



**CDM**

Eric Pescatore,  
FEMA

# What's New in Risk Map

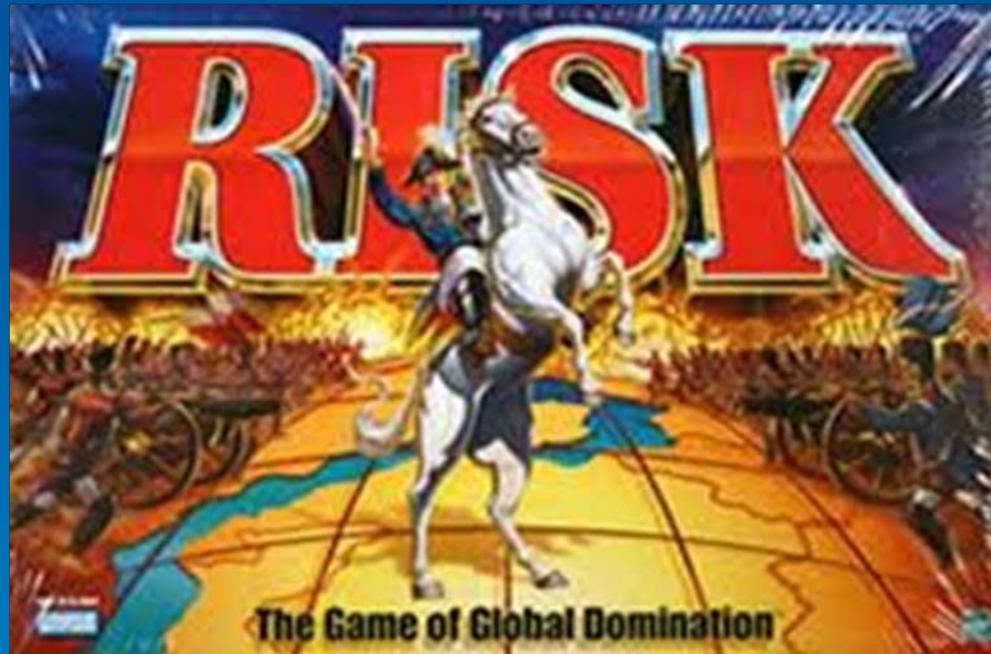
Identifying Risk so you don't have too.

March 1, 2011



**CDM**

# What the hey is a Risk Map?



# Previous FIS/FIRMs

## FLOOD INSURANCE STUDY

VOLUME 1 OF 8



### MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)



**COMMUNITY NAME**

**COMMUNITY NUMBER**

ACTION, TOWN OF 250177  
 ARLINGTON, TOWN OF 250178  
 ASHLAND, TOWN OF 250179  
 AYER, TOWN OF 250180  
 BELFORD, TOWN OF 250209  
 BELMONT, CITY OF 250183  
 BELLINGHAM, TOWN OF 250185  
 BURLINGTON, TOWN OF 250184  
 BOSTON, CITY OF 250186  
 CAMBRIDGE, CITY OF 250188  
 CHARLESTOWN, TOWN OF 250189  
 CHELSEA, CITY OF 250190  
 CONCORD, TOWN OF 250191  
 DANVERS, TOWN OF 250192  
 ENDETT, CITY OF 250193  
 FRANKLIN, TOWN OF 250194  
 GROTON, TOWN OF 250195  
 HOLLISTON, TOWN OF 250196  
 HOPKINTON, TOWN OF 250197  
 HUDSON, TOWN OF 250198  
 LEICESTER, TOWN OF 250200  
 LITTLETON, TOWN OF 250201  
 LITTLETON, TOWN OF 250202  
 LOWELL, CITY OF 250203  
 MALDEN, CITY OF 250204  
 MARLBOROUGH, CITY OF 250205  
 MEDFORD, CITY OF 250206

**COMMUNITY NAME**

**COMMUNITY NUMBER**

MELROSE, CITY OF 250207  
 NATICK, TOWN OF 250208  
 NEVTON, CITY OF 250209  
 NEEDHAM, CITY OF 250210  
 NORTH READING, TOWN OF 250211  
 PEPPERELL, TOWN OF 250212  
 READING, TOWN OF 250213  
 SHERBORNE, TOWN OF 250214  
 SHIRLEY, TOWN OF 250215  
 SOMERVILLE, CITY OF 250216  
 STONEHAM, TOWN OF 250217  
 STOW, TOWN OF 250218  
 TOWNSEND, TOWN OF 250219  
 TOWNSEND, TOWN OF 250220  
 WAREFIELD, TOWN OF 250221  
 WALTHAM, CITY OF 250222  
 WATERFORD, TOWN OF 250223  
 WILMINGTON, TOWN OF 250224  
 WESTFORD, TOWN OF 250225  
 WESTON, TOWN OF 250226  
 WILMINGTON, TOWN OF 250227  
 WINCHESTER, TOWN OF 250228  
 WOBURN, CITY OF 250229

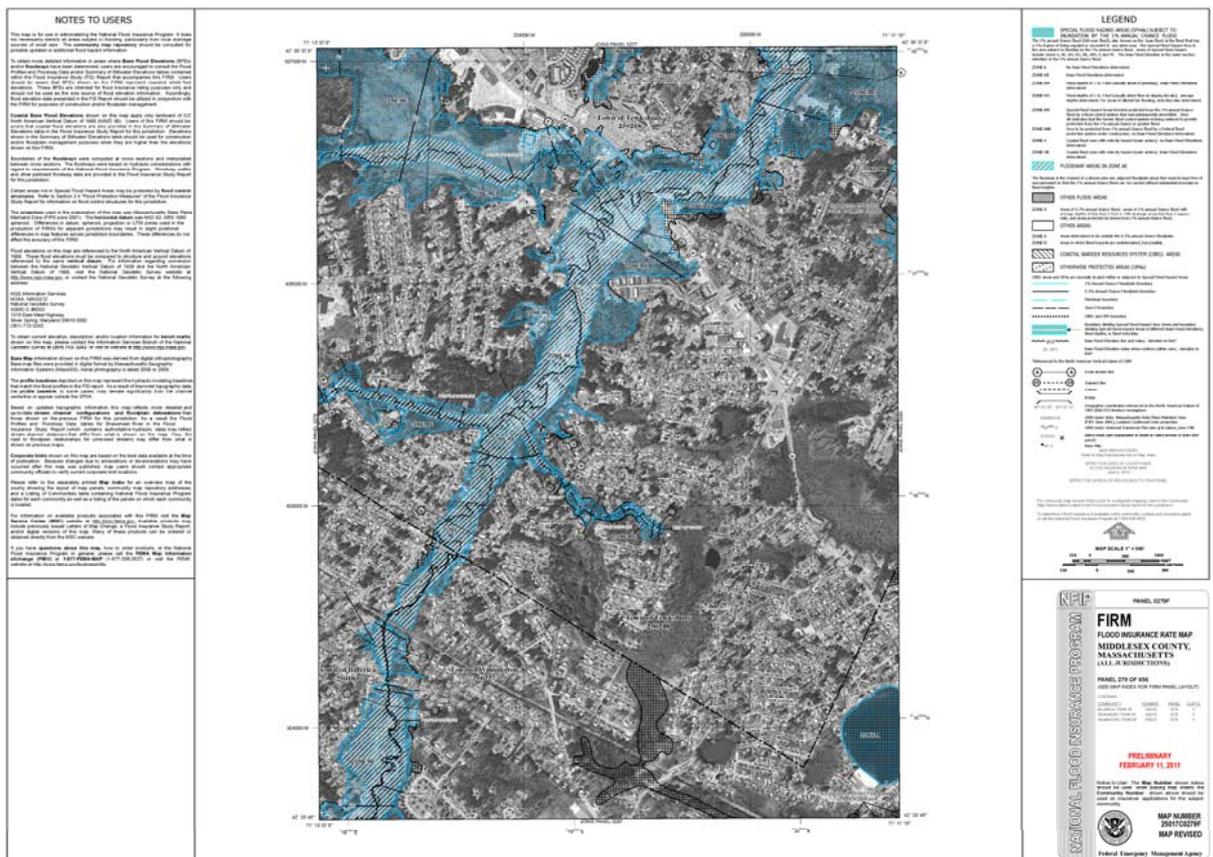
PRELIMINARY  
 FEBRUARY 11, 2011

EFFECTIVE:  
 JUNE 4, 2010  
 REVISED:



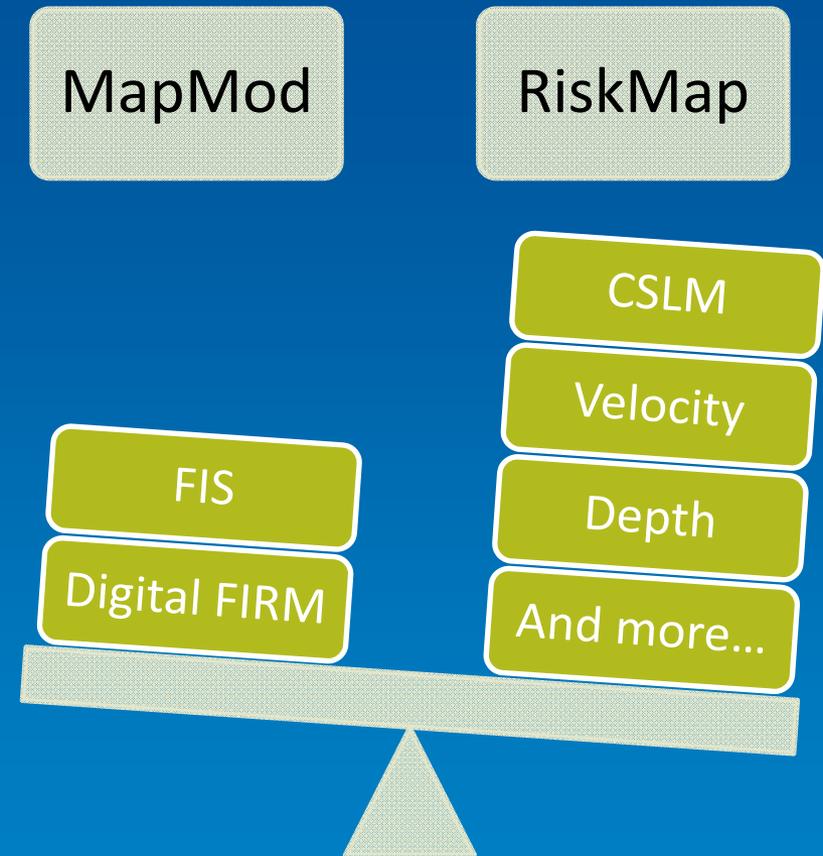
Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER  
 25017CV001A



# Whats New in the Risk Map Products

- New Maps that help identify Risk!
- Watershed based mapping extents.
- Updated Flood Insurance Study Report.

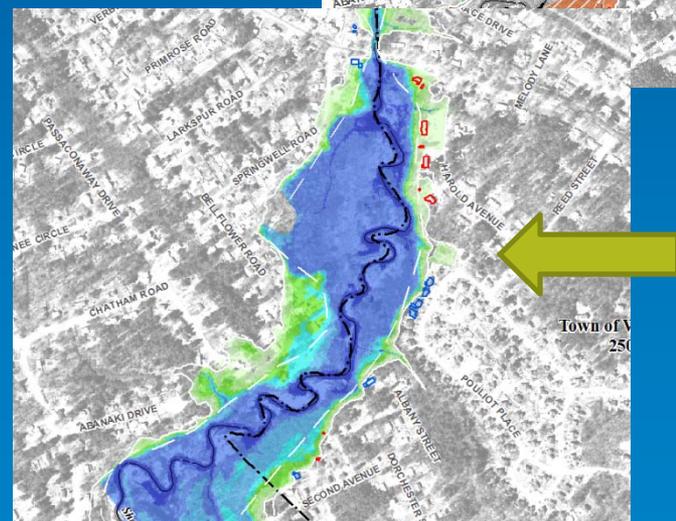
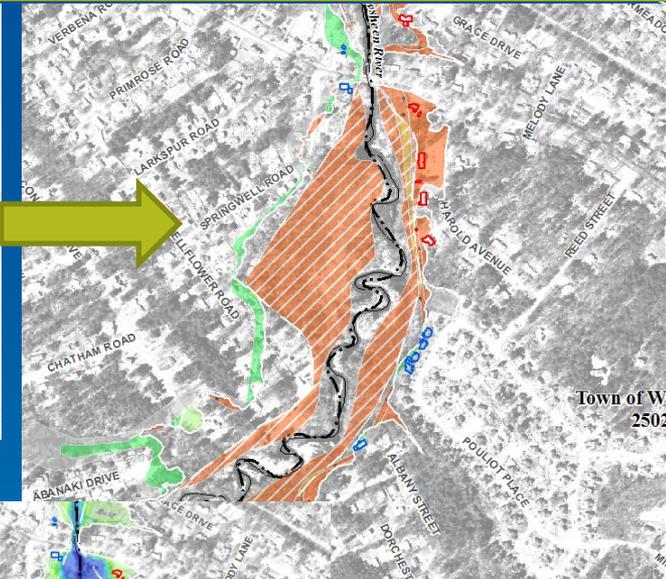


# Flood Risk Products

- Changes Since Last Map
- Multi-Frequency Depth & Water-Surface Elevation (WSE) Grids
- Elevation Change Grids
- Velocity Grids

**Changes Since Last Map**

AE --> AE w/ fw	
Shaded X --> AE w/ fw	
Unshaded X, AE w/ fw	
Unshaded X --> AE	
Shaded X --> AE	
A --> AE	
SFHA --> Shaded X	
SFHA --> Unshaded X	
AE w/ fw --> AE	
AE w/ fw --> Shaded X	
AE w/ fw, Unshaded X	
Non-SFHA Change	



**Annualized Depth 1%**

0 - 2	
2 - 4	
4 - 6	
6 - 7.6	
7.6 - 9.6	
9.6 - 12.3	
12.3 - 17.25	

# First Massachusetts Risk Map Study

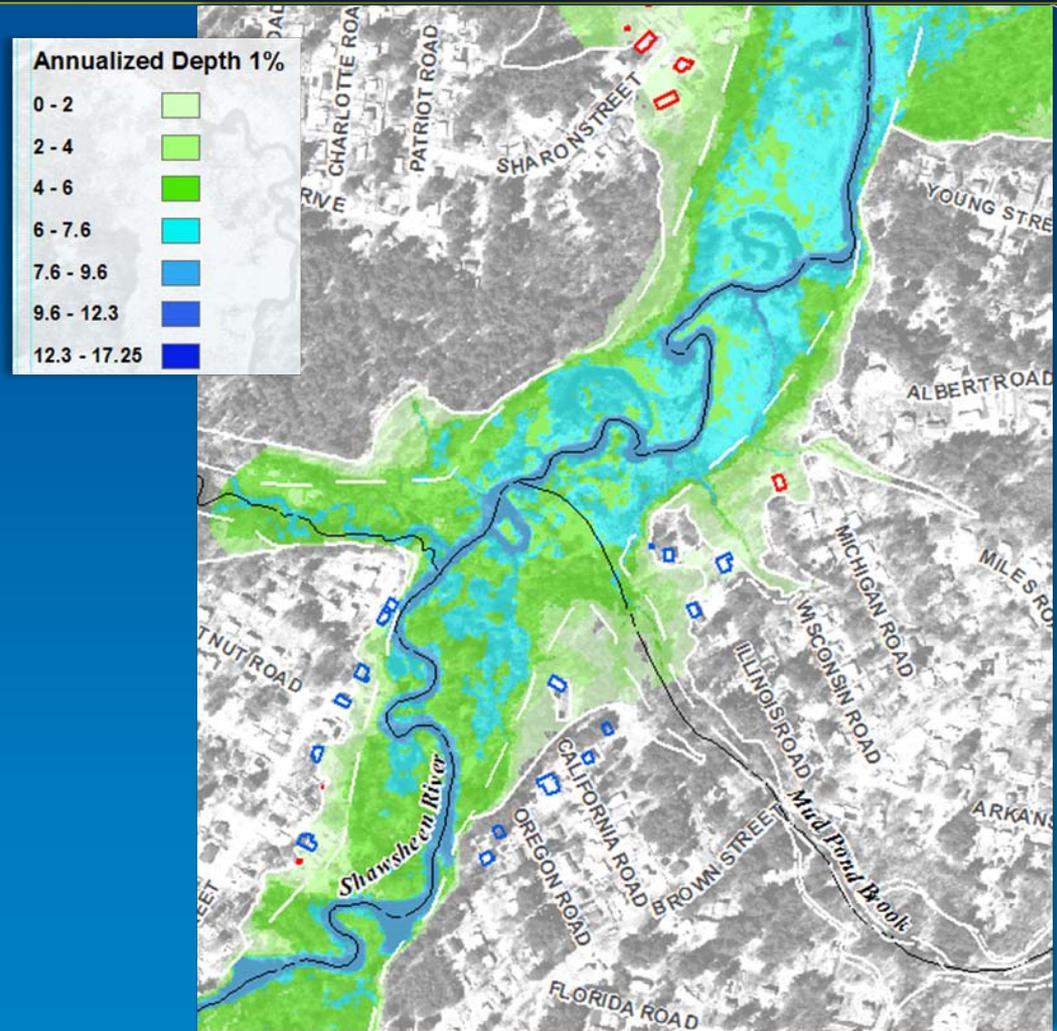
- Shawsheen River was restudied in 2008 in both Essex and Middlesex Counties.
- The restudy was performed by URS and Dewberry under Hazard Mitigation Technical Assistance Program (also known as HMTAP)
- Approximately 29 miles of the Shawsheen River from its confluence with the Merrimack River Hanscom in Bedford, MA.



# Annualized Depth Grid

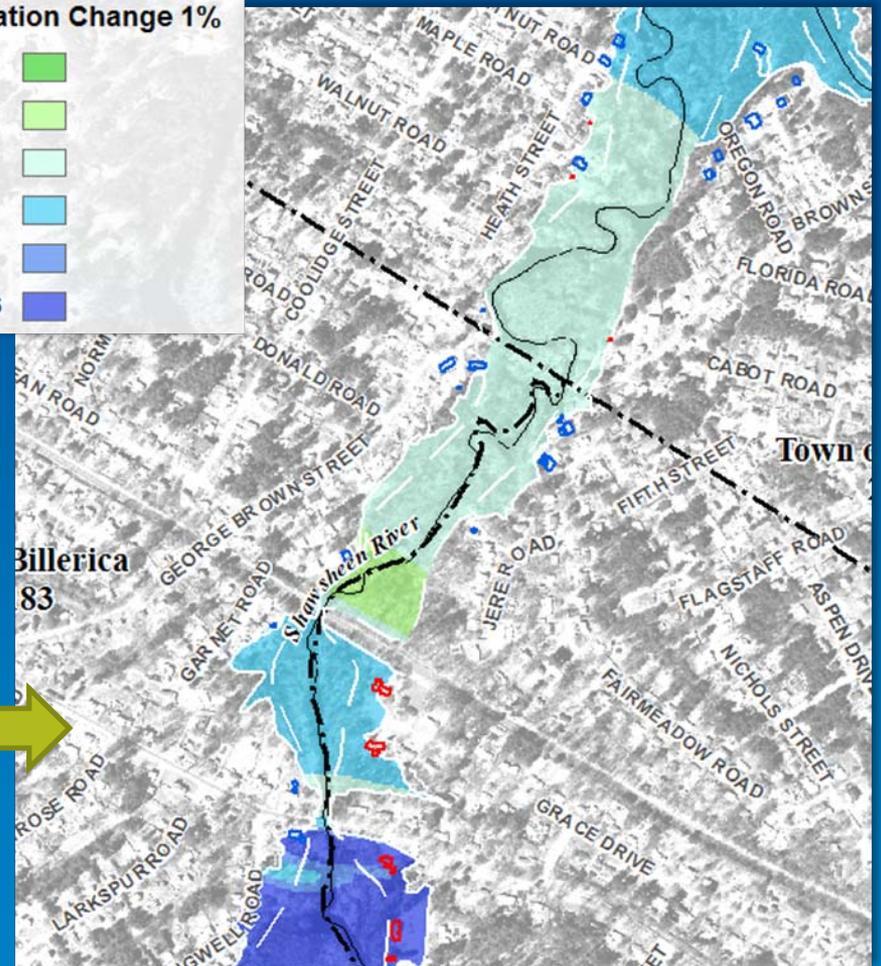
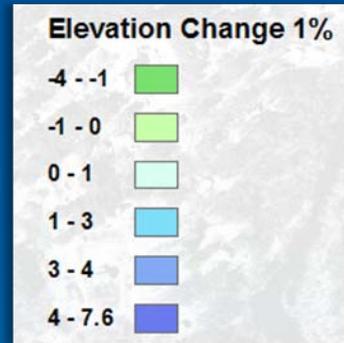
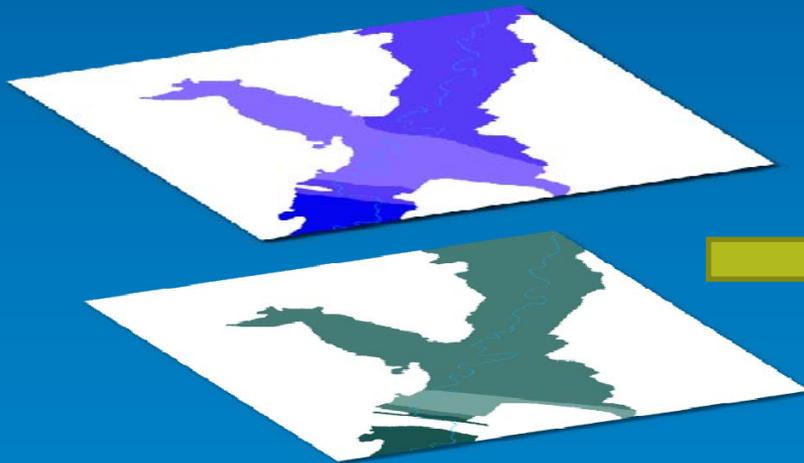
- Depth Grids provided for annual chance floods:

- 10% - (10 Year)
- 2% - (50 Year)
- 1% - (100 Year)
- 0.2% - (500 Year)



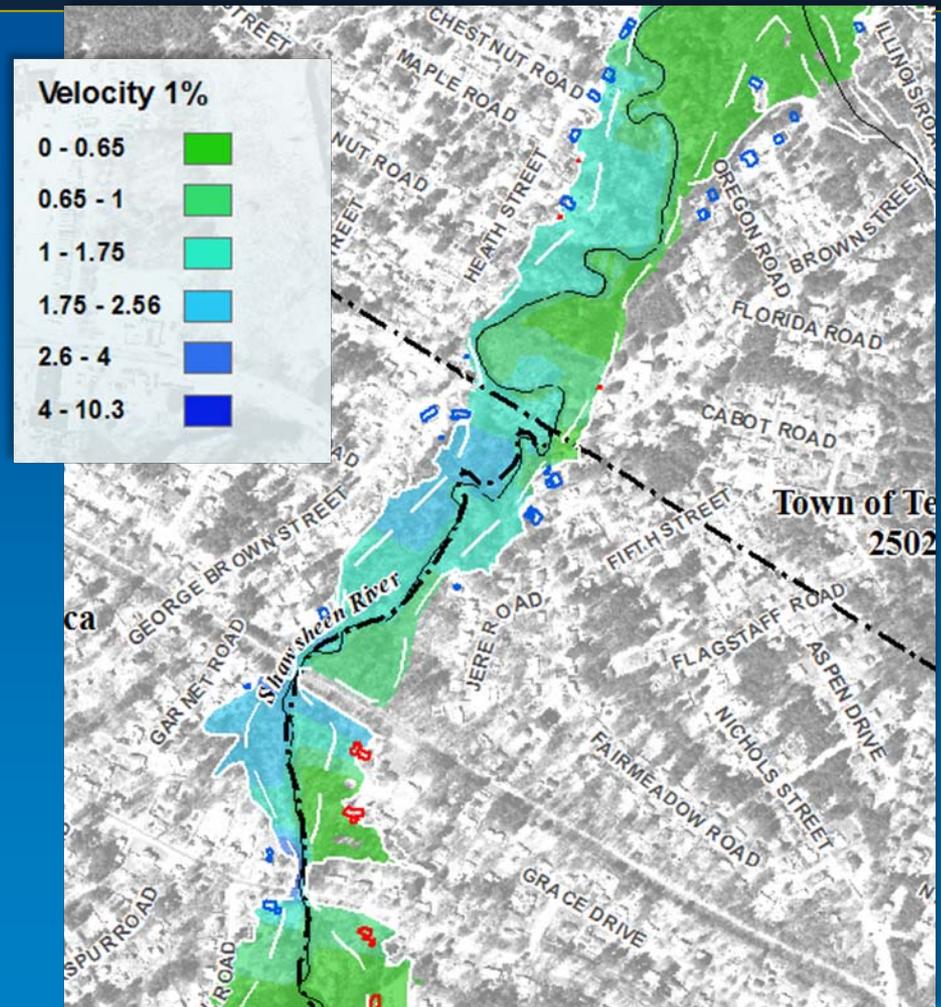
# Elevation Change Grid

- Represents the difference in elevation between the new study and the old study



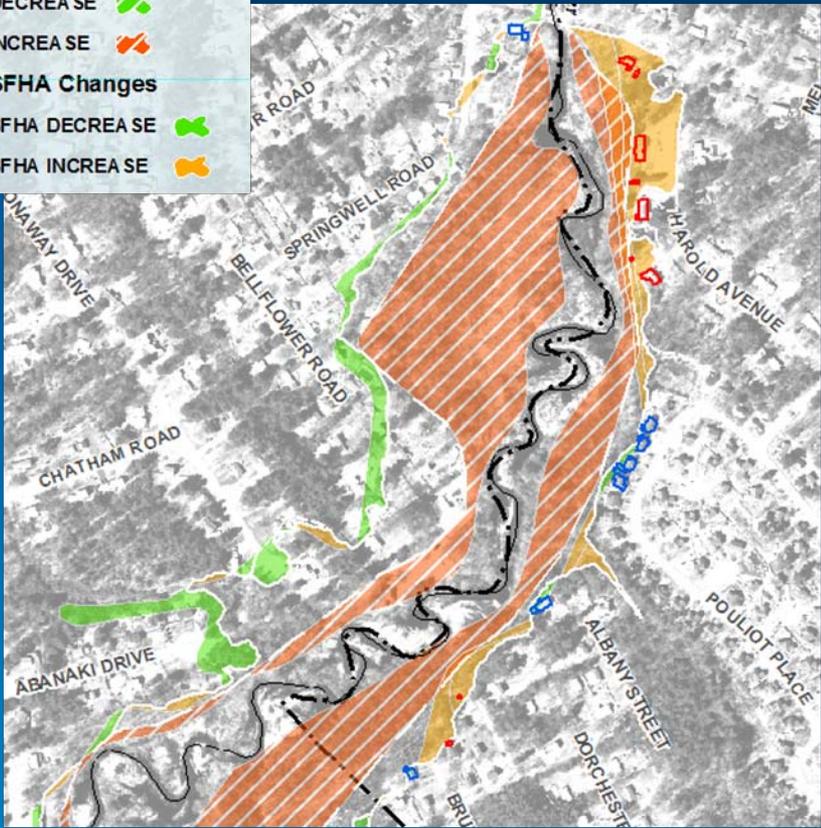
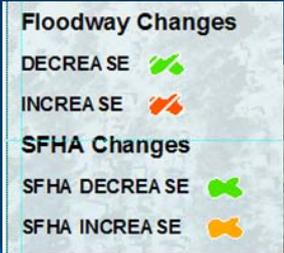
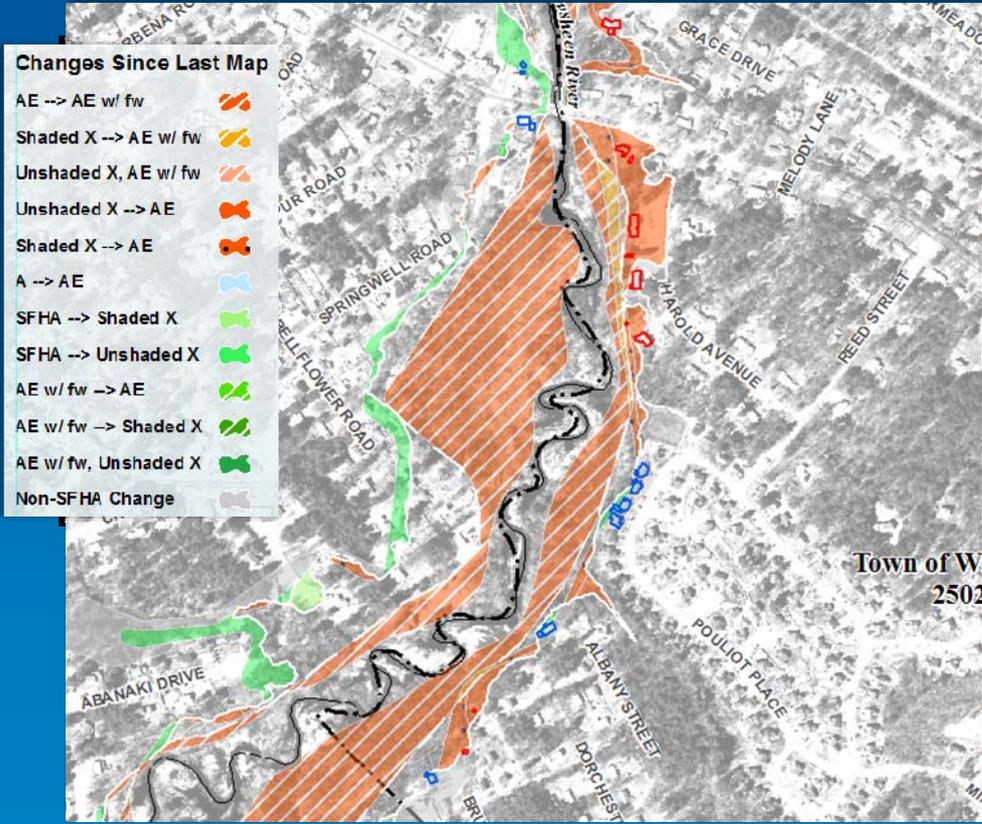
# Velocity Grid

- Display the variation of flood velocities within the floodplain.
- Helps identify locations where erosion, scour, or other structural instability may occur



# Changes Since Last Map

- Highlight Changes between studies





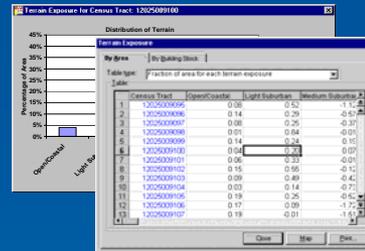
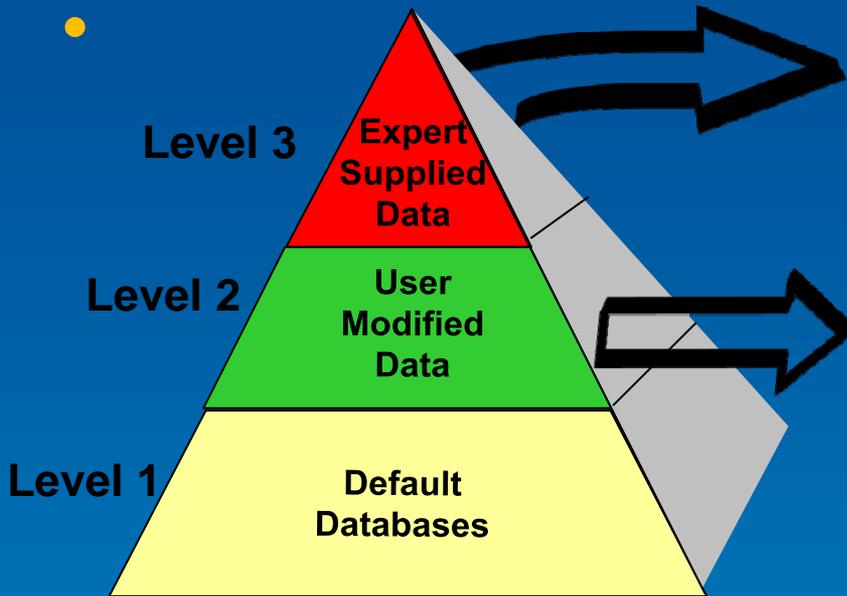
# What a HAZUS?



# What is HAZUS-MH?

- HAZUS is FEMA's methodology for estimating potential losses from disasters.
- A Planning Tool that can identify hazard related risks, calculate potential losses to life and property, and help define effective ways to reduce losses
- HAZUS is not a regulatory tool.
- This is a Multi-Hazard (MH) tool that looks at Earthquakes, Floods and Hurricane Winds.
- HAZUS an acronym (HAZards United States)

# Different Levels of Analysis – Depending upon available data!



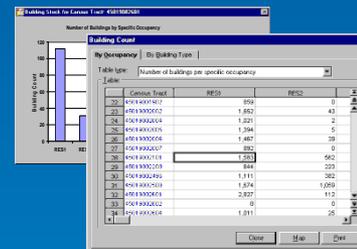
Community-Specific Damage Functions

Damage



Flood Depth

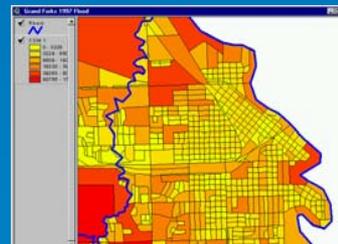
Modify Building Inventory



Aerial Photo



Use Default Databases



Level 1

# HAZUS-MH Model Components

HAZUS quantifies impacts:

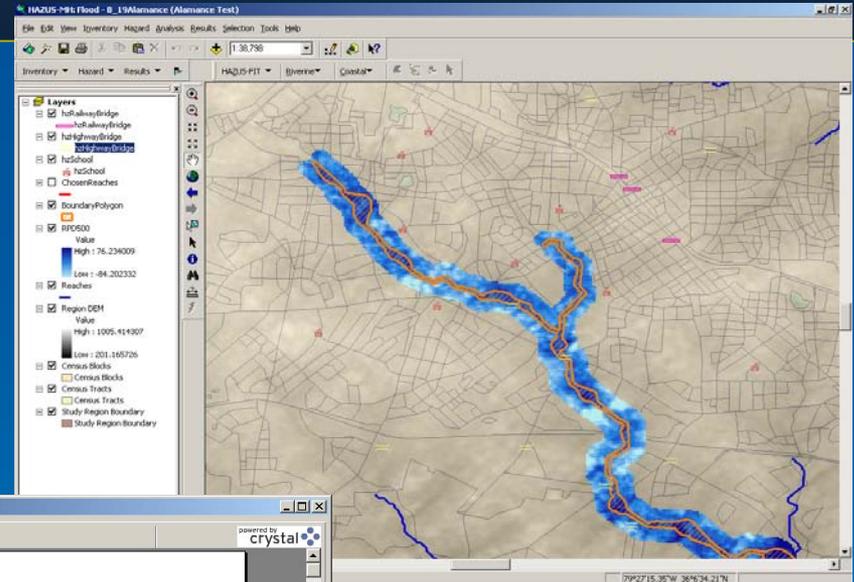
- Economic and social losses
- Functionality
- System performance

# HAZUS Results

RES\_GENERIC\_DUMMY

Generic Dummy results

	Tract	CountyFips	BldgSchemeId	Tract6	TractArea	Length
1	37001020101	37001	NC1	020101	0.94	
2	37001020102	37001	NC1	020102	3.78	
3	37001020200	37001	NC1	020200	3.99	
4	37001020300	37001	NC1	020300	10.97	
5	37001020400	37001	NC1	020400	11.63	
6	37001020500	37001	NC1	020500	12.22	
7	37001020600	37001	NC1	020600	8.59	
8	37001020700	37001	NC1	020700	14.39	
9	37001020800	37001	NC1	020800	16.84	
10	37001020900	37001	NC1	020900	18.49	
11	37001021000	37001	NC1	021000	3.32	
12	37001021100	37001	NC1	021100	19.26	
13	37001021201	37001	NC1	021201	37.34	
14	37001021203	37001	NC1	021203	37.39	
15	37001021204	37001	NC1	021204	33.57	
16	37001021300	37001	NC1	021300	139.42	
17	37001021400	37001	NC1	021400	70.11	
18	37001021500	37001	NC1	021500	94.57	
19	37001021600	37001	NC1	021600	34.16	
20	37001021700	37001	NC1	021700	35.61	
21	37001021800	37001	NC1	021800	252.32	
22	37001021900	37001	NC1	021900	180.55	
23	37001022000	37001	NC1	022000	86.42	



Tables

Building Stock Dollar Exposure by Building Type

Apr 08, 2009 Bldg Case Name: Alamance Test Return Period: 500  
 Bldg Case Description: Anal: 40-Options: 0

All values are in thousands of dollars

	Wood	Steel	Concrete	Misc	Manufact	Total
North Carolina	1					
Alamance	210,878.00	6,730.00	22,116.00	60,262.00	6,089.00	366,281.00
Alamance	210,878.00	6,730.00	22,116.00	60,262.00	6,089.00	366,281.00
Average for North Carol	64,186.00	16,488.00	44,033.00	186,324.00	15,168.00	716,182.00
Bldg Case Total	64,186.00	16,488.00	44,033.00	186,324.00	15,168.00	716,182.00

Study Region Name: 0\_19Alamance Flood Hazard Report Page: 1 of 1

Maps

Reports

# Where can we HAZUS it up!

- Mitigation Planning
- Disaster Response
- Catastrophic Planning
- Risk Assessment
- Emergency Management

