

# NTHMP Strategic Plan

**Outcome: Tsunami evacuation products and strategies that support effective preparedness and response**

Outcome	Strategy	Measure	Milestone	Execution
Tsunami evacuation products and strategies that support effective preparedness and response	Implement guidelines for tsunami evacuation maps based on guidelines developed by the MES in 2011.	100% of NTHMP-funded evacuation maps available on-line.	All NTHMP-funded maps follow the approved 2011 guidelines by end of 2013.	MES
	Establish guidelines for evacuation modeling procedures so all at-risk communities can leverage the correct information for evacuating their population.		Coordinate with experts to discuss proper strategies for evacuation studies of the inundation area (including horizontal evacuation) and produce guidelines for evacuation studies by end of 2014.	

**Establish guidelines for evacuation modeling procedures so all at-risk communities can leverage the correct information for evacuating their population.**

# Evacuation Studies Guidance by 2014 (MES-MMS)

- **Guidelines and Best Practices for Tsunami Evacuation Mapping:** minimum requirements to develop consistent and reliable tsunami evacuation maps (finalized 2011)
- **NTHMP Annual – Introduced by Nate Wood**  
Presentation Modeling Pedestrian Evacuations
- **ACTION: Provide Draft guidelines to assist the MES strategy for Summer MES 2014 Meeting**
- Team: Washington (John Schelling), Oregon (Althea Rizzo), ITIC (Laura Kong), US Virgin Islands (Elton Lewis), Alaska (Erv Petty), Hawaii (Kevin Richards)

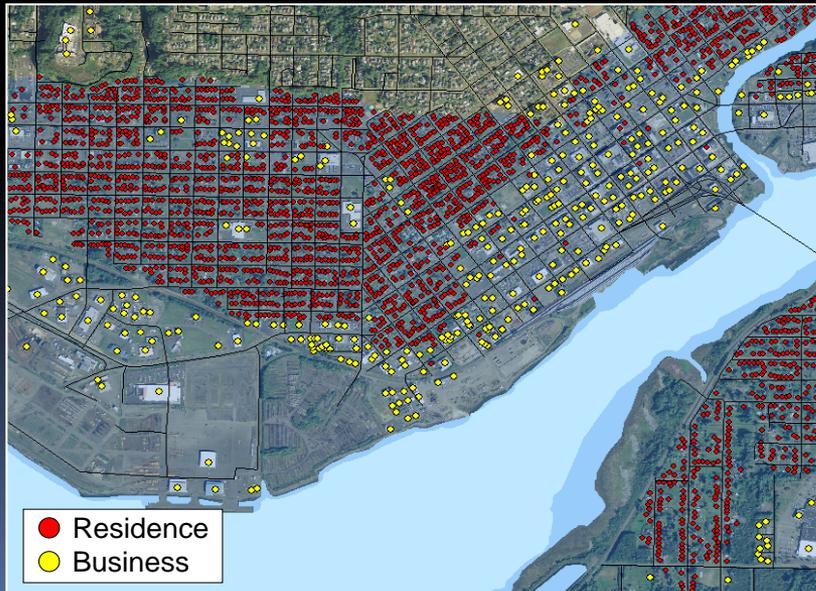
# Modeling pedestrian evacuations (Wood)

*a very quick comparison of two approaches*

## PURPOSE AND FOCUS

### Agent-based model

- To track individual movement along road network to safe point
- Focus on human behavior
- Good for bottlenecks, congestion, and urban areas



### Least-cost-distance model

- To map travel times to safe zone by calculating “costs” due to varying land
- Focus on evacuation landscape
- Good for mixed populations, open areas, and varied landscape



# Summary

Both approaches are useful for evacuation modeling but in different ways

## Agent-based

- Population #'s & sites well constrained
- Focus on population movement
- Focus on specific scenario
- Loss estimation numbers
- Post-disaster assessments
- Influence of behavior change

## LCD-based

- Desire for flexibility in population
- Focus on evacuation landscapes
- Focus on worst case @ site
- Maps and graphs
- Outreach product for public
- Mitigation product for VE siting

# Evacuation Modeling Guidelines and Procedures

- What is it?
- Why it is needed?
- What are the products?
- What methods are used?    How is it done?

From Nate's presentation:

- Models: Agent-based, Least-cost distance
- Data required
- Assumptions
- Outputs (Products)

# Next Steps

## **Outcome: Tsunami evacuation products and strategies that support effective preparedness and response**

### **Strategies:**

- Implement guidelines for consistency of tsunami evacuation maps based on guidelines developed by the MES in 2011
- Ensure all NTHMP-funded maps follow the adopted guidelines and are publicly available through the NTHMP web site. The guidelines for the evacuation maps include scale, colors, symbols, and critical infrastructure to be included as well as the text.
- Evacuation maps will be based on either high-resolution inundation maps or estimates based on alternative means of determining hazard zones.
- **Establish guidelines for evacuation modeling procedures so all at-risk communities can leverage the correct information for evacuating their population.**

# MES PRIORITIES--HIGH

- **NTHMP Maps use mapping std guidelines by 2013**
  - Standards developed, implementation in process
- **Evacuation studies Guidance by 2014 (MMS)**
- Education strategy by 2014
  - In process, Progress Report from NOAA Tsunami Program due to committee along with suggestions for next steps (by summer MES meeting?)
- Conduct evaluation of tsunami education products and programs in 10 communities by 2014
  - NOAA Tsunami Program to develop a tool for stakeholder use
- Develop a decision support tool (which?) addresses the characteristics of the population at risk by the end of 2015. (MMS)
  - HI, CA, PR, USGS, NOAA Tsunami Program (Rocky) (Cindy?)
  - PAR communities subject to tsunami, people who live, work, plays, commutes thru, tourists, vulnerable populations (ANYONE IN AN EVACUATION ZONE?)
  - Boundary of evacuation zone
- Conduct state-level reviews of all local response plans for accuracy and effectiveness by the end of 2014.
  - In process through local CEMP review