

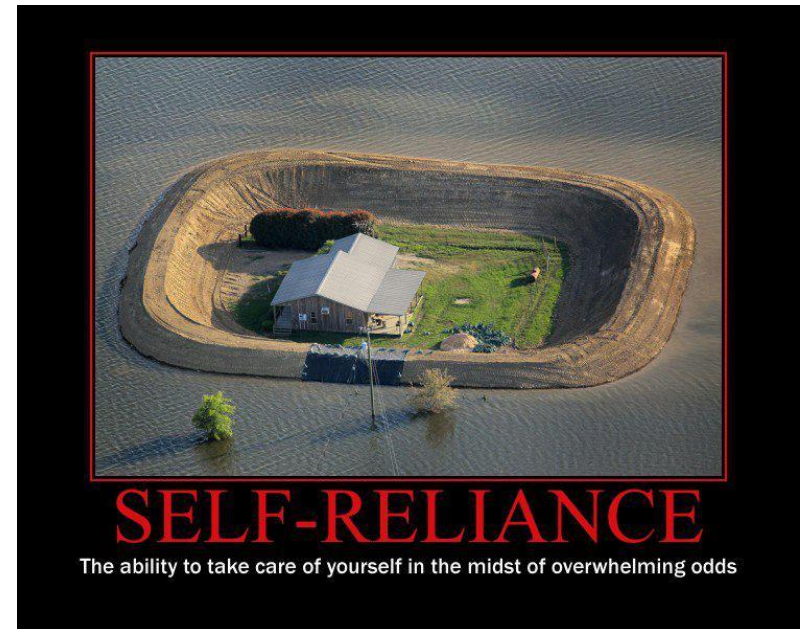
Climate Change & Emergency Management

Justin Kates - Nashua Office of
Emergency Management



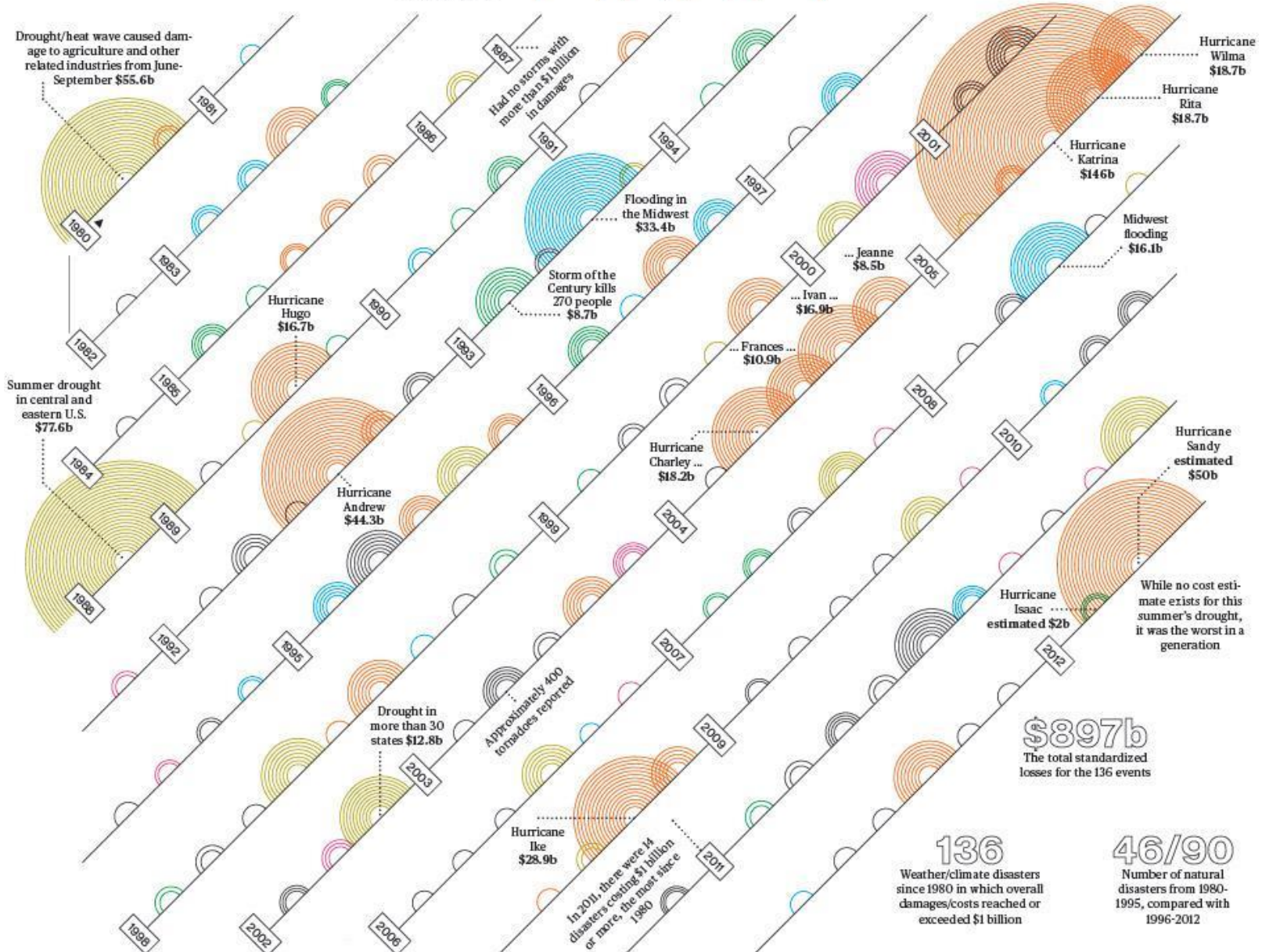
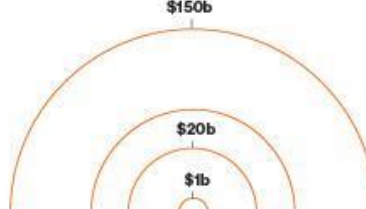
Why is Climate Change Important to Emergency Managers?

- Rising temperatures
- Increased storm intensity and frequency
- Rising sea levels
- Changing drought and fire risk
- Shifting threats to human health and disease patterns



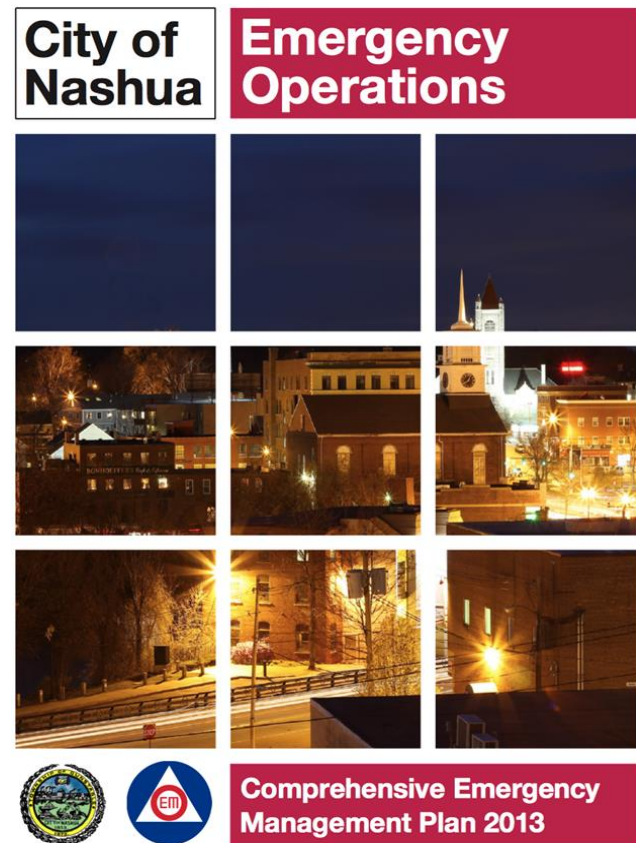
What is Nashua doing?

- Key**
- Blizzard/freeze/ice
 - Drought/heat wave
 - Fire
 - Flood
 - Hurricane
 - Tornado/storm



Including All Stakeholders

- Natural Hazard Mitigation Planning
- Local Emergency Planning Committee
- What Critical Infrastructure is affected?
- What local, state, and Federal entities have responsibility to act?
- Funding sources for mitigation?
- Including Mitigation during Recovery

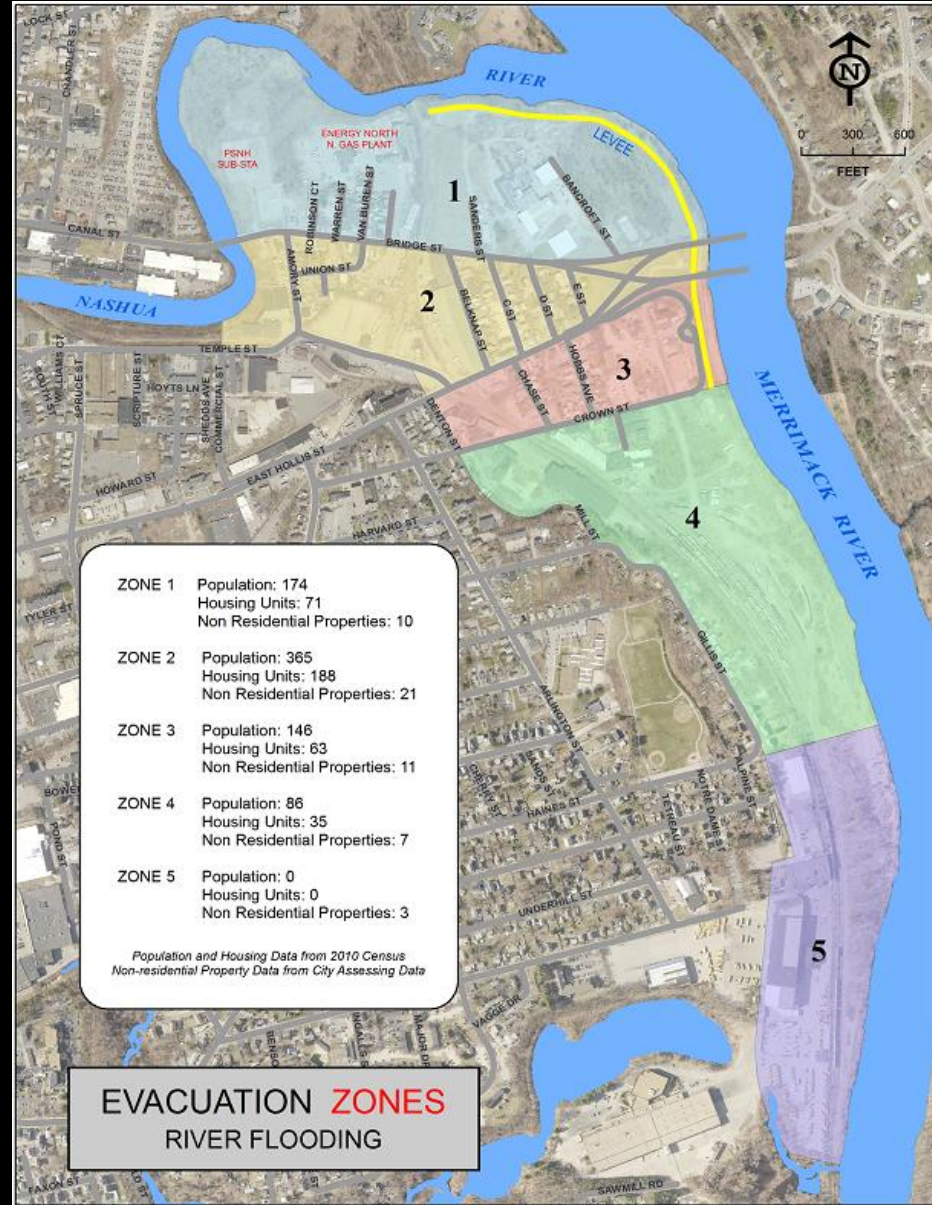




Nashua Levee System

Emergency Action Plan

September 2013

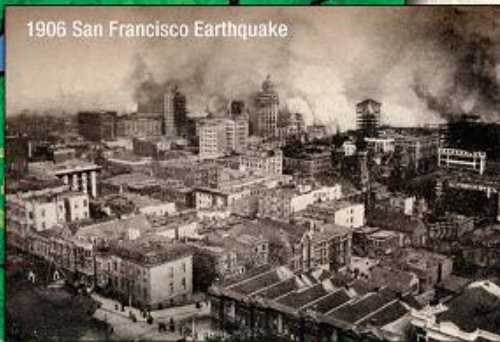
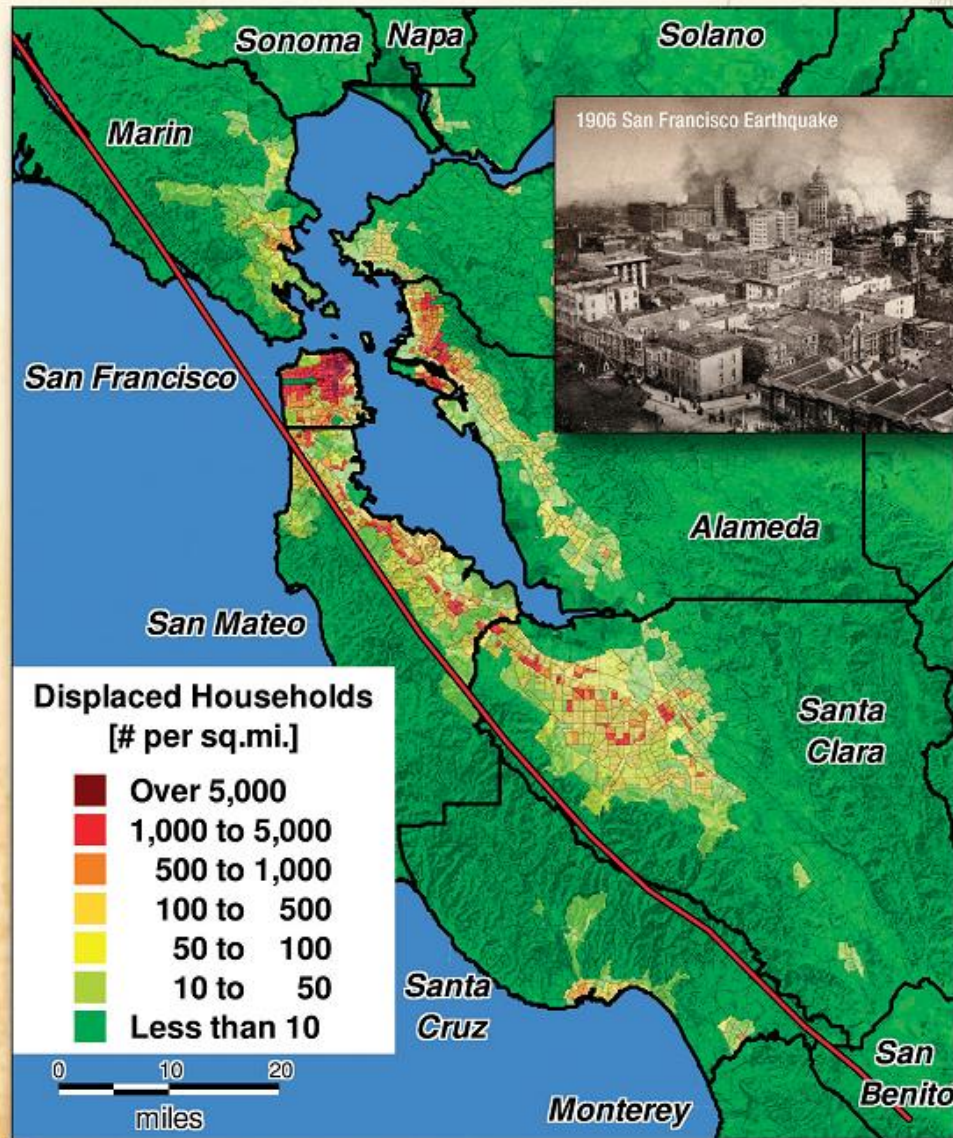


HAZUS & GIS

- Working with Northeast States Emergency Consortium to run some HAZUS models on potential worst case scenarios in the Greater Nashua area
- Participated in FEMA HAZUS Training with the intention to continue running models in the future
- Developing maps of current and future vulnerable areas for all hazards

HAZUS Evaluation of 1906 magnitude earthquake in today's environment –

Displaced Households



Data and Analysis Displayed:

FEMA's multi-hazard loss estimation methodology and software application, HAZUS-MH, was used in the preparation of a study of building damage and losses likely to occur due to a repeat of the 1906 San Francisco earthquake. The map shows estimates of Displaced Households from a repeat of the 1906 event, which is a function of the number of residences in the 19 county study region that would experience either extensive or complete structural damage. HAZUS-MH also estimates short-term shelter requirements, taking into account the income levels of the impacted population. These HAZUS-MH products are very useful in assessing potential short-term shelter and long-term housing requirements following a major earthquake.

HAZUS-MH: FEMA's Software Program for Estimating Potential Losses from Disasters

HAZUS-MH is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest geographic information systems (GIS) technology to produce estimates of hazard related damage before, or after, a disaster occurs. As part of the on-going HAZUS-MH model development process, FEMA conducts model validation studies following flood, hurricane and earthquake events to compare the predicted losses and actual losses.



For more information about HAZUS and HAZUS User Groups in your area:
www.fema.gov/plan/prevent/hazus/



FEMA

HAZUS-MH Building Counts Affected: 100-Year Flood Exceedance and Potential Elevation Requirement *New Orleans, Louisiana*



Data and Analysis Displayed:

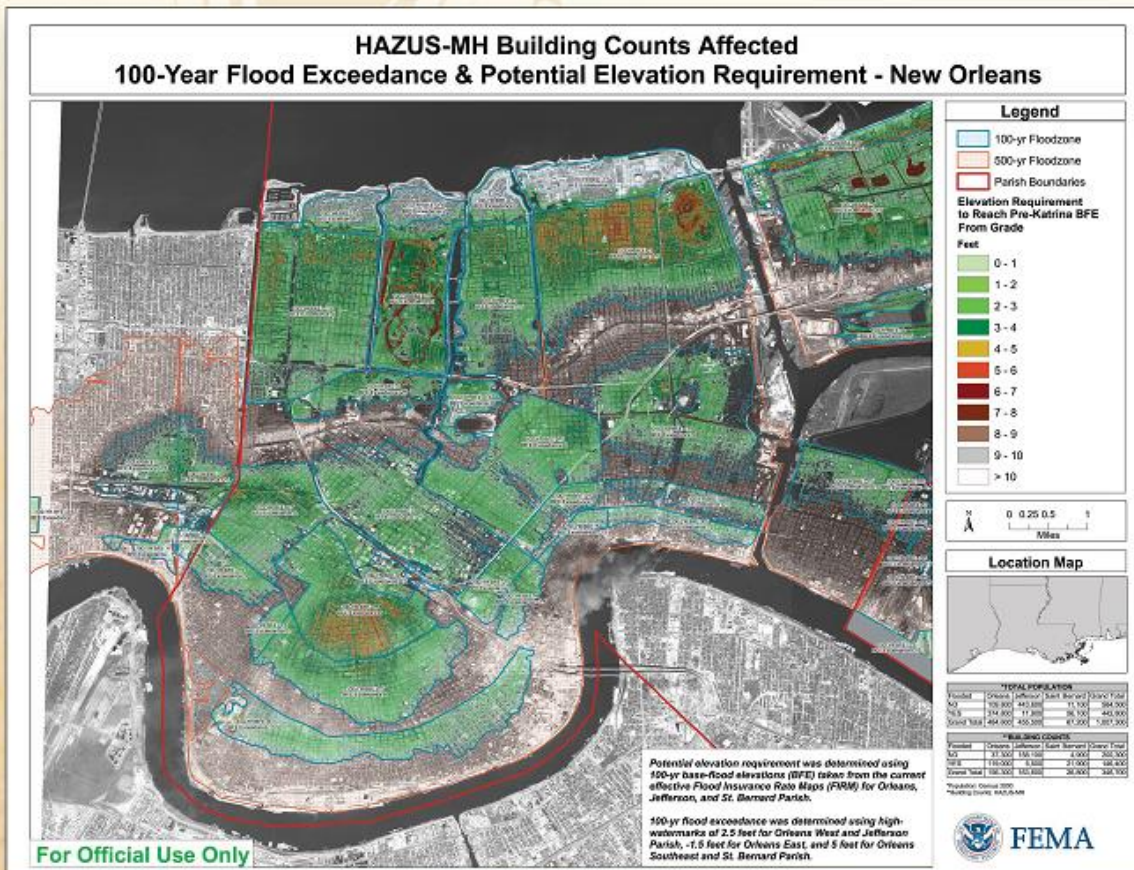
This map displays 100-year flood exceedance and potential elevation requirements for central New Orleans. The purpose was to quickly identify potential elevation requirements for substantially damaged structures (damaged more than 50%) as this is a requirement of the National Flood Insurance Program (NFIP). The 100-year flood exceedance was determined using field surveyed high watermarks and 100-year base flood elevations (BFE) taken from current effective Flood Insurance Rate Maps (FIRM) for Orleans, Jefferson, and St. Bernard parishes. Advisory BFEs are developed to guide the recovery process.

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For more information about HAZUS visit:
www.fema.gov/plan/prevent/hazus/hz_overview.shtm

Learn more about FEMA's National Flood Insurance Program at www.fema.gov/business/nfip/



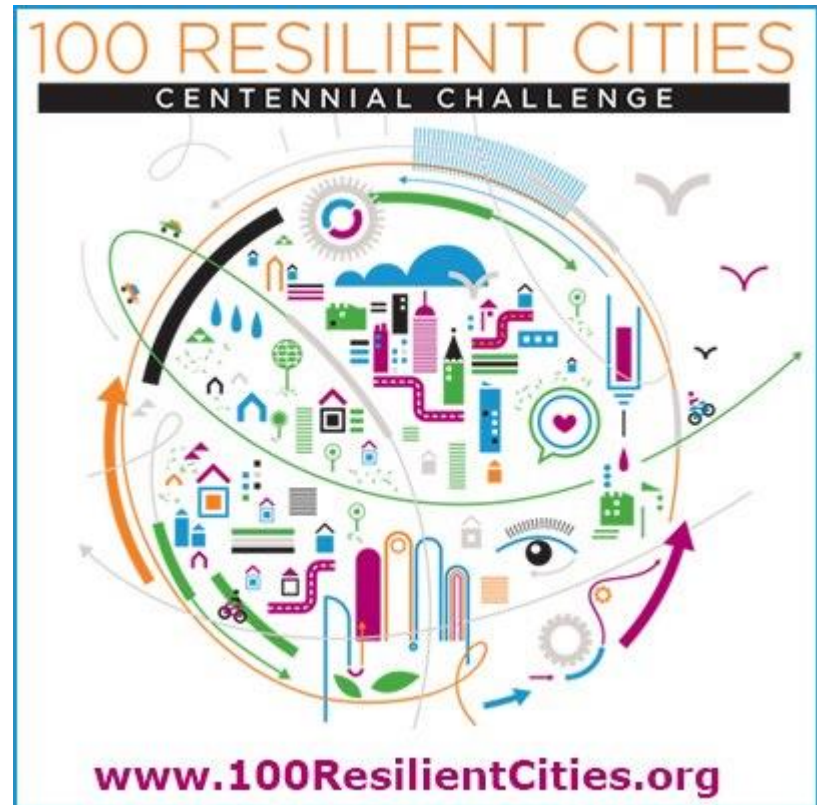
DATA SOURCES: Current effective Flood Insurance Rate Maps (FIRM); Field-surveyed High Watermarks; Ikonos Satellite Imagery (9-2-05); Light Detection and Ranging (LIDAR), (U.S. Army Corps of Engineers, Saint Louis District, 2003, Digital Elevation Model (USGS DEM)); U.S. Census Bureau 2000; HAZUS-MH (Loss Estimation Software developed by FEMA)



FEMA

100 Resilient Cities Challenge

- Rockefeller Foundation
- 100 Cities Awarded Grants for development of resilience planning, including climate adaptation
- Shifting from responding to emergencies to becoming a more resilient City



Climate Change is Controversial

- Use Comprehensive Emergency Management to “hide the controversy”
- All-Hazards
- All-Threats
- All-Actors
- All-Phases



Questions?

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