Public Reaction to Impact Based Warnings During an Extreme Hail Event in Abilene, Texas

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Survey Results: 324 respondents

Did you receive warning of severe weather prior to the severe weather event?

- Yes: 64%
- No: 36%

Based on your understanding of the National Weather Service’s severe thunderstorm warnings, how likely are you to take protective action?

- Likely: 52%
- Unlikely: 8%
- Hard to say: 11%

Degrees to which the information or services received explained the severe thunderstorm threat and expected impacts (Impact Based Warning (IBW))

- Satisfied: 23%
- Neutral: 68%
- Unsatisfied: 9%

What led to your decision to seek shelter during the severe thunderstorm warning?

- Damaging winds: 40%
- Damaging rain: 15%
- Flash flooding: 14%
- Hail: 12%
- Other: 6%

Which of the following actions was the first action you took when you received the severe thunderstorm warning?

- Took shelter: 66%
- Sought additional info: 12%
- Secured property: 11%
- Verified I was in the warning area: 8%
- Other: 4%

Primary source of hazardous weather information (top 3):

1. Local broadcast media
2. Internet (websites and social media)
3. Cell phone apps

Impacts included in the updated Severe Thunderstorm Warning

"YOU ARE IN A LIFE THREATENING SITUATION. FLYING DEBRIS MAY BE DEADLY TO THOSE CAUGHT WITHOUT SHELTER. MOBILE HOMES WILL BE HEAVILY DAMAGED OR DESTROYED. HOMES AND BUSINESSES WILL HAVE SUBSTANTIAL ROOF AND WINDOW DAMAGE. EXPECT EXTENSIVE TREE DAMAGE AND POWER OUTAGES."

Highlights:

1. Warning lead time of 25 minutes in and around Abilene. The presence of this BWER coincided with the first reports of baseball size hail north of the city.
2. A textbook bounded weak echo region (BWER) was observed as the storm approached Abilene. The presence of this BWER coincided with the first reports of baseball size hail north of the city.
3. The city of Abilene has an outdoor warning system.
4. Mature supercell approaching Abilene, TX.
5. Storm was producing baseball size hail and damaging winds as it moved into the city of 117,000 residents.
6. A textbook bounded weak echo region (BWER) was observed as the storm approached Abilene. The presence of this BWER coincided with the first reports of baseball size hail north of the city.

Recommendations:

1. Enhance warning dissemination to everyone, anytime, anywhere (Wireless Emergency Alerts).
2. Issue warnings with basic weather terms, not definitions (e.g. Destructive Hail Warning).
3. Paint a clearer picture of personal impacts to prompt action (Impact Based Warnings).