SESSION B

- Risk MAP Products
- Coastal Non-Regulatory Products
- Public's Role in the Flood Map Revision Process
- Timelines

RISK MAP

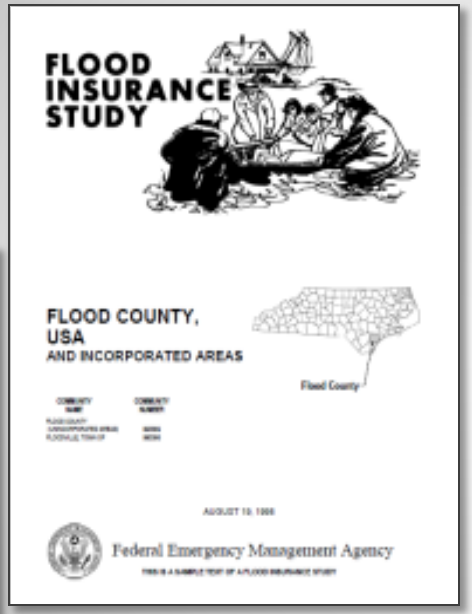
- Background
- Overview of Risk MAP Data Sets
  - Changes Since Last FIRM
  - Flood Depth and Analysis Grids
  - Flood Risk Assessment
  - Areas of Mitigation Interest
- Overview of Risk MAP Products
  - Flood Risk Database
  - Flood Risk Report
  - Flood Risk Map

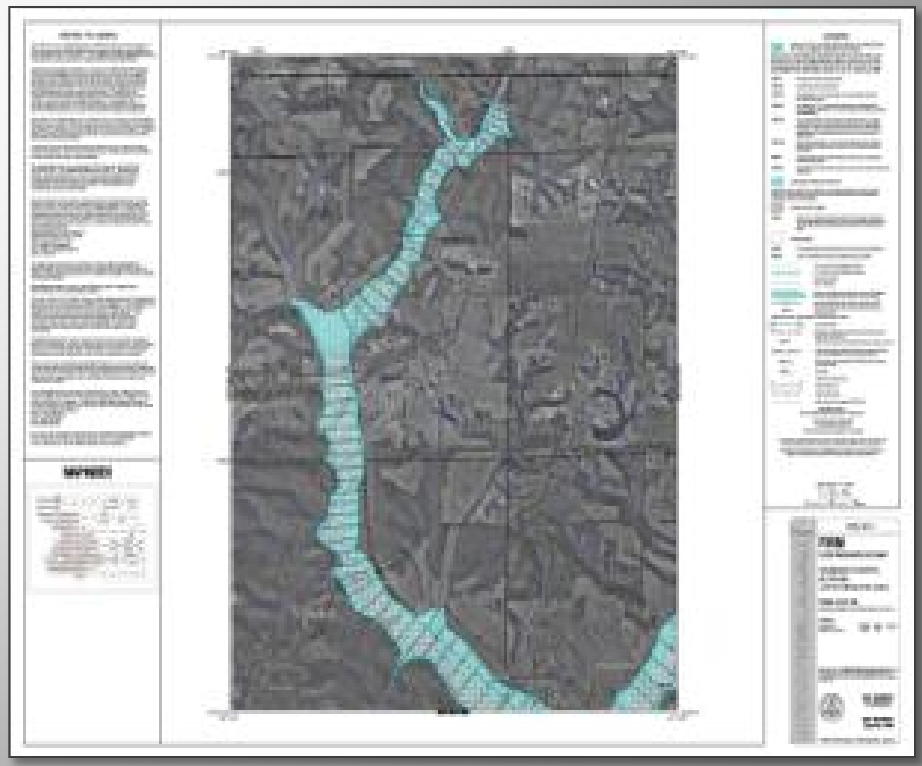
RISK MAP DATASETS

Traditional Regulatory Products

DFIRM Database

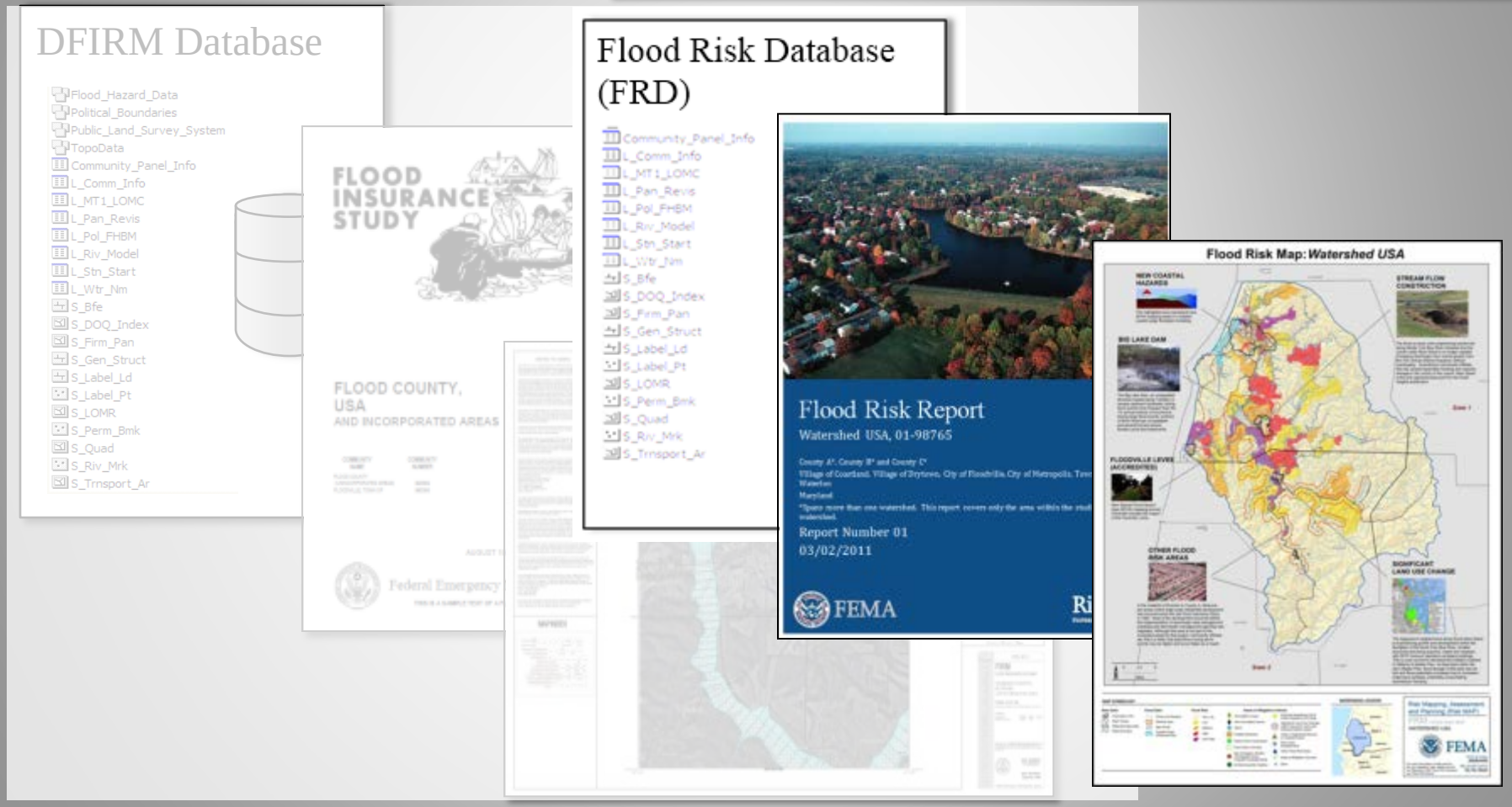
- Flood_Hazard_Data
- Political_Boundaries
- Public_Land_Survey_System
- TopoData
- Community_Panel_Info
- L_Comm_Info
- L_MT1_LOMC
- L_Pan_Revis
- L_Pol_FHBM
- L_Riv_Model
- L_Stn_Start
- L_Wtr_Nm
- S_Bfe
- S_DOQ_Index
- S_Firm_Pan
- S_Gen_Struct
- S_Label_Ld
- S_Label_Pt
- S_LOMR
- S_Perm_Bmk
- S_Quad
- S_Riv_Mrk
- S_Trnsport_Ar





RISK MAP DATASETS

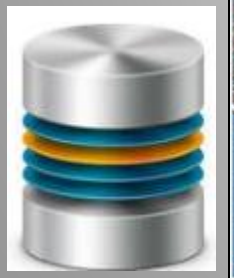
Non-Regulatory Flood Risk Products



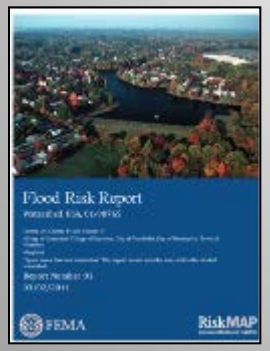
RISK MAP DATASETS

- **Three Flood Risk Products**
  - **Flood Risk Database**
  - **Flood Risk Report**
  - **Flood Risk Map**

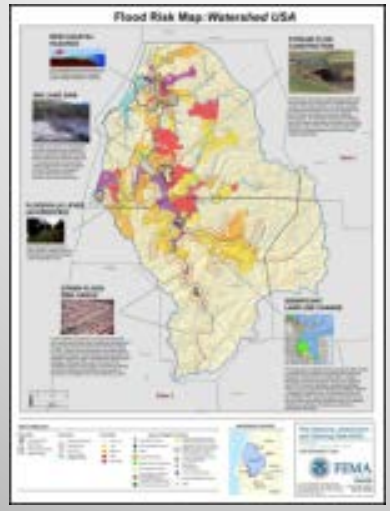
- **Four Flood Risk Datasets**
  - **Flood Depth & Analysis Grids**
  - **Flood Risk Assessments**
  - **Changes Since Last FIRM**
  - **Areas of Mitigation Interest**



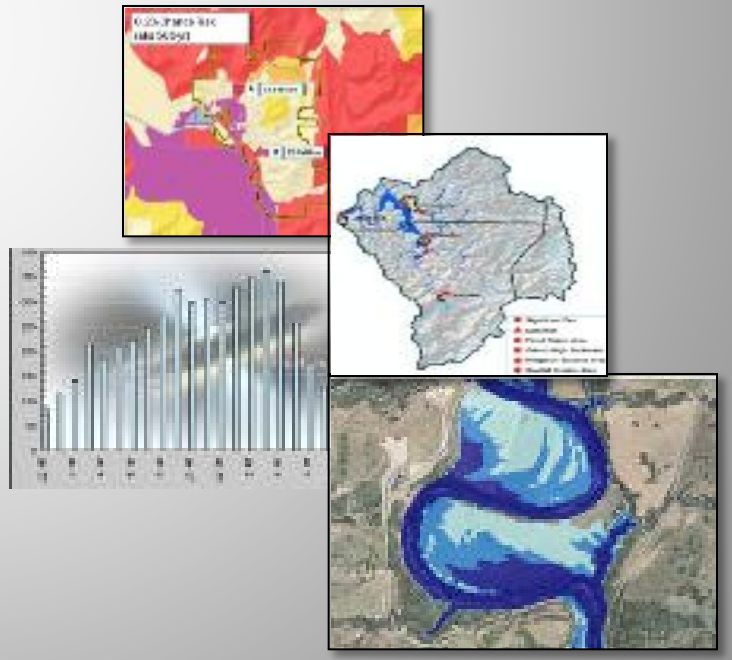
Flood Risk Database



Flood Risk Report



Flood Risk Map



Flood Risk Datasets

FLOOD RISK DATASETS

- Changes Since Last FIRM
- Flood Depth & Analysis Grids
- Flood Risk Assessment
- Areas of Mitigation Interest - Enhanced

RISK MAP DATASETS

Changes Since Last FIRM (red = enhanced)

- Horizontal Changes and Results
- Structure/Population counts impacted by change

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Delivery of Water Surface Elevation (multi-freq)
- Water Surface Elevation Change Grid (1%)
- Velocity Grids

Flood Risk Assessment

- Average Annualized Loss – 2010
- Refined Flood Risk Assessment
- HAZUS or Non-HAZUS with improved data/assumptions

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

RISK MAP DATASETS

Changes Since Last FIRM (red = enhanced)

- Horizontal Changes and Results
- Structure/Population counts impacted by change

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Delivery of Water Surface Elevation (multi-freq)
- Water Surface Elevation Change Grid (1%)
- Velocity Grids

Flood Risk Assessment

- Average Annualized Loss – 2010
- Refined Flood Risk Assessment
- HAZUS or Non-HAZUS with improved data/assumptions

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

FLOOD RISK DATABASE

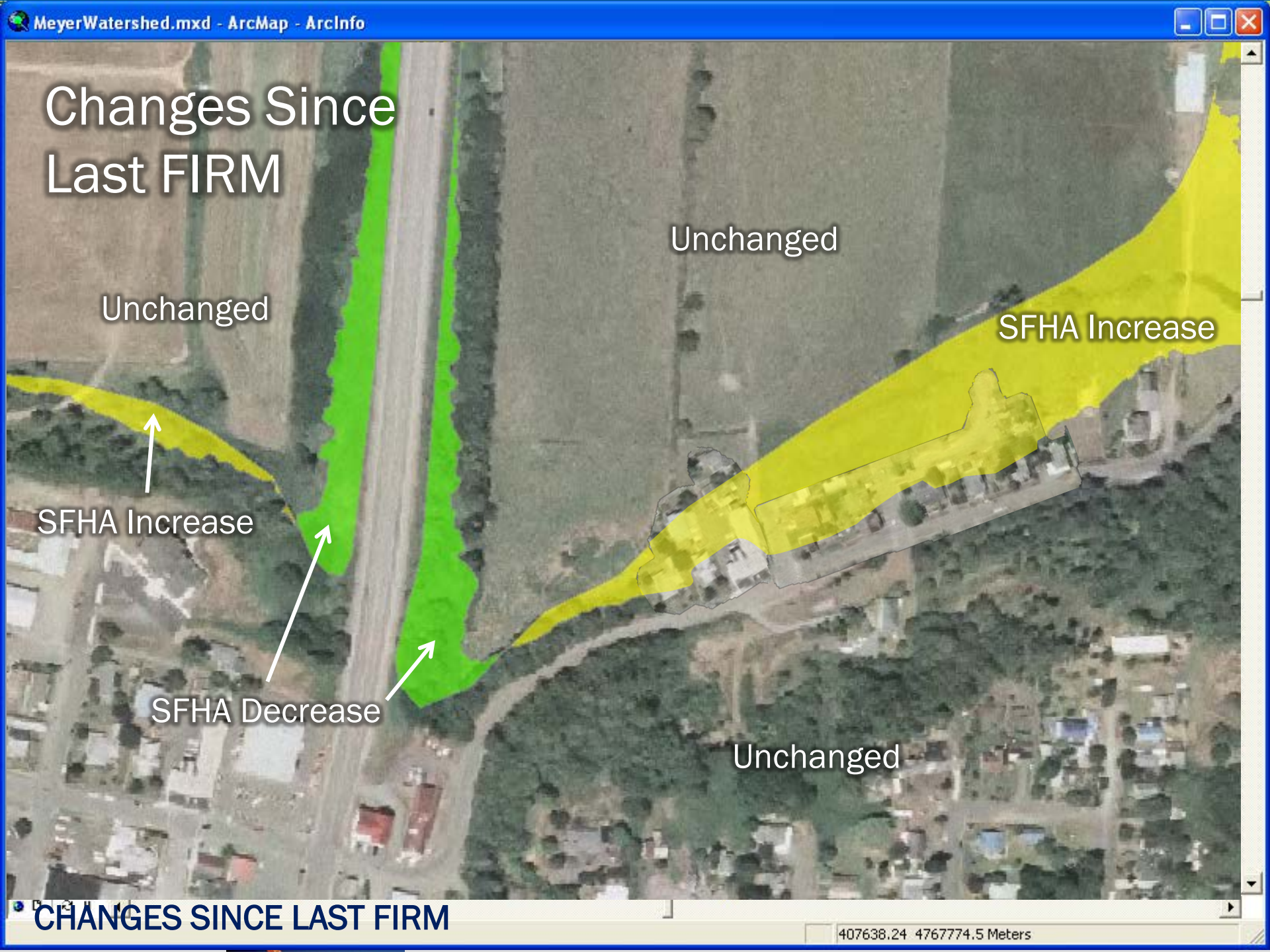
FLOOD RISK DATASETS

- **Identify Areas and Types of Flood Zone Change:**
  - **Compares current effective (previous) with proposed (new) flood hazard mapping. (all inputs must be digital)**
  - **Flood zone changes are categorized and quantified**
- **Provide Study/Reach Level Rationale for Changes Including:**
  - **Methodology and assumptions**
  - **Changes of model inputs or parameters (aka Contributing Engineering Factors)**
- **Offer Stakeholders Transparency and Answers to:**
  - **Where have my flood hazards increased or decreased?**
  - **Why have my flood hazards increased or decreased?**
  - **Which communities are subject to new BFEs or ordinance adjustments.**

CHANGES SINCE LAST FIRM

CHANGES SINCE LAST FIRM


MeyerWatershed.mxd - ArcMap - ArcInfo
New
Mapping
CHANGES SINCE LAST FIRM
407638.24 4767774.5 Meters


MeyerWatershed.mxd - ArcMap - ArcInfo
Changes Since Last FIRM
Unchanged
Unchanged
SFHA Increase
SFHA Increase
SFHA Decrease
Unchanged
CHANGES SINCE LAST FIRM
407638.24 4767774.5 Meters

RISK MAP DATASETS

Changes Since Last FIRM (red = enhanced)

- Horizontal Changes and Results
- Structure/Population counts impacted by change

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Delivery of Water Surface Elevation (multi-freq)
- Water Surface Elevation Change Grid (1%)
- Velocity Grids

Flood Risk Assessment

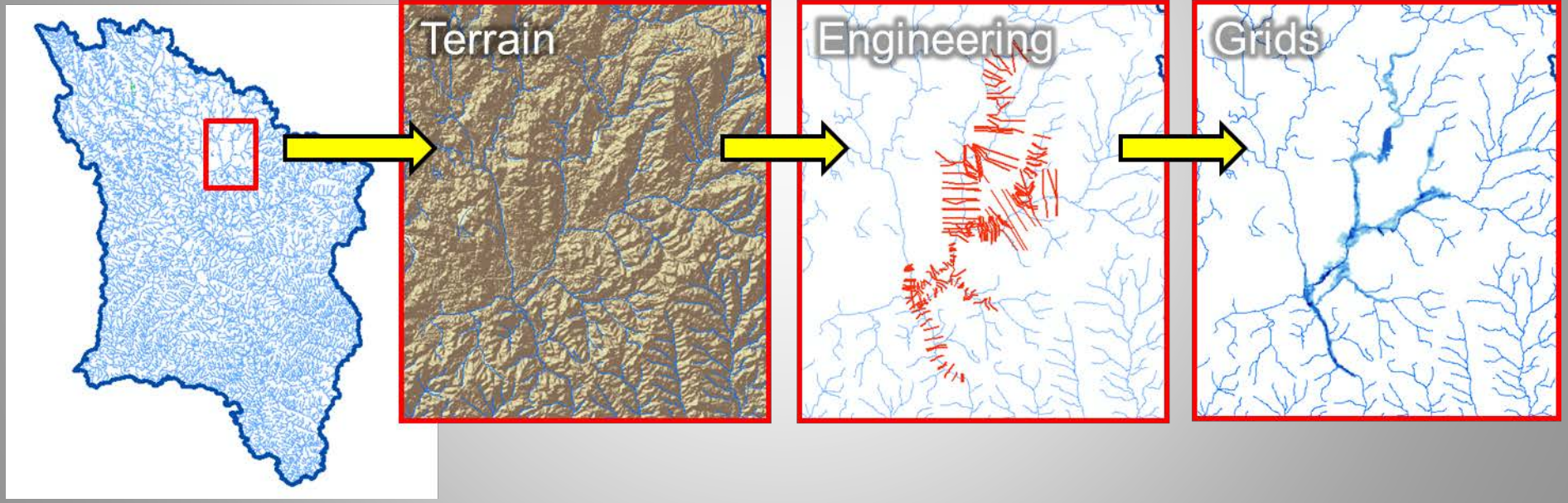
- Average Annualized Loss – 2010
- Refined Flood Risk Assessment
- HAZUS or Non-HAZUS with improved data/assumptions

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

FLOOD RISK DATABASE

FLOOD RISK DATASETS



FLOOD DEPTH & ANALYSIS GRIDS

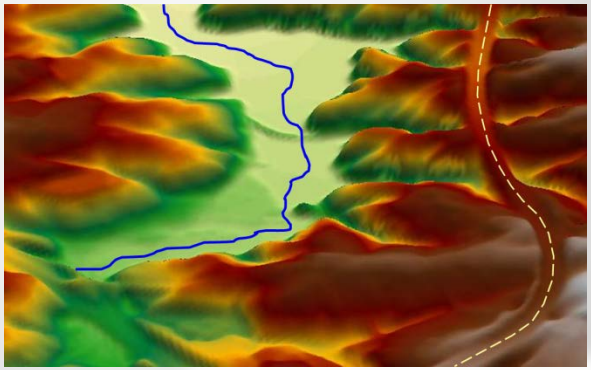
FLOOD RISK DATASETS

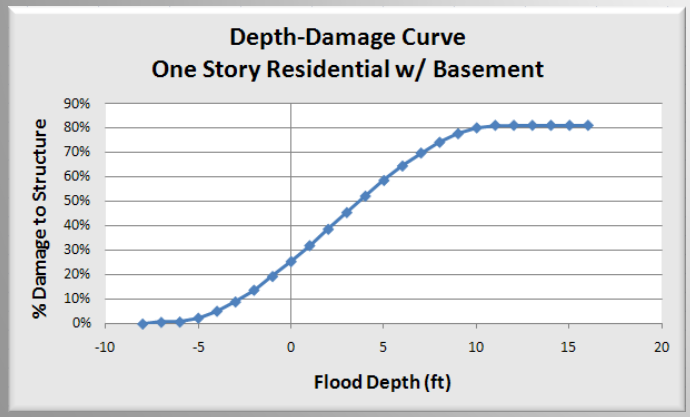
- Communicate / 'Show' Flood Inundation as Function of Event's Magnitude or Severity
- Serve as Key Inputs to HAZUS Risk Assessment Analyses
- Serve as pre-screening criteria for mitigation project potential (e.g. BCA > 1.0 with positive 10-yr depths)
- Increase Flood Risk Awareness as Acknowledged from Varied Contexts (Depth, Probability, Velocity, etc.)
- Communicate that Hazard, and by extension Risk, varies within the mapped floodplain

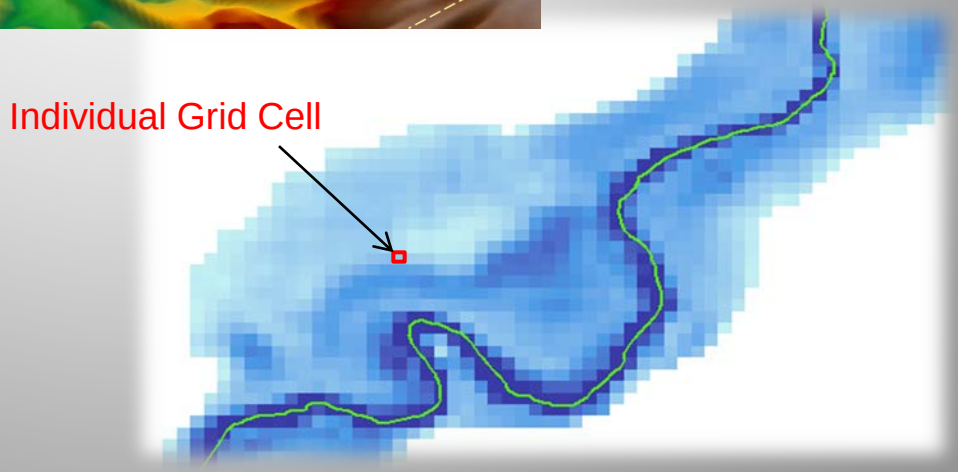
FLOOD DEPTH & ANALYSIS GRIDS

FLOOD RISK DATASETS

- **Grids include:**
  - **Flood Depths for Standard and Enhanced Frequencies (include 1%-plus)**
  - **Water Surface Elevation for Standard and Enhanced Frequencies**
  - **Water Surface Elevation Change Since Last FIRM (1%)**
  - **Percent Annual and 30-yr Percent Chance of Flooding**
  - **Velocity**
  - **Hillshade**

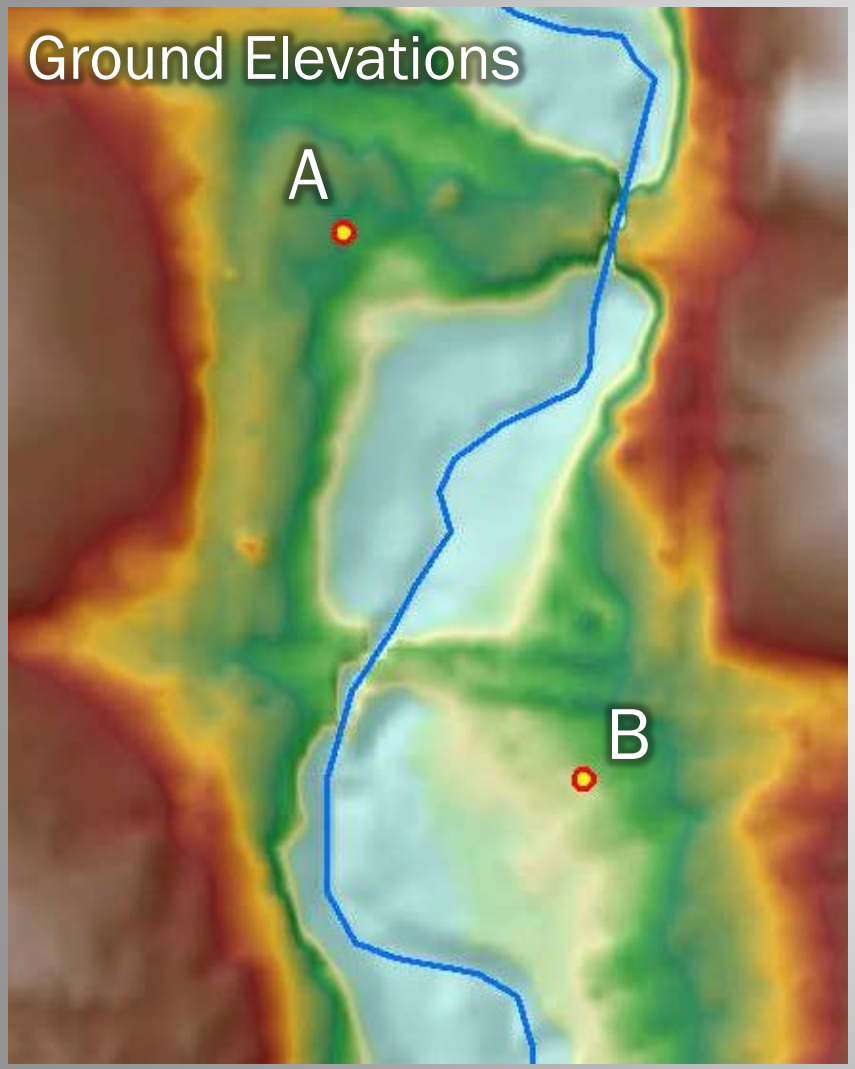


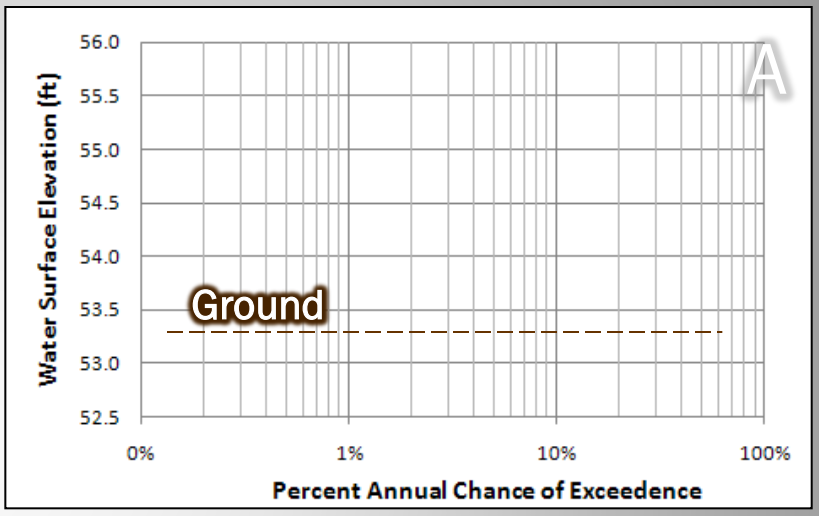


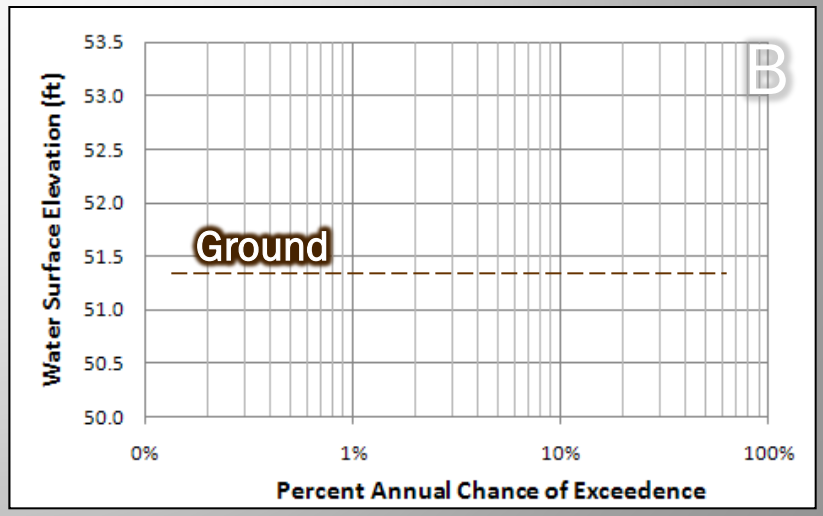


FLOOD DEPTH & ANALYSIS GRIDS

FLOOD RISK DATASETS

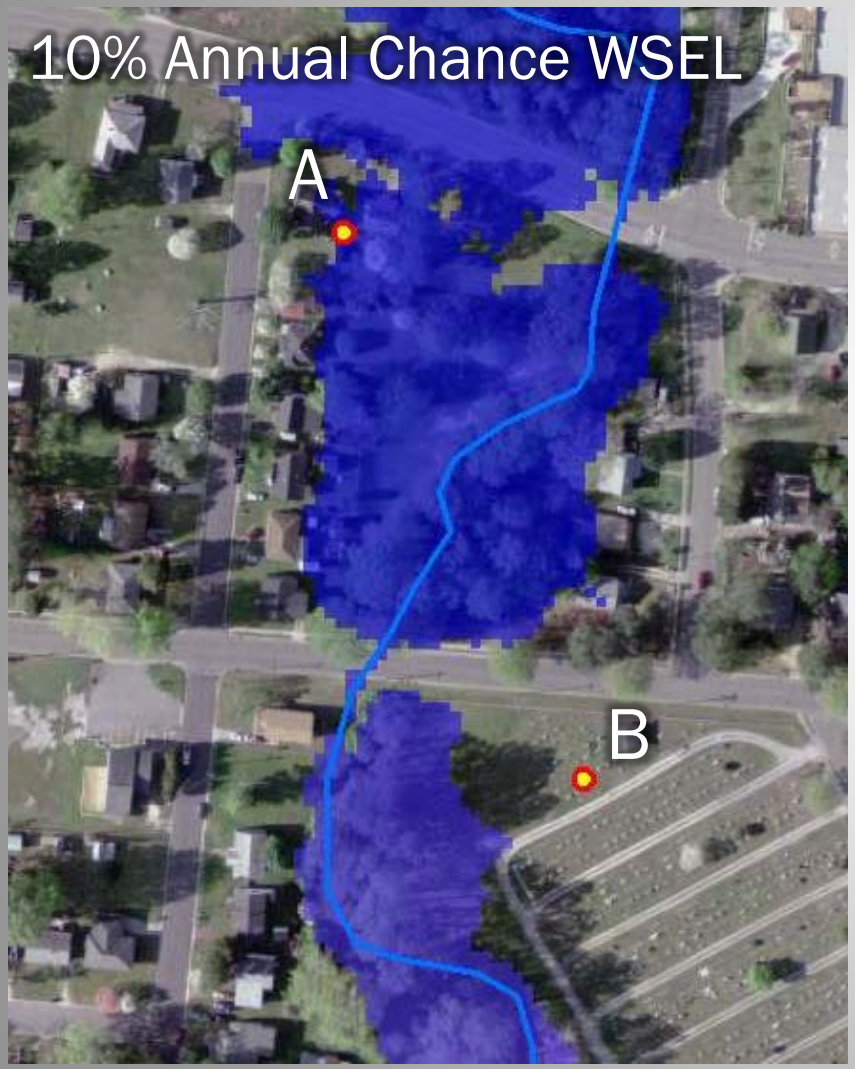


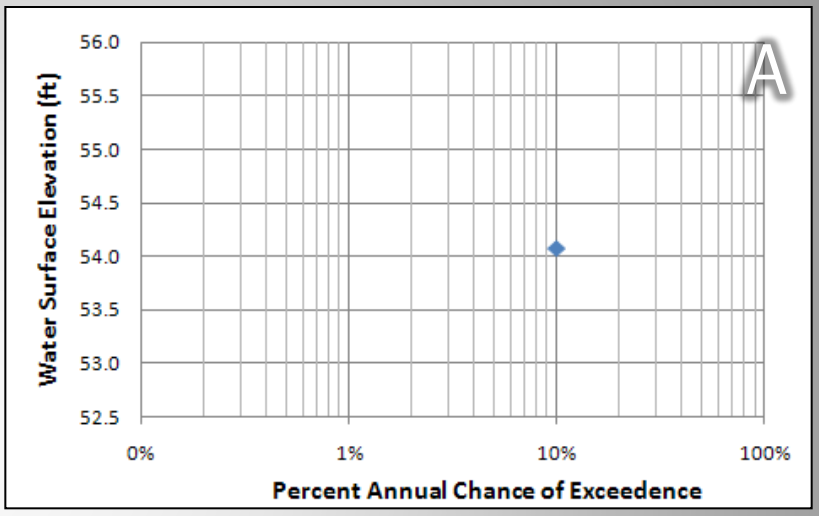


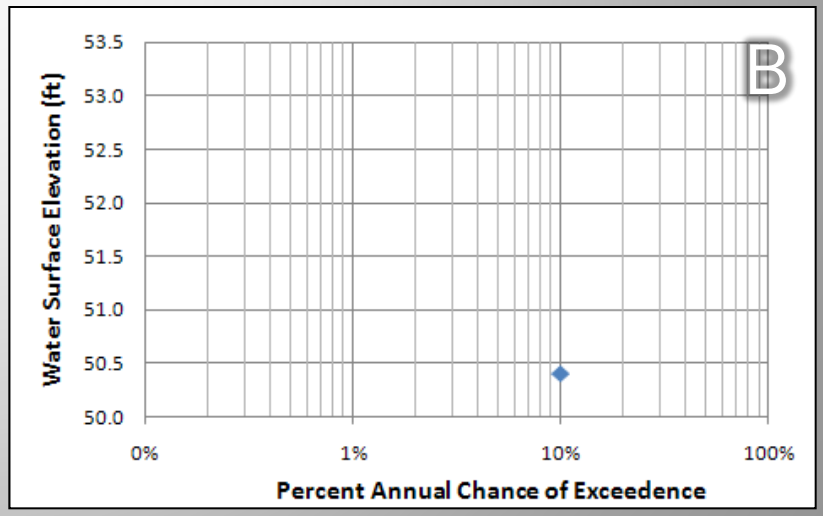


FLOOD DEPTH & ANALYSIS GRIDS

FLOOD RISK DATASETS



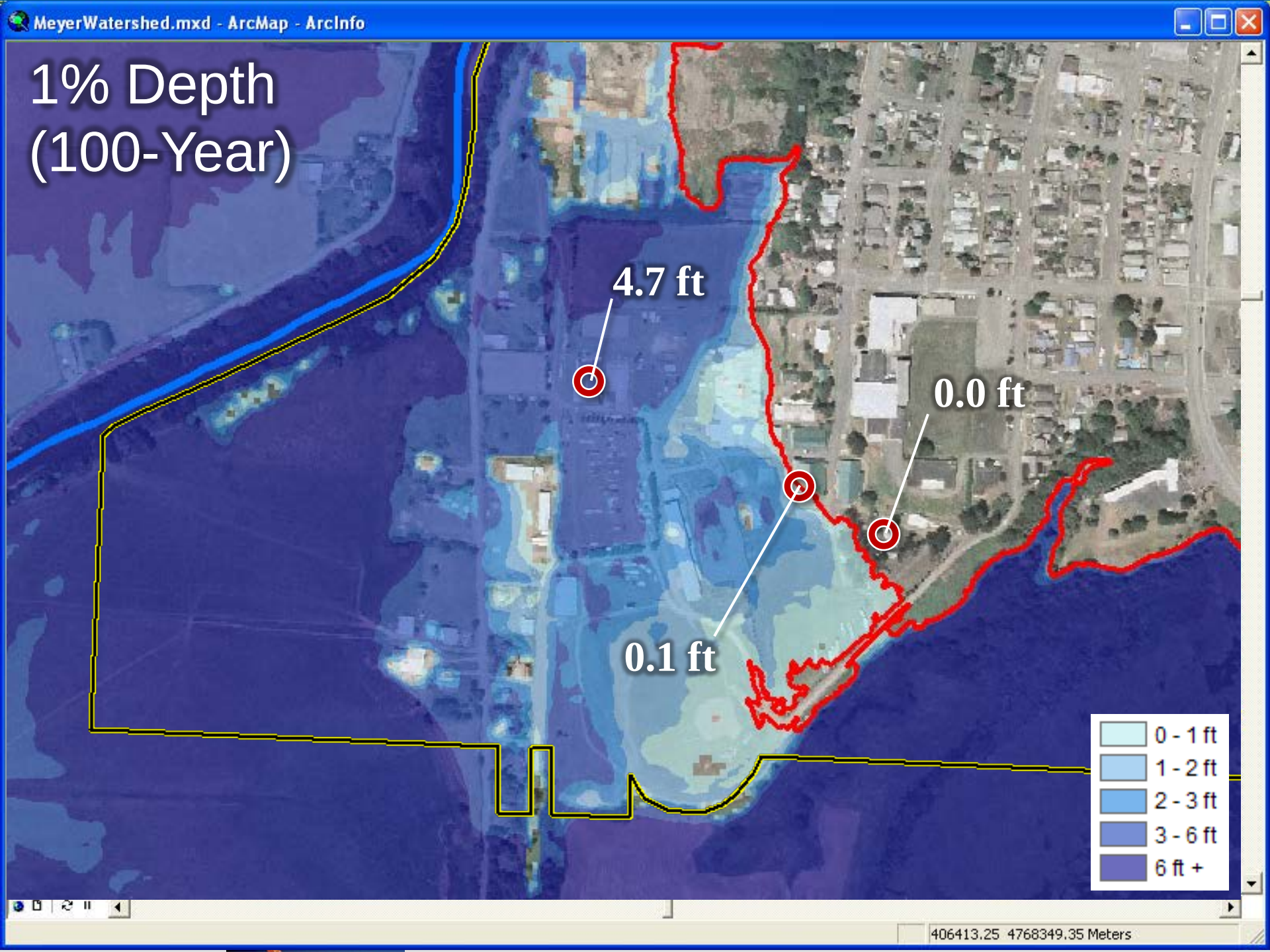


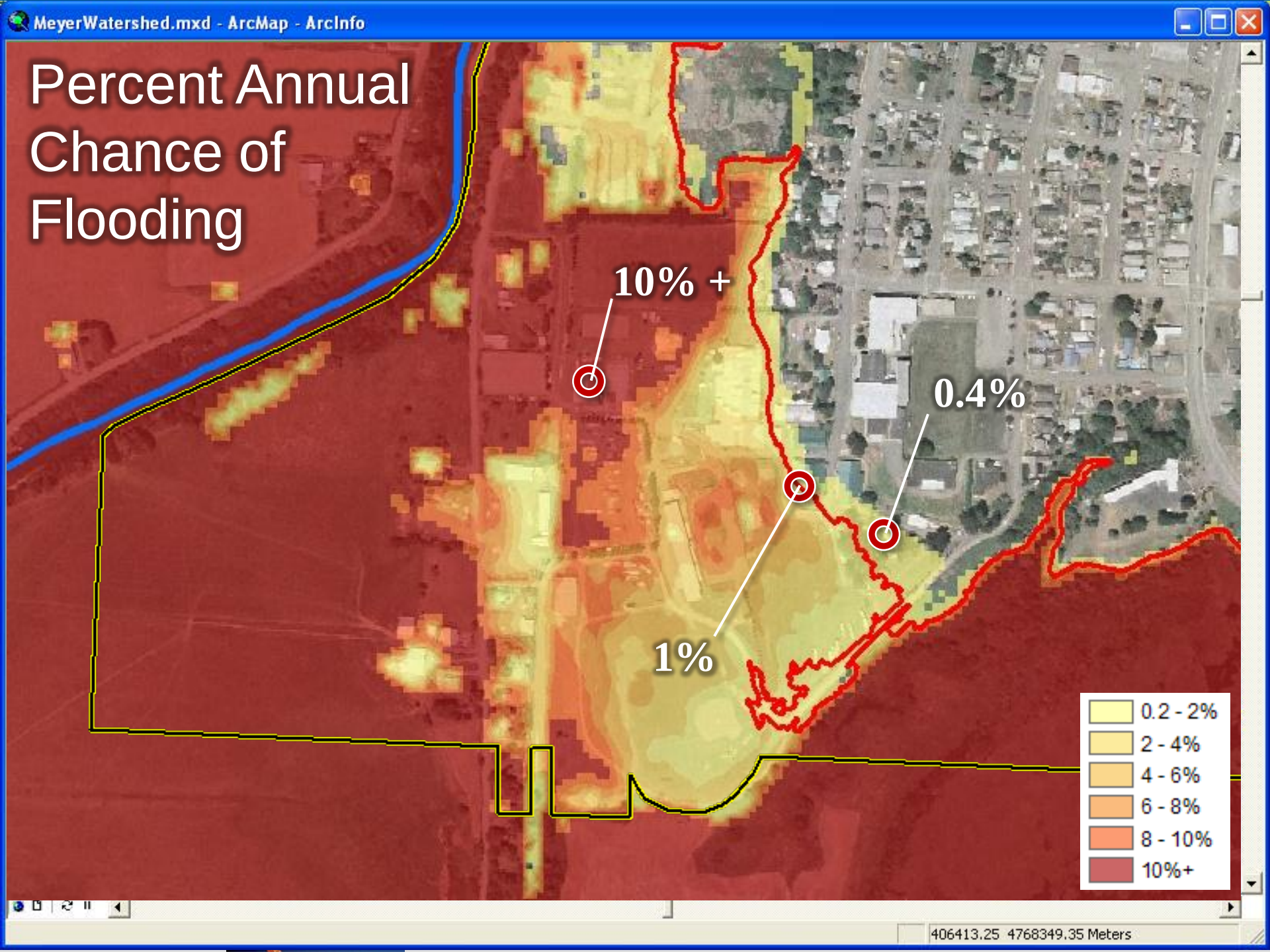


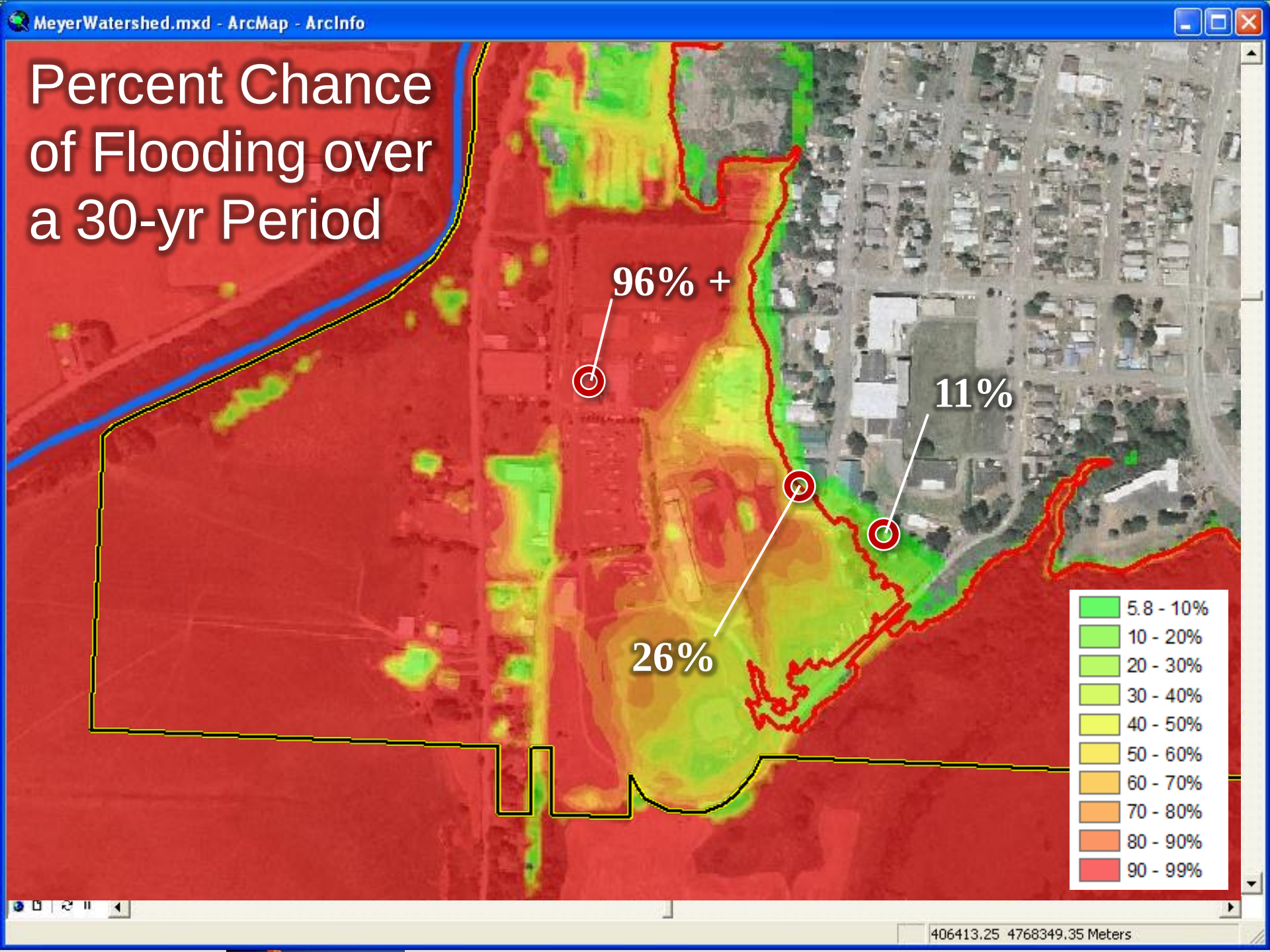
FLOOD DEPTH & ANALYSIS GRIDS

FLOOD RISK DATASETS

- Creation of these Grids comes after the Engineering Analysis has been performed, and can be used to support community discussions and meetings
- Grids are most effectively used in communicating risk results “at the ground” and not necessarily within specific structures (i.e. depth of water as you walk out your front door and down your front steps, and not necessarily depth within your kitchen)
- Flood Depth Grids feed into the Flood Risk Assessment process and are a key input to produce that dataset
- These Grids live within the Flood Risk Database, but are not depicted on the Flood Risk Map or tabularized in the Flood Risk Report


MeyerWatershed.mxd - ArcMap - ArcInfo
1% Depth
(100-Year)
4.7 ft
0.0 ft
0.1 ft
0 - 1 ft
1 - 2 ft
2 - 3 ft
3 - 6 ft
6 ft +
406413.25 4768349.35 Meters


MeyerWatershed.mxd - ArcMap - ArcInfo
Percent Annual Chance of Flooding
10% +
0.4%
1%
0.2 - 2%
2 - 4%
4 - 6%
6 - 8%
8 - 10%
10%+
406413.25 4768349.35 Meters


MeyerWatershed.mxd - ArcMap - ArcInfo
Percent Chance of Flooding over a 30-yr Period
96% +
11%
26%
5.8 - 10%
10 - 20%
20 - 30%
30 - 40%
40 - 50%
50 - 60%
60 - 70%
70 - 80%
80 - 90%
90 - 99%
406413.25 4768349.35 Meters

RISK MAP DATASETS

Changes Since Last FIRM (red = enhanced)

- Horizontal Changes and Results
- Structure/Population counts impacted by change

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Delivery of Water Surface Elevation (multi-freq)
- Water Surface Elevation Change Grid (1%)
- Velocity Grids

Flood Risk Assessment

- Average Annualized Loss – 2010
- Refined Flood Risk Assessment
- HAZUS or Non-HAZUS with improved data/assumptions

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

FLOOD RISK DATABASE

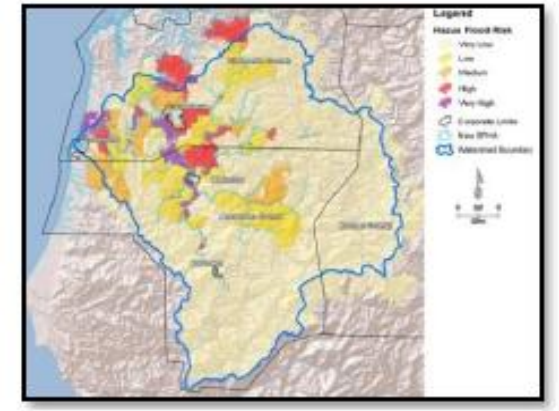
FLOOD RISK DATASETS

- **Identify Areas and Communicate Relative Flood Risk:**
  - **Flood prone areas**
  - **Vulnerable people and property**
- **Provide Flood Risk $:**
  - **Potential damage severity for different flood frequencies**
  - **Identify locations with possible cost effective mitigation options**
- **Improve Estimates for Flood Risk $:**
  - **Losses from Average Annualized Loss (AAL) Study**
  - **Refined losses from new flood study depth grids**
  - **Refined general building stock data from local sources**

FLOOD RISK DATASETS

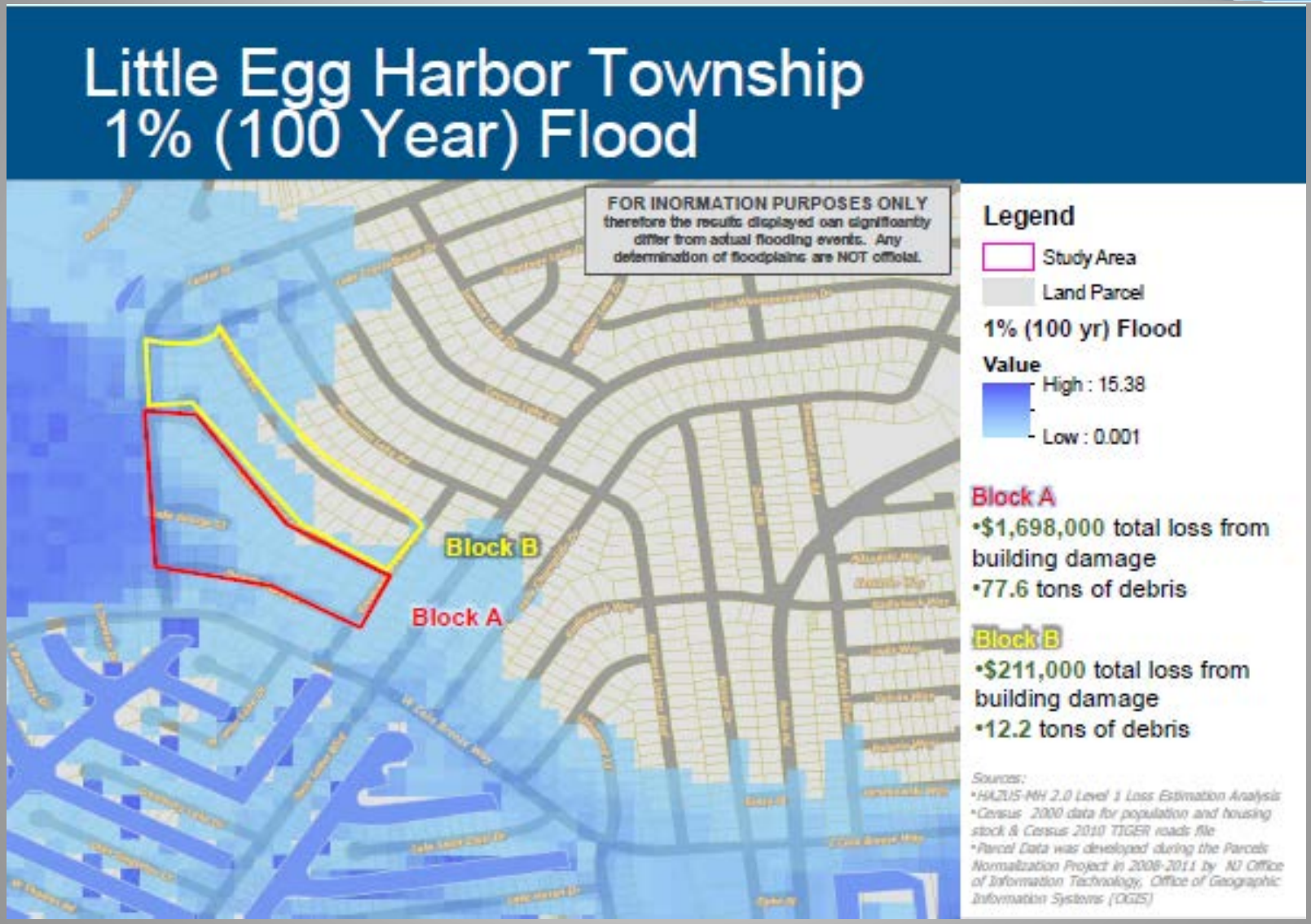
- **Flood Risk Assessment Data**
  - **2010 HAZUS Average Annualized Loss (AAL) Study Data**
  - **Refined HAZUS and Other Risk Analyses Data**
  - **Composite Data**

HAZUS MH



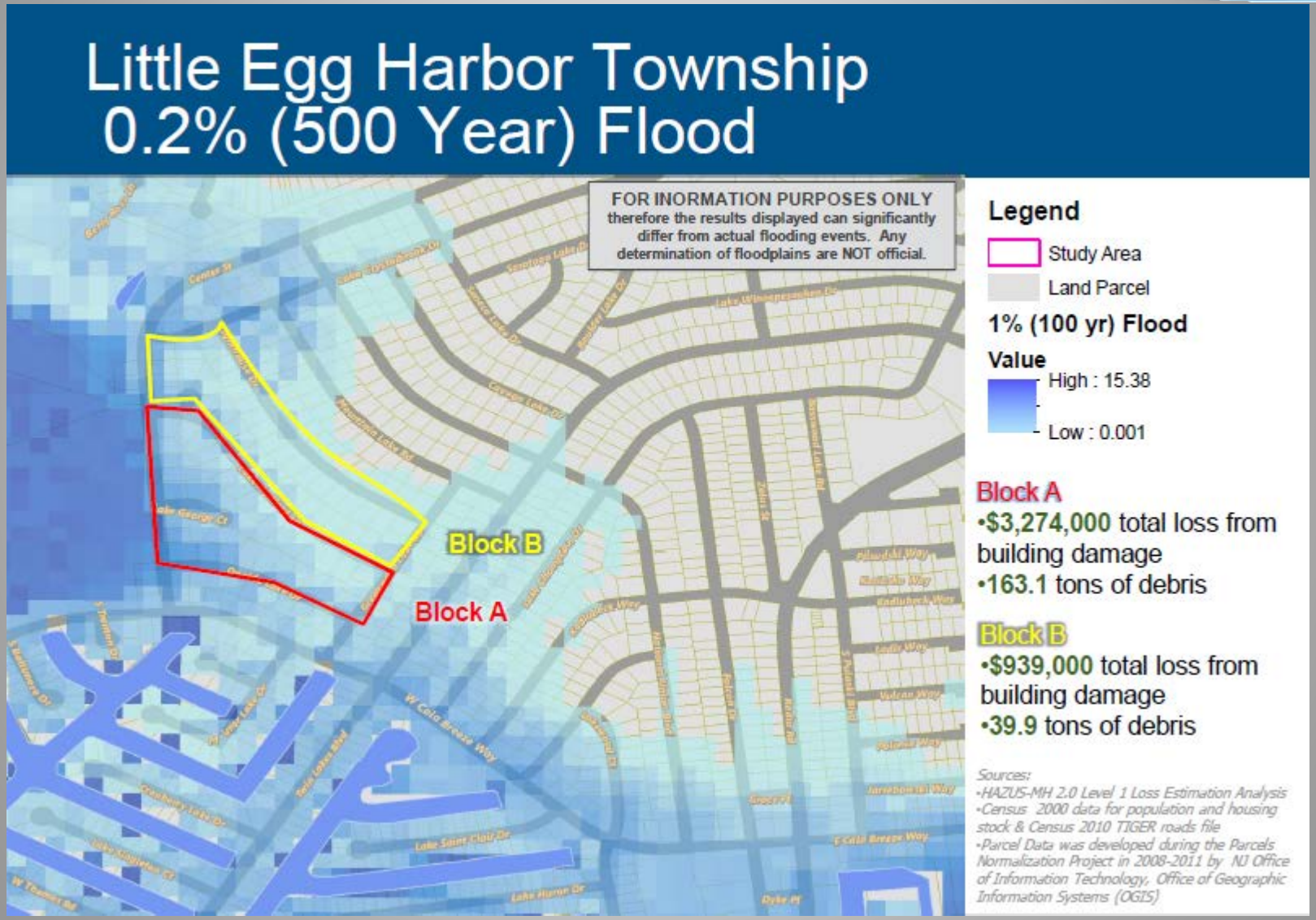
Flood Risk Assessment

FLOOD RISK DATASETS



FLOOD RISK ASSESSMENT

FLOOD RISK DATASETS



FLOOD RISK ASSESSMENT

RISK MAP DATASETS

Changes Since Last FIRM (red = enhanced)

- Horizontal Changes and Results
- Structure/Population counts impacted by change

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Delivery of Water Surface Elevation (multi-freq)
- Water Surface Elevation Change Grid (1%)
- Velocity Grids

Flood Risk Assessment

- Average Annualized Loss – 2010
- Refined Flood Risk Assessment
- HAZUS or Non-HAZUS with improved data/assumptions

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

FLOOD RISK DATABASE

FLOOD RISK DATASETS

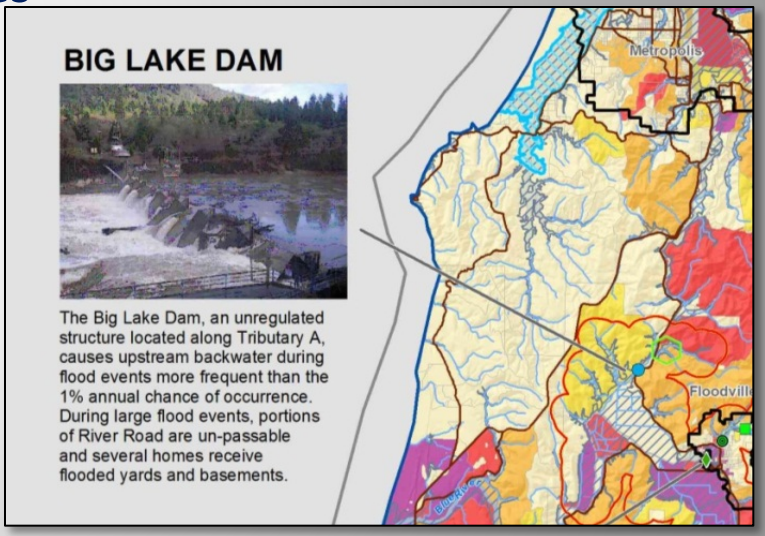
- Identify areas and communicate relative flood risk
- Raise awareness by local stakeholders of areas within and upstream of the watershed that may be contributing to flood risk and associated interrelationships
- Provide input to local mitigation plans

FLOOD RISK DATASETS

Items that may have an impact (positive or negative) on the identified flood hazards and/or flood risks

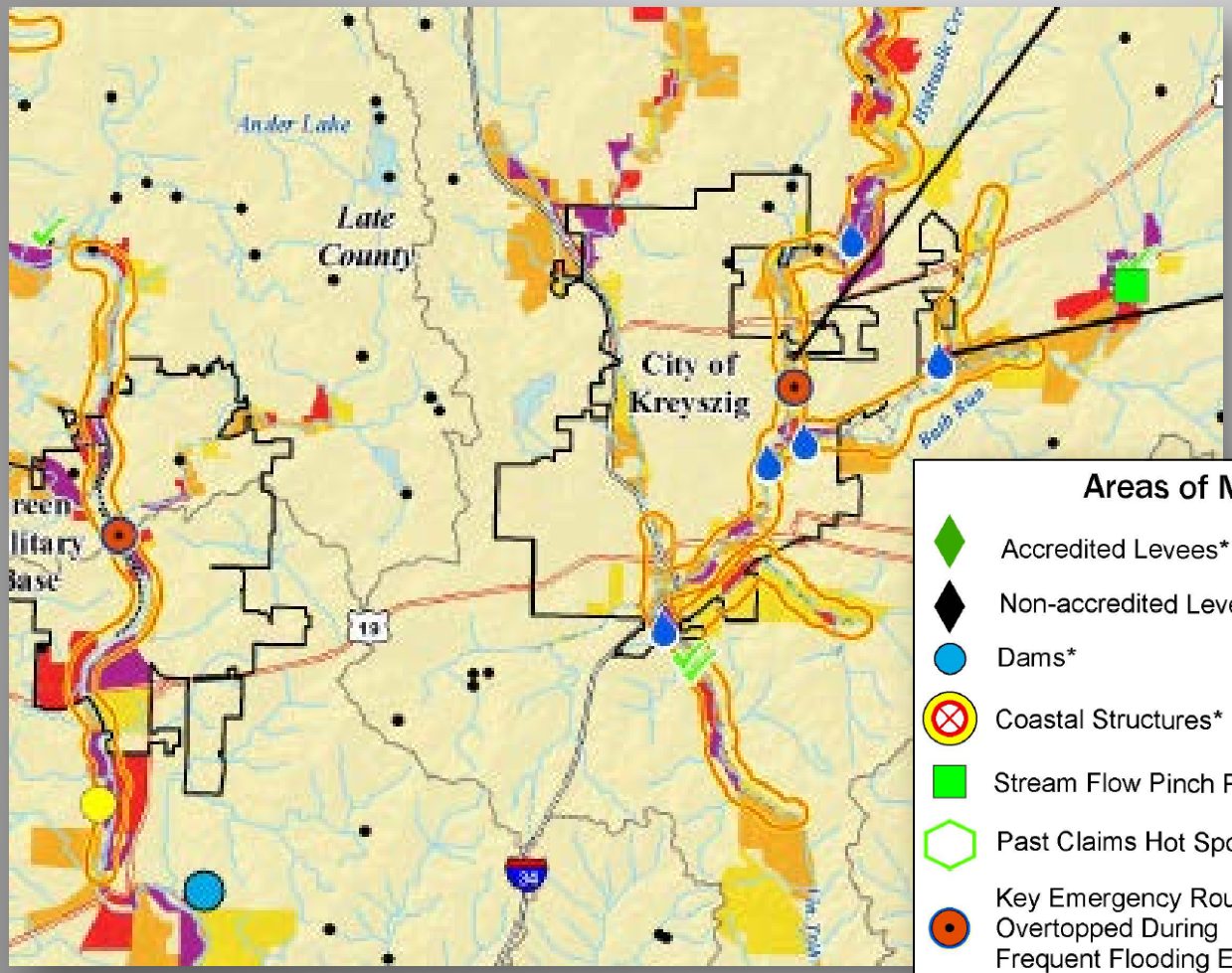
Examples include:

- Riverine and coastal flood control structures (e.g. dams, levees, coastal berms, etc.)
- At risk essential facilities and emergency routes that could overtopped
- Stream flow constrictions (e.g. undersized culverts and bridge openings, etc.)
- Previous assistance and claims "Hot Spots" (clusters of IA and PA claims, RL, SRL)
- Significant land use changes
- Significant riverine or coastal erosion
- Locations of successful mitigation projects



AREAS OF MITIGATION INTEREST

FLOOD RISK DATASETS

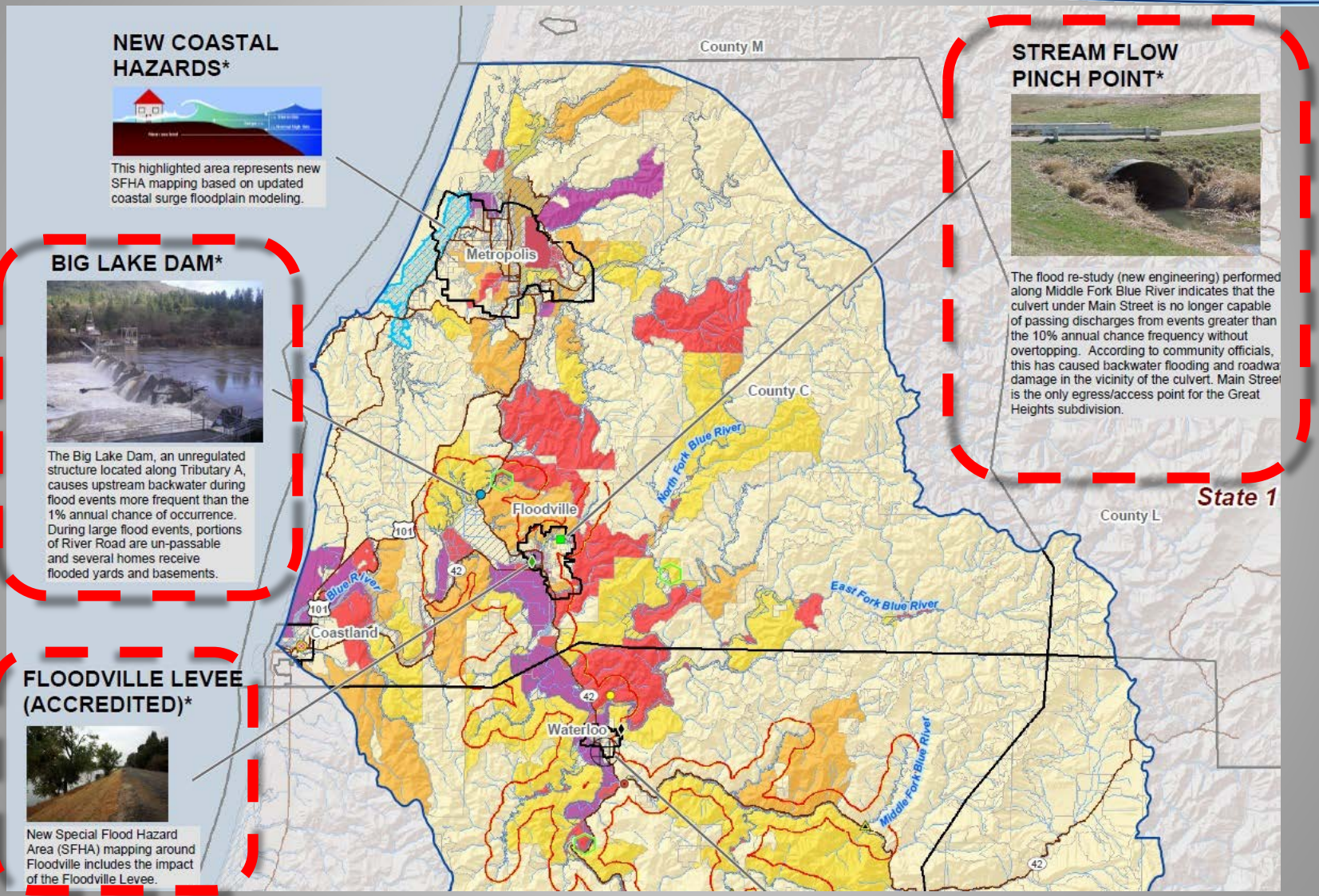


Areas of Mitigation Interest

- Accredited Levees*
- Non-accredited Levees*
- Dams*
- Coastal Structures*
- Stream Flow Pinch Point*
- Past Claims Hot Spot*
- Key Emergency Routes Overtopped During Frequent Flooding Events*
- Individual Assistance (IA) and Public Assistance (PA) Data*
- Significant Land Use Changes*
- Areas of Significant Riverine or Coastal Erosion*
- Significant Hydraulic Embankments*
- Other Flood Risk Areas*
- Areas of Mitigation Success*

AREAS OF MITIGATION INTEREST

FLOOD RISK DATASETS

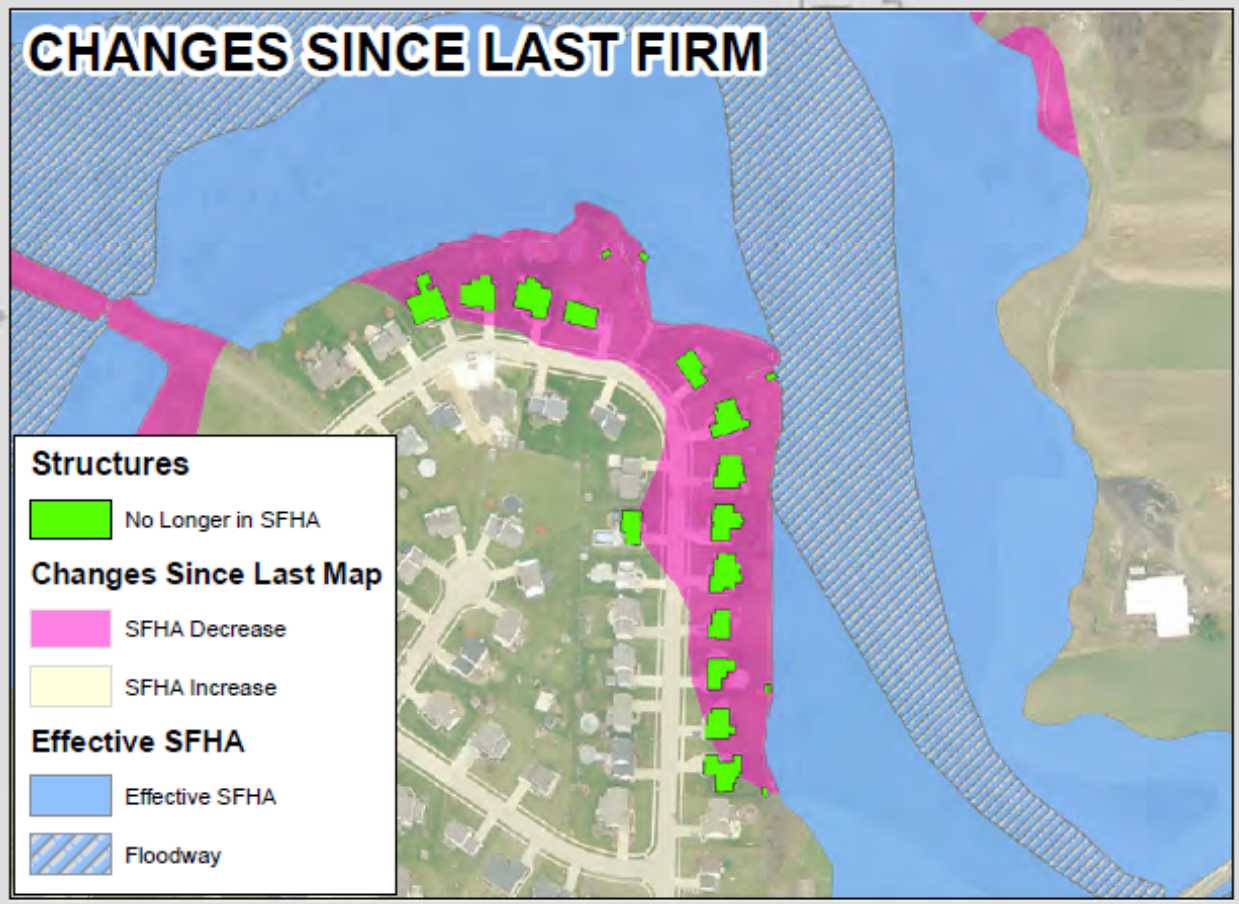


AREAS OF MITIGATION INTEREST

FLOOD RISK DATASETS

AREAS OF MITIGATION INTEREST

FLOOD RISK DATASETS

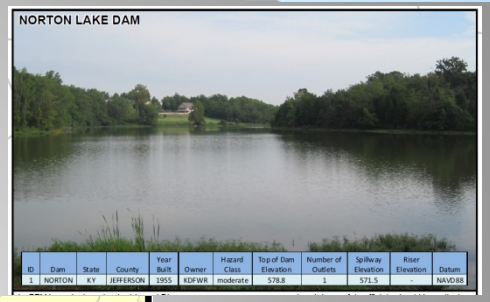


Several residential structures along Plum Creek are no longer shown within the SFHA, due to new H & H modeling. The new model includes two hydraulic structures not previously modeled, and also shows significant decrease in peak discharge.

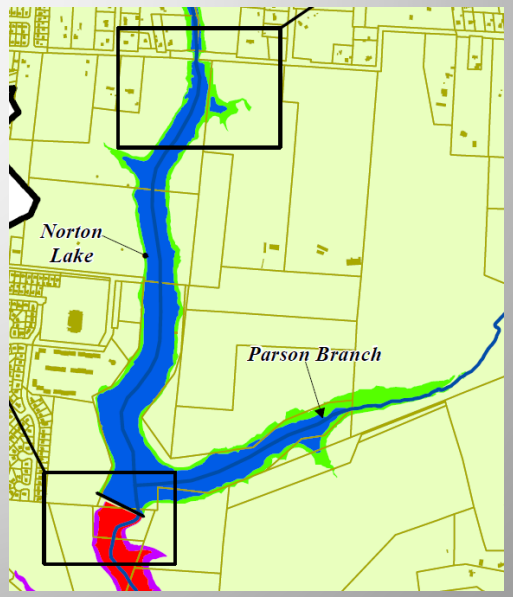
AREAS OF MITIGATION INTEREST

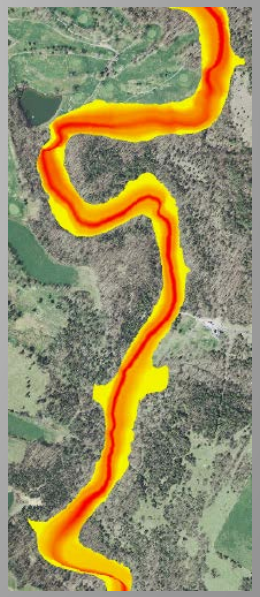
DAMS

- Analysis from dam safety officials
- Flexible depending on varying state regulations & methods
- Enhanced datasets include:
  - Basic dam characteristics
  - Upstream inundation areas delineated
  - Downstream inundation areas delineated
  - Assorted depth and analysis grids (depth, velocity, arrival time)
  - Easements & critical facilities
  - Flood risk assessments
  - Additional Areas of Mitigation Interest categories
- Data used to communicate risks & promote mitigation

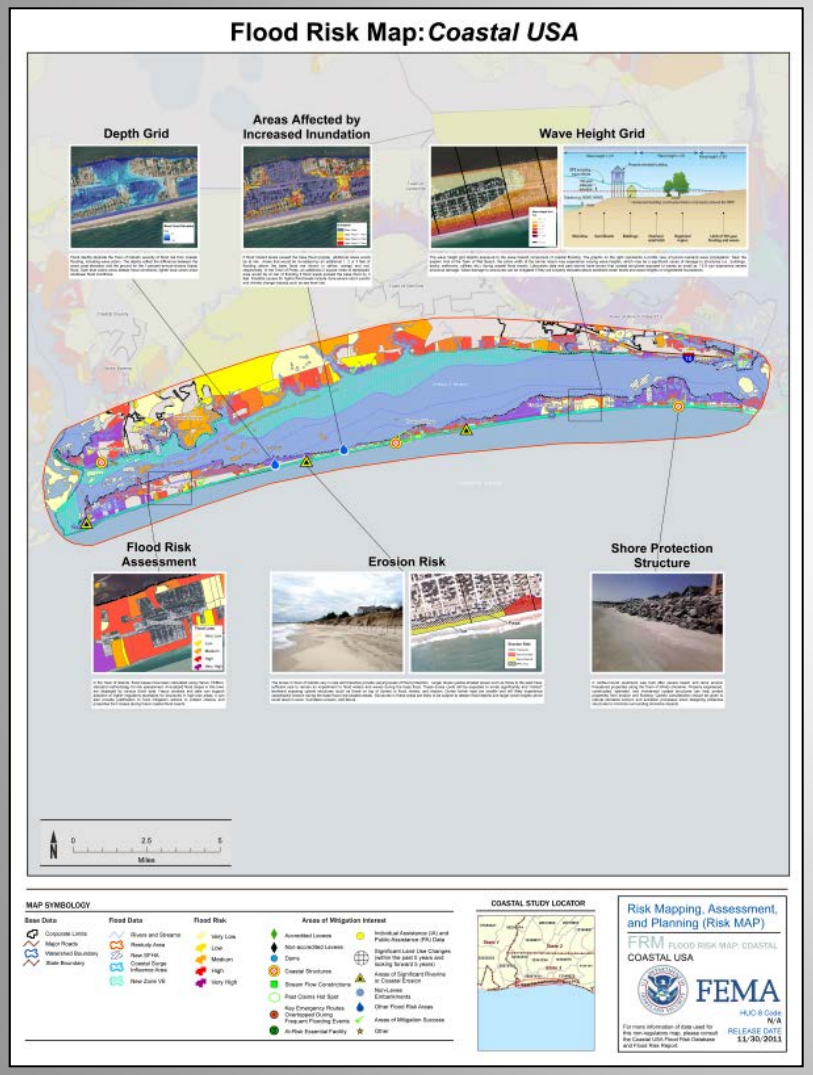


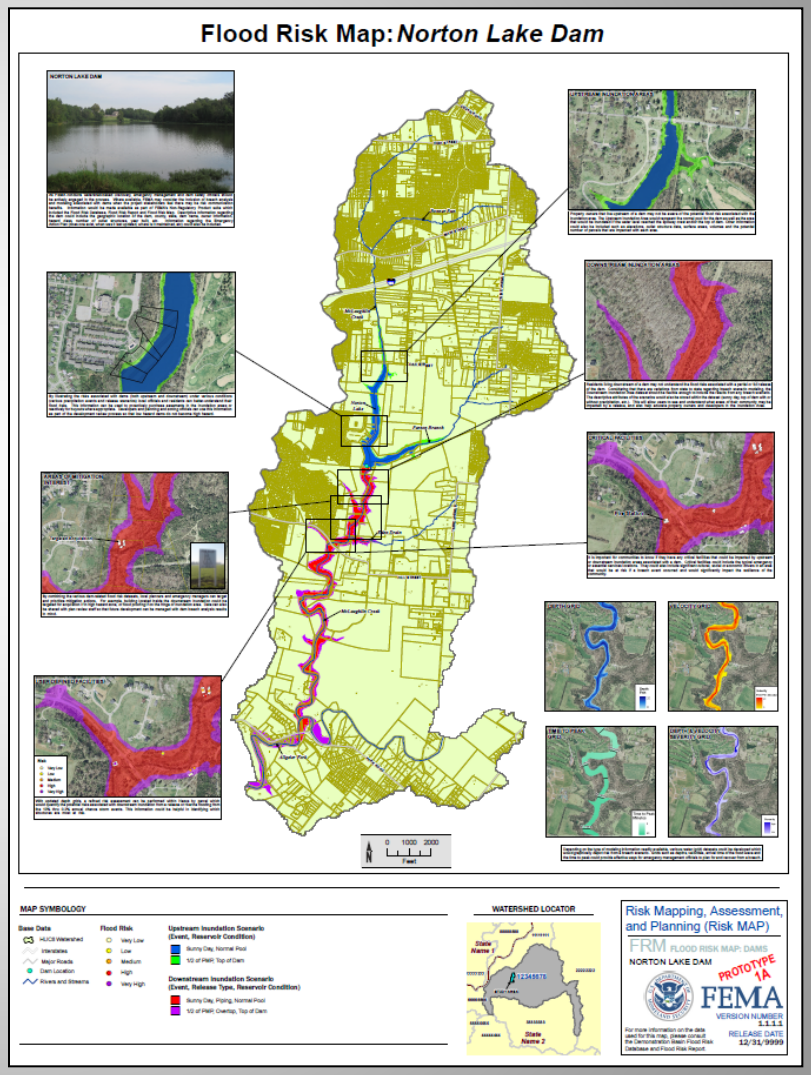
Emergency Spill-Crest Failure: Population at Risk = 450
Sunny Day Failure: Population at Risk = 266
100 Year Flood Event: Population at Risk = 167





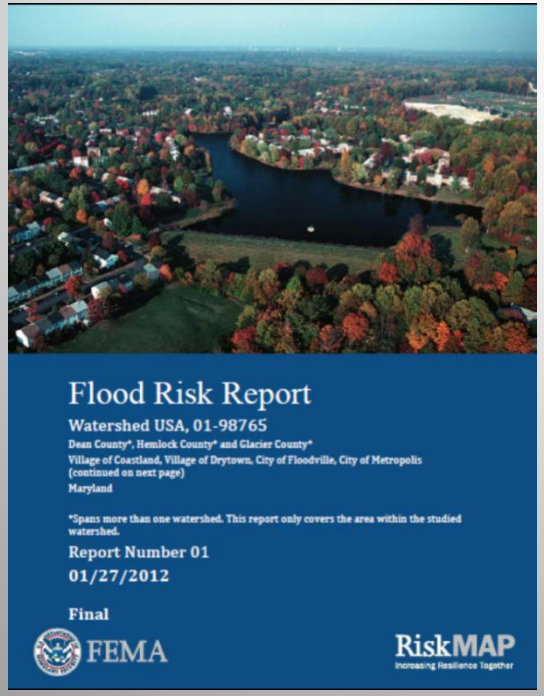
COASTAL & DAMS

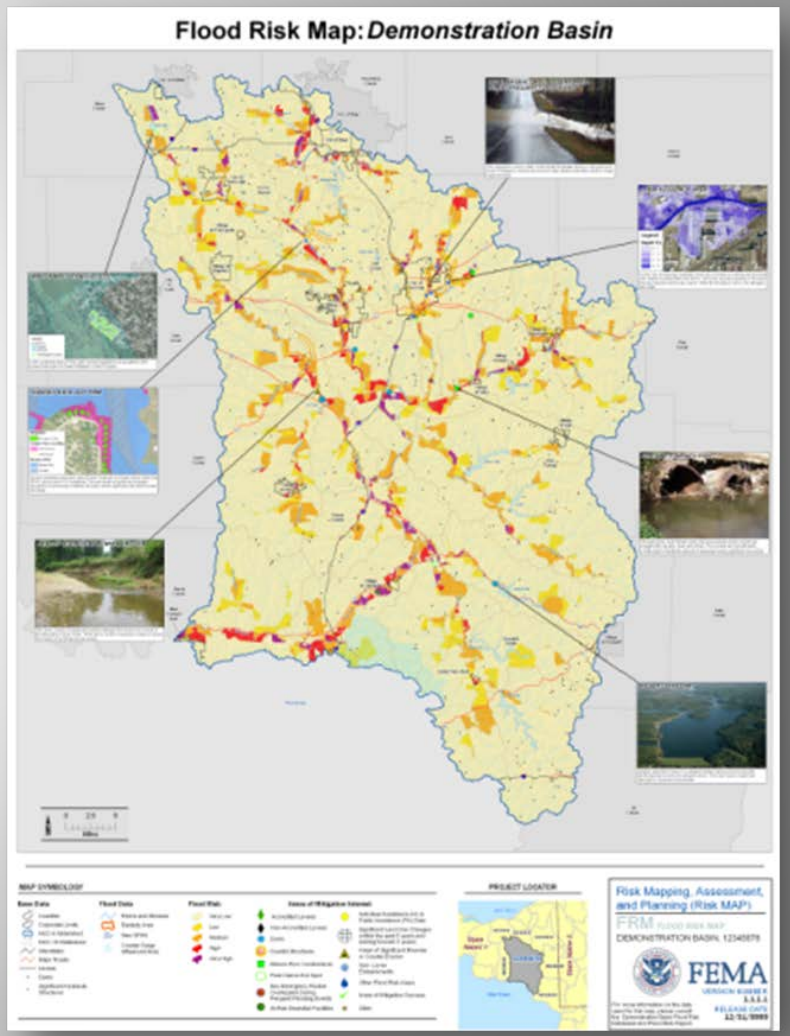




RISK MAP PRODUCTS

- **Non-regulatory**
  - **Flood Risk Database**
  - **Report**
  - **Maps**

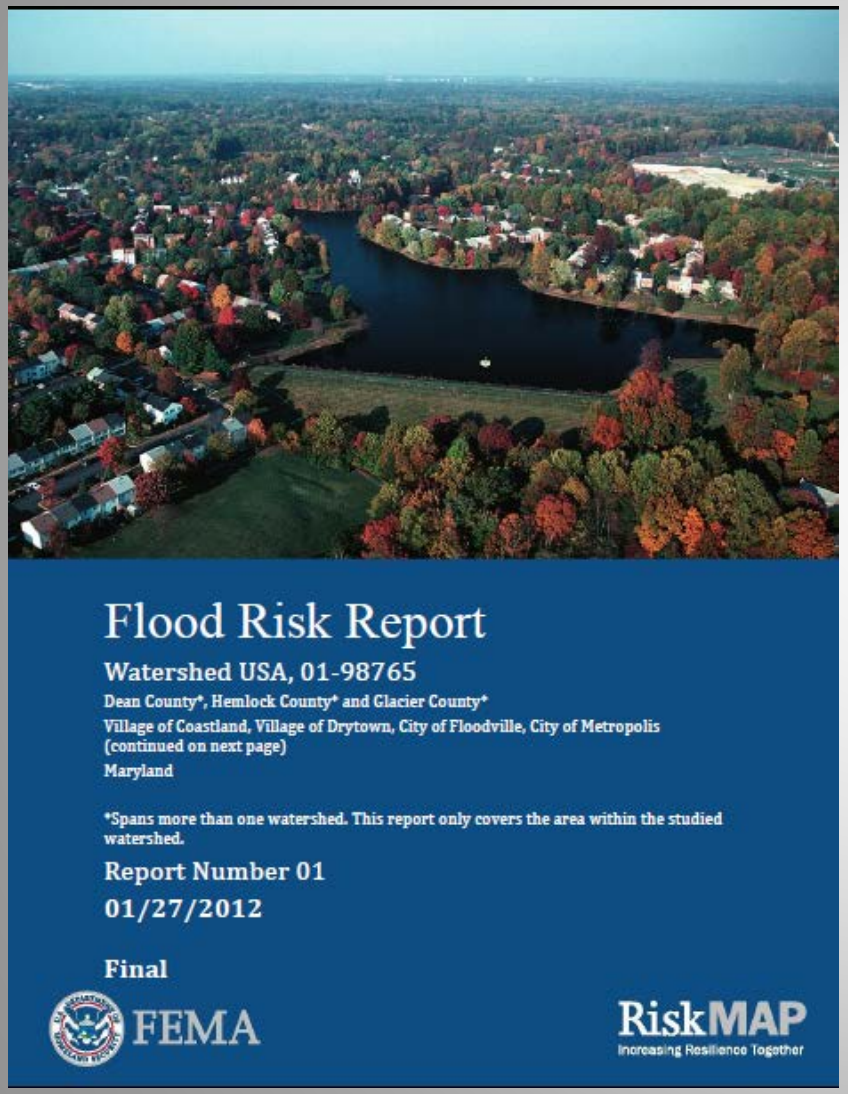




RISK MAP PRODUCTS

- Intended to be used in a GIS
- Real Usefulness of the FRD is in the Data
- Combined with local data
  - Housing
  - Commercial
  - Critical / public infrastructure
- Supports risk analysis, hazard mitigation planning
- Requires GIS capabilities to understand and apply the data to local questions / problems

RISK MAP PRODUCTS



FLOOD RISK REPORT

- **Background:**
  - Purpose, Methods
  - Risk Reduction Practices
- **Project Results**
  - Changes Since Last FIRM
  - Depth & Analysis Grids
  - Flood Risk Assessment
  - (enhanced analyses)
    - e.g. Areas of Mitigation Interest
- **Summarized by Locations**
  - Communities and Watersheds

RISK MAP PRODUCTS

FLOOD RISK REPORT

1 Introduction

1.1 About Flood Risk

Floods are naturally occurring phenomena that can and do happen almost anywhere. In its most basic form, a flood is an accumulation of water over normally dry areas. Floods become hazardous to people and property when they inundate an area where development has occurred, causing losses. Mild flood losses may have little impact on people or property, such as damage to landscaping or the generation of unwanted debris. Severe flooding can destroy buildings, ruin crops, and cause critical injuries or death.

1.1.1 Calculating Flood Risk

It is not enough to simply identify where flooding may occur. Just because one knows where a flood occurs does not mean they know the **risk** of flooding. The most common method for determining flood risk, also referred to as vulnerability, is to identify the probability of flooding and the consequences of flooding. In other words:

Flood Risk (or Vulnerability) = **Probability x Consequences**, where
Probability = the likelihood of occurrence
Consequences = the estimated impacts associated with the occurrence

The probability of a flood is the likelihood that a flood will occur. The probability of flooding can change based on physical, environmental, and/or contributing engineering factors. Factors affecting the probability that a flood will impact an area range from changing weather patterns to the existence of mitigation projects. The ability to assess the probability of a flood and the level of accuracy for that assessment are also influenced by modeling methodology advancements, better knowledge, and longer periods of record for the water body in question.

The consequences of a flood are the estimated impacts associated with the flood occurrence. Consequences relate to humans activities within an area and how a flood impacts the natural and built environments.

1.1.2 Risk MAP Flood Risk Products

Through Risk MAP, FEMA provides communities with updated Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies (FISs) that

Flooding is a natural part of our world and our communities. Flooding becomes a significant hazard, however, when it intersects with the built environment.

Which picture below shows more flood risk?

Even if you assume that the flood in both pictures was the same probability—let's say a 10-percent-annual-chance flood—the consequences in terms of property damage and potential injury as a result of the flood in the bottom picture are much more severe. Therefore, the flood risk in the area shown in the bottom picture is higher.

4.3 Mitigation Programs and Assistance

Not all mitigation activities require funding (e.g., local policy actions such as strengthening a flood damage prevention ordinance), and those that do are not limited to outside funding sources (e.g., inclusion in local capital improvements plan, etc.). For those mitigation actions that require assistance through funding or technical expertise, several state and federal agencies have flood hazard mitigation grant programs and offer technical assistance. These programs may be funded at different levels over time or may be activated under special circumstances such as after a presidential disaster declaration.

4.3.1 FEMA Mitigation Programs and Assistance

FEMA awards many mitigation grants each year to states and communities to undertake mitigation projects to prevent future loss of life and property resulting from hazard impacts, including flooding. The FEMA Hazard Mitigation Assistance (HMA) programs provide grants for mitigation through the programs listed in Table 4.2 below.

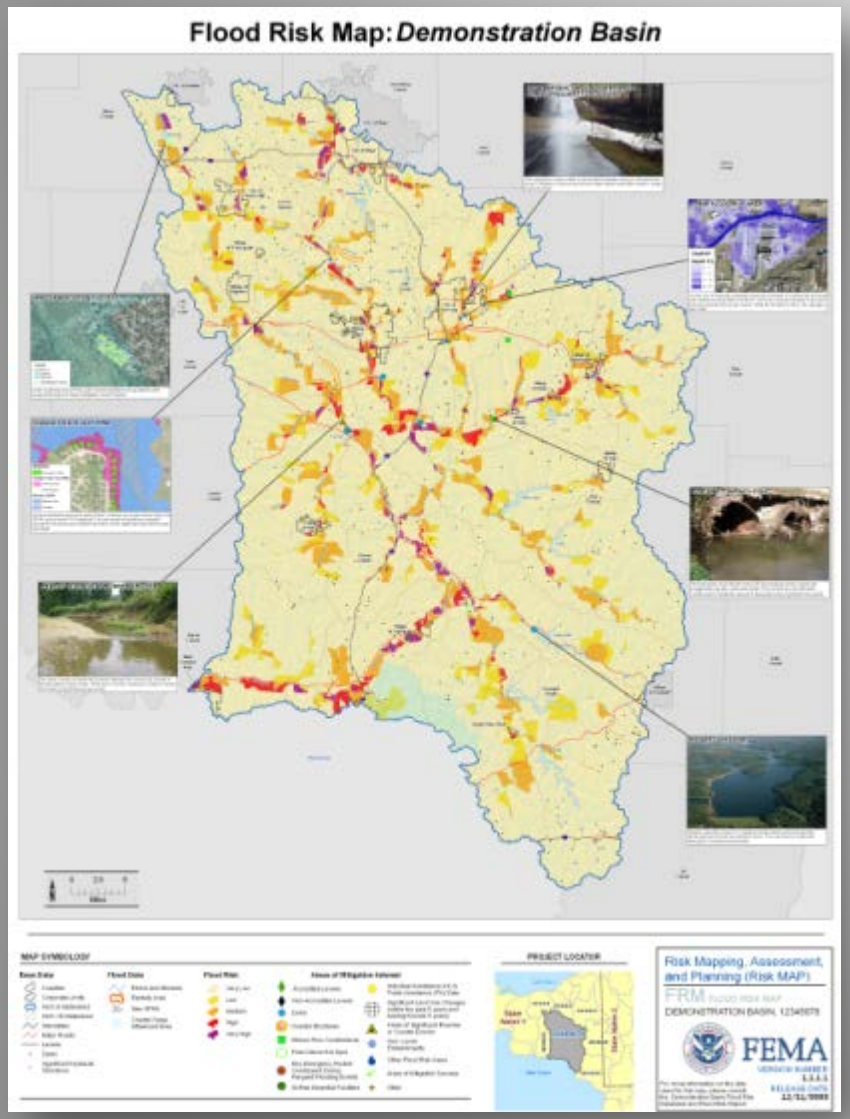
Table 4-2. FEMA Hazard Mitigation Assistance Programs

Mitigation Grant Program	Authorization	Purpose
Hazard Mitigation Grant Program (HMGP)	Robert T. Stafford Disaster Relief and Emergency Assistance Act	Activated after a presidential disaster declaration; provides funds on a sliding scale formula based on a percentage of the total federal assistance for a disaster for long-term mitigation measures to reduce vulnerability to natural hazards
Flood Mitigation Assistance (FMA)	National Flood Insurance Reform Act	Reduce or eliminate claims against the NFIP
Pre-Disaster Mitigation (PDM)	Disaster Mitigation Act	National competitive program focused on mitigation project and planning activities that address multiple natural hazards

Communities plans and grant pro reduction FEMA HMA http://www.fe

FLOOD RISK REPORT

RISK MAP PRODUCTS

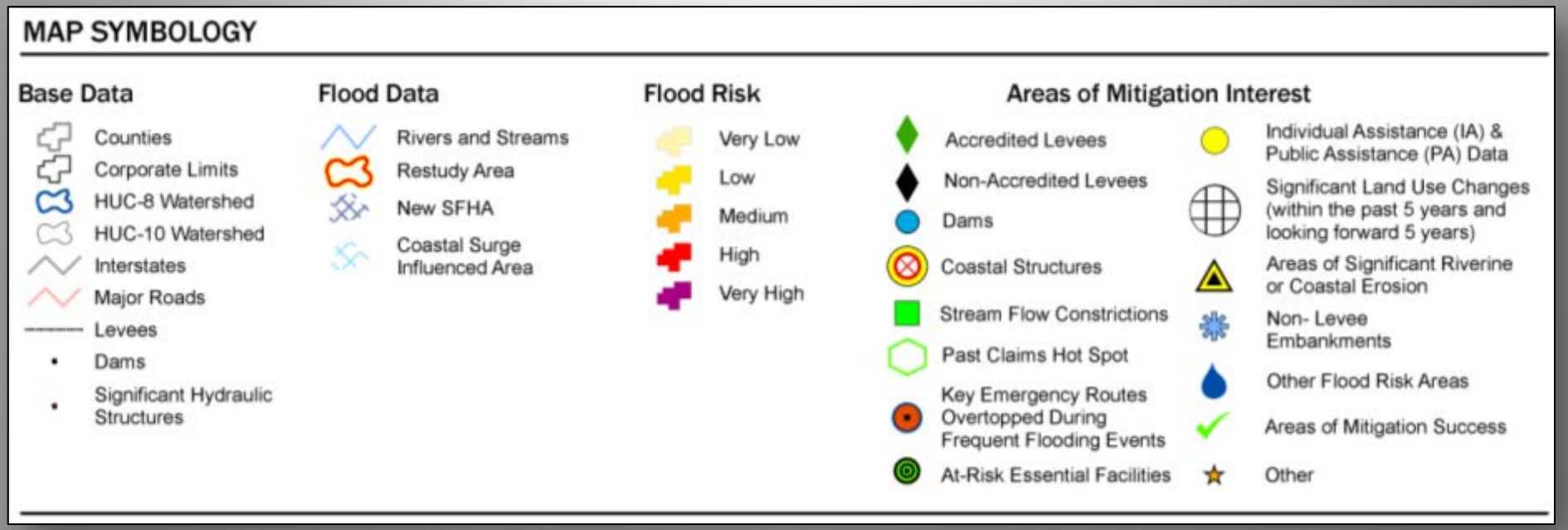


FLOOD RISK MAP

- Intent is to provide a geographic summary of risks within the project area
- NOT a regulatory product, and is intended to focus on specifically-identified risk areas
- In most cases, created using the FRD as companion elements to the hydrologic & hydraulic (H & H) study
- This integrated approach is to produce a map that requires little or no manual cartographic finishing

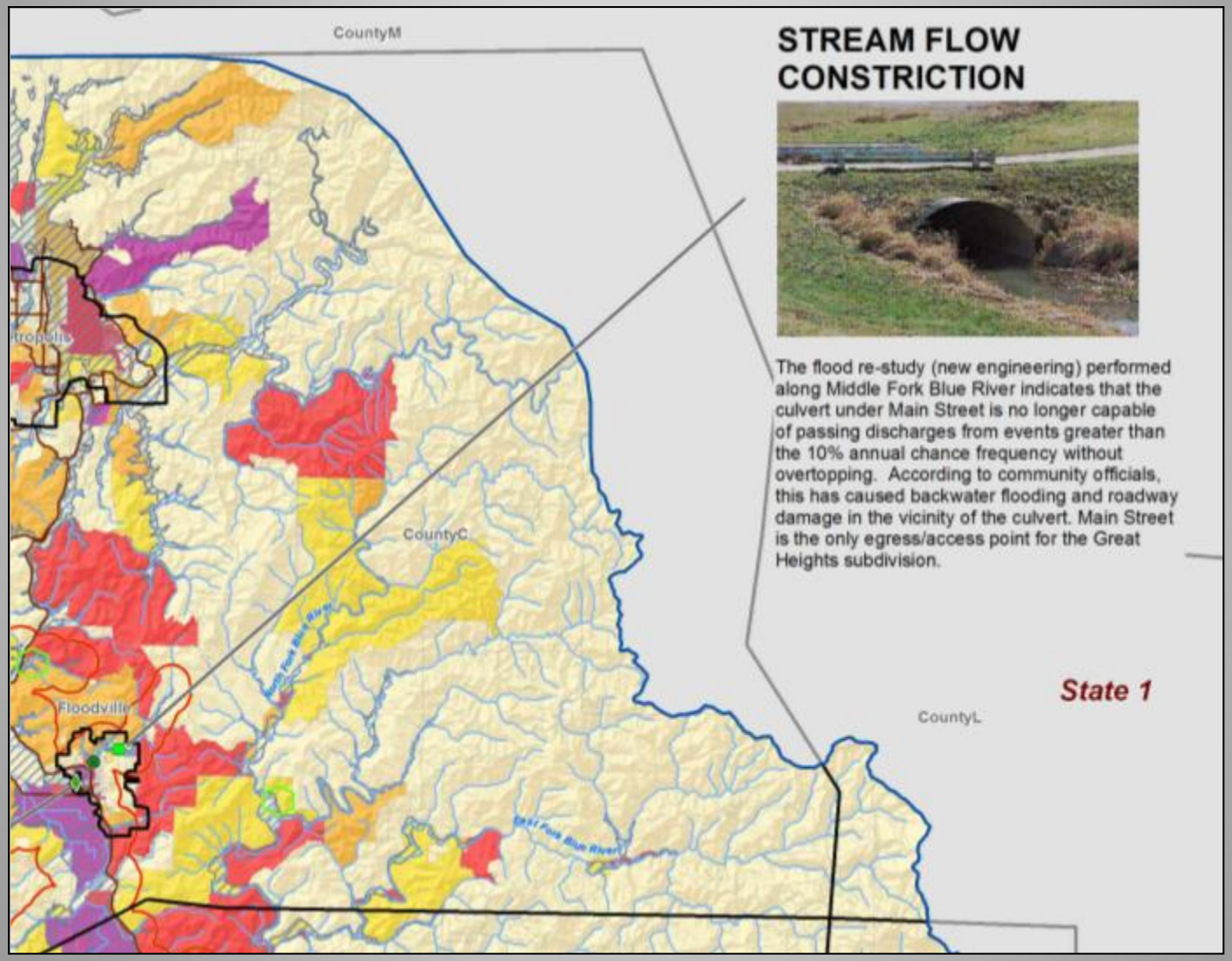
RISK MAP PRODUCTS

- **4 Legend components**
  - Base Data
  - Flood Data
  - Flood Risk
  - Areas of Mitigation Interest (enhanced)
- **All legend elements are standardized and are to be on all FRD maps, except enhanced features (AoMI)**



FLOOD RISK MAP

RISK MAP PRODUCTS



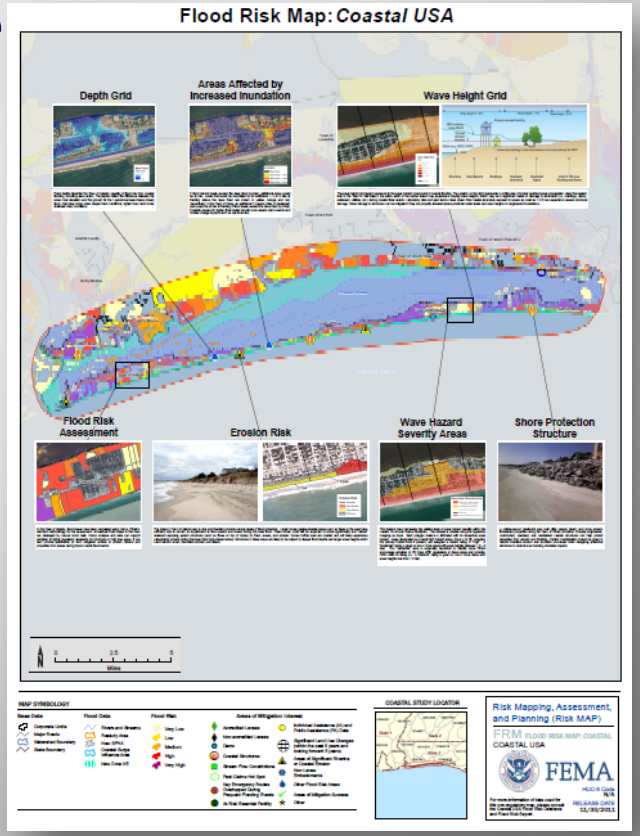
FLOOD RISK MAP

GROUP DISCUSSION

- What is the role of your community in disseminating Risk MAP product information?
- What are potential connections between Risk MAP products and potential risk mitigation actions for your community?
- What benefits do you see from individual Risk MAP elements?
- What are the best approaches for reaching out to your community?
- What connections do you see between Risk MAP products and potential risk mitigation actions that can be taken in your communities?

COASTAL PRODUCTS

- Convey information about coastal hazards
- Enhance risk awareness
- Encourage action at the community-level
- Reduce risks



Base Products:

- Changes Since Last FIRM
- Coastal 1% Annual Chance Depth Grid
- Average Annualized Loss Risk Assessment

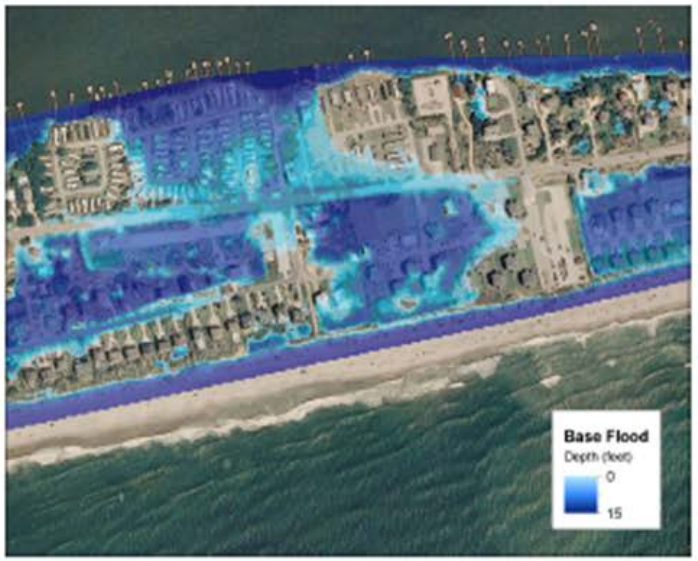
Coastal-Specific Products:

- Inundation
- Waves
- Erosion

Can be developed for an entire studied coastline or for focused areas

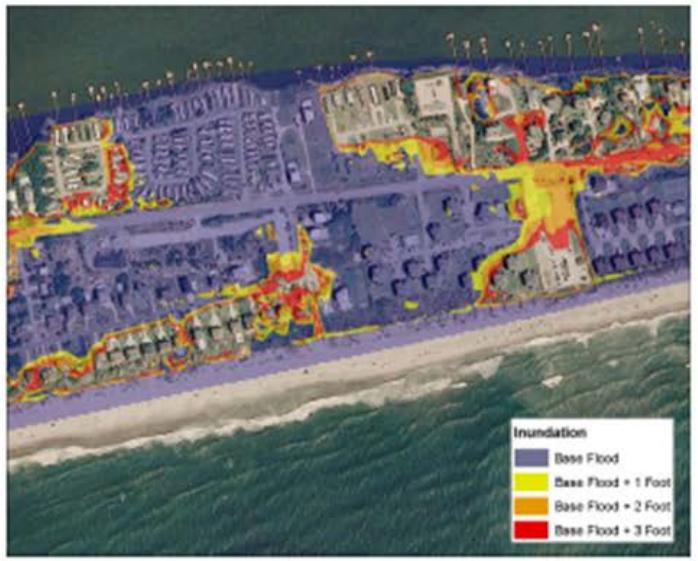
COASTAL PRODUCTS

Depth Grid



Flood depths illustrate the Town of Islands' severity of flood risk from coastal flooding, including wave action. The depths reflect the difference between the wave crest elevation and the ground for the 1-percent-annual-chance (base) flood. Dark blue colors show deeper flood conditions; lighter blue colors show shallower flood conditions.

Areas Affected by Increased Inundation

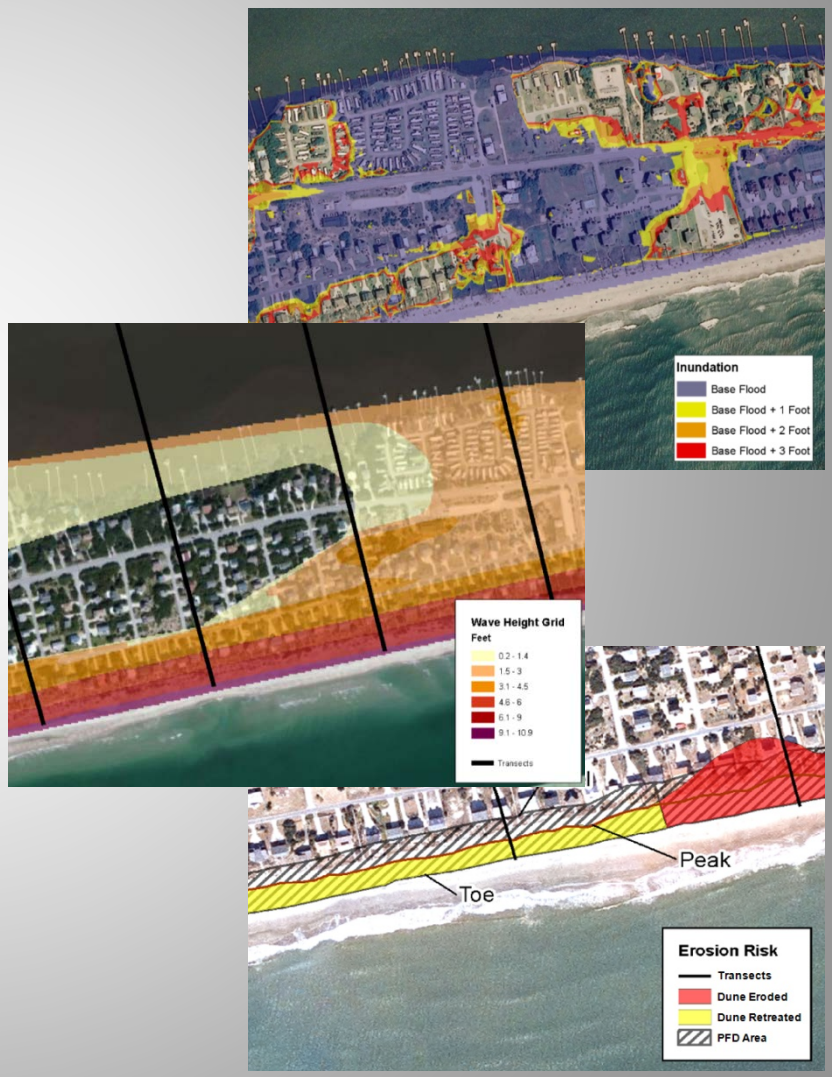


If flood hazard levels exceed the base flood (purple), additional areas would be at risk. Areas that would be inundated by an additional 1, 2 or 3 feet of flooding above the base flood are shown in yellow, orange and red, respectively. In the Town of Pines, an additional 2 square miles of developed area would be at risk of flooding if flood levels exceed the base flood by 3 feet. Possible causes for higher flood levels include more severe storm events and climate change impacts such as sea level rise.

INUNDATION

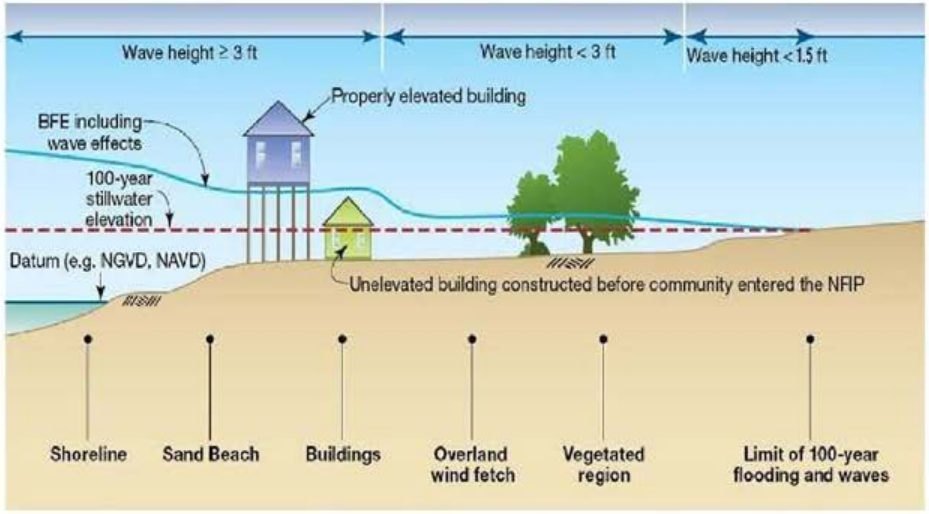
COASTAL PRODUCTS

- Provides results from coastal analysis
- Enhanced datasets include:
  - Flood Depth grid
  - Flood Depth grids based on hypothetical 1-ft increments in sea level rise
  - Wave Height grid
  - Primary Frontal Dune datasets
    - Storm-Induced Erosion Risk (High: removed; Medium: retreat)
    - Vulnerability grid (Dune Height relative to Stillwater Elevation)
- Data used to communicate risks & promote mitigation



COASTAL PRODUCTS

Wave Height Grid

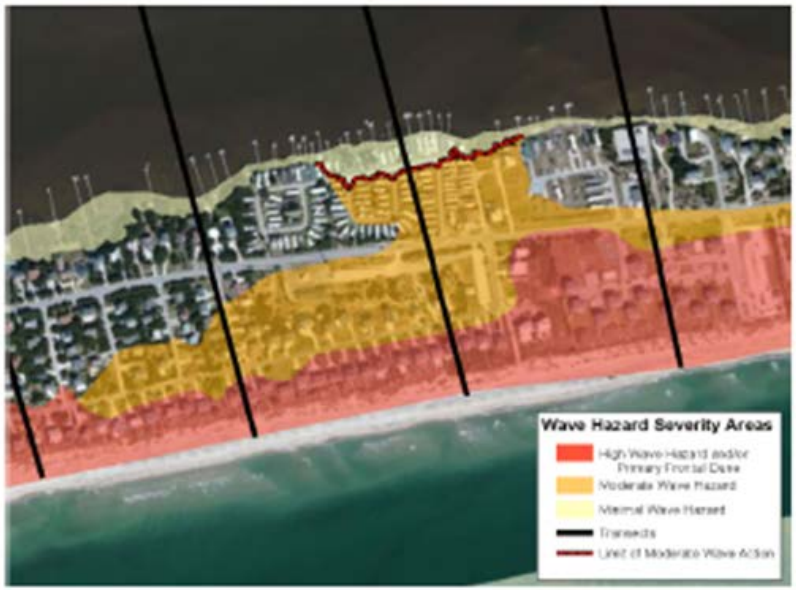


The wave height grid helps to indicate the risk associated with overland wave propagation. Coastal high hazard areas (Zone VE) are areas subject to wave heights greater than 3 feet. Based on storm damage assessments, high water mark surveys, and laboratory wave tests, coastal structures exposed to waves as low as 1.5 ft can be severely damaged. An area of Moderate Wave Action (MoWA) identifies areas with wave heights between 3 ft and 1.5 ft. The graphic on the right represents a profile view of typical overland wave propagation.

Waves greater than 3ft = Potential for severe damage from waves;
Waves between 3 and 1.5 ft = Potential for severe to moderate damage from waves

COASTAL PRODUCTS

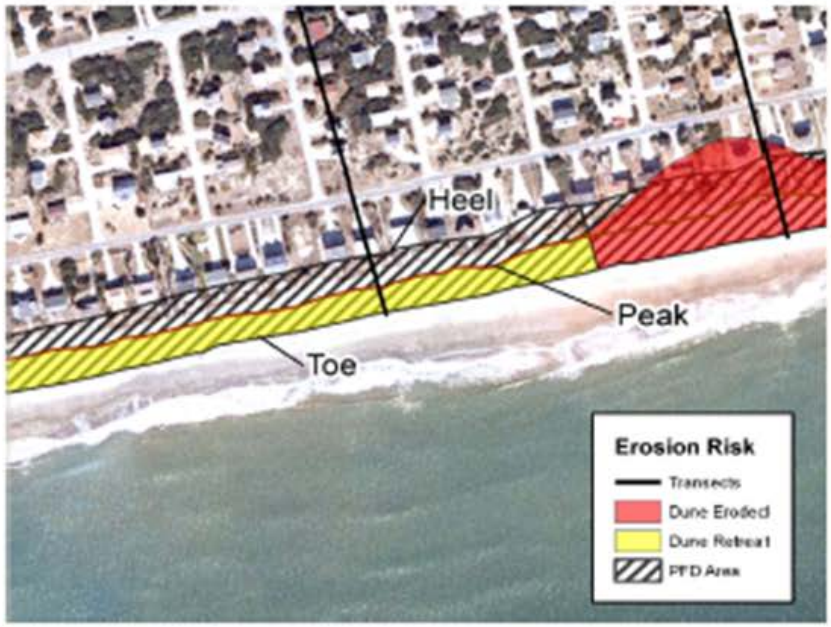
Wave Hazard Severity Areas



This feature class represents the relative level of wave hazard severity within the coastal 1% annual chance floodplain. This dataset is created using the regulatory mapping as input. Each polygon feature is attributed with its respective wave hazard. Areas designated as coastal high hazard areas, Zone V or VE, including the primary frontal dune if present, are assigned a hazard rating of "High". A "Moderate" rating is given to non-V Zone areas with wave heights between 1.5 – 3 feet. This "Moderate" area is especially beneficial to identify since FEMA encourages adoption of VE Zone NFIP regulations in these areas and provides CRS credit for doing so. A "Minimal" rating is given to non-V Zone areas with wave heights less than 1.5 feet.

COASTAL PRODUCTS

Erosion Risk



The dunes in Town of Islands vary in size and therefore provide varying levels of flood protection. Larger dunes (yellow-shaded areas) such as those to the west have sufficient size to remain an impediment to flood waters and waves during the base flood. These dunes could still be expected to erode significantly and "retreat" landward exposing upland structures (such as those on top of dunes) to flood, waves, and erosion. Dunes further east are smaller and will likely experience catastrophic erosion during the base flood (red-shaded areas). Structures in these areas are likely to be subject to deeper flood depths and larger wave heights which could result in scour, foundation erosion, and failure.

EROSION RISK

COASTAL PRODUCTS

Flood Risk Assessment

In the Town of Islands, flood losses have been calculated using Hazus, standard methodology for risk assessment. Annualized flood losses are displayed by census block data. Hazus analysis and data can adoption of higher regulatory standards for structures in high loss area also provide justification to fund mitigation actions to protect citize properties from losses during future coastal flood events.

Shore Protection Structure

und revetment was built after severe beach and dune erosion roperties along the Town of Winds shoreline. Properly engineered, operated, and maintained coastal structures can help protect m erosion and flooding. Careful consideration should be given to line erosion and accretion processes when designing protective minimize surrounding shoreline impacts.

Areas of Mitigation Interest

- Accredited Levees
- Non-accredited Levees
- Dams
- Coastal Structures
- Stream Flow Constrictions
- Past Claims Hot Spot
- Key Emergency Routes Overtopped During Frequent Flooding Events
- At-Risk Essential Facility
- Individual Assistance (IA) and Public Assistance (PA) Data
- Significant Land Use Changes (within the past 5 years and looking forward 5 years)
- Areas of Significant Riverine or Coastal Erosion
- Non-Levee Embankments
- Other Flood Risk Areas
- Areas of Mitigation Success
- Other

RISK ASSESSMENT

COASTAL PRODUCTS

Flood Risk Report (FRR)

Area of Study	Total Area (mi^2)	Increase (mi^2)	Decrease (mi^2)	Net Change (mi^2)
Within SFHA	#.#	#.#	#.#	#.#
Within Floodway	#.#	#.#	#.#	#.#
Within CHHA (Zone VE or V)	#.#	#.#	#.#	#.#

Area of Study	Buildings			Population		
	Increase	Decrease	Net Change	Increase	Decrease	Net Change
Within SFHA	#	#	#	#	#	#
Within Floodway	#	#	#	#	#	#
Within CHHA (Zone VE or V)	#.#	#.#	#.#	#.#	#.#	#.#

Coastal Wave Hazard Severity	*Total Area (mi^2)*	*# of Structures*
High	*#.#*	*#*
Moderate	*#.#*	*#*
Minimal	*#.#*	*#*

Flood Event Frequency	*Area of Additional Inundation (mi^2)*				
	1-ft Increase	*2-ft Increase*		*3-ft Increase*	
		Newly Inundated	*Total*	*Newly Inundated*	*Total*
10%-annual-chance	*#.#*	*#.#*	*#.#*	*#.#*	*#.#*
2%-annual-chance	*#.#*	*#.#*	*#.#*	*#.#*	*#.#*
1%-annual-chance	*#.#*	*#.#*	*#.#*	*#.#*	*#.#*

GROUP DISCUSSION

Questions regarding Coastal non-regulatory products?

COMMUNITY ACTION

Questions regarding Risk MAP products?

What is your role in disseminating Risk MAP product information in your community?

COMMUNITY ACTION

- **Communicating Risk**

- **Personal Actions**
- **Know risk**
- **Know role**
- **Take action**

- **Review and Comment on Preliminary FIRMs and FIS Reports**

- **Support Implementation of Community Mitigation Plan**

GROUP DISCUSSION

What are some of the actions that are presently underway in your community?

TIMELINES

Advisory Base Flood Elevation Maps
NY/NJ Coastal Studies
Map (DFIRMs) Revisions

	2013											
	January	February	March	April	May	June	July	August	September	October	November	December
Brooklyn												
Bronx												
Manhattan												
Staten Island												
Queens												
Hudson												
Cumberland												
Middlesex												
Monmouth												
Salem												
Ocean												
Atlantic												
Cape May												
Bergen - TBD												
Essex - TBD												
Gloucester/Camden - TBD												
Burlington - TBD												
Union - TBD												

Projected Preliminary

GROUP DISCUSSION

YOUR QUESTIONS