

Maryland HAZUS User Group Inaugural Call



Agenda

Introductions

Overview of the HAZUS-MH program

HAZUS-MH Support Network

General Discussion



FEMA

Let's Get Acquainted!

MD HUG Leader

- Zachary Baccala
- Sr. GIS Analyst with PBS&J an Atkins company
- 6 years of GIS and 3 years of HAZUS

Call Participants

- Name
- Organization
- Role in organization
- GIS and/or hazard analysis experience



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What is HAZUS-MH?

GIS-based tool used on a personal computer

Available from FEMA free of charge
(<http://www.fema.gov/plan/prevent/hazus/>)

Requires installation of ArcGIS 9.3, ArcGIS Spatial Analyst (for flood modeling), and applicable ArcGIS service packs

Requires Windows XP SP3 or Windows7 on a 32-bit system



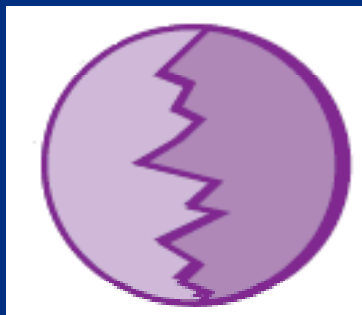
Supported Hazards



Hurricane Winds



**Riverine and
Coastal Floods**



Earthquakes



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History

Program initiated in 1992

Earthquake model first released in 1997

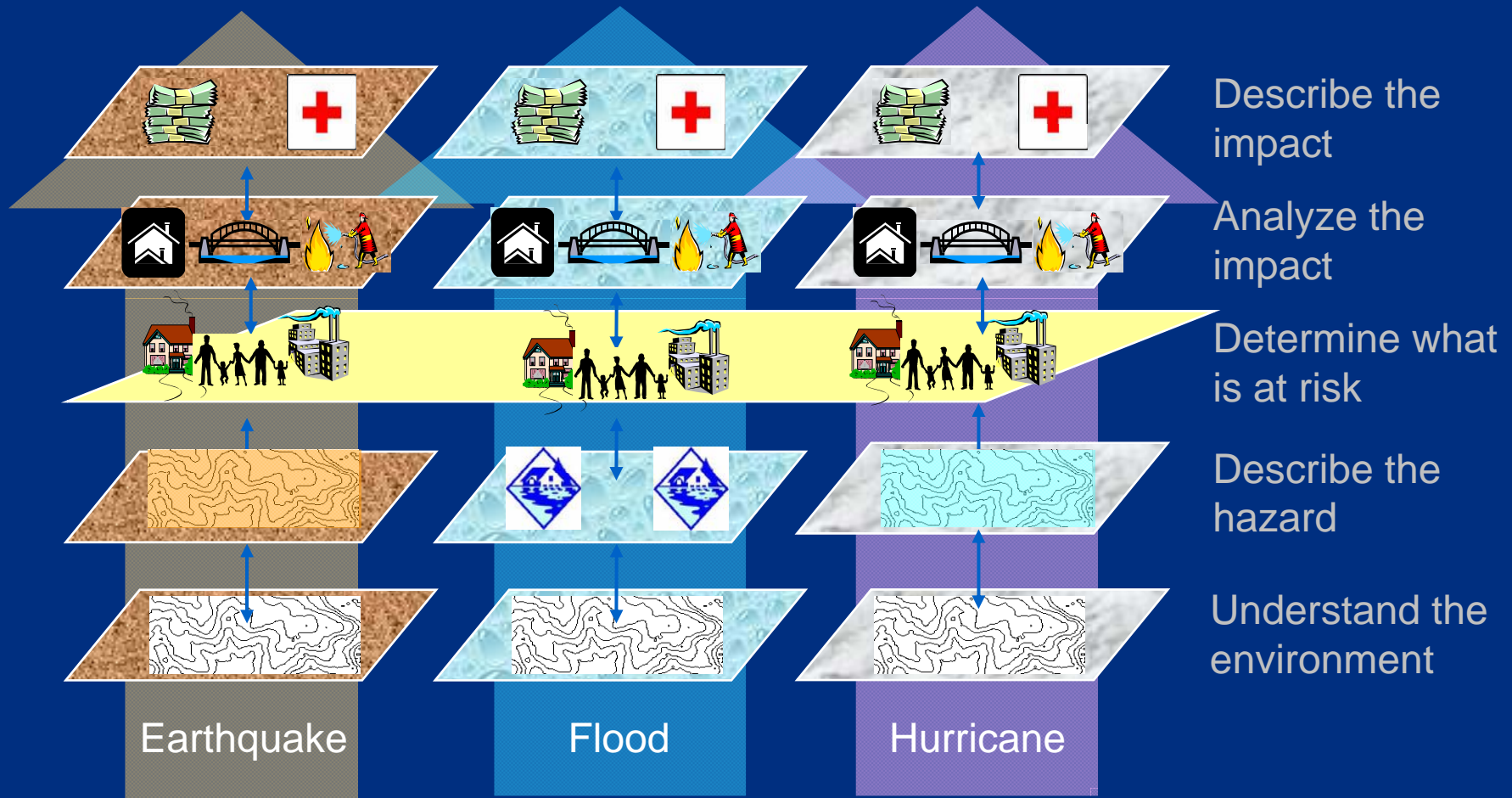
Hurricane and Flood model development initiated in 1998

HAZUS-MH Maintenance Releases in Jan. 2005, June 2006, June 2007, August 2008, July 2009 and January 2010

Level 1 Analysis for the State of Maryland completed in 2005



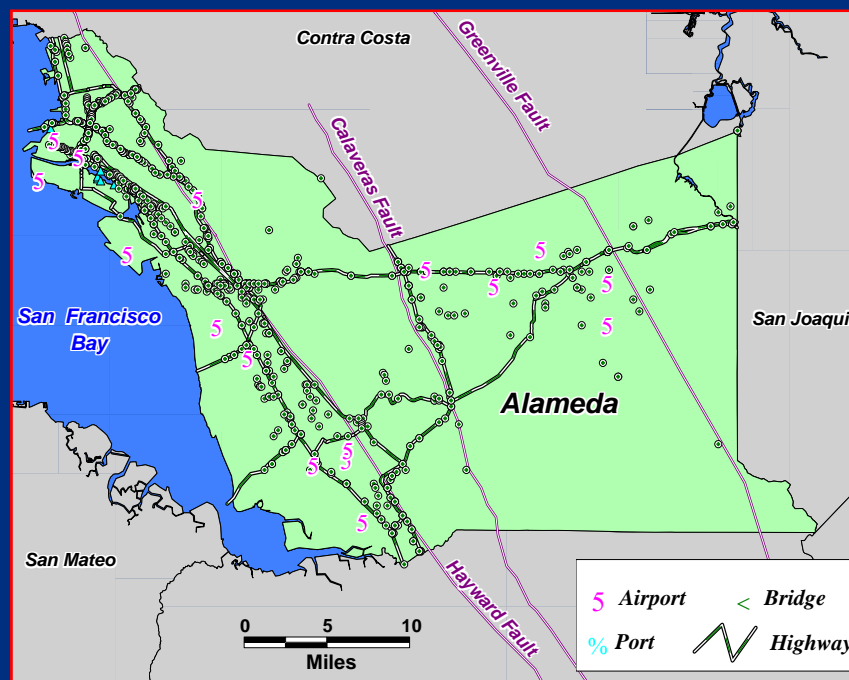
How does HAZUS-MH estimate losses?



Inventory (Exposure)

HAZUS-MH provided inventory

- General building types and occupancies
 - Lifelines
 - Replacement costs
 - Demographics
- Hazard-specific
 - Specific building types
 - Elevation
 - Building configurations



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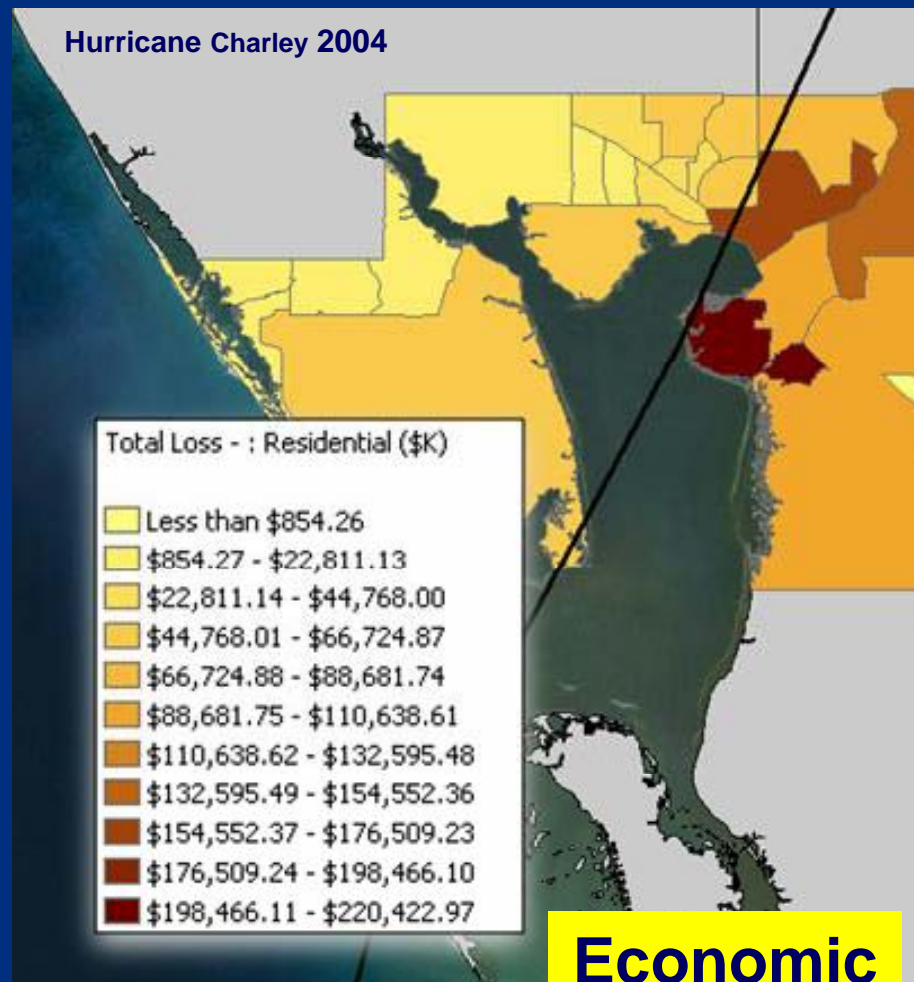
HAZUS-MH Output



**Physical
Impacts**



**Social
Impacts**



**Economic
Impacts**



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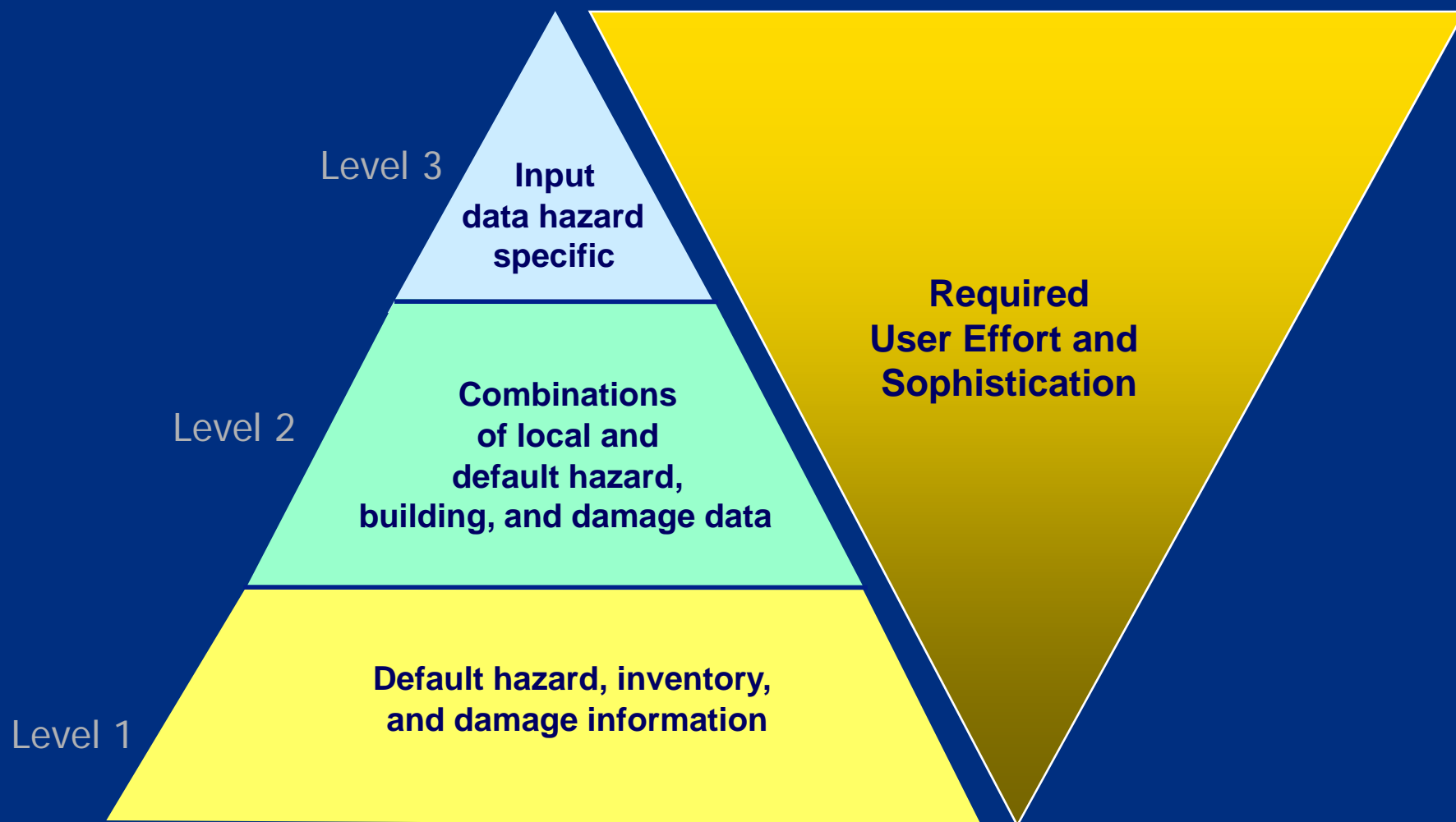
HAZUS-MH Output

	Earthquake Ground Shaking Ground Failure	Flood Frequency Depth Discharge Velocity	Hurricane Wind Pressure Missile Rain
➤ Direct Damage			
General Building Stock	✓	✓	✓
Essential Facilities	✓	✓	✓
High Potential Loss Facilities	✓		
Transportation Systems	✓	✓	
Utility Systems	✓	✓	
➤ Induced Damage			
Fire Following	✓		
Hazardous Materials Release			
Debris Generation	✓	✓	✓
➤ Direct Losses			
Cost of Repair	✓	✓	✓
Income Loss	✓	✓	✓
Crop Damage		✓	
Casualties	✓	Generic Output	
Shelter Needs	✓	✓	✓
➤ Indirect Losses			
Supply Shortages	✓	✓	
Sales Decline	✓	✓	
Opportunity Costs	✓	✓	
Economic Loss	✓	✓	



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Levels of Analysis



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Benefits

HAZUS-MH allows user to

- **IDENTIFY** vulnerable areas
- **ASSESS** level of readiness and preparedness
- **ESTIMATE** potential losses from specific hazard events
- **DECIDE** on how to allocate resources
- **PRIORITIZE** mitigation measures



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HAZUS Role in Emergency Management

Emergency Preparedness

Develop emergency response plans

- Temporary housing
- Debris removal
- Emergency power and water
- Emergency medical services
- Evacuation/emergency route clearance

Organize response exercises



HAZUS Role in Emergency Management Mitigation

Mitigation Assessment

- Identify 'at-risk' communities

Mitigation Measures

- Strengthen existing structures
- Strengthen window/door openings and siding

Mitigation Programs

- Adopt and enforce hazard-resistant building codes
- Land use planning



HAZUS Role in Emergency Management Response and Recovery

Post-disaster damage assessment and ground-truthing

Response planning for critical transportation outages

Identify critical infrastructure

Recovery action planning

Long-term economic recovery planning



Who is a HAZUS-MH User?

HAZUS-MH is used by a variety of communities and organizations across the United States.

- Local and State Government
- Federal Agencies
- Educational institutions
- Private industry
- Others

Considerable international interest



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FEMA HAZUS-MH Website

Primary FEMA resource for updated information related to HAZUS-MH.



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HAZUS Home

Overview

News

Models

Order HAZUS-MH

Using HAZUS-MH

HAZUS

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.

HAZUS[®]
EARTHQUAKE • WIND • FLOOD **MH**



<http://www.fema.gov/plan/prevent/hazus/>

User Groups

Latest news

User feedback

User group contacts

USEHAZUS

Home News User Groups Events & Training Forum Wiki

USEHAZUS is an all HAZUS Website developed by Jamie Caplan Consulting in response to the needs of the HAZUS user community.

Upcoming Conferences

- Pennsylvania GIS Conference**
May 19, 2009 - May 20, 2009
- ASFPM Annual Conference**
Jun 07, 2009 - Jun 12, 2009
- 2009 ESRI International User Conference (ESRI UC)**
Jul 13, 2009 - Jul 17, 2009
- National Association of Counties Conference**
Jul 24, 2009 - Jul 29, 2009
- IAEM Annual Conference**
Oct 31, 2009 - Nov 05, 2009

[View all conferences](#)

Upcoming Training

- Application of HAZUS-MH for Disaster Operations**
Apr 20, 2009 - Apr 23, 2009

[Hot Zone Newsletter has been published](#)

HAZUS.org

THURSDAY, MAY 7, 2009

HAZUS in the news ... Scientists model local impacts on towns and tidal environments

HAZUS-MH software models indicate that a category 3 hurricane, like the 1938's Long Island Express that hit 70 years ago, could cause \$160 billion worth of property damage in Long Island. Scientists are considering how climate change might exacerbate this. [READ MORE](#)

Labels: Hurricane

POSTED BY JOSEPH LAVENDER AT 3:12 AM | 0 comments

FRIDAY, APRIL 24, 2009

Study questions New Madrid threat

New findings might give disaster responders in Illinois, Indiana, Missouri, Arkansas, Kentucky, Tennessee and Mississippi reason to reconsider earthquake response policy. According to studies headed by Eric Calais, professor of geophysics at Purdue University, and Seth Stein, William Deering professor of Earth and Planetary Sciences at Northwestern

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HAZUS.org encourages everybody to take

Web page development and maintenance to all interested in this free service. We incorporated licenses and to offer you related websites.

[User Group Develops from the Successful Project](#)

[Improvements](#)

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<http://www.usehazus.com>



FEMA

<http://www.hazus.org>

Goals for the Maryland HUG

Encourage and expand the use of HAZUS for decision making relating to preparation, response and recovery, and mitigation

Provide training and support to create a knowledge base within the State for using HAZUS and results generated from it

Update the State inventory data to allow for Level 2 and above Hazard Analysis for each county

Foster collaborative efforts between agencies for large projects and to improve the science behind the model

Help facilitate the State's goal of assessing vulnerability to hazards

Provide information about software updates



Discussion and Questions

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