

## Session No. 3

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**Course Title: Disaster Planning and Policies**

**Session 3: Mitigation Planning and Policy Strategies: Local, State, and Federal Level**

**Time: 3 hrs**

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### **Learning Objectives:**

- 3.1 Define and discuss natural and technological hazards
- 3.2 Describe mitigation and its role in the phases of disaster management
- 3.3 Explain policy strategies supported by the federal, state and local governments to address and support mitigation.
- 3.4 Discuss the nature and variety of land use management and planning implementation tools that promote mitigation
- 3.5 Discuss the role of hazard mitigation planning and integration
- 3.6 Identify and discuss best practices in hazard mitigation
- 3.7 Understand the impediments to mitigation and other associated dilemmas

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### **Scope:**

This session of the Disaster Mitigation module focuses on mitigation planning and policy strategies at the federal, state and local levels. By the end of the session, students should understand the importance of mitigation planning at all levels and how pre-disaster planning and policy processes and interventions can help reduce vulnerabilities and increase resilience of communities.

### **Student Readings (also referred to in the subsections below):**

#### **Required Readings:**

- Burby, Raymond (ed.). 1998. *Cooperating with Nature*. Washington, DC: Joseph Henry Press. (Chapters 4, 5, 6,7)
- Haddow, G. J. Bullock, and D. Coppola. 2010. *Introduction to Emergency Management*. Burlington, MA: Butterworth-Heinemann. (Chapter 3).
- Lindell M., C. Prater, R.W. Perry with W.C. Nicholson. 2006. *Fundamentals of Emergency Management*. <http://training.fema.gov/EMIWeb/edu/fem.asp> (Chapter 6)

- Schwab, James C (Ed). 2010. Hazard Mitigation: Integrating Best Practices into Planning. Planning Advisory Service Report # 560. Chicago, IL: American Planning Association (Chapters 2, 3 and 4)

### **Recommended Readings:**

- Godschalk, David R, Timothy Beatley, Philip Berke, David J. Brower, and Edward J. Kaiser. 1999. Natural Hazard Mitigation: Recasting Disaster Policy and Planning. Washington D.C.: Island Press.
  - Waugh. 2000. Living with Hazards, Chapter 5
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### **General Requirements:**

*The materials for this session are on the syllabus and the instructor should remind students that the materials should be read and reflected upon before class. The information about the readings materials should also be placed on an appropriate course website.*

*Instructional Methodologies: The instructor can choose to employ a mixture of tools for presenting the materials. The materials presented here can be summarized into a PowerPoint presentation.*

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### **Note to Instructors**

*Refer to some of the material covered during the first class session, including the definition of hazard mitigation planning as:*

*Mitigation seeks to reduce, minimize or eliminate the risk to people and property from the effects or impacts of various hazards. Mitigation activities (such as moving properties out of a flood zone) are best if taken before a disaster. However, such activities are increasingly incorporated during the post-disaster period.*

Remind students about the documentary clip on mitigation that they watched during that first class session. One of the clips focused on hazard mitigation planning, what it means, how it can be undertaken, and the benefits of planning (both direct and indirect).

### **3.1 Define and discuss natural and technological hazards**

Refer to readings:

- Lindell M., C. Prater, R.W. Perry with W.C. Nicholson (2006). Chapter 6, “Hazard, Vulnerability and Risk Analysis” in *Fundamentals of Emergency Management* pages 155-179 <http://training.fema.gov/EMIWeb/edu/fem.asp>

- Deyle, R.E., S.P. French, R.B. Olshansky, and R.G. Patterson (1998). Chapter 5 “Hazard Assessment: The Factual Basis for Planning and Mitigation” in Burby, Raymond (ed.). *Cooperating with Nature*. Washington, DC: Joseph Henry Press.

Hazard refers to an extreme natural event that poses risk to human settlements (Deyle et al., 1998, p. 121)

Hazard exposure arises from people’s occupancy of geographical areas where they could be affected by specific types of events that threaten their lives or property. (Lindell et al., 2006, p. 153)

Some examples of natural hazards

- flooding, snowfall, hurricane and tornado winds, drought, excessive heat (weather-related);
- earthquakes, landslides, erosion, volcanic activity (geologic);
- wildfires, forest and grass fires (ecological)

### 3.2 Describe mitigation and its role in the phases of disaster management

Refer to readings:

- Lindell M., C. Prater, R.W. Perry with W.C. Nicholson (2006). Chapter 7, “Hazard Mitigation” in *Fundamentals of Emergency Management*, pages 155-179 <http://training.fema.gov/EMIWeb/edu/fem.asp>.
- Schwab, James C (Ed). 2010. Hazard Mitigation: Integrating Best Practices into Planning. Planning Advisory Service Report # 560. Chicago, IL: American Planning Association (Chapters 2, 3 and 4)
- Haddow, G. J. Bullock, and D. Coppola. 2010. *Introduction to Emergency Management*. Burlington, MA: Butterworth-Heinemann, Chapter 3.

**Note to Instructor:** *The instructor should introduce the four phases here and then let students know that ~~the next~~ three of these phases (preparedness, response and recovery) will be discussed in greater detail in later sections of the course. The material should be presented in lecture format.*

**Phases of Disaster/Emergency Management:**



Source: Arizona Division of Emergency Management at:  
<http://www.dem.azdema.gov/operations/mitigation/mitigation.html>

- 1) **Mitigation:** is defined as a “sustained action to reduce or eliminate risk to people and property from hazards and their effects. (Haddow et al. 2010, 67).

Mitigation tools can be structural or non-structural. Structural tools are typically used to control the hazard, not to prevent or reduce it. They are controversial in that they may protect some areas, but may provide a false sense of security, even exacerbating development and increased risk in hazard-prone areas. Non-structural mitigation tools are used typically to reduce or prevent risks from hazards. (Instructors can inform students at this point that a more detailed discussion of non-structural mitigation measures follows-see Sections 3.4, 3.5, and 3.6).

-Examples of structural and non-structural mitigation tools are presented in the table below.

Structural Mitigation Tools	Non-Structural Mitigation Tools
Levees	Hazard identification and mapping
Engineering and retrofitting facilities	Land-use planning
Seawalls	Financial incentives
	Building codes, design and construction
	Public Education Programs

- 2) **Preparedness:** is the second phase and like the mitigation phase is also pre-impact, prior to the event/disaster. It is defined as, “ a state of readiness to respond to a disaster, crisis, or any other type of emergency situation” (Haddow et al. 2010, 97).<sup>2</sup>

-It can take the form of planning, acquiring equipment, training, and exercises designed to save lives and to minimize damage right before an emergency occurs.

- 3) Response: This typically begins when a disaster event occurs or is imminent. Response involves the actions taken to save lives and prevent further damage in a disaster or emergency situation. It involves putting preparedness plans into action. Examples of response activities are damage assessment, search and rescue, fire fighting, sheltering victims, debris clearance, provision of immediate medical assistance, etc.
- 4) Recovery: Also takes place after disaster. It involves the actions that take place to return the community back to the pre-disaster state or “a new normal”.

-The distinctions between the phases are fuzzy and there can be considerable overlap between them. While the term ‘phases’ connotes a temporal dimension, it can also be functional and some scholars term these activities as such; namely, four ‘functions’ instead of phases. (Waugh 2000).

- Question: How is disaster mitigation different from emergency response?
  - “The term “hazard mitigation” means preventative actions a community can take now to help reduce the destruction caused in a major hazardous event in the future. Hazard elimination and loss prevention are not the same thing as emergency response. Some hazard loss reduction can be achieved by components of response plans and preparedness plans, such as a flood warning system or a plan to evacuate residents in an area stricken by wildfire. However, warning and evacuation deal only with the immediate needs prior to, during, and following a disastrous event. Hazard mitigation is much more effective when it is directed toward reducing the need to respond to emergencies by lessening the impact of the hazard ahead of time.” (Massachusetts Department of Environmental Management. 2003, page 4, Natural Hazards Mitigation Planning: A Community Guide.)

### **3.3 Explain policy strategies supported by the federal and state and local governments to address and support mitigation**

#### Refer to readings:

- Lindell M., C. Prater, R.W. Perry with W.C. Nicholson (2006). Chapter 7, “Hazard Mitigation” in *Fundamentals of Emergency Management*, <http://training.fema.gov/EMIWeb/edu/fem.asp>.
- Federal Emergency Management Agency (FEMA). 2012. Hazard Mitigation Assistance. <http://www.fema.gov/government/grant/hma/index.shtm>.
- Haddow, G. J. Bullock, and D. Coppola. 2010. *Introduction to Emergency Management*.

Burlington, MA: Butterworth-Heinemann, Chapter 3.

***Instructor Note:*** *The instructor should introduce and discuss different mitigation programs and summarize some of the key features. The material should be presented in lecture format, punctuated with questions for discussion. Students can explore more details of various mitigation policy strategies and programs in the form of an assignment.*

- 3.3.1 **Federal Level:** In 2000, Congress passed the Disaster Mitigation Act of 2000 (DMA 2000). This legislation amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act in an effort to encourage mitigation planning at the State and local levels, requiring that States maintain mitigation plans as a prerequisite for certain Federal mitigation funding and disaster assistance programs (Haddow et al. 2000). It also directed FEMA to require all local governments to establish mitigation plans as a condition for receiving federal assistance for disaster recovery (Lindell et al. 2006, 201).

While FEMA is responsible for most mitigation programs, other agencies such as the Small Business Administration (SBA) and Housing and Urban Development (HUD) also encourage mitigation.

The most important mitigation programs (as discussed in Haddow et al. 2010 and FEMA 2012) are:

- a) [The Hazard Mitigation Grant Program \(HMGP\)](#): This provides the largest source of funding for state and local mitigation activities, providing grants to implement long-term hazard mitigation programs after a major disaster has been declared by the President.
- b) [The Pre-Disaster Mitigation Program \(PDM\)](#): “PDM provides funds on an annual basis for hazard mitigation planning and the implementation of mitigation projects prior to a disaster. The goal of the PDM program is to reduce overall risk to the population and structures, while at the same time, also reducing reliance on Federal funding from actual disaster declarations (FEMA 2012).” The program requires that local applicant communities maintain an approved FEMA Hazard Mitigation Plan to be eligible.
- c) [The Flood Mitigation Assistance Program \(FMA\)](#): This program is primarily to provide funding for communities to take action to reduce or eliminate the risk of flood damage to buildings insured under the National Flood Insurance Program (NFIP).
- d) [The Repetitive Flood Claims Program \(RFC\)](#): This program provides funding to reduce the risk of flood damage to individual properties insured under the NFIP that have had one or more claim payments for flood damages. It provides up to 100% federal funding for projects in communities that meet the reduced capacity requirements.

- e) [The Severe Repetitive Loss Program](#) provides funds on an annual basis to reduce the risk of flood damage to individual residential properties insured through the NFIP.
- f) [The National Earthquake Hazard Reduction Program \(NEHRP\)](#): This program seeks to reduce the risks of life and property from future U.S. earthquakes through the establishment and maintenance of an effective earthquake hazards reduction program. It provides funding to states to establish programs that promote planning, loss estimation studies, public education and awareness, and some minimal mitigation activities.
- g) [The National Hurricane Program](#): This program supports activities at the federal, state, and local level that focus on the physical effects of hurricanes, improved response capabilities, and new mitigation techniques for the built environment.
- h) [The National Dam Safety Program](#): This program provides funding to states to establish and maintain dam safety programs, training for state dam safety staff and inspectors, technical and archival research in dam safety, and education of the public in the hazards of dam failure. The National Dam Safety Review Board and the Interagency Committee on Dam Safety are part of this program.
- i) [The Fire Prevention and Assistance Act](#): supports prevention activities at the nation's paid and volunteer fire departments and supports prevention activities. The program provides competitive grants to fire companies throughout the United States.
- j) [Superfund Amendment and Reauthorization Act \(SARA Title 3\)](#): For mitigating toxic waste hazards, this legislation emphasized local emergency planning and the community right-to-know (RTK). Under RTK provisions, a facility that handles extremely hazardous substances in amounts that are greater than thresholds set by the US EPA, is required to notify its local fire department, Local Emergency Planning Committee, State Emergency Response Commission, and the EPA, which in turn need to make the information available to citizens (Lindell et al. 2006, 214).

### 3.3.2 State Level:

-At the state level, all states have established [State Hazard Mitigation Officers \(SHMO's\)](#) to produce state-wide hazard mitigation (Section 409) plans and to manage the programmatic and financial matching requirements of the Federal programs. The SHMO, serves as a liaison between the federal and local levels. In addition, the SHMO generally performs the same functions at the state level as the Federal Hazard Mitigation Officer (FHMO) does at the federal level.

### 3.3.3 Local Level:

-Local governments are required to evaluate hazards, adopt appropriate hazard mitigation measures, and appoint local HMOs when necessary. They also participate on Hazard Mitigation Survey Teams and Interagency Mitigation Teams when appropriate and, finally, develop and implement Section 409 plans.

*Note to Instructors:* After discussing the programs and strategies at various levels of government, instructors should stress that coordination between the different levels with respect to implementation is critically important. Students can also be directed to the sample case study provided in Lindell et al. (2006, 219) about Kinston, North Carolina, where mitigation strategies that involved the acquisition of property in flood plains led to a significant savings of the cost or rebuilding and repair when Hurricane Floyd struck.

### **3.4 Discuss the nature and variety of land use management and planning implementation tools that promote mitigation.**

*Refer to readings:*

- Schwab, James C (Ed). 2010. Hazard Mitigation: Integrating Best Practices into Planning. Planning Advisory Service Report # 560. Chicago, IL: American Planning Association (Chapters 5)
- Olshansky, R.B. and J.D. Kartz. 1998. Managing Land Use to Build Resilience, Chapter 6 in Burby, Raymond (Ed.). Cooperating with Nature. Washington, DC: Joseph Henry Press.

Instructors should remind students about the definition of planning from session 1<sup>1</sup>. A range of land use management tools and techniques (used alone or in various combinations) can be used to mitigate natural hazards.

Refer students to chapter 6 on “*Managing Land Use to Build Resilience*” in the Cooperating with Nature 1998 book, where the chapter authors (Rob Olshansky and Jack Kartz) classify land use management and implementation tools into six categories:

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<sup>1</sup> According to the American Planning Association, “*Good planning helps create communities that offer better choices for where and how people live. Planning helps communities to envision their future. It helps them find the right balance of new development and essential services, environmental protection, and innovative change*”. For more details on what planners do and the various specializations, see <http://www.planning.org/aboutplanning/whatisplanning.htm>

- Building standards (including building codes, seismic design standards, flood-proofing requirements) for regulating details of building construction;
- Development regulations (e.g. zoning, subdivision ordinances, flood-zone regulations, and setbacks from steep slopes) to regulate location, type and intensity of new development;
- Critical and public facilities policies (e.g. capital improvement programs, siting of schools, siting of public utilities) which local governments can use more readily than they can control private facilities;
- Land and property acquisition such as those in hazardous areas. Such properties can be purchased with public funds and subsequently used in minimally vulnerable ways. Funds can also be used to acquire undeveloped lands or damaged buildings;
- Taxation and fiscal policies (e.g. impact taxes to cover the public costs of private development of hazardous property) to more equitably distribute the public costs of private development of hazardous property;
- Information dissemination to influence public behavior (e.g. public information, posting of warning signs in high hazard areas).

Instructors can then spend 5-10 minutes discussing how these tools and techniques can be used to accomplish the following mitigation goals laid out by James Schwab in his book “ *Hazard Mitigation: Integrating Best Practices into Planning*” . They are:

- keeping future development out of known hazard zones;
- keeping hazards from affecting existing developed areas (i.e. improve protection of already built up areas through structural mitigation projects or environmental management techniques that modify the progression of the hazard itself); and
- strengthening existing development to resist hazards (i.e. enhance hazard resistance by enacting and enforcing construction code provisions concerning hazard stresses and impacts).

We created the following table based on these two readings to facilitate this type of discussion.

Goal	Examples of tools
Keep future development (e.g. public and private investment) out of known hazard zones	Zoning and subdivision regulations – use location-specific allowable land uses and standards for public safety  Capital Improvement Programs (CIPs) - can direct funding for public facilities such as roads, bridges, utility systems and critical facilities to locations outside hazard zones.
Keep hazards from affecting existing developed areas	CIPs and funds from state and federal programs - e.g. reforestation and wetland preservation can be used for flood control.
Strengthen existing development to resist hazards	Subdivision regulations as well as building codes can contain design guidelines and project review procedures for ensuring the safety of projects subject to natural hazards.

Source: Adapted from Schwab (2010) section on “Goals of integrating hazards into planning implementation tools” ( p 48) & Olshansky and Kartez (1998)

Note to instructors: here are some sample definitions since non-planning students may not familiar with terms such as: zoning, subdivision regulations, capital improvement plan (program); and building code.

**Zoning:** divides a local government’s jurisdiction into districts or zones. The zoning ordinance regulates each zone using: types of land uses allowed; intensity or density of development; height, bulk and placement of buildings; amount and design of parking (Planning and Urban Design Guidelines, 2006, 593)

**Subdivision regulation:** controls the division of a tract of land for building and development purposes (including standards for the design and layout of lots, streets, utilities and other public improvements). (Planning and Urban Design Guidelines, 2006, 597).

**Capital improvement plan (program) or CIP:** five- to six- year schedule of capital projects (buildings, utility systems, roadways, bridges, parks, landfills etc.) (Planning and Urban Design Guidelines, 2006. 637)

**Building code:** a compendium of minimum safety standards arranged in a systematic manner (codified) for easy reference; it embraces all aspects of building construction (fire, structural, plumbing, electrical, and mechanical). International Code Council, <http://www.iccsafe.org/safety/Documents/BSW-BldgCodes-How.pdf>)

### 3.5 Discuss the role of hazard mitigation planning and integration

Refer to readings:

- Schwab, James C (Ed). 2010. Hazard Mitigation: Integrating Best Practices into Planning. Planning Advisory Service Report # 560. Chicago, IL: American Planning Association (Chapters 2, 3 and 4)
- Godschalk, D.R., E.J. Kasier and P.R. Berke. 1998. Integrating Hazard Mitigation and Land Use Planning, Chapter 4 in Burby, Raymond (Ed.). Cooperating with Nature. Washington, DC: Joseph Henry Press.
- American Planning Association website on “Integrating Hazard Mitigation into Local Planning” - <http://www.planning.org/research/hazards/index.htm>

Note to instructors: First define mitigation planning and a comprehensive land use plan, then discuss how the integration of these two types of plans can be achieved as well as the pros and cons of stand-alone mitigation plans versus integrated plans (including examples of each).

#### 3.5.1 Definition of mitigation planning.

One definition of mitigation planning used by David Godschalk and his colleagues is:

*“a mitigation plan is a statement of intent. It states aspirations, principles of actions, and often specific courses of action the community intends to follow to achieve those aspirations. It is formulated through a systematic process involving a broad representation of community citizens, stakeholders, and officials and it commits the community to a course of action designed to accomplish considered goals – to reduce losses to private property or to reduce vulnerability of lifeline facilities” (Godschalk et al., 1998, p. 87)*

If necessary, instructors should then refer back to session 1's discussion of the importance of planning for disasters: planning ahead of time allows communities to strengthen themselves against hazards; planning is critical to successful growth and change of communities; and planning is a process (it does not end)

Instructors can then segue into the topic of integrating hazard mitigation and comprehensive land use planning. Hazard mitigation and land use planning share a future orientation (Godschalk *et al.* 1998, p. 85).

- Mitigation aims to project into the future ..
- Mitigation projects impact future conditions ..
- Planning aims to project into the future ..

### 3.5.2 Definition of comprehensive land use plan

Here are two sample definitions:

*The comprehensive plan – sometimes also labeled the master plan or general plan – is the central element in the community planning process. It is intended to provide a guiding vision for a community's future, to embody both the overarching public policy goals of a community and the essential reasoning behind them” (Schwab 2010, p. 23)*

*“a community's land use plan is a broad strategy for managing urban change. It addresses the physical development and redevelopment of the community in the intermediate to long-range future. Depending on how comprehensive its approach is, the plan may include sections on public capital improvements, transportation, environmental quality, housing and community development, and historic preservation, in addition to land use and development. In some states (such as California and Florida, and in coastal regions of some states such as North Carolina, city and county comprehensive plans are required by state law to include a section on natural hazards” (Godschalk et al., 1999, p. 102)*

### 3.5.3 How can integration be achieved?

An integrated mitigation/land use planning process means incorporation of mitigation activities and goals into the four main planning steps (i.e. intelligence; goals/objectives; policies/programs; and monitoring/evaluation). If we focus on goals/objectives, hazard mitigation may be one or several goals of a land use plan. Some examples provided by Godschalk et al. (1998; pp. 99-100):

- Protect the safety of the population

- Reduce private property loss
- Reduce damage to public property
- Reduce government liability
- Reduce vulnerability of lifeline facilities (e.g. hospitals, bridges, power plants)
- Minimize fiscal impacts of disasters
- Minimize disruption of the economy and social networks
- Distribute hazard management costs equitably
- Reduce impacts of natural hazards on environmental quality

3.5.4 Should plans be separate stand-alone plans focusing on hazards, or integrated with community comprehensive plans or land use plans? What are the pros and cons of integrated plans?

*Pros of integrated plans:*

- avoids conflicting outcomes and assuring improved outcomes through synchronization ( Schwab, 2010, p. 21)
- stand-alone hazard mitigation plans (unlike comprehensive plans) have no legal status for guiding local decision making regarding capital expenditures or land use ( Schwab, 2010, p. 21). Differently stated “comprehensive plans already has standing in the community as a policy guide, and the comprehensive plan encourages integration of mitigation goals and programs with other ongoing community goals and programs” (Godschalk et al., 1998, p. 101)

*Cons of integrated plans:*

- Mitigation can become lost in a press of community issues (Godschalk et al., 1998, p. 101)
- May not be feasible especially when a community has no comprehensive plan or weak or outdated comprehensive plan and hazard mitigation is high of the community agenda after a disaster (Godschalk et al., 1998)

In the end, planners have to decide what the appropriate type of plan is for their specific community. Godschalk et al. (1998, p. 102) also suggest that it is usually possible to integrate a stand-alone plan into a comprehensive plan at a later date.

### 3.5.5 What are examples of stand-alone plans and integrated plans?

Hazard Plan as a chapter of a comprehensive land use plan :

- Town of Nags Head (NC) Hazard Mitigation Plan – originally adopted in 2004; revised and adopted as part of Dare County Joint Plan in 2010

<http://www.nagsheadnc.gov/vertical/sites/%7BB2CB0823-BC26-47E7-B6B6-37D19957B4E1%7D/uploads/%7B698987F1-140F-439E-94E6-6A7EC499E808%7D.PDF>

Stand –alone hazard mitigation plans:

- Massachusetts Hazard Mitigation Plan. *Massachusetts Department of Environmental Management. 2003. Natural Hazards Mitigation Planning: A Community Guide* -

[www.mass.gov/dcr/stewardship/mitigate/hazguide.pdf](http://www.mass.gov/dcr/stewardship/mitigate/hazguide.pdf)

Listen to the “Hazard Mitigation Planning” Podcast on APA website <http://www.planning.org/multimedia/podcasts/index.htm>

*“John Wilson from Lee County, Florida, and Julia Burrows from Roseville, California, discuss how their respective communities created hazard mitigation plans.”*

See Godschalk et al. (1998) pages 115-117 for suggested principles and criteria to consider when preparing and evaluating mitigation plans. The suggested criteria include: clarity of purpose; citizen participation; issue identification; policy specification; fact base; policy integration; linkage with community development; multiple hazard scope; organization and presentation; internal consistency; performance monitoring; and implementation.

## **3.6 Identify and discuss best practices in hazard mitigation**

*Refer to readings:*

- Godschalk, D.R., E.J. Kasier and P.R. Berke. 1998. Integrating Hazard Mitigation and Land Use Planning, Chapter 4 in Burby, Raymond (Ed.). 1998. Cooperating with Nature
- Paterson, R.G. 1998. The Third Sector: Evolving Partnerships in Hazard Mitigation, Chapter 7 in Burby, Raymond (Ed.). 1998. Cooperating with Nature
- Schwab, James C (Ed). 2010. Hazard Mitigation: Integrating Best Practices into Planning. Planning Advisory Service Report # 560. Chicago, IL: American Planning Association

Best practices can be used to highlight effective or efficient approaches to hazard mitigation. Additionally, lessons learned (positive and negative) are just as important. Planners and policy makers should use what is appropriate and transferable to their community or region of interest.

Schwab (2010, pp. v-vi) summarized what works based on a comprehensive study of hazard mitigation and its integration into planning. They include:

- Including complementary goals and objectives in the local hazard mitigation plans and comprehensive plans;
- Implementing hazard mitigation through government expenditures and development regulations;
- Documenting existing and predicted future conditions and raising awareness of what can be done about them;
- *Ensuring mutual reinforcement between hazard mitigation and other planning goal;*
- Sustaining leadership for hazard mitigation;
- Enabling a strong culture of preparedness and mitigation; and
- Using external drivers as leverage while focusing on community needs
- *Ensuring proactive outreach and stakeholder involvement in planning*

Instructors can decide to focus on two of these recommendations in more detail. We focus on discussion points for: (i) mutual reinforcement between hazard mitigation and other planning goals; and (ii) proactive outreach and stakeholder involvement in planning.

- (i) Mutual reinforcement between hazard mitigation and other planning goals

In 1996, the Association of State Flood Plain Managers wrote a book on “Using Multi-Objective Management to Reduce Flood Losses in your Watershed”

([http://www.floods.org/PDF/Using MOM in Watershed.pdf](http://www.floods.org/PDF/Using_MOM_in_Watershed.pdf)). The focus for them was on reducing flood losses and simultaneously addressing other community concerns. Here is an excerpt from their report:

*If you have only one objective—“stop the flooding”—you may spend a lot of time and money on your one problem and you may create more problems for other people. You will be competing with other communities that want funds for expensive structural projects. You will even be competing with others in your own community who have different goals in mind. The M-O-M approach helps you take charge of your future by looking at all the things your community needs and seeing how they can be combined with possible ways to reduce flood losses. You do not put all your eggs in one basket, you are less dependent on outside agencies, and you have more sources of funding and technical advice (page 3).*

Similarly, Godschalk et al (1999, 496) warn us that “many values compete in mitigation choices (public safety and property protection; environmental preservation; historic preservation; personal freedom or individual property rights”. But what are some examples of linking these values?

A popular example relates to linking the mitigation goal of keeping development out of hazard zones, with the community goal of enhancing open space in recreation areas. This can be achieved by “turning vulnerable floodplain land into open space and recreational areas which can help avert or minimize disaster by sacrificing park land in the short term instead of allowing floodwaters to ruin homes and businesses” (Schwab 2010 p. 37)

#### *(ii) Outreach and Stakeholder involvement*

Planners can help by initiating the public dialogue before disaster strikes. This entails involving as many stakeholders as possible and helping them to achieve consensus on as many broad principles and action items as possible, given the prevailing norms of the community (Schwab, 2010, p. 4) . The participation of stakeholders and citizens in the decision making process allows for mutual learning to occur between participants and local staff and officials and for more creative ideas and solutions to emerge. Requirements for public participation were written into regulations implementing the DMA.

Who should be involved? (Schwab 2010, Chapter 1) – planners; elected officials; city and town managers; planning commission members; emergency managers; fire officials; public works employees; transportation planners and engineers; GIS managers; environmental professionals; parks and recreation officials; and economic developers/business leaders.

Partnerships with the private and the non-profit sectors have also become increasingly important. Paterson (1998) advises that the third sector (nonprofit, nongovernmental, independent or voluntary sector) can play a wider role in promoting the use of land use measures to reduce losses from natural hazards. They have “become the key brokers and intermediaries in establishing networks, alliances, and partnerships across government, industry, and communities” (Paterson, 1998, p. 206)

Paterson (1998, p. 211) also suggests other promising partnerships such as: (i) existing preparedness and response organizations within the hazards field (e.g. the American Red Cross); (ii) environmental NGOs (e.g. land trusts given their efforts in protecting and conserving important natural and/or cultural resources typically through purchase of land or conservation easements); (iii) public service professional associations (e.g. the American Planning Association’s Hazard Planning Research Center) ; and (iv) universities and foundations.

Students should be warned that there is no guarantee that a participatory process will lead to successful outcomes since commitment and interest wanes; special interests might dominate; and there will be different levels of involvement based for example of the technical nature of the task. Overall, transparency in the process and mutual trust and learning is important.

### **3.7 Understand the impediments to mitigation and other associated dilemmas**

*Refer to readings:*

- Godschalk, David R, Timothy Beatley, Philip Berke, David J. Brower, and Edward J. Kaiser. 1999. *Natural Hazard Mitigation: Recasting Disaster Policy and Planning*. Washington D.C.: Island Press.

Instructors should discuss with students that in addition to examining past events and some of the lessons learned, it is also important to consider impediments to mitigation and related dilemmas.

### **3.7.1 Impediments to Mitigation:**

*Note to Instructor:* Instructors should point out key impediments to the adoption of mitigation measures for governments and individuals and discuss the interrelated nature of these impediments. It is also important to note that while these factors may make it more difficult to adopt mitigation measures, there are several ways in some of these impediments may be overcome or resolved.

- 1) **Nature of Disasters/Crises:** While emergencies may be more frequent, disasters and crises tend to be low-probability, high consequence events. The lower the probability of the event, the more difficult it is to adopt and implement mitigation measures. Disaster memories tend to be short-lived and fade away as the time elapsed after the disaster increases. On the other hand, other community needs are seen as more imminent and pressing (i.e. education, health, development and job-creation, etc.). Low probability disaster events tend to have lower priorities for local, state, and federal policy-makers. Conversely, jurisdictions that experience disasters more frequently, tend to pay more attention to them in terms of policy strategies and tools for mitigation. For instance, states in which the likelihood of disasters is higher, such as Florida and California, who are susceptible to hurricanes and earthquakes respectively, are leaders in the adoption of mitigation planning and the adoption of other types of mitigation policies.
- 2) **Economic Impediments:** Linked to the nature of disasters, is the issue of finite monetary resources and constraints. Mitigation requires available capital, which can exceed the resources of local governments. Mitigation measures are also often costly to implement in the short-term. For instance, land-use planning discussed above seeks to mitigate the effects of disasters by limiting development in hazardous areas. However, the pressure to acquire more property tax revenues by allowing such development can override concerns on mitigation. Similarly, retrofitting structures, such as elevating buildings to prevent flooding can be costly to implement. Other measures, such as building code enforcement also require resources in the form of hiring and training more inspectors. Economic

impediments are exacerbated by the short-term perspective of most policy-makers, which are rooted in political issues.

- 3) ***Political Impediments:*** Political impediments are critical in understanding the adoption or the lack thereof of mitigation measures. Political perspectives are typically short-term, linked to the office-bearers' term or potential number of terms in office. Election cycles also underscore the importance of adopting short-term measures to satisfy constituents and groups, particularly the more politically and economically powerful ones. For instance, developers and business groups maybe hefty campaign contributors and exert other forms of power through their networks; these groups are often the ones most opposed to the adoption of mitigation measures that would reduce their potential earnings from development or increase their costs. If there are countervailing forces present in the form of other interest groups (such as environmental NGOs or business groups who will gain from the adoption of mitigation measures), then the political will to adopt mitigation measures may be stronger. However, the presence of balancing forces is likely to vary across jurisdictions and for different hazards.

Other obstacles to adopting mitigation measures that have less visibility in the short-term also arise. Engaging in disaster response is likely to yield greater political dividends than adopting less media-friendly mitigation measures. With the twenty-four news cycle, political careers may be broken or bureaucrats may lose their jobs if disaster response is seen as being inadequate. However, similar media and public pressures do not exist if mitigation measures are not adopted. Moreover, the “camcorder policy-process” (Schroder and Wamsley 2001)<sup>2</sup> sensationalizes disasters, presenting opportunities for politicians to adopt the crusading role of “disaster heroes” by exhibiting their ‘leadership qualities’ in crisis mode; this is often successfully exploited much to the detriment of beleaguered agencies who are undermined by politicians, but yet are the ones to deal with the problems once media and political attention has shifted. Response thus becomes more politically rewarding than adopting mitigation measures that tend to receive less attention.

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<sup>2</sup> Schroder A. and G. Wamsley. 2001. “The Evolution of Emergency Management in America: From a Painful Past to a Promising Future.” In the *Handbook of Crisis and Emergency Management* ed. By Ali Farazmand. NY: Marcel Dekker Inc: 357-418.

4) ***Property Rights: The Takings Issue:*** Legal impediments to hazard mitigation are also important. The property rights or the takings issue has been one of the most controversial legal challenges to mitigation. As explained by Lindell et al. (2006, 194):

“Government has traditionally held the power of *eminent domain*, under which it can compel private owners to sell their property to the government at a fair market value. Historically, governments have used eminent domain to acquire property for major public benefits such as roadways. In recent years, some plaintiffs have successfully argued in the courts that some government restrictions on the use of their property constitute a “taking” of part of its value. The net effect of these cases has been to limit, but not eliminate, the ability of local governments to regulate land use for hazard mitigation. Governments must not remove all value of a property (“total taking”) without adequate compensation, regardless of the purpose of the law.”

Several “regulatory takings” cases have been heard in the Supreme Court, which have sought to clarify the conditions under which jurisdictions can regulate the use of private property in order to accomplish a public purpose. Thus, the property rights or takings issue render it more difficult to regulate land-use or acquire land as a mitigation strategy.

### ***3.7.2 Associated Dilemmas***

Mitigation Ethics and Professionalism: One dilemma that is seldom addressed is mitigation ethics and professionalism. Chapter 12 of Godchalk et al. (1999) offer one of the more comprehensive treatments on this subject. These scholars point to the need to “fill the gap left by this failure to confront ethical issues posed by natural hazard mitigation decision making” (p. 479). They do acknowledge that making mitigation decisions clearly involves extensive value judgments, and there is the dilemma that “everyone is responsible and no one is” which makes it easy for us to assume that someone else is addressing the problem.

Some dilemmas and “ethical quandaries” include keeping up with changing standards and technologies; conflicting obligations (e.g. a consultant who has a client that is seeking a particular outcome/report that is not beneficial to the safety of the general public); concern for safety may be secondary to selling of professional services; full disclosure of information; the fact that the professional reward structure serves to discourage mitigation; separating

professional and personal judgments; determining the appropriate role of politics and politicians in making mitigation decisions (particularly when politicians see their primary roles as promoting economic development and growth and only secondarily as minimizing risks from natural disasters; interference of interest group politics with public safety; differing interpretations of federal and state disaster programs by mitigation officials and program administrators; and decisions about who should pay for mitigation.

Other “ethical quandaries” are presented below to provide a venue for additional discussion by the full class or by sub-groups that comprise students from multiple disciplines or interests. Students should be warned that there is no simple or clear answer.

*Sample discussion question:* Should there be shared responsibility among a number of groups and actors (e.g. governmental agencies and regulators; the private sector (building owners, corporations, merchants); professionals (architects, engineers, planners); and individuals (citizens, consumers and homeowners)?

*Sample discussion question:* Are you aware of your professional codes of ethics and professional conduct, and how does it address public safety and/or mitigation of hazards? Refer to Godschalk et al (1999) provide a table that summarizes professionals and professional organizations that influence mitigation.

- Architects (American Institute of Architects)
- Structural engineers (National Society of Professional Engineers)
- Consulting engineers (American Society of Civil Engineers)
- Engineering geologists, geologists (Association of Engineering Geologists)
- Land use planners (American Planning Association, American Institute of Certified Planners)
- Building code officials (Council of American Building Officials)
- Public Administrators (American Society for Public Administration)

Refer students to Godschalk *et al* (1999, p. 516-522) provide a list of 28 guidelines for ethical mitigation geared primarily toward mitigation officials.