



Leveraging Resources to Improve Disaster Risk Reduction

Welcome!

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Purpose of Module

- Encourage local decision makers to take control of determining how local resources are used to reach the community's own disaster resilient destination
- Present an overview of the vast number of resources and partnerships that can be leveraged for disaster risk reduction
- Present a “roadmap” analogy for communities as they journey to disaster resilience

Learning Objectives

1. Summarize the elements of a community's roadmap to a disaster resilient future
2. Provide examples of resources to leverage for disaster risk reduction during normal times
3. Describe how conditions, opportunities, and resources for disaster risk reduction change after a disaster
4. Discuss options for leveraging resources in a hypothetical post-disaster community

Are We Doing Enough?



We Need Disaster Risk Reduction!

No possibility of a sustainable economy or effective business continuity without safe housing and safe locations



Photo by Marilee Caliendo/FEMA Mar 12, 2012 - Salyersville, KY

Review: Key Themes

Systems Analysis Manner

Collaboration

Reward / Discourage

Think About How to Achieve Disaster Risk Reduction in Three Areas

Achieving Disaster Risk Reduction

Undeveloped property that is being developed for the first time or land that is being completely redeveloped

Undeveloped lands or existing developed lands that face repeated risks from disasters

Development or redevelopment of hazard risk areas

How Can We Accomplish Disaster Risk Reduction Pre Disaster?

- Common theme: insufficient funds for Hazard Mitigation/Climate Adaptation/Disaster Risk Reduction
 - Do you at least sort of agree with the theme, “**Well Begun is Half Done?**”
 - Would “Half-Done” be very, very well begun?
- How do we systematically approach this challenge?

Develop Your Community's Roadmap to Disaster Resilience Before a Hazard Event



- Communities start the journey to disaster resilience from wherever they are now, mapping the trip based on priorities and vulnerabilities
- Learn about and leverage resources needed to reach the destination

Developing a Roadmap to Disaster Resilience Requires...

1. A Disaster Risk Reduction Ambassador – A community leader with vision for change
2. Collaboration among diverse groups to help translate the vision into a destination of disaster resilience
3. A plan for getting to the destination; using available technical support to ensure it is feasible and makes sense for the community
4. “Supplies” for the trip - partnerships, technical support, funding
5. Capability to reroute after a disaster

Engage Participants in Community Disaster Risk Reduction

“Decisions about disaster risk reduction are best made based on this local knowledge, combined with the scientific knowledge and technologies available to ensure that investments in disaster resilience will be effective.”

United Nations Office for Disaster Risk Reduction



Integrate Hazard Mitigation into Local Planning

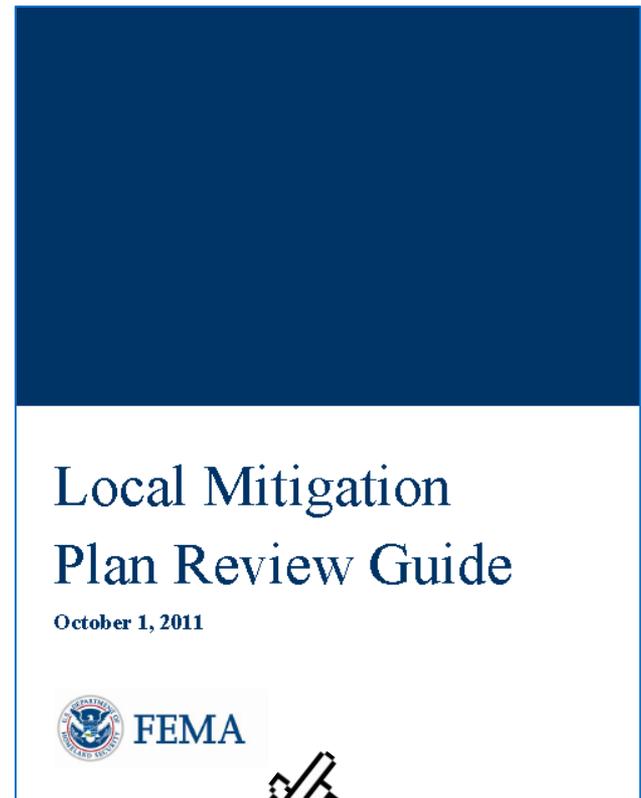
- Integrate hazard mitigation goals, objectives, and actions **throughout every element** of a local comprehensive or general plan
- Develop and maintain a hazard mitigation plan as a **distinct element** to be included in a local comprehensive or general plan



Berkeley, California is an example of a community that has done both

Develop/Update a Hazard Mitigation Plan

- The community can have its own plan or participate with other jurisdictions
- May be developed or updated by the local government or by consultants
- Defines community's mitigation strategy



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Integrate Hazard Mitigation into Local Planning

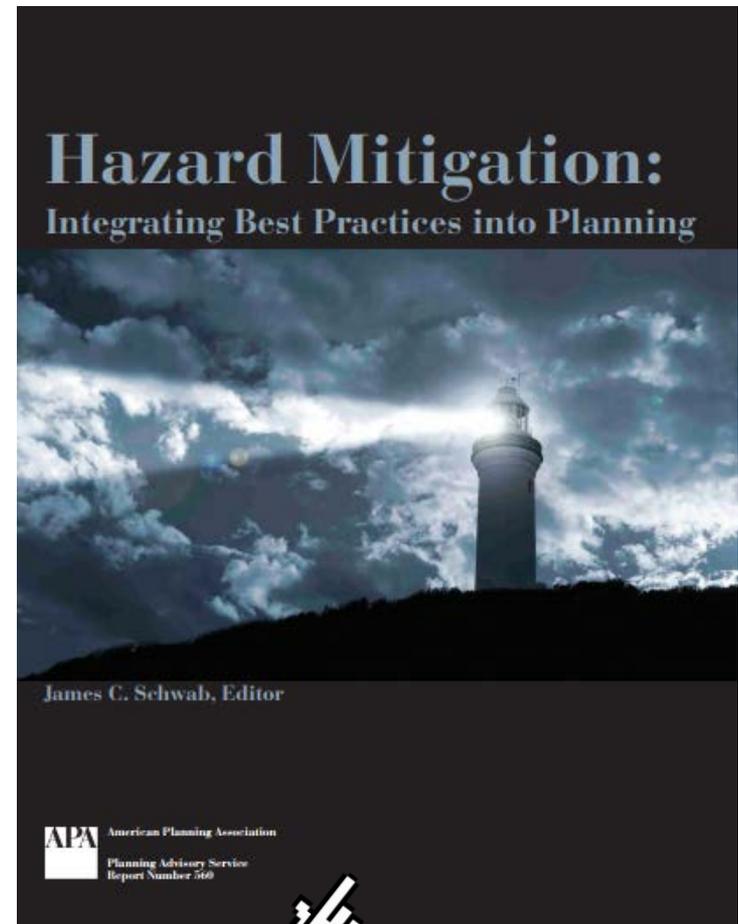
What factors are most important for effective integration?

- Intergovernmental coordination
- Elected and/or executive leaders
- Community hazard risks
- Understanding of the benefits of hazard mitigation
- Incentives

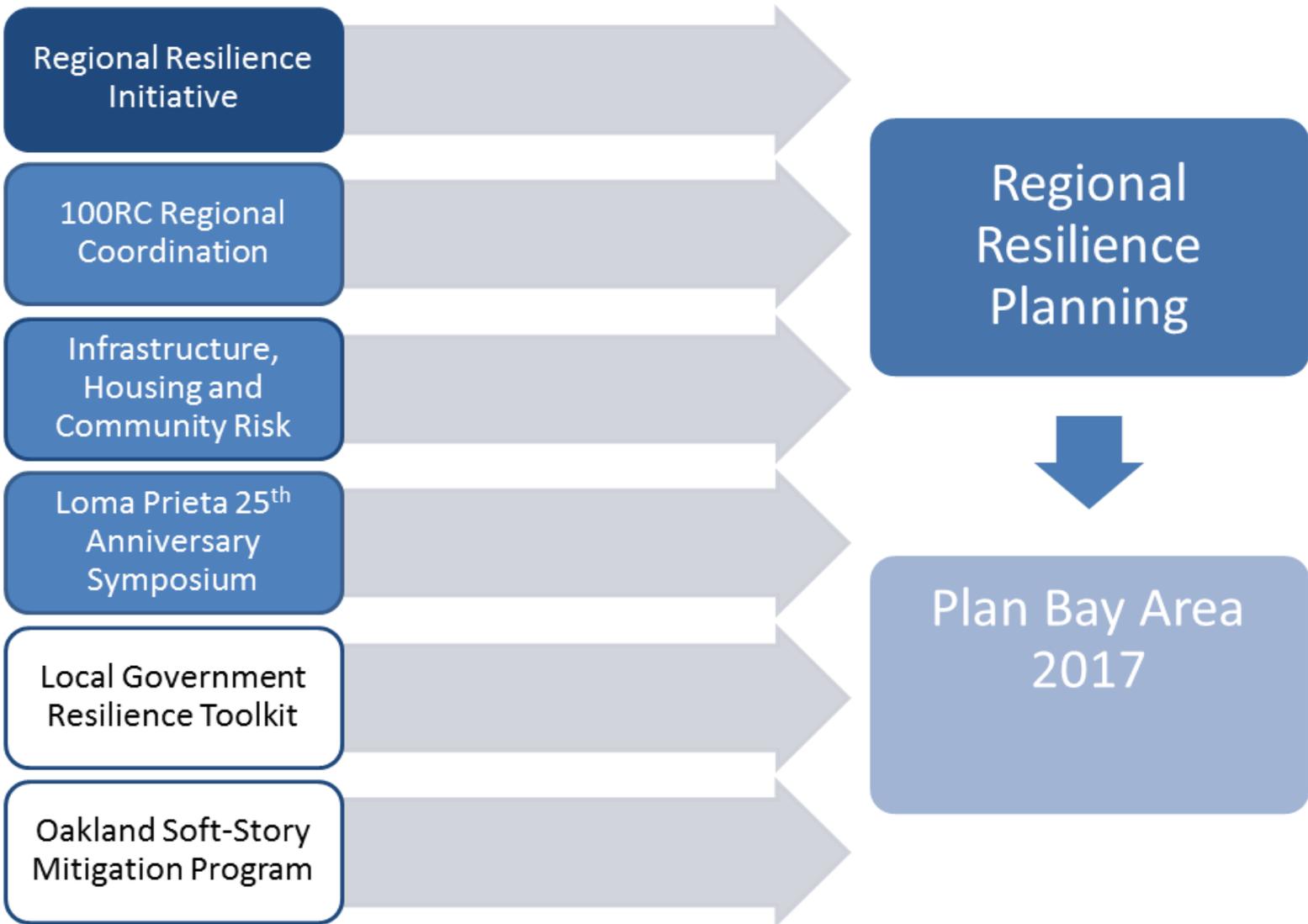


Other Plan Integration

- Hazard Mitigation Plan
- Post-Disaster Recovery Plan
- Comprehensive Plan
- Zoning and Development Standards
- Capital Improvements Plan
- Economic Development Plan
- Climate Adaptation Plan
- Emergency Operations Plan



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How Much Time Do You Have Before the Next Disaster?

WHO in the community needs to be involved?

WHAT pre-disaster funding sources exist now?

WHEN do we start?

WHERE do we start?

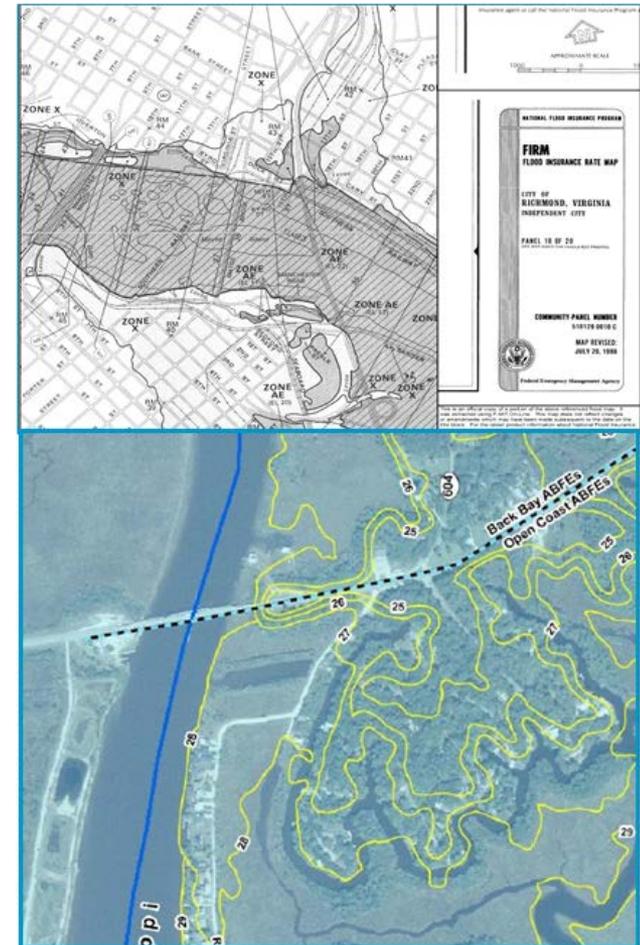
WHY do we start now?

Resources for Implementing DRR Before a Disaster

- Technical Assistance
- Grant Programs
- Community Agreements
 - Mutual Aid Agreements
 - Memorandums of Understanding
 - The Emergency Management Assistance Compact
- Incentives

Technical Assistance: Flood Map Improvement

- FEMA is engaging in a multi-year effort to update and transform flood maps into more reliable, easy-to-use, and readily available digital products
- This effort is called **Risk MAP** (Risk Mapping, Assessment and Planning)



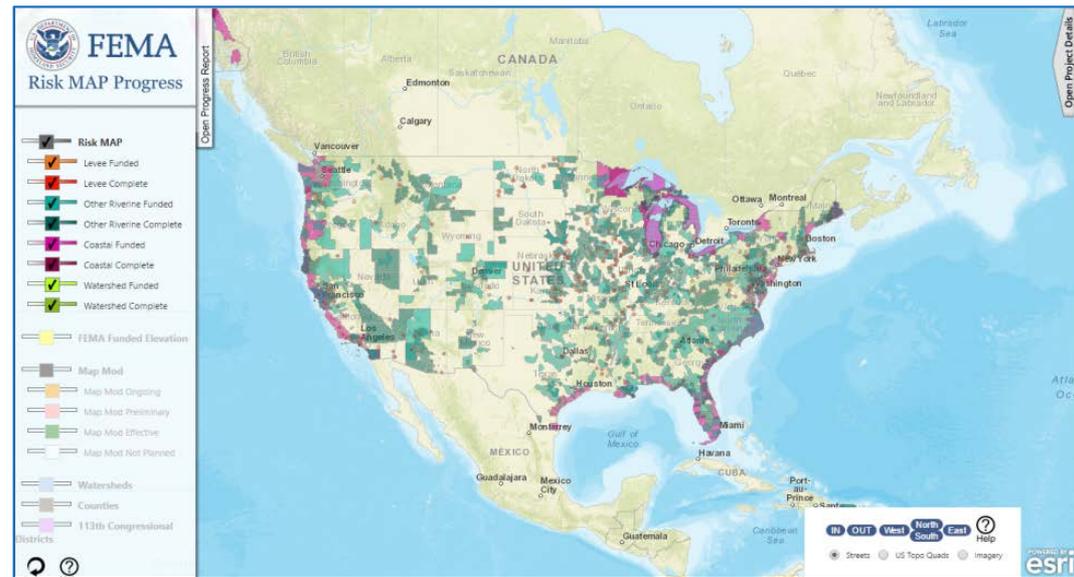
Risk MAP website:

<https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>

Technical Assistance: Flood Map Improvement (cont.)

Risk MAP enables communities and citizens across the country to:

- More efficiently obtain flood hazard data
- Learn their flood risk
- Make informed decisions about development, floodplain management, and mitigation projects that limit damages in future flooding events



Risk MAP website:

<https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>

Incentive: Community Rating System (CRS) Participation Benefits

In addition to reduced flood insurance premiums:

- Floodplain management activities enhance public safety and reduce damages to private property and public infrastructure
- Community can evaluate effectiveness of floodplain management program against national benchmark
- Implementing CRS activities enhances community eligibility for other funding

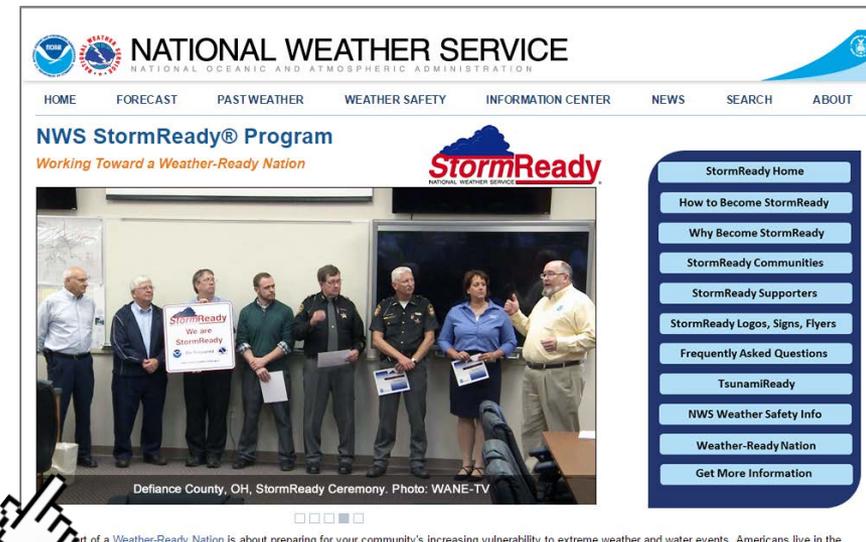
Community Rating System (CRS) - Case Study

City of Tulsa, Oklahoma (CRS-Class 2): CRS Benefits

- 40% discount on policies in the Special Flood Hazard Area
- Comprehensive planning for floodplain management has been a key contributor in reducing flood damage from the dozens of creeks within its jurisdiction.
- As of May 2016 Tulsa has cleared more than 900 buildings from its floodplains
- The average premium discount for policies in the SFHA is \$630

Community Program: NOAA StormReady® Program

- Was designed to help communities better prepare for and mitigate effects of extreme weather-related events
- Also helps establish a commitment to creating an infrastructure and systems that will save lives and protect property
- StormReady recognition does ensure being storm proof, but StormReady



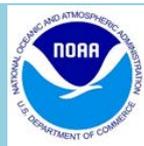
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Pre-Disaster Funding Sources to Support Local Disaster Risk Reduction

- FEMA Hazard Mitigation Assistance (HMA)
- National Oceanic and Atmospheric Agency (NOAA) Coastal Resilience Grants Program
- Environmental Protection Agency (EPA) Clean Water State Revolving Fund (CWSRF)
- USDA Natural Resources Conservation Service (NRCS) Watershed Rehabilitation Program
- FEMA Earthquake State Assistance Program



FEMA



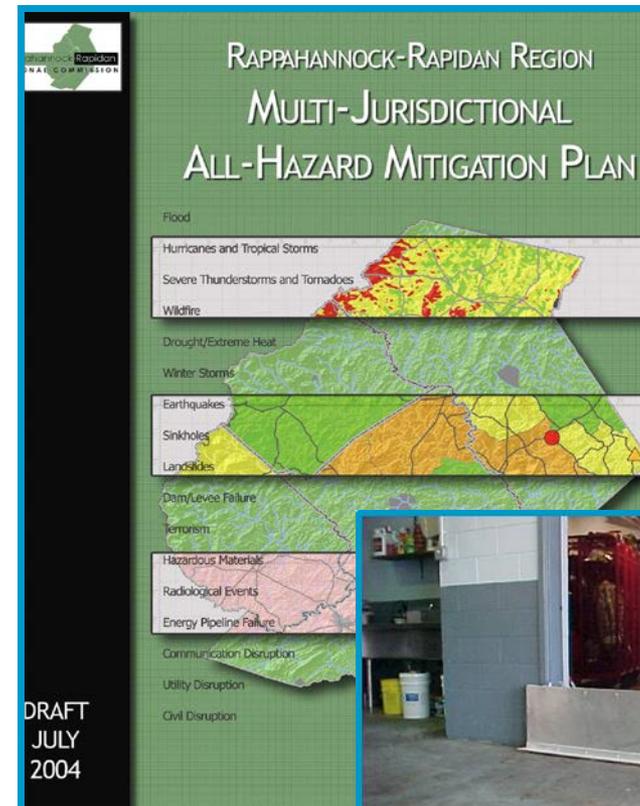
FEMA “Unified” Hazard Mitigation Assistance (HMA) Programs



- Pre-Disaster Mitigation Program (PDM)
- Flood Mitigation Assistance (FMA)
- **Hazard Mitigation Grant Program (HMGP) is only available after a Presidential Disaster Declaration**

Pre-Disaster Mitigation Grant Program (PDM)

- Nationally competitive source for planning and structural mitigation projects
- FEMA funds up to 75% of the project cost; can shift to 90% for small impoverished communities
- Projects must be consistent with local mitigation plan and cost-effective



Flood Mitigation Assistance (FMA) Grant Program

- Provides funding for measures that reduce or eliminate the *long-term risk* of flood damage to structures insurable under the NFIP
- Priority is to fund flood-mitigation activities that reduce the number of repetitive loss structures

GOAL
**Reduce NFIP
flood insurance
claims**

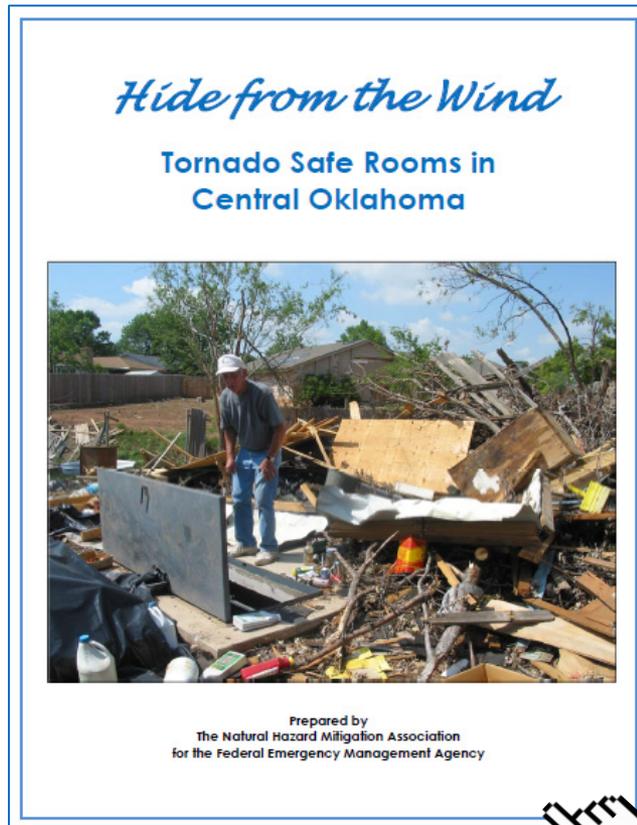
NOAA Coastal Resilience Grants Program

- Competitive grants program for specified regional programs, institutions of higher education, nonprofit or for-profit organizations, a U.S. territory or state, Native American tribes, or local governments focused on:
 - Strengthening Coastal Communities
 - Habitat Restoration
- Projects must benefit coastal communities in one or more of the 35 U.S. coastal states or territories



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Tornado Safety Projects are Eligible for Pre-Disaster Mitigation Grants



[click to view report]

- Safe rooms are “hardened” interior places like bathrooms or closets that can provide shelter from severe winds and windborne debris
- Federal funds are available for the construction of safe rooms and community shelters

National Firewise[®] Communities Program

- An interagency program
- Designed to encourage local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others to protect people and property from wildfire



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What Happens to DRR After a Disaster Strikes?



- Communities may need to assess and reroute but there are even more opportunities to continue on road to disaster resilience
- Continue on the road to disaster resilience by taking advantage of opportunities to implement mitigation measures in the Local Mitigation Plan

Disasters Present a Window of Opportunity for DRR

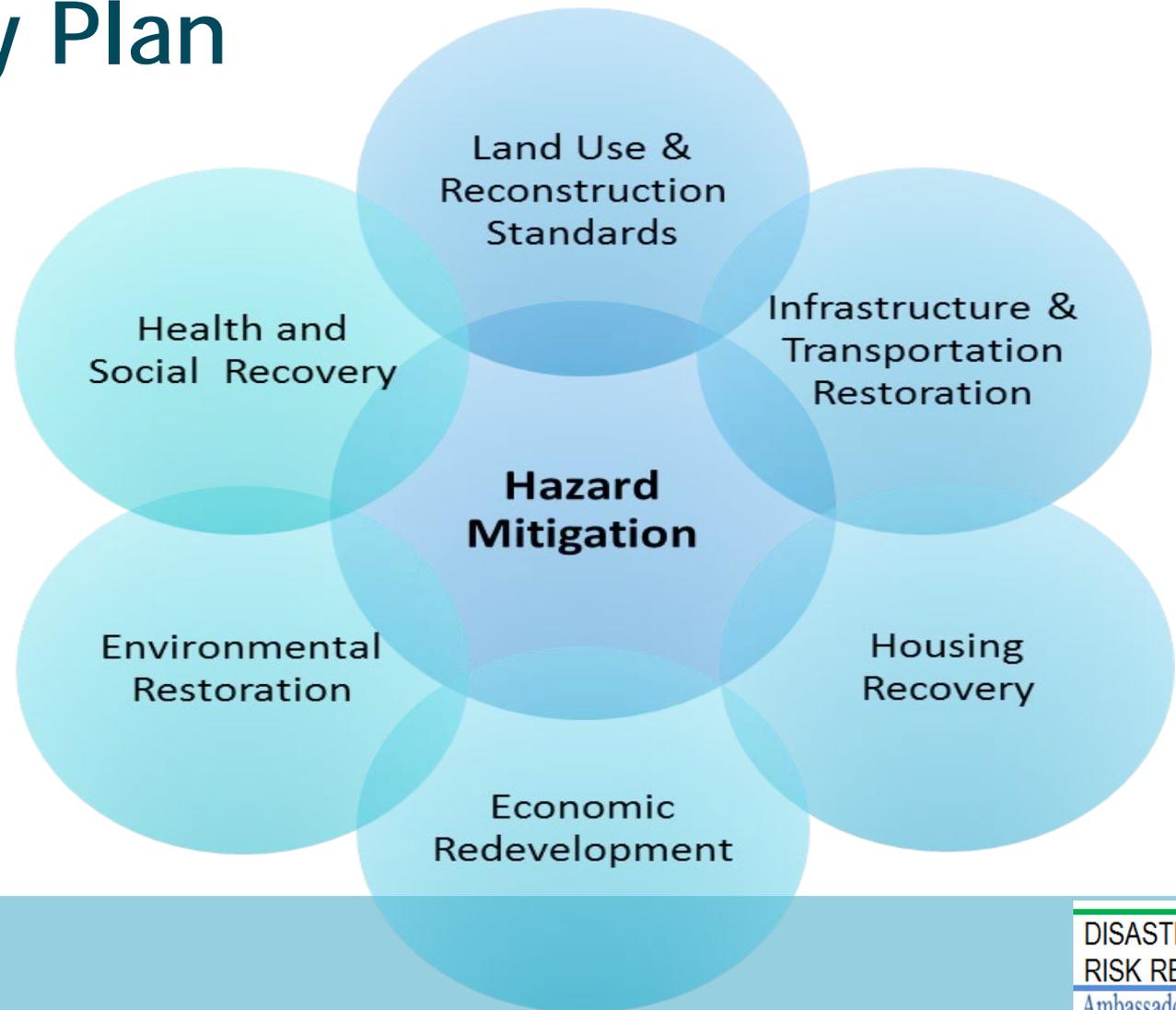
Contributing Factors

- Funding sources
- Public awareness
- Political will
- Repair/rebuild activity

Obstacles

- Race to return to normalcy
- Institutional disincentives
- Timing of knowledge and funding
- Property rights and development patterns
- Multiple recovery agendas

Integrate Mitigation throughout the Recovery Plan



Build Back Better

Disaster resilience is the ability of communities to:

“Mitigate hazards, contain the effects of disasters when they occur, and carry out recovery activities in ways that minimize social disruption and mitigate the effects of future disasters.”

(Multidisciplinary Center for Earthquake Engineering Research)



[click to view resource]

<https://www.planning.org/research/postdisaster/>

Conduct a Vulnerability Analysis Based on Disaster Data

- Accessible data on hazard risks with social and economic information can assist in recovery decisions
- Understand the risks to the built environment and infrastructure that may increase with climate change



Photo source: National Oceanic and Atmospheric Administration (NOAA)

Plan for Public Involvement



- Major post-disaster projects need public support to be successful
- How can you adapt your normal public outreach practices to a post-disaster environment?
- Can you plan ahead for broad stakeholder involvement and inclusive participation mechanisms?

Modify Building and Development Standards

- Adopting stronger building codes
- Site design requirements
- Triggers for nonconforming structures/uses



Photo: An aerial view of Dade County showing damage from Hurricane Andrew (FEMA)

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PLANNING FOR POST-DISASTER RECOVERY
BRIEFING PAPERS



FLOOD INSURANCE AND DESIGN REQUIREMENTS

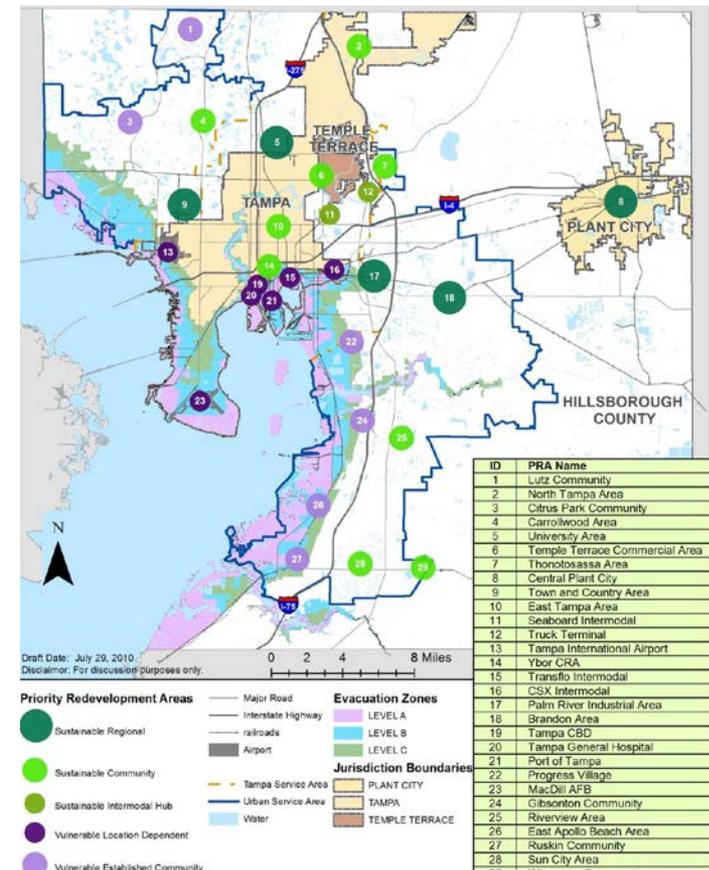
[\[click to view briefing paper\]](#)

Relocate Development out of Severely Damaged Areas

- Property acquisition
- Transfer of Development Rights
- Changes to land use and zoning



City of Grand Forks, ND
(Photo: FEMA/ Brenda Risky/UND)



Priority Redevelopment Areas
Source: Hillsborough County, 2010

Initiate Building Moratoria and Temporary Regulations

- APA Model Recovery Ordinance 
- Boulder County Land Use Code Article 19 
- Hillsborough County Recovery Ordinance 93-20 

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PLANNING FOR POST-DISASTER RECOVERY
BRIEFING PAPERS

ADOPT A PRE-EVENT RECOVERY ORDINANCE

Article 19



■ ■ ■ Procedures Following Disasters

ORDINANCE NUMBER 93 - 20

AN ORDINANCE TO GUIDE REDEVELOPMENT AND MITIGATION FOLLOWING A STORM EVENT OR OTHER NATURAL DISASTER WITHIN THE UNINCORPORATED AREAS OF HILLSBOROUGH COUNTY, FLORIDA; PROVIDING THE PURPOSE AND INTENT OF THE ORDINANCE; PROVIDING FOR JURISDICTION; PROVIDING DEFINITIONS; PROVIDING FOR THE ENACTMENT, RESPONSIBILITIES, COMPOSITION, CHAIRPERSON, DURATION, AND REPEALING OR EXTENDING OF A REDEVELOPMENT TASK FORCE; PROVIDING FOR DETERMINATION OF

[select and click on graphic to view resource]

Encourage Mitigation During Repair and Rebuilding

- Public education on the benefits of voluntary mitigation measures
- Assistance in obtaining funding

Under the Flood Insurance Reform Act of 2012, You Could Save More than \$90,000 over 10 Years if You Build 3 Feet above Base Flood Elevation*

**PREMIUM AT 4 FEET BELOW
BASE FLOOD ELEVATION**

**\$9,500/year
\$95,000/10 years**



**PREMIUM AT
BASE FLOOD ELEVATION**

**\$1,410/year
\$14,100/10 years**



**PREMIUM AT 3 FEET ABOVE
BASE FLOOD ELEVATION**

**\$427/year
\$4,270/10 years**



Image: FEMA/ Greig Powers, 2013

Include Mitigation in Infrastructure Repair or Replacement

- Include mitigation in Public Assistance projects
- Relocate or remove from high-risk zones
- Include climate adaptation
- Upgrade protection levels of mitigation structures (e.g., seawalls, levees)

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PLANNING FOR POST-DISASTER RECOVERY
BRIEFING PAPERS

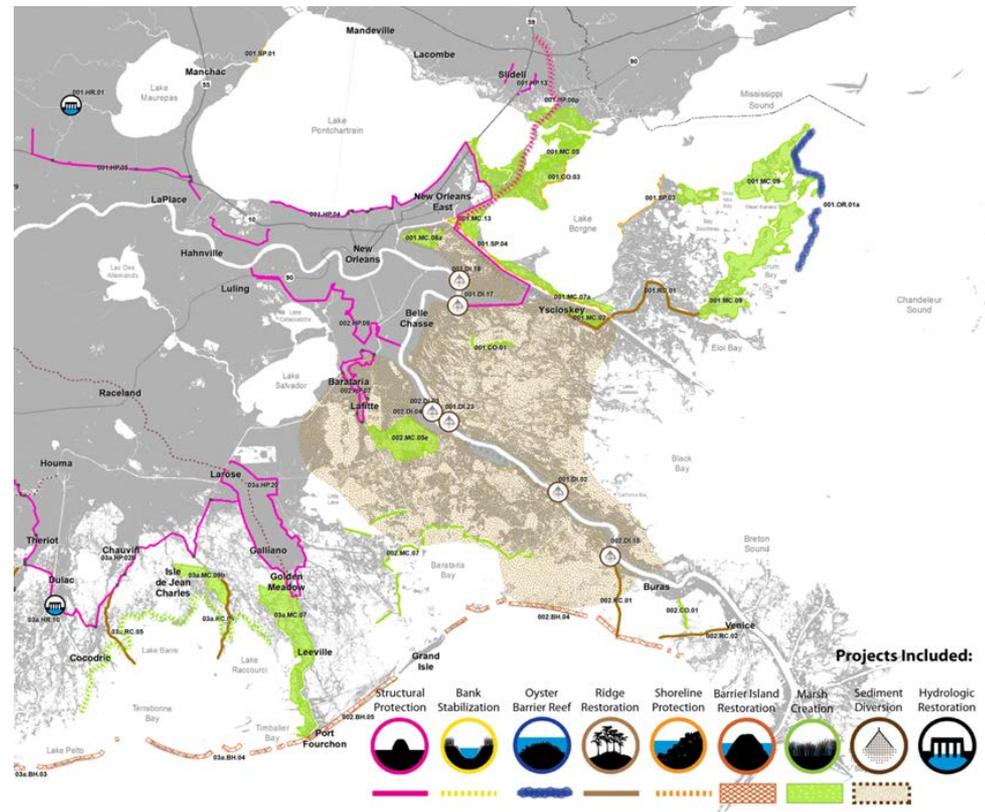
PLANNING RESILIENT INFRASTRUCTURE



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Restore Natural Functions that Provide Protection from Hazards

- Floodplains
- Wetlands
- Beaches and Dunes
- Reefs
- Fire adapted ecosystems



10 PLANNING FOR POST-DISASTER RECOVERY BRIEFING PAPERS

GREEN INFRASTRUCTURE AND POST-DISASTER RECOVERY



[click to view briefing paper]

Louisiana's Coastal Protection Master Plan, 2012

Who Pays for What's Needed?



- Assistance for immediate needs
- Financing for Disaster Risk Reduction

FEMA Public Assistance (PA)

- Grant program for debris management and emergency protective measures for presidential emergency and disaster declarations
- Supports repair and replacement assistance for public infrastructure recovery **after a presidential disaster declaration**
- FEMA funds not less than 75%; no more than 25% non-federal match is required



FEMA Individual Assistance

- Individuals and Households Program
- Temporary Housing
- Repair
- Replacement (Rare)
- Other Needs Assistance (ONA)



A Guide to the Disaster Declaration Process and Federal Disaster Assistance



Help After a Disaster: Applicant's Guide to the Individuals & Households Program (FEMA 545)

[click on thumbnails to view resource]

Voluntary Agencies Active in Disaster (VOAD)

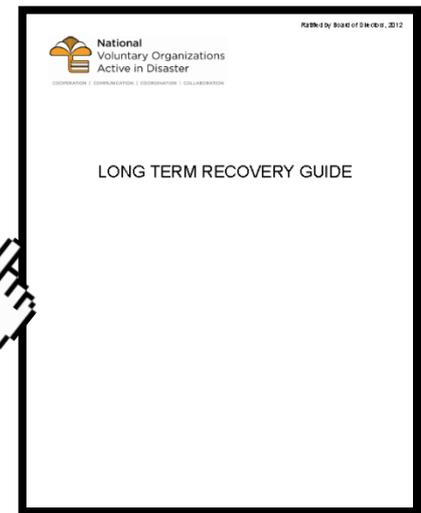


National
Voluntary Organizations
Active in Disaster

COOPERATION | COMMUNICATION | COORDINATION | COLLABORATION



[click to view website]



[click to view Guide]

Available Mitigation Programs

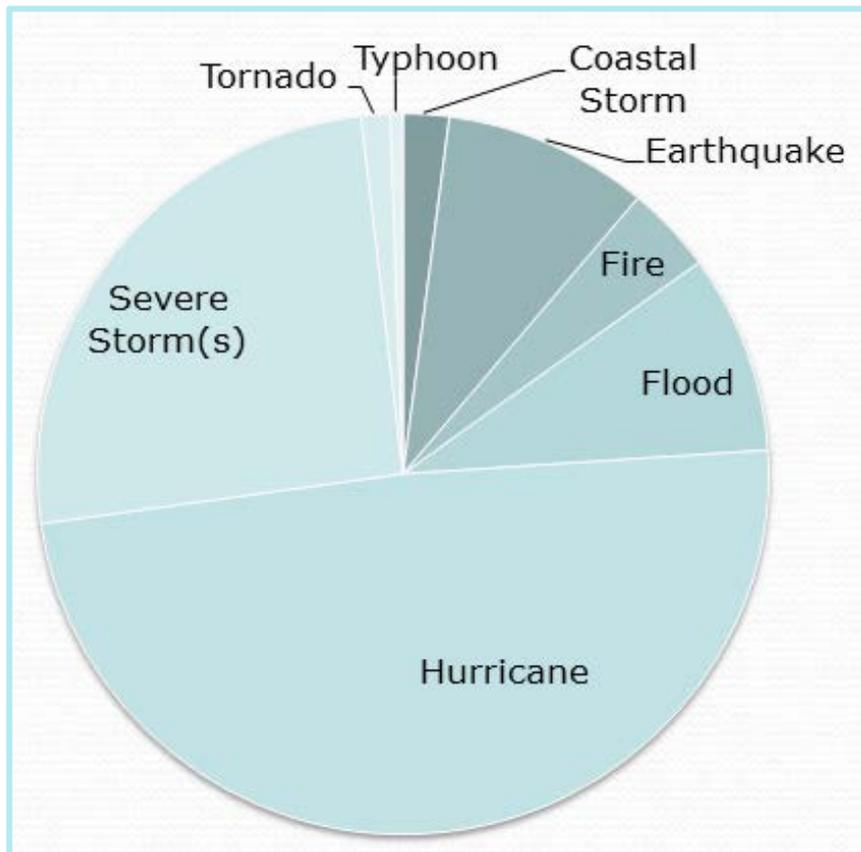
There are many groups eager to help with post disaster mitigation

- Federal and state programs
- Charitable organizations
- Voluntary agencies
- Foundations



Hazard Mitigation Grant Program

HMGP Grant Funding per Incident Type, 1989 - 2014 (Approved, Closed, or Pending Projects)



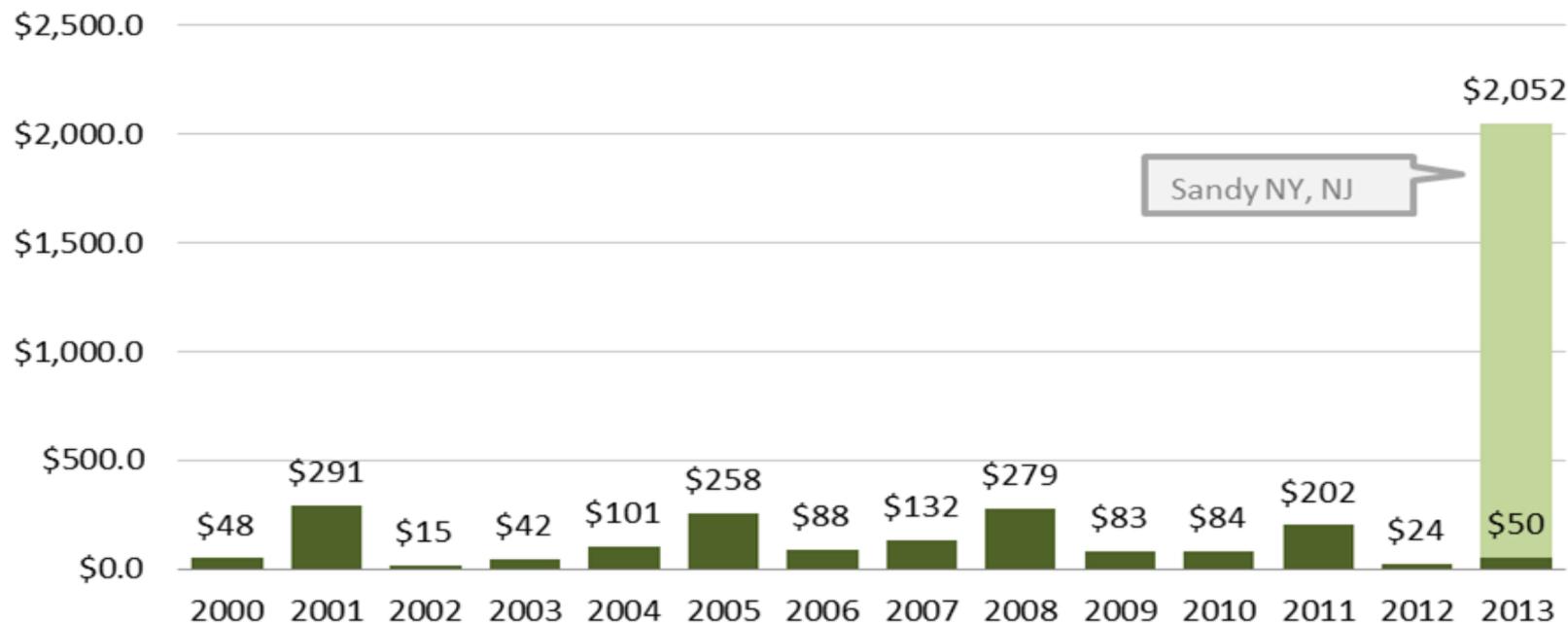
Incident Types with less than 1% of Total Project Amounts

- Dam/Levee Break
- Drought
- Fishing Losses
- Freezing
- Human Cause
- Mud/Landslide
- Terrorist
- Tsunami
- Volcano
- Other

Public Assistance - Section 406

Hazard Mitigation Obligations in the PA Program, FY2000-FY2013

(\$ millions; lighter green in FY2013 represents obligations for DR-4085 and DR-4086)



Source: Congressional Research Service, 2015

NFIP Increased Cost of Compliance (ICC)

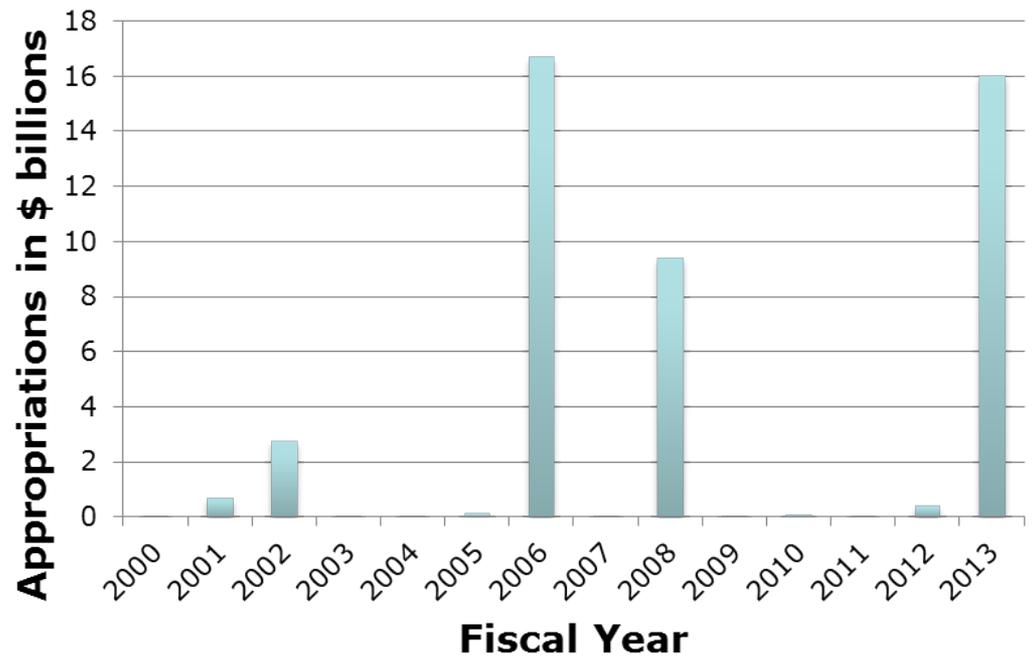
NFIP Flood Insurance Policies include up to \$30,000 to cover flood mitigation measures

- For structures substantially damaged or repetitive loss
- Can be used individually or assigned



Community Development Block Grants (CDBG) - Disaster Recovery

CDBG - Disaster Recovery Appropriations, FY 2000 - 2013



Agricultural Assistance

- US Department of Agriculture (USDA) Farm Services Agency and other support agencies provide assistance to farmers with crop, livestock, and facility losses
- US Small Business Administration (SBA) also supports agribusiness losses



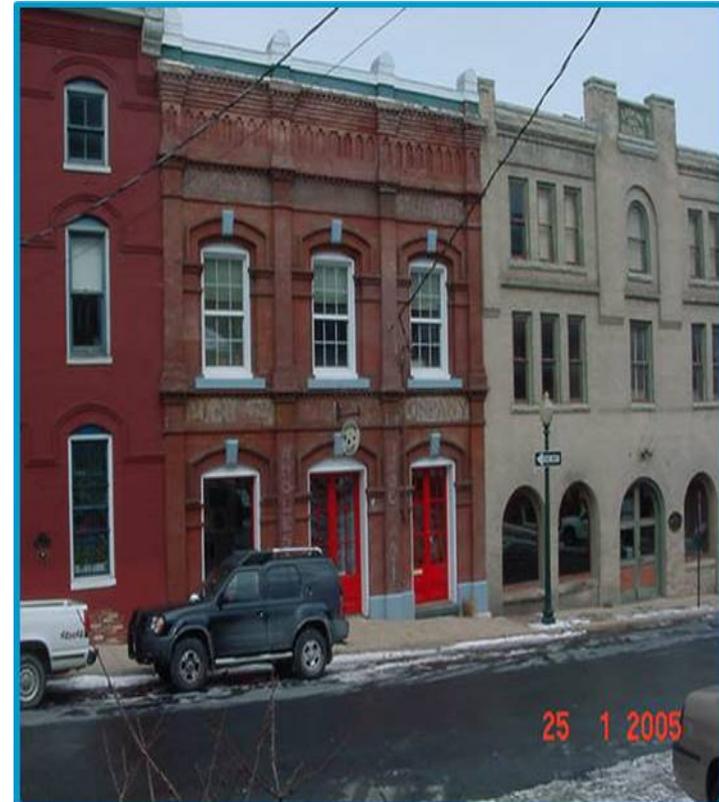
Economic Revitalization and Community Assistance

- Economic Development Administration
- HUD
- Housing Assistance
 - FEMA-SBA-HUD
- Infrastructure Assistance
 - FEMA-DOT-USDA



Historic Preservation Initiative

FEMA's Historic Preservation and Cultural Resources Program integrates historic preservation considerations into FEMA's mission of preparedness, response, recovery, and mitigation



Unite Around These Needs

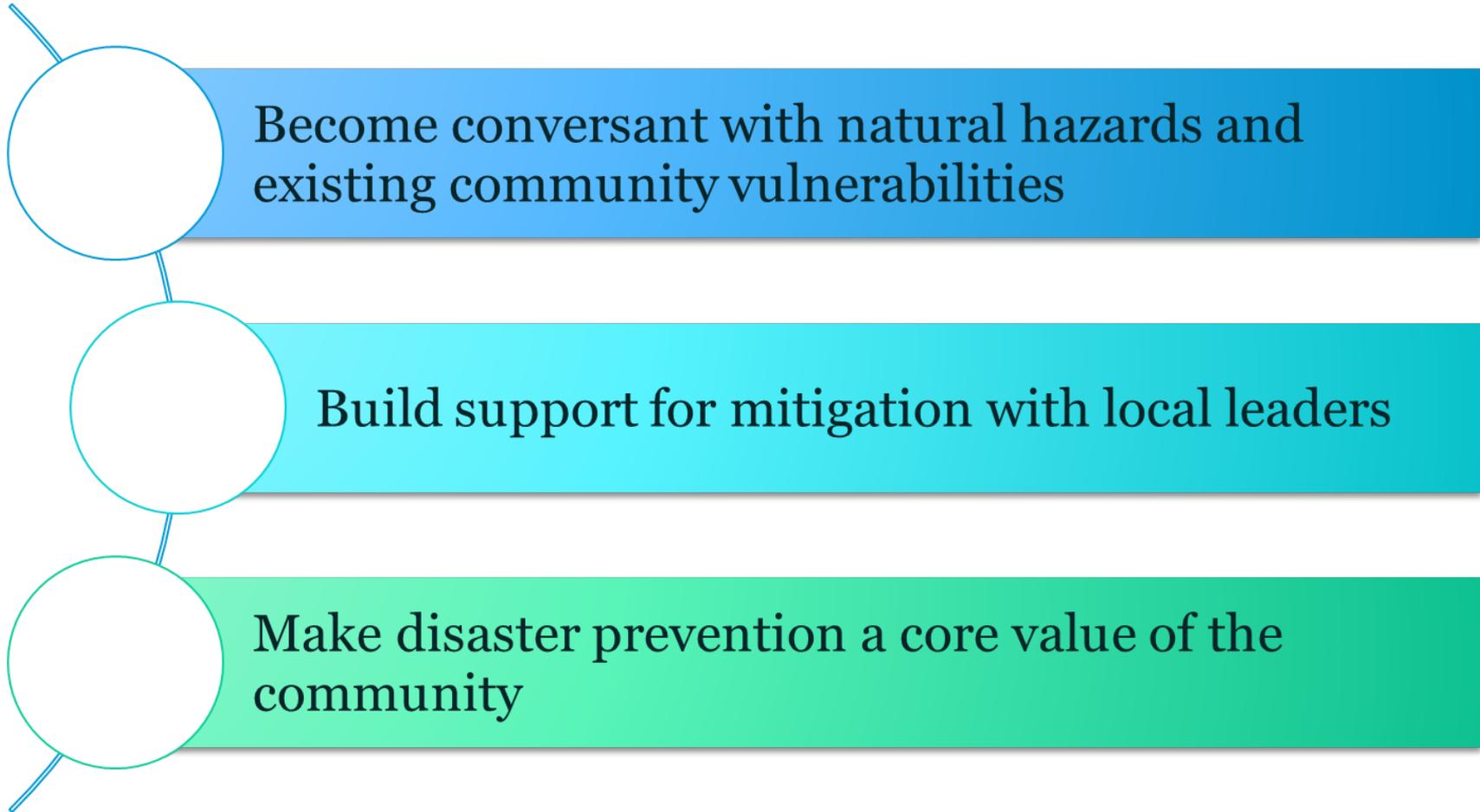


Focus on Problem that Enables/Disables Accomplishment of Physical Resilience

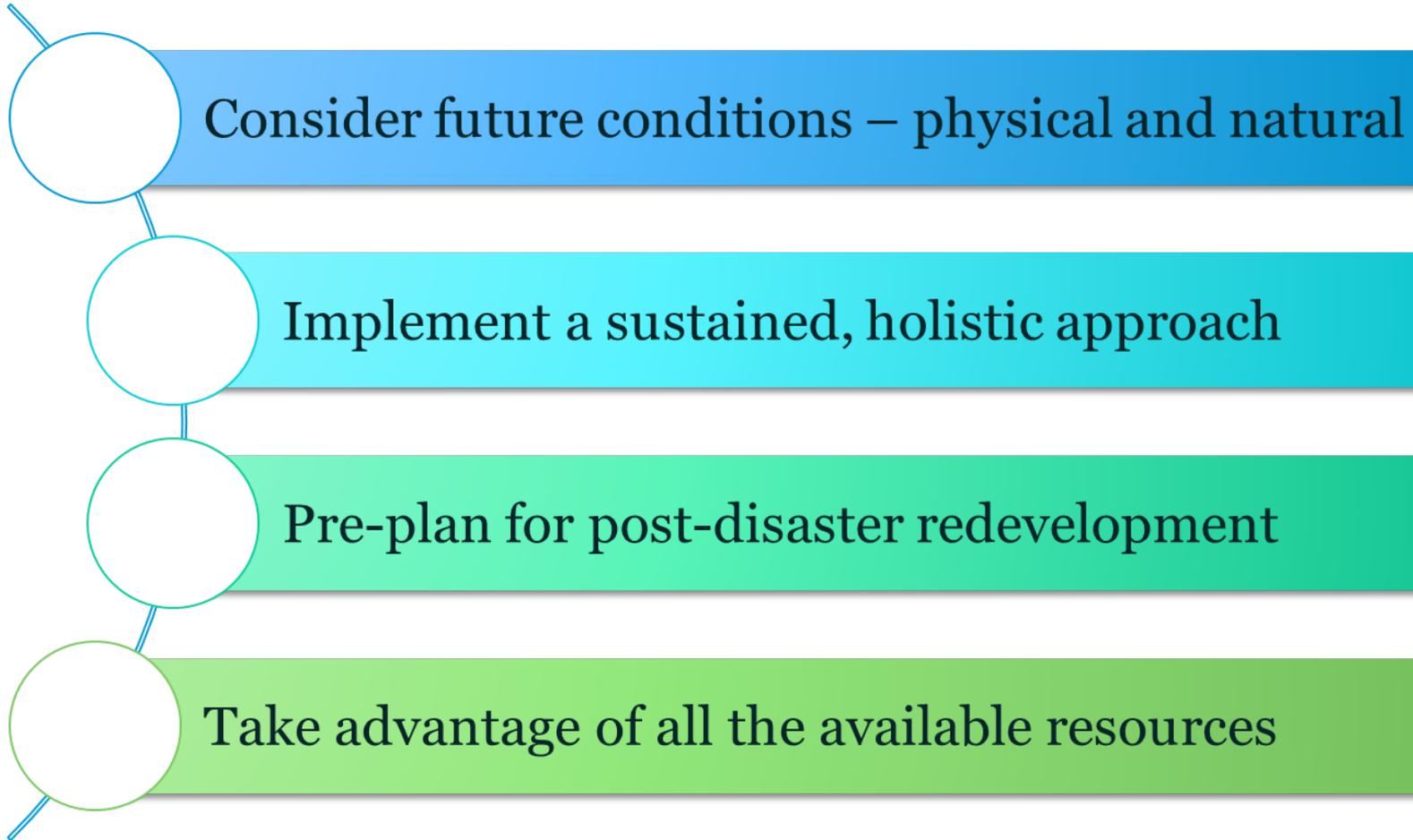
- Leadership
- Planning
- Community engagement
- Recovery management



How to Leverage Funding



How to Leverage Funding (cont.)

- 
- Consider future conditions – physical and natural
 - Implement a sustained, holistic approach
 - Pre-plan for post-disaster redevelopment
 - Take advantage of all the available resources

Best Practices of Leveraging Funding

- Berkeley, California
- Charlotte-Mecklenberg, North Carolina
- Mystic, Connecticut
- Grays Harbor, Washington
- Pasadena, Texas
- Tulsa, Oklahoma



Increase Community Outreach and Support

- Be clear
- Use varied sources
- Render information consistently – multiple outlets
- Tell people what to do
- Support people in their search for information
- Use words and graphics
- Position additional information in the community

**“Behavior change is hard.
Behavior change takes time.”**

How the Process Works

Funds To Individuals

Does everyone receive the same assistance from the same program?

- Same needs?
- Same damage?
- Same resources from insurance?

Funds To Communities

Do all communities have the same needs?

- Vision for the future?
- Resources?
- Leadership?

Exercise: How to Re-route Your Roadmap After a Disaster

Anywhere, Rivertown, U.S.A.



- An agricultural community of 4,000 people located along the majestic banks of the Great Fast River
- Has only a few full-time employees or officials
 - Some officials wear many public hats and run their own businesses, too
- Rivertown floods every year – not a big deal in the past
 - Also suffered a tornado and a wildfire
- **This year's event: A Big Deal!**

Continued

Exercise (cont.)

Anywhere, Rivertown, U.S.A.

- 25 Homes received major damage or were destroyed
 - A bridge and significant historic structure were also impacted
- Rivertown recently received new flood insurance rate maps
 - Unfortunately, only a few community members have flood insurance



Exercise (cont.)

Anywhere, Rivertown, U.S.A.

- Governor Requests and President Declares A Major Disaster Under The Stafford Act (P.L. 93-288 as amended)
- Congress Appropriates Special Disaster Community Development Block Grant (CDBG) Funds



The Town Officials Decide

- Town officials originally planned to spend special HUD funds to acquire one home and help elevate another
 - The original thought by the community was to demolish the entire impacted neighborhood to force residents to relocate to safer, higher ground
- The residents did not agree, and shared that thought with the local officials clearly, forthrightly, and loudly



The Community's Solution When We Work Together

The process



The programs available



Your solutions



No one answer for all communities



No one right answer, as long as we re-build safely

Summary

Time, patience, and synergy can create a whole greater than the sum of its parts

- Time and patience are required in building your community's roadmap to disaster resilience
- The devastation may have taken many forms, and the recovery may take months or even years
- Achieve *Nania*, another term for synergism, by working together, balancing each individual's needs with the community's long-term objectives

Closing Remarks

- Climate Adaptation and Hazard Mitigation is the foundation of **Resilience**
- Work together, instead of in parallel or recreating the wheel
- Apply Safe Building principles to Hazard Mitigation, in general
- Use the “Patchwork Quilt” approach

Resilience:
the development of decent,
safe, sanitary, affordable,
and sustainable
communities

Thank You!



DISASTER
RISK REDUCTION
Ambassador Curriculum

- **Questions and/or comments**
- **Contact information**

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