

Guidance Document Part 2, Section 4 MITIGATION STRATEGY

REQUIREMENT: §201.6(c)(3) of the Rule outlines measures that localities must take in developing their mitigation strategies. Specifically, The Local Hazard Mitigation Plan must “include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.”

This entails the development of goals from which specific mitigation actions and projects will be derived. All mitigation actions must be prioritized according to a cost-benefit analysis, with a focus on how effective the actions are expected to be with respect to their cost. For multi-jurisdictional plans, each jurisdiction must show the specific actions they will undertake.

Section 4 includes the following subsections:

- 4.1 *Local Hazard Mitigation Goals***
- 4.2 *Identification and Analysis of Mitigation Measures***
- 4.3 *Implementation of Mitigation Measures***
- 4.4 *Multi-jurisdictional Mitigation Strategy***

Section 4.1 - *Local Hazard Mitigation Goals*

REQUIREMENT: IFR §201.6(c)(3)(i) - The hazard mitigation strategy shall include: a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Guidance for Section 4.1 - *Local Hazard Mitigation Goals*

EXPLANATION: The community's hazard reduction goals, as reflected in the plan, along with their corresponding objectives, guide the development and implementation of mitigation measures.

The Mitigation Strategy must include a community's goals, and should describe what these goals are and how they were developed. The goals could be developed early in the planning process and refined based on the risk assessment findings, or developed entirely after the risk assessment is completed (current state recommended approach). They should also be compatible with the goals of the community as expressed in other community plan documents (such as the General Plan).

In the Mitigation Strategy section, the Local Hazard Mitigation Plan must:

1. Identify and analyze a comprehensive range of specific mitigation actions.
2. List potential loss-reduction activities identified in the planning process
3. Describe how the actions identified will be prioritized, implemented and administered by the local jurisdiction
4. In a multi-jurisdictional strategy, link the proposed actions to the applicable jurisdictions

Although the IFR language does not require a description of objectives, communities are highly encouraged to include a description of the objectives developed to achieve the goals so that reviewers understand the connection between goals, objectives, and activities.

The goals and objectives should:

- Be based on the findings of the local and State risk assessments; and
- Represent a long-term vision for hazard reduction or enhancement of mitigation capabilities.

SPECIAL CONSIDERATIONS:

Goals are general guidelines that explain what you want to achieve. They are usually long-term and represent global visions, such as "eliminate flood damage."

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and have a defined completion date. Objectives are more specific, such as "adopt a zoning ordinance prohibiting new development in the floodplain."

(From FEMA's "How To Guide" #386-1, Step 4: *Getting Started*: For information on beginning the local mitigation planning process.) (available on the Web at <<http://www.fema.gov/fima/planresource.shtm>>)

FEMA's GUIDANCE: To receive a satisfactory score, the plan should describe how the goals were developed. Additionally, it would be helpful to include the objectives that will be used to achieve the goals.

STATE PERSPECTIVE: The mitigation goals and objectives must directly address the vulnerabilities detailed in the risk assessment portion of the plan. The State Hazard Mitigation Plan, The California Fire Plan, The California Earthquake Loss Reduction Plan, The Sacramento San Joaquin River Basins Study, The State of California Flood Plan of 1996 and other state documents are excellent sources of information that local governments can use to develop goals and objectives for their community based upon their local hazard identification and risk assessment. Local governments should also insure that the goals and objectives identified in their Local Hazard Mitigation Plan are consistent with and do not contradict other plans the community has developed such as their General Plan developed in accordance with State guidelines. Multi Jurisdictional Plans should identify hazard mitigation goals for the region as well as **specific hazard mitigation goals of participating jurisdictions**.

LOCAL PERSPECTIVE: Suggested by San Joaquin Co. OES - Local governments may find it useful to go over mitigation plans annually by inviting all involved departments who have been affected by emergencies and disasters in the past. These departments and other stakeholders are perhaps best prepared to suggest ideas on new measures and projects that will create a safer, disaster resistant jurisdiction. At the meeting, a review of where there were actual costs, damage and interrupted service should be accomplished. This process may suggest the best ways that these negative results may be mitigated during future disasters, and hence identify a proposed action, measure or project.

SUGGESTED RESOURCES: For more information on identifying local goals and objectives, see:

Federal: 1. FEMA "How To Guide" #386-1): *Getting Started:* For information on beginning the local mitigation planning process. Order a copy from the FEMA Publication Warehouse at

1-800-480-2520 or (available on the Web at
<<http://www.fema.gov/fima/planresource.shtm>>)

For more information on refining local mitigation goals and objectives, see:

2. FEMA "How To Guide" #386-3): *Developing a Mitigation Plan:* For more information on identifying and refining the State's mitigation goals and objectives. (not yet available)

State: The State Hazard Mitigation Plan, The California Fire Plan, The California Earthquake Loss Reduction Plan, The Sacramento San Joaquin River Basins Study, The State of California Flood Plan of 1996.

Local:

Tools:

EXAMPLE TEXT: To complete the criteria of Section 4.1 - *Local Hazard Mitigation Goals*

NOTE: The following example of text for Section 4.1 is considered satisfactory by FEMA. Similar content, tailored for local circumstances, should be considered by a Local Government for their LHMP. OES intends to replace the FEMA provided example text provided below, with examples from approved California Local Government Plans, at the earliest opportunity.

FEMA TEXT: The Rumble County Hazard Mitigation Planning Committee held a 2-day charette to review and analyze the risk assessment studies that were performed for the County. The goals listed were determined to be those that would have the greatest benefit in hazard reduction to the County. The goals, objectives, and actions for each are as follows:

Goal 1: Reduce flood damage in the County.

Objective 1.1: Minimize future damage due to flooding of the Big River.

Action 1.1.1: Place a restrictive clause in the County Ordinance that will prohibit development in the Big River floodplain.

Timeframe: 6 months

Funding: No additional funding required

Staff: Planning Department personnel will work with County Administrator.

Action 1.1.2: Work with existing floodplain residents to elevate or flood proof their structures, including obtaining funding assistance and technical guidance.

Timeframe: 2 years

Funding: HMGP/FMA funds

Staff: 1 full-time Planning Department employee.

Action 1.1.3: Work with property owners to implement deed restrictions for open lots/vacant properties along the Big River to prevent development. Timeframe- ongoing, Funding –no additional funding required, Staff- Planning Department Staff.

Goal 2: Reduce economic impact of droughts.

Objective 2.1: Minimize damage to local crops due to drought situations.

Action 2.2.1: Develop water-rationing measures that will be implemented during a drought situation.

Timeframe: 1 year

Funding: No additional funding required

Staff: 1 full-time member from Department of the Environment.

Action 2.2.2: Educate residents on the benefits of conserving water at all times, not just during a drought.

Timeframe: 1 year

Funding: State Mitigation Fund

Staff: ½ time of staff member from Department of the Environment.

Action 2.2.3: Work with local farmers to investigate the use of more drought-resistant crops. Timeframe- ongoing, Funding- no additional funds required, Staff- students from agronomy program at State University in conjunction with 1 full-time Planning Department staff member.

Goal 3: Reduce the threat of contamination from the nuclear power plant.

Objective 3.1: Maintain the safe operation of the nuclear power plant located in the County.

Action 3.3.1: Work with power plant administrators to increase security measures necessary to prevent a terrorist attack.

Timeframe: 6 months, Funding: No additional funding required

Staff: ½ time of staff member from Building Department.

Action 3.3.2: Develop radiation safety protocols to be used in case of an emergency and educate the community on the use of these protocols.

Timeframe: 1 year

Funding: Donations from power plant

Staff: 1 full-time staff member from power plant.

Action 3.3.3: Work with power plant safety inspectors to ensure that the power plant is meeting or exceeding all safety requirements and develop a plan for enforcing these requirements if necessary.

Timeframe: 3 months

Funding: No additional funds required

Staff: 1 full-time inspector from power plant, ½ time of staff member from Building Department.

Action 3.3.4: Conduct a local public relations campaign to educate residents about the power plant, clearly delineating real threats from imagined.

Timeframe: Ongoing

Funding: Power plant will provide funds

Staff: ½ time of power plant staff member.

End of Section 4.1

Section 4.2 - Identification and Analysis of Mitigation Measures

REQUIREMENT: IFR §201.6(c)(3)(ii) - The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Guidance for Section 4.2 - Identification and Analysis of Mitigation Measures

EXPLANATION: The local jurisdiction should list potential loss reduction activities it has identified in its planning process and describe its approach to evaluating these activities to select those that achieve the community's goals and objectives. Particular attention should be given to those mitigation activities that address existing and new buildings and infrastructure.

Not all of the mitigation measures identified may ultimately be included in the community's plan due to prohibitive costs, scale, low benefit/cost analysis ratios, or other concerns. The process by which the community decides on particular mitigation measures must be described. The information will also be valuable as part of the alternative analysis for the National Environmental Policy Act (NEPA) review required if projects are federally funded.

FEMA's GUIDANCE: To receive a satisfactory score, the plan should describe how the actions were identified, and how the community will decide which measures to implement.

STATE PERSPECTIVE: It is important that the Hazard Mitigation Measures identified in this section flow from the hazard and risk analysis, and support the achievement of the mitigation goals identified in 4.1. Benefit Cost Analysis is a major required step in the process of identifying mitigation measures. The state can provide valuable support to local governments in the field of Benefit Cost Analysis. Mitigation Measures must directly support the goals and objectives identified in the previous section. Mitigation measures should not only include projects but also changes

SUGGESTED RESOURCES: For more information on the mitigation action evaluation process, see:

Federal: 1. FEMA "How To Guide" #386-3, Step 2): - *Developing a Mitigation Plan:* For more information on identifying and refining the State's mitigation goals and objectives. **(not yet available)**

FEMA #294, 57 pages - *Report on Costs and Benefits of Natural Hazard Mitigation* – This report, targeted at Local officials, reviews the types of benefits that can accrue to different segments of society from mitigation measures, the types of costs that can be incurred by undertaking the actions, and the types of analyses needed to evaluate the cost-effectiveness associated with the mitigation measure. In addition, the reports provide a review of the tools of hazard mitigation, to give the reader an understanding of how mitigation measures are implemented. <http://www.fema.gov/pdf/library/haz_cost.pdf>

FEMA #331, 50 pages *Protecting Business Operations Second Report on Costs and Benefits of Natural Hazard Mitigation* - This report, targeted at Local officials, the business community and the general public, is designed to help business and industry assess the risks that threaten their operations, identify measures to address the risks, and implement the measures before a disaster occurs. The reward is a business able to keep the doors open, operations running, and revenues generating for their employees and stockholders. <http://www.fema.gov/pdf/library/haz_pbo.pdf>

State:

Local:

Tools:

EXAMPLE TEXT: To complete the criteria of Section 4.2 - *Identification and Analysis of Mitigation Measures*

NOTE: The following example of text for Section 4.2 is considered satisfactory by FEMA. Similar content, tailored for local circumstances, should be considered by a Local Government for their LHMP. OES intends to replace the FEMA provided example text provided below, with examples from approved California Local Government Plans, at the earliest opportunity.

FEMA TEXT: The City of Rolling Hills has identified several hazard mitigation projects that would benefit the City and will be formalized in the City Hazard Mitigation Plan. These were identified in the Planning Group Meetings, which included input from local government agencies, county government, the local college, and residents. The hazard-prone areas and the mitigation actions suggested for each are as follows:

- Eastern Neighborhood: Located along the Big River and prone to overbank flooding. Recommend acquisition and relocation of flood-prone structures and repetitive loss properties. Focus on preservation and expansion of the created open space along the river.
- Western Neighborhood: Located in the foothills and prone to landslides. City Natural Resource Agency will conduct research to determine best management practices regarding drainage conveyance, slope excavation, and grading practices that reduce the risk of landslides. Work to incorporate these findings into the City development ordinances.

Southern Neighborhood: Prone to tornado damage. Form task force to study shelter design and reinforcement and anchoring of manufactured homes. Disseminate the information to residents and provide funding to residents to assist them in complying with the recommendations.

End of Section 4.2

Section 4.3 - *Implementation of Mitigation Measures*

REQUIREMENT: IFR §201.6(c)(3)(iii) - The mitigation strategy section shall include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Guidance for Section 4.3 - *Implementation of Mitigation Measures*

EXPLANATION: After outlining the mitigation measures to be included in the strategy, the local government should describe the method used to prioritize the order in which they intend to implement them.

Prioritization shall include an emphasis on cost-benefit analysis with a focus on how effective the actions are expected to be with respect to their cost.

The action plan should also identify those policies, programs, or resources that can be used to implement the strategy. This section should include the implementation timeline; the funding sources, when possible; and the agency or personnel responsible for carrying out the actions.

FEMA's GUIDANCE: The plan must describe how the mitigation projects were prioritized. The agencies responsible for implementation of the projects should be identified, along with the respective funding sources.

STATE PERSPECTIVE: This section is important because in it local government will detail how they prioritize their mitigation measures. The state hazard mitigation plan identifies the State's priorities and local governments should use this as a guide. This is important because the priorities of the state determine which projects the state will forward to FEMA for funding in the HMGP and the PDM programs. However, local governments should not solely base their priority on Federal programs as this funding is not guaranteed and limited to small amounts.

SUGGESTED RESOURCES: For a detailed description of the development of the action plan, see:

Federal: 1. FEMA "How To Guide" #386-3, Step 3): - *Developing a Mitigation Plan*
For more information on identifying and refining the State's mitigation goals and objectives. **(not yet available)**

2. FEMA "How To Guide" #386-5): *Using Benefit-Cost Analysis in Mitigation Planning* - For information on prioritizing projects and determining eligibility, and for a discussion about methods to determine cost effectiveness. **(not yet available)**

State: The State Hazard Mitigation Plan (draft completed – not yet available)

Local:

Tools:

EXAMPLE TEXT: To complete the criteria of Section 4.3 - *Implementation of Mitigation Measures*

NOTE: The following example of text for Section 4.3 is considered satisfactory by FEMA. Similar content, tailored for local circumstances, should be considered by a Local Government for their LHMP. OES intends to replace the FEMA provided example text provided below, with examples from approved California Local Government Plans, at the earliest opportunity.

FEMA TEXT: The City of Sandytown has identified several hazard mitigation projects to be included in the Hazard Mitigation Plan. These projects, along with the responsible agency, the funding source, and their priority are listed in the following table.

The Planning Group worked with two professors from the Economic and Planning Schools of the local college to evaluate potential projects. The professors and a handful of students completed cost-benefit analyses for each project, providing a cost-benefit ratio, expected present value, and internal rate of return. Each project was judged against these criteria and ranked according to their greatest cost-benefit ratio, their expected present value, and their internal rate of return. When necessary, the Planning Group also looked at past occurrences and historical trends to aid in assigning priority. The summary of the results is included in the plan as Appendix X.

Hazard	Project	Priority
Flooding	<ul style="list-style-type: none"> ▪ Acquisition and relocation of flood-prone structures and repetitive loss properties 	High
	<ul style="list-style-type: none"> ▪ Preservation and expansion of open space along the river 	Medium
Landslides	<ul style="list-style-type: none"> ▪ Determine best management practices (BMP) regarding slope excavation, drainage conveyance, and grading practices that reduce the risk of landslides 	High
	<ul style="list-style-type: none"> ▪ Incorporate BMP findings into City ordinance 	High
Tornado	<ul style="list-style-type: none"> ▪ Task force to study shelter design, and reinforcement and anchoring of manufactured homes. Disseminate the information to residents. 	Low
	<ul style="list-style-type: none"> ▪ Provide funding to residents to help them comply with the above recommendations. 	Low

End of Section 4.3

Section 4.4 - *Multi-jurisdictional Mitigation Strategy*

REQUIREMENT: IFR §201.6(c)(3)(iv) - For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Guidance for Section 4.4 - *Multi-jurisdictional Mitigation Strategy*

EXPLANATION: The multi-jurisdictional plan should contain a section that links the proposed mitigation actions to the applicable jurisdictions. Any jurisdiction within the planning area requesting approval or credit for the Mitigation Plan must be able to point to specific actions to be pursued.

FEMA's GUIDANCE: For a satisfactory score, the plan should list specific actions by jurisdiction.

STATE PERSPECTIVE: For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

The multi-jurisdictional plan should contain a section that links the proposed mitigation actions to the applicable jurisdictions. Any jurisdiction within the planning area requesting approval or credit for the Mitigation Plan must be able to point to specific actions to be pursued.

Mike's input – Multi jurisdictional plans should have a separate listing for each participating jurisdiction. The prioritization of multi-jurisdiction projects could be a separate priority list. Multi-jurisdiction planning teams need to find ways to achieve consensus in the prioritization. Determining the potential for consensus should be a important beginning step of a multi jurisdictional planning process.

SUGGESTED RESOURCES: For more information on the development of the action plan, see:

Federal: 1. FEMA "How To Guide" #386-3, Step 4): - *Developing a Mitigation Plan*
For more information on identifying and refining the State's mitigation goals and objectives. **(not yet available)**

<p>State:</p> <p>Local:</p> <p>Tools:</p>
--

EXAMPLE TEXT: To complete the criteria of Section 4.4 - *Multi-jurisdictional Mitigation Strategy*

NOTE: The following example of text for Section 4.4 is considered satisfactory by FEMA. Similar content, tailored for local circumstances, should be considered by a Local Government for their LHMP. OES intends to replace the FEMA provided example text provided below, with examples from approved California Local Government Plans, at the earliest opportunity.

FEMA TEXT: Golden County's Mitigation Plan encompasses several jurisdictions. Strategies for hazard mitigation within the County were identified to reduce overall damage in the County. Although these strategies are aimed at reducing overall damage in the County, each jurisdiction will be responsible for pursuing the actions that are relevant to that jurisdiction. The jurisdictions, along with the specific actions they will pursue, are listed as follows: **Jurisdiction, Action, Responsible Agency, Time Frame/ Deadline.**

Sandy Township

Pursue buyouts for the NFIP Repetitive Loss Properties located within its boundaries
 Sandy Township Department of Emergency Services, NFIP Coordinator
 Ongoing

City of Rolling Hills

Update flood ordinance to prohibit new development from being built in the floodway
 City of Rolling Hills Department of Public Works, Legislative Liaison
 Fall 2005

Town of Soggy Bottom

Hire building inspector to identify unpermitted development in the floodplain
 Town of Soggy Bottom, Department of Planning and Community Development
 Fall 2004

End of Section 4.4