

# Consequences from Flooding

**“Life Safety is Paramount”**

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**BUILDING STRONG**®



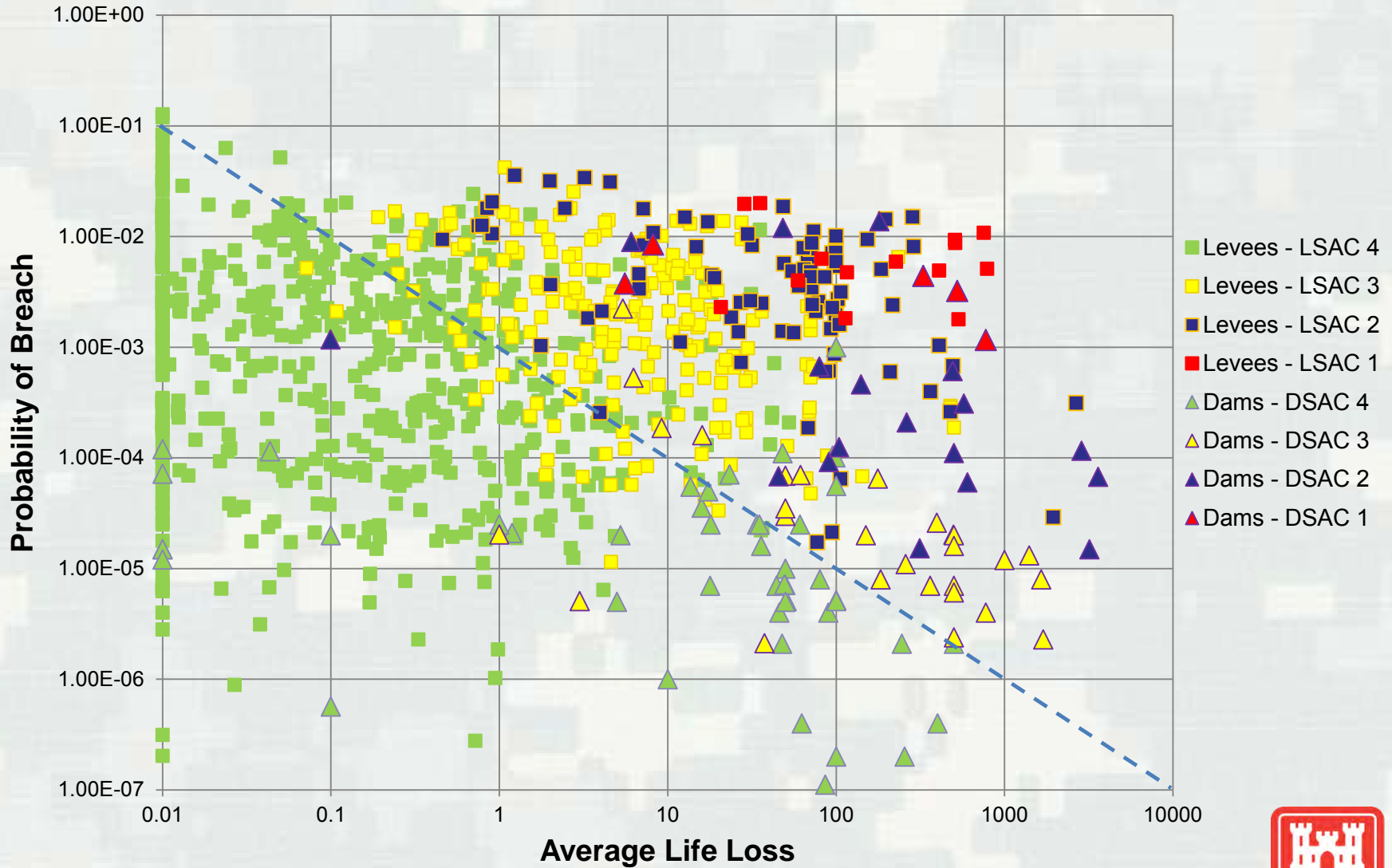
# Why All the Fuss?

- “Have you heard about all this detailed life loss modeling (HEC-FIA specifically)? It’s a huge resource sink, is it really necessary?”



# USACE Flood Defense Infrastructure

## *Risk Characterization*



# USACE Life Loss Estimation Methods – Decision Driven

<u>Goal</u>	<u>Approach</u>	<u>Resources</u>	<u>Uncertainty</u>
Prioritizing focus for large portfolio	Screening-level (Empirical)	Low	High, risk drivers poorly understood
Validation of prioritization, analysis and selection of measures when evacuation issues are not significant	Simplified simulation (HEC-FIA)	Medium	Significant and quantifiable, risk drivers other than evacuation understood
Analysis and selection of risk reduction measures	Detailed simulation (LifeSim)	High	Significant and quantified, risk drivers understood

# What does it take to estimate loss of life?

- How many people are exposed to the flooding?
- How severe is the flooding?
- Are the people in a structure that can withstand the flooding?
- Will the people subjected to flooding die?



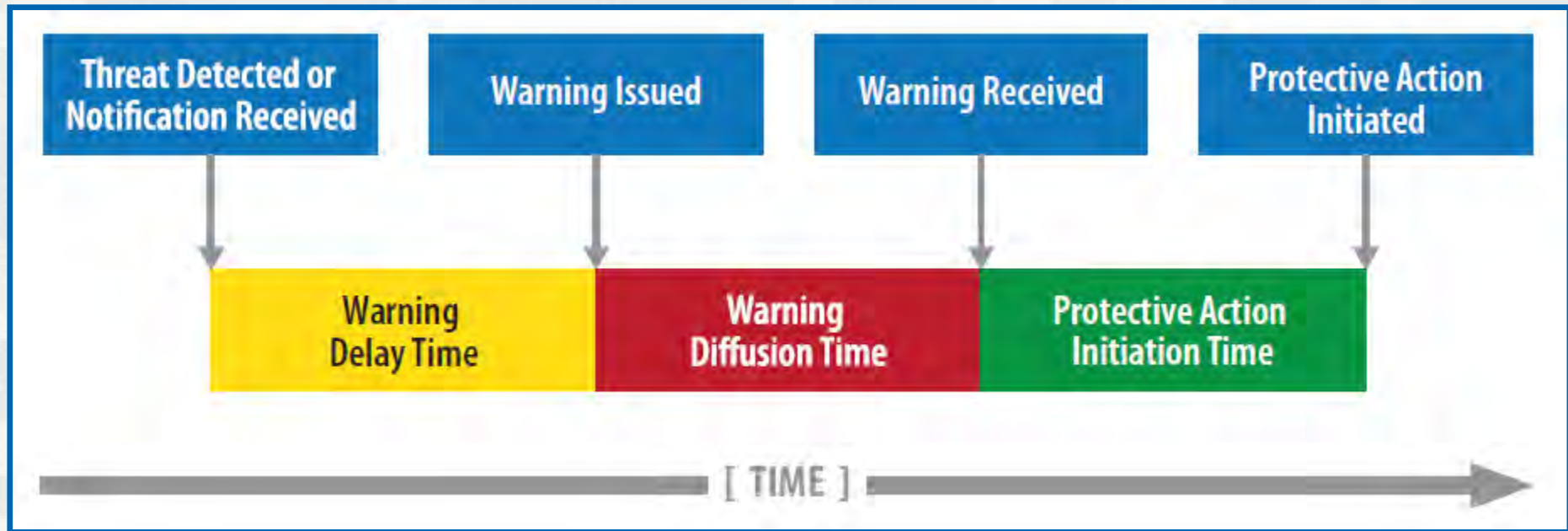
# How many people are exposed to flooding?

- Initial distribution of people
- Redistribution of people
  - ▶ Warning
  - ▶ Mobilization
  - ▶ Evacuation





# Warning and Mobilization Timeline



# Message Content

- **The single most important thing that an emergency manager can do** to motivate effective public protective action is to provide the best emergency messages possible.

**SOURCE:** say who the message

**THREAT:** describe the flooding

**LOCATION:** state the impact area

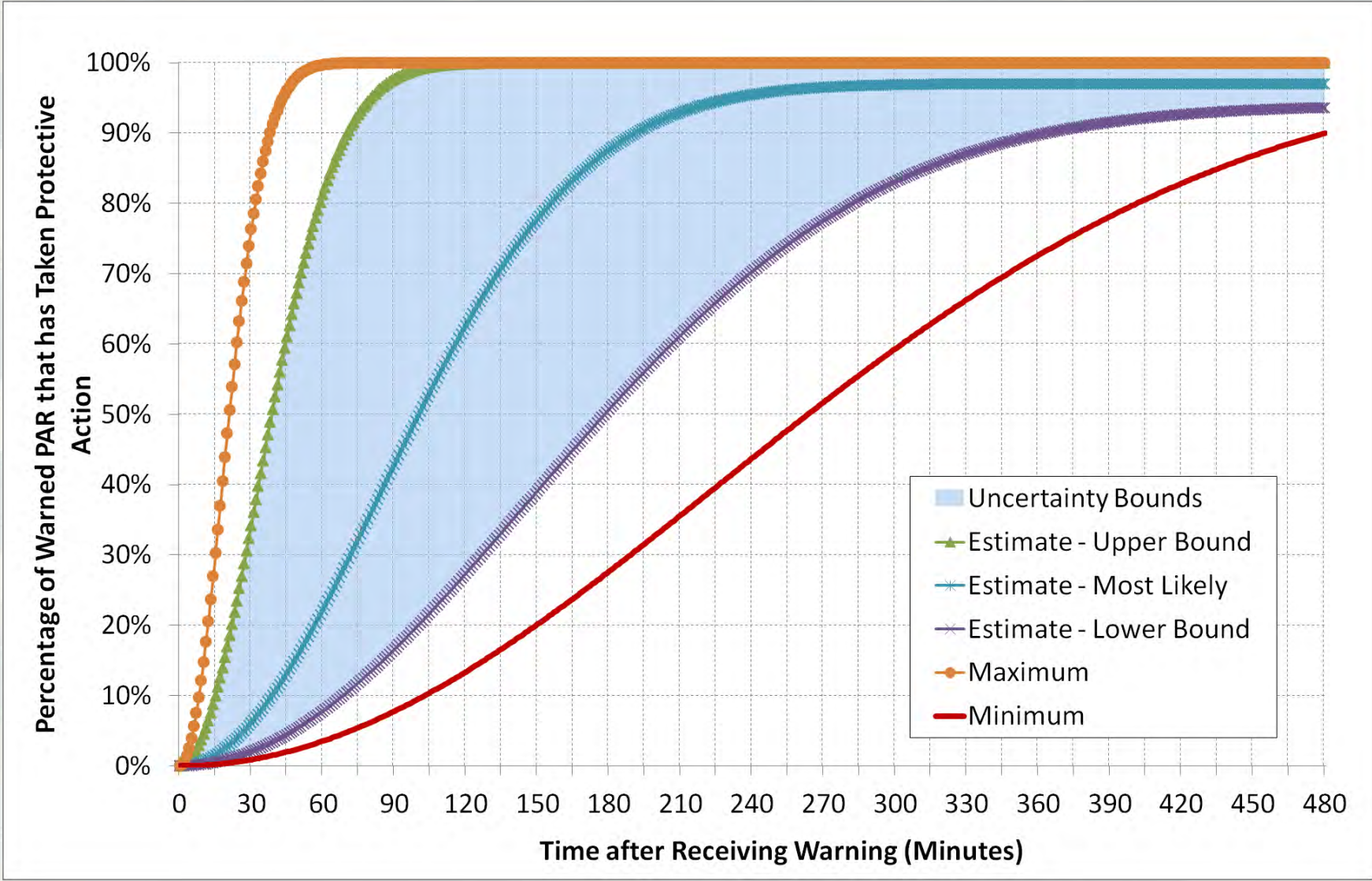
**GUIDANCE/TIME:** tell people

**EXPIRATION TIME:** tell people when the alert/warning expires and/or new information will be received





# Model Inputs



# MYTHBUSTERS



# Cry Wolf Syndrome

- Asking the public to evacuate for a flood emergency, only to find out that the threat is a false alarm, could result in a loss of trust in the next time a real emergency occurs.





# Traffic Accidents

- Traffic accidents increase during mass events.



Traffic accidents increase during mass events because of slower speeds, generally in a single direction, and people are more cautious and more considerate.



# Recent Products



**A GUIDE TO  
PUBLIC ALERTS  
AND WARNINGS  
FOR DAM  
AND LEVEE  
EMERGENCIES**



# More Information

- [jason.t.needham@usace.army.mil](mailto:jason.t.needham@usace.army.mil)
- [“A guide to public alerts and warnings for dam and levee safety emergencies”](#)
  - ▶ <http://silverjackets.nfrmp.us/Home/Newsroom>

