G-318 Local Hazard Mitigation Planning Workshop
Administrative

- Emergency exits
- Restrooms
- Cell phones
- Break schedule
Workshop Goal

Provide plan developers with the information necessary to prepare and implement a local hazard mitigation plan or plan update.
Workshop Objectives

Participants will be able to:
• Define hazard mitigation and identify the benefits of mitigation planning
• Engage community officials, stakeholders, and the public in a robust planning process
• Develop or update a local mitigation plan
• Identify resources available for mitigation planning and plan implementation
Workshop Organization

Module 1: Planning Process

Module 2: Risk Assessment

Module 3: Mitigation Strategy

Module 4: Community Resilience in Action
Module Goals

• Module 1: Planning Process
  ▪ Participants will effectively engage their community in an open public involvement process that leads to the development of a comprehensive approach to risk reduction and an effective mitigation plan

• Module 2: Risk Assessment
  ▪ Participants will conduct a hazard risk assessment that forms a basis for mitigation actions appropriate for their community
Module Goals

• Module 3: Mitigation Strategy
  ▪ Participants will develop their goals and actions for reducing potential losses to long-term hazard risks based on existing local capabilities

• Module 4: Community Resilience in Action
  ▪ Participants will have the knowledge, tools, and resources to effectively implement their community’s hazard mitigation plan
Introductions

Hello
My name is

Name
Position and organization
Mitigation planning experience
Workshop expectations
Participant Responsibilities

- Ask questions
- Share experiences
- Participate in discussion
Plan Development Resources

• Local Mitigation Planning Handbook
• Local Mitigation Plan Review Guide
• Region 1 Best Practice Guides
• Planning Webliography
• FEMA Mitigation Planning website: http://www.fema.gov/multi-hazard-mitigation-planning
Module 1:
Planning Process
Unit 1.1

Mitigation and Hazard Mitigation Planning
What Is Hazard Mitigation?

Mitigation
Sustained action taken to reduce or eliminate long-term risk to human life and property from hazards.

Protection  Prevention  Response  Recovery
Hazard Mitigation: Examples

Structural retrofitting, enforce building codes, land use planning, removal of structure from hazard area

MITIGATION: Elevated Home by the River

MITIGATION: Property Acquisition

RESPONSE: Purchase of Police Command Vehicle
Mitigation Is an Investment

- Addresses the long-term root cause of vulnerabilities
- Prevent injury and loss of life
- Prevent damage to community assets (existing and future)
- Advance other community objectives

<table>
<thead>
<tr>
<th></th>
<th>Federally Funded</th>
<th>Beyond Code Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Hazard Benefit-Cost Ratio</td>
<td>6:1</td>
<td>4:1</td>
</tr>
<tr>
<td>Riverine Flood</td>
<td>7:1</td>
<td>5:1</td>
</tr>
<tr>
<td>Hurricane Surge</td>
<td>Too few grants</td>
<td>7:1</td>
</tr>
<tr>
<td>Wind</td>
<td>5:1</td>
<td>5:1</td>
</tr>
<tr>
<td>Earthquake</td>
<td>3:1</td>
<td>4:1</td>
</tr>
<tr>
<td>Wildland-Urban Interface Fire</td>
<td>3:1</td>
<td>4:1</td>
</tr>
</tbody>
</table>
Hazard Mitigation Planning

Engages the whole community in a process to:

Assess vulnerabilities and risks

Identify policies and actions to reduce risk
Why Mitigation Planning?

Planning enables communities to:

- Strengthen community disaster resilience
- Identify cost-effective actions to reduce risk
- Focus resources on greatest vulnerabilities
- Build partnerships
- Increase awareness of hazards and risk
- Communicate priorities
- Leverage emergency management with other community plans and goals
Federal Planning Regulations

Disaster Mitigation Act of 2000

• Requires an approved Hazard Mitigation Plan (HMP) to be eligible for Hazard Mitigation Assistance (HMA)
• HMPs must be updated every 5 years to maintain eligibility

Title 44 Code of Federal Regulations (CFR) 201

• Identifies requirements for HMP approval
Hazard Mitigation Assistance (HMA)
Guiding Principles for HMPs

• This is your community’s plan
• Focus on mitigation strategy
• Process is as important as the plan itself
• Relationship building
Unit 1.2

Establish the Planning Area
Determine the Planning Area

- What geographic area will it cover?
- What are the participating jurisdictions?
- Who will lead the project?
Single or Multi-Jurisdiction Plan

• Tribal governments must meet Tribal mitigation planning requirements

One governing body

Single Jurisdiction

Multiple Jurisdictions

- Town
- City
- Tribe
- District
- County
Multi-Jurisdiction Requirements

Each jurisdiction seeking plan approval must:

- Participate in the planning process
- Assess unique risks
- Identify specific mitigation activities
- Adopt the plan
Benefits of Multi-Jurisdictional Plans

• Improves communication and coordination
• Enables comprehensive and regional mitigation approaches
• Maximizes economies of scale by sharing costs and capabilities
• Avoids duplication of effort
• Provides organizational structure
• Broader opportunities for stakeholder engagement
Challenges of Multi-Jurisdictional Plans

• Reduces individual control over process
• Involves coordinating and timing the process with multiple jurisdictions (with past histories)
• Getting a detailed assessment of risks, specific mitigation actions, and involvement by jurisdictions
• Requires organization of large amounts of information into a single document
Leading the Planning Process

• Engage with local leadership

• Identify which local agency should lead the effort

• Involve local community planners and emergency managers - both have valuable knowledge and experience
Technical Assistance

You could seek help with:

- Assessing risks
- Facilitating meetings and outreach strategy
- Creating plan document
Tips for Consultant Selection

Private consultant should:
• Be familiar with applicable policies
• Understand importance of process
• Know mitigation concepts
• Recognize the role of local leadership
• Demonstrates successful history of HMP approvals

Community should:
• Check references
• Ensure experience
• Seek training in G-318
Unit 1.3

Build the Planning Team
Role of the Planning Team

- Engage community members
- Identify vulnerabilities of each jurisdiction
- Develop potential solutions for each jurisdiction
- Be champions for community resilience through the hazard mitigation planning process
Planning Team Members

Expertise in:

• People and social conditions
• Built and natural environments
• Hazards and disaster history

Responsibility for:

• Implementing programs and activities
• Making decisions on policies and resources
Planning Team and Other Stakeholders

Planning Team
Members of:

- Previous planning team
- Committee that oversees land use planning
- Local emergency planning committee
- Agencies that promote hazard mitigation
- Agencies that regulate development

Other Stakeholders

- Elected officials
- Business leaders
- Public agencies
- Cultural institutions
- Colleges and universities
- Nonprofit organizations
- Neighborhood groups
Opportunity for Involvement

Certain stakeholders must be given the opportunity to be on the planning team or otherwise involved in the planning process.

- Agencies involved in hazard mitigation activities
- Agencies that have authority to regulate development
- Neighboring jurisdictions
- Business, academia, other private and nonprofit interests

Tip: Consider tapping into existing outreach efforts!
Discussion Question

• What agencies, organizations, and officials would be valuable members of the planning team?
Promoting Participation

• Send formal invitation from elected official or department head
• Follow up with a phone call
• Plan meetings in multiple convenient locations
• Provide refreshments
Getting Buy-In

• Develop a mission statement
• Obtain official recognition of the planning team
• Build relationships to:
  ▪ Increase coordination and commitment
  ▪ Build resilience and enhance post-disaster response and recovery
Multi-Jurisdiction Planning Teams

MULTI-JURISDICTIONAL PLANNING TEAM

JURISDICTION A
- One Representative on Planning Team
- Sub-Team

JURISDICTION B
- Multiple Representatives on Planning Team
- Sub-Team

Lead Point of Contact
Initial Planning Team Decisions

1) Confirm plan purpose and mission
2) Review the current plan and process
3) Refine plan scope and schedule
4) Establish responsibilities
5) Develop an outreach strategy
1. Confirm Plan Purpose and Mission

Protect life, property, economy, quality of life, and environment of Lincoln County from hazards and disasters.
2. Review the Current Plan and Process

Review of the plan can provide:

• Ideas for improvement
• Areas that may require more time and resources
• Assessment of current capabilities

In addition to the plan, also review:

• Opportunities for improvement recommended by FEMA in Plan Review Tool when plan was approved
• Status of mitigation actions identified in current plan
### 3. Refine Plan Scope and Schedule

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Target Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice to Proceed</td>
<td>September 1, 2017</td>
</tr>
<tr>
<td>Task 1: Hold Project Kickoff Meeting</td>
<td>October 15, 2017</td>
</tr>
<tr>
<td>Task 2: Invite Stakeholders and Engage Public</td>
<td>Continual</td>
</tr>
<tr>
<td>Task 3: Conduct Risk Assessment</td>
<td>January 15, 2018</td>
</tr>
<tr>
<td>Task 4: Develop Mitigation Strategy</td>
<td>March 1, 2018</td>
</tr>
<tr>
<td>Task 5: Plan Maintenance Process</td>
<td>March 15, 2018</td>
</tr>
<tr>
<td>Task 6: Review and Submit Plan</td>
<td>May 1, 2018</td>
</tr>
</tbody>
</table>
4. Establish Responsibilities

• Coordinate and assist with stakeholder and public involvement
• Make decisions on plan process and content
• Attend meetings
• Collect current best available information
• Review drafts and prepare for adoption and plan submittal
5. Develop an Outreach Strategy

1) Confirm plan purpose and mission
2) Review the current mitigation plan
3) Confirm plan scope and schedule
4) Establish responsibilities

Next Unit:
Develop an Outreach Strategy
Unit 1.4

Develop an Outreach Strategy
Outreach Strategy Framework
Opportunity for Involvement

Planning Team
- Agencies involved in hazard mitigation activities
- Agencies with authority to regulate development

Stakeholders
- Neighboring jurisdictions
- Businesses
- Academia
- Other private and nonprofit interests

Public
- Residents
- Business owners
- Local workers
Types of Stakeholders

- Elected officials
- Business leaders and large employers
- Regional, State, and Federal agencies
- Cultural institutions
- Schools and universities
- Nonprofit organizations
- Neighborhood groups
- Watershed Associations
Benefits of Public Involvement

• Educates people about hazards and risk
• Incorporates different perspectives
• Improves plan quality
• Ensures transparency and builds trust
• Improves opportunities for implementation by building consensus
• Strengthens community disaster resilience
Role of Planning Team

• Develop outreach strategy for all stakeholders and jurisdictions
• Coordinate and facilitate communication
• Evaluate and incorporate feedback
Outreach Methods

- Community events
- Interviews
- News media
- Presentations to governing bodies
- Questionnaires / surveys
- Forums and roundtables
- Social media and websites
Discussion Question

In your community, what types of public outreach and involvement methods have worked well?
Multi-Jurisdictional Outreach

Stakeholders

Planning Team

Public

Town

County

City

Tribe

District
Tips for Outreach Strategy

• Brainstorm outreach activities
• Determine outreach objectives and schedule
• Develop clear and consistent messages that align with community values
• Communicate and invite the public throughout the planning process
• Evaluate and incorporate feedback
• Celebrate success
Involve the Public Prior to Plan Adoption

• Make the final plan draft available for comment
• Consider existing policies for public review
• Use the adoption process to increase awareness
Keep Public Involved After Plan Adoption

• Identify how to continue public involvement after plan adoption
• Use methods that were successful during the planning process
Document Who, What, and When

- Who was involved?
- How was the plan prepared?
  - Schedule
  - Activities
- How was the public involved?
- What future public involvement opportunities are scheduled?
- Plan updates must document the current planning process
Module 2: Risk Assessment
Risk Assessment

• Process that collects information and assigns values to risks to:
  ▪ Identify or compare courses of action
  ▪ Develop priorities
  ▪ Inform decision-making

• Foundation for mitigation strategy to reduce future losses
Community Risk from Hazards

HAZARDS
- Location
- Extent (Magnitude/Strength)
- Previous Occurrences
- Future Probability

COMMUNITY ASSETS
- Population
- Built Environment
- Natural Environment
- Economy

RISK
Multi-Jurisdiction Considerations

- Describe unique or varied hazards
- Assess assets and risks for each jurisdiction
Steps to Assess Risks

1. Describe Hazards
2. Identify Community Assets
3. Analyze Risks
4. Summarize Vulnerability
Updating the Risk Assessment

- Changes in hazards (example: disaster declarations)
- Changes in community assets
- Emphasis on changes in development
Step 1: Describe Hazards

Describe Hazards
Identify Community Assets
Analyze Risks
Summarize Vulnerability
Types of Hazards

- Natural Hazard
- Technological Hazard
- Human-caused Hazard
Sources of Hazard Information

- State Hazard Mitigation Plan
- Disaster declarations
- Hazard-related reports/plans
- State agencies
- Colleges/universities
- Planning team and stakeholders
- Local records (newspaper, chamber of commerce, local historical society)
Discussion Questions

• What hazards affect your community?

• What information sources would you use for your plan?
Hazard Descriptions

- Location
- Extent
- Previous Occurrences
- Probability of Future Events
Location
Extent

• Defined as the strength or magnitude of the hazard.
• Can be described in a combination of ways, depending on the hazard.
## Previous Occurrences

<table>
<thead>
<tr>
<th>Date of Flood</th>
<th>Property Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 19, 2010</td>
<td>$2,500,000</td>
</tr>
<tr>
<td>August 28, 2007</td>
<td>$1,000</td>
</tr>
<tr>
<td>July 23, 2007</td>
<td>$1,000</td>
</tr>
<tr>
<td>October 14, 2006</td>
<td>$15,000</td>
</tr>
<tr>
<td>October 9, 2006</td>
<td>$20,000</td>
</tr>
<tr>
<td>October 6, 2006</td>
<td>$500,000</td>
</tr>
<tr>
<td>October 3, 2006</td>
<td>$25,000</td>
</tr>
<tr>
<td>July 10, 2006</td>
<td>$25,000</td>
</tr>
<tr>
<td>September 9, 2005</td>
<td>$3,000</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Date of Flood</th>
<th>Property Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 12, 2002</td>
<td>$25,000</td>
</tr>
<tr>
<td>July 30, 1999</td>
<td>$2,000</td>
</tr>
<tr>
<td>July 14, 1999</td>
<td>$60,000</td>
</tr>
<tr>
<td>September 6, 1997</td>
<td>$175,000</td>
</tr>
<tr>
<td>July 31, 1976</td>
<td>$50,000</td>
</tr>
<tr>
<td>September 18, 1972</td>
<td>$385</td>
</tr>
<tr>
<td>July 29, 1969</td>
<td>$1,250</td>
</tr>
<tr>
<td>August 2, 1963</td>
<td>$5,000</td>
</tr>
</tbody>
</table>
Probability of Future Events

• The previous slide shows:
  ▪ There were 17 occurrences of flooding
  ▪ Over 48 years from 1962 through 2010
  ▪ With 17 occurrences in 48 years, probability of future occurrence is 17/48 = 0.3542 or about a 35% chance of flooding in any year
  ▪ If using dollar values of property damage, use constant or real dollars to adjust for inflation.
Hazard Map
### Summarize Hazard Information

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Location</th>
<th>Extent</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tornado</td>
<td>Entire planning area</td>
<td>EF2</td>
<td>2% chance per year</td>
</tr>
<tr>
<td>Hail</td>
<td>Entire planning area</td>
<td>1” diameter</td>
<td>10% chance per year</td>
</tr>
<tr>
<td>Flood</td>
<td>Along 0.2 mile of stream in Town A only</td>
<td>6” to 12” depth</td>
<td>25% chance per year</td>
</tr>
</tbody>
</table>
Step 2: Identify Community Assets

- Describe Hazards
- Identify Community Assets
- Analyze Risks
- Summarize Vulnerability
Community Assets

- People
- Economy
- Structures
- Critical Facilities and Infrastructure
- Natural Environment
People

- Locations and concentrations of residents and employees
- Locations and concentrations of special needs and dependent populations
- Types and locations of visiting populations
Economy

- Major employers
- Primary economic sectors
- Commercial centers
- Dependencies between economy and infrastructure
Structures

Existing and Future

• Locations, types, and building materials
• Cultural and historic resources
• Locations and types of planned new development/redevelopment
• Infrastructure for new development
• Planned critical facilities and capital improvements
• Value of structures in real dollars
Structures (Existing and Future)

Existing Structures (red dots)

Existing (red dots) and Potential Future Structures (yellow dots)
Critical Facilities & Infrastructure

• Location, age, and value of critical facilities and infrastructure
• Dependencies that exist among critical facilities and infrastructure
Discussion Questions

• What are critical facilities and infrastructure in your community?

• What are potential natural hazards which may impact them?
Natural Environment as Mitigation Partner

• Environmental functions that reduce magnitude of hazards
• Critical habitat areas to protect
• Areas where conservation reduces risk and achieves other community objectives (example: trails and parks)
Step 3: Analyze Risks

- Describe Hazards
- Identify Community Assets
- Analyze Risks
- Summarize Vulnerability
Hazards, Community Assets, and Risk

HAZARDS
- Location
- Extent (Magnitude/Strength)
- Previous Occurrences
- Future Probability

COMMUNITY ASSETS
- Population
- Built Environment
- Natural Environment
- Economy

RISK

FEMA
Analyze Risk and Summarize Vulnerability

For each hazard:

- Evaluate vulnerable assets
- Assess potential impacts
- Estimate future losses
Methods for Analyzing Risk

Exposure analysis

Historical analysis

Scenario analysis

FEMA
Exposure Analysis

What assets are located in hazard-prone areas?

• Quantify number, type, value of assets
• Estimate future development in hazard-prone areas based on planning and zoning
• Consider magnitude of hazard or event (high vs. moderate wildfire hazard areas)
• Use maps and GIS for analysis
## Exposure Analysis

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>1% Annual Chance</th>
<th>0.2% Annual Chance*</th>
<th>X Zone (no flood)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parcel Count</td>
<td>Structure Value</td>
<td>Parcel Count</td>
</tr>
<tr>
<td>Citrus Heights</td>
<td>157</td>
<td>$30,238,980</td>
<td>276</td>
</tr>
<tr>
<td>Elk Grove</td>
<td>525</td>
<td>$206,224,864</td>
<td>3,967</td>
</tr>
<tr>
<td>Folsom</td>
<td>8</td>
<td>$2,519,665</td>
<td>124</td>
</tr>
<tr>
<td>Galt</td>
<td>1</td>
<td>$315,000</td>
<td>-</td>
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<tr>
<td>Isleton</td>
<td>324</td>
<td>$29,743,865</td>
<td>-</td>
</tr>
<tr>
<td>Rancho Cordova</td>
<td>21</td>
<td>$9,394,521</td>
<td>976</td>
</tr>
<tr>
<td>Sacramento</td>
<td>28,192</td>
<td>$6,781,945,735</td>
<td>8,420</td>
</tr>
<tr>
<td>Unincorporated Country</td>
<td>4,483</td>
<td>$1,444,981,125</td>
<td>21,415</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33,711</strong></td>
<td><strong>$8,505,363,755</strong></td>
<td><strong>35,178</strong></td>
</tr>
</tbody>
</table>

Source: Sacramento County 2010 secured roll assessor & parcel data; Sacramento County DFIRM, January 2011

*This parcel count only includes those parcels in the 0.2% annual chance floodplain. The 0.2% annual chance flood also includes all parcels in the 1% annual chance floodplain.
Historical Analysis

Based on past events, what are potential future impacts and losses?

- Use for higher frequency events with available data on past impacts and losses (e.g., winter storms, stormwater flooding)
- Consider vulnerability of new development
Scenario Analysis

What are the potential impacts and losses if a particular event occurs?

• Monetary costs, casualties, down time, etc.

Consider a scenario analysis for low-frequency, high-consequence events (e.g., earthquake)

• Use modeling tools, such as HAZUS®
## Risk Index

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Location</th>
<th>Probability</th>
<th>Extent</th>
<th>Impact</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tornado</td>
<td>Entire planning area</td>
<td>5% chance per year</td>
<td>EF2</td>
<td>Damage &gt; $35 million</td>
<td>1</td>
</tr>
<tr>
<td>Hail</td>
<td>Entire planning area</td>
<td>75% chance per year</td>
<td>Up to 1” diameter</td>
<td>Damage $50,000 to $100,000</td>
<td>2</td>
</tr>
<tr>
<td>Subsidence</td>
<td>Northwest corner of planning area</td>
<td>Very low; there is no history of subsidence</td>
<td>Minimal</td>
<td>Damage &lt;$500</td>
<td>3</td>
</tr>
</tbody>
</table>
Step 4: Summarize Results

- Describe Hazards
- Identify Community Assets
- Analyze Risks
- Summarize Vulnerability
Summarize Overall Vulnerability

• Summarize each jurisdiction’s overall vulnerability to hazards
• Communicate findings to:
  ▪ Educate public, stakeholders, elected officials
  ▪ Inform decision-making
  ▪ Develop mitigation strategy
Develop Problem Statements

To communicate vulnerabilities, develop problem statements

• Clear, concise
• Not overly technical
• Identify key issues or problems
• Based on results of the risk assessment
• Pertain to individual jurisdictions or to the entire planning area
Example Problem Statements

- The Town of Newton recently annexed the South Woods area located in the wildland-urban interface. The Town’s land use and building codes do not address wildfire hazard areas. Future development in South Woods will increase vulnerability to wildfires.

- The North Creek Sewage Treatment Plant is located in the 100-year floodplain and has been damaged in past events.
Mechanic/Blossom St Neighborhood: The age and density of the buildings in this neighborhood increase the risk of urban fire to spread and cause significant damage. The team noted that there is concern with vacant structures in this location. In some cases, the properties are bank owned, squatters living there, and it can be difficult to track down the actual owner.

Nashua River: The shoals are building with vegetation growth and need to be defoliated. The presence of all of this vegetation reduced the flood capacity of the river, creating a higher potential for flooding. The vegetation could dislodge, clogging up the river, creating natural dams, also creating a higher potential for flooding and ice jamming. In addition, the Railroad bridge over the River as well as Cushing St and Boulder Dr under the Water St bridge have had water levels almost reach the bridge. This area is also vulnerable to Snow Melt and Ice Jam related hazards.

Naukeg Mill Area: Vacant factories, potential fire hazard.

Cleghorn St to King St Neighborhood: The age and density of the buildings in this neighborhood increase the risk of urban fire to spread and cause significant damage.

Problem with basements flooding along Main Street in the Downtown area.

Taggarts Pond Dam: This dam is in condition and considered a vulnerable structure for dam failure.

River St, east of Kimball St intersection: There is a low spot in the road and this area collects a lot of storm water run-off.

Rollstone Hill: There is a communication tower that is vulnerable to lightning strikes interfering with communication.

Milr St to Forest St Neighborhood: The age and density of the buildings in this neighborhood increase the risk of urban fire to spread and cause significant damage.
<table>
<thead>
<tr>
<th>Hazard</th>
<th>Problem Statements</th>
<th>Potential Projects</th>
<th>STAPLEE Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>5. Heavy and prolonged rain events cause flood damage to the 55 structures located within the 1% floodplain.</td>
<td>5a. Join the Community Rating System&lt;br&gt;5b. Educate residents within the floodplain about risks through GIS maps on Town website and mailing out NFIP brochures.</td>
<td>Social 3</td>
</tr>
<tr>
<td></td>
<td>6. The culvert at the intersection of Yaz Street and Papi Road does not have the capacity to handle flow during minor thunderstorms, causing localized flooding that affects 3 businesses.</td>
<td>6a. Upgrade culvert to accommodate stormwater higher intensity storms.</td>
<td>Social 3</td>
</tr>
<tr>
<td></td>
<td>7. The Three Corners neighborhood consistently experiences localized flooding and erosion at various locations during heavy rain events, impacting Town Hall, the Wastewater Treatment Plant, and 4 residential structures.</td>
<td>7a. Amend current subdivision regulations to require a “zero discharge” policy for stormwater runoff from new development.&lt;br&gt;7b. Adopt erosion and sedimentation control regulations for new construction.&lt;br&gt;7c. Establish a green infrastructure program to encourage the use of pervious pavement, as well as expand existing parks and greenways.&lt;br&gt;7d. Raise electrical wiring 2 feet above worst</td>
<td>Social 3</td>
</tr>
</tbody>
</table>
Update to Reflect Development Changes

- Increasing vulnerability
  - Climate change
  - New development in hazard-prone areas

Decreasing vulnerability
- Mitigation actions implemented to reduce risk
- Adopted codes to protect future development
Risk Assessment Summary

- Plan document focuses on communicating analysis and findings to:
  - Emergency managers
  - Planners
  - Policy makers
  - Community members
- Background data in appendices or integrated in local systems
Review of the Risk Assessment

For each hazard, the plan must provide description of:

- Hazards (location, extent, previous occurrences, and future probability)
- Potential impacts for each participating jurisdiction
- Changes in development since previous plan was developed if plan is an update

- Summary of vulnerability
Module 3: Mitigation Strategy
Unit 3.1

Community Capabilities
Community Capabilities Related to Mitigation

• What existing capabilities (plans, policies, programs) currently reduce long-term vulnerability?

• What capabilities could be used to implement mitigation and reduce vulnerability in the future?
Capability Assessment

• Describe existing authorities, policies, programs, and resources available to accomplish hazard mitigation
• Describe the plans, reports, and technical information reviewed and incorporated
• Review and update capabilities, highlighting changes since previous plan
Types of Community Capabilities

- Planning and Regulatory
- Administrative and Technical
- Financial
- Education and Outreach
Examples of Capabilities

Plans, policies, and ordinances such as:

- Comprehensive plans
- Capital improvement programs
- Transportation plans
- Emergency operations plans
- Zoning ordinances
- Building codes
Examples of Capabilities

Staff and skills for planning and mitigation such as:

- Engineers
- Planners
- GIS analysts
- Building inspectors
- Emergency managers
- Grant writers
Examples of Capabilities

Resources available to fund mitigation actions such as:

- Operating budgets
- Stormwater utility fees
- Development impact fees
Examples of Capabilities

Existing programs that implement mitigation and communicate risk such as:

- School programs
- Firewise communities
- Storm Ready communities
- Hazard awareness campaigns (Tornado Awareness Month)
- Public Information Officer
- Community newsletter
National Flood Insurance Program

Plan must describe participation in the NFIP, as well as repetitively damaged NFIP-insured structures.
Discussion Questions

• How would you collect information on capabilities in your community?
• What community capabilities might be identified?
• What limits to community capabilities might be identified?
Unit 3.2

Develop the Mitigation Strategy
Mitigation Strategy

- Long-term outcomes
  - Specific
  - To reduce risk

Actions

- Priorities
  - Implementation

Goals

Action Plan
## Mitigation Goals and Actions

<table>
<thead>
<tr>
<th>Goals</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad, long-term, policy-type statements</td>
<td>Specific projects and activities that help achieve goals</td>
</tr>
<tr>
<td>Reduce losses due to flooding</td>
<td>Amend flood damage prevention ordinance to require elevation of first floor at least 1 foot above base flood elevation</td>
</tr>
<tr>
<td>Prevent damage to structures and infrastructure</td>
<td>Retrofit historic school for earthquake safety</td>
</tr>
</tbody>
</table>

Ex 1 Reduce losses due to flooding
Ex 2 Prevent damage to structures and infrastructure
Types of Mitigation Actions

- Local Plans and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Programs
Local Plans and Regulations
Structure and Infrastructure Projects
Natural Systems Protection
Education and Awareness Programs
Other Actions in the Mitigation Plan
Discussion Questions

- What are some examples of mitigation actions?
- What are examples of activities related to response, but not mitigation?
Steps for Developing a Mitigation Strategy

1. Develop Mitigation Goals
2. Identify Comprehensive Range of Mitigation Actions
3. Evaluate and Prioritize Actions
4. Develop Action Plan for Implementation
1. Develop Mitigation Goals

- The plan must include mitigation goals consistent with the hazards identified in risk assessment
- Evaluate previous goals and reaffirm or change based on current conditions and priorities
How to Develop Goals

• Risk assessment findings
• Outreach findings
• Community goals
• State Hazard Mitigation Plan goals
2. Identify Mitigation Actions

Each jurisdiction must:

• Identify and analyze a comprehensive range of specific mitigation actions to reduce the impacts of hazards identified in the risk assessment

• Consider actions that reduce risk to:
  ▪ Existing buildings and infrastructure
  ▪ New development and redevelopment
How to Identify Mitigation Actions

- Review Risk Assessment
- Assess Capabilities

- Hazards
- Community Assets

- Planning and Regulatory
- Administrative and Technical
- Financial
- Education and Outreach
Mitigation Action Worksheet

Local Mitigation Planning Handbook

March 2013

FEMA

Mitigation Action Implementation Worksheet

Complete a mitigation action implementation worksheet for each identified mitigation action.

<table>
<thead>
<tr>
<th>Jurisdiction:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation Action/Project Title:</td>
</tr>
<tr>
<td>Background/Issue:</td>
</tr>
<tr>
<td>Ideas for Integration:</td>
</tr>
<tr>
<td>Responsible Agency:</td>
</tr>
<tr>
<td>Partners:</td>
</tr>
<tr>
<td>Potential Funding:</td>
</tr>
<tr>
<td>Cost Estimate:</td>
</tr>
<tr>
<td>Benefits (Numbers Affected):</td>
</tr>
<tr>
<td>Timeline:</td>
</tr>
<tr>
<td>Priority:</td>
</tr>
<tr>
<td>Worksheet Completed by: (Name/Department):</td>
</tr>
</tbody>
</table>
Example Problem Statement

In wildland-urban interface areas, two critical facilities (school and county maintenance shop) and $500 million in property value are at risk, and there is increasing development pressure.
Comprehensive Range of Actions

1. Adopt a wildfire mitigation code
2. Retrofit school and maintenance shop with fire-resistant materials
3. Identify land for acquisition by Parks Department for trails and open space
4. Implement Firewise programs to educate property owners
Ideas for Mitigation Actions

• Subject matter experts, stakeholders, public
• FEMA Region I’s “Mitigation Ideas for Natural Hazards”
3. Evaluate and Prioritize Actions

Describe how actions will be prioritized, including emphasis on benefit-cost review

- Benefit-Cost Review
  - Are costs reasonable compared to problem and probable benefits?
  - Estimate costs using planning level assessment
  - Consider quantitative ($) and qualitative

![Diagram showing costs, benefits, and losses avoided]
Evaluation Criteria

- Technical
- Political
- Legal
- Environmental
- Social
- Administrative
- Local champion
- Protect lives
- Other community objectives
Action Prioritization

- Consider plan goals and hazards addressed
- Weigh the pros and cons
- Ensure appropriate for community capabilities
4. Develop Action Plan for Implementation

• Describe how the mitigation plan will be incorporated into existing planning mechanisms
  ▪ Examples: Land use plan, comprehensive plan, capital improvement plan, etc.
• Describe how the mitigation actions will be prioritized, implemented, and administered by each jurisdiction
Integrating Mitigation

- Integrate plan goals with other community objectives
- Use the risk assessment to inform plans and policies
- Implement mitigation actions through existing mechanisms
# Action Implementation

<table>
<thead>
<tr>
<th>Action</th>
<th>Restrict construction of critical facilities and infrastructure in 500-year floodplain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Agency</td>
<td>Planning and Development</td>
</tr>
<tr>
<td>Potential Resources</td>
<td>Staff time, operating budget</td>
</tr>
<tr>
<td>Timeframe</td>
<td>Completion in 2 years</td>
</tr>
<tr>
<td>Priority</td>
<td>High</td>
</tr>
</tbody>
</table>
## Communicating the Action Plan

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Description</th>
<th>Priority</th>
<th>Responsible Agency</th>
<th>Potential Funding</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Floodproof pump stations</td>
<td>Medium</td>
<td>Department of Public Works</td>
<td>FEMA HMA</td>
<td>2-4 years</td>
</tr>
<tr>
<td>2</td>
<td>Inspect schools for seismic retrofit</td>
<td>High</td>
<td>School District</td>
<td>Staff time</td>
<td>1-3 years</td>
</tr>
<tr>
<td>3</td>
<td>Implement vegetation management program</td>
<td>Medium</td>
<td>Fire District</td>
<td>State Forest Service</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Steps for Developing a Mitigation Strategy

1. Develop Mitigation Goals
2. Identify Comprehensive Range of Mitigation Actions
   - Review risk assessment
   - Assess capabilities
3. Evaluate and Prioritize Actions
4. Develop Action Plan for Implementation
   - Integrate with existing planning mechanisms
   - Describe implementation of actions
Unit 3.3
Updating the Mitigation Strategy
Update the Mitigation Strategy

• Evaluate progress in plan implementation
• Describe changes in priorities
Evaluate Progress in Implementation

1. How was the plan integrated into other planning mechanisms?
2. What is the status of each action?

- Completed
  - Did action have the intended results?
  - What factors contributed to success?

- Not Completed
  - Still relevant – include in updated mitigation strategy?
  - What were barriers to implementation?
How Have Priorities Changed?

• Identify new actions based on updated risk and capability assessments
• Reprioritize with remaining actions from previous plan
• Factors influencing changes:
  ▪ Hazard events and recovery priorities
  ▪ Rate of growth and development
  ▪ Political and economic changes
  ▪ New State or Federal funding sources
Unit 3.4
Keep the Plan Current
Plan Maintenance

A plan maintenance process ensures the plan remains an active and relevant document

- Describe method and schedule for monitoring, evaluating, and updating the plan
- Identify methods for keeping the public involved
## Plan Monitoring and Evaluation

<table>
<thead>
<tr>
<th></th>
<th>Monitoring: Tracking implementation of mitigation actions</th>
<th>Evaluating: Assessing the effectiveness of the plan at achieving its goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who</strong></td>
<td>Mitigation Committee</td>
<td>Mitigation Committee</td>
</tr>
<tr>
<td><strong>When</strong></td>
<td>Quarterly</td>
<td>• Annually</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• After a disaster event</td>
</tr>
<tr>
<td><strong>How</strong></td>
<td>Progress report forms from responsible agencies</td>
<td>• Evaluate process and implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Identify lessons learned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Report to elected officials</td>
</tr>
</tbody>
</table>
Plan Update

Develop a method and schedule for updating the plan on a 5-year cycle

- Determine a responsible party for the update process
- Estimate a practical schedule
- Identify steps in process
  - Develop scope of work
  - Coordinate participating jurisdictions
  - Apply for funding or budget cost
Discussion Question

• How will you monitor the plan in your community?
Unit 3.5

Review and Adopt the Plan
Review Final Draft Plan

- Follow existing local process for public review
- Make available on Web site and community locations
- Publicize comment period
- Present to elected officials
Plan Approval Process

1. Submit plan to SHMO for State review

2. State submits to FEMA Region for review

3. FEMA issues “approvable pending adoption”

4. Local jurisdictions adopt plan and submit resolutions

5. FEMA issues approval letter and final review tool

Revisions Required
Plan Adoption

All jurisdictions seeking plan approval must adopt the plan and submit documentation.
Keep in Mind

• Communicate often with your State planners
• Keep local decisionmakers informed of the plan’s progress
• Allow time for State and FEMA review and local adoption
• Celebrate your success!

Photo credit: Brigitte Ndikum-Nyada, FEMA Region I
Module 4: Community Resilience in Action
Unit 4.1

Putting the Plan into Action
Planning Has Important Benefits

Engages the whole community in a process to:

Assess vulnerabilities and risks

- Builds partnerships
- Increases awareness of hazards and risks
- Communicates priorities
- Aligns with other community objectives

Identify policies and actions to reduce risk
Common Challenges

• Competing priorities
• Apathy, loss of interest
• Lack of funding and resources
• Limited local capability or capacity
• Insufficient political will
• Disconnect with day-to-day operations
Discussion Question

• What are challenges to implementing mitigation actions in your community?
Unit 4.2
Recommendations for Success
Use Post-Disaster Window of Opportunity

- Take advantage of public interest and political will
- Funding opportunities to address problems
- Chance to re-invent community
Focus on Quality over Quantity

- Balance staff available and the time allotted to the project
- Plans can always be updated to include future projects
- Identify and focus on projects that target the highest risks and greatest community needs
Build on Existing Strengths

Look at existing programs and plans to match with mitigation actions and proposed projects.
Encourage Local Champion

• Must have sufficient authority
• Understands the vision and can clearly communicate it to others
• Ideally from an organization that will be spearheading the project
Develop Strong Messaging

- Stakeholders need to see personal value
- Community officials want to see the financial benefit
- Agency leads want to see the benefit to their goals and objectives
- Businesses want to see how the plan will protect their investments
- The public wants to see how it will protect their lives and property
G318 Local Mitigation Planning Workshop

Workshop Conclusion
Workshop Goal

Provide plan developers with the information necessary to prepare and implement a local hazard mitigation plan.
Workshop Objectives

At the end of this workshop, participants will be able to:

• Define hazard mitigation and identify the benefits of mitigation planning
• Develop or update a local hazard mitigation plan
• Identify resources and guidance available for mitigation planning
Workshop Closing

• Final questions
• Suggestions
• Observations about the workshop
• Congratulations!