

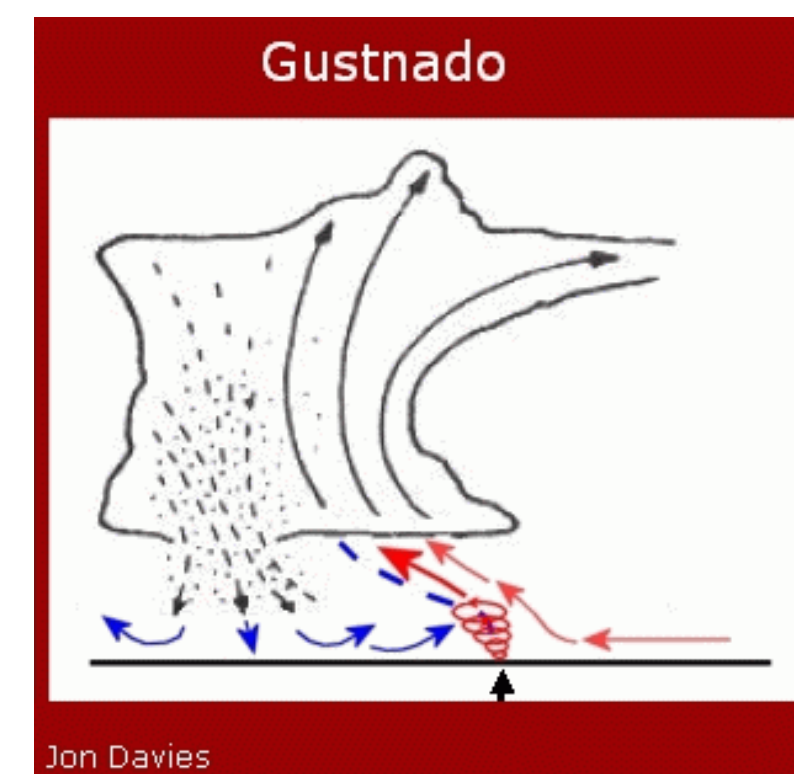
# Societal Perceptions of the Warning Process for Gustnadoes



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## 1. Introduction

**Gustnado:** A short-lived, shallow, generally weak, vertically oriented vortex found along a gust front. Gustnadoes are usually visualized by a rotating dust or debris cloud.



**Warning decision making challenge:** Gustnadoes are not tornadoes, do not cause the same damage as tornadoes, but look very similar to the untrained eye.



How do decision makers react when a tornado warning is NOT issued? What type of challenges do they face from the public?

Purpose of this study: Assess how non-scientists view gustnadoes, and what products and services they prefer during a gustnado event.

## 2. Data: The Questionnaire

Two groups of decision makers were interviewed:

- Emergency Managers
- Law Enforcement Officials

15 questions about warning decisions during a severe weather event with gustnadoes:

- Set a scenario
- Show pictures of reported "tornado"
- Show video of reported "tornado"
- Give an explanation of gustnadoes
- Show the results and post assessment
- Evaluate the level of service of the NWS when no tornado warning is issued

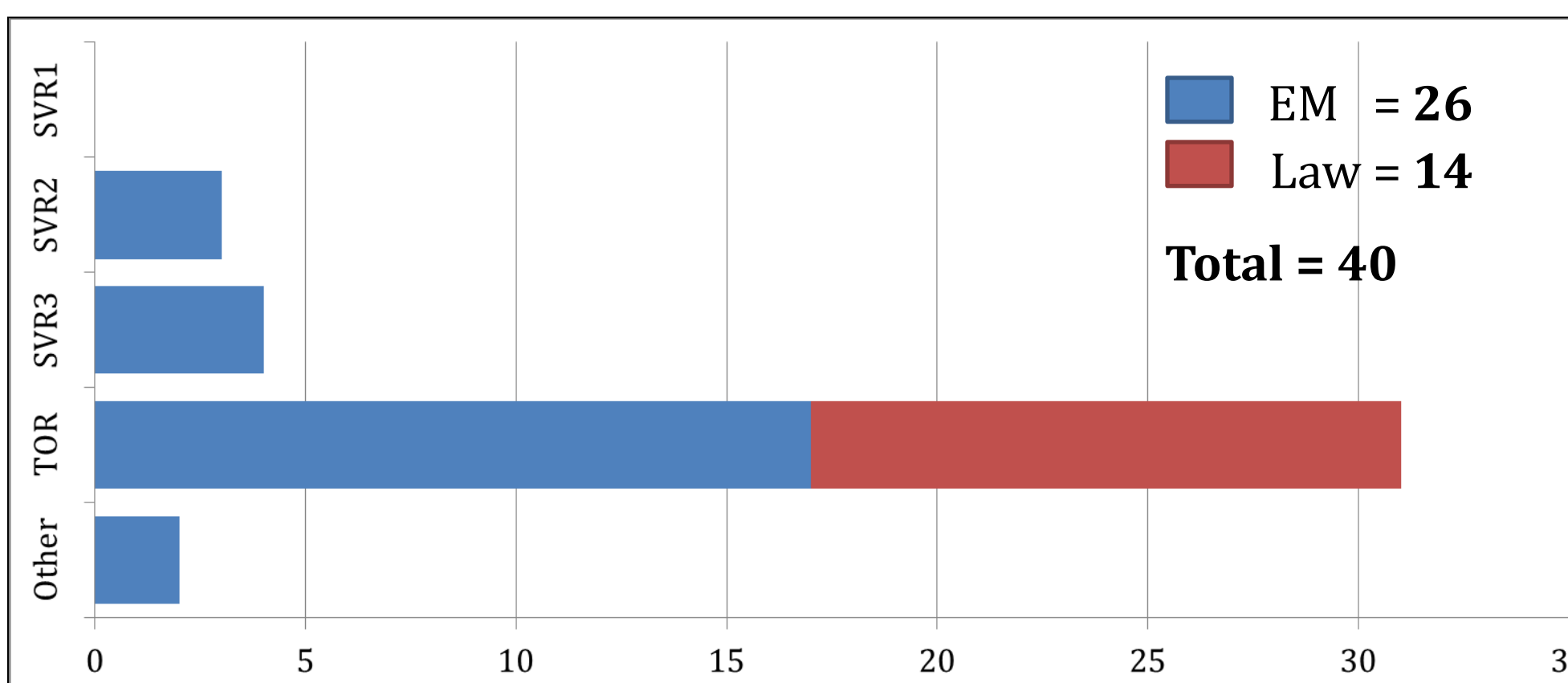
## 3. Questionnaire Results

Category abbreviations for warning decisions listed below:

- SVR1** = Continue SVR with no additional info
- SVR2** = Update SVR and mention damaging winds
- SVR3** = Update SVR and mention brief tornadoes
- GUST** = Update SVR and mention gustnadoes
- TOR** = Issue a tornado warning



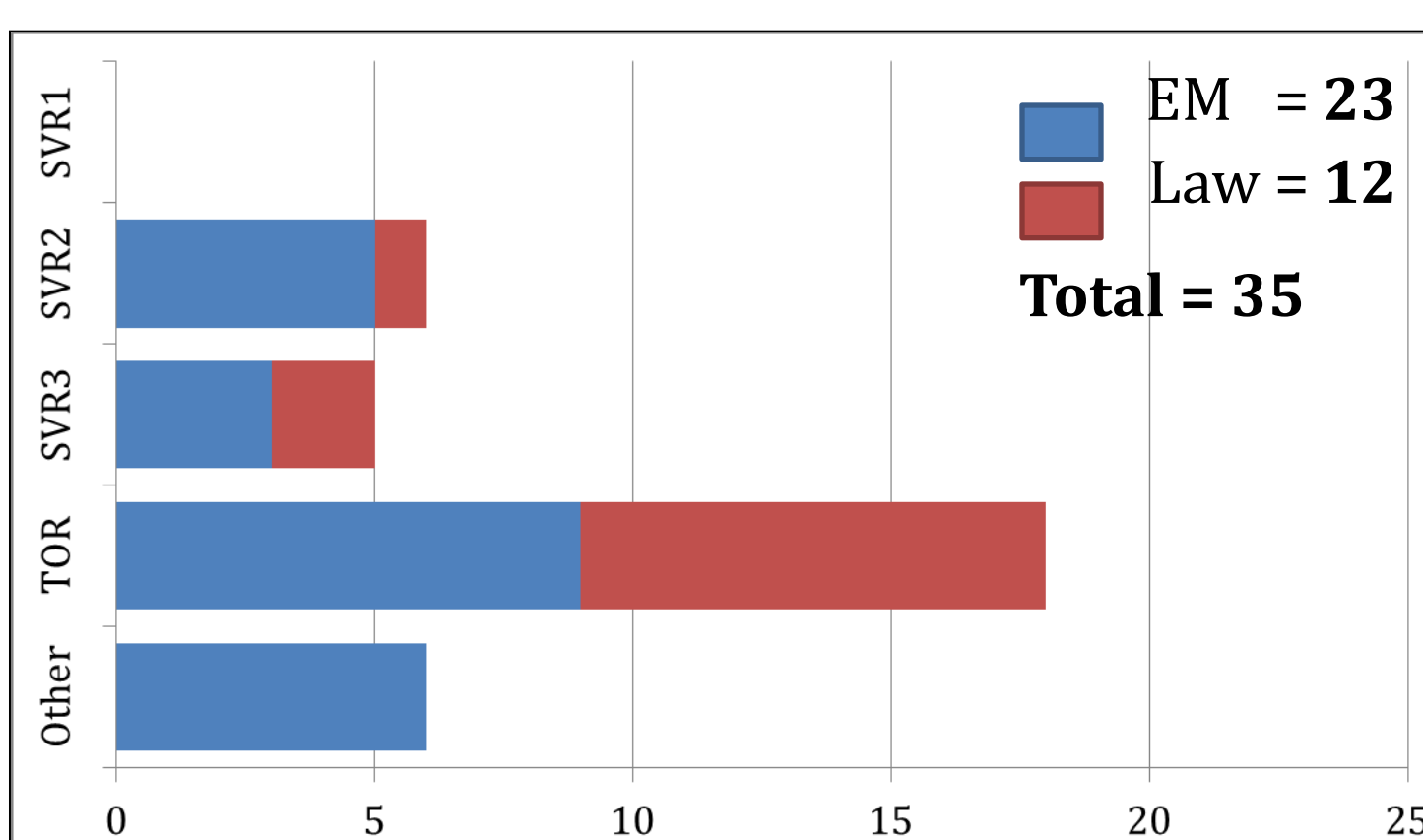
Given these pictures and 2 public tornado reports, what product do you think the NWS should issue?



### Other:

- No opinion
- Whatever the NWS feels is the best decision

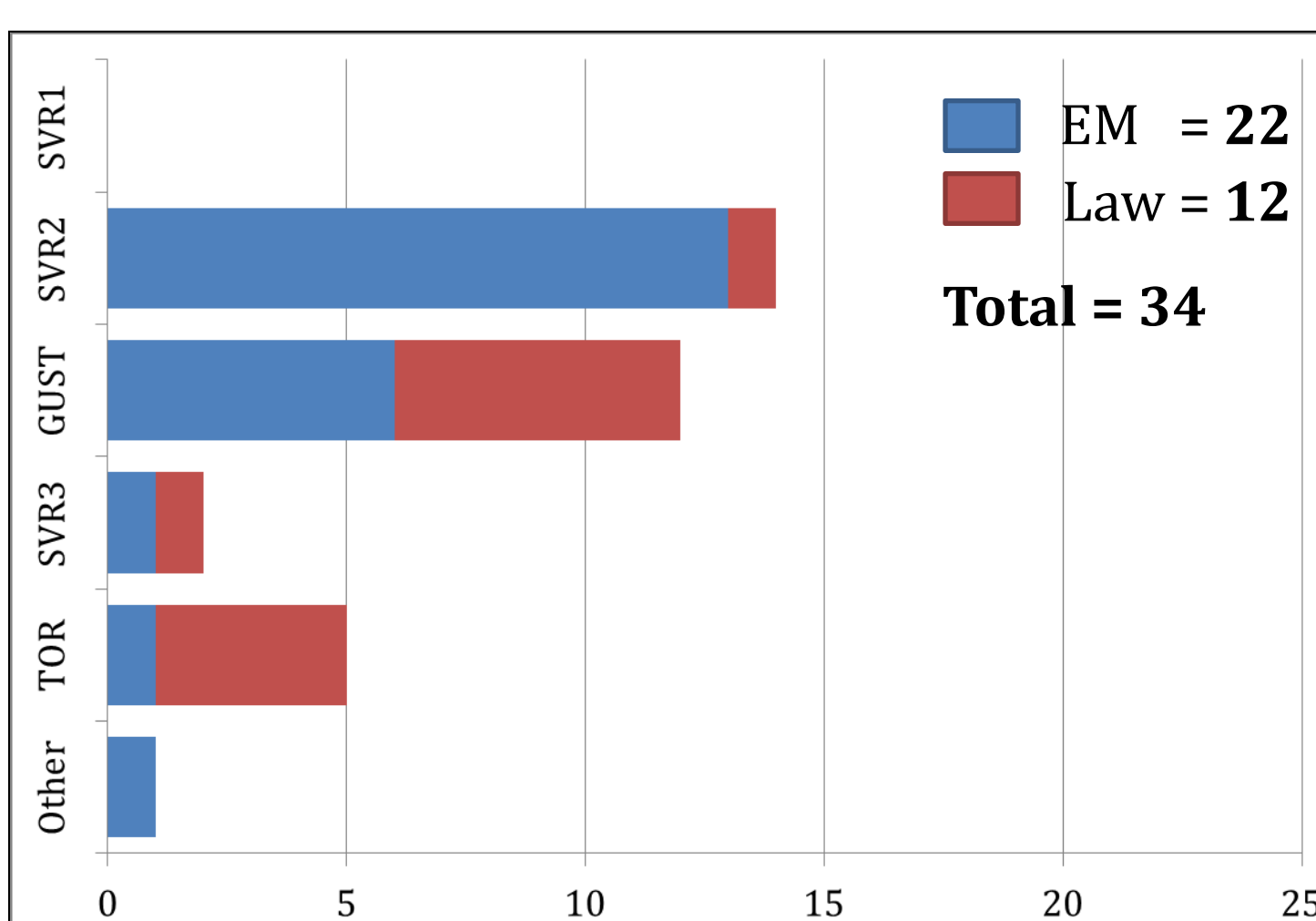
Same question after viewing a video of the circulation:



### Other:

- Need more information
- "I know it's not a tornado, but issue a TOR anyway"
- I don't have a "say"

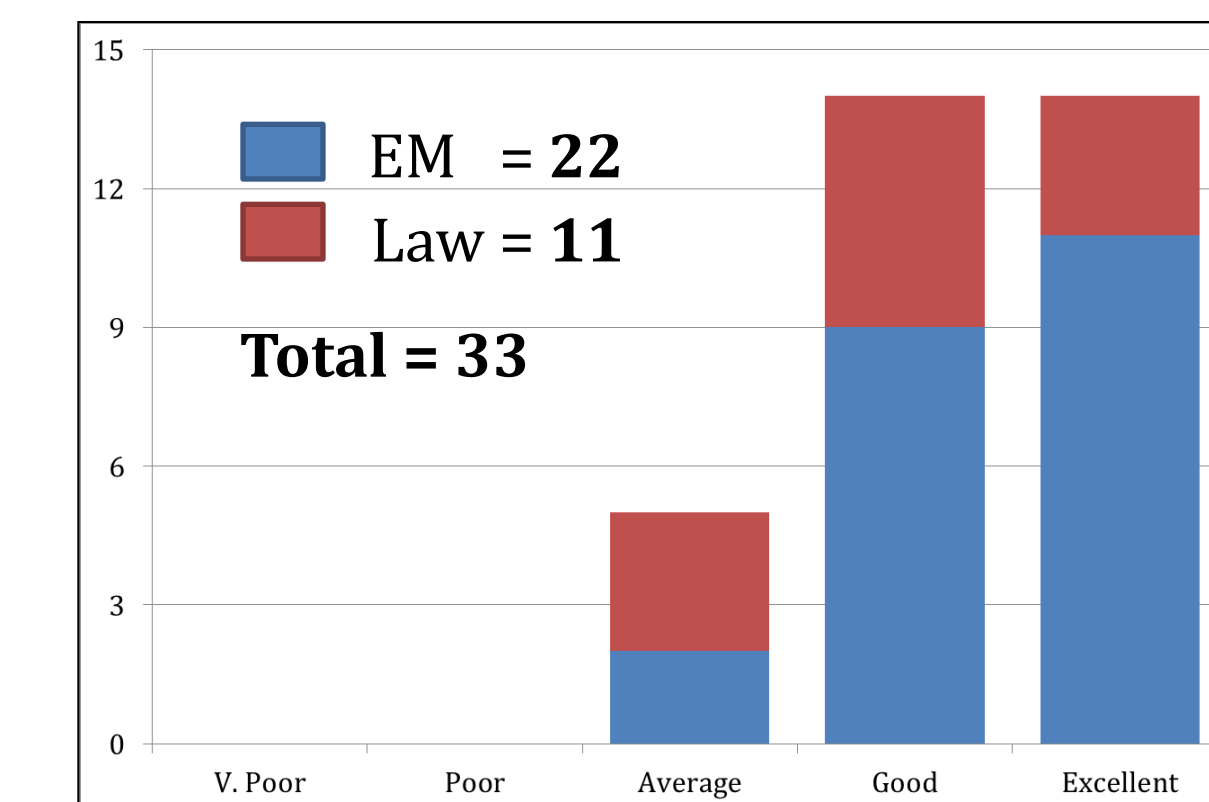
Same question after providing the definition of a gustnado:



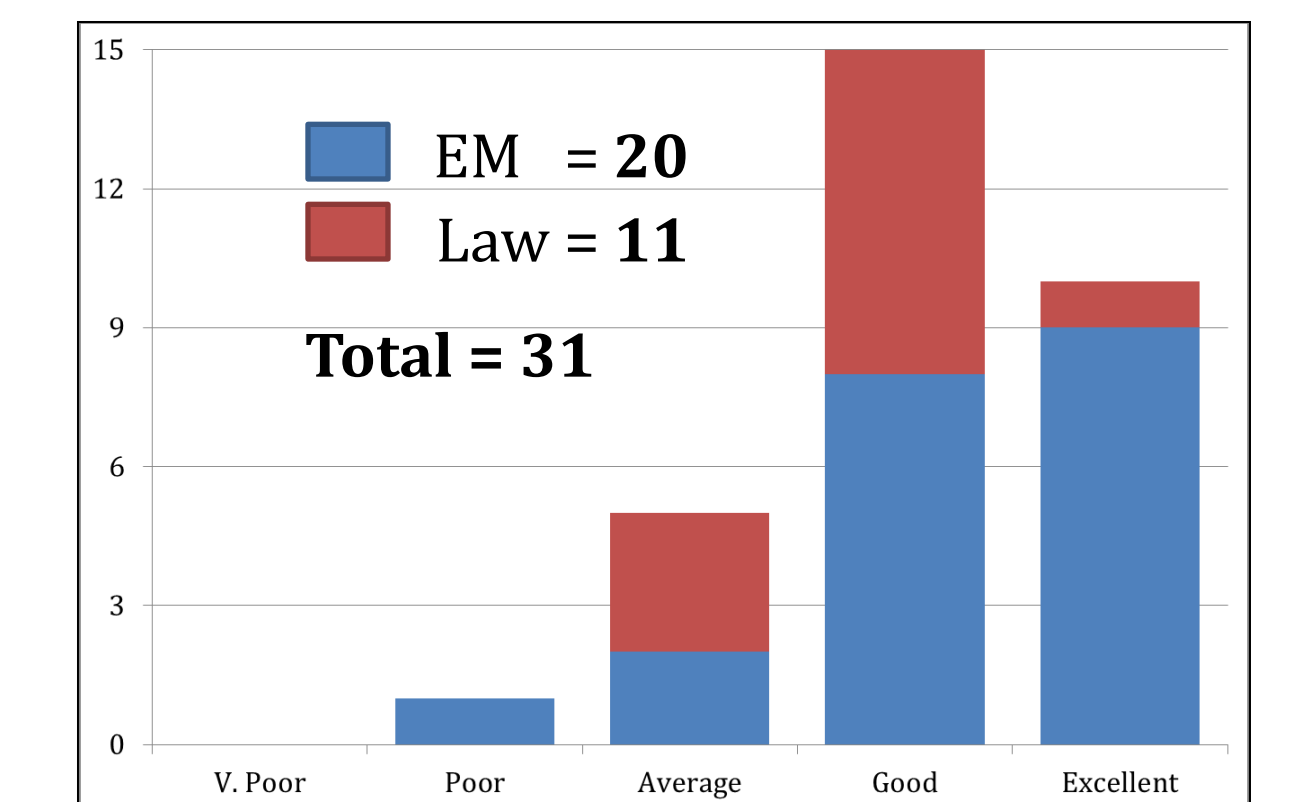
### Other:

- "Not my decision to make"
- "Issue a tornado warning and specify that it's a gustnado... explain that it can look like a tornado but explain what is different"

## 4. Perceived Level of Service



After the NWS decides to issue a SVR mentioning damaging winds and gustnado potential



After the NWS damage survey determines that a gustnado, not a tornado occurred

## 5. Limitations/Challenges

- "I don't think the public has a level of knowledge on what the differences are between a tornado and a gustnado."
- "Having to deal with uneducated people"
- "I don't think people understand a gustnado and might be better understood as a tornado"
- "It's easier to explain after the incident that the public was alerted for something other than a tornado than it is to explain why no warning was issued when the public feels a threat existed."
- "We need a definition in place to put information out about gustnadoes or we would be causing some misconceptions with the public"

## 6. Discussion Questions

- Once made aware of the difference between tornadoes and gustnadoes, decision makers appear to understand it – but will the general public?
- How do we share information with a public that generally does not read the text in NWS warnings?
- How would (or should) the inclusion of gustnadoes in Severe Thunderstorm Warnings affect the siren warning policy of communities?
- How do we educate outside the spotter community?