A Decade of Wireless Emergency Alerts

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IPAWS

Overview

- Decades of empirical research, starting with Mileti & Sorensen (1990)
- WHY each type of content in a warning message is important and their frequency
- WHY message completeness matters too

WEA Messages Analyzed

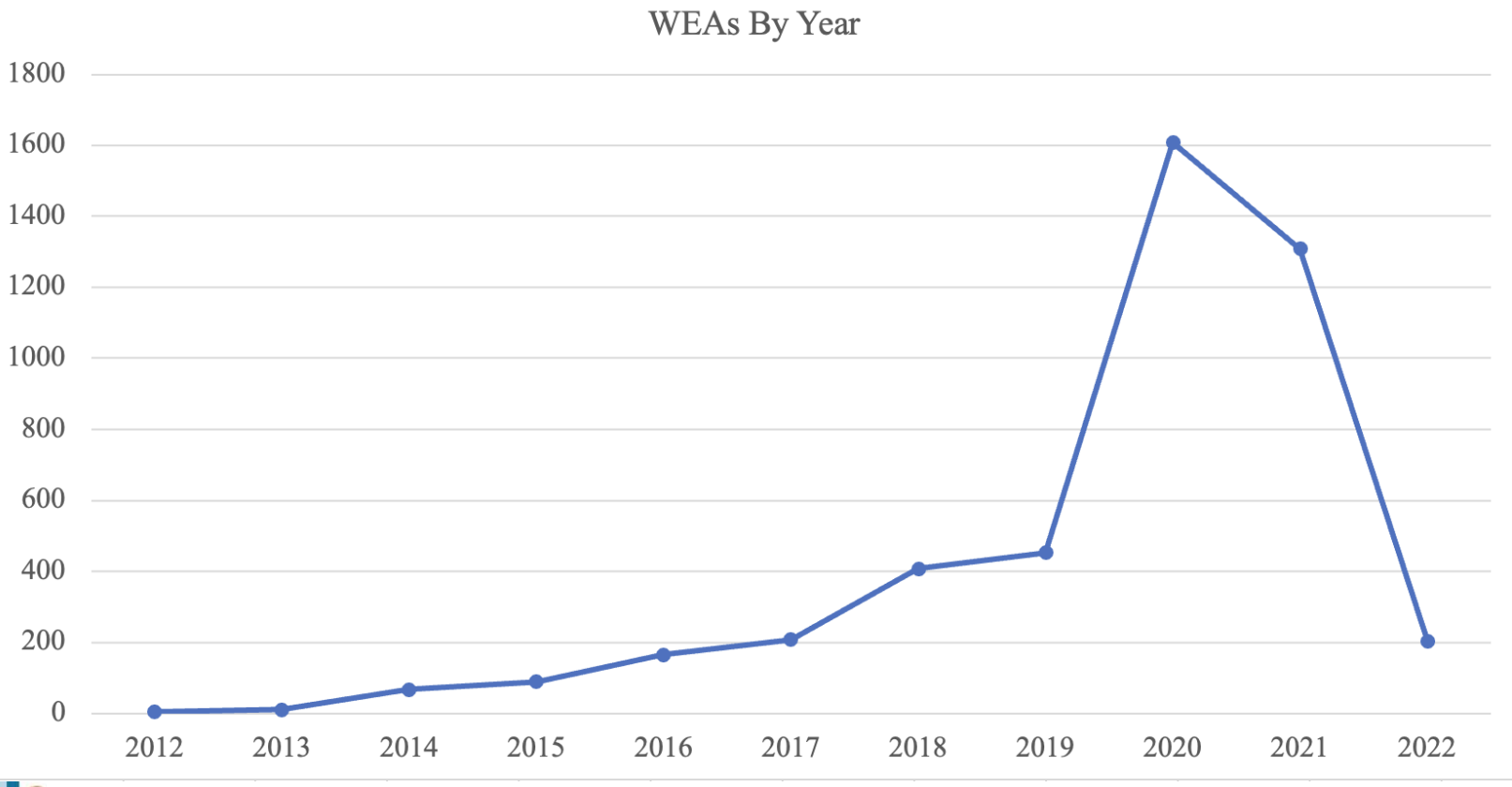
Sent from 2012 – April 2022

- Excluding National Weather Service, missing persons, AMBER alerts, test/demonstrations, cancellations/updates, and messages sent in Spanish

6,080 unique WEA Messages

- 69.2% were 90-character messages and 30.8% were 360-character

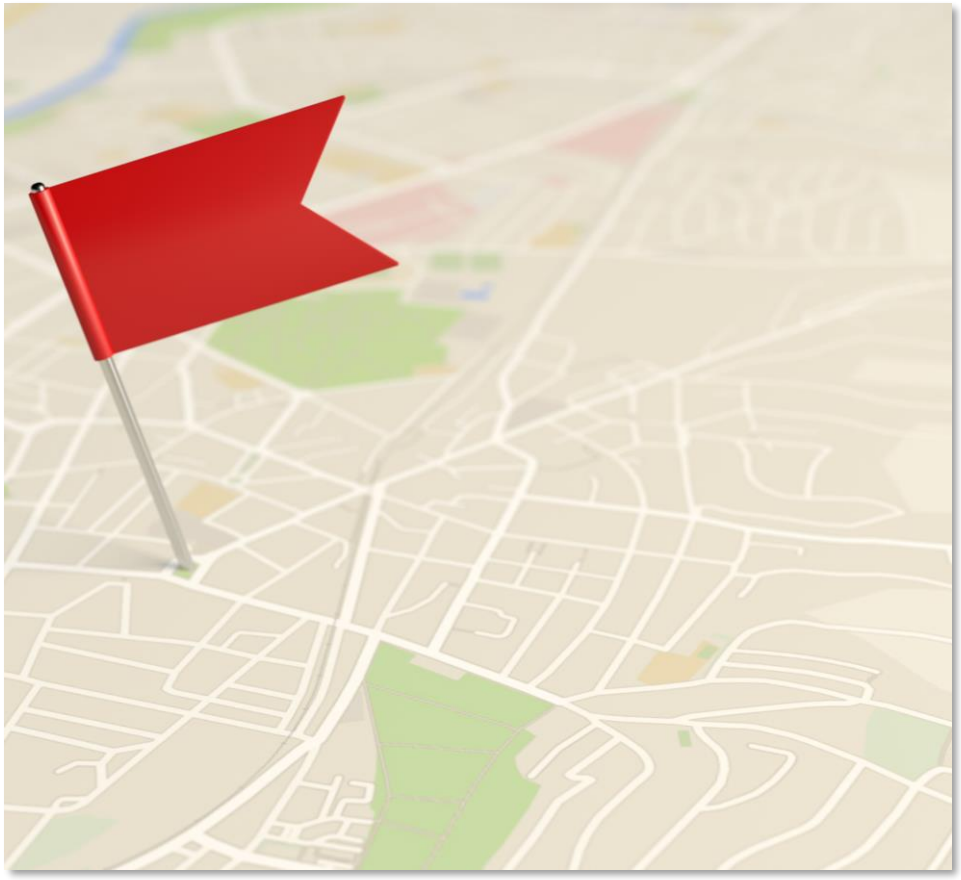
WEAs Over Time



Data period of analysis through April 2022

Location

- Am I at risk?
- How frequently is (a) location information present and (b) how is it described?

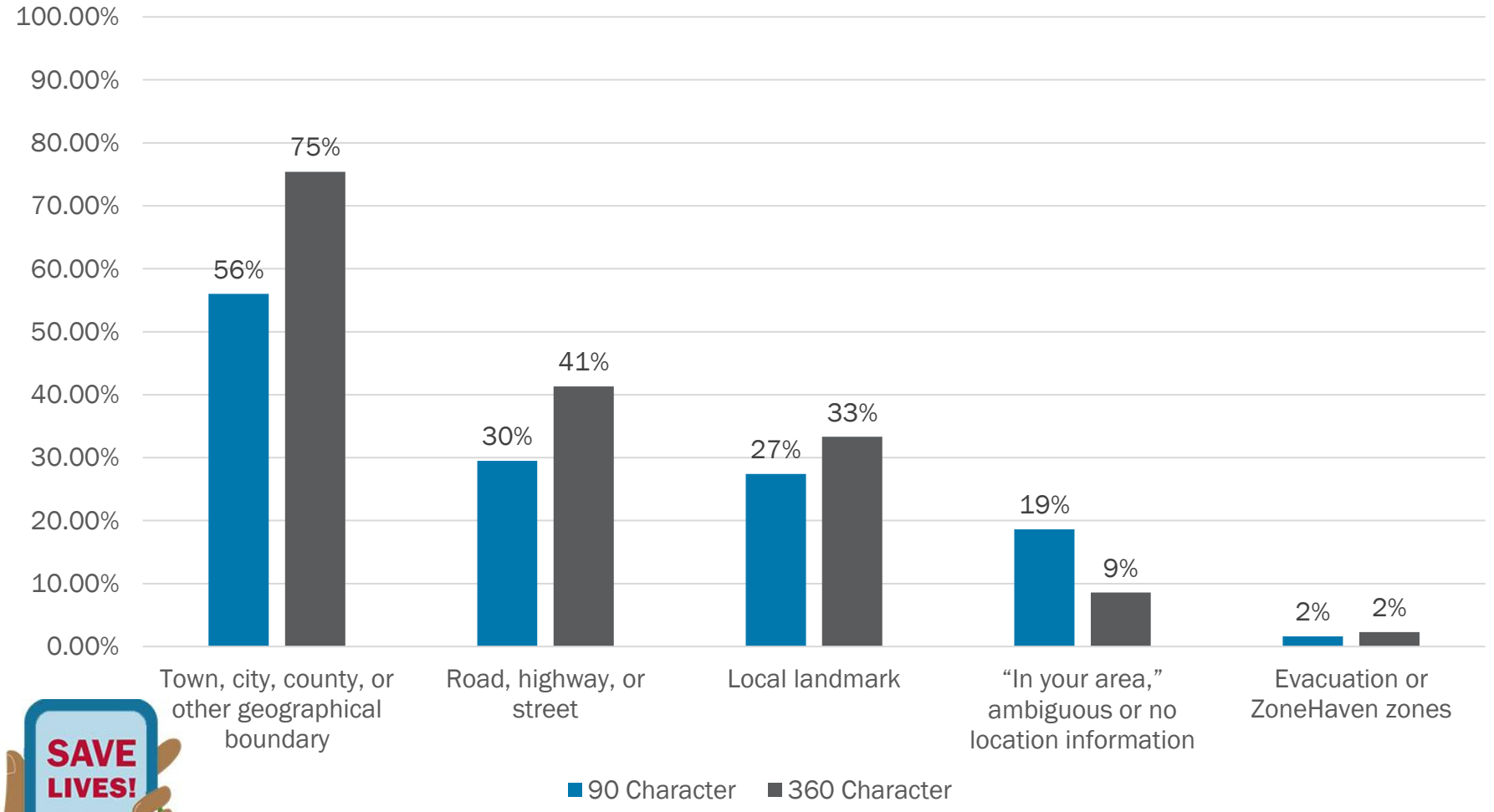


Location

Content	90 Character	360 Character	Total
Location	81.2%	91.5%	84.4%

Data period of analysis through April 2022

Location Specificity



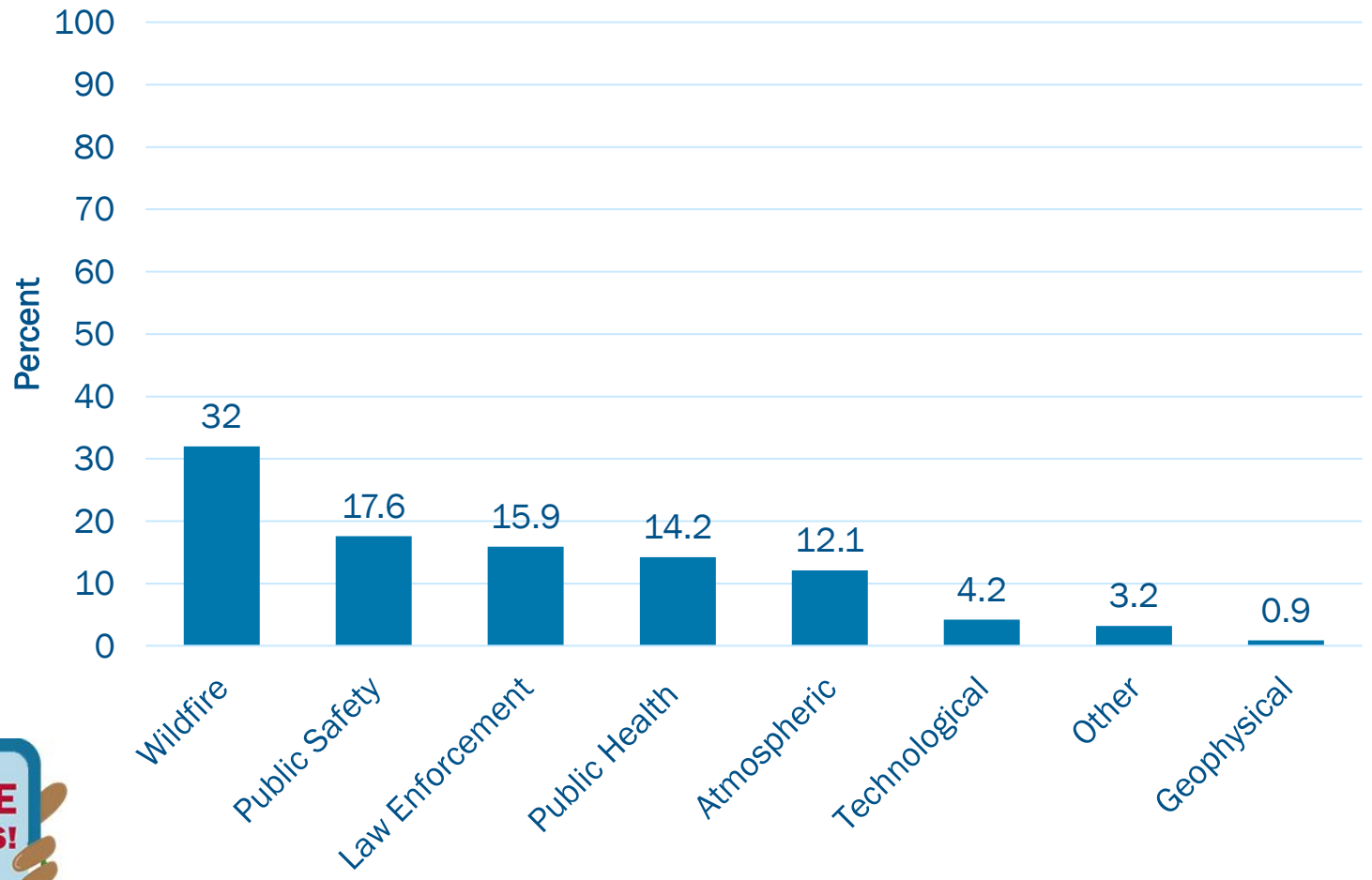
Hazard & Description

- What is happening and why is it serious?
- How frequently is the (a) hazard named and (b) described?
- For which hazards are WEAs most frequently sent?

Hazard & Description

Content	Definition	90 Character	360 Character	Total
Hazard	The name of the impending hazard, threat, or event that has precipitated the message	70.3%	80.6%	73.5%
Hazard Description	Information describing the hazard	16.7%	33.5%	21.9%

Hazard Category



Guidance

- What should I do?
- How frequently is guidance information included?

Guidance

Content	Definition	90 Character	360 Character	Total
Guidance	Information about how people should protect themselves or the actions they should/could perform	64.0%	88.0%	71.4%

Time

- When is it happening and when should I protect myself?
- How frequently is (a) timing information present and (b) what types of timing information are included?

Time

Content	Definition	90 Character	360 Character	Total
Time	When message receivers should expect hazard impacts, when they should take action, when the message expires, or how long they have to take action	32.8%	53.5%	39.2%

Time

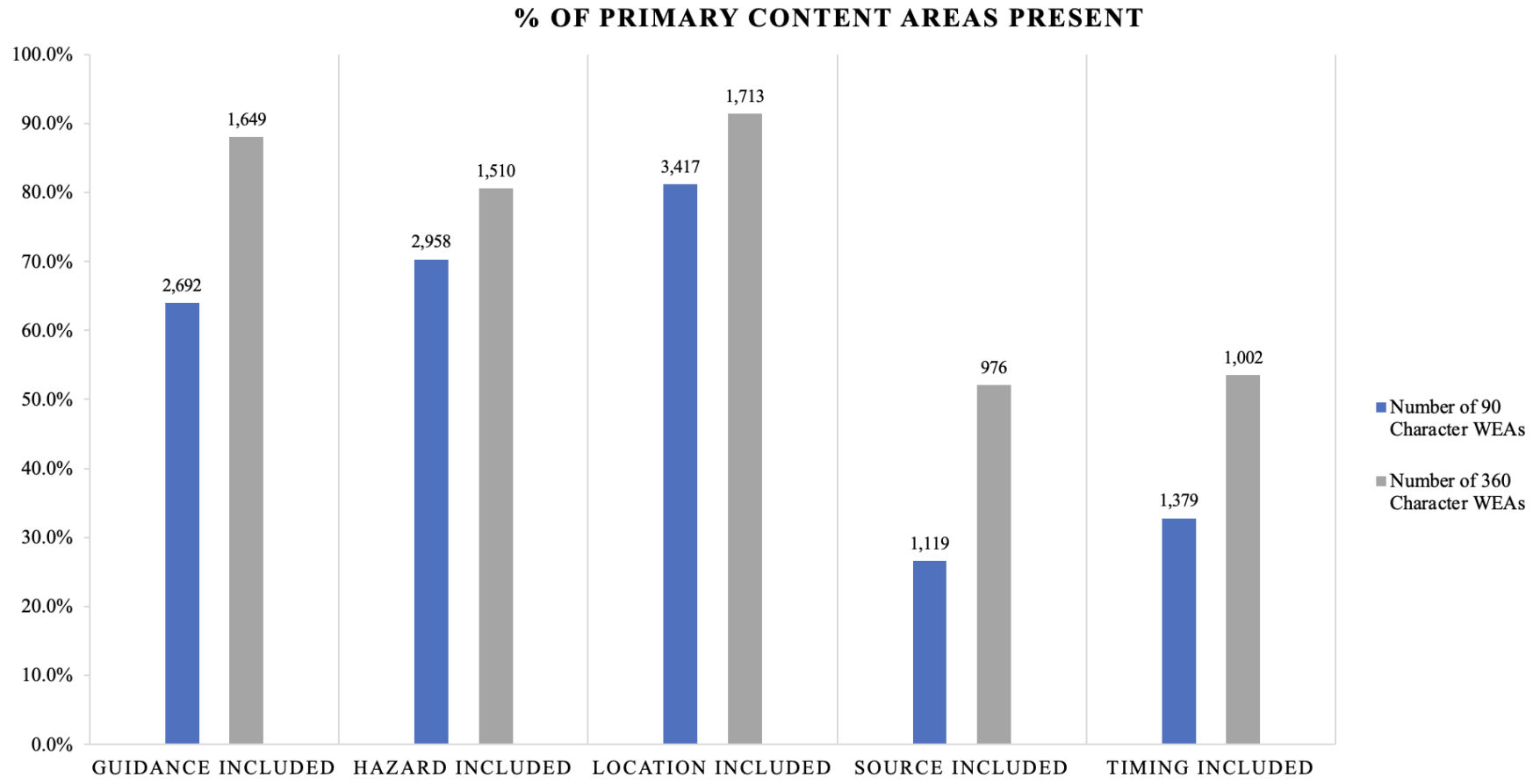
Time Category	90 Character	360 Character	Total
Time until hazard impact	17.2%	30.7%	21.4%
Message expiration	14.5%	20.6%	16.4%
Time to take action	11.2%	19.2%	13.6%

Source

Content	Definition	90 Character	360 Character	Total
Source	Name of the organization providing the information in the message	26.6%	52.1%	34.5%

Data period of analysis through April 2022

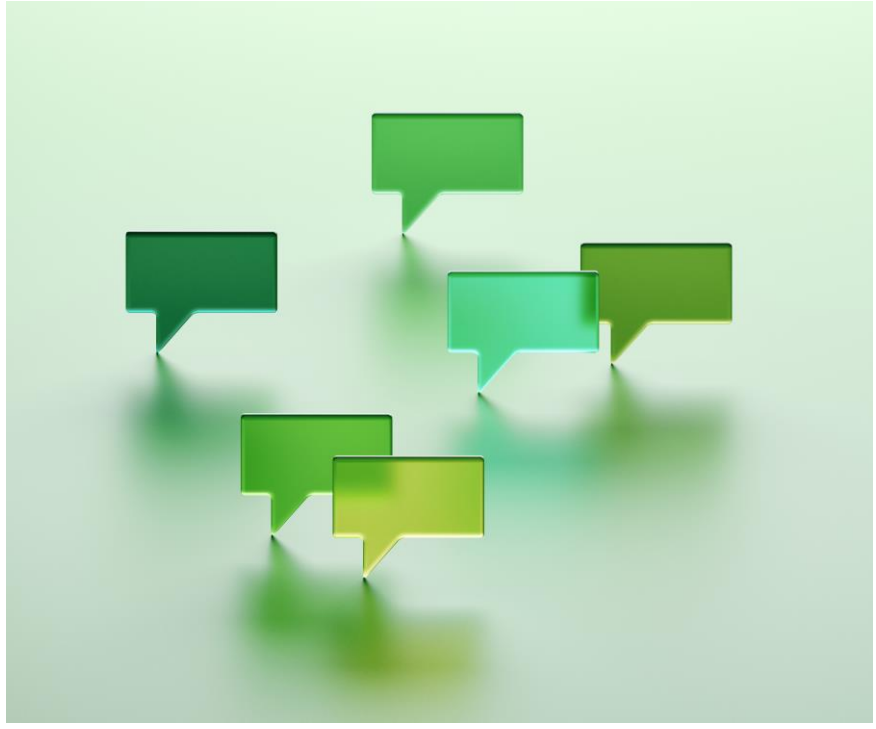
Overall Findings



Message Completeness

What's the whole story?

Are there differences between 90- and 360-character messages and their completeness?

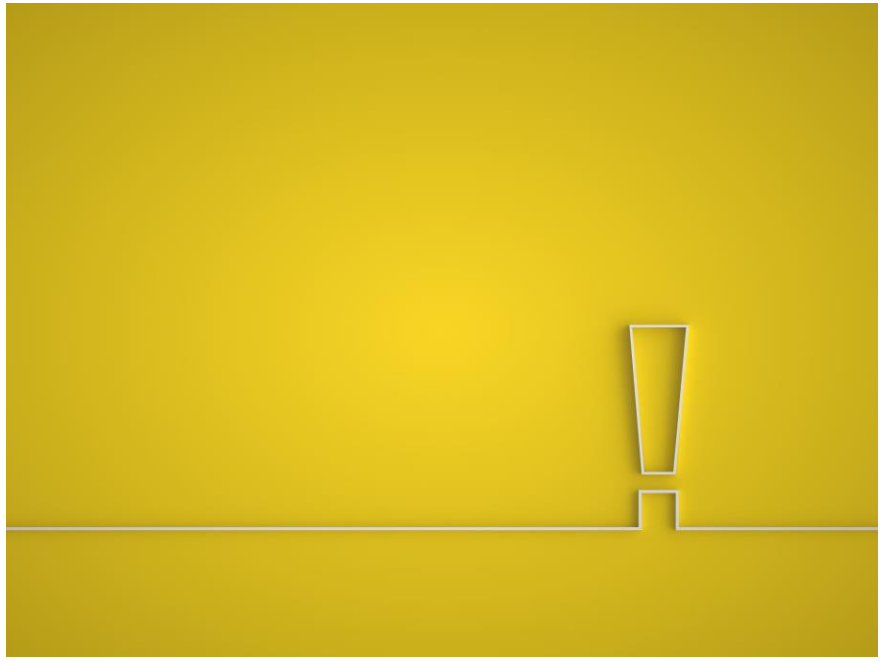


Message Completeness

Content	90 Character	360 Character	Total
Message Completeness	2.9%	21.1%	8.5%

Conclusion

90 Characters = Alerts



360 Characters = Warnings

Take advantage of the opportunity to reduce protective action delay by utilizing the full 360-characters of a WEA to warn populations at risk.

Thank You

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