I’ve Written My Hazard Mitigation Plan... NOW WHAT?!

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Pop Quiz!

(Don’t worry – we won’t grade you!)
Every community needs a mitigation plan – why not make it great?
What is Hazard Mitigation?

Any sustained action taken to reduce or eliminate long-term risk to life and property resulting from natural and human-made hazards.
What is a Hazard Mitigation Plan?

A Mitigation Plan is a community-driven, living document that communities use to reduce their vulnerability to hazards.
Why have a Mitigation Plan?

(Other than access to grant funding)

Hazard Mitigation actions reduce vulnerability, and communities are able to recover more quickly from disasters.
Why have a Mitigation Plan?

<table>
<thead>
<tr>
<th>Type of Declaration</th>
<th>In Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential</td>
<td>56</td>
</tr>
<tr>
<td>Gubernatorial</td>
<td>45</td>
</tr>
</tbody>
</table>
“Hope is not a plan and failure is not an option.”
The Planner’s Role in Hazard Mitigation

- Develop a FEMA-approved HMP
- Integrate hazard mitigation into existing plans and documents
- Coordinate with the Local Emergency Management Personnel
Guided by the Stafford Act and the Disaster Mitigation Act of 2000 (44 CFR 201.6) and explained in the Local Mitigation Plan Review Guide (FEMA, 2013)
PA Hazard Mitigation Planning Standards

Standard operating procedures for hazard mitigation planning in PA

- captures FEMA requirements
- clarifies and combines existing guidance
Model Plan Outline for PA

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
Model Plan Outline for PA

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
Chapter 3: Planning Process

- CFR Requirements:
  - Process shall provide an opportunity for the public to comment on the plan
  - Process shall include an opportunity for other stakeholders to be involved in planning process
  - Plan must document planning process
Planning Process Enhancements

- Diversify stakeholders
- Plan by watershed
- Outreach “to the people”
- Digital engagement
Diversify Stakeholders

- Invite others who have a stake in/resources for mitigation:
  - Academia
  - Business
  - School Districts
  - Non-Profit/Non-Governmental Community Leaders
Outreach “to the people”
The approach to the emergency management cycle in Pennsylvania has evolved considerably over the past several years. A renewed emphasis has been placed on planning for disasters before they occur as a complement to effective response and recovery. As a result, hazard mitigation planning has gained increasing prominence as a critical part of emergency management. Through sustained action to reduce or eliminate the long-term risk to human life and property, risks can be combated in a systematic and proactive manner.

Commonwealth of Pennsylvania 2013 State Standard All-Hazard Mitigation Plan

Survey

Thank you for your interest in Hazard Mitigation Planning at East Stroudsburg University!

The Pennsylvania State System of Higher Education (PASSHE) will use this survey as a tool in its continuing work to make East Stroudsburg University and the other State System schools more disaster-resistant through an effective Hazard Mitigation Plan.

This survey is meant to capture some basic information about you and your thoughts on hazard mitigation efforts at East Stroudsburg University. One lucky responder will win a backpack and a disaster kit, so don't forget to leave your email!

*Required

What is your role at East Stroudsburg University? *
- Faculty
- Student
- Staff
- Other:

Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to people and property from natural and human-made hazards and their effects. How familiar are you with hazard mitigation? *
- Very familiar (expertise)
- Familiar
- Somewhat familiar
- Not at all familiar
- Other:

Comments

Need further information?
Chapter 4: Risk Assessment

• CFR Requirements:
  • Plan shall include description of all hazards
  • Plan shall include a description of the location and extent of hazards, past occurrences, and future probability
  • Plan shall include a description of jurisdiction’s vulnerability to hazards in terms of:
    • Number and type of existing and future buildings, infrastructure, and critical facilities
    • Estimation of potential losses
    • Current and future land use patterns
Risk Assessment Enhancements

- Data collection for loss and vulnerability assessments
- Inventories of hazard-prone properties and critical facilities
- Enhanced Hazus analysis
- Use of Risk MAP products
- Climate change
Data Collection Improvements

- Critical by category
- Residential attributes
- Occupied/unoccupied
- Economic importance
- Potential for secondary hazard
Structure Attributes

- Occupancy
- Structure replacement value
- Address, owner, year built
- First floor elevation
- Number of stories
- Total area
- Construction type/quality
- Shelter capability
- Access during emergency?
PA Geospatial Coordination - County Level Response

As of October 13, 2014

Legend
County Response Status
- Responded to Data Survey
- NO Response to Data Survey

NO Assessment Received for 9 Counties
• 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
Key Inventories

- RL and SRL data
- Mitigated properties
- Maps:
  - Flood ways and Flood zones
  - Historical Floods
  - Dams and Levees
  - Critical structures in flood zone
- Critical transport routes at risk
## Enhanced Hazus Analysis: Flood

<table>
<thead>
<tr>
<th>Level of analysis</th>
<th>Hazard</th>
<th>Building Stock, Demographics</th>
<th>Critical Facilities, Utilities, Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>Hazus-generated hazard</td>
<td>Default census block – level</td>
<td>Default</td>
</tr>
<tr>
<td>Enhanced</td>
<td>Hazus-generated hazard with user-specified Critical Facilities</td>
<td>Updated census block – level general building/demographics</td>
<td>Updated CDMS site-specific module</td>
</tr>
<tr>
<td>Enhanced</td>
<td>DFIRM depth grid</td>
<td>Site-specific buildings with flood attributes (User Defined Facilities)</td>
<td></td>
</tr>
<tr>
<td>Enhanced</td>
<td>User-generated depth grid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enhanced Hazus Analysis:
Earthquake

<table>
<thead>
<tr>
<th>Level of analysis</th>
<th>Hazard</th>
<th>Building Stock, Demographics</th>
<th>Critical Facilities, Utilities, Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>Probabilistic or Annualized</td>
<td>Default tract –level</td>
<td>Default</td>
</tr>
<tr>
<td>Enhanced</td>
<td>Deterministic (e.g. Historical or Arbitrary)</td>
<td>Updated tract –level general building stock/demographics</td>
<td>Updated CDMS site-specific module</td>
</tr>
<tr>
<td>Enhanced</td>
<td>User-supplied hazard (e.g. ShakeMap, landslide, liquefaction, soil type, etc.)</td>
<td>Site-specific buildings with earthquake attributes (User Defined Facilities) or AEBM site specific analysis</td>
<td></td>
</tr>
</tbody>
</table>
## Enhanced Hazus Analysis: Hurricane Wind

<table>
<thead>
<tr>
<th>Level of analysis</th>
<th>Hazard</th>
<th>Building Stock, Demographics</th>
<th>Critical Facilities, Utilities, Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>Hazus-generated hazard</td>
<td>Default tract –level</td>
<td>Default</td>
</tr>
<tr>
<td>Enhanced</td>
<td>Hazus-generated hazard with user-specified location</td>
<td>Updated tract –level general building stock/demographics</td>
<td>Updated CDMS site-specific module</td>
</tr>
<tr>
<td>Enhanced</td>
<td>User-generated H-Wind field or Hurrevac wind field</td>
<td>Site-specific buildings with hurricane attributes (User Defined Facilities)</td>
<td></td>
</tr>
</tbody>
</table>
Climate Change

- Sea Level Rise
- Extreme weather events
- Incorporation into future development/future vulnerability
Chapter 5: Capability Assessment

• CFR Requirements:
  • Plan shall include a mitigation strategy based on existing authorities, policies, programs, and resources and its ability to improve existing tools
  • Plan shall address each jurisdiction’s NFIP participation and compliance
  • Plan shall include the review and incorporation of other planning mechanisms
Capability Assessment
Enhancements

• Plan integration
• NFIP implementation
Plan Integration Benefits

- Help guide development and redevelopment patterns
- Reduce risk to hazards
- Avoid or minimize risk through safe development practices
Integration Opportunities

- Comprehensive plan
- Zoning ordinance
- SALDO
- Site planning requirements
- Building codes
- Capital improvement plans
- Functional plans
- Special programs
Integration Guidance

- Includes recommended steps and tools to assist with local integration efforts, along with ideas for overcoming possible impediments.
So, How Do We Do It?

• Review existing local HMP for hazards, risks, and mitigation strategies

• What plans, policies, and tools already in place?

• Identify gaps and overlaps with your current plans
NFIP Implementation

National Flood Insurance Program

Flood Insurance Manual

June 2014
Revised October 2014

- Who administers program?
- What is the planning mechanism used?
- Does your ordinance meet or exceed the state minimums?
- How are permits and violations handled?
Chapter 6: Mitigation Strategy

- CFR Requirements:
  - The plan shall include a description of mitigation goals
  - The mitigation strategy shall include a section identifying a comprehensive range of specific actions and projects
  - The strategy must address NFIP participation and compliance
  - The strategy shall include an action plan describing prioritization and implementation
Mitigation Strategy Implementation

- Alignment with state priorities
- New mitigation techniques
- FEMA HMA funding
- PA mitigation successes
- Grant application tips
- Other resources for mitigation
Mitigation Techniques

Types of Mitigation Actions

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

- Targeted planning (local plans, zoning, regs)
- Revision of building codes
- Stormwater and floodplain regulations
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
Natural System Protection

- 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
Education and Awareness

- Outreach projects
- Library materials dissemination
- The creation of hazard information centers
- School age / adult education programs
State Mitigation Priorities

- Acquisition/Demolition of damaged, substantially damaged, or destroyed homes.
- Small structural projects using FEMA Benefit Cost Analysis (BCA) Software.
- Other eligible State Initiative flood mitigation opportunities (up to 5% of the grant total).
- Development of County Hazard Mitigation Plans (allowable amount up to 7% of the grant total).
- Home elevation projects.
- Eligible business mitigation activities; e.g. flood-proofing or other resilient mitigation retrofitting measures.

Note: Other federal and state programs are available for structural projects.
Funding Mitigation

FEMA Hazard Mitigation Assistance Programs:

• Hazard Mitigation Grant Program (HMGP)
• Flood Mitigation Assistance (FMA) Program
• Pre-Disaster Mitigation (PDM) Program
Projects on private property may be eligible for funding under the HMA only if submitted by a county or municipal government entity.

Participation in an HMA project by both private citizens and eligible entities **MUST BE VOLUNTARY!**
Eligible HMGP Projects

- Property Acquisition and Structure Demolition
- Structure Relocation
- 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
- Safe Room Construction
- Infrastructure Retrofit
- Structure Elevation
- Soil Stabilization
- Wildfire Mitigation
- Post-disaster Code Enforcement
- 5% Initiative Projects
- Hazard Mitigation Planning (counties) [7% Cap]
What isn’t Eligible?

- Repair or replacement of existing infrastructure, roads, facilities, etc.
- Debris/snow removal
- Stream-related work
- Bridge replacement
- Mitigation for damaged infrastructure that can be funded under Public Assistance
- Deferred maintenance
The “Maybe” Costs

- Hydrology and Hydraulics (H&H) studies
- Elevation drawings
- Appraisals
- Title searches
- Surveying
What Throws Projects Off-Track

- Pre-award costs
- Surveying
- Trust Land
- Appraisals
- Engineering costs
- Legal costs
- Taxes
FMA Project Example

FLOOD GATE, City of Sunbury, Northumberland Co. (2006)

State Route 61 (Sunbury to Shamokin)
FMA Project Example

41 & 3 W. Indian Ave, West Norriton Twp.
Schuylkill River, Montgomery Co. (2009)

≈$250,000 / elevation in the SE
Combination HMGP-RFC Project

Lewisburg, PA
Acquisition/demolition of 10 homes (5 RFC/5 HMGP)
DR-1898
HMGP Project Example

Oil City, PA
Ice Boom (2011)
DR-1898
L-PDM Project Example

Presque Isle State Park, City of Erie (2008)
Flood mitigation
ICC Fund Project Examples

Scott Township, PA
Elevation
ICC Fund Project Examples

Scott Township, PA
Elevation
ICC Fund Project Examples

Hemlock Township, PA Acquisition
Grant Application Tips

- HMGP Read-me online
- PDM Guide
- Realistic budgets accounting for all costs
- Continuity of contact
- Manage Expectations of homeowners
- Manage execution of the project within POP
Other Potential Funding

- [http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder](http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder)
- Community Development Block Grant (CDBG)
- CDBG-DR (Disaster Funding)
- Small Business Administration (SBA) Disaster Loans
- PA Silver Jackets Funding Guide

[www.esa.dced.state.pa.us](http://www.esa.dced.state.pa.us)
Guidelines Released in March 2014
- Abandoned Mine Drainage
- Baseline Water Quality Data
- Flood Mitigation
- Greenway Trails Recreation
- Multimodal Transportation Fund
- Orphan Abandon Well Plugging
- Sewage Facilities
- Small Water and Sewer
- Watershed Restoration Protection
State Hazard Mitigation Resources

- PEMA
  - Tracks mitigation projects
  - Funding
  - DCED Coordination
  - Training and Exercises
  - Resources
  - Technical Assistance
PA Silver Jackets

Our Partners

Flood Risk Management Resources
By Pennsylvania Silver Jackets

The Pennsylvania Silver Jackets is an innovative program that provides an opportunity to bring together local, state, regional and federal agencies to address the state's flood risk management priorities. For more information please visit the Pennsylvania Silver Jackets webpage.

This site was created by the Pennsylvania Silver Jackets team to provide the best resources for flooding information for the Commonwealth of Pennsylvania. The site is divided into three major categories - before the flood/general information, during the flood, and after the flood - and provides information on types of flooding, levees, protecting your family during a flood, recovering after a flood, and more.

Before the Flood

During The Flood

After The Flood
Chapter 7: Plan Maintenance

• CFR Requirements:
  • The plan shall describe how it will be kept current between updates
  • The plan shall include a process by which the HMP will be incorporated into other plans
  • The plan shall discuss how the community will continue participating
Chapter 7: Plan Maintenance

- Tailor your plan maintenance
- Progress reports
- Sell successes
Questions?
I’ve Written My Hazard Mitigation Plan... NOW WHAT?!

THANK YOU!

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