RiskMAP
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Upper St. Johns River Watershed
Florida
(HUC—03080101)

Discovery Meeting Guidebook
September 20, 2016
September 21, 2016

FEMA

Discovery Presentation

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Discovery Meeting: Upper St. Johns Watershed

September 20, 2016
September 21, 2016

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Why We Are Here?

- **A complete, current picture of your community's flood hazards and the associated risk will help you better:**
  - Plan for the risk
  - Take action to protect your communities
  - Communicate the risk to your citizens
- **Flood risk changes over time.**
- **FEMA Region IV prioritized the Upper St. Johns Watershed due to population, current FIRMs and CNMS data.**

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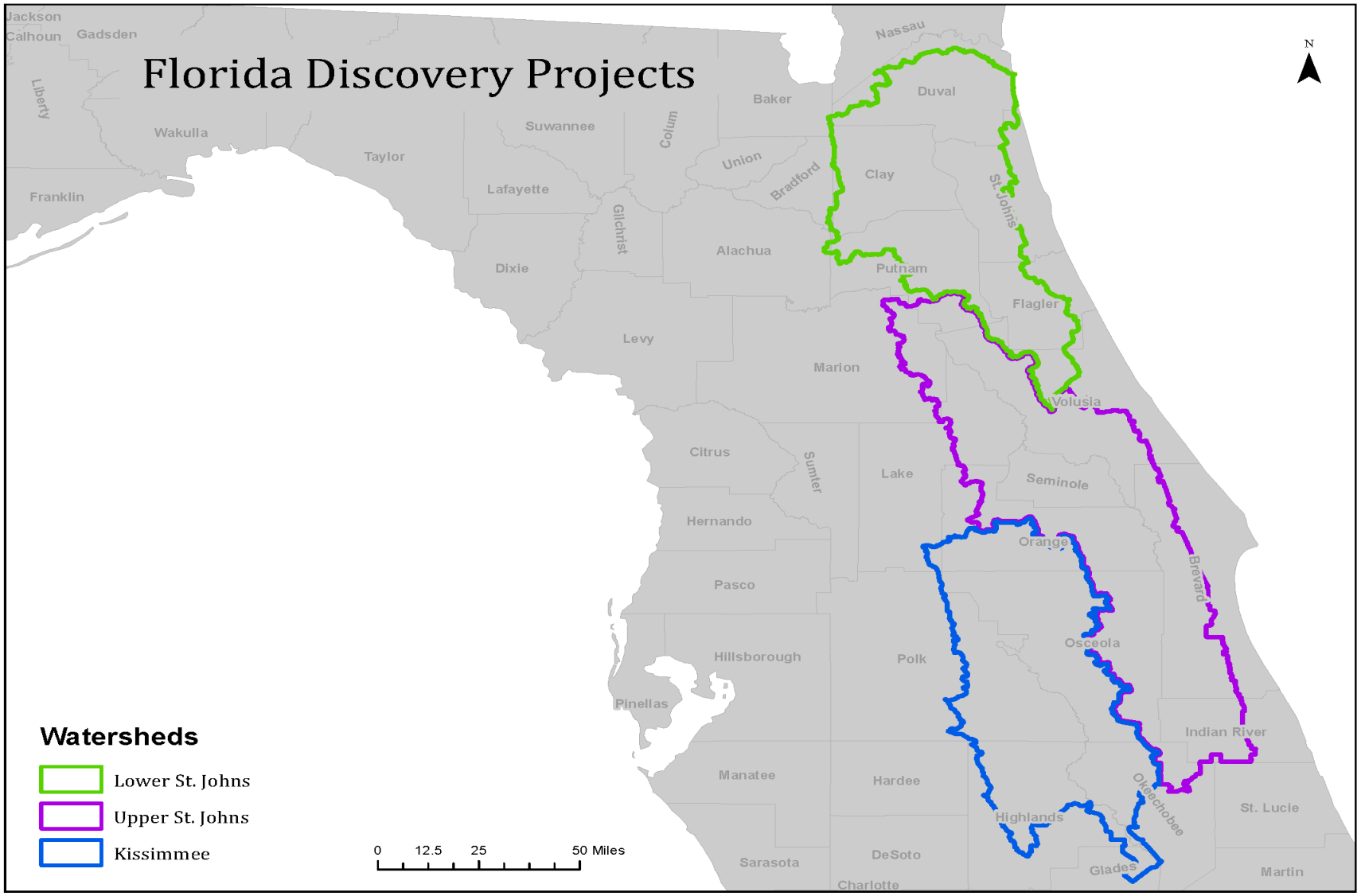
Ongoing Discovery Projects



How Is This Meeting Different?

- Northeast Florida Coastal Flood Risk Study
- East Coast Central Florida Coastal Flood Risk Study
- Upper St. Johns Discovery

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Agenda

- **Welcome & Introductions**
- **Brief Overview of Risk MAP & Discovery**
- **Upper St. Johns Watershed Snapshot**
  - Overview
  - Your Discovery Map
  - Mitigation Planning
  - Creating Action
  - Communication & Outreach
- **Looking Forward**
- **Breakout Sessions & Interactive Discussions**

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Introductions

- Community partners and officials
- State of Florida partners and officials
- Other Government Agency partner representatives
- Private-sector representatives
- FEMA Project Team representatives

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Program Overview & Discovery

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What is the value of RiskMAP?

Through collaboration with State, Local, and Tribal entities, Risk Mapping Assessment & Planning (Risk MAP) will deliver quality data that increases public awareness and leads to action that reduces risk to life and property

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Program Overview

- **Through Risk MAP, FEMA works with communities to develop flood risk products and flood hazard maps that are:**
  - Based on the best available data from the community and that use the latest technologies
  - Conducted on a watershed level
  - Strengthened by partnerships
- **You can use Risk MAP tools and data to:**
  - Create or improve your Hazard Mitigation Plans
  - Make informed decisions about development, ordinances, and flood mitigation projects
  - Communicate with citizens about flood risk

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Risk MAP vs. Map Modernization

- **Map Modernization was designed to put digital maps into the hands of communities.**
- **The improvements in consistency, quality, and process have continued under Risk MAP.**
- **Many more community touchpoints occur in Risk MAP vs. Map Modernization – FEMA is truly a partner.**
  - This extends beyond the scheduled meetings, too. If you have a concern or new data at any point in the process, give us a call! We want to know.
  - Risk MAP focuses on products and services beyond the traditional Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS).

What is Discovery?

- Discovery is the foundation for Risk MAP.
- The better the information we receive, the more accurate the tools and products we can produce.
- First, we want to learn where your flood hazards are, what risk they pose, and how your community addresses that risk.
- Then, we want to be a long-term partner to help you communicate and mitigate those hazards.

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What should you know about Discovery?

When

- After an area/watershed has been prioritized
- Before a Risk MAP project is scoped or funded

Why

- Increases visibility of flood risk information,
- Increases education and involvement of communities
- Helps inform whether a Risk MAP project will occur

Potential Next Steps

- Flood studies
- Flood risk assessments
- Mitigation planning technical assistance projects

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Discovery Goals

- Review flood hazards and risks
- Understand local mitigation activities and capabilities and hazard risk assessments
- Collect information about flooding history, development plans, and floodplain management

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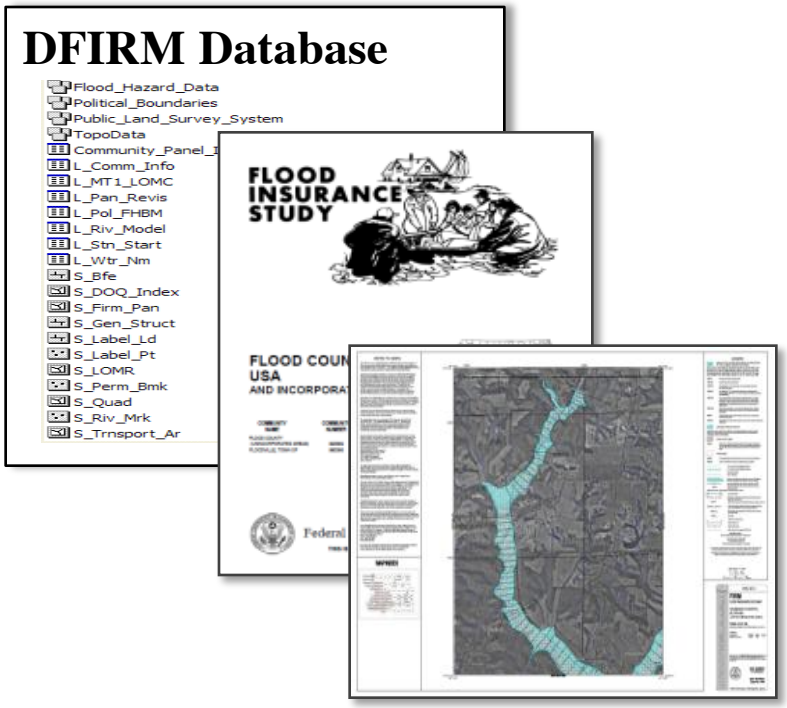
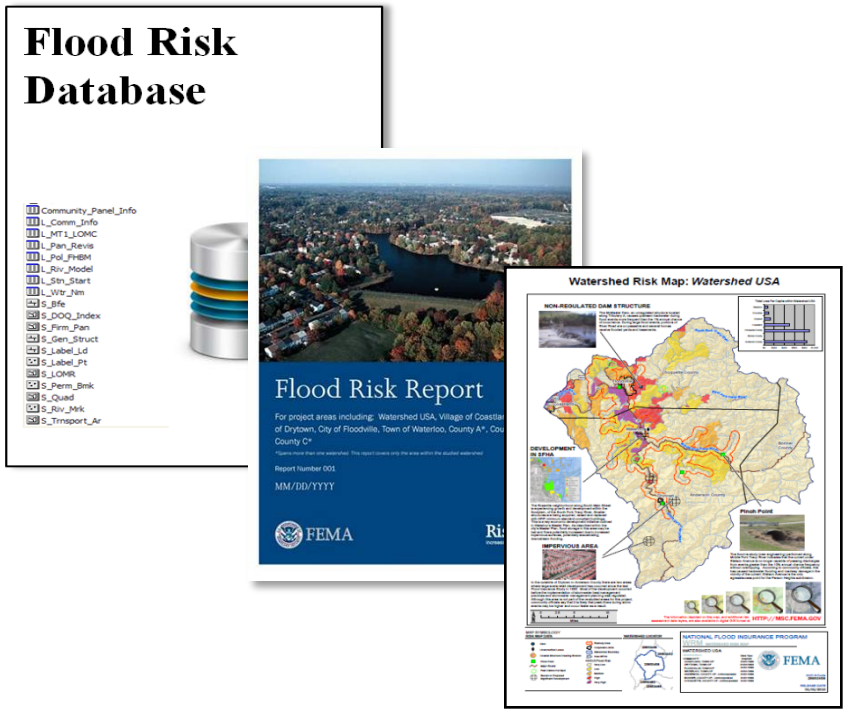
Program Product Comparisons

Traditional Regulatory Products



Risk MAP Products



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Flood Risk Database

Changes Since Last FIRM

- Horizontal Changes and Results

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-frequency)

Flood Risk Assessment

- Refined Flood Risk Assessment

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

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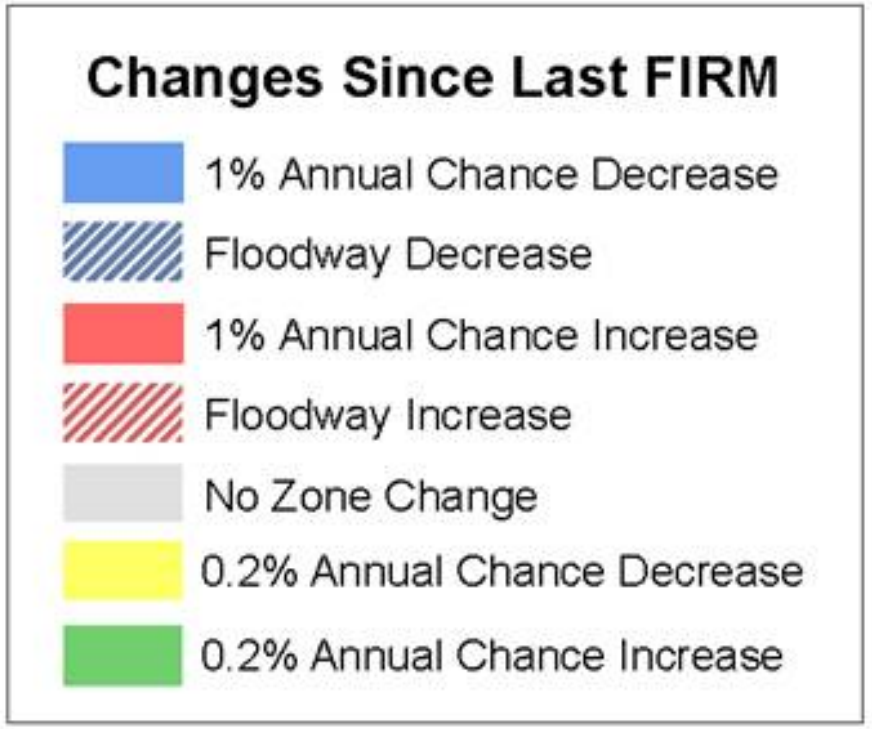
Changes Since Last FIRM (CSLF)

Goals:

- Help communities understand changes to their flood maps
- Identify sources and areas of SFHA Increase/Decrease & Zone Changes
- Produce a spatial layer that can be used to quickly identify buildings/structures that are at risk, but were previously unidentified



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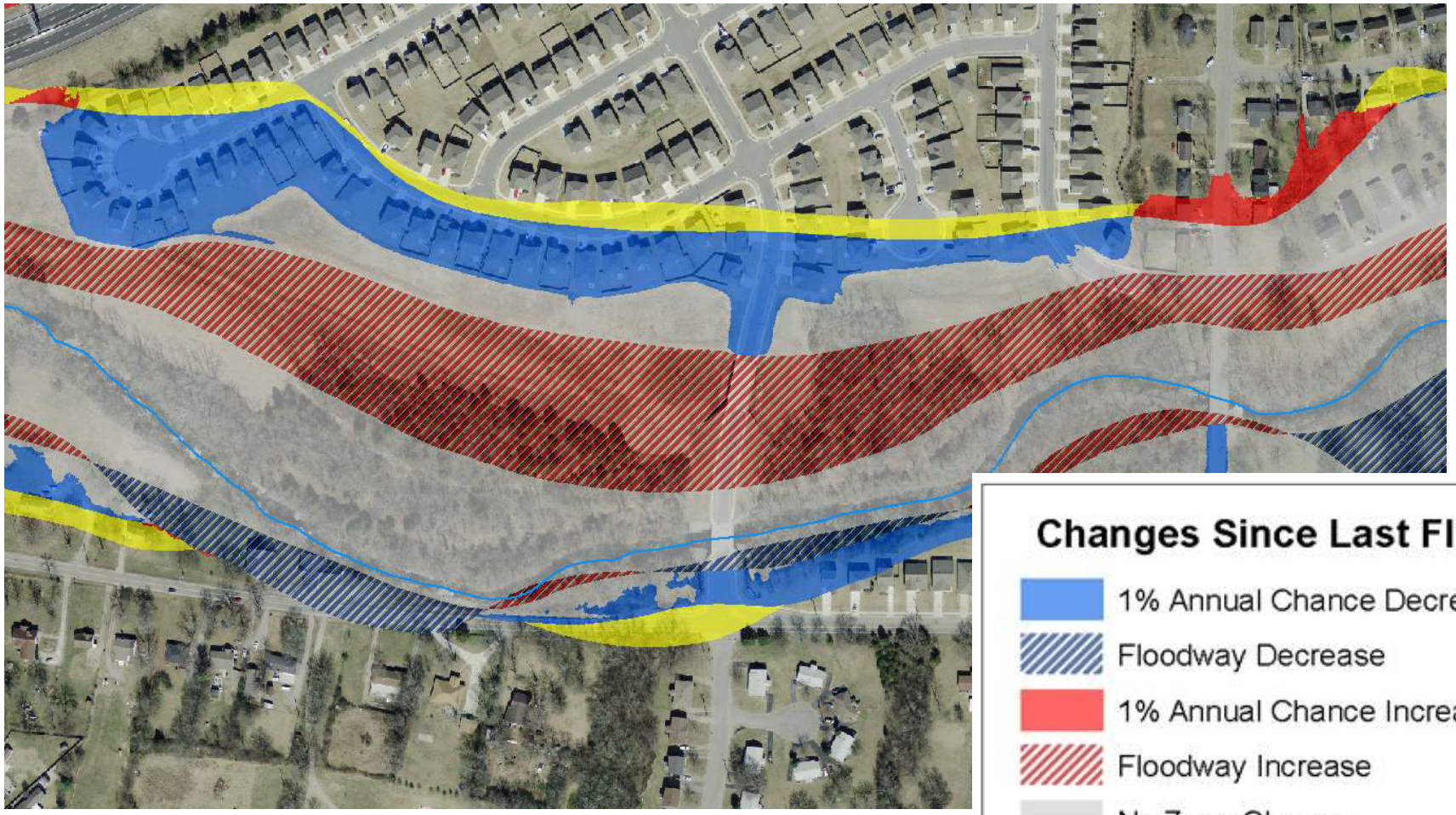
Changes Since Last FIRM (CSLF)



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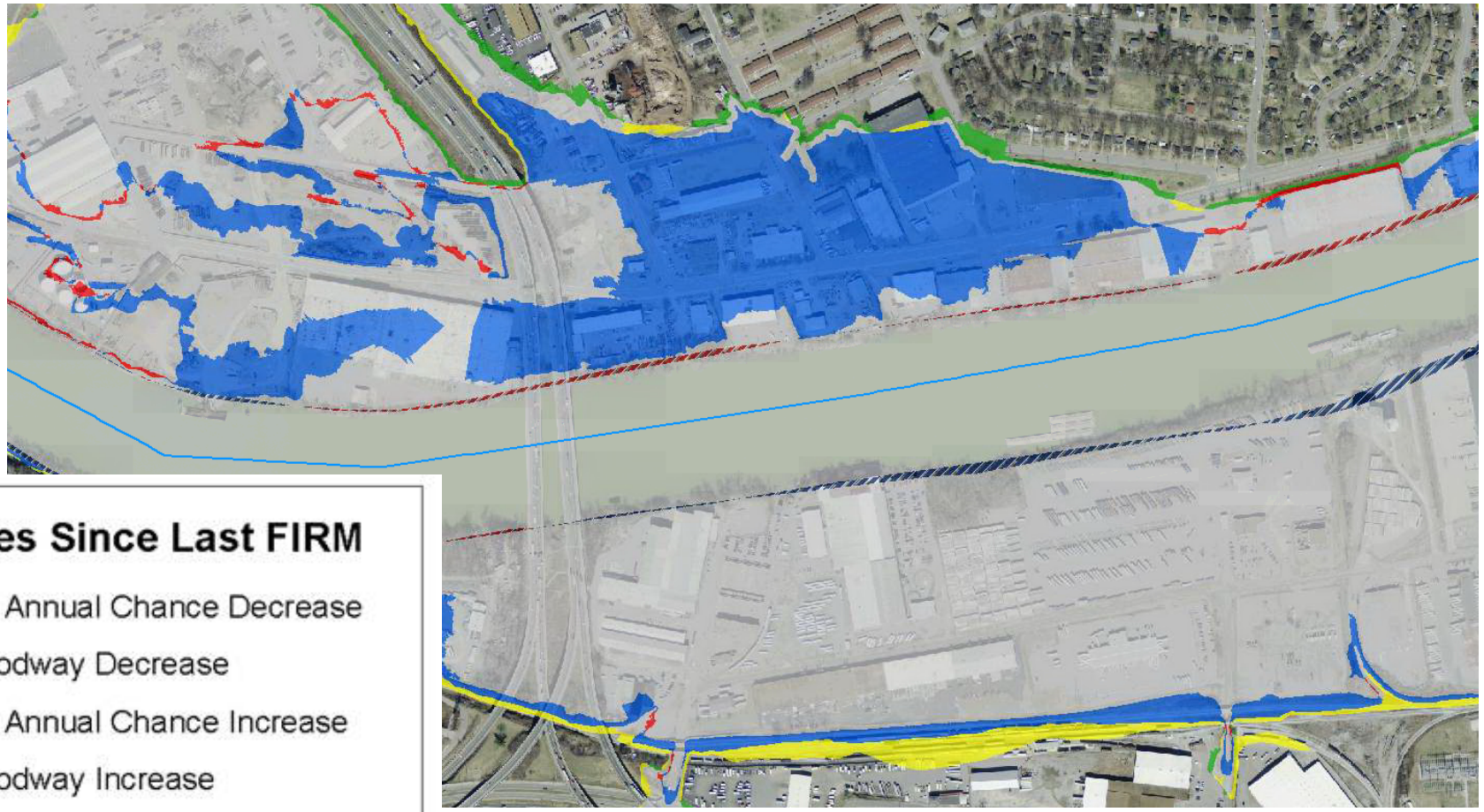

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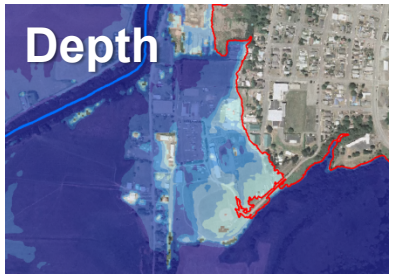
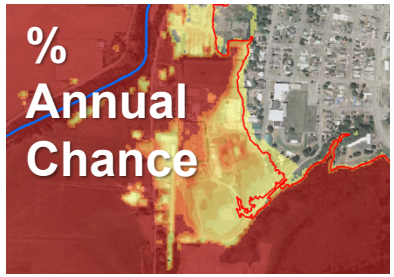
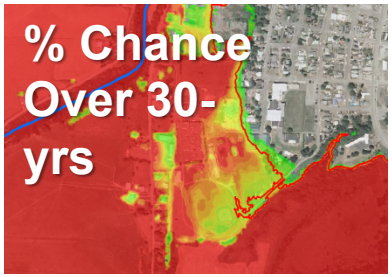
Multi-Frequency Depth (& Other) Grids

Goals:

- Help communities better understand their likelihood of flooding beyond the “1-percent-annual-chance” floodplain
- Produce data that can feed into Hazus
- Provide location-specific results within the floodplain that communities can leverage for additional analysis
- Provide information that can feed into Benefit-Cost Analyses







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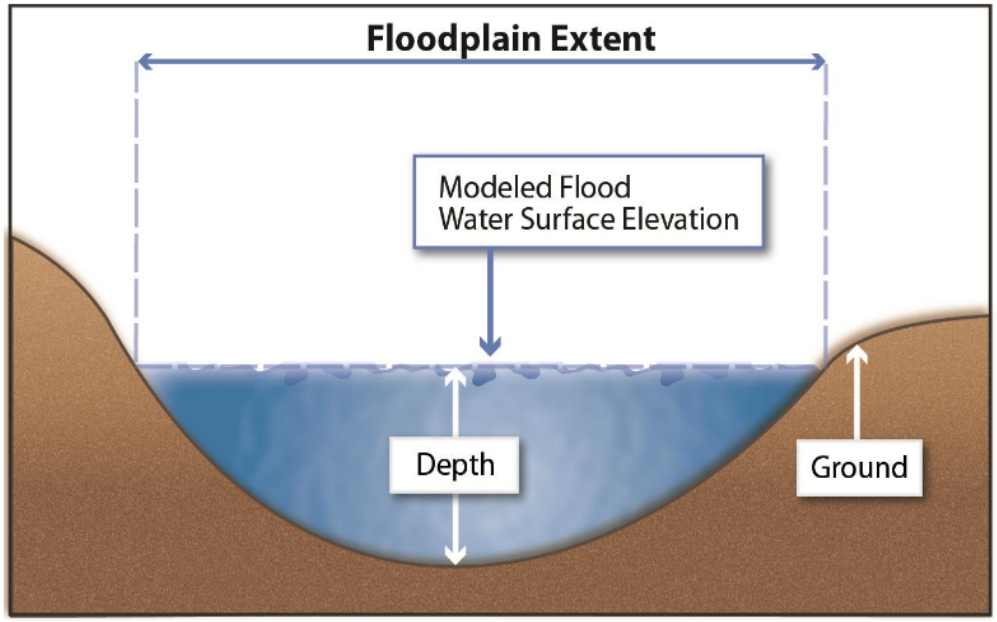
Flood Depth Grids

- Depth Grid calculated as the difference between the WSEL and the ground
- Answers “Are we going to be under water by inches or feet?”
- Not just the 1% annual chance event - multiple event levels!



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Multi-Frequency Depth (& Other) Grids

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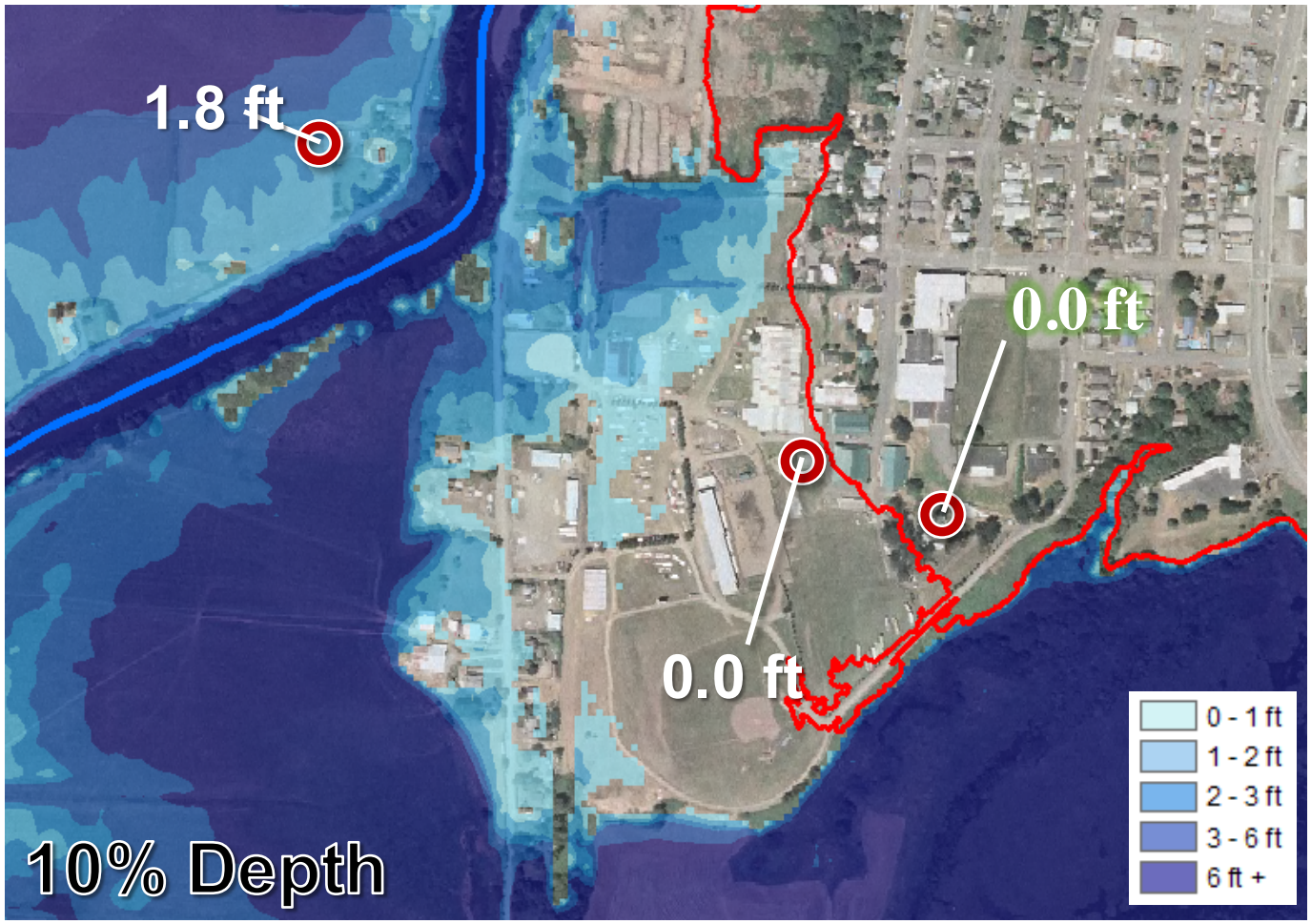

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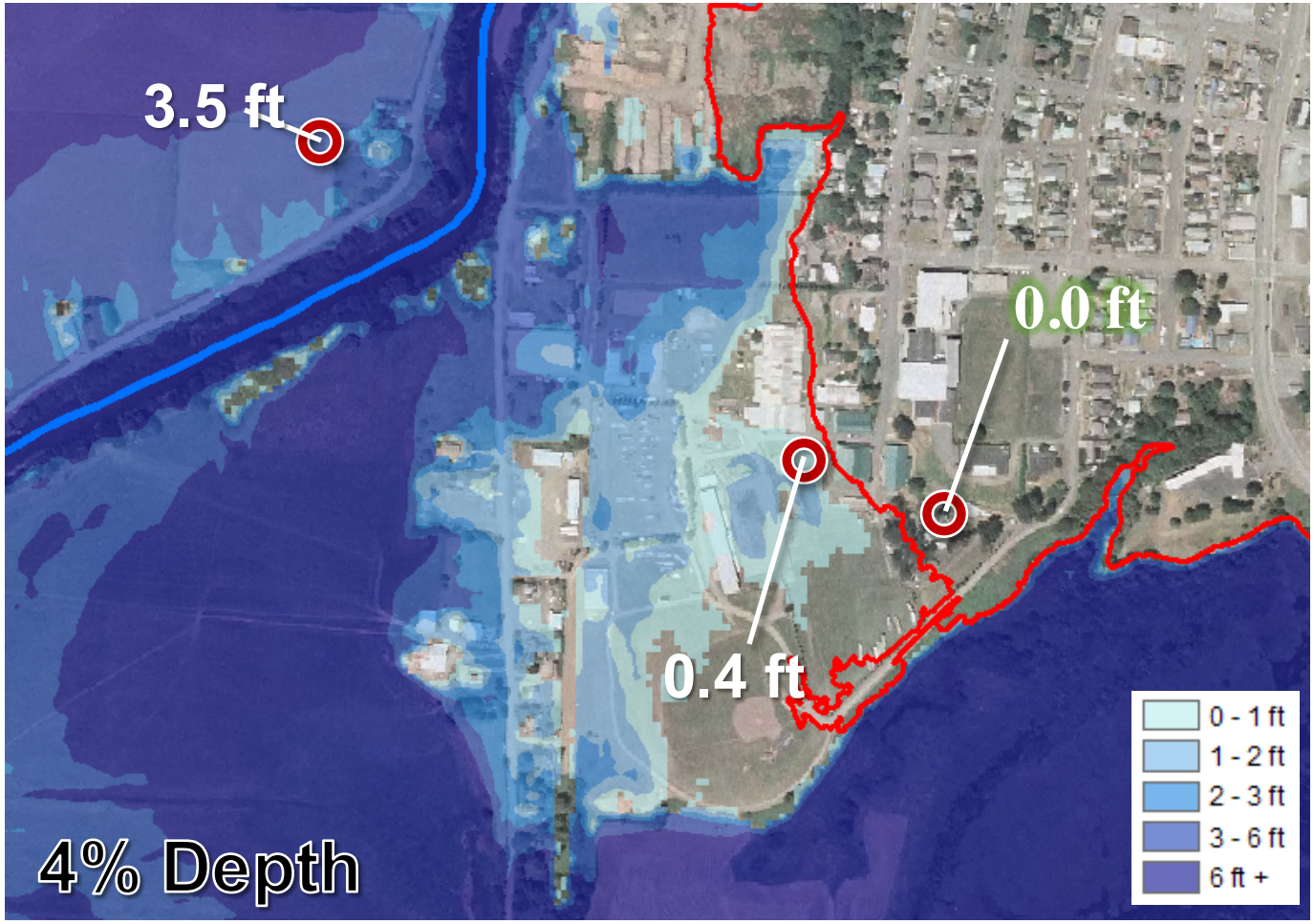
Multi-Frequency Depth (& Other) Grids



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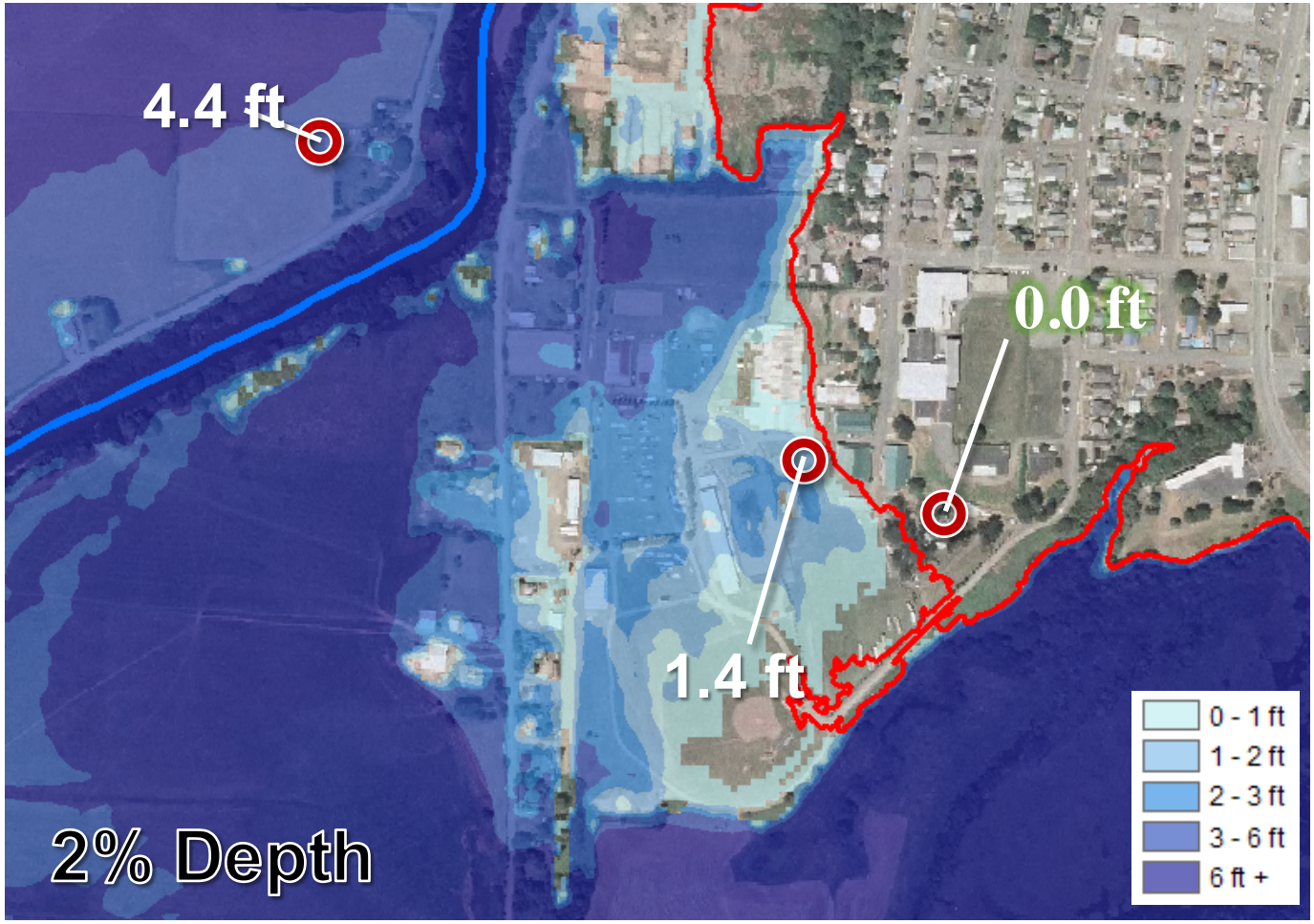

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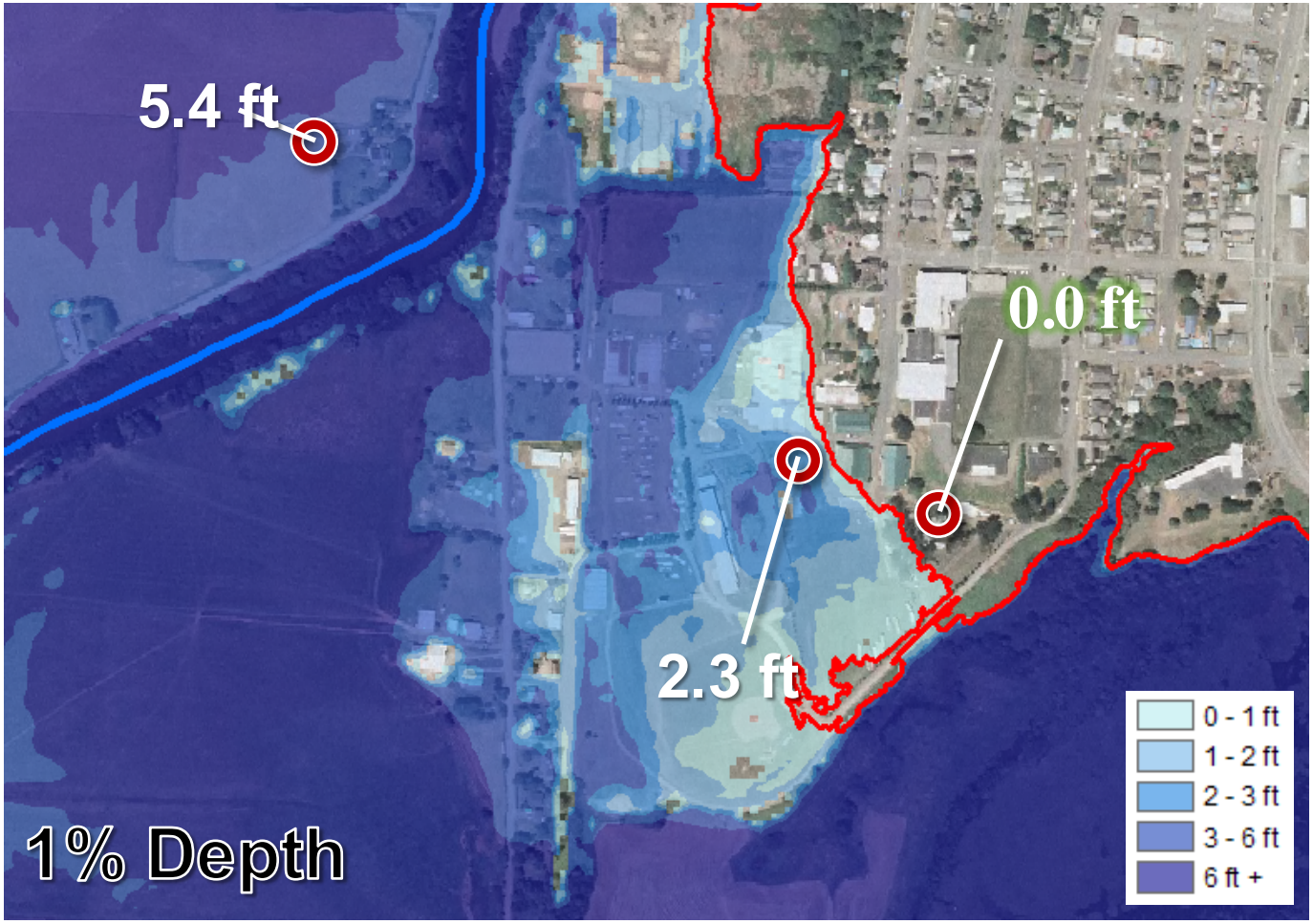

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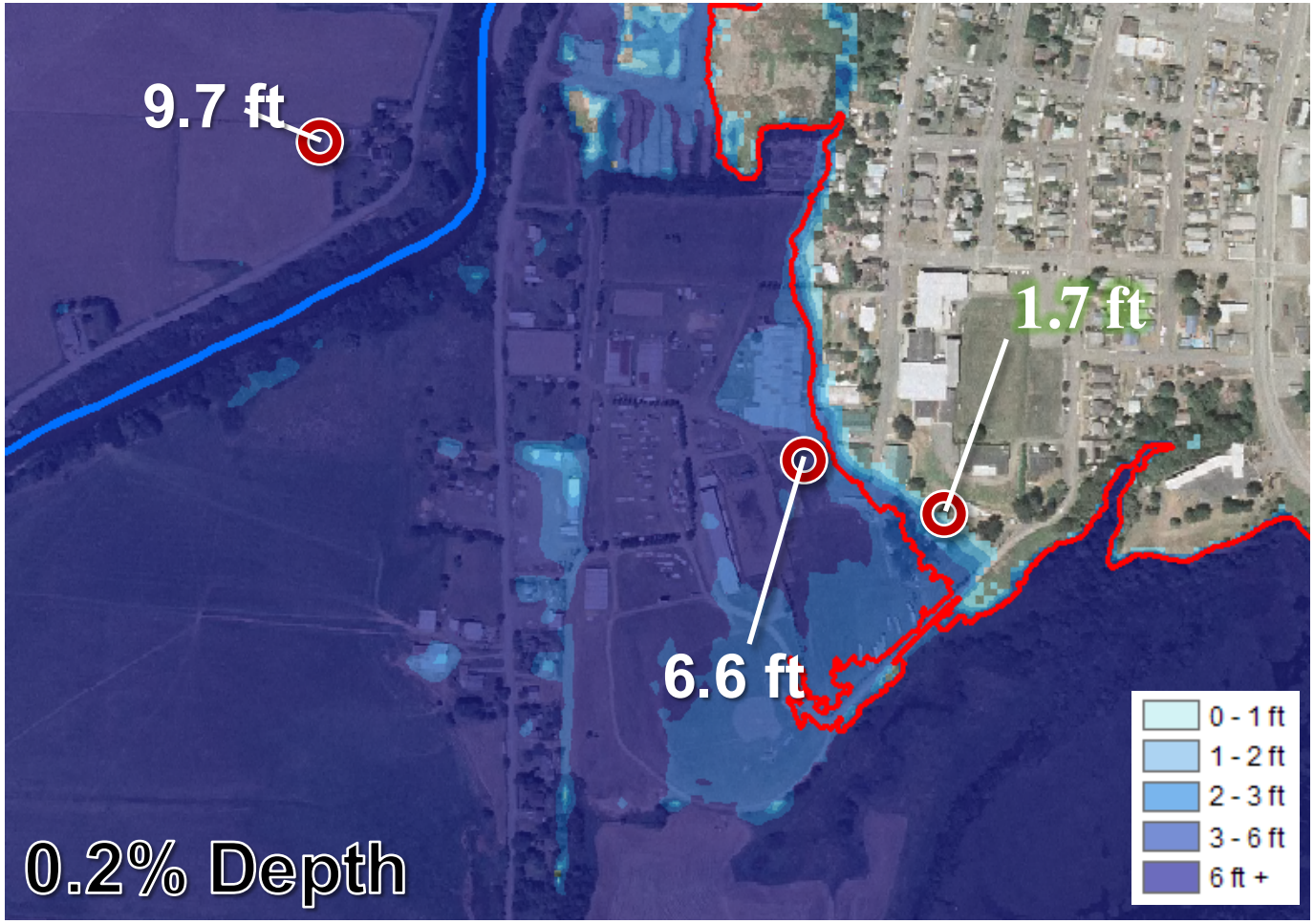

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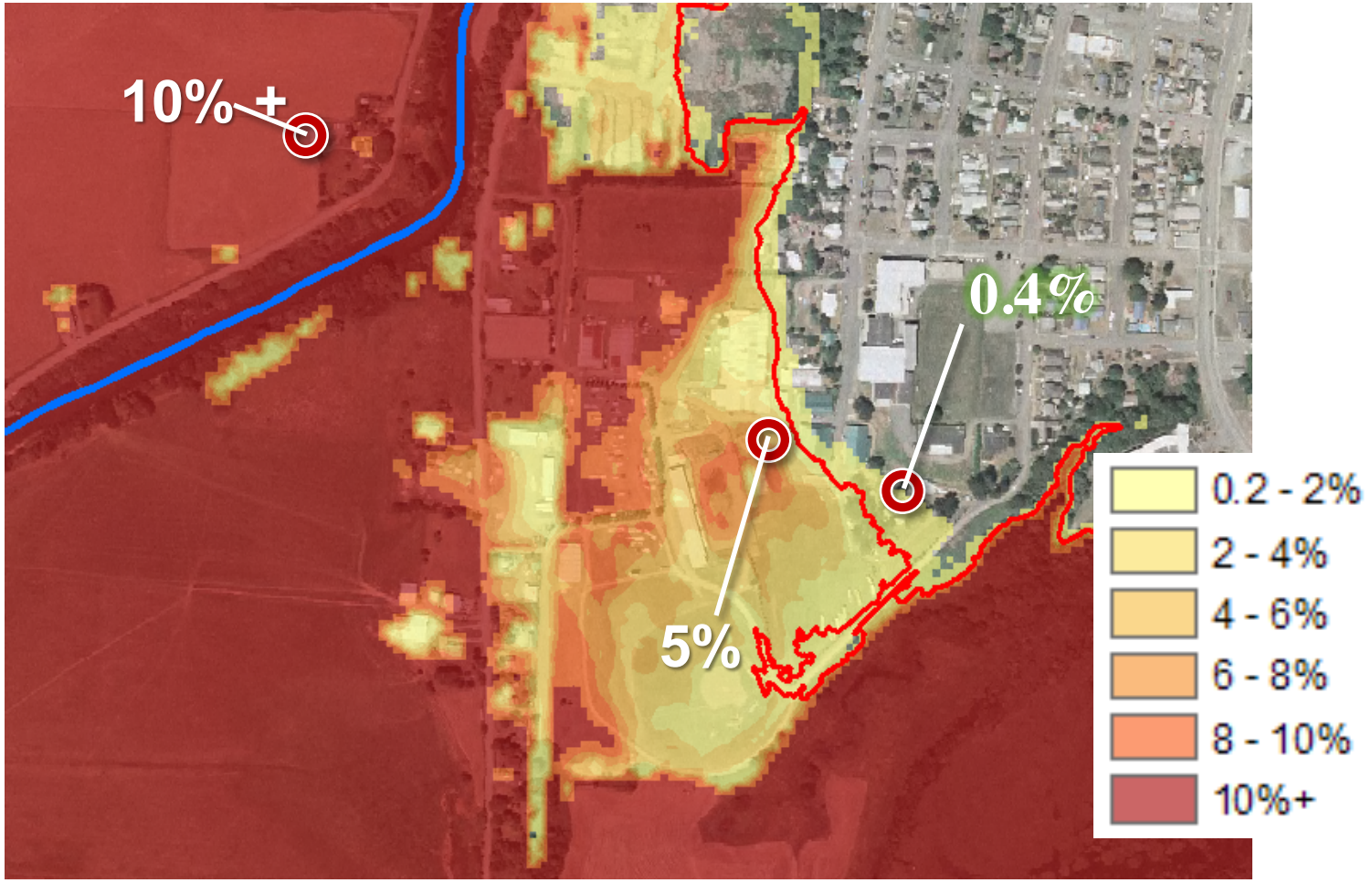
Percent Annual Chance of Flooding



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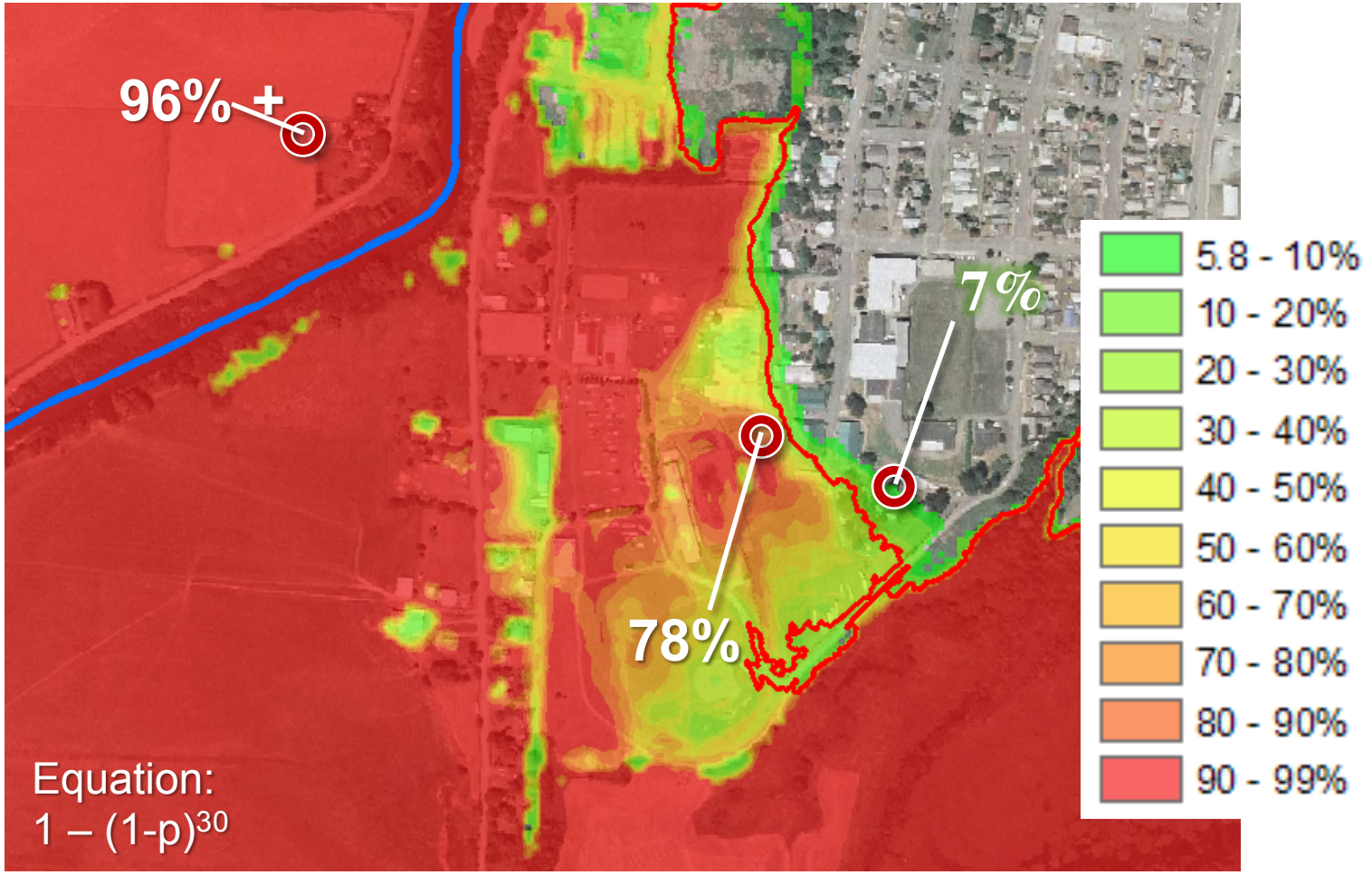
Percent Chance of Flooding Over 30 Years



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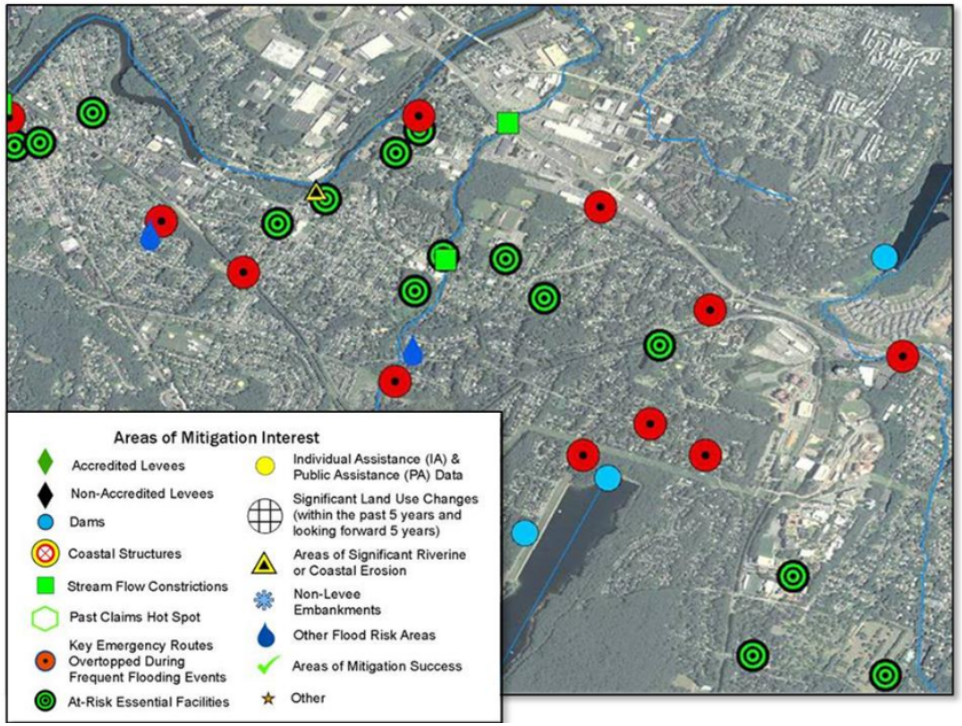
Area of Mitigation Interest (AoMI)

- An AoMI highlights areas of concern identified during scoping and the engineering process.
- Includes repetitive loss hotspots, community identified concerns, and other data points.
- Results can assist communities in prioritizing day-to-day work, infrastructure improvements, and mitigation projects.



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Watershed Snapshot

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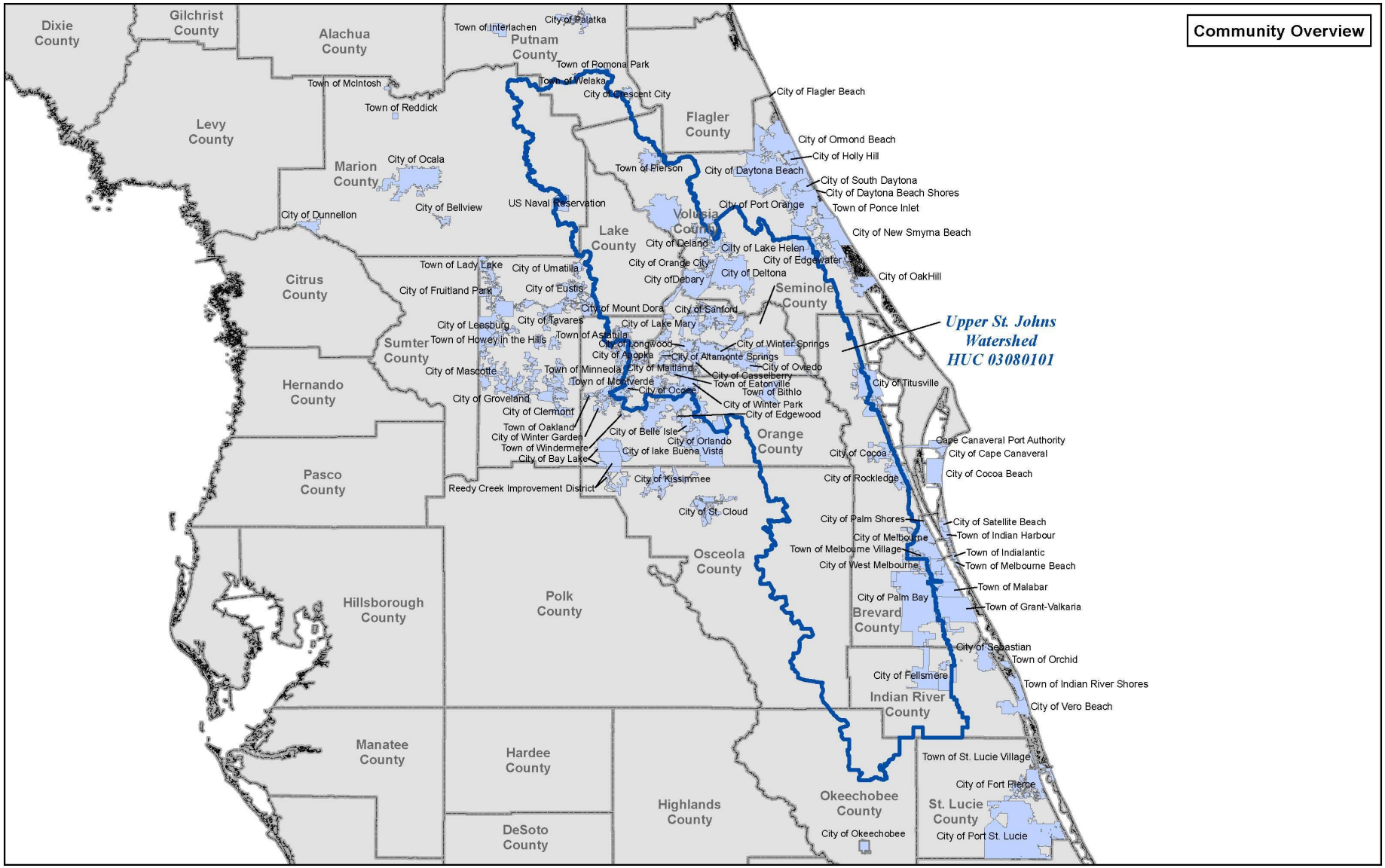
Upper St. Johns Watershed



Discovery Data Collected to Date

- Effective Flood Data
- Coordinated Needs Management Strategy (CNMS) Results
- Letters of Map Revision (LOMRs)
- Historical Flood Information
- Hazard Mitigation Plans and Proposed Projects
- Community Assessments/Community Interviews
- Key Project Stakeholders

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CNMS Critical Elements

If one fails, stream is unverified

1. Major change in gage record
2. Updated and effective discharges differ significantly
3. Inappropriate model methodology
4. Addition / removal of a major flood control structure
5. Channel reconfiguration outside the SFHA
6. Five or more new or removed hydraulic structures
7. Significant channel fill or scour

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CNMS Secondary Elements

If four fail, stream is unverified

1. Rural regression equations in urban area
2. Repetitive losses outside the SFHA
3. Increase of 50%+ in impervious area
4. Four or less new or removed hydraulic structures
5. Channel improvements
6. Availability of better topographic data
7. Changes in vegetation or land use
8. Failure to identify Primary Frontal Dune
9. Storms with high water marks
10. New regression equations

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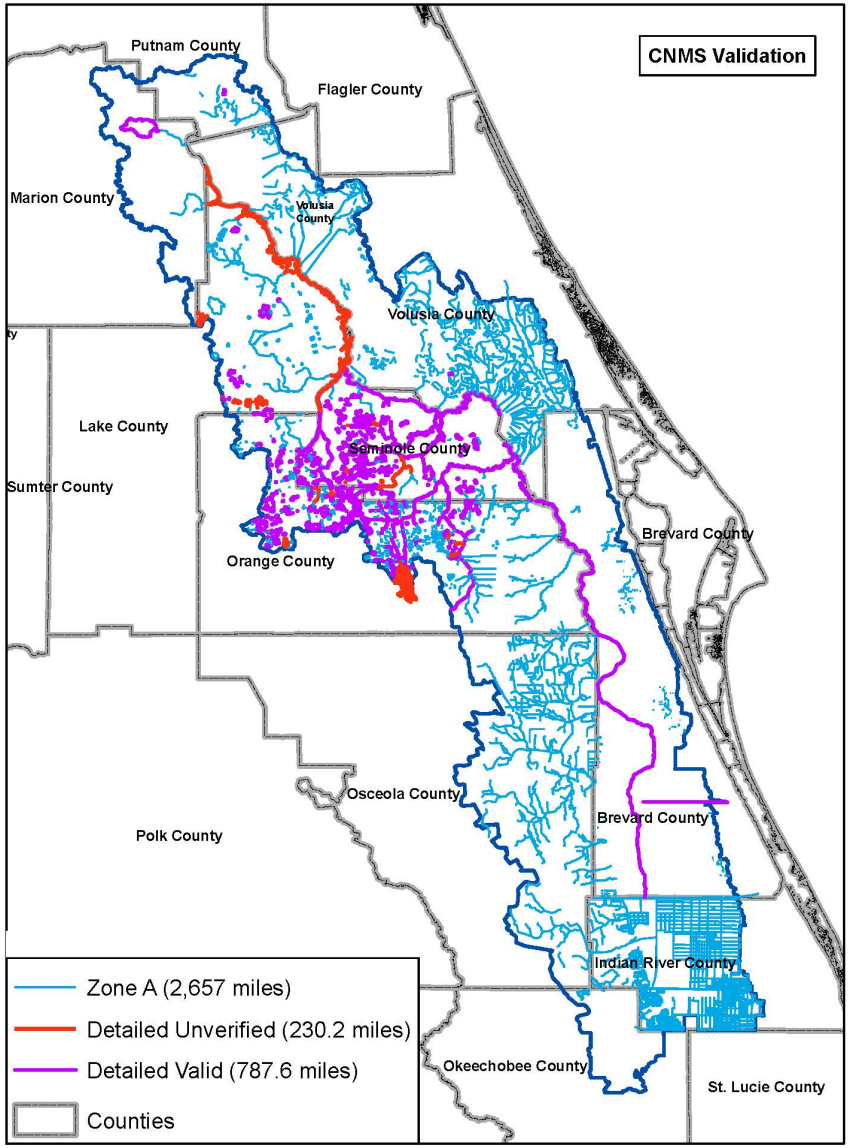
CNMS Results



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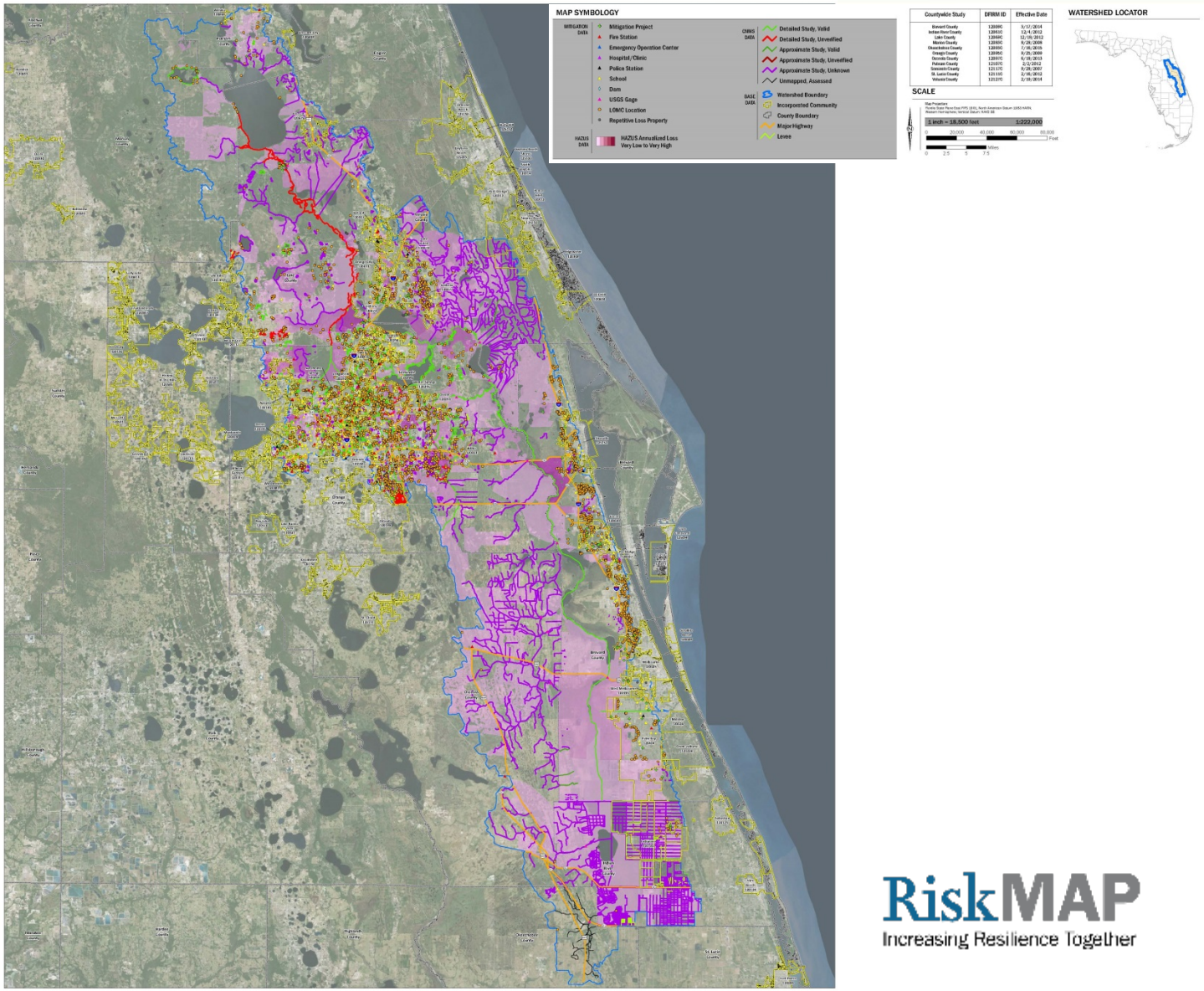
Your Discovery Map



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Local Knowledge Is Critical!

- **Can you provide us with any additional information?**
  - Completed or Planned Engineering Studies
  - Available GIS Data
  - Development Plans
  - Completed or Planned Mitigation Activities
  - Stormwater Management Activities
  - Outreach / Engagement Activities
  - Additional Stakeholders

Mitigation Planning

- **Hazard Mitigation Plans:**
  - Help guide your decisions on mitigation activities for all hazards you face
  - Are an important resource responsible for responding to disasters
  - Can help you apply for assistance to take action

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Mitigation Plan Expiration Dates

Upper St. Johns Watershed	Plan Expiration
Brevard County	August 28, 2020
Indian River County	August 12, 2020
Lake County	February 10, 2021
Marion County	May 19, 2021
Okeechobee County	August 1, 2016 - *Update Pending*
Orange County	February 26, 2015 - *Expired*
Osceola County	December 22, 2020
Putnam County	August 5, 2020
Seminole County	May 5, 2020
St. Lucie County	June 21, 2021
Volusia County	July 29, 2020

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Hazard Mitigation Plan Updates

- **How can Risk MAP help with updates?**

Provide risk analyses and assessments that can bolster many community plans (including hazard mitigation)

Can help you identify and prioritize flood mitigation activities

Risk MAP flood risk tools can help you enhance the flood portion of your Hazard Mitigation Plan

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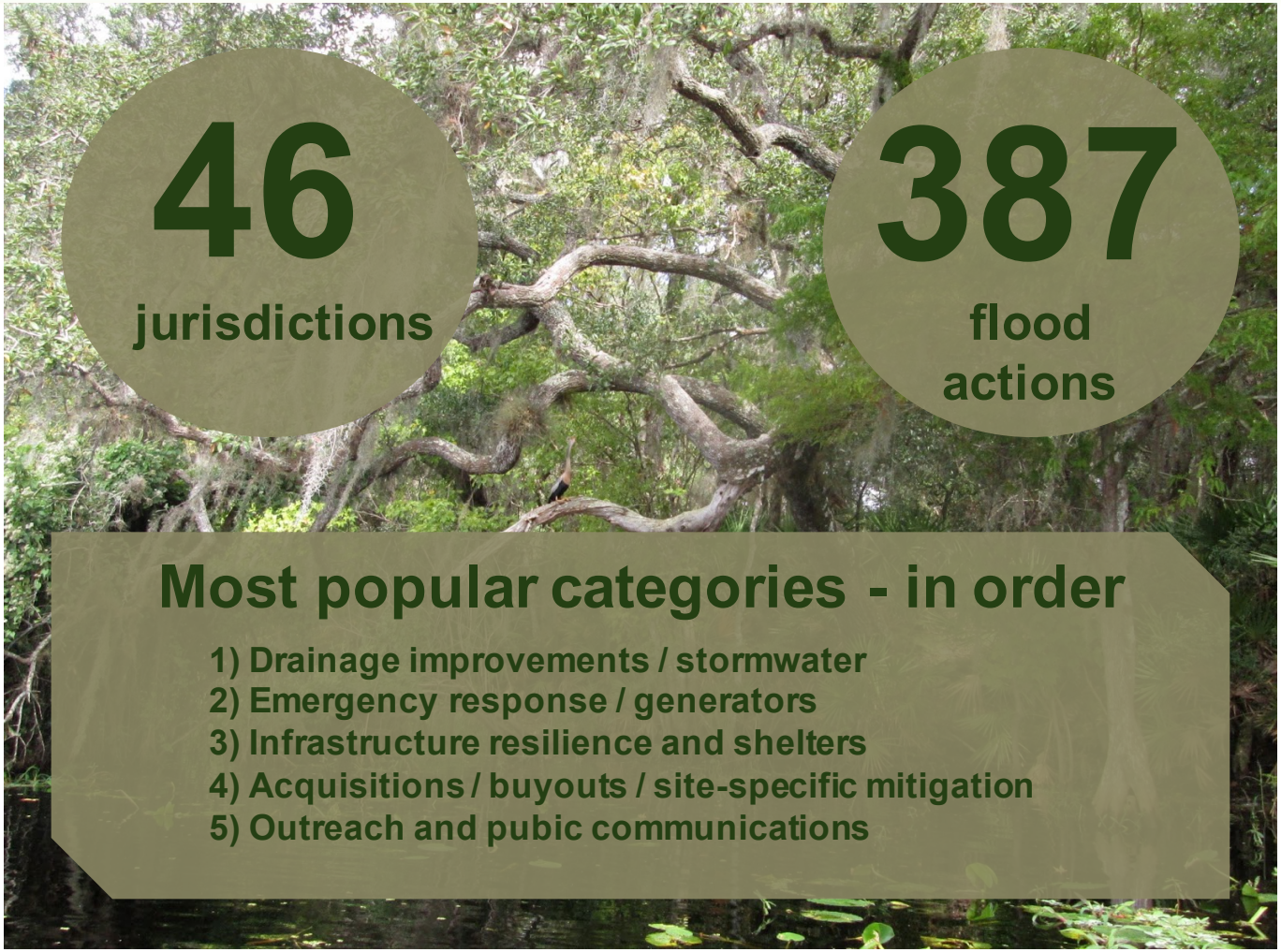
Mitigation By The Numbers



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Potential Mitigation Actions

- **Hazard Reduction**
  - Bridge
  - Culvert
  - Dams
  - Debris removal
  - Drainage Improvements
  - Levees
  - Forest/Vegetation Management
  - Natural Systems Restoration
  - Soil Stabilization or Erosion Control
- **Property & Infrastructure**
  - Acquisition
  - Elevation (Structure and Utilities)
  - Retrofits
  - Safe Room Construction
  - Underground/Protected Utilities
- **Policy**
  - Floodplain Management
  - Open Space Preservation
  - Stormwater Management
  - Subdivision Ordinance
  - Zoning
  - Building and Residential Codes
  - Community Rating System (CRS)
  - Natural Hazard Planning
  - Firewise
  - National Flood Insurance Program (NFIP)
- **Outreach**
  - Mailings and fact sheets
  - Public Expos
  - Community Meetings
  - Partnerships with key organizations/groups

One Example of Risk MAP Advancing Action

- **Gwinnett County, Georgia**
- **Utilized their flood risk products (depth grids) in combination with local data to prioritize critical culvert replacement and other infrastructure projects**
- **Others available online**

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Taking Action

- **Mitigation and risk reduction can only happen at the local level. We're here to support YOU.**
  - What do you need?
- **Risk MAP can provide:**
  - Risk identification and awareness
  - Education on mitigation alternatives
  - Technical and outreach assistance
- **Risk MAP can also provide information about:**
  - Hazard Mitigation Assistance grants
  - Other Federal Agency grants to support mitigation activities
  - Technical assistance provided by related trade associations

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Looking Forward

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Next Steps

Today we will work with you to review the community information we have collected thus far.

Today we will ask you to sign the Project Charter.

In the next few months, we will provide you with an updated Discovery Map and a Discovery Report.

Next, we will determine areas that require further study and how the Risk MAP process will continue in your watershed.

We will encourage and support communication and outreach throughout the study and within the community.

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Communications and Outreach are Essential

- **It's important for communities to keep FEMA informed of any changes in flood risk, new developments, mitigation actions, etc.**
- **Residents look to local officials for flood risk information, which provides an opportunity for you to engage them about:**
  - Flood risk
  - Progress of studies
  - Steps they can take to protect themselves and their property
- **Communication tools are available to help communities communicate about risk and projects**

Additional Resources

- For general FEMA mapping and Letter of Map Change (LOMC) questions contact FEMA's Map Information Exchange (FMIX): 1-877-FEMA MAP (1-877-336-2627) or email a Map Specialist: FEMAMapSpecialist@riskmapcds.com

- Map Service Center (MSC): where you can view effective maps online for free http://www.msc.fema.gov/

- To learn more about the National Flood Insurance Program (NFIP): http://www.floodsmart.gov/floodsmart/ or call 1-888-379-9531

Contact State Partners

- **Steve Martin, CFM:** State NFIP Coordinator, Florida Division of Emergency Management
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- **Melissa Schrader, MPA:** Mitigation Planner, Florida Division of Emergency Management
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Contact FEMA and Contractor Partners

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Breakout Session & Interactive Discussion

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Discovery Maps

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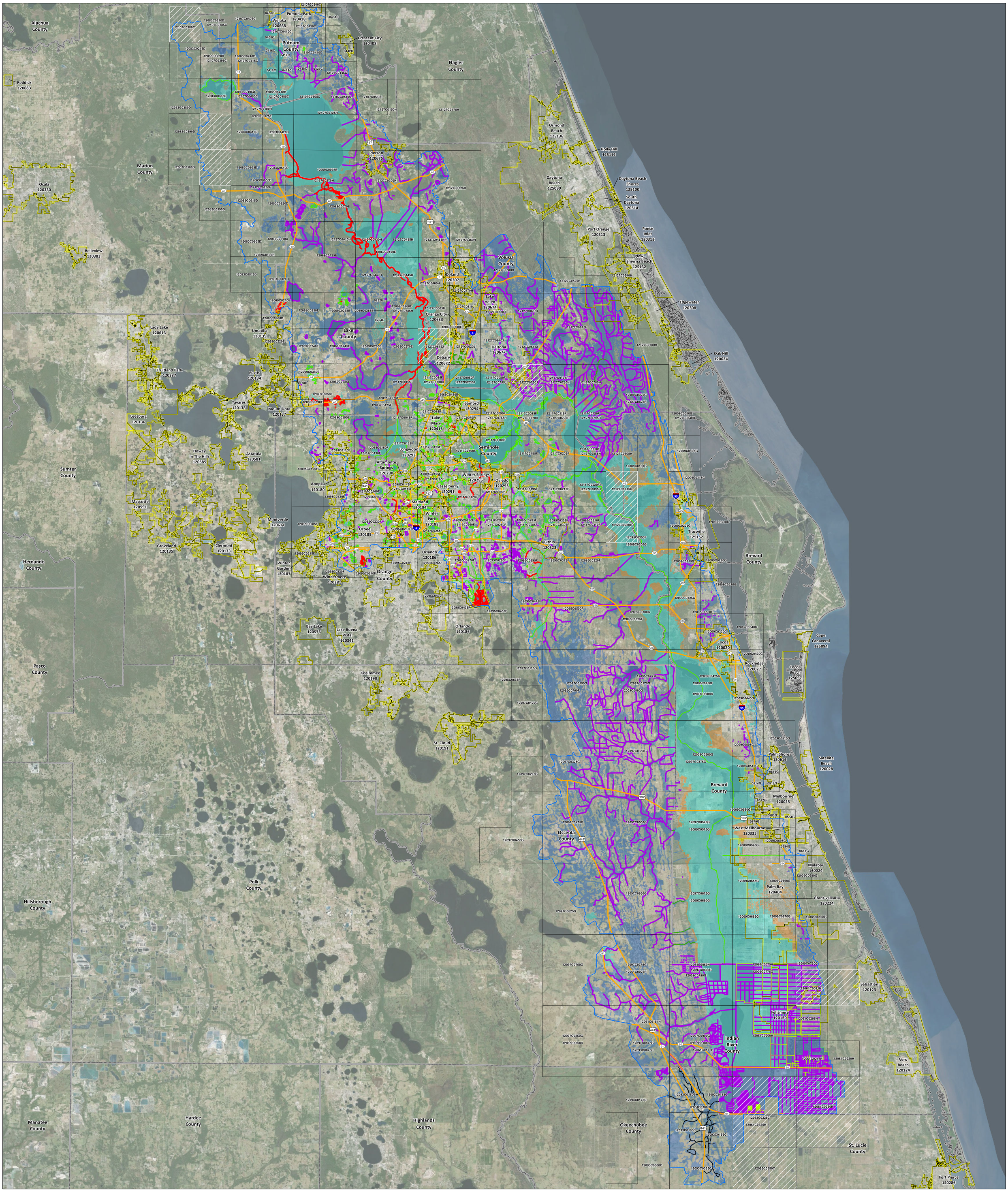

MAP SYMBOLOGY

EFFECTIVE FIRM DATA
- FIRM Panel, Not Printed
- FIRM Panel, Printed
- Approximate Study - Zone A, V
- Detailed Study - Zone AE, AO, AH, VE
- Floodway - Zone AE, AH
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Flood Risk Due to Levee

CNMS DATA
- Detailed Study, Valid
- Detailed Study, Unverified
- Approximate Study, Valid
- Approximate Study, Unverified
- Approximate Study, Unknown
- Unmapped, Assessed

BASE DATA
- Watershed Boundary
- Incorporated Community
- County Boundary
- Major Highway
- Levee

Countywide Study	DFIRM ID	Effective Date
Bervard County	12009C	3/17/2014
Indian River County	12061C	12/4/2012
Lake County	12069C	12/18/2012
Marion County	12083C	8/28/2008
Okeechobee County	12093C	7/16/2015
Orange County	12095C	9/25/2009
Osceola County	12097C	6/18/2013
Putnam County	12107C	2/2/2012
Seminole County	12117C	9/28/2007
St. Lucie County	12111C	2/16/2012
Volusia County	12127C	2/19/2014

SCALE

Map Projection:
Florida State Plane East FIPS 1901; North American Datum 1983 HARN; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 18,500 feet 1:222,000

0 20,000 40,000 60,000 80,000 Feet

0 2.5 5 7.5 Miles

WATERSHED LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map:

Upper St. Johns River Watershed, Florida

Map 1 of 2 - Effective Data

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MAP SYMBOLOGY

MITIGATION DATA
- Mitigation Project
- Fire Station
- Emergency Operation Center
- Hospital/Clinic
- Police Station
- School
- Dam
- USGS Gage
- LOMC Location
- Repetitive Loss Property

HAZUS DATA
- HAZUS Annualized Loss Very Low to Very High

CNMS DATA
- Detailed Study, Valid
- Detailed Study, Unverified
- Approximate Study, Valid
- Approximate Study, Unverified
- Approximate Study, Unknown
- Unmapped, Assessed

BASE DATA
- Watershed Boundary
- Incorporated Community
- County Boundary
- Major Highway
- Levee

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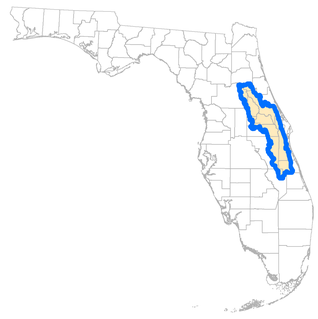

NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map:

Upper St. Johns River Watershed, Florida

Map 2 of 2 - Modeling and Mitigation Data

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Watershed Stakeholders

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Upper St. Johns River Watershed, Florida
Project Team

State of Florida

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Additional Information

FEMA

FEMA

What is Risk MAP?

Risk Mapping, Assessment, and Planning (Risk MAP) is the Federal Emergency Management Agency (FEMA) Program that provides communities with flood information and tools they can use to enhance their mitigation plans and take action to better protect their citizens. Through more precise flood mapping products, risk assessment tools, and planning and outreach support, Risk MAP strengthens local ability to make informed decisions about reducing risk.

The Risk MAP Vision

Through collaboration with State, Tribal, and local entities, Risk MAP delivers quality data that increases public awareness and leads to action that reduces risk to life and property. Risk MAP focuses on products and services beyond the traditional Flood Insurance Rate Map (FIRM) and works with officials to help put flood risk data and assessment tools to use, effectively communicating risk to citizens and enabling communities to enhance their mitigation plans and actions.

Risk MAP Solution

Building on the Risk MAP Multi-Year Plan, FEMA has developed a Risk MAP Solution to achieve the Program's vision. The Solution identifies new strategies and products designed to achieve the goals and objectives laid out in the vision. These strategies and products address project prioritization, elevation data acquisition, a watershed study approach, engineering and mapping, risk assessment, mitigation planning support, and risk communications. The following sections provide the overall objective of each of these strategies.

Vision

Risk MAP will deliver quality data that increases public awareness and leads to action that reduces risk to life and property

Multi-Year Plan

Risk MAP Program Measures

Goal 1: Data Gaps	Goal 2: Awareness & Understanding	Goal 3: Mitigation Planning	Goal 4: Digital Platform	Goal 5: Synergize Programs
Address gaps in flood hazard data	Measurably increase public's awareness & understanding	Lead effective engagement in Mitigation Planning	Provide an enhanced digital platform	Align Risk Analysis programs and develop synergies

The Risk MAP Team

FEMA's ten Regional Offices implement Risk MAP at the local level through close collaboration with community officials.

FEMA Headquarters provides direction, policy, and guidance to enable consistent implementation nationwide.

State, regional, Tribal, and local communities can use enhanced hazard data to make more informed decisions regarding risk.

FEMA's Risk MAP Multi-Year Plan and FY12 Report to Congress

On March 16, 2009, Congress approved the Risk MAP Multi-Year Plan for fiscal years 2010 to 2014. The document outlines the goals, objectives, and strategies for Risk MAP and summarizes FEMA's strategic planning approach and stakeholder roles and responsibilities. For more information please visit http://www.fema.gov/national-flood-insurance-program-0/multi-year-flood-hazard-identification-plan.

FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) Fiscal Year 2012 Report to Congress, dated February 23, 2012, provides an update on FEMA's strategic approach, program budget and measures, and implementation for Risk MAP. For more information about the report please visit http://www.fema.gov/library/viewRecord.do?id=5924

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Project Prioritization

Guides FEMA's investments in engineering, mapping, assessment, and planning support in order to achieve Risk MAP objectives

- Applies a quantitative approach to determine which communities FEMA will study

Elevation Data Acquisition

Improves engineering data and supports risk assessment data development

- Elevation data is essential to the accuracy and reliability of flood hazard data
- Updated digital elevation data enables better risk assessments
- Detailed, digital elevation data supports innovative risk communication products

Watershed Study Approach

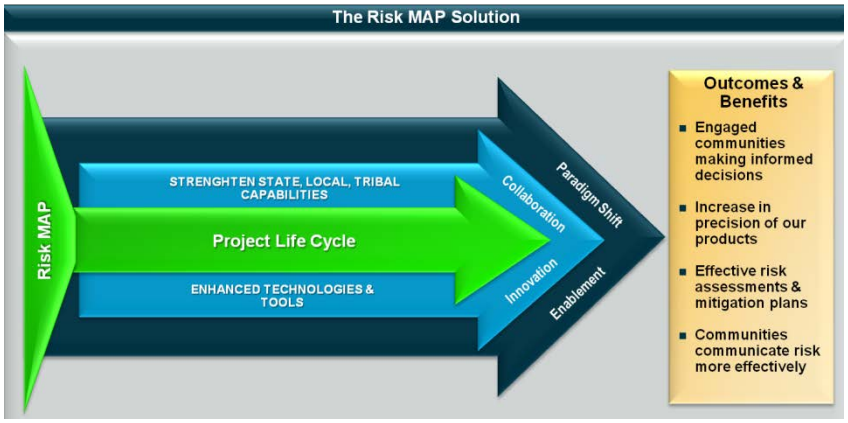
Improves engineering credibility and opens the door to understanding risks in a more holistic, comprehensive way

- Encourages work across community boundaries and a more comprehensive understanding of flooding
- Allows for a better understanding of flood hazards as a result of more comprehensive assessments of stream and tributary relationships
- Provides a framework to evaluate flood risk, engineering need, elevation data acquisition availability and gaps, and availability of community contribution by watershed

Engineering and Mapping

Identifies flood hazards, provides local floodplain management data, supports the National Flood Insurance Program (NFIP), and provides data for risk assessments and mitigation plans for flood hazards

- Includes the scientific collection, processing, and analysis of flood hazard data to provide communities with accurate flood maps and risk assessment products
- Engineering and mapping data provide the foundation for more effective risk communications through assessments and also enable effective mitigation at the local level
- Includes significant investments in the flood mapping of areas impacted by levees and coastal flood hazard



Risk Assessment

Allows communities to make informed mitigation decisions by providing products and technologies that communicate and visualize risks

- Equips communities with the information and tools they need to develop effective mitigation plans
- Provides communities with flood risk information through a Flood Risk Report, Flood Risk Map, and Flood RiskDatabase

Mitigation Planning Support

Provides technical assistance, incentivizes risk reduction activities at the local level, and develops the programmatic infrastructure to monitor community efforts

- Enables communities to assess risks and identify actions to reduce vulnerability to those risks
- Enhances collaboration with and among local stakeholders
- Provides tools to improve communities' understanding of risk and facilitate mitigation planning and local risk reduction efforts
- Incentivizes local effective mitigation planning and risk reduction activities

Risk Communications

Motivates citizens to make informed decisions regarding their risks and encourages communities to take the lead in protecting their constituents

- Enhances local capabilities to communicate effectively with constituents about risk
- Allows for an exchange of information about risk between FEMA and other stakeholders
- Provides customizable communications plans, key messages, and materials to communities
- Facilitates national and local collaboration through key partnerships

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FEMA

Risk MAP and the NFIP

Answers to Frequently Asked Questions

What is the National Flood Insurance Program?

The U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968. Participation in the NFIP is based on an agreement between a community and the Federal Government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk, the Federal Government will make flood insurance available to the community as a financial protection against flood losses. Flood insurance is intended to reduce expensive government disaster assistance and to contain the escalating costs of repairing flood damage to buildings and their contents.

What is a Flood Hazard Map?

Flood hazard maps, also called Flood Insurance Rate Maps or FIRMs, are used by community officials, lenders, insurance agents, and homeowners to identify flood risk, make informed floodplain management decisions, and determine appropriate flood insurance rates. Low- and moderate-risk flood hazard zones are represented on a FIRM by the letter "X" ("B" or "C" on older maps). Inland high-risk areas are designated as "A" zones, coastal high-risk areas are designated as "V" zones.

Why is my community receiving a new map?

Many currently effective maps are 25 to 30 years old. Under its five-year Flood Map Modernization (Map Mod) program, FEMA updated and digitized flood hazard maps Nationwide to provide a more accurate assessment of flood risks and make the maps more user friendly.

What is Risk MAP?

To leverage the successes of Map Mod and further enhance the utility and value of flood hazard mapping, FEMA developed the Risk Mapping Assessment and Planning (Risk MAP) Strategy. Risk MAP combines flood hazard mapping, risk assessment tools, and mitigation planning into one seamless program. The intent of this integrated program is to encourage beneficial partnerships and innovative uses of flood hazard and risk assessment data to ensure the greatest possible reduction in flood losses.

Additional Resources

FEMA maintains a variety of resources to assist communities and property owners in better understanding their flood risk and taking steps to protect themselves from loss of life and property.

For answers to questions about new FIRMs, the status of a request, or other mapping issues:

FEMA Map Information eXchange
1-877-FEMA-MAP
(1-877-336-2627)

FEMA Map Service Center
www.msc.fema.gov

For answers to questions about flood insurance:

The NFIP Call Center
1-888-379-9531

FloodSmart
www.FloodSmart.gov

For general information on FEMA and its programs:

www.FEMA.gov

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How are the maps updated?

FEMA uses state-of-the-art analysis methods and digital engineering applications to define flood risks. Then FEMA overlays the flood risk information on detailed topographic mapping based on Geographic Information System (GIS) or Global Positioning System (GPS) data.

What are the benefits of the new flood hazard maps?

- The digital map can be used by the community to overlay flood hazard data onto other digital maps used for various purposes by planners, tax assessors, emergency managers, and others.
- Updated maps are available to view, print, or purchase on the FEMA Map Service Center Web site at www.msc.fema.gov and may be on State or local Web sites. Paper copies will continue to be available for review at the local community map repository.
- Community officials and planners can see clearly how areas of the community are affected by flood risks and can better plan to mitigate, or avoid altogether, exposure to flood risks.
- Builders and developers have more detailed information on where to build and how construction can affect, and be affected by, local flood hazards.
- Insurance agents and lenders have easy online access to the maps and map updates.
- Private property owners have the same access to maps to help them make informed decisions about protecting their property.

What is a high-risk flood zone?

A high-risk flood zone, also known as a Special Flood Hazard Area (SFHA), is delineated on the FIRM to represent the area subject to inundation by the base (1-percent-annual-chance) flood. This is often called a 100-year flood. However, the base flood is a flood of a certain size, not a flood that will occur once every 100 years. The base flood could occur multiple times in a short period. Certain weather and climate conditions have to happen for this flood to occur. The area that will be affected by the base flood is determined using accepted technology tools and engineering analyses.

How do I determine if my property is in a high-risk flood zone?

There are several ways to determine your property's location on the flood map:

- Contact your community map repository, an office that stores community flood maps for public reference and use.
- Contact your local floodplain administrator.
- Contact the FEMA Map Information eXchange (FMIX) at 1-877-336-2627.
- Visit the FEMA Map Service Center Web site: www.msc.fema.gov.

For information on your flood risk and assistance in obtaining flood insurance coverage, visit www.FloodSmart.gov.

Why is my property shown in a high-risk flood zone? My house has never flooded.

Because of the sporadic occurrence of flood events, it is not possible to base the delineation of flood zones on the lack of flooding occurrences in a particular location or flooding occurrences in recent memory. FEMA's engineering studies develop a long-term projection of flood risk. FEMA estimates that structures in designated SFHAs have a one-in-four chance of incurring flood damage during the term of a 30-year mortgage.

How will the new flood hazard maps affect me?

Flood risks change over time, and new maps will likely result in changes to SFHA boundaries. The boundaries might increase to include properties that were previously in low- or moderate-risk zones, or they might decrease to exclude properties that were previously in high-risk zones. These changes will impact community development. The most direct impact on an affected homeowner will be changes in flood insurance rates and requirements. A Federal flood insurance requirement applies to structures in SFHAs that carry a mortgage backed by a Federally regulated lender or servicer. Flood insurance rates are lower in areas of low- or moderate-risk, but flooding can still occur in these areas. Therefore, FEMA recommends flood insurance coverage, even if it is not required by law or lender.

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What is the process when FEMA changes a FIRM?

FEMA works closely with community officials and uses the best available data to ensure new maps are accurate. Before the maps become effective, FEMA holds meetings with community officials to present, explain and receive feedback on the maps. FEMA then publishes two notices in local papers to notify officials and property owners that the maps are available for inspection. After the second notice, a 90-day appeal period begins. Appeals must be received within the 90 days and must include technical and/or scientific data to demonstrate that the proposed Base Flood Elevations (BFEs) are scientifically or technically incorrect. Non-technical concerns, such as incorrect street names, discrepancies in community boundaries, etc., can also be raised during this time. If FEMA and the community are unable to agree on the resolution of an appeal, the community can request a review by an independent Scientific Resolution Panel.

When will the new maps become effective?

After all appeals are resolved, FEMA issues a Letter of Final Determination (LFD). The new map becomes effective six months after the date the LFD is issued.

What will happen if the flood zone designation for my property changes from low- or moderate-risk to high-risk?

If you have a mortgage or a home equity line of credit, your lender will likely require you to purchase flood insurance. However, if your structure was built in compliance with the FIRM in effect at the time of construction, FEMA's "grandfather" rules may benefit you. If continuous flood insurance coverage has been maintained, you will have the option of using the current rating criteria for your property or having the rate based on the flood zone or BFE in effect when the building was originally built.

What if my home or business is shown in a high-risk area on the FIRM and I disagree with the designation?

Because of scale limitations, FIRMs cannot reflect every rise in terrain, and some areas of high ground may be included in high-risk areas. FEMA developed the Letter of Map Amendment (LOMA) process to address this situation. The LOMA process allows property owners to request an official FEMA flood zone determination for their property. There is no fee for FEMA's review of a LOMA request, but the property owner is responsible for providing site-specific property information, much of which is likely available from the local government. If the submitted information supports the request, FEMA will issue an official document removing the high-risk designation from the property, and the mandatory Federal flood insurance requirement will no longer apply. A lender may still require flood insurance as a condition of the loan, but premiums are lower for structures outside the high-risk area. More information about the LOMA process can be found at: http://www.fema.gov/letter-map-amendment-letter-map-revision-based-fill-process.

Should I wait for my lender to require me to buy flood insurance?

If you wait for your lender to require you to purchase flood insurance, you will miss out on the savings that might be available to you under the grandfather rule. In addition, if you are currently in a low- or moderate-risk zone, you may be eligible for a Preferred Risk Policy, which offers substantial savings over a Standard Flood Insurance Policy (SFIP). As of January 1, 2011, property owners whose properties will be shown in high-risk zones can retain their PRP rate for two years after the new map becomes effective. Upon the next renewal, the policy will then be converted to a SFIP, but property owners can still take advantage of the grandfather rule and other cost savings. Your flood insurance agent can help you get the best available rate for your structure and take advantage of any discounts that may be available.

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Risk MAP Discovery

The Goal

To work closely with communities to better understand local flood risk, mitigation efforts, and other topics
and spark watershed-wide discussions about increasing resilience to flooding. The Discovery process of FEMA's Risk MAP program helps communities identify areas at risk for flooding and solutions for reducing that risk.

The Partners

During Discovery, FEMA partners with:

- Community and Tribal officials, including leaders, floodplain administrators, engineers, watershed council representatives, planners, emergency managers, and GIS specialists
- Federal, State, and regional, non-profit organizations concerned with flooding or land use
- Other locally identified stakeholders

The Meeting

Once communities provide FEMA with local flood risk and other data, FEMA schedules a Discovery Meeting to:

- Review and validate the flood risk data gathered to date
- Discuss the community or Tribe's flooding history, development plans, flood mapping needs, and flood risk concerns
- Review stormwater, floodplain management, and other community activities that relate to flood risk
- Discuss the vision for the watershed's future, as well as the importance of mitigation planning and community outreach

Learn More

To learn more about Discovery and the types and formats of data communities can contribute, contact your Regional Office (see *http://www.fema.gov/regional-operations* for details). We look forward to working with you.

Related FEMA Programs

FloodSmart
www.floodsmart.gov

Hazard Mitigation Assistance
http://www.fema.gov/hazard-mitigation-assistance

Community Rating System
http://www.fema.gov/national-flood-insurance-program/community-rating-system

National Dam Safety Program
http://www.fema.gov/regional-interagency-steering-committee-and-regional-advisory-council

National Hurricane Program
http://www.ready.gov/hurricanes

FEMA

FEMA B-778
Catalog No. 11122-1

http://www.fema.gov/rm-main
1–877–FEMA MAP

Risk MAP Discovery

Capturing a More Complete Picture of Your Watershed

FEMA B-778 / November 2012

FEMA

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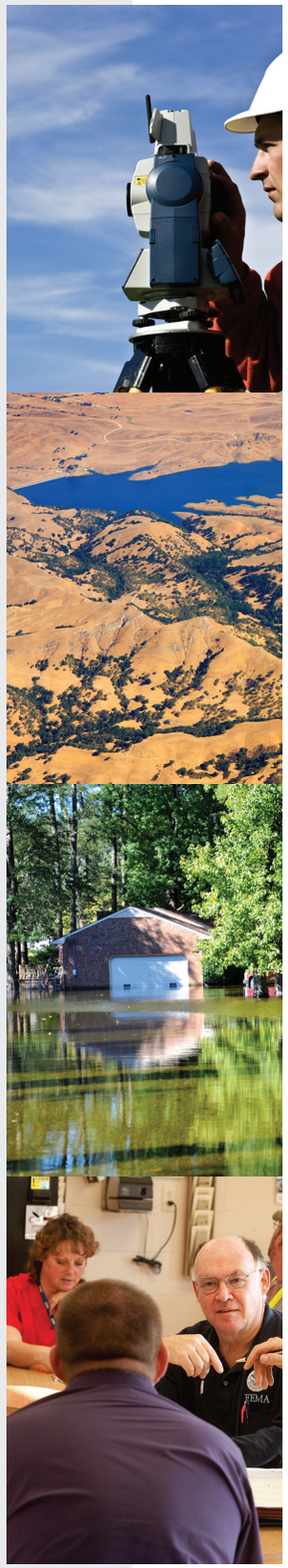
Discovery and Risk MAP

The FEMA Risk Mapping, Assessment, and Planning, or Risk MAP, program helps communities identify, assess, and reduce their flood risk. Through Risk MAP, FEMA provides information to enhance local mitigation plans, improve community outreach, and increase local resilience to floods.

During Discovery, FEMA:

- Gathers information about local flood risk and flood hazards
- Reviews mitigation plans to understand local mitigation capabilities, hazard risk assessments, and current or future mitigation activities
- Supports communities within the watershed to develop a vision for the watershed's future
- Collects information from communities about their flooding history, development plans, daily operations, and stormwater and floodplain management activities
- Uses all information gathered to determine which areas of the watershed require mapping, risk assessment, or mitigation planning assistance through a Risk MAP project



Local and National Flood Data Tell the Story

The data that FEMA has available at the national and regional levels only tells part of the story. For a holistic picture of a community's flood risk, FEMA relies heavily on information and data provided by the community itself.

Data FEMA Requests *from Communities*

FEMA works with communities to collect and review*:

- Areas of nuisance flooding
- Historical local flooding mitigation activities and grant projects, ongoing and planned
- Comprehensive plans
- Local development and floodplain management plans
- Stormwater management activities
- Community ordinances
- Infrastructure information, especially for levees and new bridges, dams, culverts, and road improvements
- Building footprints or parcel data
- Boundary, hydrography, and transportation layers
- Elevation data
- Flood study needs
- Regional watershed plans
- Details of the current flood risk communication process

Data Available to FEMA *at the National/Regional Level*

FEMA can access and review:

- FEMA-approved mitigation plans
- Previous flood studies
- Numbers of flood insurance policies
- Letters of Map Change
- Average Annualized Loss (AAL) information
- Census data
- National levee and dam inventories*
- Related data from other Federal and State agencies

Why Is this Important?

Because flood hazards change over time, this effort provides a great opportunity to take a comprehensive look at the components and activities that contribute to your community's and your watershed's flood risk. In addition to providing another perspective, participating in this process will increase your understanding of your flood risk and help you identify proactive steps you can take to protect your community from losses to life and property that often accompany flooding.

** Communities may also have additional data that may help explain their flood risk or hazard. FEMA asks communities to share whatever data they have to provide as complete a picture as possible.*

FEMA

Fact Sheet

Federal Insurance and Mitigation Administration

FEMA's Federal Insurance and Mitigation Administration

Hazard Mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards. Hazard Mitigation focuses on breaking the cycle of disaster damage, reconstruction, and repeated damage.

The Federal Emergency Management Agency's (FEMA's) Federal Insurance and Mitigation Administration (FIMA) implements a variety of programs authorized by Congress that cover the full range of natural hazards. Hazard Mitigation efforts provide value to the American people by (1) creating safer communities by reducing loss of life and property, (2) enabling individuals to recover more rapidly from floods and other disasters, and (3) lessening the financial impact of disasters on the Federal Treasury, States, Tribes and Territorial governments.

Three Main Components of Hazard Mitigation

Effective Hazard Mitigation is achieved through three critical components – Risk Management, Mitigation, and Federal Insurance.

- **Risk Management:** Determining the impact of natural hazards that lead to effective strategies for reducing risk.
- **Mitigation:** Reducing or eliminating long-term risk from hazards on the existing built environment and future construction.
- **Federal Insurance:** Reducing the impact of floods on the Nation by providing affordable flood insurance.

FIMA is organizationally structured to facilitate the three main components of Hazard Mitigation. Within FIMA there is a Risk Management Directorate, Mitigation Directorate and Federal Insurance Directorate.

Risk Management

Risk Management applies engineering, planning, and advanced technology to determine the potential impact of natural hazard events and to develop strategies to manage the risks associated with these hazards.

Risk Management includes assessing critical information both before and after a disaster strikes, developing and maintaining a state-of-the art inventory of flood maps, and supporting multi-hazard mitigation planning.

Program areas currently administered by the Risk Management Directorate include the following:

- Flood Hazard Identification and Mapping
- Multi-Hazard Mitigation Planning
- National Dam Safety Program
- National Levee Safety Program
- HAZUS-MH
- Building Science
- National Earthquake Hazards Reduction Program

Mitigation

Mitigation works to reduce risk to life and property through land use planning, floodplain management, the adoption of sound building practices, and a variety of grant programs that support these activities. Hazard Mitigation projects that reduce risk include elevating, relocating, or acquiring properties located in floodplains and returning them to open space, and the reinforcing of buildings in earthquake-prone areas.

The following areas are within the Mitigation Directorate:

- Floodplain Management and the Community Rating System (CRS)
- Hazard Mitigation Assistance (HMA)
  - Hazard Mitigation Grant Program (HMGP)
  - Pre-Disaster Mitigation (PDM)
  - Flood Mitigation Assistance (FMA)

Federal Insurance

The Federal Insurance Directorate manages the insurance aspects of the National Flood Insurance Program (NFIP). The NFIP is a Federal program enabling property owners in participating communities to purchase flood insurance as protection against flood losses, while requiring State and local governments to enforce floodplain management ordinances that reduce future flood damages. Over 22,00 communities currently participate in the NFIP.

ADDITIONAL RESPONSIBILITIES

Office of Environmental Planning and Historic Preservation (OEHP)

While OEHP resides within FIMA, it provides FEMA-wide technical and operational support. OEHP leverages federal environmental policy in reducing risk, meeting the needs of disaster survivors and environmental stakeholders, and protecting federal investments.

It integrates environmental and historic preservation considerations into FEMA's mission of hazard mitigation, response, and recovery. OEHP assists agency staff and non-Federal partners in anticipating and accomplishing environmental and historic preservation reviews required by Federal laws and executive orders.

Hazard Mitigation Cadre Management

The Mitigation Directorate's Insurance and Mitigation Readiness Division coordinates disaster readiness and operations for FIMA, and serves to facilitate integration of Regional and Headquarters processes. Responsibilities include managing the Mitigation disaster workforce at the national level; working with Regional and disaster workforce staff to develop and conduct training; facilitating consensus, standardization, and development of Joint Field Office job aids, tools, and operating procedures; coordinating program activities to support effective service delivery; reviewing and presenting various national emergency management disaster policy updates pertinent to Mitigation; and building relationships with other FEMA programs to support the overall agency disaster operations mission.

FOR MORE INFORMATION

Information about mitigation programs and activities are available from the following sources:

- **Fema.gov:** Additional information about FIMA is available on FEMA's website at: https://www.fema.gov/what-mitigation/federal-insurance-mitigation-administration
- **FloodSmart:** The NFIP created the FloodSmart campaign to educate consumers about their flood risk and encourage them to talk with their insurance agent about their insurance options to financially protect their property with flood insurance. The campaign also works with the insurance community to educate agents about the importance of flood insurance and to help agents attract and retain customers. Floodsmart is located online at: http://www.floodsmart.gov.
- **FEMA Library:** More information on Mitigation programs and policy is available online in the FEMA Library at: http://www.fema.gov/resource-document-library The FEMA Library is a searchable web-based collection of all publicly accessible FEMA information resources, such as: CDs, DVDs, posters and display items, brochures, publications, program regulations and guidelines, and documents. The FEMA Library allows users to locate, download, save, and print items from the web.
- **Best Practices:** The Best Practices Portfolio, located online at: https://www.fema.gov/mitigation-best-practices-portfolio highlights the ideas, activities, projects, and funding sources that help reduce or prevent the impacts of disasters. Visitors to the website may search for Best Practices based on Region or disaster type and may also submit Best Practices from their own community, Region, or State.

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Fact Sheet

Federal Insurance and Mitigation Administration

Floodplain Management

The National Flood Insurance Program

The National Flood Insurance Program (NFIP) was established with the passage of the National Flood Insurance Act of 1968. The NFIP is a Federal program enabling property owners in participating communities to purchase flood insurance as protection against flood losses, while requiring State and local governments to enforce floodplain management regulations that reduce future flood damages. Over 20,000 communities participate in the NFIP.

The NFIP and Floodplain Management

Floodplain management is broadly defined to include all actions that States and communities can take to reduce flood damage to both new and existing buildings and infrastructure. The NFIP plays a critical role in encouraging communities to adopt and enforce floodplain management regulations and to implement broader floodplain management programs. By law, the Federal Emergency Management Agency (FEMA) can only provide flood insurance to those States or communities that adopt and vigorously enforce floodplain management regulations that meet or exceed minimum NFIP requirements.

Managing Flood Risk Through the NFIP

Communities incorporate NFIP requirements into their zoning codes, subdivision ordinances, and/or building codes or they adopt special purpose floodplain management ordinances. The NFIP requirements apply to areas mapped as Special Flood Hazard Areas (SFHAs) on Flood Insurance Rate Maps (FIRMs) issued by FEMA. The SFHA is the area that would be flooded by the "base flood" (defined as the flood that has a 1-percent chance of occurring in any given year; also known as the "100-year flood").

The NFIP requirements include:

- Elevation of new and substantially improved residential structures above the base flood level
- Elevation or dry floodproofing (made watertight) of new or substantially improved non-residential structures
- Regulation of development in floodways, the central portion of a riverine floodplain needed to carry deeper and faster moving water, to ensure that there are no increases in upstream flood elevations
- Additional requirements to protect buildings in coastal areas from the impacts of waves, high velocity, and storm surge

These requirements are the most cost-effective way to reduce the flood risk to new buildings and infrastructure. Structures built to NFIP standards experience 80 percent less damage than structures not built to these standards and have resulted in $1.2 billion per year in reduced flood losses.

Floodplain Management and Hurricanes

FEMA works closely with communities impacted by disasters by providing technical assistance and resources about mitigation measures to protect property from future flood losses. In particular, FEMA provides assistance on NFIP floodplain management requirements, including substantial damage provisions that require heavily damaged buildings to be reconstructed to be stronger and safer. FEMA also works closely with communities on reconstruction strategies to determine the most appropriate mitigation measures to reduce future flood damages, including elevation, acquisition, or relocation of flood-damaged properties. The ultimate goal is to achieve a less

In addition to protecting new buildings, the NFIP substantial improvement and substantial damage requirement ensures that flood protection measures are integrated in structures built before FIRMs were developed. A building is considered substantially improved or substantially damaged when the cost of improving or repairing the building equals or exceeds 50 percent of the market value of the building. When this occurs, the community, which makes the determination, must ensure that the NFIP requirements are applied to these buildings so that they are protected from future flood damages.

Financial Help is Available

Financial help to mitigate damages to existing buildings is provided under the NFIP's Increased Cost of Compliance (ICC) coverage. When a community declares a building substantially damaged or repetitively damaged, insured property owners can receive a claim up to $30,000 to incorporate mitigation measures when rebuilding. To help reduce flood damages to existing buildings, FEMA also provides grants and technical assistance to States and communities to conduct mitigation planning and implement mitigation projects.

The Community Rating System

The NFIP's Community Rating System (CRS) provides discounts on flood insurance premiums in those communities that establish floodplain management programs that go beyond NFIP minimum requirements. Communities can receive credit for more restrictive regulations, acquiring flood-prone properties, and other measures that reduce flood damages and protect floodplains. Over 1,000 communities now participate in the CRS and are taking action to reduce their vulnerab ility to flooding.

Intergovernmental Collaboration

All levels of government have a responsibility to protect citizens and property from flooding. Under the NFIP, the States' and FEMA's roles, include:

State Role: Each State has designated an NFIP State Coordinating Agency as a point of contact for the NFIP. Many States have adopted floodplain management statutes and regulations, and have established and funded their own floodplain management programs. In addition, FEMA offers funding to States to provide technical assistance to communities on the NFIP requirements.

FEMA's Role: FEMA administers the NFIP through its 10 Regional Offices and its Federal Insurance and Mitigation Administration at FEMA Headquarters in Washington, DC. FEMA staff provide extensive technical assistance and training through workshops, visits, and other contacts with community officials. In addition, FEMA staff offer technical assistance to property owners, builders and contractors, architects and engineers, surveyors, and other NFIP constituents on NFIP requirements and mitigation measures. FEMA also has extensive publications on the NFIP, including detailed guidance on mitigation measures that can minimize or eliminate future flood damages. These publications can be found on FEMA's website at: http://www.fema.gov.

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Mitigation Planning

Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended, State, Tribal, and local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects.

Mitigation Planning Process

The planning process promoted by the Federal Emergency Management Agency (FEMA) is as important as the resulting plan because it creates a framework for governments to reduce the negative impacts from future disasters on lives, property, and the economy. Mitigation planning includes the following elements:

Public Involvement – Planning creates a way to solicit and consider input from diverse interests. Involving stakeholders is essential to building community-wide support for the plan. In addition to emergency managers, the planning process involves other government agencies (e.g., zoning, floodplain management, public works, community and economic development), businesses, civic groups, environmental groups, and schools.

Risk Assessment – Mitigation plans identify natural hazards and risks based on history, estimate the potential frequency and magnitude of disasters, and assess the potential losses of life and property. The assessment considers the built environment, including the type and numbers of existing and future buildings, infrastructure, and critical facilities located in or near identified hazard areas.

Mitigation Strategy – Based on the risk assessment, communities develop mitigation goals and objectives, as part of a strategy for mitigating disaster losses. The strategy is a community's approach for implementing mitigation activities that are cost-effective, technically feasible, and environmentally sound as well as allowing strategic investment of limited resources.

Hazard Mitigation

Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards. Hazard mitigation planning is the process State, Tribal, and local governments use to identify risks and vulnerabilities associated with natural disasters, and to develop long-term strategies for protecting people and property from future hazard events.

http://www.fema.gov/multi-hazard-mitigation-planning

RiskMAP
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Benefits of Mitigation Planning

- Increases public awareness and understanding of vulnerabilities as well as support for specific actions to reduce losses from future natural disasters.
- Builds partnerships with diverse stakeholders, thereby maximizing opportunities to leverage data and resources, which can help reduce workloads and achieve shared community objectives. For example, managing floodplain development may not only reduce flood losses, but also protect water quality by restoring natural functions.
- Expands understanding of potential risk reduction measures to include structural and regulatory tools, where available, such as ordinances and building codes. Implementation of local floodplain ordinances prevents an estimated $1.1 billion in flood damages annually.

  Informs development, prioritization, and implementation of mitigation projects. Benefits accrue over the life of the project as losses are avoided from each subsequent hazard event.

Planning Guidance, Tools, and Training

To assist with mitigation planning, FEMA and its partners offer a variety of guidance, training, and informative publications, such as:

- Multi-Hazard Mitigation Planning Guidance, or "Blue Books," designed to increase State, Tribal, and local governments' understanding of the requirements for developing new or updated mitigation plans. They also help Federal and State reviewers fairly and consistently evaluate mitigation plans from different jurisdictions.
- Training sessions, including the following courses: Mitigation Planning Workshop for Local Governments (G318), HAZUS Multi-Hazard/DMA 2000 Risk Assessment (E296), and Protecting Tribal Communities and Acquiring Resources (E344).
- A series of "How-To" guides with information beyond FEMA's basic requirements. The guides focus on initiating and maintaining a planning process that will result in safer communities and are applicable to jurisdictions of all size, resource, and capability levels.

Hazard Mitigation Planning Results

History shows that the physical, financial, and emotional losses caused by disasters can be reduced significantly through hazard mitigation planning. A broad range of activities designed to reduce risk can result from the mitigation planning process. The examples listed below illustrate a range of possible long-term mitigation actions; however, they are not necessarily intended to serve as examples of eligible activities under the FEMA Hazard Mitigation Assistance programs:

- Consider adopting and enforcing regulatory tools, including ordinances, regulations, and building codes, to guide and inform land use, development, and construction decisions in areas affected by hazards. Where authorized, adopt more stringent criteria to provide greater protection for citizens, as conditions may change over time. For example, consider:
  - Exceeding the National Flood Insurance Program (NFIP) floodplain management regulations by elevating structures above the Base Flood Elevation (BFE) in high-risk areas.
  - Creating a buffer area by protecting natural resources, such as floodplains, wetlands, or sensitive habitats. Additional benefits to the community may include improved water quality and recreational opportunities.
- Develop mitigation projects to acquire and demolish flood damaged structures, such as homes or businesses, or to retrofit public buildings, schools, and critical facilities to withstand extreme wind events or ground shaking from earthquakes.

Hazard Mitigation Assistance (HMA)

FEMA's HMA programs fund eligible mitigation activities that reduce future disaster losses and protect life and property. Funding is available for mitigation plan development and updates as well as mitigation projects. For more information on FEMA's HMA programs, visit http://www.fema.gov/hazard-mitigation-assistance.

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Fact Sheet

Federal Insurance and Mitigation Administration

Hazus-MH

Estimating Potential Losses From Disasters

Hazus-MH is a nationally applicable standardized methodology that estimates potential losses from earthquakes, floods, and hurricane winds. Hazus-MH was developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS).

Providing Estimates of Hazard-Related Damage

Hazus-MH is FEMA's risk assessment and loss estimation tool that helps States, communities, and businesses prepare for, mitigate the effects of, respond to, and recover from a hazard event. Hazus-MH provides estimates of hazard-related damage before a disaster occurs and takes into account various impacts of a hazard event.

Potential loss estimates analyzed by Hazus-MH include:

- Physical damage to residential and commercial buildings, schools, critical facilities, and infrastructure;
- Economic loss, including lost jobs, business interruptions, repair and reconstruction costs; and
- Social impacts, including estimates of shelter requirements, displaced households, and population exposed to scenario earthquakes, floods, and hurricanes.

Using GIS Technology

Hazus-MH can quantify the risk for a study area of any size by using geographic information system (GIS) technology to combine hazard layers with national databases, and applying standardized loss estimation and risk assessment methodology. The GIS-based environment allows users to create graphics to help communities visualize and understand their hazard risks and possible solutions. The nationwide databases built into Hazus-MH include datasets on demographics, building stock, essential facilities, transportation, utilities, and high-potential-loss facilities.

Hazus-MH Methodology

Hazus-MH can estimate losses from earthquakes, floods, and hurricane winds by using:

- Ground motion and ground failure information to calculate losses for earthquakes
- Flood frequency, depth, discharge, and velocity for floods
- Information on wind pressure, windborne missiles, and rain for hurricane winds

Hazus-MH Helps Build Safer and Stronger Communities

Hazus-MH can help States and communities:

- Anticipate the scope of disaster-related damage
- Identify areas at risk from hazards that may require special land-use or building codes
- Assess the vulnerability of housing and essential facilities
- Estimate potential losses from specific natural disasters
- Prioritize mitigation projects
- Educate communities about their risk and how to reduce it
- Develop damage prevention, preparedness, response, and recovery plans

Integrated Risk Analysis

Hazus-MH can perform multi-hazard analyses by combining the results from earthquake, flood, and hurricane wind models to provide integrated multi-hazard reports and graphs. Hazus-MH also contains a third-party model that provides access and operational capability to a wide range of natural, manmade, and technological hazard models (nuclear and conventional blast, radiological, chemical, and biological) that can supplement the natural hazard loss estimation capability.

Hazus-MH User Groups Support Mitigation Planning

Hazus-MH User Groups unite the resources of public and private organizations to reduce the risk of loss and respond to natural hazards. By pooling the talents of GIS professionals, risk managers, contingency planners, natural hazard experts, and elected officials, User Groups use Hazus-MH to develop hazard mitigation plans as well as to identify and execute mitigation projects. User Groups throughout the country benefit from group collaboration and the sharing of information, data, and software usage tips.

For information about forming hazard-specific or multi-hazard Hazus-MH User Groups, please consult *How to Start a User Group* (FEMA 404), available online at: http://www.fema.gov/plan/prevent/hazus/hz_users.

Information and Training

FEMA provides many Hazus-MH publications free of charge from the FEMA Distribution Center as well as online. *Hazus: What Could Happen* (FEMA 410) is a video overview of how communities are using Hazus-MH in planning for earthquake, flood, and wind loss mitigation; emergency preparedness; response; and recovery. *Using Hazus-MH for Risk Assessment: How-To Guide* (FEMA 433) helps users prepare standardized, scientifically based risk assessments with Hazus-MH software.

Additional Hazus resources are available online at: http://www.fema.gov/plan/prevent/hazus/hz_resources.

Regularly scheduled Hazus-MH training classes are held at FEMA's Emergency Training Institute (EMI) located on the National Emergency Training Center campus in Emmitsburg, Maryland. Classes range from Basic to Advanced and can benefit emergency managers, GIS specialists, geologists, state and local planners, and others involved in assessment activities. For upcoming training dates, go to: http://www.fema.gov/plan/prevent/hazus/hz_training.

For More Information

Many States also offer Hazus training. For more information, please contact the Hazus Regional Point of Contact (POC) in your area or check online at: http://www.usehazus.com/hugs/contacts/.

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Federal Insurance and Mitigation Administration

Community Rating System

October 2015

The National Flood Insurance Program (NFIP) Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS.

1,368 Communities Participate in the CRS

Nearly 3.8 million policyholders in 1,368 communities participate in the CRS by implementing local mitigation, floodplain management, and outreach activities that exceed the minimum NFIP requirements.

Under the CRS, flood insurance premium rates are discounted to reward community actions that meet the three goals of the CRS, which are: (1) reduce flood damage to insurable property; (2) strengthen and support the insurance aspects of the NFIP; and (3) encourage a comprehensive approach to floodplain management.

Although CRS communities represent only 5 percent of the over 22,000 communities participating in the NFIP, more than 68 percent of all flood insurance policies are written in CRS communities.

CRS Classes

The CRS uses a Class rating system that is similar to fire insurance rating to determine flood insurance premium reductions for residents. CRS Classes* are rated from 9 to 1. Today, most communities enter the program at a CRS Class 9 or Class 8 rating, which entitles residents in Special Flood Hazard Areas (SFHAs) to a 5 percent discount on their flood insurance premiums for a Class 9 or a 10 percent discount for Class 8. As a community engages in additional mitigation activities, its residents become eligible for increased NFIP policy premium discounts. Each CRS Class improvement produces a 5 percent greater discount on flood insurance premiums for properties in the SFHA.

Best of the Best

Four communities occupy the highest levels of the CRS. Each has developed a floodplain management program tailored to its own particular hazards, character, and goals. Under these programs, each community carries out numerous and varied activities, many of which are credited by the CRS. The average discount in policyholder premiums varies according to a community's CRS Class and the average amount of insurance coverage in place. Some highlights:

Roseville, California was the first to reach the highest CRS rating (Class 1). Damaging floods in 1995 spurred Roseville to strengthen and broaden its floodplain management program. Today the City earns points for almost all CRS creditable activities. The average premium discount for policies in the Special Flood Hazard Area (SFHA) is $850.

Comprehensive planning for floodplain management has been a key contributor to **Tulsa, Oklahoma's** progress in reducing flood damage from the dozens of creeks within its jurisdiction. The City (Class 2) has cleared more than 900 buildings from its floodplains. The average premium discount for policies in the SFHA is $630.

King County, Washington (Class 2) has preserved more than 100,000 acres of floodplain open space and receives additional CRS credit for maintaining it in a natural state. The average premium discount for policies in the SFHA is $664.

Pierce County, Washington (Class 2) maintains over 80 miles of river levees. County officials annually mail informational brochures to all floodplain residents. The average premium discount for policies in the SFHA is $687.

* CRS Class changes occur on May 1 and October 1 of each year. The data contained in this fact sheet were current through October 2015.

CRS Credit

A community accrues points to improve its CRS Class rating and receive increasingly higher discounts. Points are awarded for engaging in any of 19 creditable activities, organized under four categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Warning and response.

Formulas and adjustment factors are used to calculate credit points for each activity.

The communities listed below are among those that have qualified for the greatest premium discounts:

Class 1: Roseville, California

Class 2: Tulsa, Oklahoma
King County, Washington
Pierce County, Washington

Class 3: Sacramento County, California
Ocala, Florida
Louisville-Jefferson County, Kentucky

Class 4: Fort Collins, Colorado
Charleston County, South Carolina
Maricopa County, Arizona
Thurston County, Washington

Benefits of the CRS

Lower cost flood insurance rates are only one of the rewards a community receives from participating in the CRS. Other benefits include:

- Citizens and property owners in CRS communities have increased opportunities to learn about risk, evaluate their individual vulnerabilities, and take action to protect themselves, as well as their homes and businesses.
- CRS floodplain management activities provide enhanced public safety, reduced damage to property and public infrastructure, and avoidance of economic disruption and loss.
- Communities can evaluate the effectiveness of their flood programs against a nationally recognized benchmark.
- Technical assistance in designing and implementing some activities is available to community officials at no charge.
- CRS communities have incentives to maintain and improve their flood programs over time.

How to Apply

To apply for CRS participation, a community must initially inform the Federal Emergency Management Agency (FEMA) Regional Office of its interest in applying to the CRS and will eventually submit a CRS application, along with documentation that shows it is implementing the activities for which credit is requested. The application is submitted to the Insurance Services Office, Inc. (ISO)/CRS Specialist. ISO works on behalf of FEMA and insurance companies to review CRS applications, verify communities' credit points, and perform program improvement tasks.

A community's activities and performance are reviewed during a verification visit. FEMA establishes the credit to be granted and notifies the community, the State, insurance companies, and other appropriate parties.

Each year, the community must verify that it is continuing to perform the activities that are being credited by the CRS by submitting an annual recertification. In addition, a community can continue to improve its Class rating by undertaking new mitigation and floodplain management activities that earn even more points.

CRS Training

CRS Specialists are available to assist community officials in applying to the program and in designing, implementing, and documenting the activities that earn even greater premium discounts. A week-long CRS course for local officials is offered free at FEMA's Emergency Management Institute (EMI) on the National Emergency Training Center campus in Emmitsburg, Maryland, and can be field deployed in interested states. A series of webinars is offered throughout the year.

For More Information

A list of resources is available at the CRS website: www.fema.gov/national-flood-insurance-program-2/community-rating-system For more information about the CRS or to obtain the CRS application, contact the Insurance Services Office by phone at (317) 848-2898 or by e-mail at nfipcrs@iso.com.

FEMA

The Hazard Mitigation Assistance Grant Programs

HMA
Hazard Mitigation Assistance

Hazard Mitigation Assistance

The Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA) programs present a critical opportunity to reduce the risk to individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds.

A Common Goal

While the statutory origins of the programs differ, all share the common goal of reducing the loss of life and property due to natural hazards.

Funding Disaster Recovery Efforts

The Hazard Mitigation Grant Program (HMGP) may provide funds to States, territories, federally-recognized tribes, local governments, and eligible private non-profits following a Presidential major disaster declaration.

The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State or territory requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration. Federally-recognized tribal governments can submit a request for a major disaster declaration within their impacted areas.

The Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, territories, federally-recognized tribes, and local communities in implementing a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future disasters.

The Flood Mitigation Assistance (FMA) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of mitigating flood damaged properties to reduce or eliminate claims under the National Flood Insurance Program (NFIP).

Additional HMA resources, including the HMA Guidance, may be accessed at http://www.fema.gov/hazard-mitigation-assistance

OR SCAN HERE

Available Funding

PDM and FMA funding depend on the amounts Congress appropriates each year.

HMGP funding is usually 15 percent of the amount of Federal assistance provided to a State, territory, or federally-recognized tribe following a Presidentially declared disaster.

General Requirements

All mitigation projects must be cost-effective, technically feasible and effective, and meet Environmental Planning and Historic Preservation (EHP) requirements in accordance with HMA Guidance. In addition, all mitigation activities must adhere to all relevant statutes, regulations, and requirements including other applicable Federal, State, territorial, federally-recognized tribal, and local laws, implementing regulations, and Executive Orders.

All Applicants and subapplicants must have hazard mitigation plans that meet the requirements of 44 CFR Part 201.

Program Comparisons

Cost Sharing

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent of eligible costs are derived from non-Federal sources.

The table below outlines the Federal and State cost share requirements.

Program Cost Share Requirements	Mitigation Activity Award (Percent of Federal/ Non-Federal Share)
HMGP	75 / 25
PDM	75 / 25
PDM (subrecipient is small impoverished community)	90 / 10
PDM (federally-recognized tribal Recipient is small impoverished community)	90 / 10
FMA (Insured properties and planning grants)	75 / 25
FMA (repetitive loss property with repetitive loss strategy)	90 / 10
FMA (severe repetitive loss property with repetitive loss strategy)	100 / 0

Eligible Applicants and Subapplicants

States, territories, and federally-recognized tribal governments are eligible HMA Applicants. Each State, territory, and federally-recognized tribal government shall designate one agency to serve as the Applicant for each HMA program. All interested subapplicants must apply to the Applicant.

Individuals and businesses may not apply directly to the State, territory, or FEMA, but eligible local governments may apply on their behalf.

The table below identifies, in general, eligible subapplicants.

Eligible Subapplicants	HMGP	PDM	FMA
State agencies	✔	✔	✔
Federally-recognized tribes	✔	✔	✔
Local governments/communities*	✔	✔	✔
Private nonprofit organizations (PNPs)	✔		

✔ = Subapplicant is eligible for program funding

* Local governments/community may include non federally-recognized tribes, or consistent with definition of local government at 44 CFR 201.2, may include any Indian tribe or authorized tribal organization, or Alaska Native village or organization that is not federally-recognized per 25 U.S.C. 479a et seq.

Eligible Activities

The table below summarizes eligible activities that may be funded by HMA programs. Detailed descriptions of these activities can be found in the HMA Guidance.

Eligible Activities		HMGP	PDM	FMA
1.	**Mitigation Projects**	✔	✔	✔
	Property Acquisition and Structure Demolition	✔	✔	✔
	Property Acquisition and Structure Relocation	✔	✔	✔
	Structure Elevation	✔	✔	✔
	Mitigation Reconstruction	✔	✔	✔
	Dry Floodproofing of Historic Residential Structures	✔	✔	✔
	Dry Floodproofing of Non-Residential Structures	✔	✔	✔
	Generators	✔	✔	
	Localized Flood Risk Reduction Projects	✔	✔	✔
	Non-Localized Flood Risk Reduction Projects	✔	✔	
	Structural Retrofitting of Existing Buildings	✔	✔	✔
	Non-Structural Retrofitting of Existing Buildings and Facilities	✔	✔	✔
	Safe Room Construction	✔	✔	
	Wind Retrofit for One- and Two-Family Residences	✔	✔	
	Infrastructure Retrofit	✔	✔	✔
	Soil Stabilization	✔	✔	✔
	Wildfire Mitigation	✔	✔	
	Post-Disaster Code Enforcement	✔		
	Advance Assistance	✔		
	5 Percent Initiative Projects*	✔		
	Miscellaneous/Other**	✔	✔	✔
2.	**Hazard Mitigation Planning**	✔	✔	✔
	Planning-Related Activities	✔		
3.	**Technical Assistance**			✔
4.	**Management Costs**	✔	✔	✔

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

** Miscellaneous/Other indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Management Costs

For HMGP only: The Recipient may request up to 4.89 percent of the HMGP allocation for management costs. The Recipient is responsible for determining the amount, if any, of funds that will be passed through to the subrecipient(s) for their management costs.

Applicants for PDM and FMA may apply for a maximum of 10 percent of the total funds requested in their award application budget (Federal and non-Federal shares) for management costs to support the project and planning subapplications included as part of their application.

Subapplicants for PDM and FMA may apply for a maximum of 5 percent of the total funds requested in a subapplication for management costs.

National Flood Insurance Program (NFIP) Participation

There are a number of ways that HMA eligibility is related to the NFIP:

Subapplicant Eligibility:

All subapplicants for FMA must be participating in the NFIP, and not be withdrawn or suspended, to be eligible to apply for grant funds. Certain political subdivisions (i.e., regional flood control districts or county governments) may apply and act as subrecipients if they are part of a community that is participating in the NFIP where the political subdivision provides zoning and building code enforcement or planning and community development professional services for that community.

Project Eligibility:

HMGP and PDM mitigation project subapplications for projects sited within a Special Flood Hazard Area (SFHA) are eligible only if the jurisdiction in which the project is located is participating in the NFIP. There is no NFIP participation requirement for HMGP and PDM project subapplications located outside of the SFHA.

Property Eligibility:

Properties included in a project subapplication for FMA funding must be NFIP-insured at the time of the application submittal. Flood insurance must be maintained for the life of the structure.

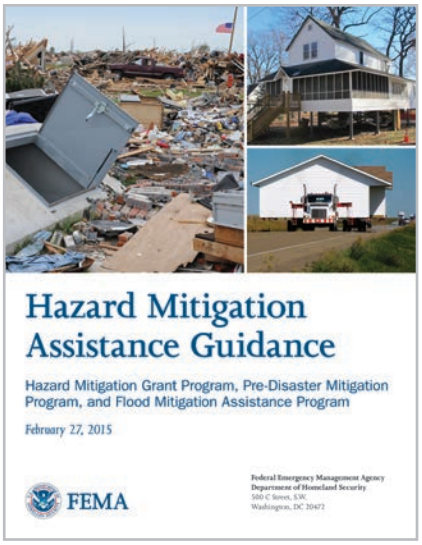
Application Process

Applications for HMGP are processed through the HMGP system (formerly known as National Emergency Management Information System [NEMIS]). Applicants use the Application Development Module of the HMGP System, which enables each Applicant to create project applications and submit them to the appropriate FEMA Region within 12 months of a disaster declaration.

Applications for PDM and FMA are processed through a web-based, electronic grants management system (eGrants), which encompasses the entire grant application process. The eGrants system allows Applicants and subapplicants to apply for and manage their mitigation grant application processes electronically. Applicants and subapplicants can access eGrants at https://portal.fema.gov.

FEMA Review and Selection

FEMA will review all subapplications for eligibility and completeness, cost-effectiveness, technical feasibility and effectiveness, and for EHP compliance. Subapplications that do not pass these reviews will not be considered for funding. FEMA will notify Applicants of the status of their subapplications and will work with Applicants on subapplications identified for further review.



Details about the HMA grant application process can be found in the HMA Guidance, which is available at http://www.fema.gov/hazard-mitigation-assistance

GovDelivery Notifications

Stay up-to-date on the HMA Programs by subscribing to GovDelivery notifications. Have updates delivered to an e-mail address or mobile device. To learn more, visit http://www.fema.gov

Contact Information

HMA Helpline: 866-222-3580

FEMA eGrants Helpdesk: 1-855-228-3362

Benefit-Cost Analysis Helpline: BCHelpline@fema.dhs.gov

For HMA independent study and classroom courses, visit http://training.fema.gov

To find your State Hazard Mitigation Office, visit http://www.fema.gov/state-hazard-mitigation-officers

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Fact Sheet

Federal Insurance and Mitigation Administration

Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Grants (PDM) and Safe Rooms

What is HMGP?

HMGP is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to provide the opportunity to take critical mitigation measures to reduce future loss of life and property during the reconstruction process following a disaster.

HMGP is available, when authorized under a Presidential major disaster declaration, in the Tribe or areas of the State requested by the Governor. The amount of HMGP funding available is based upon the estimated total Federal assistance provided by FEMA for disaster recovery under the Presidential major disaster declaration.

How is Funding for HMGP Determined?

HMGP funding is determined using a formula that takes a percentage of the estimated amount of the total Federal assistance that may be provided under the Presidential disaster declaration. The formula does not take into account administrative costs.

Tribes or States must maintain a FEMA-approved State or Tribal Standard Mitigation Plan in order to be eligible to apply for HMGP funding. This plan is updated every three years.

What are the Roles of Communities, States, and FEMA?

Local jurisdictions develop projects that could reduce property damage from future disasters and submit grant applications to the State. Tribes can submit projects either through the State or directly to FEMA if they choose depending on their mitigation plan status and other factors.

The States and Tribes establish their mitigation priorities, facilitate the development of applications, and submit applications to FEMA. The State or Tribe is responsible for managing and administering the HMGP.

FEMA conducts a final eligibility review to ensure compliance with Federal regulations. Projects must comply with Federal environmental laws and regulations, be cost-effective, technically feasible, and meet additional program criteria.

FEMA encourages property and business owners interested in implementing mitigation activities to contact their local community planning, emergency management, or State Hazard Mitigation office for more information. http://www.fema.gov/state-hazard-mitigation-officers

Who is Eligible to Apply?

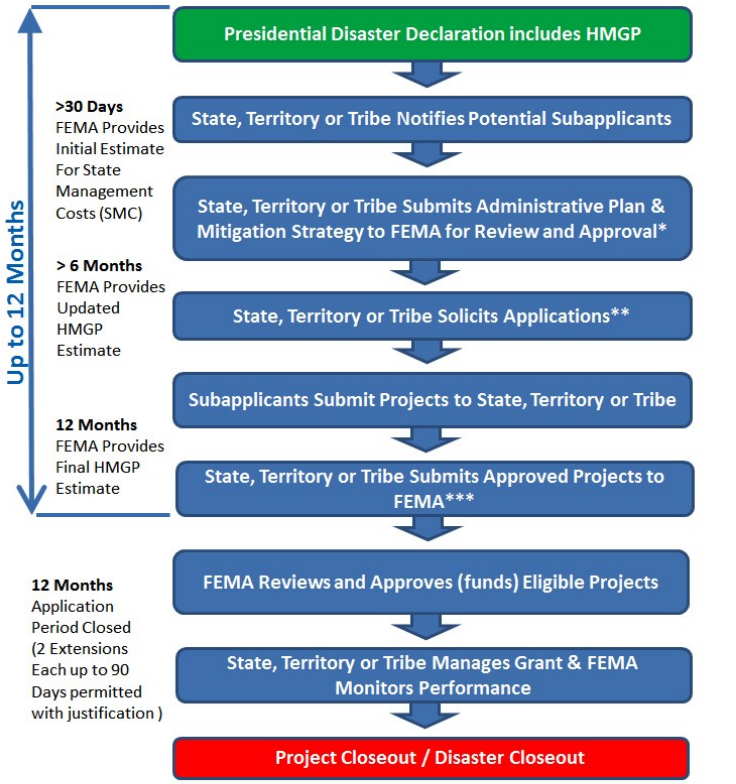
Those eligible to apply for HMGP grants include the emergency management agency or a similar office of the 50 States, the District of Columbia, American Samoa, Guam, the U.S. Virgin Islands, Puerto Rico, the Northern Mariana Islands, and Indian Tribal governments. Each State, Territory, Commonwealth, or Indian Tribal government shall designate one agency to serve as the Applicant for HMGP.

All interested subapplicants must apply to the Applicant. Eligible subapplicants include State agencies, Indian Tribal governments, local governments, and private nonprofit organizations.

Is there a Cost Share for HMGP?

Yes, HMGP grants have a shared cost of 75% Federal funding and 25% non-Federal funding, which is the portion of the funding that the grant applicant or subapplicant will pay.

What is the HMGP Process?



* An HMGP Administrative plan is required prior to receiving HMGP funding.
** Technical assistance can be requested by the Applicant at any point in time.
*** HMGP projects can be submitted at any time during the initial 12 months. States and Tribes are encouraged to submit projects early after the Disaster.

Are Safe Rooms Eligible Under the HMGP? What Requirements Must be Met?

Yes, safe rooms are an eligible activity under the HMGP. Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events, including hurricanes.

This type of project includes retrofits of existing facilities or new safe room construction projects, and applies to both single and multi-use facilities.

To be eligible for HMGP funding a safe room project must comply with FEMA publications P-320 *Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business* or FEMA P-361 *Design and Construction Guidance for Community Safe Rooms.*

What Other Activities are Eligible under HMGP?

A number of activities are eligible under the HMGP to reduce risk to life and property after a disaster event. Please see the below table.

Eligible Activities
1. Mitigation Projects
Property Acquisition and Structure Demolition
Property Acquisition and Structure Relocation
Structure Elevation
Mitigation Reconstruction
Dry Floodproofing of Historic Residential Structures
Dry Floodproofing of Non-residential Structures
Minor Localized Flood Reduction Projects
Structural Retrofitting of Existing Buildings
Non-Structural Retrofitting of Existing Buildings and Facilities
Safe Room Construction
Wind Retrofit for One-and Two-Family Residences
Infrastructure Retrofit
Soil Stabilization
Wildfire Mitigation
Post-Disaster Code Enforcement
Generators
5% Initiative Projects
2. Hazard Mitigation Planning
3. Management Costs

How do I Get More Information About Safe Room Construction?

FEMA's Risk Reduction Division, Building Science Branch, has developed two excellent resources to assist in the construction of individual safe rooms.

FEMA P-320 - ***Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business***

This publication will help a property and business owner decide how best to provide near-absolute protection for themselves, their family, or their employees and answers many questions concerning safe rooms. It includes the results of research that has been underway for more than 30 years, by Texas Tech University's Wind Science and Engineering (WISE; formerly known as the Wind Engineering Research Center or WERC) and other wind engineering research facilities, on the effects of extreme winds on buildings.

FEMA P-320 also provides safe room designs that will show property owners and their builder/contractor how to construct a safe room for their home or small business. Design options include safe rooms located in the basement, in the garage, or in an interior room of a new home or small business building. Other options also provide guidance on how to construct an exterior safe room, either buried underground or attached to the existing building, or how to modify an existing home or small business building to add a safe room inside. These safe rooms are designed to provide near-absolute protection from the extreme winds expected during tornadoes and hurricanes and from flying debris that tornadoes and hurricanes usually generate.

For more information visit: *http://www.fema.gov/safe-room-resources/fema-p-320-taking-shelter-storm-building-safe-room-your-home-or-small-business*

FEMA P-361 - ***Design and Construction Guidance for Community Safe Rooms***

This publication presents design, construction, and operation criteria for both residential and community safe rooms that will provide near-absolute life safety protection during tornado and hurricane events. It provides guidance for architects, engineers, building officials, local officials and emergency managers, and prospective safe room owners and operators about the design, construction, and operation of community safe rooms in extreme-wind events.

For more information visit: *http://www.fema.gov/safe-room-resources/fema-p-361-design-and-construction-guidance-community-safe-rooms*

What are Pre-Disaster Mitigation (PDM) Grants?

Pre-Disaster Mitigation (PDM) Grants provide funds to States, Territories, Tribes and local governments to implement pre-disaster natural hazard mitigation measures that are cost effective and are designed to reduce injuries, loss of life, and damage and destruction of property.

Eligible mitigation measures include: hazard mitigation plans, acquisition of structures, elevation of structures, flood proofing, safe rooms, wind retrofit, minor localized flood reduction projects, etc.

Although PDM is a multi-hazard mitigation program, the majority of projects funded under PDM are related to flood. Some have used PDM to fund the construction of safe rooms (e.g., Alabama, Oklahoma).

The types of projects that are eligible for PDM funding are also eligible for funding under the Hazard Mitigation Grant Program.

Approximately ten percent of PDM funds are used to develop State, Tribal and local hazard mitigation plans.

Each State receives a minimum of $575,000 or one percent of annual appropriated funds, whichever is less. The remaining funds are allocated to States, Territories, Tribes and local governments on a competitive basis.

The Federal cost share for PDM projects is 75 percent.

FEMA has awarded over $600 Million in PDM funds to States, Tribes and local governments since 2005.

Approximately $24 Million is available for PDM in FY 2013.

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Building Community Resilience by Integrating Hazard Mitigation

The Role of Local Leadership

How Can Local Leaders Promote the Integration of Hazard Mitigation into Local Planning?

Local community leaders and decision makers play an important role in setting priorities, providing overarching policy direction, and bringing stakeholders together. Their visibility can be used to spearhead initiatives that promote the importance of integrating hazard mitigation to achieve overall community safety and resilience. In addition, they have the ability to communicate with a broad base of constituents and partners. These qualities are invaluable for the success of an integrated, interdepartmental, multi-jurisdictional hazard mitigation strategy. Here are some ways to promote integrated hazard mitigation solutions:

- **Frame the issue.** On its own, integrating hazard mitigation and safe growth policies can seem like an obscure topic to decision makers and the general public. Frame the issue in terms that resonate with the community, such as economic development, environmental protection, or providing essential public services. Use these issues to highlight the importance of hazard mitigation in supporting these community values.
- **Make safety and resilience a priority.** Ensure that public safety and community resilience are considered in all decisions. When deliberating or voting on an issue, providing policy direction, or setting budgets, ask how that decision affects safety and resilience, and ask which hazard mitigation practices may strengthen the decision.
- **Build partnerships.** Bring stakeholders to the planning table by fostering partnerships among local departments, between agencies, and between communities. Include representatives of interest groups such as environmental organizations, business associations, or professional associations. Make use of technical experts—this helps to provide a more robust knowledge pool for developing ways to integrate hazard mitigation. Invite civic organizations and the general public to participate and provide input.
- **Get the message out.** Use the visibility of a local leader as a platform to champion, or raise awareness on, the importance of hazard mitigation and community resilience. Quickly highlight successful actions and return on investment to promote other actions. Be repetitive and consistent with the message through multiple channels of communication.

FEMA/Norman Lenburg

FEMA/Manny Broussard

Local leaders promote integration of hazard mitigation within the community by framing the issue, making it a priority, building partnerships, and conveying the message. Conveying the message includes demonstrating and celebrating success.

Responsibility for promoting community safety and resilience does not lie with a single person or department. Hazards often cross jurisdictional boundaries, requiring communication and partnerships among neighboring communities and various organizations that can support integration efforts.

What Community Tools Support Community Resilience?

Building or enhancing community resilience does not need to mean expensive structural protection measures. Decisions that are made relating to land use, environmental protection, economic development, capital improvements, government operations, and budgets all have a role to play in mitigating hazard risks. The most effective way to promote resilience at the community level is to integrate the consideration of risk, and ways to reduce or eliminate risk, into all decisions.

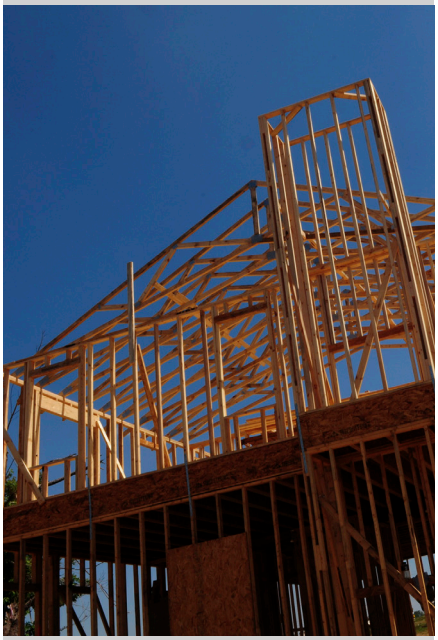
Examples of integrated hazard mitigation solutions include:

- Establishing goals, policies, and objectives that are linked to risk reduction and resiliency in the comprehensive, general, or other community plans;
- Incorporating hazard mitigation standards in permit reviews;
- Using tax increment financing, transportation improvement financing, or other public funding mechanisms to help pay for hazard mitigation measures;
- Using capital improvement programs to fund hazard mitigation measures;
- Using infrastructure improvements to guide growth away from known hazard areas;
- Using zoning and other land use controls to prohibit or discourage hazardous development patterns;
- Preserving natural areas or open space as buffers against known hazards, such as wildfire breaks;
- Preserving or restoring natural functions that minimize hazard impacts, such as wetland restoration;
- Incorporating structural retrofits or relocation of existing buildings or infrastructure during the post-disaster redevelopment process; and
- Incorporating the awareness of hazard risks and hazard mitigation into public outreach practices.

Why is Hazard Mitigation Important?

Hazard mitigation has value on a number of levels. Mitigation creates safer communities by reducing loss of life and damage to property. Mitigation also enables individuals and communities to recover more quickly from disasters. And, mitigation lessens the financial impact of disasters on individuals and all levels of government.

FEMA/Michelle Miller-Freeck



FEMA/Ruth Kennedy

For More Information

Refer to FEMA's integration guidance document, *Integrating Hazard Mitigation Into Local Planning*, available at www.fema.gov/hazard-mitigation-planning-resources

FEMA

Building Community Resilience by Integrating Hazard Mitigation

Integrating Hazard Mitigation Into the Local Comprehensive Plan

FEMA/Jocelyn Augustino

FEMA/Charles Powell

Local comprehensive plans, also referred to as master plans or general plans, provide a framework for the physical design and development of a community over a long-term planning horizon. They address social, economic, and environmental issues by the manner in which they guide overall growth and development. The vision, goals, and policies of the comprehensive plan are routinely implemented through other local planning instruments such as zoning ordinances, subdivision regulations, and capital improvement programs. Integrating hazard mitigation into the local comprehensive plan thereby establishes resilience as an overarching value of a community and provides the opportunity to continuously manage development in a way that does not lead to increased hazard vulnerability.

Land Use and Future Development

Strong land use policies are the foundation of successful comprehensive planning efforts—they establish the general pattern for the location, distribution, density, and type of future development throughout all areas of the community. The land use element of a comprehensive plan is based on an analysis of present and future conditions, including physical setting and natural surroundings. This creates opportunities to guide future growth and development away from areas with known hazards, or to ensure design standards for new or improved construction take potential hazards into account. Land use policies can build community resilience by taking information on the location, frequency, and severity of hazards into consideration and setting forth recommendations that influence development in a way that does not increase risks to life and property.

Transportation

Transportation and land use are intricately linked; therefore, the transportation element can reflect land use principles that reduce the community's vulnerability to hazards. Building community resilience through transportation planning can be accomplished by adopting policies that direct growth away from known hazard areas. Another opportunity to be seized is ensuring that transportation systems and other critical infrastructure are designed to withstand the effects of known hazards so that they still function in the event of an emergency or disaster.

"Hazard Mitigation works best as a policy objective of local planning when it is so completely integrated into the comprehensive plan that it becomes a normal assumption behind all daily planning activities."

American Planning Association, Planning for Post-Disaster Recovery and Reconstruction
http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1558

Housing

Housing policies focus on the provision of safe and sanitary housing to meet existing and future needs of the community. The housing element can help strengthen community resilience by ensuring that the location and design of new or improved housing complies not only with existing building codes, but with potential hazards in mind. Opportunities to strengthen or replace structures identified as vulnerable to hazards can be promoted through existing maintenance or rehabilitation programs, and particularly through policies regarding non-conforming, substantially damaged, or substantially improved properties.

Economic Development

The relationship between economic development and resilience is rooted in the shared objective to sustain and enhance community sustainability. Hazard mitigation can be integrated with economic development policies by promoting commercial or industrial expansion in areas that are not vulnerable to damage or disruption from hazards, and by making community resilience a key feature in attracting, expanding, and retaining businesses and industry.

Public Facilities and Infrastructure

Similar to the transportation element, a community's facilities and infrastructure policies are directly linked to land use patterns and community development. These linkages provide opportunities to build community resilience by establishing policies that limit the extension of public facilities or services and the provision of other capital expenditures in areas that are vulnerable to hazards. Policies may be adopted to ensure critical facilities such as police and fire stations, as well as key infrastructure such as water and wastewater treatment plants, are protected from the effects of hazards. This element also provides opportunities to establish goals and policies in support of mitigation projects such as stormwater drainage improvements or the public acquisition of hazard areas for open space.

Natural Resource Protection

There are an abundance of opportunities to achieve multiple objectives when it comes to hazard mitigation and natural resource protection. Policies designed to preserve or enhance environmental areas of concern, such as wetlands, riparian corridors, and floodplains, often include the added benefit of avoiding or minimizing development in hazard areas. These policies build community resilience by not only protecting lives and property from hazards, but also maintaining natural and beneficial functions of systems that often act as buffers against those hazard effects.

Historic Properties and Cultural Resources

Policies designed to protect and preserve historic and cultural sites, buildings, and other resources may be linked with existing mitigation strategies to prevent damage or losses from hazards—particularly due to the fact that such resources are irreplaceable. The policies aimed at protecting these unique resources, by their very nature, can be tailored in a manner consistent with the location, design, or material to be preserved.

FEMA/Andrea Booher

FEMA/Jennifer Smits

"In the end, it is important both to focus on hazards in a specific element devoted to identifying and assessing the hazards a community faces and to integrate those concerns more broadly into other elements, since hazards do not operate in isolation from the built environment."

American Planning Association, Hazard Mitigation: Integrating Best Practices into Local Planning
http://www.fema.gov/library/viewRecord.do?id=4267

FEMA

Building Community Resilience by Integrating Hazard Mitigation

Social and Economic Benefits

What Makes a Community Resilient?

Resilience is the ability to adapt to changing conditions and prepare for, withstand, and rapidly recover from disruption. Resilient communities proactively protect themselves against hazards, build self-sufficiency, and become more sustainable.

What Are the Benefits of Community Resilience?

Community resilience has multiple social and economic benefits, including:

- **Preventing loss of life and injury.** This is typically of paramount importance to most communities. The value of protecting buildings and infrastructure diminishes significantly if residents and property owners do not feel safe in their homes or places of business.
- **Reducing property damage to homes and businesses.** Minimizing physical damage to residential properties can help avoid expensive displacement costs, in addition to the cost of repairs. Any avoided damage to a business can help reduce loss of revenue and downtime for employees, in addition to the cost of repairs.
- **Reducing business interruption and revenue loss.** Businesses employ workers, provide for community needs and services, and generate revenue, allowing the community, both its members and government, to provide for itself. Reducing business interruption and revenue loss greatly aids in the speed and effectiveness of returning a community to self-sufficiency and vitality after a disaster.
- **Helping to lower emergency response and disaster recovery costs.** Emergency response costs can be lowered significantly when services such as fire safety, search and rescue, medical operations, disaster management, and other related services are needed less. Disaster recovery costs can also be lowered when prolonged activities such as long-term recovery planning, debris management, housing recovery, infrastructure recovery, natural resource recovery, and other related activities are needed less.

FEMA/Adam Dubrowa

"On average, a dollar spent by FEMA on hazard mitigation provides the nation about $4 in future benefits.

In addition, FEMA grants to mitigate the effects of floods, hurricanes, tornadoes, and earthquakes between 1993 and 2003 are expected to save more than 220 lives and prevent almost 4,700 injuries over approximately 50 years."

Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities by the Multihazard Mitigation Council
www.nibs.org/resource/resmgr/MMC/hms_vol1.pdf

- **Attracting new businesses and residents.** The ability to market a neighborhood or business district as "resilient" to hazards can help attract industry, commercial development, and a thriving population with positive impacts on a community's tax base.
- **Protecting cultural and historical assets.** Seeking to preserve, protect, conserve, rehabilitate, recover, and restore cultural and historical resources can have a significant positive impact on a community's overall health.
- **Reducing environmental damage.** Environmental assets and natural resources are important to community identity and quality of life and support the economy through agriculture, tourism and recreation, and a variety of other ecosystem services, such as clean air and water. The natural environment also provides protective functions that reduce hazard impacts and increase resiliency.
- **Building a sense of place and peace of mind.** A safe, resilient community results in residents and business owners feeling more confident and secure about their assets and investments, and can lead to a stronger sense of place and, ultimately, peace of mind.

FEMA/Jennifer Smits

The Added Value of Integration

Well-rounded community resilience as described above is often the result of integrating hazard mitigation with other local planning processes that help guide community development. Communities can build a stronger capacity for mitigation, preparedness, response, and recovery by building on the public, private, and non-profit institutions that enable day-to-day activities to run well. Integration can also lead to efficiencies and reduced costs as planning efforts and hazard mitigation activities are combined, productivity is optimized, and tasks and responsibilities are shared.

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Building Community Resilience by Integrating Hazard Mitigation

Protecting Community Infrastructure

Investing the time and resources needed to develop a local hazard mitigation plan is critical to a community's resilience to disasters. A key aspect of this is integrating hazard mitigation concepts into existing community infrastructure plans and projects. This typically requires long-term planning, coordination, community buy-in, and funding.

A range of hazard mitigation actions may be implemented to protect community infrastructure, including:

- Incorporating hazard mitigation into capital improvement programs;
- Flood protection measures for water or sewer facilities, road elevation, or drainage improvements;
- Increasing hazard resistance when repairing or replacing aging transportation infrastructure such as roads, bridges, and tunnels;
- Bolstering the protection of hospitals, fire stations, emergency operations centers, and other critical facilities through structural retrofits;
- Dam or levee maintenance;
- Underground power lines;
- Tree pruning/canopy management;
- Utility system redundancies; and
- Lightning protection measures.

The integration of mitigation into planned infrastructure projects can provide tangible benefits to the community and its public works staff. These include the reduction or elimination of service outages, which can free up public works personnel to provide response and recovery support elsewhere, and reduced recovery costs.

FEMA/Martin Grube

FEMA/Ralph Simcox

Infrastructure damaged by a disaster may not necessarily be replaced in the way it was originally constructed, but rather with hazard mitigation and community resiliency in mind.

Why is Coordination Important?

Public works officials may benefit from working closely with community planners and hazard mitigation specialists in a comprehensive planning process that addresses the needs of the whole community. Ideally, this coordination would occur in a pre-disaster environment. However, it is not too late to benefit from coordination if the first meeting between public works and other community planners occurs in the days following a disaster.

Some of these mutual benefits may include:

- Hazard mitigation plans may have already identified replacement values for structures or predicted where damages are likely to be greatest;
- Information in the hazard mitigation plan may assist public works officials with post-disaster damage assessments;
- Public works officials may have first-hand knowledge of what damage has occurred in the community and what needs to be done to mitigate it; and
- An opportunity to look at activities that will help the community in the short term, while reducing risk in the long term.

The Post-Disaster Window of Opportunity

If damaged community infrastructure is replaced in the same manner as it was originally constructed, without integrating hazard mitigation, it may remain vulnerable to future disasters.

Under the FEMA Public Assistance program for example, grant opportunities may fund hazard mitigation measures during the repair or replacement of public facilities damaged by a presidentially declared disaster event. This is often referred to as "Section 406 Mitigation." Examples can include relocation of facilities from hazardous locations, slope stabilization to protect facilities, and certain types of protection from high winds, floodproofing of buildings, flood protection of bridges and culverts, seismic protection, and utility protection. These activities are intended to enhance a facility's or system's resistance to similar events in the future.

It is important for community officials to coordinate with FEMA on the utilization of Section 406 Mitigation funding or other hazard mitigation assistance following a major disaster event to ensure that hazard mitigation is incorporated into the recovery and rebuilding process.

FEMA/Ed Edahl

FEMA/Norman Lenburg

Public Assistance funding for hazard mitigation is there to promote measures that reduce future loss to life and property, protect the federal investment in public infrastructure, and ultimately help build disaster resistant communities.

For More Information on Section 406 Mitigation

Go to: http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit/hazard-mitigation-funding-under-section-406-0

FEMA

Building Community Resilience by Integrating Hazard Mitigation Planning for Post-Disaster Redevelopment

FEMA/Robert Kaufmann

FEMA/Jennifer Smits

The purpose of a post-disaster redevelopment or recovery plan is to facilitate pre-disaster planning in a way that guides long-term recovery efforts (five years or more) following a disaster. There are a number of reasons to plan for long-term recovery before a disaster occurs, including:

- **Planning ahead.** Redevelopment is too complex an issue to address in the midst of a disaster response or during the immediate post-disaster recovery process. A community's attention and resources will likely be committed to more pressing needs, and stakeholders will likely not have the time or ability to engage in a long-term planning effort. Planning in advance provides the opportunity to properly integrate hazard mitigation into redevelopment and recovery with sufficient time to explore, discuss, and address the issues.
- **Rebuilding resilient.** Rebuilding damaged structures or infrastructure in the same location and/or in the same way may leave the community at risk from similar disaster losses in the future. Hazard mitigation measures such as property protection and hazard avoidance should be considered when rebuilding or repairing damaged structures.
- **Focusing long-term.** Disasters can force business closures, displace residents and have lasting effects on the vitality of a community. Understanding and addressing these social and economic drivers, along with their existing dependencies and vulnerabilities, can support the community in its mitigation and post-disaster redevelopment efforts.
- **Implementing the vision.** Disasters may present opportunities to target investments that help achieve a long-term community vision.

"Without a comprehensive, long-term recovery plan, ad hoc efforts in the aftermath of a significant disaster will delay the return of community stability. Creating a process to make smart post-disaster decisions and prepare for long-term recovery requirements enables a community to do more than react..."

Florida Department of Community Affairs and Florida Division of Emergency Management, Post-Disaster Redevelopment Planning: A Guide for Florida Communities

Integrating Hazard Mitigation into Redevelopment Plan Elements

FEMA/Jennifer Smits

The community's post-disaster redevelopment plan can identify roles and responsibilities of key people, departments, and agencies; address the need for temporary regulations such as post-disaster building moratoria; address potential impacts to historic resources; address potential impacts to non-conforming uses; and address location and other provisions for temporary housing.

In addition, a recovery plan can seek to integrate long-term hazard mitigation, public safety, and resilience goals, including:

- **Profiling and mapping hazard risks.** This can help synchronize geospatial hazard analysis and mapping efforts, leading to better informed policy recommendations. This information can also be utilized by emergency operations and response personnel in order to better understand hazard impacts as events unfold.
- **Establishing a safety or hazards element in the comprehensive or general plan.** A separate public safety or hazards element can be added to the comprehensive plan, or a "checklist" or matrix might be considered for inclusion as an appendix to the plan to track where and how hazard mitigation is integrated throughout each element. This facilitates better coordination between land use and emergency planners, and ensures that hazard profiles and mapping information are integrated into the land use planning process.
- **Using land use, zoning, subdivision, and other development regulations.** These tools can be instrumental in guiding growth to safer areas while limiting development in known hazard areas. A community's hazard profile should always be considered when making land use or development decisions.
- **Protecting or restoring natural areas.** This can maintain a buffer or other mitigating effects, such as flood storage, while directing growth to less environmentally sensitive and/or hazard prone areas.
- **Using capital improvement programs to fund safety measures.** This can also aid in guiding safe growth and establishing road improvements or other measures intended to facilitate continuity of passage, evacuation, and other essential community needs in the event of a disaster.

Get FloodSmart
FloodSmart.gov

Flood Risk and Insurance
Know the Facts

Flood Risk and Insurance Facts

Many property owners do not know the basics about flooding or flood insurance. To make informed decisions, residents and business owners need a solid understanding of their flood risk and how flood insurance can help.

The following are important facts and figures to share with property owners so that they better understand the risk of flooding, its impact, and how flood insurance can help reduce the financial impact of flooding:

- Federal disaster assistance is usually provided in the form of a loan that must be paid back with interest along with any existing mortgage.
- Total flood insurance claims in the United States averaged more than $3.5 billion per year from 2005 to 2014.
- In the past 5 years, all 50 states have experienced a flood.

Understanding the Risk

- Floods are the number 1 natural disaster in the United States.
- Everyone is at risk—even those who do not live close to rivers and lakes. Floods happen as a result of heavy rains, snowmelt, overloaded drainage systems, land-development runoff, and many more reasons. Just an inch of water can cause tens of thousands of dollars in damage to your home and its contents.
- Most homeowners insurance does not cover flood damage.
- Over the life of a 30-year loan, your home, if located in a high-risk flood area, is more likely to be damaged by flood than by fire.
- More than 5 million Americans are protected with flood insurance, but millions more are unaware of their personal risk for property damage—or options for reducing that risk.
- Property owners, renters, and business owners can purchase flood insurance on their building and contents if their community is among the more than 22,000 communities that participate in the National Flood Insurance Program (NFIP).
- It typically takes 30 days after the purchase of flood insurance for the policy to take effect.
- The average premium is about $700 a year; the average claim in the past 5 years was nearly $42,000.
- More than 20 percent of all flood claims are for properties mapped outside of high-risk flood areas.
- Qualifying properties in moderate- to low-risk areas are eligible for the low-cost Preferred Risk Policy.

For flood insurance and flood risk information, visit **FloodSmart.gov**. To learn more about obtaining a flood insurance policy, call your insurance agent or **1-800-427-2419** to find an agent near you.

FEMA