

IEMA Mitigation Short Notes

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FEMA REGION V

short notes on planning #1

PROTECTING CRITICAL FACILITIES

While it is important to reduce or eliminate risks from various hazards throughout your community, there are several types of structures and infrastructure that are most important to protect. Damage to these **critical facilities** can impact the delivery of vital services, can cause greater damages to other sectors of your community, or can put special populations at risk.

Since each community is different, there is no exhaustive list regarding what should be considered a critical facility. However, a number of uses that are probably on nearly everyone's list include

- Fire stations
- Police stations
- Sewage treatment plants
- Water treatment plants and pumping stations
- Schools
- Day care centers
- Hospitals
- Retirement homes and senior care facilities
- Major roads and bridges
- Critical utility sites such as telephone switching stations or electrical transformers
- Hazardous material storage areas.

To determine the critical facilities with which you need to be concerned, you should be familiar with the existing and proposed land uses and how the loss of these uses can impact your community. You need to have a good working relationship with the transportation experts and utility companies, as well as having a good understanding of the geography and geology of your community. But this is only the start. Once you determine which sites are at risk, you then need to decide the best way to mitigate the risk.

Your planning team can look at such actions as relocating a facility, flood proofing, fireproofing, hardening a facility, or taking various preparedness actions to reduce the impacts of potential damage. Your two guiding principles should be that you will protect lives and reduce damages to the maximum extent possible.

Should your community wish to protect data regarding critical facilities for security reasons, we recommend that you check with your attorney to ensure that protecting this data does not violate your states "Freedom of Information Act." If the attorney approves protecting the data, we recommend that the data be placed in an appendix to the plan, which can be removed prior to general distribution. Also, remember that the Federal Government has a "Freedom of Information Act." Check with the FEMA Regional Office prior to sending the critical facility information, to ensure that the Federal "Freedom of Information Act doesn't require release of the information. Remember that the only information that you may protect is the location of the structures. Other discussions on critical facilities must be included in the plan.

EXAMPLE:

VASSAR, MICHIGAN

The City of Vassar (population 2,559) is located in the east-central part of Michigan's Lower Peninsula. It lies along the banks of the Cass River. The Cass River watershed drains 710 square miles with approximately 40 miles of the river upstream of Vassar and 20 miles downstream. Vassar recorded 26 floods between 1904 and 1997 of heights of anywhere from 1/10th of a foot to 11 feet above flood stage. In 1998, the City prepared a mitigation plan to guide their efforts to reduce flood damages.

An important part of the Mitigation Plan is the reduction of damages to critical facilities. They noted that flooding from the Moore Drain eliminates access to the M-15 Bridge which cuts the community in half and creates significant public safety, economic and social impacts. They also indicated that in major flood events well houses for the public water supply are threatened and the police station floods, necessitating the relocation of service.

To deal with the M-15 Bridge problem the City proposed three actions:

- Determine through a hydrological analysis the effects of relocating the Moore drain on downtown flooding and compare the effects of several different relocations.
- If the Moore Drain cannot be relocated, request that the Michigan Department of Transportation Raise M-15 eastward from Main Street to eliminate the frequent closings of the Bridge.
- Implement an annual clean-up program along the drain to ensure peak performance.

To deal with the flooding of the police station the City decided that the permanent Emergency Operations Center should be in the Public Works Building. Serious consideration is being given to relocating the Police Department to a building outside of the floodplain.

It was decided that there was adequate warning time to allow for the sandbagging of the well houses.

FEMA REGION V

short notes on planning # 2

HOW LONG IS AN APPROVED LOCAL PLAN GOOD FOR?

Just like a new computer, a Mitigation Plan is obsolete almost as soon as it is completed. We do not live in a static world and communities are constantly changing. This means that over time plans should be amended to address changes to the land and its uses. This helps ensure that new development does not create new risks and existing development is as safe as possible. The best way to deal with the changes that take place is to build-in specific times when the plan should be reviewed and updated.

- A. It is recommended that a Mitigation Plan be internally reviewed on a yearly basis and either be updated or reaffirmed. The update or reaffirmation document may also be used to summarize the accomplishments of the past year and help the community to prioritize community mitigation goals for the next year. The document reflecting the update/reaffirmation may then be added to the Mitigation Plan as an appendix.

The document should be presented to the governing board. If the document only re-affirms the information that is already in the plan, the board meeting minutes may be used to document the presentation. If the document results in changes to the plan, the board should adopt the document. This applies to both single jurisdiction plans and multiple jurisdiction plans. Revised plans should be forwarded to the State Hazard Mitigation Officer for review and approval for the Flood Mitigation Assistance Program (FMA), the Hazard Mitigation Grant Program (HMGP) or the Pre-Disaster Mitigation Program (PDM).

- B. The community may wish to update the mitigation plan when a disaster occurs within a community, whether or not it receives a Presidential Declaration. It is recommended that the update be completed as soon as possible, but by no later than the end of the calendar year following the calendar year in which the disaster occurs. Remember, post-disaster funds may hinge on the revision to the plan. So, the sooner the plan is amended the sooner funding becomes available.

C. HMGP and PDM plans are required to be revised every five years. However, if a community revises the plan and submits it to FEMA or the State for review and approval prior to the five year deadline, the five-year time clock will restart on the day the plan is approved by FEMA or a State that has received authority to approve the plan on FEMA's behalf. It is recommended that a FMA plan be updated every five years.

FEMA REGION V

short notes on planning # 3

MITIGATION PLANS AND TRIBAL BOUNDARIES

The Hazard Mitigation Grant Program (HMGP) rules found at 44 CFR, 201.3 (e) indicate that Indian Tribal Governments have the option of applying directly to FEMA as a grantee for funding or they may apply through the state as a sub-grantee.

For Federal Fiscal Year 2003 (October 1, 2002-September 30, 2003), Tribal Governments that wish to receive Pre-Disaster Mitigation funds for planning must either apply through the states as a sub-grantee for the planning funds, or they may apply as a grantee for the competitive funds. Guidance beyond 2003 has not been released.

The Rules and guidance may seem to make the decision whether to act as a grantee or a sub-grantee rather straight-forward, but the decision is not quite that easy.

The tribes can actually participate in HMGP or PDM in one of three ways:

1. They may participate as part of the applicant community (city or county) just as any other special interest group (chamber of commerce, homeowners group, school board, etc) could participate in the process;
2. They may participate as a grantee. In other words, the tribe would participate on the same level as a State; or
3. They may participate as a sub-grantee. In other words, they may participate on the same level as the community.

What is most important is that this is the tribe's determination. It should not be the State's or the community's determination.

Before making a decision on how to participate, the tribal government should consider the location of tribal lands.

- A. If the tribal land is all in one county, the tribe can follow any of the options.
- B. If the tribe wished to act as a sub-grantee and the tribal lands are contiguous, but in more than one county, we recommend that the tribe acts the same way as if they were a community that is in more than one county. The tribe should determine which County that it is most advantageous to work with and complete the plan for all of the tribal area with that County.
- C. If the tribe holds lands that are not contiguous, we recommend that they apply as a grantee. This allows them to include actions in numerous sites that have no connection except through ownership.

A side issue would be Casino sites that are in urban areas. In this scenario, the tribe owns or leases the site with the casino building, hotel and parking on it. The site has no tie-in with any other tribal lands. Since most possible mitigation actions would rely on actions by the municipality in which the land is located, we recommend that this site be dealt with through the communities mitigation plan with the tribe participating.

FEMA REGION V

short notes on planning # 4

WHAT ARE THE PLANNING REQUIREMENTS OF THE FLOOD MITIGATION ASSISTANCE (FMA) PROGRAM?

The FMA program provides funds to communities for pre-disaster mitigation planning and for projects designed to reduce flood damage to insurable structures. The National Flood Insurance Program (NFIP) funds the program, and projects are limited to structures covered by flood insurance policies.

The flood mitigation planning process is designed to identify and address overall flood problems in the area and to develop strategies for reducing the damage to structures and systems within the community. The planning document should be a vision of what the community wants to accomplish, not just a project overview completed in order to obtain a grant. The mitigation strategy may include both long-term and short-term solutions and may suggest a number of alternatives.

When preparing a plan for FMA approval, the following topics should be covered:

- A description of the planning process and public involvement.
- A description of flood depths and damage potential.
- A description of the existing flood hazard, identification of the flood risk, and a discussion of past floods including appropriate maps.
- Estimates of types and numbers of structures at risk, including available fair market values.
- A discussion of repetitive loss properties and potential mitigation activities including the appropriate maps.
- An assessment of the problem including: the impact of the flooding on infrastructure, public health, and safety; procedures for warning and evacuating residents and visitors; identification of critical facilities; a description of development trends; a summary of flooding's impact on the community and its economy.
- A statement of the community's floodplain management goals
- The strategy (strategies) for reducing floods risk.
- The strategy (strategies) for continued compliance with the NFIP.

- A discussion, including related maps, of other natural hazards that may effect mitigation options).
- A discussion of how the community has coordinated with other agencies and organizations for input and assistance and to insure non-duplication of prevention efforts.
- Identification and evaluation of cost-effective and technically feasible mitigation actions considered.
- Procedures the community is taking to ensure implementation of the plan, including progress reviews and recommended revisions.
- Identification of feasible mitigation actions and their applicability to specific conditions or geographic areas.
- The official ordinance or resolution of adoption of the plan by your community government.
- If submitted by an entity other than a community, documentation of formal interagency agreement.

We encourage you to contact your State Hazard Mitigation Officer for more information regarding reducing flood risk through the Flood Mitigation Assistance program.

FEMA REGION V

short notes on planning # 5

IDENTIFICATION OF PRIORITY HAZARD AREAS AND PROJECTS NOT INCLUDED IN THE APPROVED PLAN

Question: If the core planning group does not identify an area in the natural hazard mitigation plan that is subsequently damaged by an event, will it be eligible for funding and what priority would it have over those identified in the plan?

Response – There are actually two questions:

1. If the core-planning group does not identify an area in the natural hazard mitigation plan that is subsequently damaged by an event, will it be eligible for funding?
2. What priority would any area not previously identified have over those identified in the plan?

Question 1. It is understood that the placement of hazards on a map is not an exact science. However, the community should have some idea where hazards such as floods, landslides, wildfires and other hazards that can be linked to specific areas of a community will occur. As a general guideline we recommend that if the area not identified is directly adjacent to an identified area it be considered as part of that area and it would be eligible for funding. At the next update of the plan, the hazard identification should be amended to include this new area.

However, if the new area is unrelated to any previously identified hazard areas, the community should work to amend both the hazard identification portion of the plan and identified actions as soon as possible. This could be completed concurrently with a project application

Question 2. The community sets priorities based on critical factors. These factors include:

- a. The community's minimum threshold regarding acceptable damage reduction.

- b. Is the action effective in reducing damage and which actions are most effective?
- c. Is the action compatible with other community goals?
- d. How quickly does the action have to take place to be effective and is the proposal a short-range or long-range action?

If the community can show that this action should be placed above priorities previously set, then there is no reason that the community should not change its priorities.

We recommend that the community amend its priority list in the plan concurrently with submittal of the project application. As part of the application the community should provide its rationale for placing a higher priority on the project and address factors a. through d.

FEMA REGION V

short notes on planning #6

WHY INCLUDE A PROFESSIONAL PLANNER?

FEMA does not require that a professional planner actually prepare your community mitigation plan, but it is recommended that a professional planner be included in the process as one of the primary staff of your planning team.

A “professional planner” may be a community employee, a private consultant, or an advisor from a state agency or regional planning agency. A “professional planner may be degreed in urban planning and/or experienced in land use planning, community planning, or urban renewal. Although it is not required, it is recommended that your “professional planner” be a member of the American Institute of Certified Planners (AICP) or the American Planning Association (APA).

Professional planners have experience in a number of areas that can be useful in assisting with your mitigation planning process:

- Organizing to prepare a plan
- Putting a planning team together
- Completing land use surveys of the community
- Facilitating public meetings
- Preparing a vision statement
- Land use planning, subdivision regulations and zoning
- Coordinating with other agencies
- Applying for grants
- Drafting an action plan
- Knowing procedures for adoption of your plan
- Implementing, evaluating and revising your plan
- Accessing maps that can be used in the hazard identification and risk assessment

Note: A community that is in the Community Rating System (CRS) can receive points toward their classification if a professional planner is involved in the preparation of the plan.

EXAMPLES OF WHAT OTHER COMMUNITIES HAVE DONE

- ❑ Adams County, Illinois, used a planning consultant in the preparation of their plan.
- ❑ The Licking County Planning Commission helped prepare the Hebron, Ohio, plan.
- ❑ The Southwestern Wisconsin Regional Planning Commission participated in the preparation of the Darlington, Wisconsin plan.

FEMA REGION V

short notes on planning # 7

DEVELOPING PHASED APPROACHES TO COMMUNITY MITIGATION PLANS

Community mitigation plans, by definition, are plans for all areas at risk from natural hazards in a community (risks may also include technological hazards). Frequently, however, larger communities, such as a county, do not have the funding, time or other resources to complete a community-wide plan. This should not be considered as a roadblock to completing a mitigation plan.

A phased approach can be taken in preparing the plan. With a phased approach the hazard identification is completed for the entire community (see guidance entitled **DETERMINING DAMAGE POTENTIAL**), but the risk assessment and the determination of mitigation actions is phased over a period of time.

Once the areas at risk are determined, along with the impact, your planning team is in position to decide those locations that should be studied initially and those areas that may be studied later. Generally, residential and commercial areas that have a history of being severely damaged, critical facilities and repetitive loss structures are included in the first phase. Later phases may include areas that are at risk but have only suffered minor damages (an example would be houses that have had only a few inches of basement flooding) or have suffered no damage thus far.

Areas that have not been developed should not be ignored. These areas should be included in the first phase of the plan. A review of current laws is necessary to determine if the regulations are adequate to keep damages from increasing. If they are not adequate, then the community should look at amending local

regulations or looking at other options to reduce damages such as keeping the undeveloped areas as open space.

For further guidance regarding phasing a plan, contact your State Hazard Mitigation Officer's office or the FEMA Regional Office. Be prepared to discuss your community's circumstances. Topics that usually are discussed include how large of an area is impacted by the hazards affecting your community, current development trends, and information regarding existing development.

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short notes on planning #8

INCLUDING OTHER AGENCIES

When preparing a plan, whether it is a land use plan, a mitigation plan, a community generally includes representatives of various local departments and organizations. These departments or organizations play a role in the day-to-day life of a community. But few realize that outside agencies may also have a great effect on the community. It is because of this effect that outside organizations need to be included in the planning process.

Most hazards are not community specific. In other words, they do not affect just one community. In the case of a hazard such as flooding, water moves down-stream and knows no political boundaries. What one community does can have a detrimental effect on its neighbors. Levees on both sides of a stream can back water up and flood those upstream and a channel-straightening project can speed flooding downstream. On the other hand, a buyout-project with the re-creation of wetlands area may reduce flooding downstream and reduce the need for a mitigation project in that area. Therefore, it is always important for a community to keep its neighbors in the loop.

It is not uncommon for several Federal or state agencies to have an interest in a certain area. Although those agencies do coordinate with local government, a proposal that is in a very early stage may not have reached the point of talks with the local government. It is important to keep these agencies advised about what is being proposed in the community to avoid duplication of efforts, to make the best use of available funds, and to avoid actions that are not complimentary. Some Federal agencies to keep advised regarding local mitigation proposals include:

- Federal Emergency Management Agency
- U.S. Army Corps of Engineers
- Natural Resources Conservation Service
- U.S. Geological Survey
- National Park Service

State Agencies to keep advised are:

- Department of Natural Resources or Environmental Quality
- Emergency Management Agency
- State or regional park organizations
- Soil and Water Conservation Service
- University Extension Service

WHEN TO DO IT

The earlier you get these organization involved in the process the better off you are. Once you get your local organization formed, solicit their involvement. These organizations may not always be able to send someone to the local meetings, but will participate via conference calls or will monitor meeting minutes to determine if they need to be at subsequent meetings. These organizations should also receive a copy of the draft plan for their concurrence.

REMEMBER: THE BEST PLAN IS USELESS IF IT JUST SITS ON A SHELF AND GATHERS DUST. IT WILL BE USED IF PEOPLE ARE AWARE OF IT, HAVE OWNERSHIP IN IT, AND IF IT IS COST EFFECTIVE FOR ALL PARTIES.

MITIGATION PLANNING

FEMA REGION V

short notes on planning #9

POST-DISASTER MITIGATION PLANNING

Post-disaster mitigation planning is similar to pre-disaster mitigation planning, except that the community usually does not have a long period to gather data and study issues. Following a disaster, the immediate priority is likely to be recovering from the disaster. In the past, recovery was concurrent with mitigation project implementation. The Disaster Mitigation Act of 2000 will necessitate the following changes in your process.

The first important task may be to consider a temporary moratorium on building permits for repairs to allow the community to determine the areas in need of immediate mitigation action. Once target areas are identified, a longer moratorium may be enforced to allow time to complete the plan. In either case, the community should place a definite time limit on the moratorium.

If some of the structures in the target area are habitable, the community may wish to grant temporary repair permits. However, they should be careful not to grant permits that would compromise the opportunities for hazard mitigation.

The remainder of the mitigation planning process, which normally may take several months, may be compressed into as short a time period as a few weeks. Rather than relying on new studies of an area to determine hazards and the risks, assessments will be focused on previous studies and the area impacted by the recent disaster. After flooding, the flood of record may be used instead of differences between the base flood elevation and the actual elevation of the structure. After an earthquake, risk assessments may be based on the damage assessments completed following the event.

In post-disaster situations, communities may decide to divide the mitigation tasks into short-term and long-term solutions, with the most critical problems targeted as the short-term objectives. Mitigation decisions made in these situations may have to be made on the basis of the few options that will work in the short-term

instead of those that may be most effective over the long term. These decisions are often made quickly and under pressure rather than after and as a result of a comprehensive study and discussion.

In order to facilitate the immediate necessary mitigation actions, temporary housing for residents and temporary locations for businesses should be arranged. This will allow immediate access to stricken areas for mitigation action, for review and modification of building codes and/or for the preparation of cost benefit analyses and environmental reviews.

For additional information regarding post-disaster mitigation planning, contact the FEMA Publication Warehouse at 1-800-480-2520 to order a document entitled “Planning for Post-Disaster Recovery and Reconstruction.” If it is unavailable, you can purchase the document from the American Planning Association (APA). You may contact APA at 122 South Michigan Avenue, Chicago, Illinois 60603. You may also e-mail APA at pasreports@planning.org. Be sure to ask for PAS Report 483/484.

FEMA REGION V

short notes on planning #10

1

ASSESSING YOUR PLANNING CAPABILITIES

Prior to beginning the planning process, your community first needs to assess its current planning capabilities. Obviously, the first step is to determine whether you have trained employees that can provide staff to assist the mitigation planning team. If not, you may wish to turn to a regional planning commission for staff or hire a consultant to assist in your efforts

When hiring a consultant, be sure that the firm has experience in mitigation planning. Otherwise, you are also paying for the time that it takes the consultant to learn mitigation planning.

The next step is to determine what tools that your community already has available to use in the planning process. Attached is a checklist that you can use to help assess your capabilities. The checklist includes types of plans that your community may already have, types of ordinances that you may have adopted, and types of maps that your community already has that can be used to assess both the hazard and the risk.

Once you have completed your assessment, you will know how much work you need to do before putting your planning team together.

**ASSESSING YOUR
COMMUNITY'S PLANNING CAPABILITIES**

**Name of
Community:** _____

Task A. Determine the Planning Area

- | | |
|--|--|
| <input type="checkbox"/> Single Jurisdiction | <input type="checkbox"/> Regional Planning Area |
| <input type="checkbox"/> County (unincorporated Areas Only) | <input type="checkbox"/> Watershed |
| <input type="checkbox"/> County (unincorporated and incorporated Areas) | |
| <input type="checkbox"/> Metropolitan Area | |
| <input type="checkbox"/> Multi-jurisdictional (list all jurisdictions involved) | _____ |
| | _____ |
| | _____ |
| | _____ |
-

Task B. Determine Which Plans the Community Has in Place

- | | |
|--|--|
| <input type="checkbox"/> Comprehensive Plan | <input type="checkbox"/> Land-use Plan only |
| <input type="checkbox"/> Stormwater Management Plan | <input type="checkbox"/> Community Rating System
Plan |
| <input type="checkbox"/> Flood Mitigation Assistance
Plan | <input type="checkbox"/> Emergency Management
Plan |
| <input type="checkbox"/> Capital Improvement Plan | <input type="checkbox"/> Other Plans |
| | _____ |
| | _____ |
| | _____ |
| | _____ |
-

Task C. Determine Which Ordinances the Community Has in Place

- | | |
|---|--|
| <input type="checkbox"/> Zoning Ordinance | <input type="checkbox"/> Build Code |
| <input type="checkbox"/> Subdivision Ordinance | <input type="checkbox"/> Drainage Ordinance |
| <input type="checkbox"/> Historical Preservation Ordinance | <input type="checkbox"/> Other |
| | _____ |
| | _____ |
| | _____ |
-

Task D. Other Resources

- Geographical Information System (GIS) Capability**
- Hazards US (HAZUS) Capability**
- Zoning Maps**
- Existing Land Use Maps**
- Proposed Land Use Maps**
- Highway Maps**
- Infrastructure Maps**
- Soils Maps**
- Assessor's Property Index Maps**
- Aerial Maps**
- Topographic Maps**
- Subdivision Maps**
- NFIP Flood Maps**
- NFIP Elevation Certificates**
- Other**

Notes:

FEMA REGION V

short notes on planning #11

INCLUDING INSTITUTIONS AND NON-PROFITS IN YOUR PLANNING PROCESS

This issue/question is about entities that would normally not be expected to prepare hazard mitigation plans, since they don't have land use authority or broadly recognized jurisdictions. This includes non-profits and institutions (hospitals, schools, utilities, service providers, etc.) that technically are eligible to apply for HMGP project funds, but now apparently do not meet planning criteria for eligibility. The question is whether the grant is through the planning requirement, therefore shifting responsibility away from such applicants, now to focus mainly on jurisdictional applicants (ones that have specific boundaries and organizations for which planning can be expected) such as counties, cities, villages, townships, and special districts?

There is no change in how institutions and non-profits apply for project funds under the Hazard Mitigation Grant Program (HMGP). However, whether under HMGP or Pre-Disaster Mitigation these groups must be involved in the planning process in order to be eligible for project funds. While we realize that this may mean a little more work when their facilities cross jurisdictional boundaries, they should be invited to participate in the planning process for areas in which their facilities are located. This may be as strong as being actively involved in putting the plan together, or as weak as letting the communities know what projects they are considering. At the very least, the institutions and non-profits projects should be included in a community's plan.

Should a disaster occur and new projects be identified by the institutions and non-profits, the community should go back and amend the plan to include those projects.

FEMA REGION V

short notes on planning #12

COMMUNITY RATING SYSTEM (CRS)

A community may choose to benefit from actions it takes over and above Federal minimum requirements of the National Flood Insurance Program (NFIP) to reduce the risk from flooding to its residents by applying to become part of CRS. In a CRS community, the cost of flood insurance for residents will be reduced based on the number of activities it undertakes and the points it receives for those activities. Up to 18 activities may be credited including:

Elevation Certificates	Maintaining Flood Data
Map Information	Stormwater Management
Outreach Projects	Floodplain Management Planning
Hazard Disclosure	Acquisition and Relocation
Flood Protection Libraries	Flood Protection
Flood Protection Information	Drainage System Maintenance
Developing Additional Flood Data	Flood Warning Programs
Open Space Preservation	Levee Safety
Adopting Higher Regulatory Standards	Dam Safety

Discounts on premiums may range from 5% to 45% based on the actions each community undertakes.

CRS provides credit for adopting, implementing, evaluating and updating a comprehensive floodplain management plan. Programs that are based on a comprehensive floodplain management plan address all the community's floodplain problems more effectively, since they look at the entire system and do not attempt to deal with problems in a piecemeal fashion. A plan that has been approved as being compliant with the Hazard Mitigation Grant Program or the Pre-Disaster Mitigation Program requirements should qualify for CRS credits if it addresses flooding issues.

Note: Those interested in additional information on how to obtain the maximum 224 points for a comprehensive floodplain management plan should refer to Section 510 in the CRS Manual. You may obtain the CRS Manual at www.fema.gov/nfip/crs.htm or call the FEMA Regional Office. You may also wish to review Region V's Mitigation Planning Requirements crosswalk document. This document compares planning requirements of the CRS, the Disaster Mitigation Act and the Flood Mitigation Assistance Program. The document may be obtained by contacting the Region V Federal Insurance and Mitigation Division at (312) 408-5548.

FEMA REGION V

short notes on planning #13

REPETITIVE LOSSES

Repetitive loss structure is a term that is usually associated with the National Flood Insurance Program (NFIP). This is a structure, covered by a contract of flood insurance under the NFIP, that has suffered flood damage on two or more occasions over a 10-year period ending on the date when a second claim is made, in which the cost to repair the flood damage, on average, equals or exceeds 25% of the market-value of the structure at the time of each flood loss event. For the Community Rating System (CRS) of the NFIP, a repetitive loss property is any property, which the NFIP has paid two or more flood claims of \$1,000 or more in any, given 10-year period since 1978. A repetitive loss structure is important to the NFIP, since structures that flood frequently put a strain on the flood insurance fund. It should also be important to a community because residents' lives are disrupted and may be threatened by the continual flooding.

A Community that prepares a mitigation plan should include a map showing the general location of all repetitive loss structures and address ways to reduce or eliminate future damages. The community should also identify whether the structures uses are residential, commercial or industrial, since mitigation actions are frequently dependant on the use of the structure. Information regarding whether a community has any repetitive loss structures may be obtained from the State NFIP Coordinator's Office or the FEMA Regional Office.

Common sources of funding which can be used to mitigate repetitive loss structures are Flood Mitigation Assistance Program (FMA) funds, Hazard Mitigation Grant Program (HMGP) funds or Pre-Disaster Mitigation Program (PDM) funds. Increased Cost of Compliance (ICC) funds for a substantially damaged structure covered by flood insurance can also be used to mitigate repetitive loss structures.

Since actual losses are not limited to those structures that are in the NFIP or those that are at risk to only flood damage, communities are encouraged to identify any structure that is susceptible to the hazards included in the plan and may have been repeatedly damaged. This helps to ensure that the community becomes disaster resistant. Communities may determine the location of repetitive loss structures by reviewing the records of their local emergency responders, by relying on visual records after a disaster, or by surveys of the community.

There are concerns with including information on repetitive loss structures in the mitigation plan because of "Privacy Act" issues. As long as the portion of the plan that goes out to the public only includes a map showing the general location of the hazard and the structure, this should not be an issue. The map should be specific enough to show that the structure is in the hazard area, but should not be specific enough to identify the exact structure. Any accompanying information, such as address and date of loss that will be useful to the planning staff, the state emergency management agency and FEMA, may be requested separately.

EXAMPLE APPENDIX

While preparing the Flood Mitigation Plan for the City of Anytown, the City Planner contacted the State NFIP Coordinating Office to see if there were any repetitive loss structures in the community. Shortly thereafter, he received a list of 15 structures. The list included the address of the structure, the date of losses, and the amount of each loss. After reviewing the list, he determined that while 6 of the structures had an Anytown mailing address, they were located outside of the municipal limits.

He notified that State and FEMA regarding the addresses of the 6 structures outside of Anytown and included the rest of the data, including the losses, with a generalized chart to be included in the plan. The chart indicated all structures within the community that were at risk. Below is an example of the chart:

STRUCTURES AT RISK

STRUCTURES BY USE	REPETITIVE LOSS	DATE OF LOSSES
4 Residential Structures	\$350,000	6/30/90 8/12/95
2 Commercial Structures	\$200,000	8/12/95

In the narrative the planner noted that two of the 4 residential structures had been mitigated previously by moving the structures out of the floodplain.

FEMA REGION V

short notes on planning #14

COMMUNITIES THAT CROSS COUNTY BOUNDARIES

Frequently communities, especially growing communities, have their corporate limits located in two or more counties. While this should not cause any more problems for communities with individual plans than those faced by communities located in only one county, it does cause at least one immediate problem for communities that are included in a multi-jurisdictional planning process. **How does the community deal with being in more than one County, if the other county is not involved in the same multi-jurisdictional process?**

We recommend that you first talk to your municipal attorney to determine if there are any State laws that limit your ability to make a decision. Once you have cleared that hurdle, your next step is to determine if both counties are planning to complete a multi-jurisdictional mitigation plan including the communities in the county. If only one County is completing a mitigation plan, your decision is easy. However, if both Counties are preparing a multi-jurisdictional plan we recommend that your decision be based on the following:

- In which County is the majority of your community located?
- Which Counties land-use regulations more closely approximate the land-use regulations in your community?
- In which County do the hazards most approximate the hazards in your community?
- Which County does your community work the best with?

Deciding that you are going to be involved with the multi-jurisdictional planning process with one County does not mean that you should ignore the other County. You may need hazard data from the second County or they may need data from your community. We also recommend that you stay involved with the second County's planning process, so that you know about any mitigation actions that they are planning to take that will have an affect, positive or negative, on your community or your mitigation actions.

REMEMBER: Hazards cross municipal and County boundaries. Your planning should not be done in a vacuum- keep it as an open process and work with your neighbors.

FEMA REGION V

short notes on planning #15

WHY IS PUBLIC PARTICIPATION IN THE PLANNING PROCESS REQUIRED UNDER FEMA'S MITIGATION PROGRAMS?

The planning rules for implementation of the Disaster Mitigation Act of 2000, found in 44 Code of Federal Regulations (CFR) Parts 201 and 206, state that **“an open public involvement process is essential to the development of an effective plan.”** The rules go on to require **“an opportunity for the public to comment on the plan during the drafting stage and prior to approval.”**

In both guidance documents and in planning workshops FEMA recommends that the planning team tasked with preparing the mitigation plan include **“individuals or groups that will be affected in any way by a mitigation action or policy and include businesses, private organizations and individuals.”**

It is possible for a plan to be written by a few people without any type of public input. But that kind of plan usually has very little public support, is completed only to qualify the local government for receiving funding, and usually ends up gathering dust on a shelf.

A mitigation planning team that includes public participation ends up with a group that has a broader perspective and with a plan that has greater acceptance in the community. The team should include residents of the community and representatives from the business sector. Representatives can be found from homeowners groups or neighborhood associations, parent-teacher organizations, church groups and other non-profit organizations, local chambers of commerce, and academic institutions. An added benefit is that the planning team can spread the work out among a greater number of people and many times can speed up the process. The benefits that your community can see from public participation include:

- Obtaining technical assistance from non-traditional sources;
- Obtaining funding from sources outside of the government;
- Avoiding conflict later on in the process by discussing disagreements up front;
- Avoiding duplications of effort;
- Coordinating with other programs; and perhaps the most important,
- Gaining a broad base of public support to carry out the intent of the plan.

It is obvious that only a limited number of individuals can be put on the planning team, but that should not negate the input of others. The public can staff sub-committees of the planning team that are formed to study specific issues, questionnaires can be distributed to the public requesting individual input, survey teams may interview the public, workshops and facilitated meetings can be held and of course most states require public hearings prior to the adoption of plans.

Make your plan representative of the community's wants and needs, and make your plan one that will serve generations into the future.
INCLUDE PUBLIC PARTICIPATION.

FEMA REGION V

short notes on planning #16

GOALS, OBJECTIVES AND ACTIONS

When preparing a plan it is important for the community to have a vision of the future. Either the community can accept things as they are (continuing damage from disasters, loss of value to structures, damage to utilities and down time for business and industries, loss of tax base, and loss of lives) or it can have a vision of what can be. The community puts this vision into words in the goal statement, and makes the vision happen with the objectives, and the actions. The goals, objectives and actions are what drive the plan.

Goals

The goal is what the community wants to achieve. When discussing mitigation this may include:

- To protect the life, health and safety of the residents of the community;
- To reduce damages from flooding to structures in the community; or,
- To ensure a sustainable future to the community.

Objectives

The objectives are how the community will achieve the goals. Using the goals discussed above the objectives might be:

- Improve warning to the residents of the community by developing a system to monitor extremes in weather and communicating the information obtained to the residents of the community;
- Remove high-risk structures from the floodplain; or
- Revise the comprehensive plan to include a mitigation section.

Actions

The actions are the locations where the goals will be achieved and the procedures that will take place. Using the goals and objectives outlined above, possible actions could include:

- ▶ The County's Emergency Operations Center (EOC) will be linked to the Regional National Weather Service Office by a dedicated phone line to receive real time weather information and to the State Department of Natural Resources office via email to receive real time stream gage data.

- ▶ Based on a determination of interest that the County received from the residents of Creekside Subdivision, the County will begin purchasing and demolishing structures in the Subdivision. Once all buy-outs are completed, the Subdivision will be converted into a regional park.
- ▶ As part of the mitigation plan, the County has determined that the residents are at extreme risk from the damaging effects of an earthquake. The County will adopt a new building code that sets seismic standards for new and modified buildings and has started a low-interest loan program to help citizens retrofit their buildings.

Goals, objectives and actions - Your mitigation roadmaps.

EXAMPLE

Dane County, Wisconsin is in the process of preparing their mitigation plan. They have done an excellent job of identifying their goals and objectives. Below is a portion of their work.

Ideals:

Water as a critical resource. Water should be considered as a valuable resource rather than as a hazard. The County should promote good stewardship of our water resources in planning for the future. Good stewardship can make the most of this resource, for ourselves and for our children. Poor stewardship will lead to ever increasing hazards.

No adverse impact. The action of one property owner or community should not increase the flood risk of other property owners or communities unless the impact is mitigated through community or watershed based planning.

Strategy:

1. Mitigate the existing flood hazard and prevent future hazards.
2. Facilitate and coordinate solutions to multi-jurisdictional issues. Support planning and implementation of projects that address problems on a watershed level. Promote communication and coordination between units of government to address regional or systematic problems. Emphasize a participatory approach, involving users, planners and policy-makers at all levels.
3. Coordinate funding opportunities. Identify and coordinate various federal, state, and local funding programs to implement projects and accomplish the goals and objectives of the Flood Mitigation Plan.
4. Guide development. Make flooding and flood mitigation considerations a priority in the land development and land use decision-making process. Incorporate flooding and flood mitigation considerations into the County's comprehensive planning effort.
5. Identify project hotspots. Identify areas of the County where flooding is a significant concern. Provide planning and project assistance to local officials.
6. Develop and publicize pilot projects. Work with local officials to develop test projects of innovative ideas and solutions to flooding and stormwater management problems. Publicize and expand successful projects.

7. Continue to enforce and enhance as needed the County's erosion control and stormwater management ordinance, floodplain zoning ordinance, and shoreland and wetland ordinance.

Goals and Objectives:

- A. Mitigation – Reduce the existing potential for flood damage to public health, safety, life, and property.
 1. Remove high-risk structures from the floodplain. Survey floodplain property owners regarding voluntary buyout or relocation of flood-prone buildings and structures. Ensure all acquired property is set aside as permanent open space.
 2. Elevate structures above the base-flood elevation. Survey floodplain property owners regarding interest in flood-proofing and/or elevating structures on their property.
 3. Flood-proof structures where buyout or elevation is not feasible. Survey flood prone property owners regarding interest in flood proofing structures on their property.
 4. Prevent sewer backups into basements. Support a program of backflow prevention devices in homes and buildings susceptible to sewer back-ups.
 5. Reduce damage to roads. Address drainage and flow issues through channel improvements and culvert placement and sizing. Address washouts through shoulder and ditch stabilization.

MITIGATION PLANNING

FEMA REGION V

short notes on planning #17

WHY INCLUDE AN EMERGENCY MANAGEMENT DIRECTOR?

FEMA does not require that an Emergency Manager actually prepare your community mitigation plan, but it is recommended that an Emergency Manager be included in the process as one of the primary staff of your planning team.

An “Emergency Manager” is usually a full or part time employee of the county whose primary responsibility is to coordinate the county’s response to disasters and other emergencies. Sometimes, larger communities also have an Emergency Manager or an officer in the fire department has emergency management duties.

Emergency Managers have experience in a number of areas that can be useful in assisting with your mitigation planning process:

- ✓ Familiarity with hazards affecting the community
- ✓ Familiarity with areas of the community that are at risk
- ✓ Understanding of the communities disaster response capabilities
- ✓ Understanding of the communities response plans
- ✓ Familiarity with Federal and State disaster programs
- ✓ Understanding of coordination with voluntary agencies
- ✓ Applying for grants
- ✓ Drafting an action plan
- ✓ Understanding of how to deal with the public in stressful situations.

FEMA REGION V

short notes on planning #18

DETERMINING DAMAGE POTENTIAL

When a community decides to prepare a mitigation plan, their first activity is to put the mitigation team together. The second and third tasks are to complete the hazard identification and risk assessment. Flood maps, geological maps, and maps prepared by federal and state agencies regarding snowfall and other hazards make the hazard assessment relatively easy. Communities may wish to update or improve on this information, but the format is already set. The harder work is when the community starts to compare the hazard maps with maps showing the built environment to complete the risk assessment.

The reason that the risk assessment is harder is that knowing that a structure or facility is in an area susceptible to the affects of a hazard area is only the first step. After determining that a structure or facility is at risk, the community has to determine how bad the potential damage can be expected to get. To determine the actual risk, other data regarding the structure, such as building type, location and elevation of the structure, as well as information about the property, such as soil type and quality must also be obtained. The type of data will depend on the type of hazard that the community is looking at. Different data is needed to determine flood risk than the data needed to determine earthquake risk. The list below gives examples of the best possible data (BPD) and the minimum acceptable data (MAD) for three types of hazards. Always remember that the best possible data should be used if available, and if possible it should be obtained.

Floods

With floods you are trying to determine how much of the structure will be damaged when the disaster strikes. Therefore damage determination depends on the depth of the water and how high or low the structure sits.

BPD: The Base Flood Elevation at the site and the elevation of the top of the lowest floor, including basement, of the structure

MAD: Approximate depth of flooding on the outside of the structure from the flood of record, information on the foundation type (slab, crawlspace, basement) and the depth of flooding above or below the first floor

Earthquakes

With earthquakes you are trying to determine the potential strength of the earthquake, how far the seismic waves are expected to travel and what their impact on a structure will be. The Seismic maps tell you how strong the earthquake is expected to be and how often it is expected to strike. The soils maps will help an engineer determine how far the seismic waves are expected to travel and will also show how stable the foundations of the structures might be. The building code will indicate what requirements had to be met when the structure was built and this can be compared with current standards to help determine the stability of the structure during an earthquake.

BPD: Current seismic maps for the area, geologic data on the soils, the date and type of construction of each structure affected and the building code in effect at the time of construction.

MAD: Current seismic maps for the area, current building codes, and the approximate date of construction based on a windshield survey.

Landslides and Debris Flow

For landslides you need to look at the types of soils and their known characteristics, the steepness of the hillsides; the effects of other factors such as filling and drainage; the location of structures (the structures can slide down from the top or side of the hill and be buried at the bottom of the hill) and the foundation construction for those structures located on the top or side of the hill.

BPD: Geological maps indicating slide prone areas; drainage information that includes mapping and regulations for filling, re-grading and the drainage of soils; foundation requirements for each structure constructed in a landslide area.

MAD: Maps showing areas that may be slide-prone based on topography and field observations; maps showing the location of structures in slide prone areas along with types of foundations based on field observations.

Similar analysis can be used for other hazards such as wildfire, severe winds and snow loads. Contact your State Emergency Management Agency to determine that factors that should be used in these other risk assessments.

Two important things to remember when determining damage potential are:

1. There are minimum information requirements that must be met to complete many of the activities included in the planning process; and these activities should be your guide to the least effective acceptable option.
2. Each progressive improvement in information leads to a better risk analysis.

FEMA REGION V

short notes on planning #19

LOCAL PLANS NOT APPROVED PRIOR TO NOVEMBER 1, 2004

The Rules for Hazard Mitigation Planning and the Hazard Mitigation Grant Program states that communities must have all-hazard mitigation plans that have been approved by FEMA by November 1, 2004, to be eligible to receive Hazard Mitigation Grant Program (HMGP) project funds. Communities that wish to be eligible for Pre-disaster Mitigation (PDM) funds must have an approved plan by November 1, 2003. These two requirements have confused some communities. Therefore, this guidance is designed to clear up some of that confusion.

While the rules require that communities applying for HMGP project funding after November 1, 2004, must first have an approved plan, it is unreasonable to assume that all communities will meet that deadline. To help deal with the problem of all communities not having approved plans, FEMA has encouraged States to prepare a prioritization list so that the first plans that are funded are for those communities that are at the most risk. At the same time, it is understood that some communities that are struck by a disaster will not have an adopted plan. In this case, the FEMA Director may grant a one-year extension to complete a plan while project funds are made available, if a community has a good reason for not having completed a plan. If a community receives the one-year extension, they must have an approved plan within the one year of receiving the grant, or they must return any unspent planning or project funds.

The November 1, 2003, deadline for PDM is for communities that wish to apply for FY 2004 PDM project funds. If the community does not meet the 2003 deadline, they have the option of completing the plan later and applying for project funds in subsequent years. For example, approval of a plan by November 1, 2004, would make the community eligible for FY 2005 funds, and so forth.

FEMA REGION V

short notes on planning #20

COMMUNITIES WITH AN OLD OR OUTDATED FLOOD MAP

One of the major risks faced by most communities is flooding. In most cases, communities use the Flood Insurance Rate Map (FIRM) and/or the Flood Boundary and Floodway Map (FBFM) as a tool for completing their hazard identification and risk assessment (HIRA). We have received questions regarding whether communities should use older maps for the HIRA. The decision whether to use the old or outdated maps will be done on a case-by-case basis and should be based on a number of factors.

Just because a map has been prepared or updated in the past several years doesn't mean it is inaccurate. If little or no development has taken place in the community since the maps were prepared, they are probably still accurate. In this case your community should use them when preparing your HIRA.

If the FIRM or FBFM is in the process of being revised, has gone through the appeals period, but has not been officially revised, it is considered **BEST AVAILABLE DATA**. In this case, you can use the map under revision for your HIRA.

If your community has completed its own version of the FIRM or FBFM, it can only be used for the HIRA if it is more restrictive than the FEMA maps.

In all other cases, you must use the existing FIRM and FBFM for your HIRA.

FEMA REGION V

short notes on planning #21

MULTI-JURISDICTIONAL PLANS

Communities preparing mitigation plans for the Hazard Mitigation Grant Program (HMGP) or the Pre-disaster Mitigation (PDM) Program have the option of preparing a plan for their individual community or combining with other communities to prepare a multi-jurisdictional plan. Most multi-jurisdictional plans are either a countywide plan, a plan prepared by drainage basin authorities, or a plan prepared by regional planning commissions.

FEMA does not require communities to be part of a multi-jurisdictional group, and we realize that communities may see both positives and negatives to being part of a multi-jurisdictional group. However, we do set standards that communities must meet if they decide to be part of a multi-jurisdictional effort.

In addition to meeting the standard requirements of Part 201 of the Hazard Mitigation Planning and Hazard Mitigation Grant Program Rules, a community that opts to participate in a multi-jurisdictional planning effort must meet four requirements:

1. Each community that wishes to receive credit for an approved plan must participate in the planning process.
2. Each community that wishes to receive credit for an approved plan must officially adopt the plan.
3. Each community must assess risks where they vary from the risks facing the entire community.
4. Each community must identify action items specific to the jurisdiction requesting credit for the plan.

Communities that decide not to participate in the multi-jurisdictional planning effort may not receive credit for the plan and must prepare their own community plan in order to receive credit.

When making the decision of whether to prepare an individual plan or a multi-jurisdictional plan, the basis of your community's decision should be the type of plan that best serves the needs of your community.

FEMA REGION V

short notes on planning #22

MITIGATING FOR EARTHQUAKES

People living and working in the West have experienced more frequent seismic events and may be more familiar with earthquake mitigation, but to the rest of the country experiencing and mitigating potential damages from an earthquake may be a new experience. This document is meant to give residents and officials of the central United States an overview of what should be included in an mitigation plan that addresses seismic hazards and risks, the information needed for a hazard identification and risk assessment, and the types of actions that should be considered in an earthquake mitigation strategy.

Who To Turn To For Assistance

There are a number of places that a community can turn to for assistance in preparing the seismic portion of the all-hazard mitigation plan. The first place to contact is the State Emergency Management Agency (EMA). The State Hazard Mitigation Officer may be able to provide help, and a number of states EMA's have an Earthquake Program Manager. This individual is an expert on seismic hazards, seismic maps and the various mitigation activities. The State Earthquake Program Managers in Region V are:

- Illinois: Keith Chambers – (217) 557-4771
- Indiana: John Steel – (317) 233-6519
- Ohio: Candace Sherry – (614) 889-7172

There are also a number of other places a community can obtain information on earthquakes. For information on the earthquake hazard, both your state geological survey and the U.S. Geological Survey (USGS) should be able to provide you information regarding whether you are located in an earthquake zone. The USGS maintains a web site that identifies earthquake hazard zone. You can access this site by going to

<http://geohazards.cr.usgs.gov/eq/pubmaps/US.pga.050.map.gif>. You can also order maps on a CD-ROM by going to the USGS website at <http://www.usgs.gov>.

For information on how to address the earthquake hazard, FEMA has several publications that can help. They are:

- “Seismic Considerations for Communities at Risk (FEMA-83),”
- “A Non-Technical Explanation of the NEHRP Recommended Provisions (FEMA-99),”
- “Rapid visual Screening of Buildings for Potential Seismic Hazards (FEMA-154/155),”
- “Home Builder’s Guide to Seismic Resistant Construction (FEMA-232),” and
- “Promoting the Adoption and Enforcement of Seismic Building Codes: A Guide for State Earthquake and Mitigation Managers (FEMA-313).”

All of these publications may be ordered free of charge from FEMA by calling 1-800-280-5250.

Finally, you can also contact the Earthquake Consortium for the middle and southeastern portion of the country, the Central United States Earthquake Consortium (CUSCEC). They can be contacted on the Internet at <http://www.cusec.org>.

Hazard Identification

The easiest ways to determine a jurisdiction’s seismic risk are to use the USGS’s website listed above and/or order the Probabilistic Earth Ground Motion Maps from the USGS. Another place to obtain seismic maps is by ordering FEMA publication “NEHRP Recommended Provisions For Seismic Regulations For New Buildings and Other Structures Kit (FEMA-368/369).” This kit includes the seismic maps for the continental US. You can order the publication by calling 1-800-480-2520.

Once you have found the location of your community on the Maximum Considered Ground Motion Maps described above, which are based on a 2% probability of exceedance in 50 years, determine if the ground motion exceeds a short period spectral response acceleration of 0.15 and exceeds a one second period spectral response acceleration of 0.04. If so, you should consider earthquakes to be a hazard that will affect your community and determine what actions your community needs to take.

HAZUS

One of the best ways to complete a risk assessment for seismic hazards is through the use of the FEMA’s HAZUS loss estimation program’s earthquake module. This computer program in association with a GIS system will enable your community to estimate the location and the amount of damage and injuries from an earthquake of a particular magnitude. Products that a HAZUS run produces include maps based on census tracts showing the location of various facilities and how they

will be affected by a risk assessment in the Central U.S., you should be cognizant of two conditions that may accentuate the damages.

Unlike the mountainous west where bedrock comes close to the earth’s surface, the Midwest and East

will be affected by an earthquake of a given magnitude, charts showing how many structures will be damaged, the types of damage and the monetary value of the damages, figures on how many people will be expected to be injured or killed, and even the amount of debris that will be expected.

Copies of the HAZUS Software may be obtained from the FEMA Warehouse. More information on HAZUS and HAZUS training is available of the FEMA Website <http://www.fema.gov>.

SPECIAL CONSIDERATIONS

When completing a risk assessment in the Central U.S., you should be cognizant of two conditions that may accentuate the damages.

Unlike the mountainous west where bedrock comes close to the earth's surface, the Midwest and East are covered with **unconsolidated soils** that will conduct the waves produced by an earthquake over a much greater area. It has been estimated that while the 1811 and 1812 New Madrid earthquakes that occurred in the Midwest were roughly similar to the 1906 San Francisco earthquake, they affected over 10 times the area. This would impact a much larger population.

The second consideration is **construction standards**. Communities in the West have addressed seismic standards in their building codes for many years, but building codes in the Midwest have adopted seismic provisions only recently, and enforcement is only now beginning to occur in many areas. The impact is that a severe earthquake would potentially affect more structures and with greater damage than for those structures in the West.

MITIGATION ACTIONS

Seismic mitigation can take a number of forms from public information, to preparing for the primary and secondary affects of earthquakes, to adopting or modify building codes, to modifying existing critical structures.

The first step in mitigating against an earthquake is to prioritize what you wish to protect. It is recommended that you first look at critical facilities, since these facilities house the first responders, this will be from where the response and recovery is coordinated, or be from where medical attention or shelter is provided. The second priority should include the lifelines for your community. This is the critical infrastructure that provides electricity, water, and heat to your community. If these utilities are forced to shut down, your community may have to provide shelter to many more individuals. The third priority should be commercial and industrial buildings or large apartment or condominium buildings. Due to the types of construction, these are the types of structures that can be the most severely impacted by an earthquake. The final priority should be standard single-family residential structures. Usually, because of their light-weight construction, single-family structures suffer the least damage. However, they may still suffer enough damage to require the community to provide temporary housing.

Possible mitigation actions may include:

School Survey Procedures	Schools are critical facilities not only because of the special population they accommodate, but also because they are often identified as shelter sites for a community. Due to this sheltering role, it is essential that these buildings function after a seismic event. A community can use the survey procedure and guidance contained in FEMA's Rapid Visual Screening documents to inventory structural and non-structural hazards in and near school buildings. Survey results can be used to determine mitigation priorities that can be incorporated into capital improvement plans.
Capital Improvement Planning	School districts, local governments, corporations, and others have developed capital improvement plans to ensure that facilities remain operational for years down the road. It is more efficient and cost effective to incorporate structural and non-structural seismic strengthening actions into on-going building plans and activities, rather than to rehab later.
Guidelines and Model Ordinances	Earthquake risks can be mitigated through land use planning. Communities can develop and distribute guidelines or pass ordinances that require developers/building owners to locate lifelines, buildings, critical facilities, and hazardous materials out of areas subject to significant seismic hazards. Particular consideration should be given to enforcing such ordinances in areas with steep slopes or subject to ground displacement, severe ground shaking, or liquefaction.
Building Codes	Although land use management that avoids building on hazardous sites is an effective way to reduce earthquake risk, all structures will be subject to ground shaking. Engineers and architects have designed buildings in ways that reduce the impact of ground shaking, which is the major cause of earthquake damage. Encouraging all local governments to adopt and enforce updated building code provisions is one effective way to reduce earthquake damage risk.
Seismic Code Training	Legislators often enact seismic building provisions that do not get enforced because architects, engineers, and building departments are unaware of the provisions. Conducting information sessions or other forms of outreach on seismic code provisions for new and existing buildings can enhance code use and enforcement by local architects, engineers, contractors and code enforcement personnel.
Buildings as Structural Hazards	Homeowners and businesses can take simple measures to strengthen their buildings before the next earthquake. Bracing walls and bolting sill plates to the foundation are examples. Unreinforced masonry buildings and non-ductile concrete facilities are particularly vulnerable to ground shaking. These buildings should be strengthened and retrofitted against future seismic events.
Non-Structural Hazards	Many injuries in earthquakes are caused by nonstructural hazards, such as attachments to all types of buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damage include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing

propane tanks, water heaters and gas cylinders.

Technical Assistance for Homeowners	Developing a technical assistance information program for homeowners and teaching them how to seismically strengthen their houses can be an effective mitigation activity. The program could include providing local government building departments with copies of existing strengthening and repair information for distribution to homeowners. Other potential distribution sources include insurance companies, realtors, homeowner associations and libraries.
Infrastructure Hardening	Identification and hardening of critical lifeline systems, i.e., critical public services such as utilities and roads, to meet “Seismic Design Guidelines and Standards for Lifelines,” or equivalent standards, may distinguish a manageable earthquake from a social and economic catastrophe.
Bridge Strengthening	State and local highway departments should review construction plans for all bridges to determine their susceptibility to collapse. Problem bridges should be prioritized for upgrading and retrofitted.
Hazard Mitigation Awareness	Local or state governments can use community outreach activities to foster an awareness of the existing earthquake hazard, the resulting risks to buildings and infrastructure, and earthquake mitigation activities that can be undertaken in homes, schools and businesses.
Financial Incentives	Local or state governments can support financial incentives like low interest loans or tax breaks for home and business owners who seismically retrofit their structures.
Insurance	Local or state governments can work with insurance industry representatives to increase public awareness of the availability of earthquake insurance.

FEMA REGION V

short notes on planning #23

PRE-DISASTER MITIGATION PLANNING

The Pre-Disaster Mitigation (PDM) Program is a new program created by the *Disaster Mitigation Act of 2000* for those communities that wish to receive monetary assistance prior to a disaster to fund mitigation projects. Effective November 1, 2003, any community that wishes to be eligible for PDM funds must have an approved Mitigation Plan.

For the Local Mitigation Plan to be approved, it must meet the following minimum criteria:

- There must be open public involvement in the **planning process**; the process must include neighboring communities, local and regional agencies, business, academia (if available), and other private and non-profit interests; the process must include review and incorporation of existing plans, studies, reports and technical information; and, documentation of the process must include the process used to develop the plan, who was involved and how the public was involved.
- A **risk assessment** must be included that identifies the type, location and extent of all natural hazards affecting the community; a history of past events and a probability of future events for each hazard; an assessment of the type and number of existing and future buildings, infrastructure and critical facilities located in a hazard area; an estimate of dollar losses from each hazard; and, an analysis of land uses and development trends.
- A **mitigation strategy** must be included that states the mitigation goals to reduce or avoid long-term vulnerabilities from the identified hazards; that identifies and analyzes a comprehensive range of specific mitigation actions and projects to reduce the affect of hazards on new and existing buildings; and, an action plan including how the actions be prioritized, implemented and administered including a cost benefit review of the projects.

- A **plan maintenance procedure** must be included, which includes a description of how the plan will be monitored, evaluated and updated; a description of how the plan will be implemented through existing programs; and, how the public will continue to be involved in the plan maintenance process.
- The local governing body must **adopt** the plan.

For communities that opt to participate in a multi-jurisdictional planning process, the following prerequisites must also be met:

- The governing body of all jurisdictions requesting approval of the plan must **adopt** it.
- Each jurisdiction that requests approval of the plan must **participate in the planning process**.
- The **risks of one jurisdiction that vary** from those facing the entire planning area must be assessed.
- The mitigation strategy must **identify action items for each jurisdiction** requesting approval or credit for the plan.

For additional information on the planning process contact the FEMA Publication Warehouse at 1-800-480-2520 to order copies the FMEA Mitigation Planning How-To Guide Series (FEMA 386). You can also obtain copies of the Series on the Web by going to : <http://www.fema.gov/fima/planresource.shtm>.

FEMA REGION V

short notes on planning # 24

INCLUDING OTHER PLANNING DOCUMENTS

A community that wants to ensure that the requirements of a plan are enforced will endeavor to see that the plan has the broadest reach possible. This can be accomplished by incorporating the plans requirements into the communities other planning mechanisms.

To ensure that the Local Mitigation Plan has a broad reach, the rules implementing the *Disaster Mitigation Act of 2000* found at 44 CFR 201.6©(4)(ii), require that communities that prepare a Local Mitigation Plan to be eligible for the Hazard Mitigation Grant Program (HMGP) include:

“A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.”

If a community has a comprehensive plan, mitigation requirements can be included in the housing section, the environmental section, the transportation section, the economic development section and other areas of the plan. This ensures that the reduction of damages in the community is not overlooked, when other development or redevelopment is taking place. Likewise, by including the mitigation plan requirements in the communities capital improvement plan can ensure that the community is not spending money to improve the community’s infrastructure in areas that would be best left undeveloped or will encourage the use of additional funds to ensure that the infrastructure is protected from hazards.

Other planning documents that the community may wish to consider integrating your mitigation plan into include:

- The Stormwater Management Plan
- The Community Rating System Floodplain Management Plan

- The Land Use Plan (for those communities that have a land use-plan, but not a comprehensive plan)
- The Emergency Management Plan
- The Transportation Plan
- The Economic Development Plan
- The Community Development Plan
- Various other special use plans.

The key is to integrate the mitigation plan into as many aspects of your community as possible, to ensure safe development for the residents of your community.

FEMA REGION V

short notes on planning #25

IDENTIFICATION OF PROJECTS

Second to the Hazard Identification and Risk Assessment sections of a Mitigation Plan, Identification of Projects is the most important part of the plan. The Projects are the actions that accomplish the damage reduction that is the purpose of the mitigation plan.

There are many types of project that can be put in a plan. In fact, a good plan will have multiple types of projects. By types of projects, we mean:

- Projects funded by FEMA;
- Projects funded by other Federal or State agencies;
- Projects funded by the community;
- Projects funded by Non-Government Organizations;
- Projects that include modification of structures;
- Projects that remove structures from an area at risk;
- Projects to modify the infrastructure of the community;
- Projects to modify terrain;
- Projects to further identify risks;
- Projects that include the adoption of new ordinances, plans or codes; or projects that amend existing ordinances, plans or codes;
- Projects that include financial incentives to mitigate;
- Projects to educate the public.

As you can see, the multiple types of projects open up a wide range of possibilities, and we haven't even discussed the site-specific projects. This leads to the obvious question: ***“What projects should a community pick in order to reduce damages?”***

Since no one knows your community as good as you, we are not going to even think of telling you what to chose. However, we are going to give you some guidelines to help in making your decision:

1. Before making a decision regarding prioritization of the projects, decide on a vision of what you want your community to be like after all of the projects are complete. This will give you a measuring stick to determine whether the project meets the community's needs.
2. Look at the funding sources for the plan and the projects. If the plan is being prepared to make the community eligible for a certain program, you must ensure that you include fundable projects in the plan.
3. You need the public's support for almost everything that you do in the community. How are you going to educate and include the public in the planning process?
4. How long will the project take to complete and does one project have to be completed before another can begin? You may wish to include both long-range and short-term projects, so that you make progress in reducing the risk.
5. Do you need someone else's approval, such as permits, before you can begin a project?
6. Include projects that deal with the existing built-environment and future development. Don't try to correct the past, without making sure that you don't make things worse in the future.

Remember, if you want your plan to be a useful document, it should be a living document. This means it should be reviewed for progress and projects should be added and removed as needed.

FEMA REGION V

short notes on planning #26

TOWNSHIP AUTHORITY

All of the states in the Midwest are divided into political and jurisdictional subdivisions known as counties. In most states, the counties are subdivided in three types of political and jurisdictional subdivisions known as cities, villages and townships. Here the similarities end. Each state has enabling legislation dealing with how the subdivisions of counties are formed or under what conditions that they can cease to exist, how they are governed, and what authorities that they have. It is this enabling legislation laws and the mitigation program rules that govern how we deal with townships when preparing a mitigation plan.

If State-enabling legislation gives a township the same land-use regulations authority as a city or village, then for the purpose of preparing and adopting a mitigation plan it has the same responsibilities. This means that it may adopt its own plan or may be a participant in a multi-jurisdictional planning process.

If the township does not have full-land use authority, they must rely on the county to enforce any regulations that they propose to use to mitigate the natural hazards. The county would have the floodplain ordinance; the county may have the building code, the zoning ordinance or the subdivision code; and any special codes or ordinances needed would have to be enforced by whichever jurisdiction that State-enabling legislation allows. If State-enabling legislation does not give the township land use authority, or only gives it partial land use authority, the township has the option of letting the county prepare and adopt the mitigation plan or participating in the county's process. It is recommended that the township be involved in the planning process, since this would allow for a broader buy-in to the County plan, especially when there are projects in the township.

MITIGATION PLANNING

FEMA REGION V

short notes on planning #27

MITIGATION PLANNING AND ECONOMIC DEVELOPMENT

One might question what mitigation has to do with economic development. Some people feel that mitigation planning and its subsequent activities are anti-economic development, since activities may lead to the removal of land from development potential or may place additional requirements on developers. But in actuality, mitigation planning and its subsequent activities can be a benefit to economic development.

Economic development isn't just about bringing businesses to town and building structures. It's also about what will cause the businesses to want to come to town or what will keep them in town.

When businesses decide to relocate to a town or decide to stay in a town, they look at labor supply, the availability of properly zoned land, transportation, infrastructure, communications, the availability of public capital, and the quality of life. All of these assets can be linked to mitigation planning.

The labor supply depends on the availability of people as well as their education levels. If a community fails to take care of the life, health and safety of its residents, they will relocate out of town. If the schools are susceptible to damage, it can reduce the number of days that education is available and reduce the amount of money that is available to fund education activities. The availability of funds for education is also impacted by the affects of disasters on the general population, since the disaster may affect the availability of tax money.

The availability of properly zoned land means more than the

actions of the zoning board. Businesses do not want to locate at sites where their business will be closed several times a year due to flooding or where their employees can not make it to work when roads are blocked or there is damage to their homes. They also do not want to put vast amounts of money into a building that can fail due to high winds or the shaking of an earthquake.

Transportation, infrastructure and communications can all be impacted by a disaster. Roads can be impassible due to floods, debris from winds, tornadoes or ice storms, or the failure of bridges during an earthquake. The failure of infrastructure such as sewers and waterlines can cause a business to close until those utilities are available, especially if water is involved in the manufacturing process. The failure of communications can shut a business down since communications are necessary for computers, to make sales, to order supplies, and for many other aspects of the modern business.

The availability of public capital, or money, to support the relocation or expansion can be severely impacted by a disaster. If a community is forced to spend millions of dollars making roads, bridges, utilities and buildings useable after a disaster, they certainly are not going to be able to subsidize a business.

The quality of life can be intricately linked to mitigation planning. Quality of life is dependant on a safe place to work and live, amenities such as parks and greenways, historic preservation, and the availability of other recreational and cultural facilities. All of these aspects can be elevated to a higher quality level through good planning and use of mitigation projects.

Mitigation Projects

An educated choice of good mitigation projects can go a long way toward improving the economic development potential of a community. As part of the mitigation plan, a community needs to decide what goals it wishes to achieve, determine what objectives and subsequent actions will meet those goals and then move to implement them. This document gives a few examples of actions that can encourage mitigation actions, but other documents such as Region V's Mitigation Ideas discuss many of the mitigation actions by hazard that can be used to reduce damages.

If earthquakes are one of the major hazards facing a community, retrofitting projects for critical facilities such as schools, fire and police stations, hospitals and other facilities can reduce damage and the loss of life. Projects can be inexpensive such as those to anchor buildings to their foundations or projects to ensure that non-structural items such as lights, shelves, and other equipment don't fall to the ground. They can be as expensive as gutting a building and re-enforcing the frame of the structure. The retrofitting of bridges can prevent the loss of major portions of a transportation system.

If flooding is the major hazard, buy-outs, elevation or floodproofing may be used. Floodproofing can only be used for non-residential sites, but can protect millions of dollars of equipment and inventory. Elevation of a structure can raise the area subject to

damage above the flood level. Buy-outs remove the structure at risk and can provide the community with much needed open space.

If high winds and tornadoes are the major hazard, retrofitting of buildings can reduce damage, the use of saferooms can save lives, and the placement of utilities underground can reduce the chances of interruption. Re-enforcing buildings can reduce the damage from high winds by keeping elements of the building from ripping loose. If the elements don't rip loose, it not only prevents damage to the original structure, but also any structures that they may hit by those elements. In the case of tornadoes, retrofitting may prevent some damage from slower speed tornadoes and prevent damage to structures on the fringe of the area that the tornado strikes. Saferooms can be used in single-family and multi-family structures, commercial structures, schools and other critical facilities, parks, and industrial facilities. They give the residents a safe haven to move to when tornadoes are imminent. By requiring new and replaced utilities such as electrical and telecommunication lines to be put underground can reduce the down-time from the loss of these utilities that are critical to our daily lives.

Remember! The choice of the right mitigation actions can protect the residents of your community, can reduce the damages and resulting costs to your community, can reduce down time and can provide your community with recreation and open space area.