

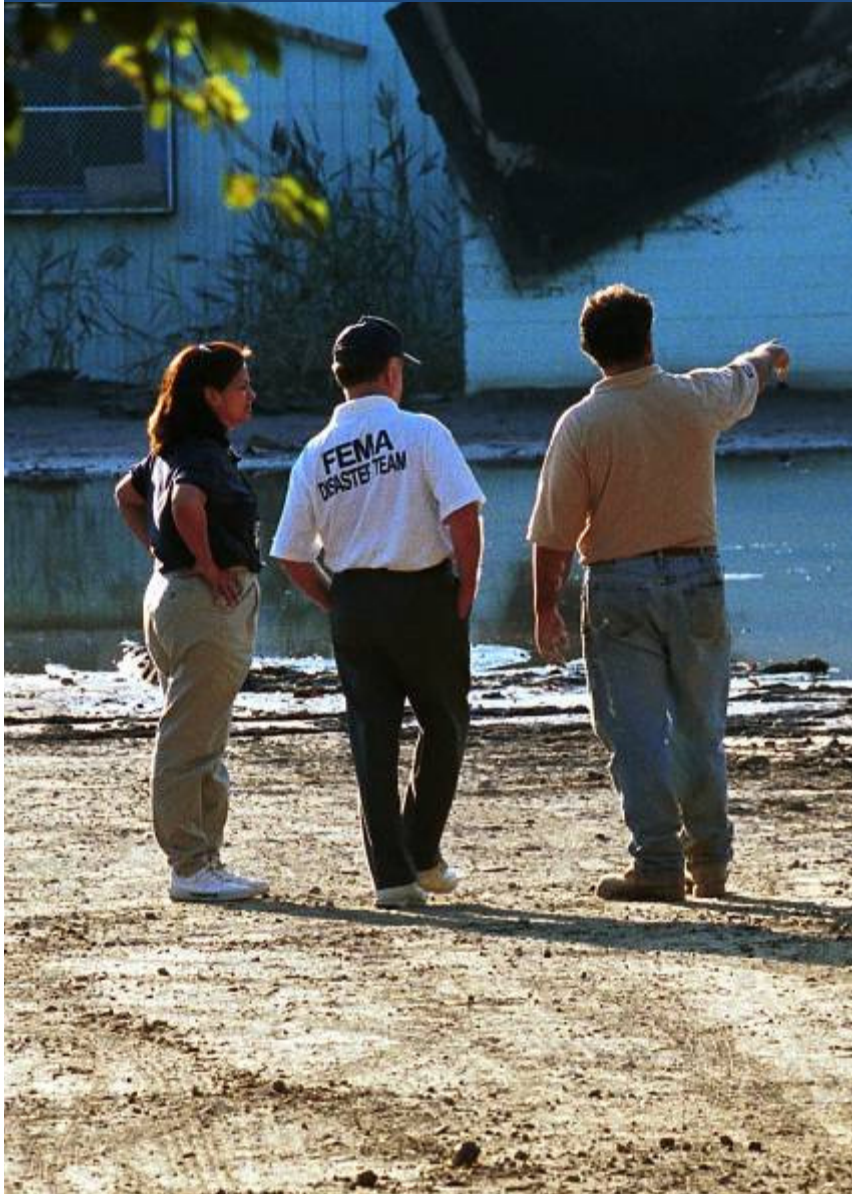
Land Use Planning Matters: Planning for Disaster Resilient Communities

Sponsored by the
PA Chapter of the American Planning Association
and the PA Local Government Training Partnership
Sarah Bowen, AICP, CFM, Michael Baker Jr., Inc.
Alexis Williams, AICP, Michael Baker Jr., Inc.

The logo for the PA Local Government Training Partnership. It features a yellow banner with a blue outline, containing the text 'PA Local Government Training Partnership' in a bold, blue, sans-serif font. The banner is positioned in the bottom right corner of the slide, partially overlapping a yellow 'DANGER HIGH WATER' sign in the background.

**PA Local Government
Training Partnership**

Training Purpose and Objectives



- Develop an understanding the four phases of Emergency Management
- Learn ways to develop plans for your community or incorporate EM into other plans and documents
- Know where to find tools and resources

Agenda

- Part I: Hazard Mitigation Planning
- Part II: Emergency Preparedness and Response Planning
- Part III: Disaster Recovery Planning
- Part IV: The Importance of Public Involvement in All Phases
- Part V: Disaster Resiliency

Four Phases of Emergency Management (EM)

- Mitigation
- Preparedness
- Response
- Recovery



Emergency Management Cycle

http://www.countyofdane.com/emergency/mitigation_plan.aspx

Types of EM Plans

- Hazard Mitigation Plans
- Business Continuity Plans
- Evacuation Plans
- Long Term Recovery Plans
- Emergency Operations Plans
- Vulnerable Population Plans





Part I: Hazard Mitigation Planning



Hazard Mitigation Planning

The background of the slide is a photograph showing a powerful surge of water, likely from a storm, flooding a coastal area. The water is turbulent and white with foam. In the background, some vertical poles or structures are visible, partially submerged. The overall scene conveys a sense of natural hazard.

- Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to people and property from natural and man-made hazards and their effects.

Hazard Mitigation Planning

- The Stafford Act requires that each state have a FEMA approved HMP to qualify for various types of assistance.
- The Disaster Mitigation Act of 2000 amended the Stafford Act and requires all state and local governments to develop a HMP in order to receive pre- and post-disaster federal mitigation funds.

Hazards in Pennsylvania



- PEMA recently completed an update of the Pennsylvania State HMP
- Profiled 16 natural hazards and 10 human-made and technological hazards
- www.pemahmp.com

Hazards in Pennsylvania

Natural Hazards in 2013 PA HMP

| HAZARD NAME | HAZARD NAME |
|--|----------------------|
| Coastal Erosion | Landslide |
| Drought | Lightning Strike |
| Earthquake | Pandemic |
| Extreme Temperature | Radon Exposure |
| Flood, Flash Flood, Ice Jam | Subsidence, Sinkhole |
| Hailstorm | Tornado, Wind Storm |
| Hurricane, Tropical Storm, Nor'easter | Wildfire |
| Invasive Species | Winter Storm |

Hazards in Pennsylvania

Human-Made and Technological Hazards in 2013 PA HMP

HAZARD NAME

Civil Disturbance

Dam Failure

Environmental Hazard

Levee Failure

Mass Food and Animal Feed Contamination

Nuclear Incident

Terrorism

Transportation Accident

Urban Fire and Explosion

Utility Interruption

Hazards in Pennsylvania



Presidential Declarations In Pennsylvania

56

Gubernatorial Declarations In Pennsylvania

45

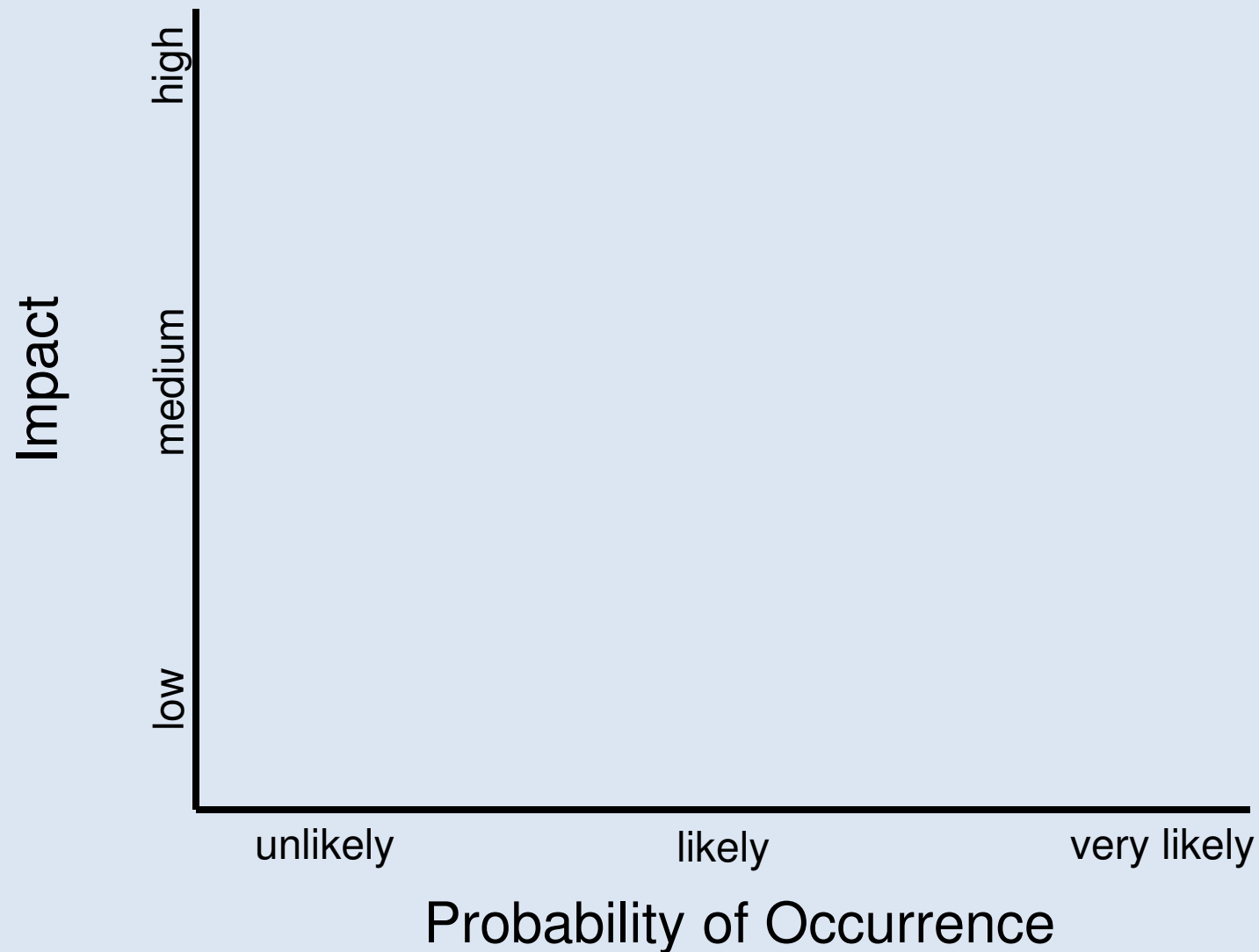
Exercise: Hazard Identification

- Place dots on hazards that you believe are most prevalent and/or most important in your community.



Flickr: Astropixie, 2008

Exercise: Hazard Identification



A Planner's Role in Hazard Mitigation



- ✓ **Developing a FEMA-approved HMP**
- ✓ **Integrating hazard mitigation into existing plans and documents**
- ✓ **Coordination with the Local Emergency Management Personnel**

Developing a Hazard Mitigation Plan



Local Mitigation Planning Handbook

March 2013



- FEMA-developed tool for local governments to use in developing or updating a local hazard mitigation plan

Developing a Hazard Mitigation Plan

Standard Operating Guide



October, 2010

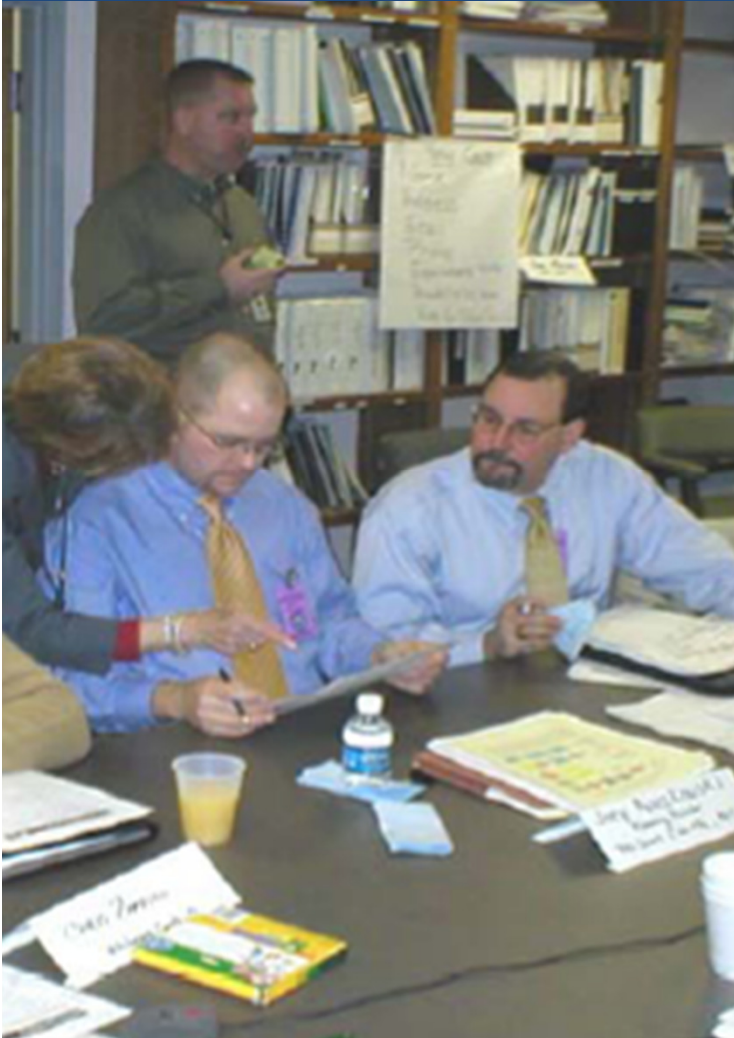
Prepared for:
Pennsylvania Emergency Management Agency
2605 Interstate Drive
Harrisburg, Pennsylvania 17110

Prepared by:
Michael Baker Jr., Inc.
1818 Market Street, Suite 3110
Philadelphia, Pennsylvania 19103

Pennsylvania's All-Hazard Mitigation Planning Standard Operating Guide (SOG)

- Documents standard operating procedures for hazard mitigation planning in PA by capturing FEMA requirements, clarifying and combining existing guidance

Developing a Hazard Mitigation Plan



Plan Outline

1. Introduction
2. Community Profile
3. Planning Process
4. Risk Assessment
5. Capability Assessment
6. Mitigation Strategy
7. Plan Maintenance
8. Plan Adoption
9. Appendices

Step 1: Stakeholder and Public Involvement

- **Establish a local steering committee or planning team to:**
 - Lead or assist in holding public meetings
 - Gather input on local hazards and mitigation measures
 - Review the final plan
 - Assist with implementation of the plan
- **Document the public involvement process as part of the plan**

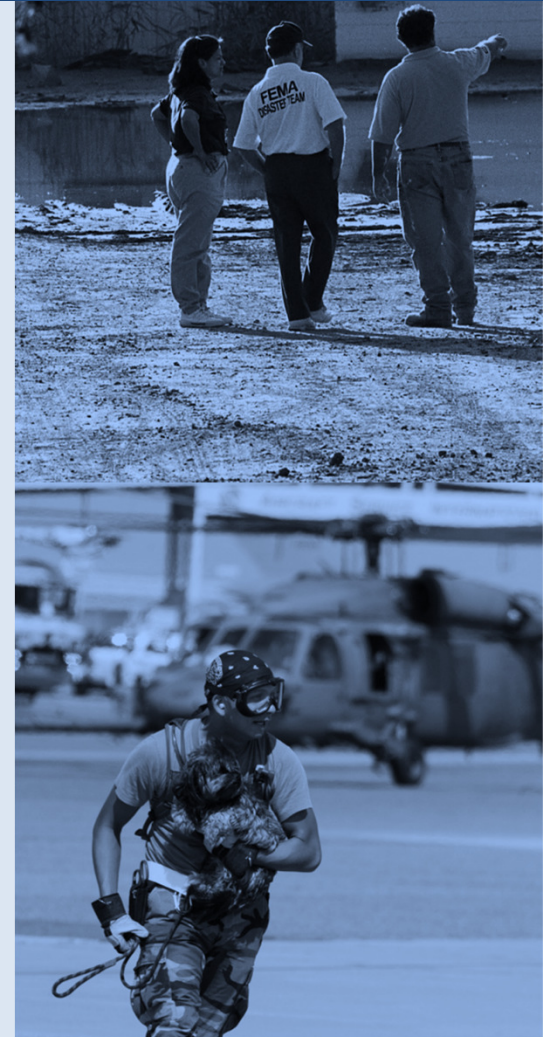
Step 2: Hazard Identification and Risk Analysis

- Hazard identification must address all hazards in area
- Hazard Identification/Risk Analysis combines hazard history with the possibility of a hazard striking the area

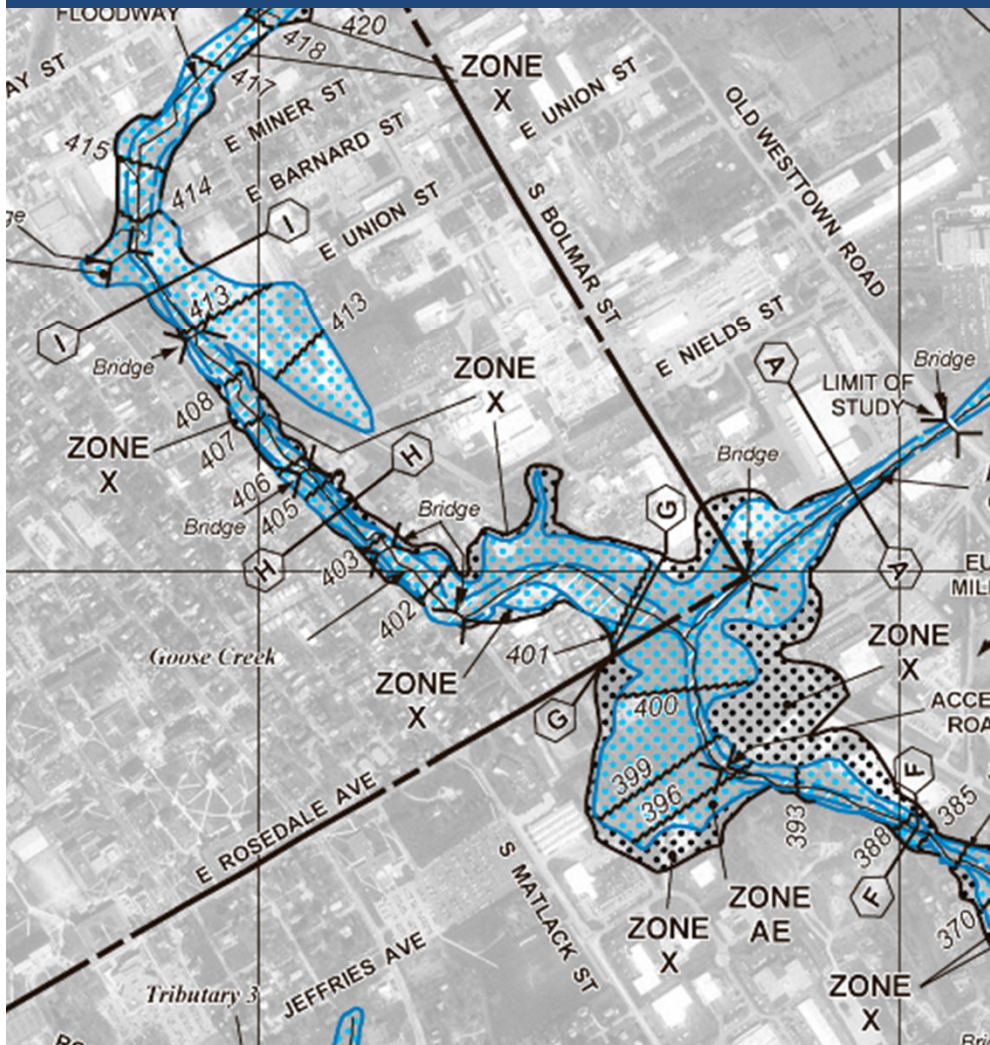


Step 2: Hazard Identification and Risk Analysis

- Use of variety of sources to research and gather hazard information:
- Historical records, reputable online sources, existing local and state plans
- Geographic Information Systems (GIS) to compare hazards to vulnerable facilities



Step 2: Hazard Identification and Risk Analysis



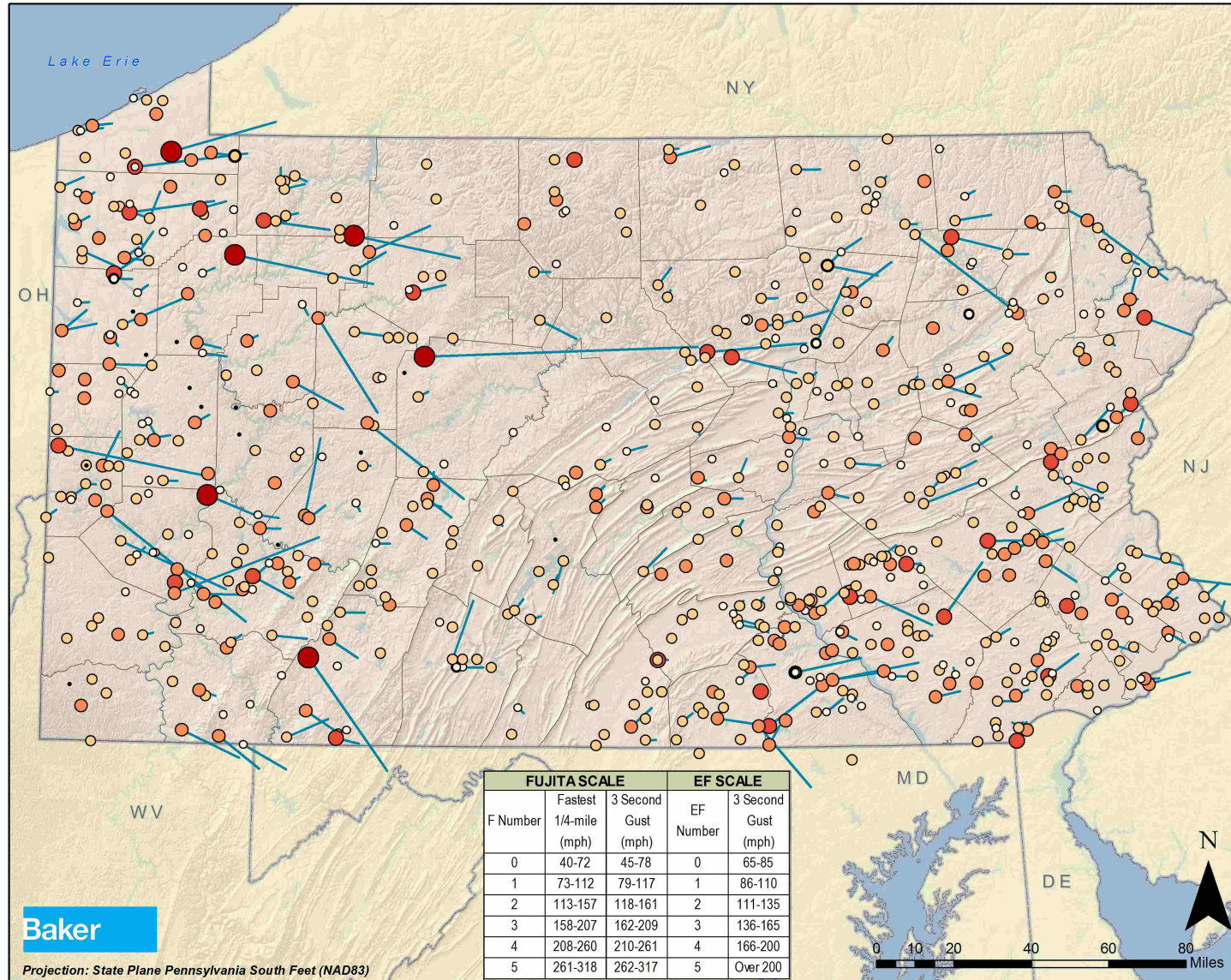
- Flood Insurance Rate Maps for 1% annual flood
- Hazard Vulnerability Analysis (HVA) for additional risk analysis
- HAZUS software
- Past Disasters

Step 3: Vulnerability Assessment



- Identify structures and populations most likely to be impacted by all hazards
- Prioritize structures/facilities for mitigation measures
- Overlay hazard history and probable occurrence to identify areas most vulnerable to hazards

Step 3: Vulnerability Assessment



Pennsylvania 2013 Hazard Mitigation Plan



Pennsylvania Tornado History (1950 - 2012)

LEGEND

Fujita Scale

- Unknown Magnitude
- 0
- 1
- 2
- 3
- 4

— Historic Tracks

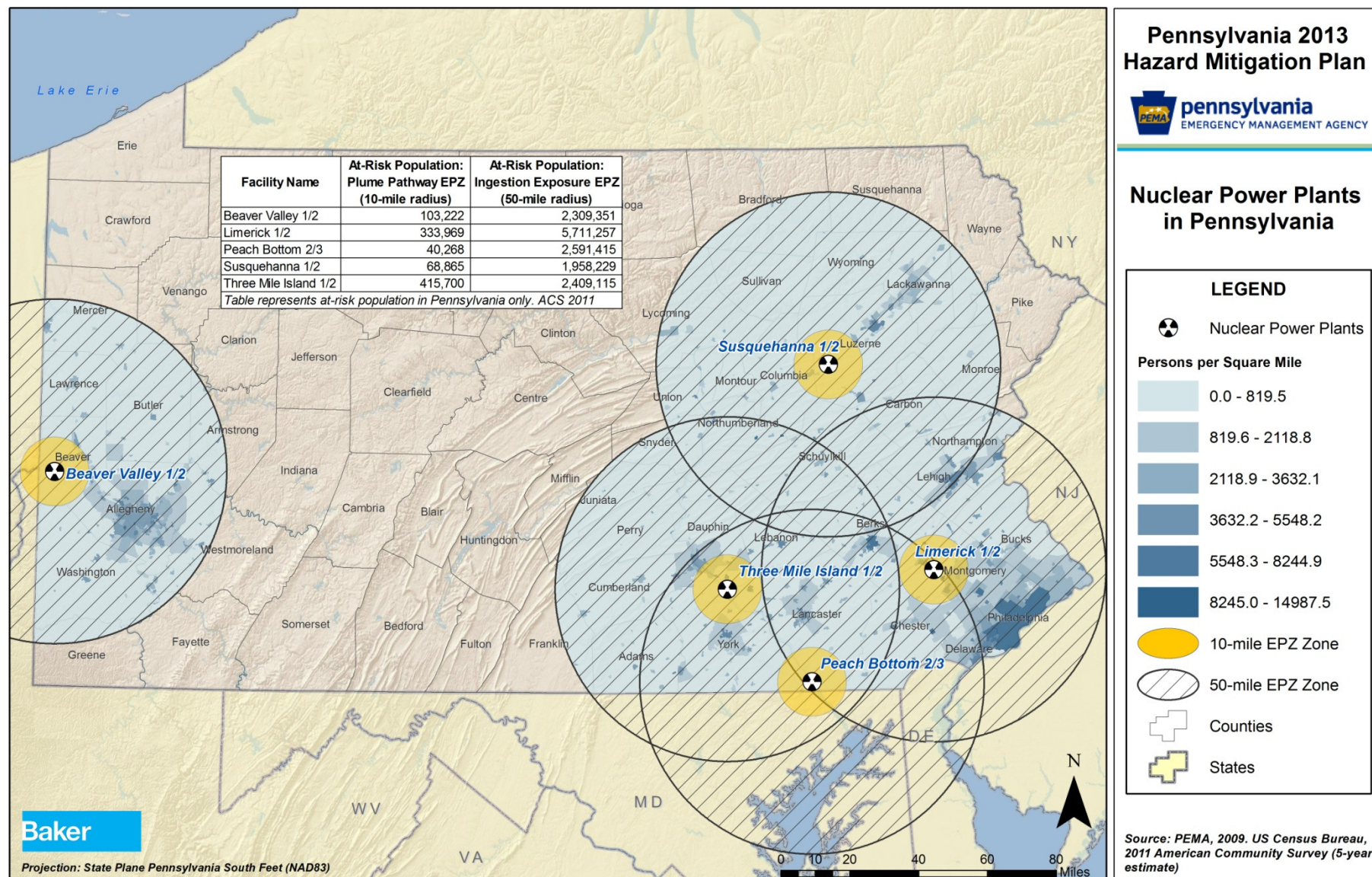
⊞ Counties

⊞ States

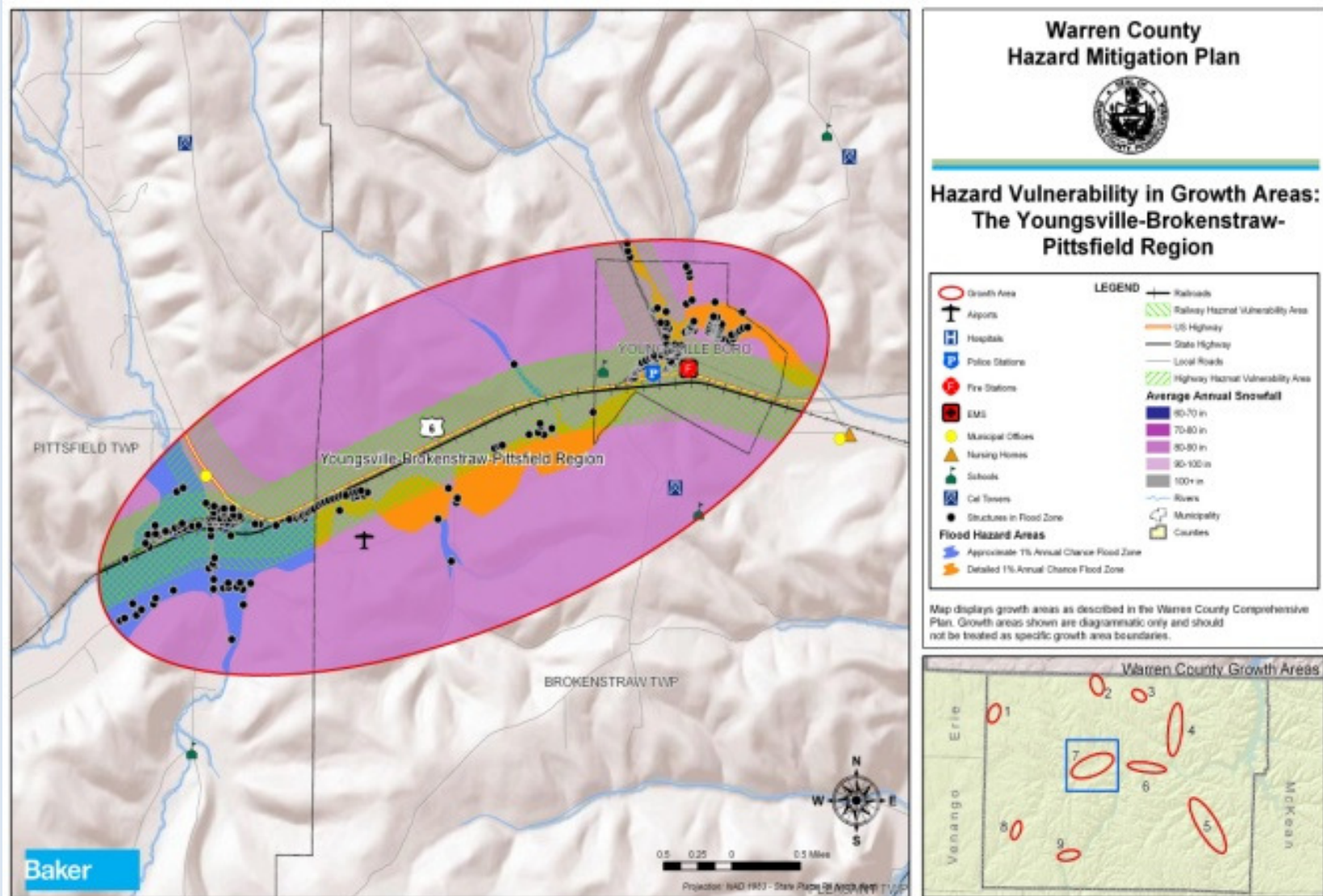
Map illustrates tornado touchdowns and tracks or events with recorded locations. Events occurring prior to 2007 are reported in the EF Scale while those prior to 2007 are reported as F Scale.

Source: NOAA 2012 and 2013

Step 3: Vulnerability Assessment



Step 3: Vulnerability Assessment



Step 3: Vulnerability Assessment

Example: Delaware County structure and critical facility vulnerability summary for flood hazards

| MUNICIPALITY | TOTAL PARCELS | TOTAL PARCELS IN SFHA | TOTAL ASSESSED PARCEL VALUE IN SFHA | TOTAL CRITICAL FACILITIES | TOTAL CRITICAL FACILITIES IN SFHA | ESTIMATED 2000 POPULATION IN SFHA |
|-------------------------|---------------|-----------------------|-------------------------------------|---------------------------|-----------------------------------|-----------------------------------|
| Aldan Borough | 1,699 | 32 | \$3,967,367 | 7 | 0 | 268 |
| Aston Township | 6,405 | 161 | \$38,423,320 | 19 | 1 | 440 |
| Bethel Township | 3,377 | 75 | \$14,625,447 | 4 | 0 | 322 |
| Brookhaven Borough | 2,681 | 68 | \$12,665,678 | 8 | 0 | 0 |
| Chadds Ford Township | 1,714 | 118 | \$36,669,632 | 4 | 0 | 11 |
| Chester City | 13,964 | 469 | \$164,968,878 | 21 | 0 | 830 |
| Chester Heights | 1,046 | 38 | \$8,151,784 | 7 | 1 | 29 |
| Chester Township | 1,659 | 143 | \$24,533,413 | 5 | 0 | 0 |
| Clifton Heights Borough | 2,547 | 39 | \$10,311,940 | 8 | 0 | 99 |

Step 4: Capability Assessment

- What plans, policies, regulations, and programs does your community have?
- What tools are available to you?
- Include the local plans, policies, regulations, and programs that may already address hazards and community resiliency
- Review of community capabilities, authorities, and other resources available to accomplish mitigation

Step 5: Mitigation Strategy



- **Work with communities to develop goals and objectives and mitigation actions**
- **Mitigation actions include a variety of choices to match community needs, some structural and some non-structural**

Step 5: Mitigation Strategy

Types of Mitigation Actions

1. Local Plans and Regulations
2. Structure and Infrastructure Projects
3. Natural Systems Protection
4. Education and Awareness Programs



Step 5: Mitigation Strategy



- **Local Plans and Regulations:**
 - Targeted planning (local plans, zoning, regs)
 - Revision of building codes
 - Stormwater and floodplain regulations

Step 5: Mitigation Strategy



- **Structure and Infrastructure Projects:**
 - Elevation of flood-prone structures
 - Floodproofing measures
 - Relocation, Acquisition, Demolition
 - Floodwalls, retaining walls, detention and retention structures, culverts, dams/levees, and safe rooms

Step 5: Mitigation Strategy



- **Natural System Protection Actions:**
 - Minimize damage and losses and preserve or restore the functions of natural systems
 - Examples include sediment and erosion control, stream corridor restoration, forest management, conservation easements, and wetland restoration and preservation

Step 5: Mitigation Strategy



- **Education and Awareness Actions:**
 - Outreach projects
 - Library materials dissemination
 - The creation of hazard information centers
 - School age / adult education programs

Step 6: Plan Maintenance

- How will the plan and the mitigation actions stemming from it be implemented and monitored?
- How will it be linked with existing plans?
- How will continued and sustained public input and involvement be sought?
- The plan should provide a schedule for evaluation and updating every five years.



Step 7: Plan Approval and Adoption

- Hazard Mitigation Plans are reviewed by states and approved by FEMA
- FEMA provides “approvals pending adoption” that are the notice to proceed for jurisdictions to adopt their plan



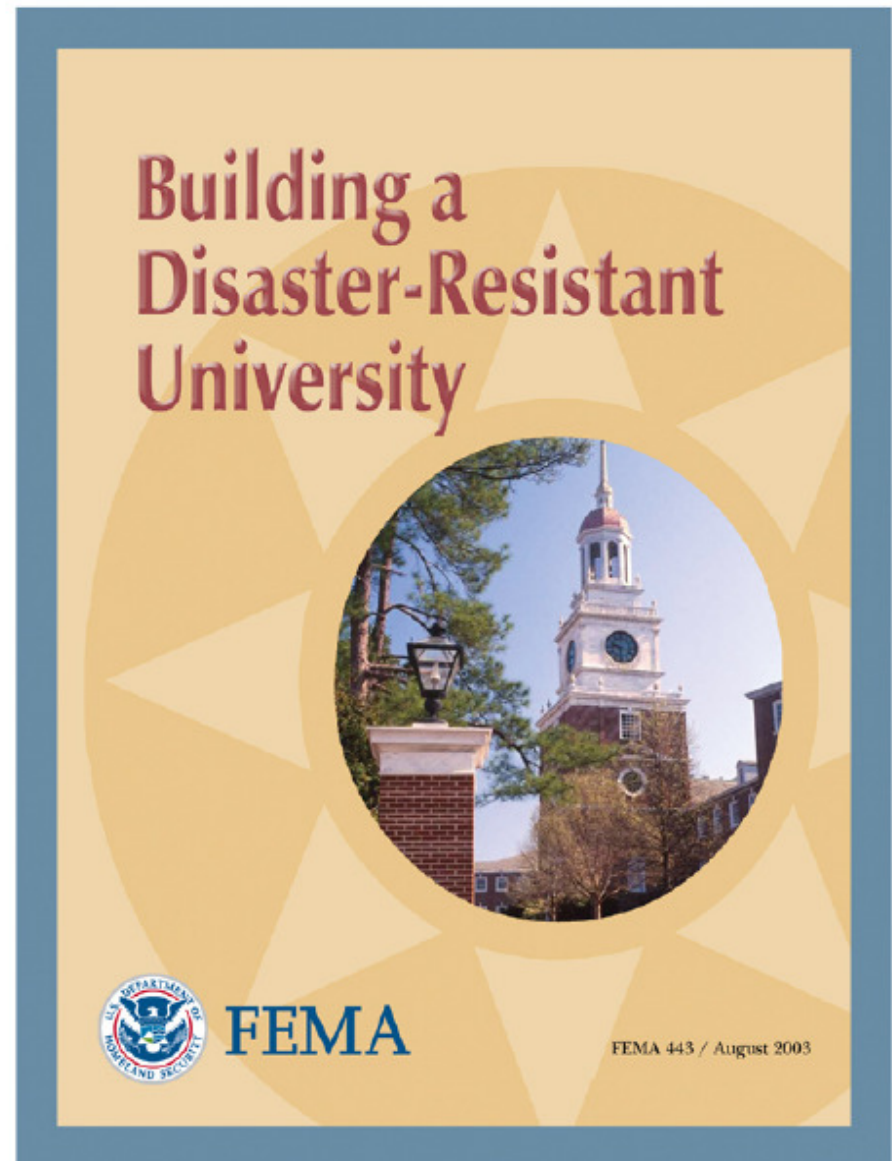
University Hazard Mitigation Planning

- Universities can develop their own plan or participate in a county hazard mitigation plan
- Universities role in mitigation impacts both university and community as a whole



University Hazard Mitigation Planning

- In Pennsylvania, University Hazard Mitigation Plans follow the SOG
- FEMA's Disaster-Resistant University Guidance provides additional ideas
 - Describes experiences of six universities/ colleges



Opportunities for University HMPs

- Focused audience for outreach
- Smaller community allows for more in depth analysis, for example HAZUS Level 3
- Students and professors may be engaged for unique project within the plan



Opportunities for University HMPs

- Improved safety of campus helps community and vice versa
 - Sheltering on campus
 - Use of campus buses for evacuation
 - Coordination with community addresses university unmet needs
 - Leverage multiple funding streams for mitigation project



University Hazard Mitigation Planning

- **Implementing the Plan:**
 - Should aligned with campus strategic or master plan
 - May involve change in operations and adjustments to culture
 - Engage municipal, county and other stakeholders throughout process



University Hazard Mitigation Planning

- **Partnerships between communities and universities:**
 - Share expertise and tools (e.g. GIS)
 - Data (demographic, economic, etc.)
 - Collaboration on larger plan or program, for example HUD Sustainability Grant



Integrating HM - Challenges



- Stand alone documents
- Often developed without the active participation of local planning staff

Integrating HM - Challenges

- **Planners often don't consider hazard mitigation planning as falling within their purview**
- **Mitigation strategies often focus on infrastructure protection and emergency services projects with less emphasis on non-structural measures available through local land use planning or policy**

Integrating HM - Benefits



- Incorporating HM into existing local plans, policies, codes, and programs can:
 - Help guide development and redevelopment patterns
 - Reduce risk to hazards
 - Avoid or minimize risk through safe development practices

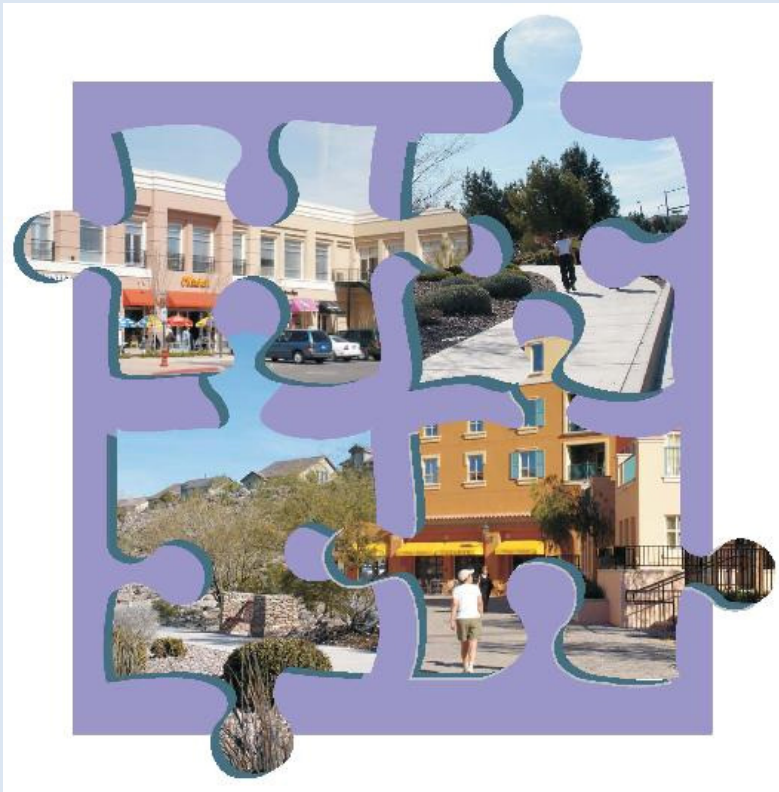
Integrating HM



Comprehensive Plan

- Map hazards and update existing conditions
- Incorporate HM goals and strategies throughout plan
- Or create a separate HM chapter
- Target growth for low hazard areas

Integrating HM



- York County, PA has integrated HM planning into its Comprehensive Plan and also into the Act 167 Stormwater Plan
- Uses a Flowchart Tool contained within the Integrated Water Resources Plan component of the County Comp Plan



Integrating HM

Zoning Ordinances

- Create hazard overlay zones
- Limit development in high hazard areas
- Restrict uses in high hazard areas to less susceptible uses such as open space
- Stand-alone SW management and floodplain ordinances

Integrating HM



- Enact higher regulatory standards for floodplains:
 - Prohibit or require permitting for all development in SFHA
 - Elevation of new and substantially improved residential structures above the BFE
 - Location or construction of all public utilities and facilities to minimize or eliminate flood damage
 - Anchoring



Integrating HM

SALDO

- Establish design guidelines that incorporate mitigation measures
- Create incentives for creative designs that avoid or minimize hazards
- E.g., design standards in floodplains, steep slopes, natural features protection etc.



Integrating HM

- **Perry County, PA SALDO:**
“The purpose of this steep slope section is to:
 - ...To protect low-lying areas from flooding by mitigating impacts caused by grading of sloped areas, changes of ground cover, or erection of structures...”

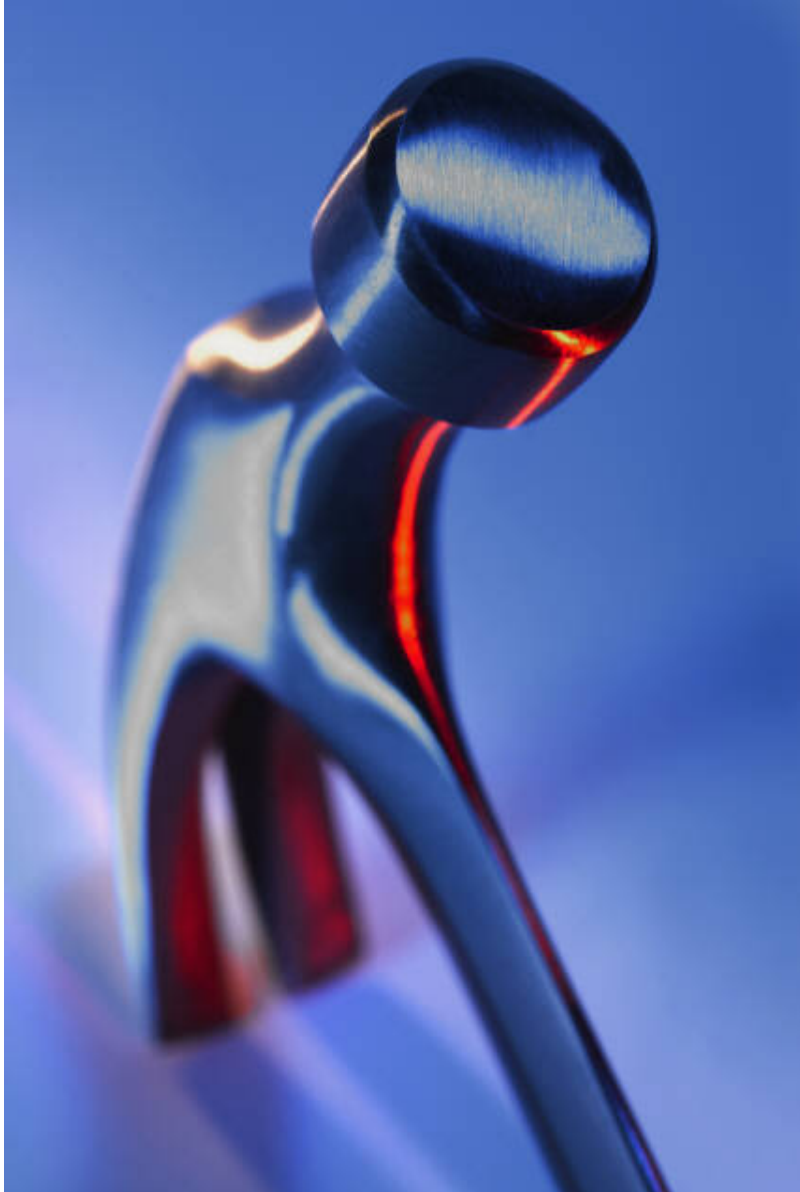


Integrating HM

Site Planning & Permitting

- Encourage development applicants to submit plans that identify the extent of known hazards, and mitigate their potential effects
- Establish permit review and approval criteria that addresses hazards
- E.g., building near the floodplain, wildfire prone, etc.

Integrating HM



Building Codes

- Compare current code to identified hazards to see if it is sufficient enough to protect the public
- Considerations: structures built to withstand storms and wind

Integrating HM



Capital Improvement Plans and Transportation Improvement Plans

- Provide funding to mitigation projects
- Plan major infrastructure improvements in areas suitable for safe growth

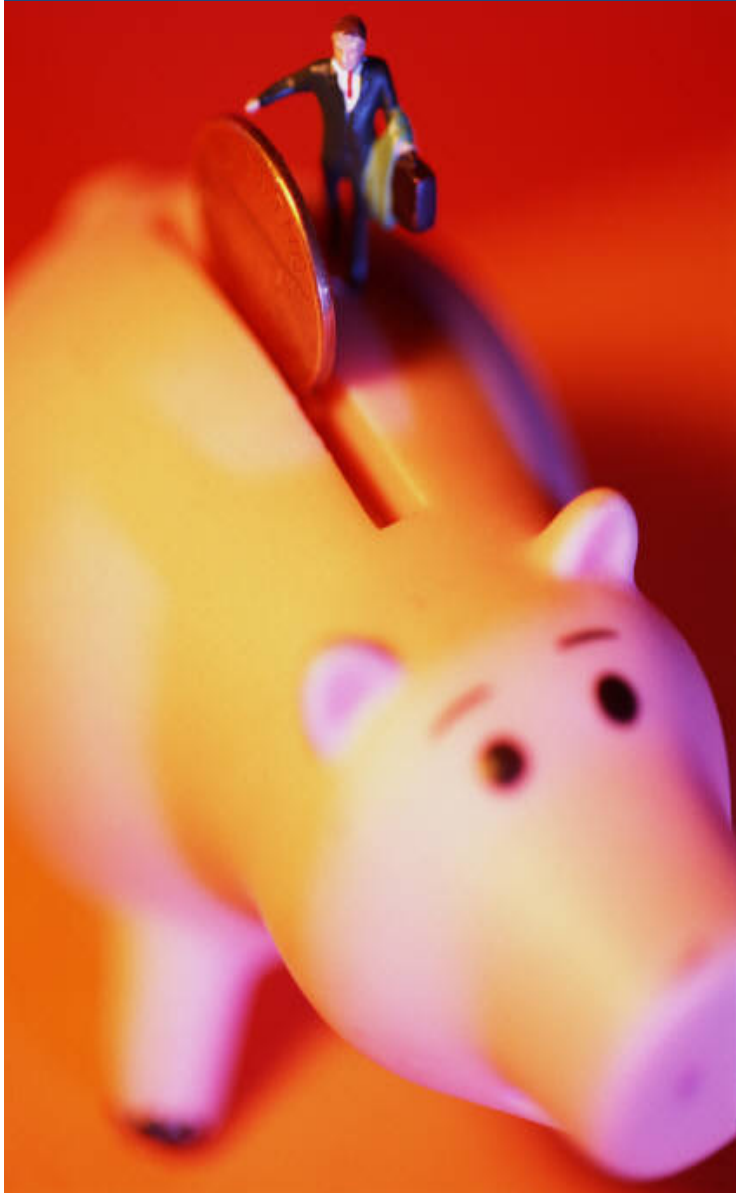


Integrating HM

Functional Plans

- **Transportation Plans:** Plan transportation infrastructure with evacuation routes in mind
- **Economic Development Plans:** Guide private investment to areas that are safe and more resilient to known hazards
- **Open Space Plans:** Target high hazard areas for acquisition

Integrating HM



Special Programs

- Use TDR to steer growth away from high-hazard areas
- Use Tax Increment Financing to encourage growth in less hazard prone areas

Integrating HM



Integrating Hazard Mitigation Into Local Planning

Case Studies and Tools for Community Officials

March 1, 2011



- Includes recommended steps and tools to assist with local integration efforts, along with ideas for overcoming possible impediments

Integrating HM

So How Do We Do It?

1. Review existing local HMP for hazards, risks, and mitigation strategies
2. What plans, policies, and tools already in place?
3. Identify gaps and overlaps with your current plans



Integrating HM

| ✓ = Area of Existing Overlap ★ = Gap Between Mitigation Plan and Planning Framework | | | | PLANNING FRAMEWORK | | | | | | | |
|--|---------------------------------|---------------------------------------|-------------------------------|---|----------|-------------|--|-------------|----------------|--|-----|
| | | | | Comprehensive/ General Plan Elements | | | Zoning Ordinances and Development Regulations | | | Capital Improvement and Infrastructure Programs | |
| | | | | Hazards | Land Use | Environment | Zoning | Subdivision | Critical Areas | CIP | TIP |
| HAZARD MITIGATION | Risk Assessment | | | ✓ | ✓ | ✓ | | | | | |
| | Mitigation Goals and Objectives | | | ✓ | ✓ | ✓ | | | | | |
| | Mitigation Actions | Local Plans and Regulations | Hazard Area Avoidance | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | Parks and Open Space Planning | | ✓ | ✓ | ✓ | | | ★ | |
| | | | Stormwater Regulations | ★ | | | | | | | |
| | | Education and Awareness Programs | Hazard and Risk Awareness | ✓ | | | | | | | |
| | | | Mitigation Best Practices | ✓ | | | | | | ✓ | ✓ |
| | | | Monitoring and Reporting | ✓ | | | | | | | |
| | | Natural Systems Protection | Watershed Management | | | ✓ | | | ✓ | | |
| | | | Wetland Preservation | | | ✓ | ✓ | ★ | ✓ | | |
| | | | Erosion and Sedimentation | | | | | | | | |
| | | Structure and Infrastructure Projects | Levees | | | | | | | ✓ | |
| | | | Structural Retrofits | | | | | | | ✓ | ★ |
| | | | Acquisition | | | | | | | ✓ | |
| | Stormwater Structures | | | | | | | | ✓ | | |

Hazard Mitigation Assistance



FEMA Assistance

- Individual Assistance
 - Aid to individuals and households
- Public Assistance
 - Aid to public and tribal (and certain private non-profit) entities for certain emergency services and the repair or replacement of disaster damaged public facilities

Hazard Mitigation Assistance



FEMA Assistance

- Hazard Mitigation Assistance
 - Funding for measures designed to reduce future losses to public and private property.
 - Some declarations will provide only individual assistance or only public assistance.

Hazard Mitigation Assistance



FEMA Hazard Mitigation Assistance Programs:

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA) Program
- Pre-Disaster Mitigation (PDM) Program

Hazard Mitigation Assistance

A photograph of a flooded residential area. In the foreground, a weathered metal mailbox is mounted on a wooden post, partially submerged in murky floodwater. The background shows a flooded street, trees, and a house, illustrating the impact of flooding.

- **PEMA**

- **Tracks mitigation projects**
- **Funding**
- **DCED Coordination**
- **Training and Exercises**
- **Resources**
- **Technical Assistance**

Hazard Mitigation Assistance



- **Local and Other Sources:**
 - **Municipal EMCs**
 - **County EMA**
 - **Local Fire/Police**
 - **Red Cross**
 - **Chambers of Commerce**

ASFPM

NO ADVERSE IMPACT A Toolkit For Common Sense Floodplain Management



2003

Community Liability and Property Rights:

As Mayor or County Commissioner, should you worry about your liability in the event of a flood?

May, 2003

able?

flooding or erosion they often file lawsuits against a government that has caused the damages, contributed to the damages, or failed to protect against hazards.

and the basic rules of liability to which result in, or increase, the risk to common law, followed the rule that you do not injure another's property." Common law rights and duties related to liability, negligence, riparian rights, and duties, and statutory liability

result from actions such as building levees, roads, and bridges on floodplains.

plain is Floodplain



ated developed, then there are flood waters. This means

What is Common Law Liability?

In the legal research paper "No Adverse Impact Floodplain Management and the Courts," Joe Kusler, Esq., concludes that under common law, no landowner, public or private, has the right to use his/her land in a way that substantially increases flood or erosion damages on adjacent lands.

Communities that cause or permit an increase in flood or erosion hazards may be liable for monetary damages to injured individuals. Increased flood and erosion hazards can be caused by construction projects undertaken, or permitted, by a local government.

landowners damaged by flooding are also suing governmental entities that fail to adequately administer or enforce floodplain regulations, particularly where an issued permit resulted in damage to other lands.

Cortez v. Sun Inv., Inc., 690 P.2d 1324, 1332 (Haw., 1984); Hawaiian Supreme Court held that a county may be liable for approving a subdivision with inadequate drainage.



Natural Hazard Mitigation Assoc.

Save the Date!
2013 International Hazard Mitigation Practitioners Symposium
NHMA
Natural Hazard Mitigation Association

When: July 16-17, 2013
Where: Broomfield, Colorado
Theme: From Grassroots to Global:
Reducing Disaster Losses through
Mitigation and Adaptation

The Symposium is designed to provide insight into best practices for mitigation. The program sessions will focus on fresh perspectives, broad visions, and inclusive management techniques that are fundamentally changing communities at home and abroad in terms of hazard mitigation and reducing risk. For more information, or if you are interested in sponsoring the 2013 Symposium, we welcome you to visit us at: <http://nhma.info/>
QUESTIONS? PLEASE CONTACT nathazma@gmail.com.

FEMA photo credits:
Marlene Colorado,
Hond
Tahavert,
Ruth
Kentucky

A WELL BUILT HOUSE
BUILT TO WITHSTAND A 120 MPH WIND EVENT

NHMA
Natural Hazard Mitigation Association
Planning and Building Livable, Safe & Sustainable
Communities
The Patchwork Quilt Approach

Edward A. Thomas, Esq.
Alessandra Jerolleman, MPA, CFM
Terri L. Turner, AICP, CFM
Darrin Punchard, AICP, CFM
Sarah K. Bowen, CFM

Special Edition for the Association of State Floodplain Managers
Fifth National Floodproofing Conference and Exposition, 2011

Other State Agencies

pennsylvania PA

Commonwealth of Pennsylvania

PA STATE AGENCIES ONLINE SERVICES

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 **pennsylvania**
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP Keywords Air Topics Land Topics Water Topics Energy Topics

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In Your Neighborhood

Links

Watershed MANAGEMENT

Welcome to the
BUREAU OF WATERSHED MANAGEMENT

The Bureau of Watershed Management's mission is to restore and protect Pennsylvania's watersheds through: proper planning and management of water resources and their uses; reducing the impacts of nonpoint sources of pollution on water resources; regulating activities for soil conservation and waterway and wetlands protection; forming partnerships and building local capacity to restore and protect water resources, including drinking water sources; and educating Pennsylvania citizens about watersheds and watershed management.

County Conservation District Niche

Drinking & Source Water Protection

[Private Wells Information](#)

[Source Water Protection](#)

[Ground Water Protection](#)

Drought Information

Stormwater

[Erosion & Sediment Control](#)

[Stormwater Management](#)

Water Resources & Planning

[State Water Plan \(Act 220\)](#)

[Instream Flow Studies PA & MD](#)

[Water Allocation & Use](#)

[Water Conservation Center](#)

Watershed Restoration & Protection

[TMDLs](#)

[Growing Greener](#)

[Citizens Volunteer Monitoring](#)

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[Stream Releaf](#)

[Watershed Academy](#)

[Watershed Notebooks](#)

[Watershed Snapshot](#)

Waterways, Floodways & Wetlands

[Waterways & Floodways](#)

[Wetlands](#)

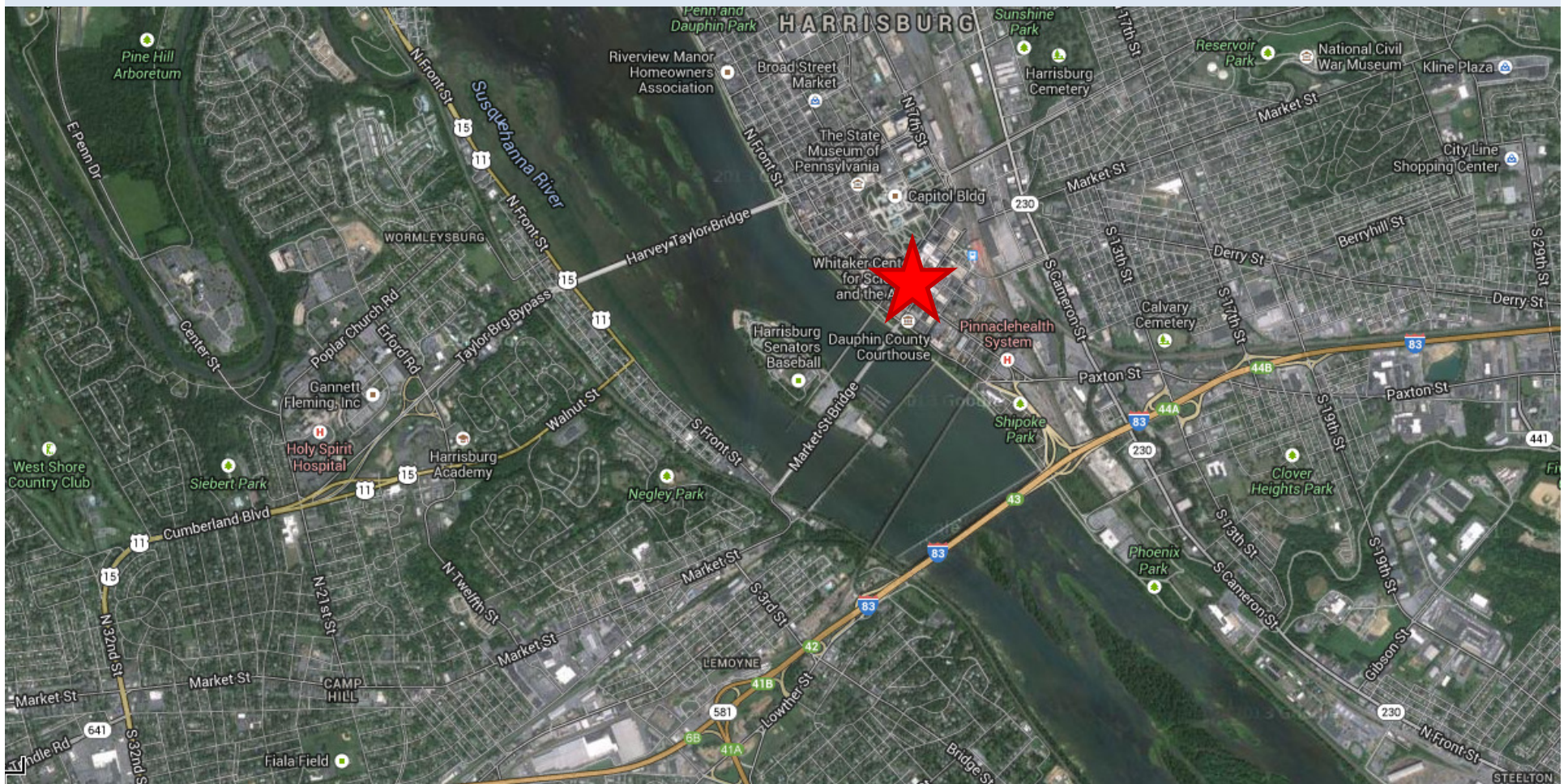


Part II: Emergency Preparedness and Response Planning

The image is a composite of two photographs. The top photograph shows a massive, billowing plume of dark, grey smoke rising from a fire, filling the upper half of the frame. The bottom photograph shows a wide, intense fire burning across a landscape of low-lying green and brown shrubs. The fire is bright orange and yellow, with thick black smoke rising from it. The text 'Part II: Emergency Preparedness and Response Planning' is overlaid in white on a dark blue rectangular background that spans the width of the image between the two photographs.

What would you do?

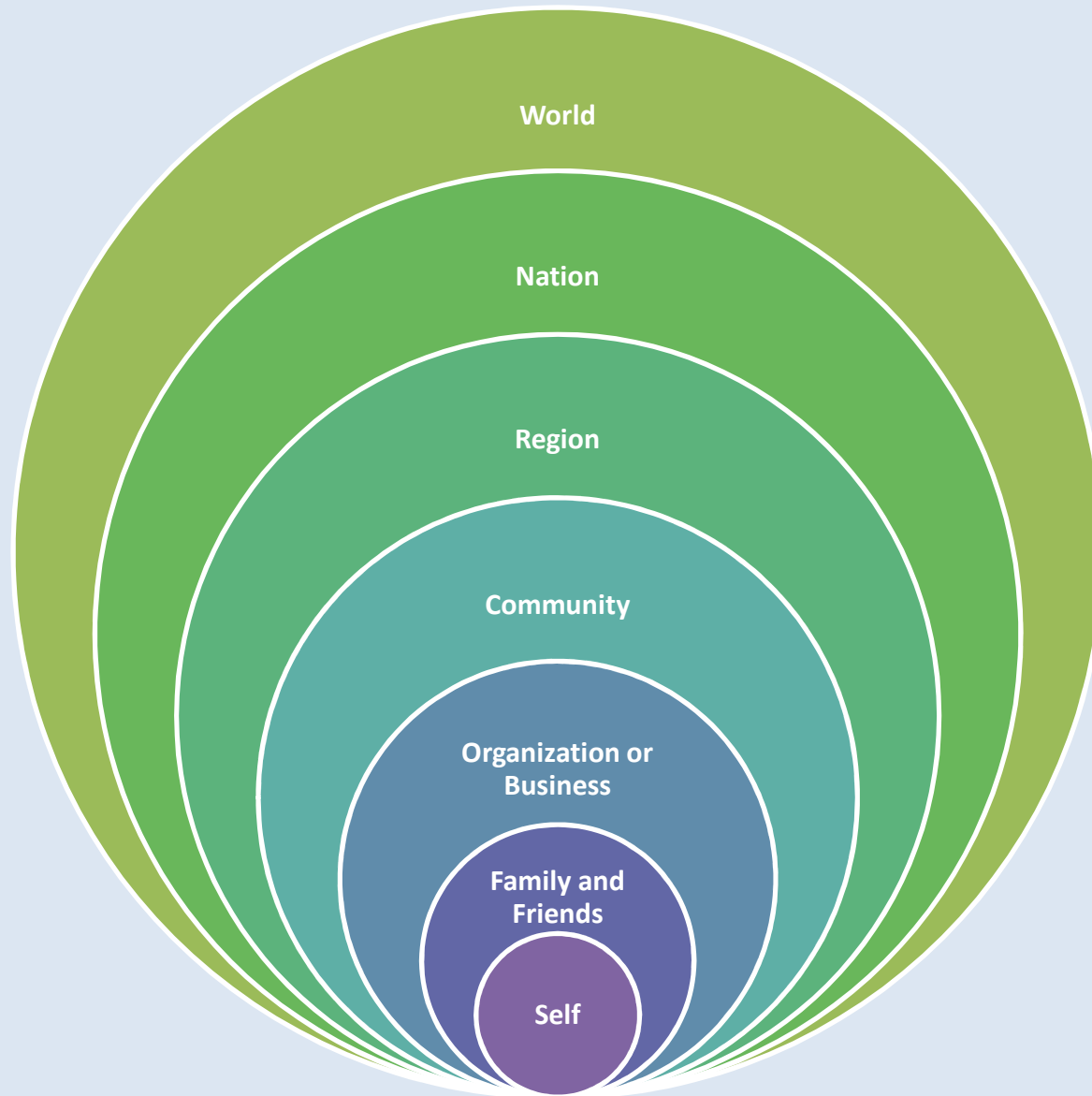
A quick exercise



What would you do?

- Call family, what if phones are not working?
- Do you have family impacted by evacuation?
- What is your daycare plan?
- Do you have family nearby where you may stay?
- Do you have pets at home?
- Do you have medicine that you need to take?
Is it with you?

Planning to Care for Others



Family Preparedness Training

- Helping colleagues to plan for disaster improves their safety during and recovery from disaster
- Increases their ability to work during a disaster
- Encourage colleagues to:
 - Make a kit
 - Make a plan
 - Be informed

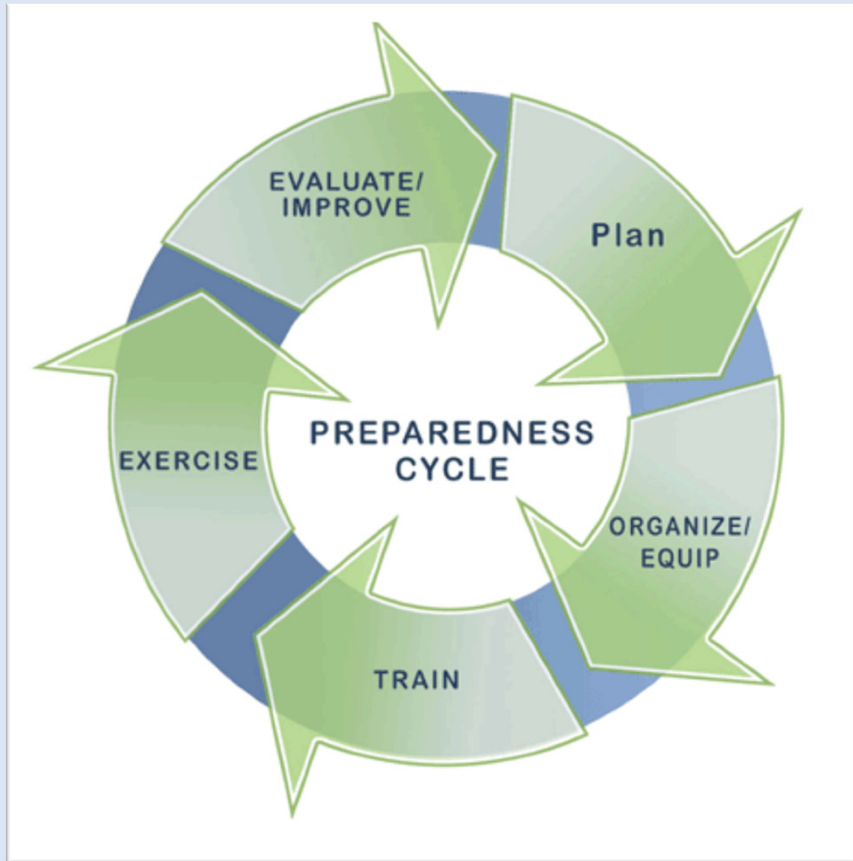


Where does Planning fit into Crisis?

- **Depends on community**
- **Preparedness:** planning, training and outreach
- **Prevention:** analysis to support recognizing and preventing hazards and threats
- **Response:** information and GIS analysis to support safe response

Preparedness

- Planning for preparedness may address:
 - Your department
 - Your building
 - Your community
 - Your neighboring communities



Preparedness Components



- Conduct threat and vulnerability identification, assessment, and resolution
- Meet and share plan with stakeholders and partners
- Coordinate public information

Preparedness Components

- Identify internal emergency management team
- Develop preparedness plans and related procedures
- Train staff on prevention, preparedness ,and response for workplace
- Train staff on family disaster planning

Preparedness Components



- Exercise plan and participate in community drills
- Homeland Security Exercise and Evaluation Program (HSEEP) resources available on-line



Preparedness Resources

- Historical events
- Incident and breach reports
- Crime Reports
- Employee reports
- Facilities plans and blueprints
- Security testing and inspections

Timeline of Natural Hazard Events Impacting the City of Capitola

| DATE | TYPE | IMPACT/PROPERTY DAMAGE | IMAGES |
|-------------|-----------|---|---|
| Winter 1996 | Flood | Yards and basements of homes along both sides of Soquel Creek near the village were flooded. |  |
| 2007-2009 | Drought | Water waste regulations strictly enforced; voluntary 15% conservation savings requested by local water providers. | |
| Winter 2008 | High tide | Old bathhouse/boathouse building (Margaritaville/Stockton Bridge Grill) battered by swells. <i>(Photo courtesy of Karen Nevís)</i> |  |

Preparedness Training Resources



American Red Cross



<http://www.youtube.com/user/SLOARC>

Prevention



- Risk Reduction
 - Vulnerability reduction best practices
- Security Awareness
- Safety Data Acquisition/Analysis

Prevention

- **Identify risk reduction strategies typical for an agency, specific resource or building:**
 - Personnel, facilities, vehicles, and information
- **Plan for implementing appropriate actions**
- **Encourage Security Awareness**
- **Use data to identify areas for security and safety improvements**

What is Emergency Response and Management?



- Actions taken to protect life, property and natural resources during a disaster event

Who is Responsible?



- Local Partners
- Regional Partners
- National Response Framework

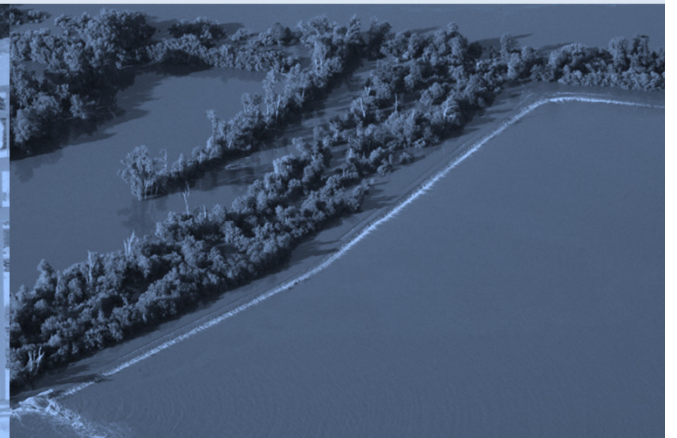
Local Partners



- **Municipal Emergency Management**
- **County Emergency Management**
- **Police**
- **Fire**
- **Emergency Medical Services**
- **Hospitals**

Local Partners

- **Municipal and County Commissioners and Council Members**
- **Public Works**
- **Public Health**
- **Local Media**



Local Partners

- Citizen Emergency Response Teams
- American Red Cross
- Salvation Army
- Voluntary Organizations Active in Disaster (VOAD)
- Utility Providers
- Animal Sheltering Organizations

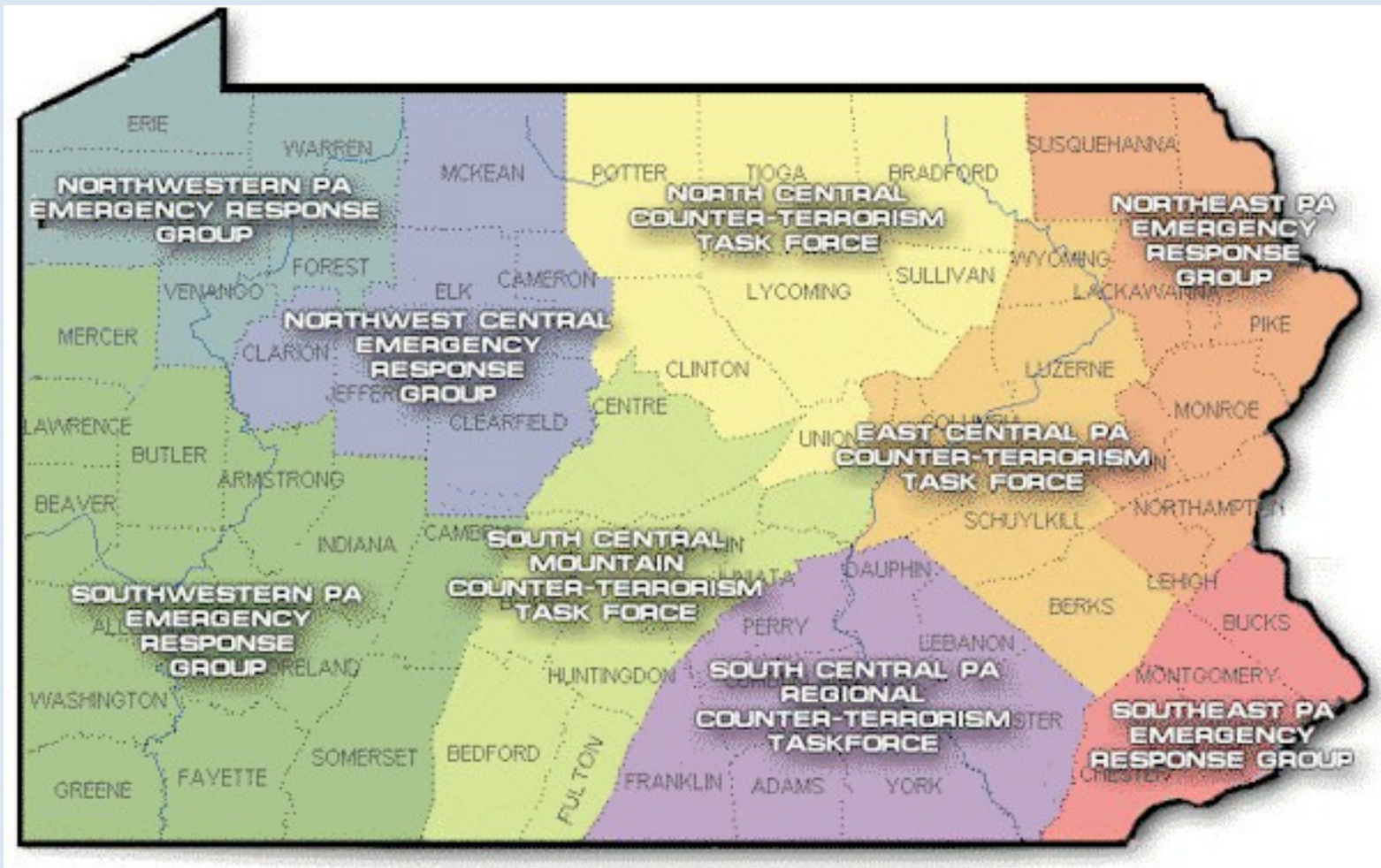


Local Plans

- **Emergency Operations Plans (EOP)**
 - Evacuation Annexes
 - Marcellus Gas Well Site Emergency Response Plans (ERP)
 - Hazardous Materials Transportation Incident ERP
- **Local Emergency Planning Committee (LEPC)**
- **Vulnerable Population Plans**
- **Organizational Disaster Response Plans**
- **Memorandum of Understanding (MOU)**

Regional Partners

- Regional Counterterrorism Task Forces



Regional Partners

- **Regional Counterterrorism Task Forces**
 - 9 Regional Task Forces
 - Formed in 1998 in response to the growing threat of Weapons of Mass Destruction
 - Provides “All Hazard” planning, mitigation, response and recovery services to the Counties in their Region
 - Department of Homeland Security funding recipients

State Partners

- PEMA
- PennDOT
- PA State Police
- PA Department of Health
- PA Army National Guard
- Emergency Preparedness Liaison Officers (EPLOs) at Many State Agencies



Regional and State Planning

- **Radiological Emergency Response Plans**
 - Required by Nuclear Regulatory Commission and regularly exercised
- **Commonwealth EOP**
- **Point of Dispensing (POD) Plans**
- **Threat Hazard Identification and Risk Assessment (THIRA)**
- **State Homeland Security Strategy**

National Planning

- **Presidential Policy Directive 8: National Preparedness (PPD-8)**
- **National Preparedness Goal:**
 - A secure and resilient Nation with the capabilities required across the whole community to **prevent**, protect against, **mitigate**, **respond** to, and **recover** from the threats and hazards that pose the greatest risk.

National Planning Themes



- ‘Whole Community’ planning
- Implementation
- Integration among the Frameworks and planning mechanisms



National Response Framework



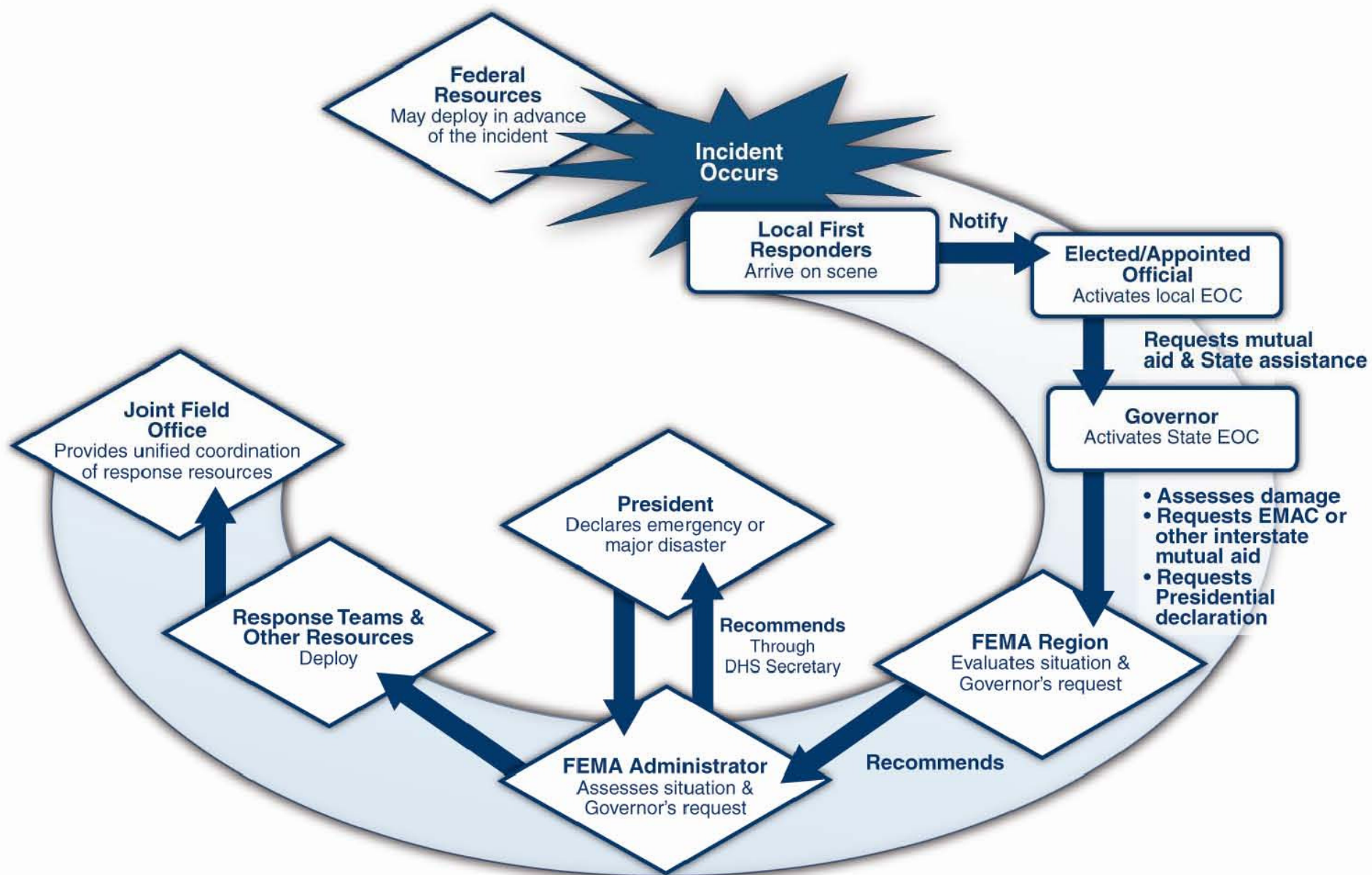
National Response Framework

*Second Edition
May 2013*



Homeland
Security

- Guides unified national response to disasters and emergencies - from the smallest incident to the largest catastrophe



Emergency Support Functions

- **ESF #1 - Transportation**
- **ESF #2 - Communications**
- **ESF #3 - Public Works and Engineering**
- **ESF #4 - Firefighting**
- **ESF #5 - Information and Planning**
- **ESF #6 - Mass Care, Emergency Assistance, Temporary Housing, and Human Services**
- **ESF #7 - Logistics**

Emergency Support Functions

- **ESF #8 - Public Health and Medical Services**
- **ESF #9 - Search and Rescue**
- **ESF #10 - Oil and Hazardous Materials Response**
- **ESF #11 - Agriculture and Natural Resources**
- **ESF #12 - Energy**
- **ESF #13 - Public Safety and Security**
- *ESF #14 - Superseded by National Disaster Recovery Framework*
- **ESF #15 - External Affairs**

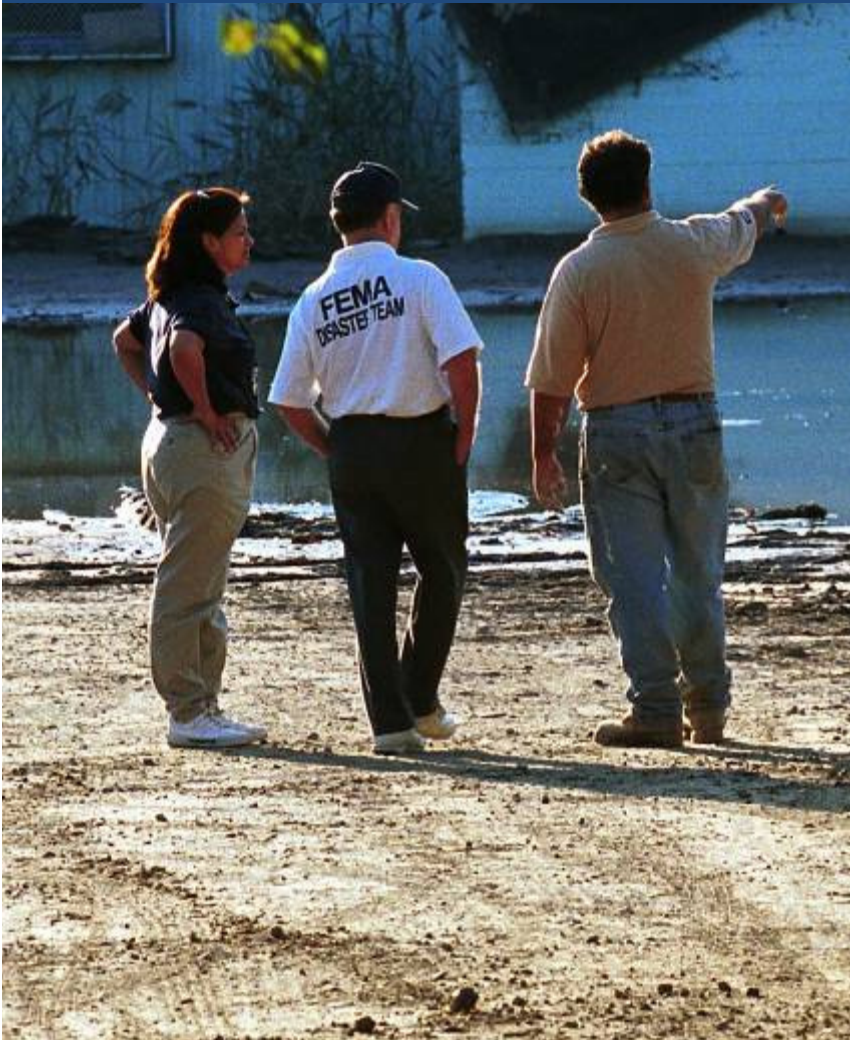
ESF #1 - Transportation

- Assists in the management of transportation systems and infrastructure during domestic threats or in response to incidents.
- Participates in prevention, preparedness, response, recovery, and mitigation activities
- Carries out the DOT's statutory responsibilities, including regulation of transportation, management of the Nation's airspace, and ensuring the safety and security of the national transportation system.

ESF #1 - Transportation

- **ESF Coordinator:** Dept of Transportation (DOT)
- **Primary Agency:** Dept of Transportation (DOT)
- **Support Agencies:**
 - Department of Agriculture
 - Department of Commerce
 - Department of Defense
 - Department of Energy
 - Department of Homeland Security
 - Department of the Interior
 - Department of Justice
 - Department of State
 - General Services Administration
 - U.S. Postal Service

A Planner's Role in Emergency Management and Response



- Information, information, information
- GIS Information
- Coordination, coordination, coordination
- Outreach

Response Planning Considerations

- Wide range of needs to consider when planning for emergencies, including:
 - Poverty
 - Physical and mental disabilities/illnesses
 - Inability to speak or read English
 - Parents with young children
 - Distrust of authority, frustration, anger
 - Pets

Response Resources



Threat and Hazard Identification and Risk Assessment Guide

Comprehensive Preparedness Guide (CPG) 201

*First Edition
April 2012*



Homeland
Security

- **FEMA:**
 - NRF:
<http://www.fema.gov/national-response-framework>
 - HSEEP:
<https://hseep.dhs.gov>
 - Emergency Management Institute (EMI):
<http://training.fema.gov/EMI/>

Natural Hazards Center

University of Colorado at Boulder

CU: Home | A to Z | Map |



**NATURAL
HAZARDS
CENTER**





Loma Prieta, California, Earthquake destroyed this building in San Francisco, October 17, 1989. Image courtesy the U.S. Geological Survey.

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Our Mission

The mission of the Natural Hazards Center at the University of Colorado at Boulder is to advance and communicate knowledge on hazards mitigation

News & Announcements

Pennsylvania Planning Case Study



- Hurricane Sandy, 2012
- Tropical Storm Lee, 2011
- Hurricane Irene, 2011
- Severe Storms and Flooding, 2011
- Severe Winter Storms and Snowstorms, 2010

What Works?

- 
- A photograph of a large meeting room with several long wooden tables. Numerous people, mostly men in business attire, are seated at the tables. Some are looking towards the camera, while others are looking down at papers or writing. The room has large windows on the left with blue curtains, and a whiteboard with several papers pinned to it on the right wall. The floor is covered with green carpeting.
- Strong coordination with partners
 - Leveraged resources

PA Silver Jackets



SILVER JACKETS

Many Agencies One Solution

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IWR



FEMA

Welcome

Effective and continuous collaboration between state and federal agencies is critical to successfully reducing the risk of flooding and other natural disasters in the United States and enhancing response and recovery efforts when such events do occur. No single agency has all the answers, but often multiple programs can be leveraged to provide a cohesive solution.

The Silver Jackets is an innovative program that provides an opportunity to consistently bring together multiple state, federal, and sometimes tribal and local agencies to learn from one another and apply their knowledge to reduce risk. State agencies, including those of the State Hazard Mitigation Officer and State NFIP Coordinator, come together with the Federal family of agencies, including the U.S. Army Corps of Engineers and the Federal Emergency Management Agency (FEMA), in a common forum to address the state's flood risk management priorities. Silver Jacket programs are [developed](#) at the state level. There are currently [33 active state teams](#); the ultimate goal is to offer an interagency team in every state.

The program's primary goals are to:

- Create or supplement a mechanism to collaboratively identify, prioritize, and address risk management issues and implement solutions
- Increase and improve risk communication through a unified interagency effort
- Leverage information and resources and provide access to such national programs as FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program and USACE's Levee Inventory and Assessment Initiative
- Provide focused, coordinated hazard mitigation assistance in implementing high-priority actions such as those identified by state mitigation plans
- Identify gaps among agency programs and/or barriers to implementation, such as conflicting agency policies or authorities, and provide recommendations for addressing these issues.

Why the name Silver Jackets? Traditionally, different agencies wear different colored jackets when responding to emergencies. For example, FEMA personnel wear blue and USACE personnel wear red. The name Silver Jackets is used to underscore the common mission of the diverse agencies involved.

Silver Jackets Newsletter

- [January 2013](#) (pdf, 1.02 MB)
- [October 2012](#) (pdf, 1.35 MB)
- [July 2012](#) (pdf, 1.68 MB)
- [April 2012](#) (pdf, 1.68 MB)
- [January 2012](#) (pdf, 2.09 MB)
- [October 2011](#) (pdf, 2.37 MB)
- [July 2011](#) (pdf, 1.36 MB)
- [April 2011](#) (pdf, 1.51 MB)
- [January 2011](#) (pdf, 2.60 MB)
- [September 2010](#) (pdf, 1.89 MB)
- [March 2010](#) (pdf, 1.6 MB)

[2012 Workshop](#)
[2011 Workshop](#)

New!

For advice from successful state teams visit the [Develop a Team](#) page.
[Virginia Silver Jackets Brochure](#) (pdf, 1.27 MB)
[Brochure Template](#) (pub, 12.9 MB)

[Webinars Supporting Flood Risk Management](#)

- **Community-based Hydrologic Warning Systems** — March 2013
- **Natural Hazard Mitigation Association's Resilient Neighbors Network** — February 2013



Flooding at Dayton along the Miami River.

Newsworthy...The Flood of 1913 - Remembered 100 Years Later

The Silver Jackets teams of Ohio and Indiana, with support from the Midwest Regional Climate Center, have launched a Silver Jackets Flood of 1913 [website](#). The web site is packed with historical information, as well as current-day tips on flood preparedness, mitigation, and more.

Public outcry after the landmark Flood of 1913 event helped drive the creation of many of the

PA Silver Jackets

Pennsylvania Flood Risk Management Resources - After The Flood

This page provides information on what residents can do in the immediate aftermath of a flood. Click the + sign to see more information.

Immediate/Short Term

Collapse All Expand All

☐ Is my house habitable?

- Hazards to Watch Out for When Re-entering Your Home
- Health Checklist for Repairing Your Flooded Home
- Removing Mold
- How to Check for Damages

- ☐ What do I do with my debris and garbage?
- ☐ My home is damaged - who do I tell, what can I do before the insurance agent arrives, and how do I rebuild?
- ☐ What financial assistance is available?
- ☐ When can I enter my home and what steps should I take after I do?
- ☐ Is my drinking water safe?
- ☐ I have/do not have insurance - what do I do?
- ☐ Where can I get basic necessities?
- ☐ How do I handle my belongings?
- ☐ Where can I recover vital records?
- ☐ Where can I find information about travel conditions?

Long Term

Collapse All Expand All

- ☐ What can be done to repair a damaged levee?
- ☐ How does my community begin to rebuild?
- ☐ What can I do to lessen my loss next time?
- ☐ What is mitigation?
- ☐ What funding is available for mitigation?
- ☐ What do I need a permit for?
- ☐ What do I do about my crop damage?
- ☐ How can I help others recover from a flood?



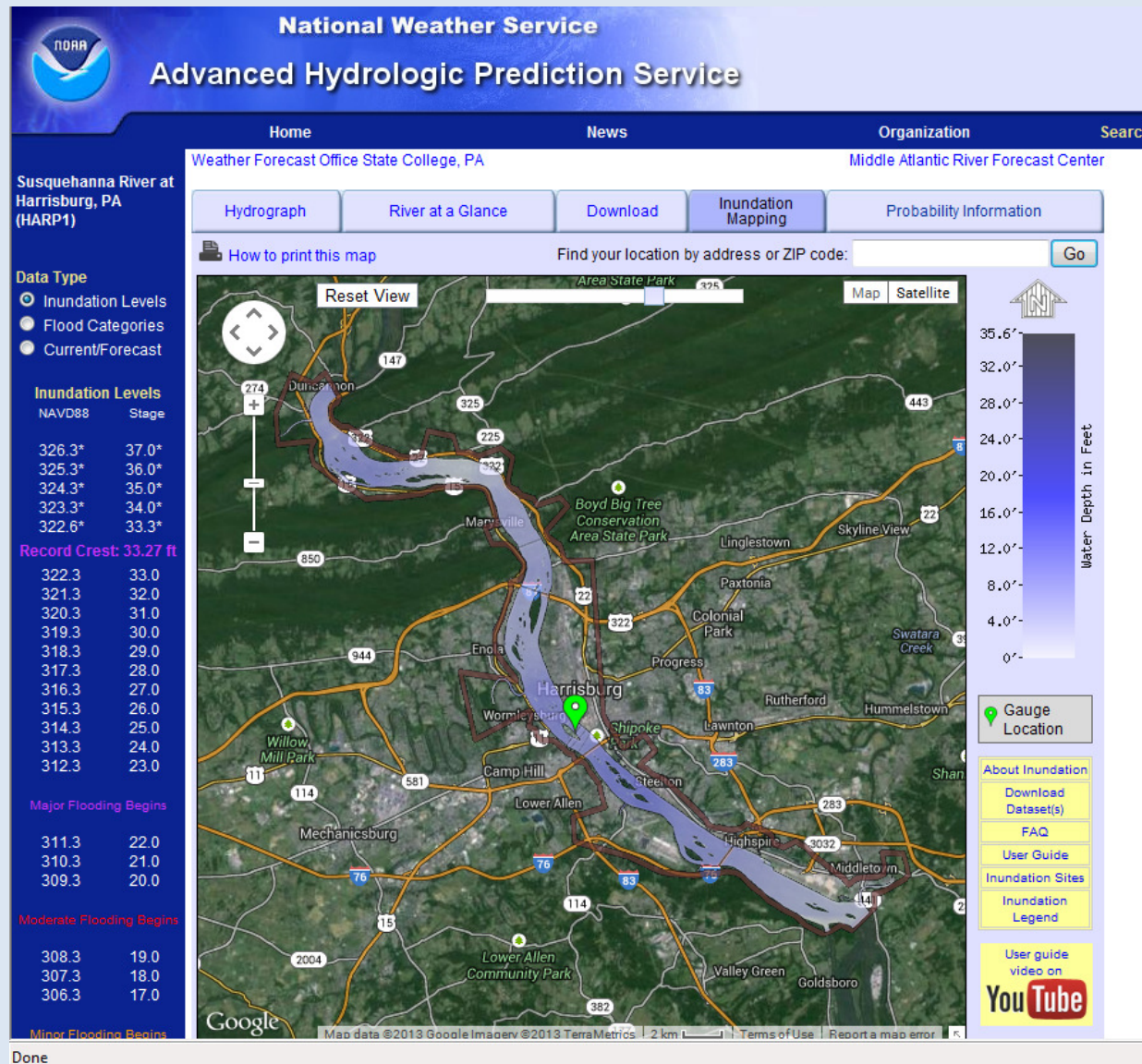
Resources

[Silver Jackets Home](#)

[Before the Flood/General Info](#)

[During The Flood](#)

PA Silver Jackets





Pennsylvania Successes

- Mitigation projects in progress
- Plan implementation continuous
- County plans up to date and being reviewed faster
- Partner focused outreach



Part III: Disaster Recovery Planning



What is Disaster Recovery?



- Planning to assist community in accessing resources needed recover from disaster
- Recovery should not automatically be based on what existed before event

Recovery Components

- Follow continuity of operations procedures
- Debrief staff and consider post-disaster counseling
- Replace damaged assets in community
- Secure available reimbursement
- Complete after action report and update emergency management plan with lessons



Planning After a Disaster

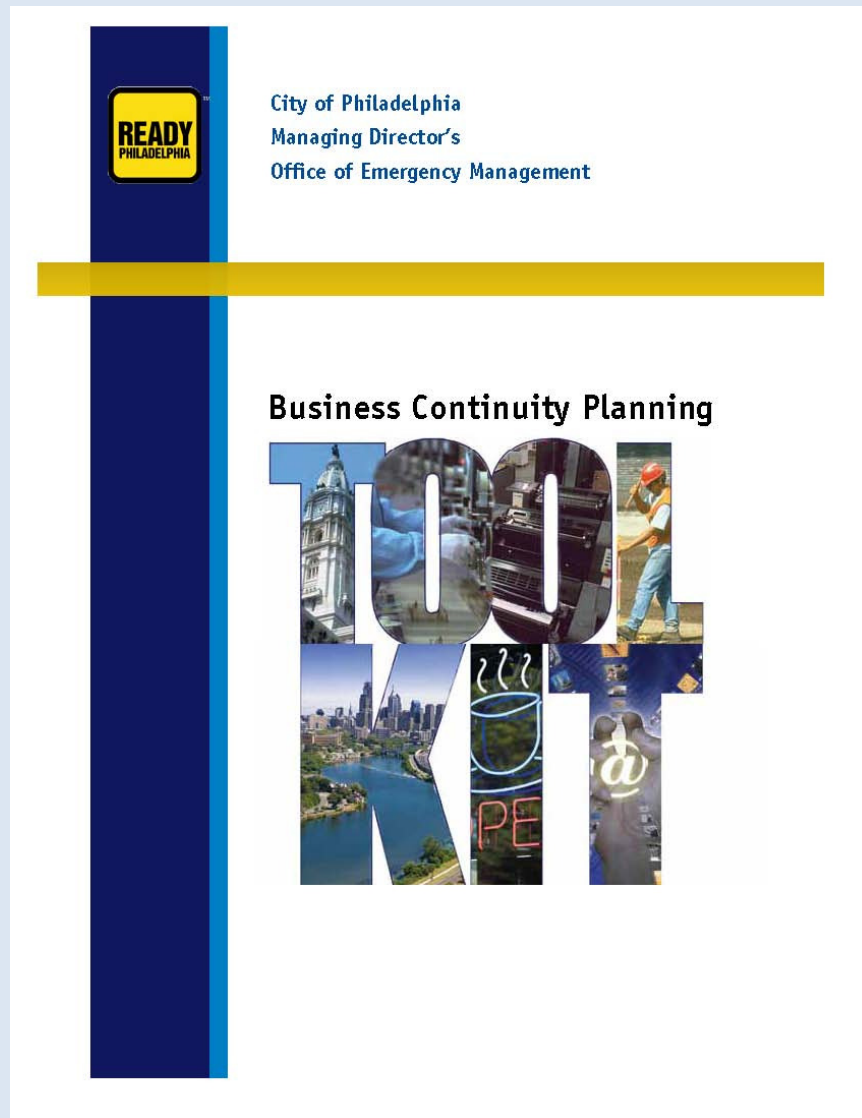
- 
- Challenge and opportunity

Types of Recovery Plans

- Continuity of Operations
- Long Term Recovery Plans
- After Action Reports

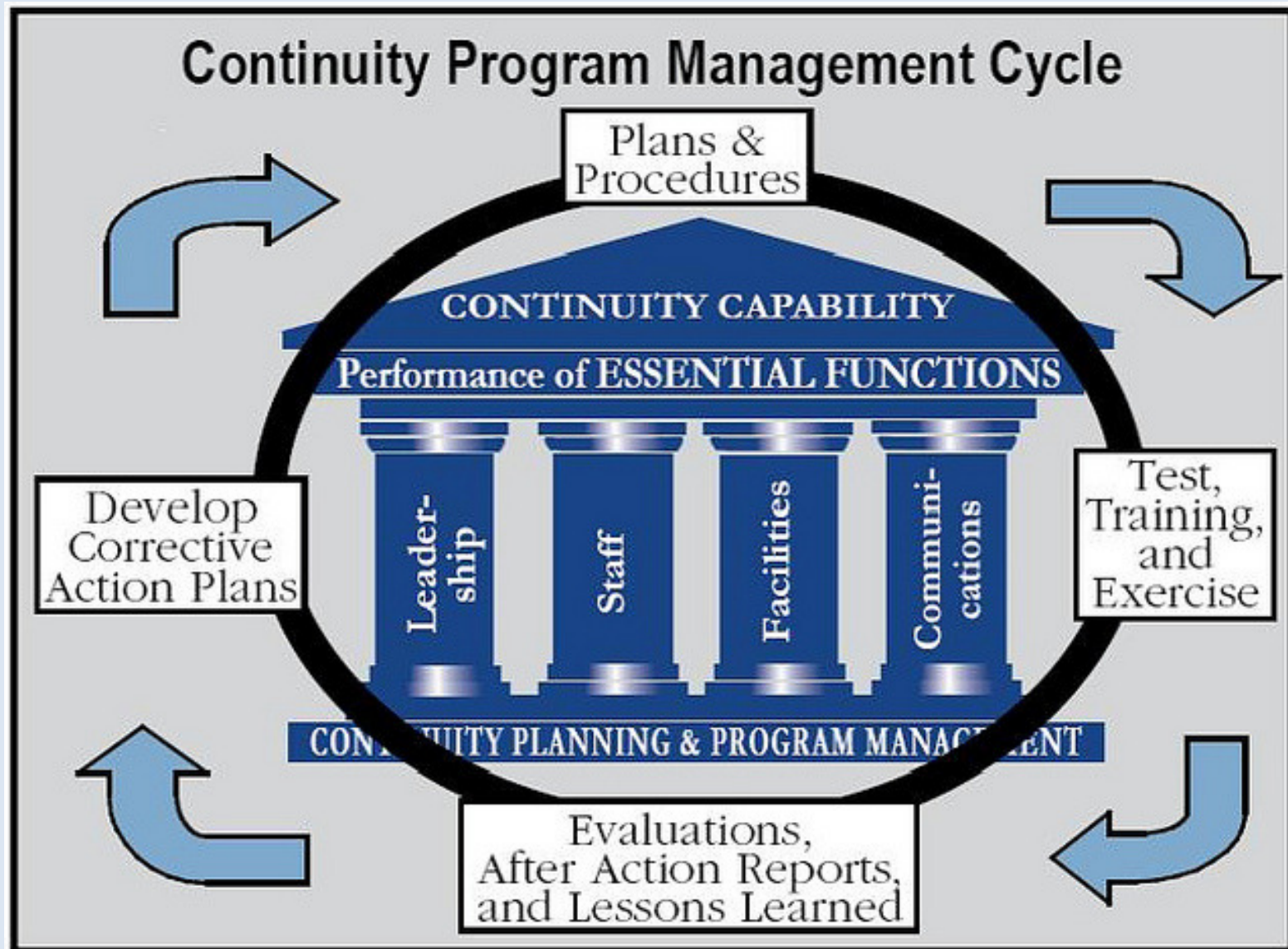


Continuity of Operations Plan (COOP)




- Identifying potential threats
- Providing training, testing, and exercises information for staff
- Establishing a call list
- Setting internal and external communications procedures


COOP Planning



Long Term Recovery Plans

- 
- A photograph of a flooded harbor or dock area. Several boats are moored in the water, which appears to be quite high. The boat in the center is white with red stripes and has "SEA DEVIL" and "PORT PLUM" written on its side. To its right is a blue and white boat with "BAFVIC" and "BERTU" on its side. Other boats and structures are visible in the background, some partially submerged. The scene suggests significant flooding, likely the result of a natural disaster.
- Assess the social and economic consequences
 - Conduct comprehensive market disruption and loss analysis
 - Develop a forward looking market-based comprehensive plan for the affected community

Long Term Recovery Plans

- 
- Identify programs and agencies to support implementation
 - Identify gaps in resources
 - Plan for follow-through and implementation

After Action Reports

1

Analyze disaster event preparation and response

2

Identify strengths to be maintained and built upon

3

Identify potential areas for further improvement

4

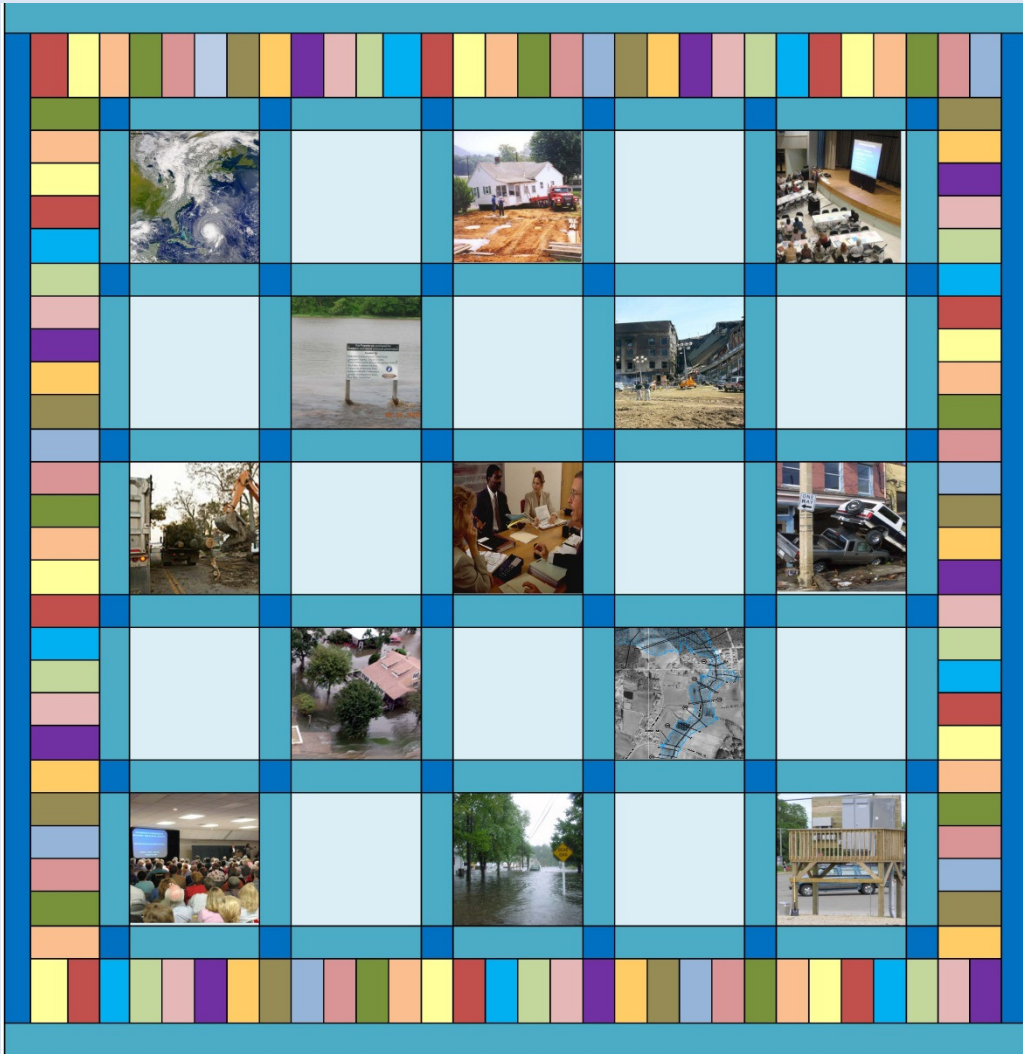
Support development of corrective actions for future events

What works?

- Co-mentoring
- Networking
- Leveraging funding sources
- Training to jump-start new programs
- Engaging a variety of stakeholders



Patchwork Quilt Approach



This concept is based on the American idea that scraps of “this and that” can be turned into a useful, warm, and very valuable object, by one or more persons, who possesses a vision of the final product.

- Ed Thomas

Recovery Resources

National Disaster Recovery Framework

Strengthening Disaster Recovery for the Nation

September 2011



FEMA

- **FEMA:**
 - HSEEP:
<https://www.llis.dhs.gov/hseep>
 - COOP:
<http://www.fema.gov/continuity-operations>
- **Funding: FEMA, CDBG-DR via HUD**



Part IV: Public Involvement



Outreach Tools



- Build on existing Facebook and Twitter networks
- Go to the people
 - Science centers
 - Sustainability forums
 - Web surveying
- Get people moving

Google Websites

Ocean County HMP

Navigation

Welcome to the Ocean County
2013 Hazard Mitigation Plan
Project Website

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Hazard Mitigation Links

[FEMA Mitigation Home Page](#)

[FEMA Mitigation Planning
Home Page](#)

[FEMA Mitigation Grants Home
Page](#)

[New Jersey Office of
Emergency Management Home
Page](#)

[New Jersey Department of
Environmental Protection
Home Page](#)

Welcome to the Ocean County 2013 Hazard Mitigation Plan Project Website



Photo by Steve Hardy

Part V: Disaster Resiliency



Resiliency



- **Ability to adapt to changing conditions and prepare for, withstand, and rapidly recover from disruption**

Mitigation



- Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to people and property from natural and man-made hazards and their effects.

Benefits



- Mitigation benefit-cost ratio for FEMA mitigation grants is about 4 to 1
- Resiliency builds on sustainability, economic development, whole community and other planning mechanisms

Vulnerability



- Economy impacting ability of people to mitigate, prepare, respond, and recover from disaster

Climate Change

An aerial photograph showing a residential neighborhood severely impacted by flooding. The water is a murky brown color and has inundated the yards and streets between several houses. The houses have various roof colors, including grey, brown, and white. Large green trees are scattered throughout the area, some partially submerged. The overall scene depicts the aftermath of a significant weather event.

- **Sea Level Rise**
- **Extreme weather events**
- **Beach erosion**
- **Saltwater intrusion**

Advocacy





Questions?



Land Use Planning Matters: Planning for Disaster Resilient Communities



THANK YOU!

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Alexis Williams, awilliams@mbakercorp.com

