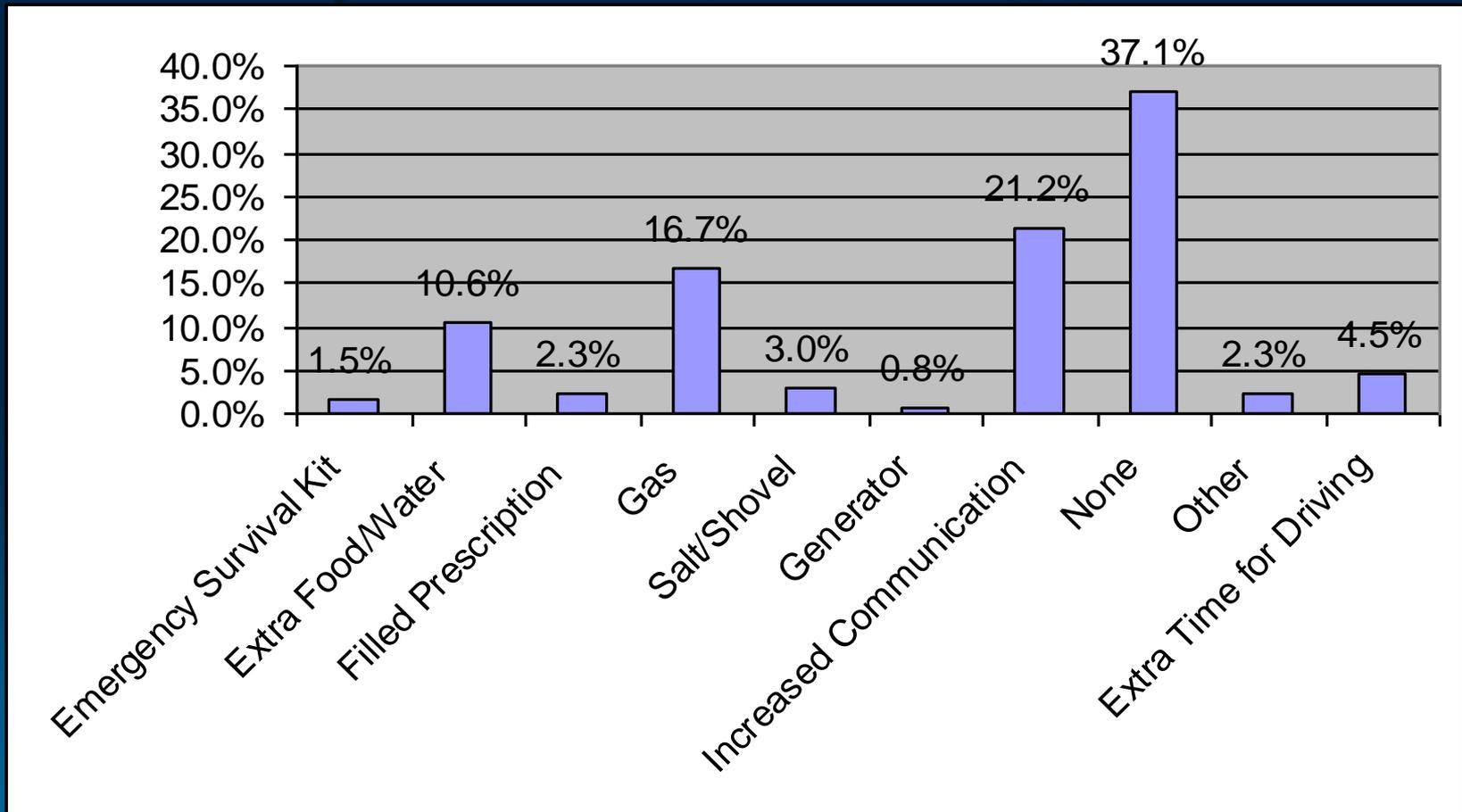


# Responses by Event

## Winter Storm 2008 April 6<sup>th</sup>



*Question: Based on the forecast, what special preparations did you take for this storm? (select all that apply)*



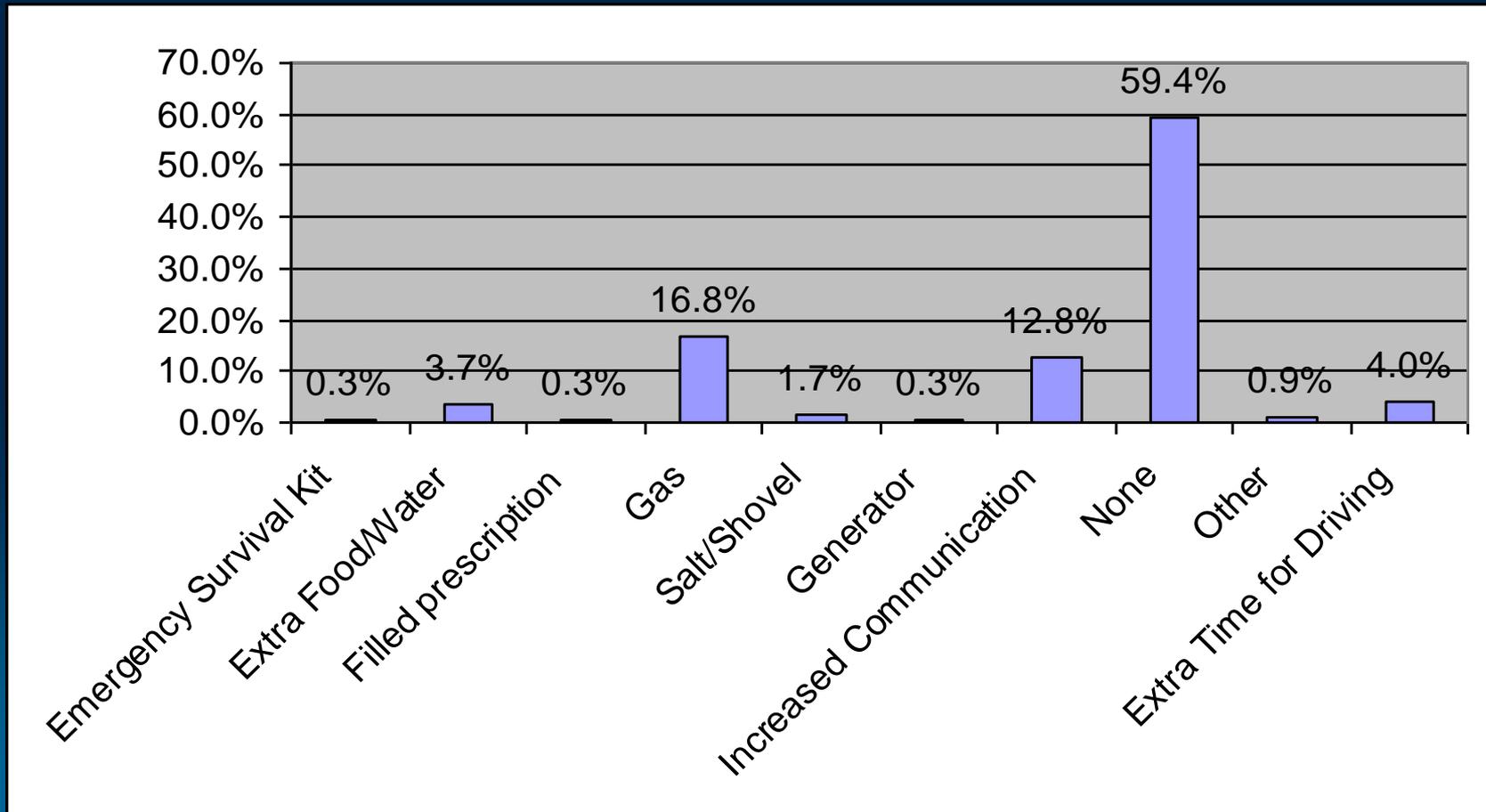


# Responses by Event

## Snow Advisory 2008 March 18<sup>th</sup>



*Based on the forecast, what special preparations did you take for this storm? (select all that apply)*





# Compare Responses



*Question: Based on the forecast, what special preparations did you take for this storm?*

## Blizzard

Food and Water: **28%**  
Gas: 24%  
Increased Communication: **25%**  
Nothing: 11%  
Extra Driving Time: **4%**

## Winter Storm

Food and Water: **11%**  
Gas: 17%  
Increased Communication: **21%**  
Nothing: 37%  
Extra Driving Time: **4%**

## Snow Advisory

Food and Water: **4%**  
Gas: 17%  
Increased Communication: **12%**  
Nothing: 59%  
Extra Driving Time: **4%**



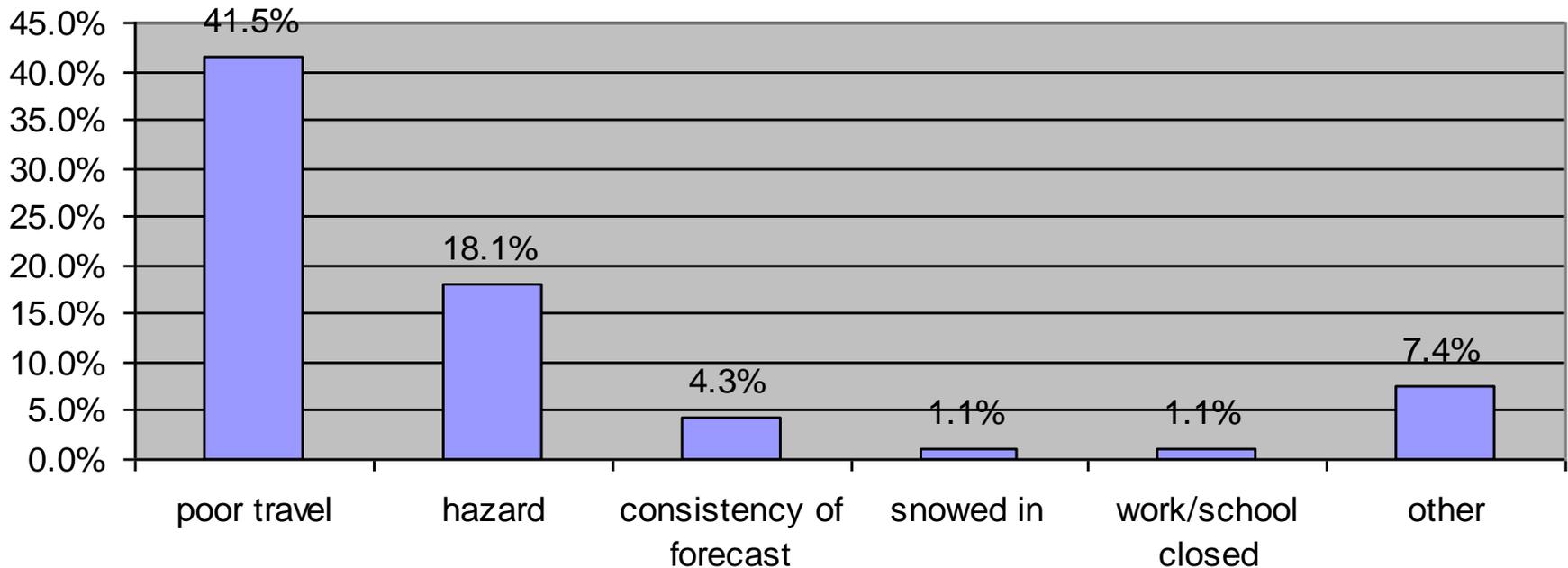
# Responses by Event

## Snow Advisory 2008 March 18<sup>th</sup>



*(Open Response)*

**Why Did You Alter Your Routine?**



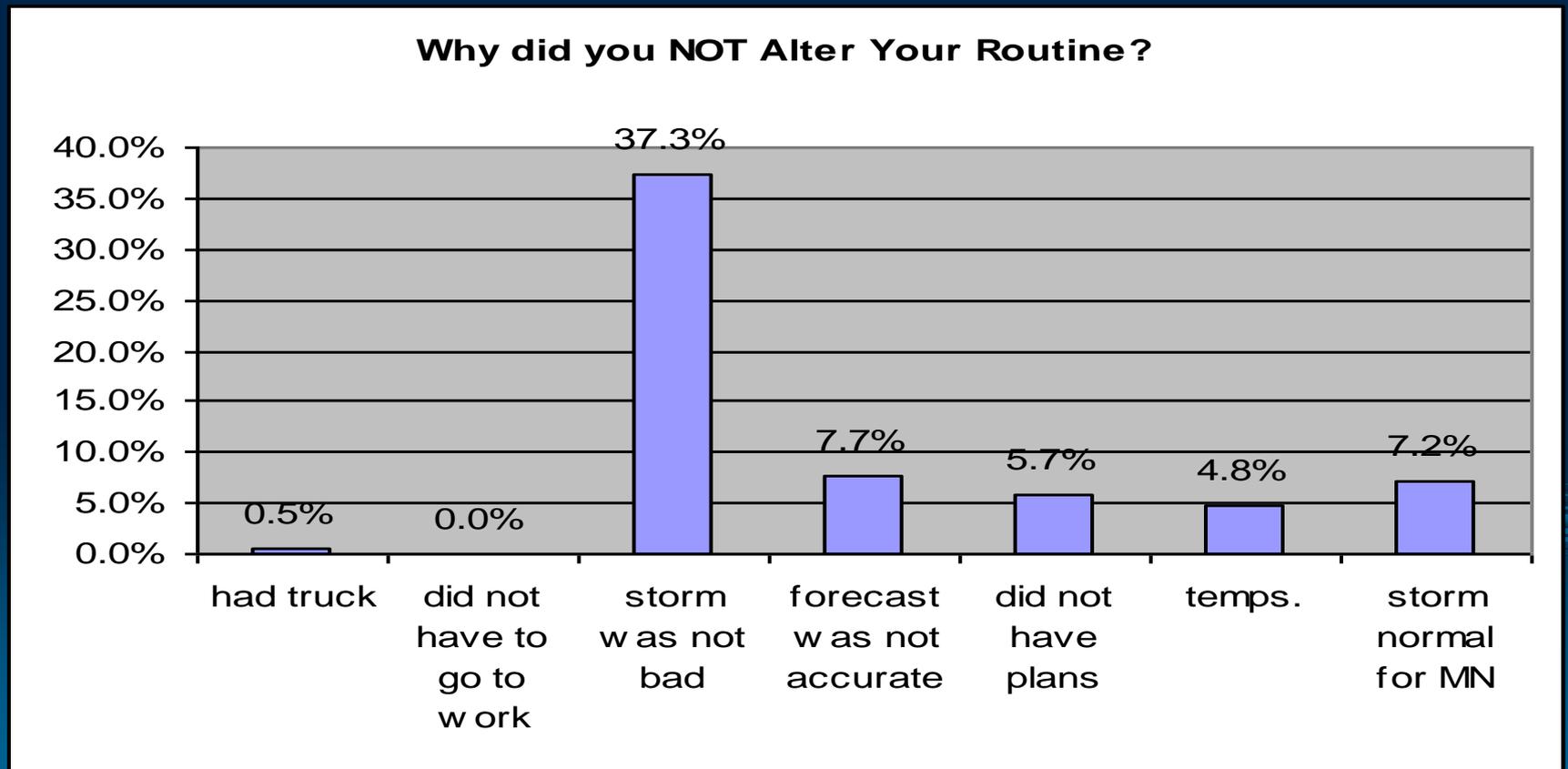


# Responses by Event

## Snow Advisory 2008 March 18<sup>th</sup>



*(Open Response)*





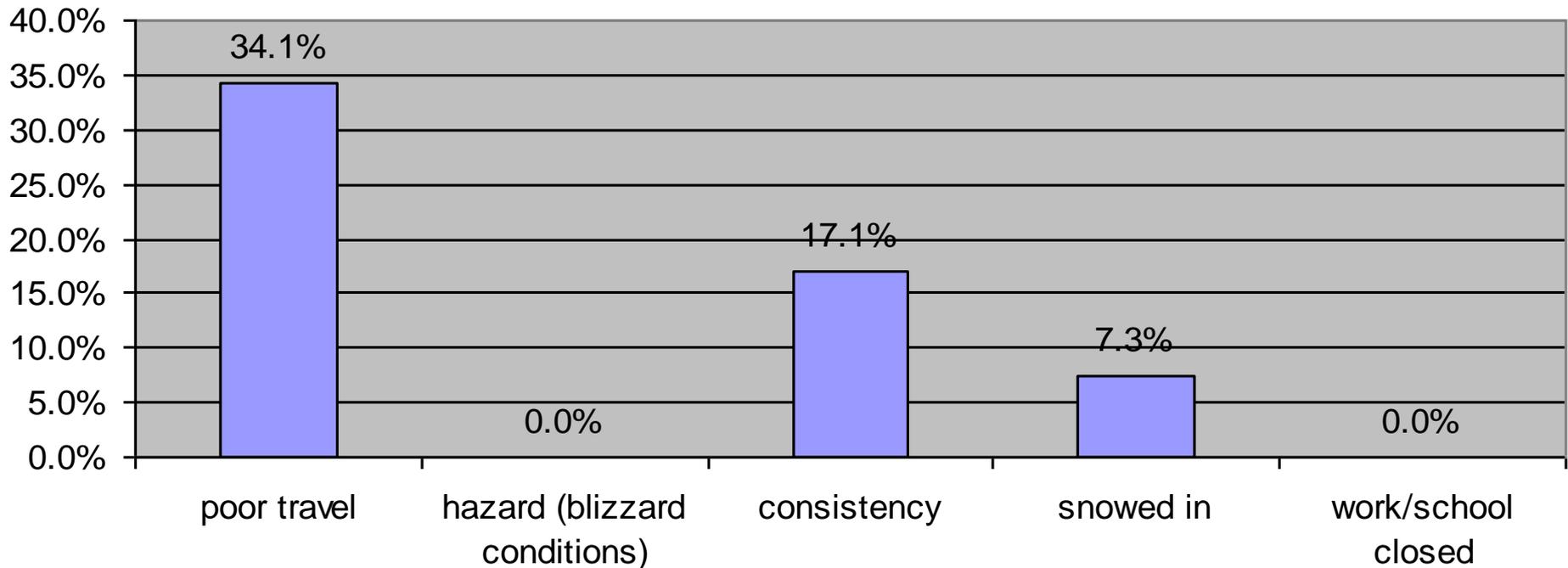
# Responses by Event

## Winter Storm 2008 April 6<sup>th</sup>



*(Open Response)*

**Why Did You Alter Your Routine?**





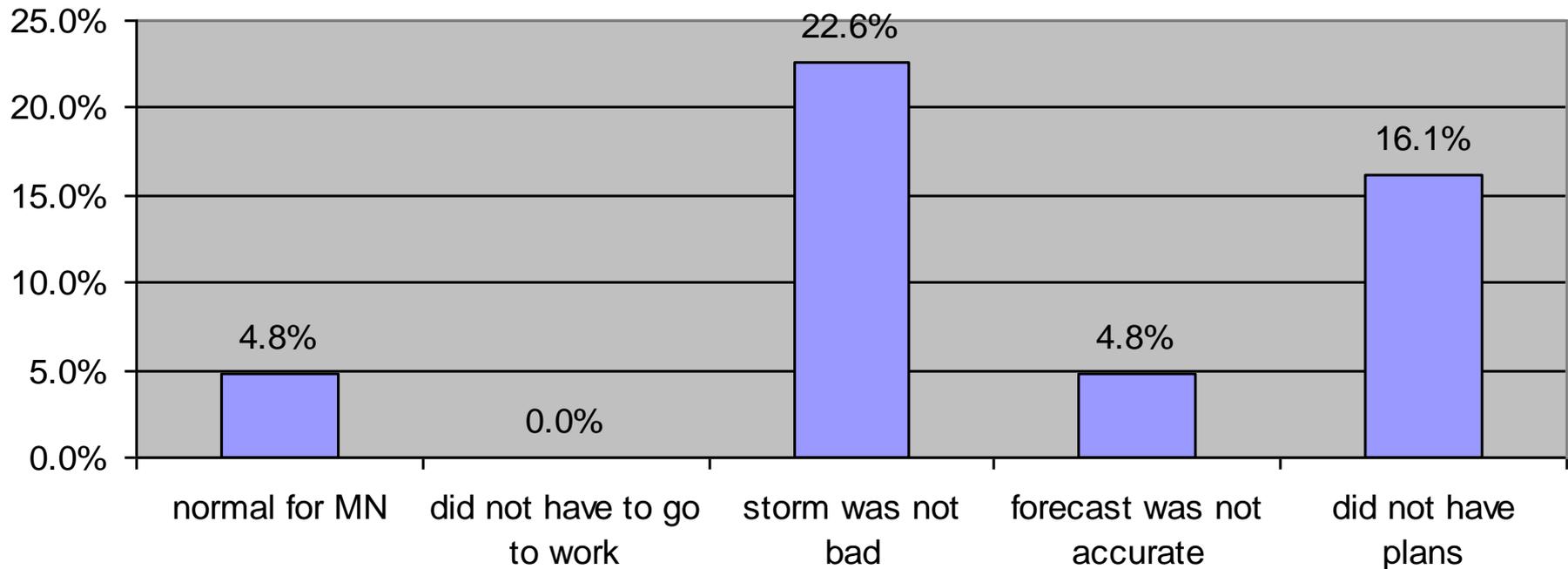
# Responses by Event

## Winter Storm 2008 April 6<sup>th</sup>

*(Open Response)*



### Why Did You NOT Alter Your Routine?





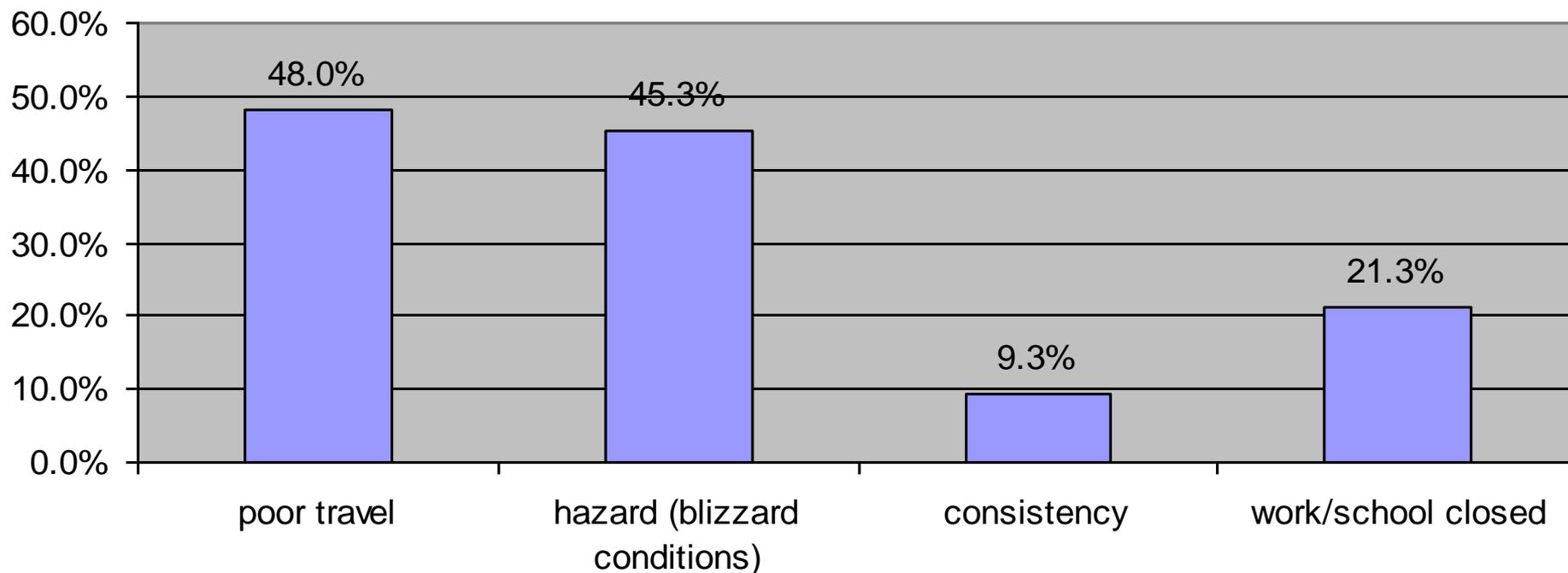
# Responses by Event

## Blizzard 2008 April 11<sup>th</sup>



*(Open Response)*

**Why Did You Alter Your Routine?**





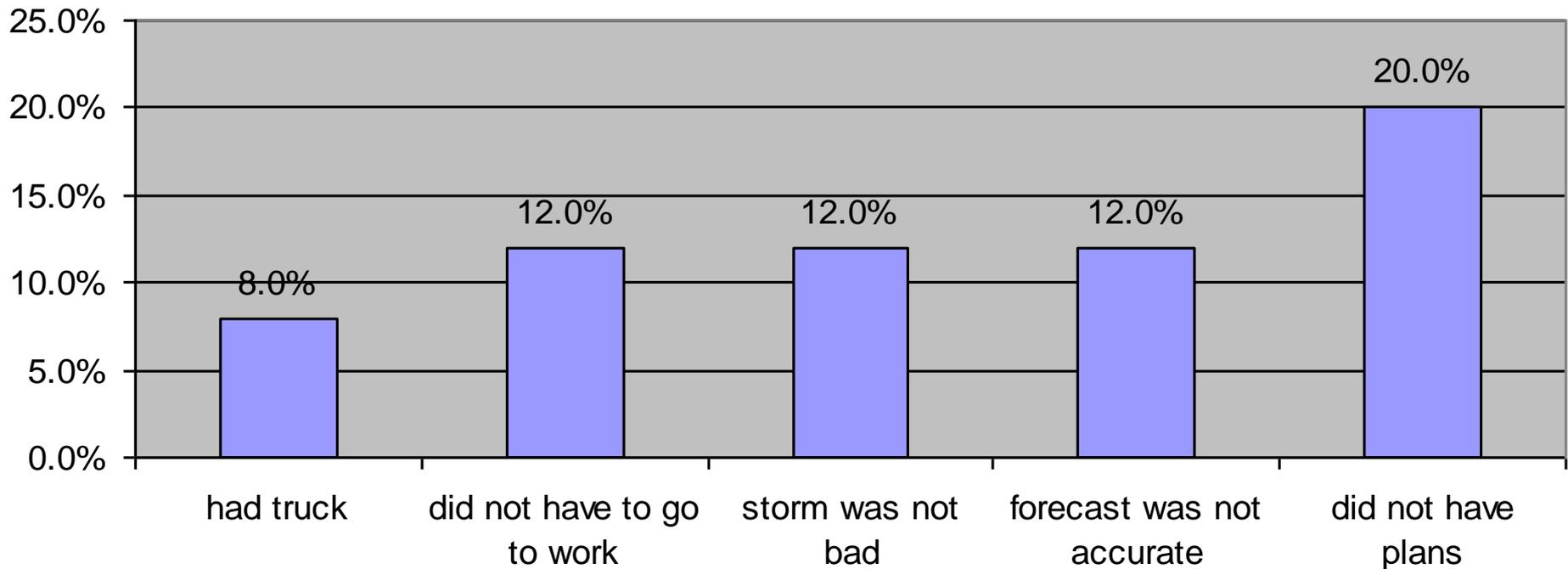
# Responses by Event

## Blizzard 2008 April 11<sup>th</sup>



*(Open Response)*

**Why Did You NOT Alter Your Routine?**





# Interesting perception...



***“I live in Northern MN, a snow storm with 25” is not a big deal.”***

**These kind of open responses introduced the idea to include a question this season along the lines of :**

**“Did you consider this a typical winter storm?”**



# Test Season Conclusions



- Significant number of respondents stated they altered their routine because concerned about **road conditions/travel**.
- People did not perceive the meteorologic terminology such as **sleet** and **freezing rain** as the threat;
  - *because not a direct impact?*
- There was an increase in preparedness (gas, food water, communication) with highly anticipated blizzard versus low impact snow advisory
- Climatology plays major factor... What is viewed as “normal” for winter?



# Post Storm Survey



## Responses & Results

[View Preliminary Results From Season 2; 2008-2009](#)

**Please Refer to the below links for the Preliminary  
Post Storm Survey Results by Case**

- [2008 December 14<sup>th</sup>](#)
- [2008 December 20<sup>th</sup>](#)
- [2008 December 30<sup>th</sup>](#)
- [2009 January 3<sup>rd</sup>](#)
- [2009 January 12<sup>th</sup>](#)

[View Responses From Test Season \(Winter 2008\)](#)

*Visit the [Northland Winter Storm Archive](#) for event summaries*



# How to get involved?

If you are interested in hosting a link to the Post Storm Survey on your website, please send an email to

[poststormsurvey@gmail.com](mailto:poststormsurvey@gmail.com)



# Thank You!



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