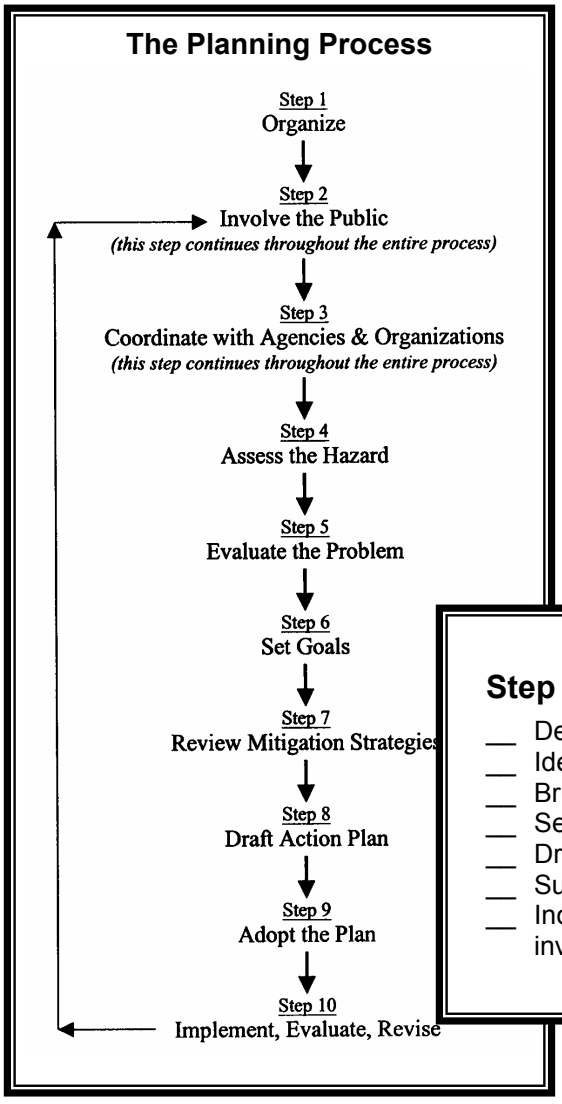
FEMA

March 2003

EXAMPLE PLANS



ⓘ Planning Hint

The resolution that adopts the plan should clearly state who is responsible for implementation and require monitoring and progress reporting. The action plans for Conway, Gurnee, Huntsville, and Oregon City all created a standing committee to do this. The standing committee members were drawn from the planning committee.

See the following plans for the draft resolutions to do this:

- ✓ Conway: page 10-9
- ✓ Gurnee: page 10-10

Step 1. Organize.

Planning Checklist

- ___ Determine who the "planner" will be
- ___ Identify other offices/staff to involve
- ___ Brush up on CRS credit criteria
- ___ Set timetable for the 10 steps
- ___ Draft the resolution creating the planning committee
- ___ Submit for adoption
- ___ Include in the plan how it was prepared, who was involved, and how the public was involved [REQUIRED]

NFIP/CRS

National Flood Insurance Program
Community Rating System

Note on this March 2003 edition: The first section of this document has been updated to incorporate the changes to CRS Activity 510 (Floodplain Management Planning) that were issued in the 2002 *CRS Coordinator's Manual*. Previous editions of *Example Plans* included floodplain management plans from three typical, but fictitious, communities. They focused on scoring the plans for CRS credit.

This edition of *Example Plans* emphasizes how to prepare a plan that will qualify for CRS credit and the planning prerequisite for receiving mitigation funds from the Federal Emergency Management Agency. It does not include any plans. Instead, it shows how seven communities that have prepared floodplain management or hazard mitigation plans addressed different aspects of the planning process.

The actual plans from the seven communities can be reviewed on FEMA's website (see page ii). This allows readers to see the plans' maps and illustrations in color and to download the sections in which they are interested. The plans are in Adobe .pdf format. Adobe's Acrobat Reader can be downloaded at no cost from FEMA's website at http://www.fema.gov.

A community interested in applying for flood insurance premium credits through the Community Rating System (CRS) should obtain the *CRS Application*. The *CRS Coordinator's Manual* provides a more detailed explanation of the credit criteria. These and other publications on the CRS are available at no cost from

Flood Publications
NFIP/CRS
P.O. Box 501016
Indianapolis, IN 46250-1016
(317) 848-2898
Fax: (317) 848-3578
NFIPCRS@iso.com

They can also be viewed and downloaded from FEMA's website at http://www.fema.gov/nfip/crs.htm.

Contents

The following communities provided their plans as examples for this publication. Their cooperation is appreciated:

Arnold, Missouri
Conway, South Carolina
Gurnee, Illinois
Huntsville, Alabama
Lewes, Delaware
Oregon City, Oregon
Oyster Bay, New York.

Example Plans

Throughout this guidebook, examples from local floodplain management or mitigation plans are used. These examples come from the following communities. Their plans can be reviewed on FEMA's website.

✓**Arnold, Missouri** *Floodplain Management Plan* — Plan adopted: 1991
Location: St. Louis suburb — Population: 20,000
Hazards addressed: riverine flooding

✓ **Conway, South Carolina** *Flood Hazard Mitigation Plan* — Plan adopted: 1999
Location: northeastern South Carolina — Population: 10,000
Hazards addressed: riverine flooding, local drainage, hurricanes

✓ **Gurnee, Illinois** *Flood Mitigation Plan* — Plan adopted: 2001
Location: Chicago suburb — Population: 25,000
Hazards addressed: flooding from a large river, local drainage, earthquake, thunderstorms

✓ **Huntsville, Alabama** *Flood Mitigation Plan* — Plan adopted: 2001
Location: Northern Alabama — Population: 175,000
Hazards addressed: flash flooding, sinkholes, landslides, tornadoes

✓ **Lewes, Delaware** *Flood Mitigation Plan* — Plan adopted: 1999
Location: Delaware coast — Population: 2,300
Hazards addressed: coastal flooding, Nor'easters, erosion — (6,000 in season)

✓ **Oregon City, Oregon** *Hazard Mitigation Plan* — Plan adopted: 1998
Location: Portland suburb — Population: 20,000
Hazards addressed: riverine flooding, landslides, earthquakes, volcanoes, wind and ice storms, wildland/urban interface fires, hazardous materials

✓ **Oyster Bay, New York** *Floodplain Management and Hazard Mitigation Plan* — Plan adopted: 1998, Population: 292,000
Location: Long Island, bordering on both Long Island Sound and the Atlantic Ocean
Hazards addressed: coastal flooding, hurricanes, Nor'easters, beach erosion, high tides, stormwater flooding/local drainage problems

Introduction

The CRS

The Community Rating System (CRS) is a part of the National Flood Insurance Program (NFIP). When communities go beyond the NFIP's minimum standards for floodplain management, the CRS can provide discounts of up to 45% off flood insurance premiums for residents of those communities.

Communities apply for a CRS classification and are given credit points that reflect the impact of their activities on reducing flood losses, insurance rating, and promoting the awareness of flood insurance. A community applies using the *CRS Application*. CRS credit criteria, scoring, and documentation requirements are explained in the *CRS Coordinator's Manual*. Copies of these publications are available free from the office listed inside the front cover of this publication. The Insurance Services Office's ISO/CRS Specialist reviews the community's program and verifies the CRS credit.

Comprehensive planning can help a community address all its problems more effectively. Accordingly, the CRS encourages and provides credit for preparing, adopting, implementing, evaluating, and updating a comprehensive floodplain management plan. The CRS does not specify what activities a plan must recommend. Instead, the CRS credits plans that have been prepared according to the standard planning process.

The CRS credit for following the floodplain management planning process is provided under Activity 510 (Floodplain Management Planning) as described in the *Coordinator's Manual*. This document, *Example Plans*, expands on Activity 510 and provides guidance on the planning process. It includes references for more information and identifies local plans that illustrate various components of the CRS credit for planning.

Other Programs

Although this publication focuses on CRS credits for a floodplain management plan, there are other programs that require or credit similar plans. In addition to the CRS, the guidelines in this publication will also help meet the planning criteria of

- The mitigation plan prerequisite for the Federal Emergency Management Agency's (FEMA's) Hazard Mitigation Grant Program funds (the Disaster Mitigation Act of 2000 specified that, as a condition of receiving the grant, a community must prepare a multi-hazard mitigation plan (see 44 *CFR* 201.6, published February 26, 2002));
- The mitigation plan prerequisite for FEMA's Pre-disaster Mitigation Program funds;
- The mitigation plan prerequisite for FEMA's Flood Mitigation Assistance Program funds; and
- The U.S. Army Corps of Engineers' floodplain management plan requirement for new projects.

Why plan?

Many communities conduct only one or two activities to deal with a hazard. Some rely entirely on building codes for earthquake or tornado risks. Others think acquisition of hazard-prone areas is the only solution. All communities in the NFIP regulate new development to make sure flood problems do not get worse, but they may not be doing anything more.

Conflicts in Mitigation Programs

Sometimes, when several different mitigation activities are undertaken, they are not coordinated or they may even conflict with each other. Here are some examples:

- ✓ Real estate developers are promoting new subdivisions in the floodplain while the planning and zoning office is discouraging development there.
- ✓ Floodplain regulations require new buildings to be elevated, but the rules have no special provisions for protecting elevated buildings from swaying during an earthquake or damage from high winds.
- ✓ The public works department straightens ditches and lines them with concrete to make them more efficient, while neighborhood and environmental groups want greenways and natural vegetative approaches to bank stabilization.
- ✓ Property owners view a swamp as a place to be filled in so it can be farmed or built on without realizing the wetland's role in absorbing flood water and providing habitat.
- ✓ Residents and businesses complain that not enough is being done to protect them, but they are not aware of the things that they can do to protect themselves or how they can contribute to community and neighborhood efforts.

Most communities do not implement as many hazard mitigation activities as they could. On the other hand, communities do implement other programs that have an impact on hazards or mitigation, and often these programs are not coordinated (see box).

Every community faces different hazards. You may face life-threatening flash floods or highly destructive hurricanes while another community may be subject to earthquakes or slow-moving flood waters from overflowing rivers. Similarly, every community has different resources and interests to bring to bear on its problems. Because there are many ways to deal with natural hazards and many agencies that can help, there is no one solution or cookbook for managing or mitigating their effects.

Planning is one of the best ways to correct these shortcomings and produce a program of activities that will best tackle the impact of hazards and meet other needs. A well-prepared plan will do the following for you and your community:

- ◆ Ensure that all possible activities are reviewed and implemented so that the local problem is addressed by the most appropriate and efficient solutions;
- ◆ Ensure that activities are coordinated with each other and with other community goals and activities, preventing conflicts and reducing the costs of implementing each individual activity;
- ◆ Coordinate local activities with federal, state, and regional programs;

- Educate residents on the hazards, loss reduction measures, and natural and beneficial functions of their floodplains;
- Build public and political support for mitigation projects;
- Fulfill planning requirements for obtaining state or federal assistance; and
- Facilitate implementation of floodplain management and mitigation activities through an action plan that has specific tasks, staff assignments, and deadlines.

The Product

A well-prepared plan will guide your activities so that they are implemented more economically and in ways more attuned to the needs and objectives of your community and its residents. When implemented, a well-prepared plan will result in

- Reduced flood losses;
- Reduced exposure to other hazards;
- Improved protection of the floodplain's natural and beneficial functions;
- More efficient use of public and private resources; and
- A constituency that supports hazard mitigation activities.

Why did they do a plan?

Each community has a different reason to begin the planning process. In most cases, they have found that the process produced additional side benefits.

- ✓ Arnold, Missouri—to meet the CRS requirement for a repetitive loss plan. Side benefits: had guidance ready to go after the 1993 Mississippi River flood and was one of the first communities to receive FEMA mitigation assistance funds.
- ✓ Conway, South Carolina—to provide reconstruction guidance after Hurricane Floyd. Side benefits: identified properties for acquisition and qualified for mitigation funding.
- ✓ Gurnee, Illinois—to identify appropriate retrofitting measures for floodplain buildings. Side benefits: learned about the CRS, created a flood warning and response plan.
- ✓ Huntsville, Alabama—to reduce tensions with floodplain residents who felt the city was not doing enough. Side benefits: improved CRS classification, identified need and support for a stormwater utility.
- ✓ Lewes, Delaware—Project Impact initiative, concern over impact of a flood on market values, property taxes, municipal income, tourism, and the local economy.
- ✓ Oregon City, Oregon—model multi-hazard plan for the Portland metropolitan area. Side benefits: learned about flooding programs, applied to the CRS.
- ✓ Oyster Bay New York—to qualify for FEMA hazard mitigation funds and CRS credit. Side benefits: supported other plans for waterfront economic revitalization and wetland creation and enhancement.

The Planning Process

Floodplain management or hazard mitigation plans can come in a variety of formats and organizational styles. However, the format and organization of a plan is not what is important.

> "Planning is essential."
>
> —Dwight D. Eisenhower

General Eisenhower's simple phrase says it all. It is not the resulting paper document, but rather the PROCESS of planning that is important. The planning process provides a framework within which planners, local officials, residents, engineers, technical experts, stakeholders, and others can work out the details and reach consensus on what should be done. It includes getting input from everyone who has relevant information, everyone who is affected, and everyone who will participate in the implementation of the plan. The process works for all types of plans, such as comprehensive plans, land use plans, capital improvement plans, neighborhood redevelopment plans, mitigation plans, and floodplain management plans.

Because each community is different, each plan will be different. CRS credit is not based on the activities a plan recommends, but rather on the process that is used to prepare the plan. It recognizes that you have followed the planning process to select the best measures for your community and its hazards.

State Requirements

Many states and regional agencies have developed their own, often more locally appropriate, planning procedures. In some cases, certain steps must be followed to comply with state law. Check with your state planning agency, emergency management agency's hazard mitigation officer, or State NFIP Coordinator to get guidance, assistance, and information on state requirements.

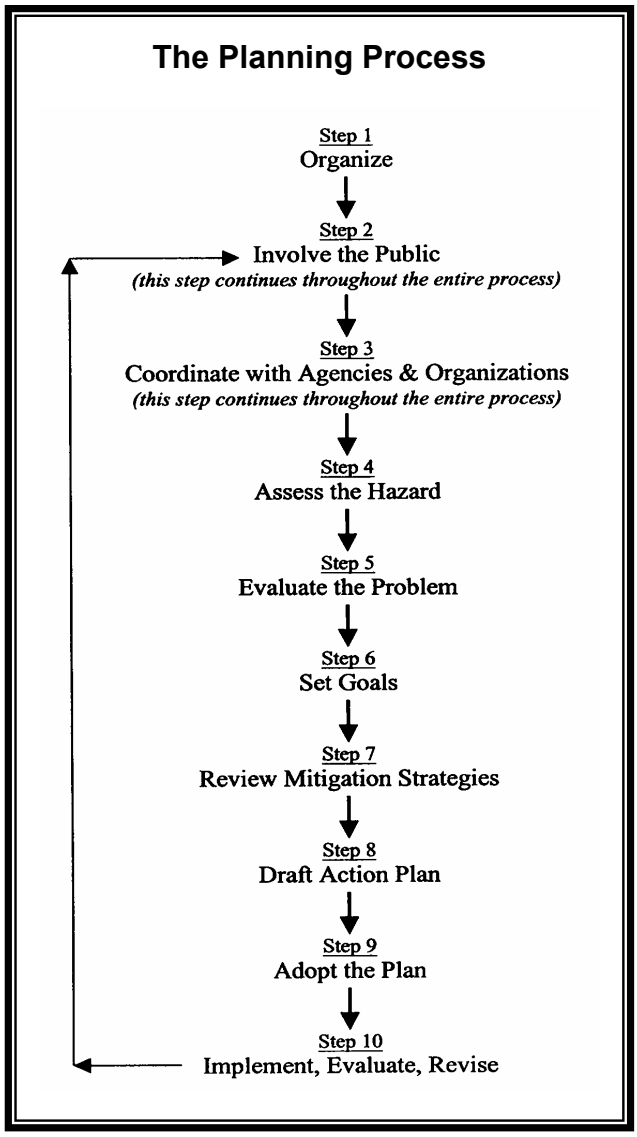
Comprehensive Plan

You should consider whether mitigation planning should be incorporated into your community's comprehensive planning process. On one hand, if it is not part of a comprehensive plan, you may be able to avoid some constraints and formalities (such as the legal process required for public hearings). On the other, you may want to trade flexibility and informality for the status and legal authority your plan will have if it is part of a comprehensive plan. In either case, your floodplain management or mitigation planning needs to be coordinated with other planning efforts.

The 10 Steps

CRS credit is based on a 10-step planning process. The 10 steps are simply an expansion on the classic planning approach of gathering information, setting goals, reviewing alternatives, and deciding what to do. FOR CRS CREDIT, YOU MUST SHOW HOW YOUR PLANNING PROCESS INCLUDES EACH OF THESE 10 STEPS.

The 10 steps follow in chronological order, as shown in the flow chart in the box. However, steps 2 and 3 are best implemented throughout the entire process.



The Requirements

The table on the next page relates the CRS's 10 steps to the four essential parts of mitigation planning in FEMA's regulations for the Disaster Mitigation Act of 2000 and the four phases discussed in many Project Impact publications (note that Project Impact has been replaced by FEMA's Pre-Disaster Mitigation Program). The FEMA regulations implementing the Disaster Mitigation Act of 2000 and the CRS both require that the planning process include each step.

These programs' minimum requirements are highlighted in the following pages. It is important to note that these programs encourage plans that EXCEED the minimum requirements—you'll have a better local plan and receive more CRS points.

NOTE: *There may be additional requirements under state planning laws and/or additional criteria set by the state agency that administers FEMA planning programs. Check with your state planning agency, emergency management agency's hazard mitigation officer, or State NFIP Coordinator.*

Variations

The 10 steps work, but an experienced planner or an office with a large staff can and should improve on this basic approach. More data, more sophisticated materials, and a more formal decision-making process can be helpful, especially in larger communities. However, the CRS and FEMA planning programs will need to see how your work met their planning process requirements.

A plan by another name, such as a post-flood hazard mitigation plan or watershed management plan, can receive CRS credit and meet FEMA's mitigation plan requirement, if it was prepared in accordance with the planning process.

FEMA Planning Guidance				
Project Impact	**Disaster Mitigation Act of 2000 (44 *CFR* 201.6)**	**CRS Steps**	**Max Pts**	**How-To Guides ***
Build Community Partnerships	Organize resources			*Getting Organized*
	201.6(c)(1)	1. Organize	10	
	201.6(b)(1)	2. Involve the public	72	
	201.6(b)(2) & (3)	3. Coordinate	18	
Assess Risks	Assess risks			*Understanding Your Risks*
	201.6(c)(2)(i)	4. Assess the hazard	20	
	201.6(c)(2)(ii) & (iii)	5. Assess the problem	35	
Prioritize Mitigation Efforts	Develop the mitigation plan			*Developing a Mitigation Plan*
	201.6(c)(3)(i)	6. Set goals	2	
	201.6(c)(3)(ii)	7. Review possible activities	30	
	201.6(c)(3)(iii)	8. Draft an action plan	70	
	Implement & monitor progress			*Bringing the Plan to Life*
	201.6(c)(5)	9. Adopt the plan	2	
Communicate Success	201.6(c)(4)	10. Implement, evaluate, revise	35	
		Total	294	

FEMA has published different guidance documents over the years, but they all agree on four basic phases to developing a mitigation plan.

* The How-to Guides are a new series of mitigation planning notebooks published as *State and Local Mitigation Planning How-to Guides,* FEMA 386-1, -2, etc.. See Appendix A for ordering information.

Documentation

The plan document does not need to be organized according to the 10 steps. However, the community must submit the plan with its submittal for CRS credit and identify where these steps were covered. steps 1, 4, 5, 6, 7, 8, and 10 must appear in the plan document. The other three steps can be in the plan document or they may be explained in a separate memo from the community or the plan's author.

Ordinances

Don't confuse a plan with an ordinance. An ordinance sets standards for land development and other activities. In most cases, it requires a permit before an action is undertaken and has penalties for violations. A plan gives guidance for a variety of activities, but generally does not have penalties for violations. It should include a review of land development standards and procedures, but it should also cover a much broader range of activities.

Multi-jurisdictional Plans

A coordinated plan covering adjacent communities is encouraged. For example, watershed-wide planning is recognized as the most effective way to deal with flooding on smaller streams. This publication notes special requirements for ensuring that a multi-jurisdictional plan will benefit the community seeking CRS credit or FEMA approval of its plan.

Step 1. Organize.

The planning process will succeed only if the right people and agencies are involved. The first of the 10 steps is to organize your effort. Key decisions are made that will guide the rest of the effort. You will need to answer the following questions at the outset:

- Who will coordinate the process?
- Who else will be involved?
- How much time will be needed?

The Planner

The person responsible for the planning process is called "the planner" in this publication. Selecting that person is crucial to the planning process. The appointed planner should be officially designated as having the authority to develop the plan. He or she would be responsible for completing the plan on time, ensuring its adoption, and perhaps monitoring its implementation.

In many communities, this role is filled by someone in the planning department. In smaller communities, it could be the emergency manager, a council member, or the chair of the citizens' planning committee. Although a consultant may provide valuable guidance, the person held responsible should be a local employee or resident.

Whoever is put in charge must have an open mind about the variety of possible mitigation measures. Different professionals will bring their own preferences to the process. For example, planning implemented by engineers often favors structural flood control measures, while plans prepared by emergency managers may be biased toward warning and response activities. Similarly, land use planners may orient a mitigation plan toward regulatory or land use measures.

The planner should be officially designated with the authority to develop the plan. A council resolution or a memo from the city manager or mayor is useful, because one of your biggest challenges will be getting other departments to devote some attention to your task.

Who got it done?

While professional planners and consultants were used for the legwork, each community had a different approach to assigning responsibility for their planning process.

- ✓ Arnold—Community Development Director
- ✓ Conway—City Manager
- ✓ Gurnee—Assistant Village Manager
- ✓ Huntsville—Hydrologist, Engineering Department
- ✓ Lewes—Building Official
- ✓ Oregon City—Fire Chief/Emergency Manager
- ✓ Oyster Bay—Town Planner

Other Staff

The staff members who are likely to be responsible for helping implement the plan should be involved in the planning process for four reasons.

- They know the technical details of the measures you will be considering (i.e., they know how to make the mitigation measures work).
- They know what is currently being done or planned to be done by the community and other agencies.
- They will be responsible for implementing some of the plan's recommendations. You need to make sure they can do what is recommended.
- They need to WANT to implement what is recommended. The best designed program will die if the responsible staff are indifferent or opposed to it. Get them involved early and make the plan THEIR plan, too.

Offices Involved in Mitigation

- ✓ Planning/community development
- ✓ Engineer
- ✓ Emergency manager
- ✓ Public information/community relations
- ✓ Public safety/police/fire
- ✓ Public works/streets/highways
- ✓ Building/zoning/code enforcement
- ✓ Parks/recreation

Therefore, key staff from ALL affected departments should participate in the planning process. Which members to involve depends on your organization and the mitigation measures that will likely be reviewed and/or selected during the planning process. At the start, you should review the list in the box. Invite individuals who would be constructive participants.

The Planning Committee

It is strongly recommended that the mitigation planning process be conducted by a committee representing the different offices involved. A planning committee can

- Be an effective forum for matching the technical requirements of a program to the community's situation;
- Give the participants a feeling of "ownership" of the plan and its recommendations, which helps build public support for it; and
- Form a constituency that will have a stake in ensuring that the plan is implemented.

The best type of committee also has residents and stakeholders on it. This is discussed under step 2, along with ideas for the committee meetings.

CRS Credit for Step 1

(Maximum credit: 10 points). The plan document must discuss how it was prepared, who was involved in the planning process, and how the public was involved during the planning process. [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(1))] The credit points for this step are the total of the following:

2, if the planning process is under the supervision or direction of a professional planner. A "professional planner" may be a community employee, consultant, or an advisor from a state agency or regional planning agency. He or she does not have to be a member of the American Institute of Certified Planners (AICP). Someone with an urban planning degree or land use planning or community development experience may be a professional planner. However, the CRS may not recognize a building official, engineer, or other non-planner as a professional planner.

6, if the planning process is conducted through a committee composed of staff from those community departments that will be implementing the majority of the plan's recommendations.

2, if the planning process and/or the committee are formally created or recognized by action of the community's governing board. This can be a motion that is passed and reflected in the minutes. However, a preferred method is a formal resolution that designates who is responsible for preparing the plan and specifies a completion deadline. If a committee with representatives from the public is used, the resolution should identify the members, who acts as chair, and how staff support is provided.

When a multi-jurisdictional plan is prepared, each community seeking CRS credit or funding under the Disaster Mitigation Act of 2000 must have at least one representative on the planning committee.

ⓘ Planning Hint

The resolution creating the planning committee can be used for several purposes. Conway wanted to reassure flooded residents that something was being done and to reiterate that the Building Official had the City Council's support to enforce the substantial damage regulations. It also proposed a temporary moratorium on reconstruction pending the completion of the mitigation plan, so reconstruction would be in accordance with the plan and properties could be acquired before they were repaired.

As it turned out, the owners of buildings found to be substantially damaged cleaned up, but did not rebuild, as they waited for the mitigation grants to be approved.

Step 1. Organize. **Planning Checklist**

__ Determine who the "planner" will be.
__ Identify other offices/staff to involve.
__ Brush up on CRS credit criteria.
__ Set timetable for the 10 steps.
__ Draft the resolution creating the planning committee.
__ Submit for adoption.
__ Include in the plan how it was prepared, who was involved, and how the public was involved. [REQUIRED]

Resolution Creating Conway's Planning Committee

Resolution No. { }

WHEREAS, properties along the Waccamaw River and its tributaries in the City of Conway have been severely flooded, are currently uninhabitable, and according to the best available information, may be substantially damaged;

WHEREAS, the floodplain ordinance of the City requires substantially damaged residences to be either elevated or demolished and either option can place a hardship upon the owners;

WHEREAS, the City Council has discussed various alternative ways to redevelop the area but none has yet been reviewed in depth and none has been based on full knowledge of the condition of the buildings or the desires or financial conditions of the owners; and

WHEREAS, several of the redevelopment alternatives reviewed to date may conflict with each other, may jeopardize the availability of flood insurance to residents, and/or may not be in the long-term best interests of the residents or the community.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Conway that:

It is the policy of the City of Conway to:

1. Keep the City in good standing in the National Flood Insurance Program to ensure that all residents can obtain financial assistance and flood insurance to protect their properties from flood damage;

2. Not allow any reconstruction or reoccupation of flooded buildings or homes until the City Building Official or his duly authorized representative has inspected the site and issued a building permit.

3. Carefully develop a mitigation plan for the affected area after a review of *all* options (including flood control, reconstruction, elevation, floodproofing and relocation) based on building conditions, the desires of the property owners, and funding sources that are available to assist the property owners; and

4. Assist residents with information on relocation and other flood protection measures and help them obtain financial assistance.

To implement this policy, be it hereby resolved that:

1. Every building that has been flooded must have an inspection by the Building Official or his duly authorized representative before it is repaired or reoccupied. If the level of damage is minor, the Building Official may issue a letter saying that clean up may proceed without a permit. There is no fee for such inspection or for the subsequent permit to repair or rebuild a flooded building.

Resolution Creating Conway's Planning Committee (cont.)

2. A Mitigation Planning Committee is hereby established. Its members shall be:

   Bill Graham, chair [banker, floodplain resident and former city manager]
   John Griggs, vice-chair [floodplain resident]
   A. M. (Mack) Floyd [floodplain resident]
   Russell Faulk [floodplain resident]
   James Goldfinch [floodplain resident]
   Vivian Chestnut [Council member, floodplain resident]
   Alys Lawson [Council member, floodplain resident]
   Jason Collins [Director of Planning]
   Ralph Bussey [Building Official, floodplain resident]
   Jerry Barnhill [floodplain resident]
   Tabby Shelton [Grants/special projects coordinator]
   Linda Vereen [floodplain resident]

3. The Mitigation Planning Committee is charged with the following:

   a. Collect data on building conditions, the desires of the property owners, and funding sources for reconstruction and redevelopment in the flooded area;

   b. Recommend reconstruction and redevelopment policies and procedures to be followed by the City;

   c. Identify particularly hard hit areas that could be designated as target areas appropriate for acquisition, clearance and conversion to open space;

   d. Prepare a post-flood hazard mitigation plan for the City that designates target areas and recommends mitigation measures appropriate for the flood hazard facing the City; and

   e. Keep the public informed of its deliberations and recommendations.

4. Upon the advice of the mitigation planning committee, the City Council may adopt a moratorium to prohibit reconstruction of buildings in certain target areas until the mitigation plan is adopted.

5. Owners of property in the affected area are encouraged to:

   a. Attend public meetings to review the City's mitigation planning activities and recommendations;

   b. Cooperate with the building inspectors in order to help determine the condition of their buildings and to collect accurate data as quickly as possible; and

   c. Assist in the preparation of the mitigation plan by providing information on the condition of their buildings and whether they are interested in relocating to a flood-free location.

Passed this 27th day of September 1999.

Step 2. Involve the public.

Who to Involve

As noted in step 1, the planning process will succeed only if the right people are involved. Three groups make for a successful program:

- Staff from offices responsible for implementing the plan,
- Residents and owners of businesses from the affected areas, and
- Community stakeholders

Staff involvement was covered in step 1. **Affected residents and businesses** include

- Occupants (homeowners and renters) of floodplains and other hazardous areas,
- Owners or managers of businesses impacted by the hazards,
- Managers/operators of critical facilities,
- Recent disaster victims, and
- Representatives of homeowner or neighborhood organizations.

Community stakeholders are not necessarily directly impacted by the hazards, but do have a stake in what happens to the community. They should include

- The Chamber of Commerce, business leaders;
- Civic groups;
- Schools and non-profit organizations;
- Major employers;
- Land developers, real estate agents, lenders, and others who affect the future development of the community; and
- "River watchers," "Friends of the _____ River," and environmental organizations.

Why to Involve Them

These people have their own concerns, and hazard mitigation is probably not one of them. Do not view them as trouble makers or dead weight, but as people who can help you design and support an effective program. There are some real advantages to involving them.

- They provide more local knowledge of past occurrences.
- They will help design a program that better fits their needs.
- They will help strengthen resident and business support for the program.
- They will help prevent misunderstandings.
- They can help share the workload.
- They can provide political support.

The last item can be doubly rewarding. Floodplain residents can provide some of the data you will need, such as historical high water marks and flood damage information. Residents and businesses have first-hand experience of what happens during a disaster and what people need after one. Stakeholders can tell you what is feasible in the community and what other public and private activities can support mitigation efforts.

As with staff, involving the public and stakeholders in this effort involves them in the whole process and helps them to become concerned about the outcome, something that will pay off when it is time to submit the plan for adoption and implementation.

Who did they involve?

Because each community has a different reason to initiate the planning process, each will draw on different constituencies. Huntsville needed broad-based community support and help with technical issues. The Planning Committee reflected the former while a Technical Advisory Committee allowed for others to be involved without making the Planning Committee unwieldy.

Conway had to produce a reconstruction plan quickly, to determine who could move back in and whose property should be acquired. The involvement and support of residents and disaster victims were crucial in such trying times, so those groups were well represented on the committee. A public meeting was held each week to keep everyone updated.

Huntsville

Flood Mitigation Planning Committee

- Chair
- Representing Council District 1
- Representing Council District 2
- Representing Council District 3
- Representing Council District 4
- Representing Council District 5
- Farmer
- Developer
- Environmental Concerns
- Urban Planning Professor
- Area's largest employer
- City—Engineering
- City—Planning
- City—Public Works/Drainage
- City—Permits/Inspections
- City—Recreation/Landscape
- City—Mayor's Office
- City/County Emergency Mgmt.
- County Engineer

Technical Advisory Committee

- Mitigation Planning Consultant
- State Climatologist
- City—Urban Planning
- City—CRS Coordinator
- City—Engineer
- Watershed Modeling
- Recreation Interests
- Neighborhood Organization
- State Floodplain Manager
- District Conservationist, NRCS
- Soil Conservationist, NRCS
- Geotechnical Engineer
- Tennessee Valley Authority

Conway

Mitigation Planning Committee

- Chair—floodplain resident
- Vice-chair—floodplain resident
- Floodplain resident
- Floodplain resident
- Floodplain resident
- Council member (also a floodplain resident)
- Council member (also a floodplain resident)
- Director of Planning
- Director of Public Works
- Building Official (also a floodplain resident)
- Grant/Special Projects Coordinator
- Public Information Officer (also a floodplain resident)

In Huntsville, only two of the five members of the public representing Council districts came from neighborhoods that had been flooded. In Conway all of the floodplain residents had also just been flooded by Hurricane Floyd.

NRCS = Natural Resources Conservation Service

How to Involve Them

You can involve these groups and their representatives in a variety of ways.

- They can serve on or send a representative to the planning committee.
- You can invite them to those meetings that address the issues that are most important to them.
- You can distribute a questionnaire to gather their input and give guidance to the planning committee. An example questionnaire is on page 16.
- You can conduct a workshop, open house, "waterfront day," or a demonstration project to attract public attention and raise the attendees' level of awareness and interest.
- They can be kept abreast of what's going on through a newsletter or presentations at their own meetings.
- They can surf through a website, reviewing the minutes of meetings and background materials and post their comments to the planners.
- They may want to just have a chance to review the draft plan.

The level of people's involvement depends on how much time they have available and how much the issues affect them. One of the most important things is that they are invited to participate and that they are offered a chance to have a say in your planning work.

Remember, involvement doesn't mean that these people just sit on a committee or that they are expected to always support what the chair proposes. A good leader will make sure everyone is heard. You need them to make sure that the plan's proposals will be acceptable to these constituencies.

The Chair

The planning committee chair can be the key to a successful planning process. The head of the planning committee should be chosen for his or her ability to get people to work together and get things done.

Who chaired?

- ✓ Arnold—Community development director
- ✓ Conway—Banker who was a floodplain resident and had been the city manager
- ✓ Gurnee—School district superintendent
- ✓ Huntsville—Former planning commissioner and president of the school board
- ✓ Lewes—Code enforcement officer
- ✓ Oregon City—Fire chief/emergency manager
- ✓ Oyster Bay—Planner

The planner or other staff member provides technical and administrative support, such as taking minutes and sending out meeting notices. Together, the planner and the chair should form a working team and coordinate before each meeting. When an outside consultant does much of the planning work, coordination with the chair is vital to ensure that the product will be useful and acceptable locally.

An Example of a Letter to Hazard Area Residents

The Village of Gurnee

Donald F. Rudny, Mayor

www.gurnee.il.us

325 North O'Plaine Road, Gurnee, Illinois 60031-2636
Administration (847) 623-7650
Building & Engineering (847) 623-7658
Fax (847) 623-9475

June 5, 2001

Mr. [Name]
[Address]
Gurnee, IL 60031

Dear Mr. [Name]:

In cooperation with the Lake County Stormwater Management Commission, the Village of Gurnee is preparing a mitigation plan for the Des Plaines River floodplain. Once the plan is finalized, we are planning to apply for state and/or federal cost-sharing funds to assist the Village in purchasing floodprone properties from willing property owners and/or assist in providing funds to protect floodprone buildings.

The planning starts with a field survey to collect basic data on the buildings in the floodplain. From Friday, June 8 through Monday, June 11, staff from our planning consultant will collect information on each building structure and take a photograph. The staff will be Susan Josheff and Shubha Shrivastava. They will have a transit, a camera, clipboards and appropriate identification.

The survey crew will shoot the elevation of your front door and other points that will help determine the building's exposure to flooding, such as the elevation of window wells. There is no reason for the surveyors to go into a building, however, they may need to go into your backyard to get a full view of the house. You are invited to tell Susan and Shubha of your flood experiences (frequency of flood damage, how high water has gone, extent of damage, etc.) .

The planning data collection effort also includes the enclosed questionnaire that will give us more information on your situation. This information will only be used for internal planning purposes and will not be distributed. Please return the questionnaire in the self-addressed postage paid envelope also enclosed with this correspondence. Completing the questionnaire and taking flood protection steps are voluntary. You are under no obligation to participate in this program.

If you have any questions on this work, feel free to call me at 623-7650, ext. 216. You are also welcome to attend the meetings of the flood mitigation planning committee. The first one will be held at the Village Hall, 325 N. O'Plaine Road, at 7:00 p.m., Tuesday, June 12.

Sincerely,

Bradly Burke
Assistant Village Manager

Enclosures

Village of Gurnee/Lake County Stormwater Management Commission

Flood Protection Questionnaire

Property address: _____

1. Has your home or property ever been flooded or had a water problem? **( )** Yes **( )** No
   If "yes," please complete this entire questionnaire.
   If "no," please complete questions 6 – 9.

2. In what years did it flood? _____

3. Where did you get water and how deep did it get?

   ( ) In basement: _____ deep. **( )** In crawl space: _____ deep.
   ( ) Over first floor: _____ deep.
   ( ) Water kept out of house by sandbagging, sewer valve, or other protective measure.
   ( ) In yard only.

4. What do you feel was the cause of your flooding? Check all that affect your building.

   ( ) Storm sewer backup **( )** Sanitary sewer backup
   ( ) Sump pump failure/power failure **( )** Saturated ground/leaks in basement walls
   ( ) Standing water next to house
   ( ) Overbank flooding from _____ River/Lake
   ( ) Other: _____

5. Have you installed any flood protection measures on your property?

   ( ) Sump pump **( )** Backup power system/generator
   ( ) Overhead sewers or sewer backup valve **( )** Sewer plug or standpipe
   ( ) Waterproofed walls **( )** Moved things out of the basement
   ( ) Regraded yard to keep water away from building
   ( ) Other: _____

6. When did you move into the building? _____

7. What type of foundation does your building have?
   ( ) Slab **( )** Crawlspace **( )** Basement

8. Do you have flood insurance or a sewer/basement flood rider to your homeowner's insurance?
   ( ) Yes **( )** No

9. Do you want information on protecting your house from flooding or sewer backup?
   ( ) Yes **( )** No If yes, please include your full mailing address.

Please include any comments you may have about flooding in your area.

*[**NOTE:** The reverse side had the Village Hall address and a stamp so the form could be folded and mailed after it was filled out.]*

Meetings

At the first committee meeting, you should establish a planning timetable. Depending on deadlines, time constraints, and staff time available, committee meetings can be held once or twice a month. Meetings should be scheduled to include as many people as often as possible.

One threat to the planning process is that it starts to drag and become a bore. Nine months of monthly meetings with nothing to show but a draft piece of paper can discourage many committee members. It is important to maintain momentum throughout the process.

Field trips are very educational and allow committee members to see the problems and examples of solutions first hand. Destinations may include floodproofing sites, reservoirs, emergency operating centers, restored wetlands, and similar locations to give the members a first-hand view of how the mitigation measures work. Such field trips often change the minds of those skeptical about some of the potential measures. They also serve to break up the monotony of continual meetings.

Typical Planning Committee Schedule

1st meeting: organize, orientation to the planning process, data to be collected

2nd meeting: hazard and problem assessment

3rd meeting: needs and goals

4th meeting: prevention measures

5th meeting: property protection measures

6th meeting: natural resource protection

7th meeting: emergency services

8th meeting: structural projects

9th meeting: public information activities

10th meeting: action plan

11th meeting: public meeting on draft plan, formal recommendation to the governing board

NOTE: *Typically meetings are held monthly, but more time may be needed to gather data. Often more than one topic can be covered at a meeting. Communities have prepared plans with as few as five or six committee meetings.*

Later Duties

The planning committee should not be disbanded when the plan is adopted by the governing board. The plan should give the committee assignments, such as developing some recommendations in more detail, helping on the design and implementation of some projects, monitoring the community's progress in implementing the action plan, and recommending revisions to the plan.

For CRS credit, a written progress report must be prepared each year, a duty for which the planning committee is well suited, because committee members wrote the plan and have a stake in seeing it implemented. These activities are discussed on page 53.

Suggestions for the First Meeting

An excellent way to start the first planning committee meeting is with an overview of the planning process. The Association of State Floodplain Managers has prepared a planning kit. It consists of reference materials, masters for handouts, and a two-part video that explains the 10-step process to the general public and is meant to be shown at the first meeting of a planning committee. See Appendix A to order "Flood Mitigation Planning—The First Steps."

The following is a possible agenda *[with notes for the chair]*

1. Introductions *[members should introduce themselves, their backgrounds, who they represent, and what their major mitigation interests are]*

2. Background on the planning project *[why the committee was organized, objectives]*

3. Video on "Flood Mitigation Planning"

4. Planning step 1—Organize
   a. Committee's role
   b. Planner's role *[who's the prime contact, number to call]*
   c. Staff support
   d. Meeting location *[what's convenient for everyone?]*
   e. Meeting schedule *[what time is convenient for everyone?]*
   f. Meeting rules *[consensus vs. voting, public comments, dress, bring materials]*

5. Planning step 2 – Public involvement options *[which ones should be done?]*
   a. Questionnaire
   b. Public meeting(s)
   c. Cable TV and website notices
   d. Targeted organizations *[should there be special meetings with any group?]*
   e. Newsletter
   f. Other methods to encourage input

6. Planning step 3 – Agency and organization coordination
   a. Government agencies *[what agencies should be contacted?]*
   b. Private organizations *[what organizations should be contacted?]*

7. Planning steps 4 and 5 – Hazard assessment and problem evaluation
   a. Hazards *[what hazards should the project cover?]*
   b. Data sources *[review what the planner will use, what do members know?]*
   c. Field data collection *[building surveys, etc., see letter on page 15]*
   d. Maps *[GIS support, flood insurance maps]*
   e. Planning area boundaries *[watershed wide? target area? whole community?]*

8. Next meeting *[time and location]*

9. Assignments *[who is going to do what between now and the next meeting]*

10. Adjourn

CRS Credit for Step 2

(Maximum credit: 72 points). The credit for this step is the total of the following points based on how the community involves the public in the planning process. TO RECEIVE CREDIT FOR THIS STEP, THE PROCESS MUST INCLUDE THE FIRST ITEM.

2, for inviting the public to comment during the planning process and for holding at least one public meeting to obtain input on the draft plan. The meeting must be at the end of the planning process, at least two weeks before submittal of the recommended plan to the community's governing body (unless state law has a different requirement). [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(b)(1))]

The CRS does not require public hearings, but simply discussing the plan at a regular public meeting of the governing body, just before it is voted on, is not sufficient for CRS credit. There must be at least one public meeting at the end of the planning process at which the proposals are explained and people can ask questions and submit their comments. State and local laws take precedence, however. Your legal counsel should determine if a public hearing is required.

8, if one or more public meetings are held in the affected area(s) at the beginning of the planning process to obtain public input on hazards, problems, and possible solutions.

ⓘ Planning Hint

If you hold the meetings credited under the first two items, you must attempt to notify floodplain residents of the meetings and explain the planning process in the notification.

The notices of the meetings should be in the form of letters to floodplain residents, a notice sent to all residents, or a newspaper article or advertisement. An inconspicuous legal notice appearing in the classified section of the newspaper is not sufficient for CRS credit.

For multi-jurisdictional plans, you'll need to reach the public in all participating communities.

Get Involved!!

Your input is important! We need to know how flood events affect your property and your quality of life in order to establish goals and projects for flood-loss reduction in the City of Lewes. You can help by:

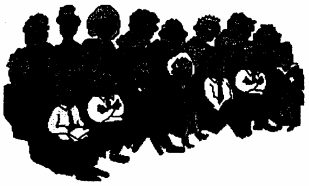
1) Attending the Open House, Public Meeting being held on June 4th (see below for more information).
2) Completing the questionnaire included in this newsletter and mailing it to the address provided.

The Plan is scheduled to be completed in the summer of 1999 and you will be able to review and comment on it prior to its adoption by the City Council. A Public Hearing on the plan will also be held prior to its adoption.

After the Plan is adopted, it will provide real goals and projects that can be undertaken to reduce flood losses in the City of Lewes. The City will actively seek Federal and State grants, such as FMA funds, to construct flood mitigation measures identified in the Plan.

Come Learn More About The Plan.....

A presentation on the Flood Mitigation Planning Process will be conducted at the Open House, Public Meeting on Friday, June 4th. You are invited to attend to learn more about the Plan, ask questions, and provide input into the Plan. Displays will be set up for in the lobby of the Library for your viewing from 7:00 pm until 9:00 pm, and representatives from the City and our contractor will be available to discuss the Flood Mitigation Plan. We look forward to meeting you and receiving your comments.



City Council Meeting
June 4, 1999 - 7:00 pm

Lewes Public Library

The National Flood Insurance Program

The National Flood Insurance Program is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This Program is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. As a participating community in the NFIP program, Lewes has adopted and enforces ordinances aimed at reducing future flood risks to new construction in Special Flood Hazard Areas.

Most homeowner insurance policies **do not** cover losses due to flooding; however, the NFIP makes flood insurance available to property owners and renters. Contact your insurance agent for details on available coverage and cost.

2

Lewes's planners mailed out two newsletters to all property owners in the city to solicit input.

4, if public information activities are implemented to explain the planning process and encourage input to the planner or planning committee.

4, if questionnaires are distributed asking the public for information on the hazards they face, the problems, and possible solutions. The questionnaires must be distributed to at least 90% of the floodplain residents. For example, they could be included as a page in a newsletter or other outreach project, such as those credited under CRS Activity 330 (Outreach Projects).

4, if written comments and recommendations are solicited from neighborhood advisory groups, homeowners' associations, parent-teacher organizations, the Chamber of Commerce, or similar organizations that represent the public in the affected area(s).

26, if the planning process is conducted through a planning committee that includes members of the public. If this is the same planning committee credited under step 1, at least one-half of the members must be representatives of the public, preferably from the floodprone areas. The term "public" includes floodplain residents and the owners or managers of floodprone properties.

No CRS credit is provided if the committee only meets once or twice. It must meet a sufficient number of times to involve the members in steps 4 through 9 of the planning process (e.g., one meeting on each step).

24, if the planning committee credited above includes other stakeholders in the community. "Stakeholders" are defined on page 12.

Step 2. Involve the public. **Planning Checklist**

__ Meet with your community's public involvement/public relations staff.
__ Identify members of the public to serve on the planning committee.
__ Identify stakeholders to serve on the planning committee.
__ Identify the committee chair.
__ Hold first committee meeting.
__ Decide on/draft a questionnaire to residents.
__ Determine whether to have a workshop, open house, booth at a festival, or other special public involvement activity.
__ Draft newsletter article(s) and news release(s).
__ Implement at least one activity that invites the public to comment during the planning process. [REQUIRED]
__ Identify groups that need presentations or special attention.
__ Publicize and hold at least one public meeting after step 8. [REQUIRED]
__ [Multi-jurisdictional plans: publicize among all jurisdictions wanting CRS credit or recognition under the Disaster Mitigation Act of 2000].

Step 3. Coordinate.

There are two reasons to involve government agencies and private organizations in your planning efforts. First, they may be implementing or planning to implement activities that can affect flood damage, the hazards, or other local interests and concerns. You need to make sure that your efforts are not going to be in conflict with a government program or duplicate the efforts of another organization.

The second reason to involve outside agencies and organizations is to see if they can help. Help may be in the form of hazard data, technical information on various measures, guidance on regulatory requirements, advice and assistance in the planning effort, implementation of a recommended measure, and/or financial assistance to help you implement a recommended measure.

Agencies to Contact

At a minimum, your planning initiative should include contacting the planning or engineering offices in the cities, villages, towns, and county governments in the watershed. Find out who is the most appropriate local official(s) for flood-related matters. Talk to them and find out their level of interest in flooding issues and what they are already doing.

Other flood-related agencies and organizations to contact include

- Regional or metropolitan water, sewer, or sanitary districts;
- Your state's natural resources or water resources agency, coastal zone management agency, and planning or local government affairs office;
- Your state and county emergency management agency;
- Your state environmental protection agency;
- The U.S. Department of Agriculture agencies that work with watershed property owners (e.g., the Natural Resources Conservation Service and the Cooperative Extension Service);
- Your district office of the U.S. Army Corps of Engineers;
- The FEMA Regional Office;
- The National Weather Service;
- The U.S. Geological Survey;
- The U.S. Fish and Wildlife Service;
- The soil and water conservation district;
- The county emergency management agency; and
- Local watershed councils or associations.

Identifying Agencies and Programs

Guidance on references and contacts on floodplain management agencies and programs is available through your State NFIP Coordinator. Also see the website of the Association of State Floodplain Managers at http://www.floods.org.

An excellent source of information is the Resource Directory prepared jointly by FEMA and the National Park Service. It is a computer program that lists over 300 government and private programs. It is easy to install and use. It can be found at http://www.sonoran.org/. Look under Conservation Assistance Tools.

Your State NFIP Coordinator can identify other floodplain management agencies to contact. You should contact non-flood agencies and organizations that have their own interests in the future of the floodplain, such as historic preservation, economic development, and recreation groups. A plan with multiple objectives has a much greater chance of success than one concerned only with flooding.

Organizations to Contact

The organizations listed below either conduct mitigation programs or represent the various publics you want to involve.

- Your local chapter of the American Red Cross;
- The Chamber of Commerce, manufacturers' association, and other business groups;
- Parent-teacher and church organizations that have strong neighborhood ties;
- Universities, community colleges, museums, and other scientific organizations;
- Water-oriented or watchdog groups, like Friends of the _____ River;
- The Izaak Walton League, the Sierra Club, and other environmental organizations;
- The League of Women Voters and other civic groups;
- The Conservation Foundation, land trusts, and others interested in preserving floodplain or watershed open space; and
- Organizations of boaters, fishers, scouts, hunters, and other floodplain visitors.

The public representatives on your planning committee can help identify appropriate organizations (see item 6 in the example agenda on page 18). The list can be long. At a minimum, contact these groups and tell them the planning schedule; they may want to participate somewhere along the line.

Helpers

Help in organizing and conducting planning may be available from a local, regional, or state planning agency or a private organization. The National Park Service's Rivers, Trails and Conservation Assistance Program provides staff support for local planning efforts under certain conditions. If they can't help throughout the planning effort, they may be able to help with some tricky stuff, such as providing a facilitator for an all-day community input workshop.

Another source of assistance is a private consultant. Planning and engineering firms often have personnel skilled in the various mitigation measures and the planning process.

Multi-jurisdictional plans (e.g., watershed plans) may be accepted for CRS credit or recognition under the Disaster Mitigation Act of 2000 as long as each jurisdiction has participated in the process and has officially adopted the plan, which must include projects specific to each community. State-wide plans are not accepted as multi-jurisdictional plans.

CRS Credit for Step 3

(Maximum credit: 18 points) The credit is the total of the following points. TO RECEIVE CREDIT FOR THIS STEP, THE COORDINATION MUST INCLUDE THE FIRST AND LAST ITEMS.

3, if other agencies and organizations are contacted at the beginning of the planning process to see if they are doing anything that may affect the community's program and to see how they can support the community's efforts. At a minimum, neighboring communities, the state water resources agency, the county and state emergency management agency, and the FEMA Regional Office must be contacted. [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(b)(2))]

10, if meetings are held with representatives of agencies and organizations to review common problems, development policies, mitigation strategies, inconsistencies and conflicts in policies, plans, programs, and regulations. The meetings need only be held with those agencies that have the most impact on the community's flood problem. Some agencies may be so important that their representatives may be invited to sit on the planning committee (see Huntsville's Technical Advisory Committee, page 13).

3, if the planning includes a review of existing studies, reports, and technical information and of the community's needs, goals, and plans for the area. [REQUIRED by the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(b)(3))] These should already be identified as part of previous comprehensive planning activities.

Community development and floodplain management goals may be mutually supportive or they may conflict. For example, if the community wants more recreational opportunities, clearing out the floodplain to provide a scenic waterfront park may be most appropriate. Conversely, if the floodplain includes the downtown, the plan should probably recommend measures other than removing the community's economic base.

2, for sending the draft action plan to the other agencies and organizations and asking them to comment by a certain date. [REQUIRED by the CRS] The comment deadline should be on or before the public meeting required in step 2.

Step 3. Coordinate. **Planning Checklist** 

__ Identify the offices in neighboring communities that should be contacted. [REQUIRED]
__ Identify agencies that should be contacted (state water resources agency and state and county emergency management agency are REQUIRED).
__ Identify organizations that should be contacted.
__ Determine which can be sent a notice and which deserve a face-to-face meeting.
__ Distribute the notice that you are preparing the plan and ask if they are doing anything that may affect your program and/or support your efforts. [REQUIRED]
__ Meet with appropriate offices, agencies, and organizations.
__ Identify and review existing studies, plans, and reports on your community's needs and goals.
__ After step 8: send a draft of the plan to appropriate offices, agencies and organizations. [REQUIRED]

Step 4. Assess the hazard.

From the CRS perspective, the major hazard to be addressed is flooding. However, the CRS has always encouraged a multi-hazard approach because it is a more efficient way of dealing with all natural disasters that may affect your community. Besides, if you want your product to meet FEMA's Disaster Mitigation Act of 2000 requirements, you must address all potential natural hazards.

> More detailed guidance on assessing your hazards can be found in *Understanding Your Risks—Identifying Hazards and Estimating Losses*, FEMA 386-2. Step 4 coincides with that book's sections 1 and 2, "Identify hazards" and "Profile hazard events."

In step 4, the planner and planning committee need to look at data on the hazard, i.e., what can Mother Nature send your way? Your community could be exposed to a wide variety of potential hazards. Start with

- Your emergency operations plan,
- Your state's hazard mitigation plan, and
- Staff and committee members knowledgeable about past problems

This will give you a preliminary list of your area's hazards. Then collect details on them.

Flooding

First, identify your areas of concern. Do you need to look at one neighborhood, repetitive loss areas, the whole city, or every flood problem in the watershed? A common pitfall is focusing on the site of the last flood. Although this area may evoke the most interest, look at the POTENTIAL for flood problems.

The base flood: Most planning programs start with the base flood. This is a statistical concept that considers both the severity of a flood and the likelihood of it occurring. Your community's Flood Insurance Rate Map (FIRM) shows the base floodplain as the A and V Zones. It is also called the Special Flood Hazard Area.

> While the FIRM is the best place to start, yours may be 10 or 20 years old, so it's good to check that you have all map revisions (they're listed on FEMA's website, http://www.fema.gov/mit/tsd/dl_comp.htm.
>
> Also, see if there have been any physical changes that could have affected flooding since the FIRM was made, such as new bridges, channel work, or substantial watershed development.

Higher floods: In some cases, you should consider a higher protection level than the base flood. For example, if your community suffered a flood that was higher than the mapped base flood, you should consider the higher flood. (The highest flood recorded is called the flood of record.) For example, Conway was hit by a flood 1.5 feet higher than the base flood elevation and decided to focus its efforts on protecting people from a recurrence from that hazard.

Critical facilities, such as a hospital, fire station, power substation, or hazardous materials storage yard, should be protected from the 500-year flood or the flood of record, whichever is higher. Most FIRMs show the 500-year floodplain.

Small flood problems: Most available studies map the base floodplain for larger bodies of water. However, if people get wet, they consider it flooding and they'll want you to address it. Therefore, this step should review flooding from small ditches, flooding in depressional areas, and sanitary or storm sewer backup that isn't shown on your FIRM or covered in existing engineering studies.

Local experience is often the best source of flood hazard data for smaller watersheds and drainage problems. Here are some sources that can help you map problem areas:

- Public works records,
- Staff knowledge,
- Flood insurance claims,
- The resident questionnaire discussed in step 2, and
- Planning Committee members.

Planning Hint

Work with the data you have—you're not designing a reservoir, you are looking into how flooding affects your community. Too often, the planning process gets delayed while waiting for more data because the planner wants a highly detailed problem description.

Other flood data: In addition to the area affected and the flood height, the following information can help you get a handle on your flood problem:

- Area and map of the watershed;
- Historical floods; [REQUIRED for the CRS and for recognition under the Disaster Mitigation Act of 2000]
- Areas repetitively flooded (FEMA can provide insurance claims data on this);
- Velocities;
- Amount of warning time;
- How long the area will stay underwater ("duration");
- Sediment, debris, and pollutants in the flood waters; and
- Whether there are any flood protection projects underway.

What flood hazard did they assess?

- ✓ Arnold—Base flood.
- ✓ Conway—Flood caused by Hurricane Floyd, 1.5 feet higher than the mapped base flood. Based on the planning committee's recommendation, the City Council adopted this higher elevation as the regulatory standard for reconstruction and new development.
- ✓ Gurnee—Historical floods, base flood, which was plotted on more accurate local GIS base map. The mitigation plan recommended that the FIRM be revised to reflect the better map.
- ✓ Huntsville—Base flood, historical floods, questionnaire sent to 9,800 properties in the 500-year floodplain, data organized under 15 major watersheds.
- ✓ Lewes—Base flood, historical floods.
- ✓ Oregon City—Base flood, most recent flood.
- ✓ Oyster Bay—Base flood, A and V Zone coastal flooding, flooding from high tides, local drainage problems.

Other sources: Additional flood information can be obtained from

- The references listed in your Flood Insurance Study;
- State NFIP Coordinator;
- State natural or water resources agency;
- Regional planning, sanitary, drainage, or water management districts;
- County emergency manager;
- County or state highway or transportation department;
- U.S. Army Corps of Engineers;
- U.S. Department of Agriculture's Natural Resources Conservation Service, usually co-located with your local soil and water conservation district (check the government listings in the phone book for your county seat); and
- A local university's geography, engineering, or natural sciences department or library.

Flood Data Websites

Because there is so much local data on flooding, national websites may not be as useful as for other hazards. However, data on local stream gauges can be obtained through the National Weather Service (http://www.nws.noaa.gov) and the U.S. Geological Survey (http://www.usgs.gov). See also Appendix B in *Understanding Your Risks* for a host of website references.

Other hazards: A good plan should integrate consideration of other hazards besides flooding. If you want your plan to qualify under the Disaster Mitigation Act of 2000, it must assess all other natural hazards to which your community is exposed. You will need to include information on previous occurrences and the probability of future events. The plan could also look at "technological" hazards, such as releases from chemical plants and hazardous materials spills.

Here's a list of hazards that should be checked:

- Alluvial fan flooding[1]
- Avalanche
- Closed basin lakes[1]
- Coastal erosion[1]
- Coastal storm/hurricane[2]
- Dam failure
- Drought
- Earthquake[2]
- Expansive soils
- Extreme heat
- Flood [2]
- Hail
- Ice jams[1]
- Land subsidence[1]
- Landslide[2]
- Mudflows[1]
- Tornado[2]
- Tsunami[1, 2]
- Uncertain flow paths[1]
- Volcano
- Wildfire[2]
- Windstorm
- Winter/ice storm

1. More information on these hazards can be found in CRS special hazards booklets that can be ordered from the office listed on the inside front cover of this publication.

2. More information on these hazards can be found in *Understanding Your Risks—Identifying Hazards and Estimating Losses*, FEMA 386-2.

The CRS provides additional credit for mapping and managing areas subject to special, flood-related hazards. These are noted on the previous page with "1" after them. If your community is subject to one or more of these, check out the CRS special hazards booklets that can be ordered from the office listed on the inside front cover of this publication.
Other sources include

- Your emergency operations plan,
- Your state's hazard mitigation plan,
- Staff and committee member knowledge of past problems,
- Government agencies that address the hazard (e.g., check with the National Weather Service on tornadoes and winter storms or the USGS on volcanoes), and
- Professional associations that address the hazard (e.g., the Association of State Dam Safety Officials and the National Fire Protection Association).

Good References on other Hazards

Understanding Your Risks—Identifying Hazards and Estimating Losses, FEMA 386-2. This book reviews risk assessment in general and provides detailed examples for the hazards of flood, earthquake, tsunami, tornado, coastal storm/hurricane/ cyclone, landslide, and wildfire. It can be viewed or downloaded from http://www.fema.gov/fima/planresource.shtm.

Multi-Hazard Identification and Risk Assessment, FEMA. 1997. This document is a good introduction to what's needed to identify and assess the full range of natural hazards affecting a given area.

What other hazards did they assess?

- ✓ Arnold—Riverine flooding
- ✓ Conway—Riverine flooding, local drainage, hurricanes
- ✓ Gurnee—Flooding from a large river, local drainage, earthquake, thunderstorms
- ✓ Huntsville—Flash flooding, sinkholes, landslides, tornadoes
- ✓ Lewes—Coastal flooding, Nor'easters, coastal erosion
- ✓ Oregon City—Riverine flooding, landslides, earthquakes, volcanoes, wind and ice storms, wildland/urban interface fires, hazardous materials
- ✓ Oyster Bay—Coastal flooding, hurricanes, Nor'easters, beach erosion, high tides, stormwater flooding/local drainage problems

CRS Credit for Step 4

(Maximum credit: 10 points). The credit for this step is the total of the following points based on what the community includes in its assessment of the hazard. The hazard assessment needs to describe the local hazard and not be a broad or generic discussion of the hazard in general. Because the most important readers are elected officials and the public, the descriptions of the hazards should be in lay terms. TO RECEIVE CRS CREDIT FOR THIS STEP, THE ASSESSMENT MUST INCLUDE THE FIRST ITEM. TO QUALIFY UNDER THE DISASTER MITIGATION ACT OF 2000, THE ASSESSMENT MUST INCLUDE BOTH ITEMS.

5, for including the following in the plan: [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(2)(i))]

- A map of the known flood hazards. "Known flood hazards" means the floodplain shown on the FIRM, repetitive loss areas, areas not mapped on the FIRM that have flooded in the past, and surface flooding identified in existing studies. No new studies need to be conducted for this assessment.
- A description of the known flood hazards, including source of water, depth of flooding, velocities, and warning time, where such data are available.
- A discussion of past floods, where such data are available.

The community's planning may address only some of its floodplain, such as a problem stream, a lakeshore, or a repetitive loss area. This step will be credited if all three subitems are included in the hazard assessment for that area. (The ISO/CRS Specialist will adjust the credit points if not all of the community's flood problems are covered in the plan.)

15, if the plan includes a map, description, and history of other natural hazards, such as erosion, tsunamis, earthquakes, and hurricanes. The plan should include a discussion of all natural hazards that affect the community, as identified by the state's hazard mitigation plan. [REQUIRED for the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(2)(i))]

Multi-jurisdictional plans must analyze each jurisdiction's risks where they vary from the risks facing the entire planning area (the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(2)(iii))).

Step 4. Assess the hazard. **Planning Checklist**

__ Write a master list of all hazards faced by your community.
__ Check that your FIRM still accurately depicts the base and 500-year floodplains.
__ Map additional areas subject to flooding and drainage problems.
__ Record other available flood data, such as velocities and warning time.
__ Collect available data on the other hazards.
__ Summarize the hazard data with maps, descriptions, and historical experiences for Committee review and to form the basis of the plan's section on the hazards. [REQUIRED]

Step 5. Assess the problem.

The previous step assessed the hazard. You determined where the water goes and what other hazards your community faces. But a flood hazard area may or may not have flood PROBLEMS. A floodplain or a steep slope is only a problem area if human development gets in the way of the natural processes of flooding and settling.

In step 5, the planner and planning committee members collect and summarize data on what is vulnerable to damage from the hazards. Data on the hazard, such as flood depths and wind speeds, don't mean much unless we know how people and property are affected.

> More detailed guidance on assessing the problem can be found in *Understanding Your Risks—Identifying Hazards and Estimating Losses*, FEMA 386-2. Step 5 coincides with that book's sections 3, Inventory assets and section 4, Estimate losses.
>
> NOAA's Coastal Services Center offers guidance and a tutorial on vulnerability analysis. It can be found at http://www.csc.noaa.gov/products/nchaz/startup.htm.

The Flood Problem

The impact of flooding on a community can be measured in a variety of ways. You should review what past and predicted floods do to the people, property, and economy of your community.

Impact on health and safety: This should be one of your prime concerns. Find out how many people have been killed in past floods. Where were they? For example, if they were killed in automobiles, your plan should include recommendations for public information activities aimed at drivers.

Floods can bring a variety of health problems: disease and pollutants in the water; mold, mildew, and sediment left by the flood; and psychological impacts on flood victims. Comprehensive data on health problems will probably not be available, but there should be sufficient historical accounts (newspaper articles, after action reports, etc.) to provide an indication of the types and extent of the problem.

Buildings: Because the National Flood Insurance Program insures buildings, the impact of flooding on buildings is a prime concern of the CRS. A count of the number of buildings affected by each type of flooding informs planners of the magnitude of the problem. The building count should be done by use or type of building because flooding affects different types differently. For example, a commercial or industrial building is likely to suffer more dollar damage than a house and have a bigger impact on the community if it has to close because of flooding or flood damage.

Similarly, a building with a basement will be hit harder by shallow flooding and sewer backup than will a building on a crawl space. An historic site may deserve more attention than other properties because of its special value to the community.

The number and types of buildings affected can be obtained by a review of aerial photos or a windshield survey. The amount of time and resources available dictates how much data can be collected. At a minimum, you should obtain a total count of the residential and non-residential structures affected by each type of flooding.

An assessment of predicted or actual building damage is another useful type of information. It may be readily available from the following sources:

- Flood control studies often include the elevations of buildings and developed estimates of their average annual dollar damage.
- Post-flood, after-action, or damage assessment reports may include damage data.
- Flood insurance claims records will have data on insured buildings that were flooded. ***NOTE:*** *Use of flood insurance claim data is subject to the Privacy Act, which prohibits public release of the names of policy holders and the amount of the claim payment. Averages or totals and maps showing AREAS where claims have been paid can be made public.*

How did they look at buildings?

- ✓ Conway—Initial data on 150 properties flooded by Hurricane Floyd were collected from high water marks and questionnaires. Detailed data on 100 damaged buildings were obtained from reoccupancy inspection reports.
- ✓ Gurnee—Each of the 111 buildings in the floodplain was surveyed. The plan summarized building data by cluster, use, and flood depth.
- ✓ Huntsville—With 6,066 buildings in the floodplain, the number of buildings in each watershed's floodplain and floodway were taken from the city's geographic information system (GIS). Historic flood depths were extrapolated from 1,549 returned questionnaires.

Estimates may be sufficient for larger communities that may find it difficult and time consuming to locate every floodprone building. However, if time and resources permit, you should consider collecting data ON EACH LOT to determine appropriate property protection measures.

Repetitive losses: FEMA programs, especially the CRS, are particularly concerned about repetitive losses—two or more flood insurance claims for more than $1,000 for the same structure over a 10-year period. Such buildings represent fewer than 2% of the nation's flood insurance policy base, but over 35% of claims payments.

Community officials can get a list of their community's repetitive losses from 1978 to the present from their FEMA Regional Office or State NFIP Coordinator. (If your community currently participates in the CRS, it already has that information.) Many communities have found this information to be useful because it identifies previously unknown problem areas. Developing mitigation responses to repetitive loss problems is required by the CRS and may also help your community compete for FEMA funds.

Other facilities: Flooding impacts more than buildings. The problem assessment should review the following items, too:

- Roads, bridges, and transportation facilities that may be damaged or closed;
- Critical facilities (e.g., emergency operations centers, hospitals, day care centers, senior citizen housing, and schools) that may be damaged or isolated;
- Other infrastructure, such as water and sewage treatment plants, that could become inoperable due to a flood;
- Business centers and major employers;
- Features or landmarks important to your community;
- Flood protection measures in effect or under construction; and
- What happened in past floods.

Economic impact: Experience has shown that struggling businesses often close for good after a flood. What will a flood do to your downtown? To your major employers? Can your community treasury pay for another flood fight? What did past floods do? These are the kinds of questions to ask to determine the impact of flooding on your economy.

You may be able to put a dollar value on the economic impact or find a study that did. If so, you may be surprised at the figure. Gurnee's planners found a report that had calculated the cost of closing all three flooded bridges to be $383,000 per day. That cost is borne by everyone, not just floodplain residents, an important fact when seeking support for the plan's recommendations.

Natural features: Comprehensive floodplain management planning should also review the unique natural features, natural areas, and other environmental and aesthetic attributes that may be present in the floodplain. Protecting and preserving these natural and beneficial floodplain functions yield flood protection benefits and also help integrate floodplain management efforts with other community goals.

Natural features that protect property from flooding include lakes, ponds, wetlands, barrier islands, sand dunes, and beaches. Your

What problems did they find?

Each of the seven communities discussed the impact of flooding on insurable buildings. They also found other interesting problems:

- ✓ Conway—After flooded homes, the number-two problem was damage to sewer lift and pump stations.
- ✓ Gurnee—The base flood will enter 111 buildings, including one school and the police station. It will isolate one fire station and the public works complex, but the biggest problem in terms of dollars comes from traffic disruption when flooded bridges are closed.
- ✓ Huntsville—Flash flooding posed the greatest threat to life and safety—in 1999, flood waters rose 4.5 feet in half an hour in the middle of the night.
- ✓ Lewes—"Any major flood damage inflicted during summer, the height of tourist season, could have a devastating effect on Lewes's economy," and the city's main source of income, property taxes.
- ✓ Oregon City—In 1996, the county's public works center was flooded more than eight feet deep. County crews spent their time rescuing county equipment and were not free to fight the flood and help residents elsewhere. Three of the city's six hazardous materials sites are in the floodplain. The 1996 flood also inundated the Oregon Trail Center, a major area tourist attraction.

data collection effort should identify parks, open space, and greenways that could benefit when adjacent natural areas are preserved. What would happen if you lost these features? One Chicago suburban study found that if the existing natural depressional areas in the watershed were developed (even with stormwater detention facilities), downstream flood heights would increase several feet. The resulting mitigation plan identified these vacant areas as prime candidates for acquisition.

The future: A final topic that should be addressed is the future. Your problem definition should review expected changes to the watershed and floodplain, especially the development potential of vacant land. It should also note the trends for redeveloping floodprone areas and possible development constraints, such as a land use plan, zoning, or ownership.

Take a look at the watershed. Is there a lot of land that is expected to be developed? If so, the runoff into your community will likely increase and, if not managed, the frequency and height of flooding could increase as well. Will other areas of natural or cultural importance be lost?

ⓘ Planning Hint

A geographic information system (GIS) can be a very efficient way to view the impact of localized hazards. It is also needed to run HAZUS, FEMA's hazard assessment software for earthquakes (and flood and wind hazards in a 2003 version).

- ✓ Gurnee—Using a property ownership layer allowed the planners to quickly calculate that 50% of the floodplain was in publicly owned open space.
- ✓ Huntsville—Without the GIS, the city would not have been able to identify the 9,800 addresses in the 500-year flood-plain to which it sent a questionnaire.
- ✓ Oregon City—The city's GIS office provided maps showing the floodplain, landslide hazard areas, earthquake hazard zones, hazardous materials sites, and the urban growth boundary. Combining these overlays revealed one area with the highest concentration of problems that deserved priority attention—an area where a major new residential development was being considered.
- ✓ Oyster Bay's GIS planning maps showed FIRM zones and building footprints in colors that made it easier to visualize and identify problem areas.

Other Hazards

Similar reviews are needed for the impact of the other hazards identified in step 4. Again, *Understanding Your Risks* is the best place to go. It provides a detailed approach to inventorying the exposure and estimating the cost of a disaster. The references and resources listed on pages 26 and 27 can also help with the problem evaluation.

If you have the computer resources, the FEMA program HAZUS can provide an initial inventory of key facilities and hazard data. Although the current version is designed for earthquake loss estimation, it has general information on other hazards, such as hurricane surge areas and Q3 floodplain maps. In 2003, FEMA will have developed HAZUS software for floods and other hazards. See FEMA's website for more information at http://www.fema.gov/hazus/.

Summarizing

With a lot of data on different hazards and their impact on people, buildings, infrastructure, the economy, etc., it may be hard for the committee (and even the planners) to see the big picture. A summary helps. One way to do this is to use a tabular format, like the one below.

Summary of the Problem

Hazard	Frequency of Occurrence	Geographical Area Affected	Property Damage	Population Affected	Overall Impact
Drainage	annually	local depressions	minor	250	low
10-year flood	10% chance	100 acres of floodplain	minor	200	low
Flood of 1999	2% chance	1,000 acres of floodplain	moderate	1,000	medium
Base flood	1% chance	2,000 acres of floodplain	major	2,000	high
Hail storm	every 2 years	entire city	minor	45,000	medium
Earthquake	1/50 years	entire city	major	45,000	high
Tornado	every 10 years	narrow paths	destroyed	50	medium
etc.					

This type of table can be prepared at a committee meeting. The input is based on the data collected, but many of the statements in the boxes are subjective. A more exacting technique that converts expected losses to dollars is explained in *Understanding Your Risks*. Using dollars makes comparisons more objective, but may miss less tangible impacts, such as pollution and threats to life.

ⓘ Planning Hint

A summary doesn't need to go overboard with numbers and details for a community-wide plan. The objective is to give the committee a framework to think in, e.g., to get away from concentrating on the last disaster or the "everyday" occurrences of drainage problems and storms.

CRS Credit for Step 5

(Maximum credit: 35 points) The credit for this step is the total of the following points based on what is included in the assessment of the vulnerability of the community to the hazards identified in the previous hazard assessment step. TO RECEIVE CREDIT FOR THIS STEP, THE ASSESSMENT MUST INCLUDE THE FIRST ITEM AND MUST EVALUATE THE HAZARD DATA IN LIGHT OF THE IMPACT ON THE COMMUNITY. Simply listing data, such as the names of the critical facilities or the number of flood insurance claims, will not suffice for credit.

2, if the plan includes an overall summary of each hazard identified in the hazard assessment (step 4) and its impact on the community. [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(2)(ii))]

5, if the plan includes a description of the impact that the hazards identified in the hazard assessment (step 4) have on life, safety, and health, and the need and procedures for warning and evacuating residents and visitors.

5, if the plan includes a description of the impact that the hazards identified in the hazard assessment have on critical facilities and infrastructure. An estimate of the potential dollar losses to vulnerable facilities is recommended for Disaster Mitigation Act of 2000 plans.

5, for including the number and types of buildings subject to the hazards identified in the hazard assessment. An estimate of the potential dollar losses to vulnerable buildings is recommended for Disaster Mitigation Act of 2000 plans.

4, if the assessment includes a review of all properties that have received flood insurance claims (in addition to the repetitive loss properties) or an estimate of the potential dollar losses to vulnerable structures. Contact your FEMA Regional Office to request a printout or digital file of insurance claims. ***NOTE:*** *Use of flood insurance claim data is subject to the Privacy Act, which prohibits public release of the names of policy holders and the amount of the claim payment. However, averages, totals, etc. and maps showing AREAS where claims have been paid can be made public.*

4, if the plan describes areas that provide natural and beneficial functions, such as wetlands, riparian areas, sensitive areas, and habitat for rare or endangered species.

5, if the plan includes a description of development, redevelopment, and population trends and a discussion of what the future is likely to bring for development and redevelopment in the community, the watershed, and natural resource areas.

5, if the plan includes a summary of the impact of each hazard on the community's economy and tax base.

When a multi-jurisdictional plan is prepared, the critical facilities, building counts, and similar data must be presented for each community seeking CRS credit or the Disaster Mitigation Act of 2000 recognition.

Step 5. Assess the problem. **Planning Checklist** 

__ Review and summarize the impact of EACH hazard on
- Health and safety
- Warning and evacuation procedures
- Critical facilities
- Utilities and other infrastructure
- Buildings
- Repetitive loss areas
- Roads, bridges, and transportation facilities
- Business centers and major employers
- Features/landmarks important to your community
- Natural features and sensitive areas
- Local economy and tax base.

__ Review what will happen to future development and what that development will do to the hazard.

__ Prepare an overall summary of the impacts. [REQUIRED]

Step 6. Set goals.

Up to this point, your planning work has been relatively noncontroversial, consisting of talking to agencies and organizations and collecting and recording facts. Now comes the tough part—getting people to agree on what should be done. There should be agreement in the community (represented by the committee) as to the purpose of the whole project. A clear definition of goals at this point assures that your planning moves in a productive direction.

Community goals and other potentially controversial issues may have been resolved in previous efforts that prepared other community plans. Even so, those involved in your planning process need to identify and clarify their concerns so you can reach agreement on the wording of your floodplain management or mitigation planning goals.

Which direction?

There is a choice at this step. You can limit your work to reacting to your hazards and identifying mitigation goals, such as "protect lives during a hurricane," "reduce the potential for flood damage to existing buildings," and "prevent construction of any more buildings in the floodway." Such goals are appropriate and in line with the minimum credit criteria for the CRS.

Your second choice is to look at how the floodplain, watershed and other hazards affect your community. Many planners now promote a "vision" step in the planning process in which people review how they'd like their community to look in the future. What should your floodplain look like 20, 50, or 100 years from now? Is your vision of the floodplain limited to how well buildings are protected, or should you discuss the best use of this sensitive area?

Is your vision simply of an area free from danger or damage, or can you take advantage of the attention currently being given to hazards, coordinate it with other goals, and outline a way to develop a better community? If so, you may have some additional goals or vision statements, such as "have a river clean enough for swimming and fishing," "preserve all wetlands and natural storage areas in the watershed," "have a waterfront that attracts people," or "eliminate all substandard housing in the area." Why not use the planning process to meet more than one objective for your community?

Sustainable Communities

"Sustainable" means meeting the needs of the present without compromising the ability of future generations to meet their own needs. FEMA notes, "The extent to which your community manages to achieve a sustainable future largely depends upon how well you integrate the concepts and principles of sustainable development, including disaster resistance, into your decision-making process."

Why think small? As long as you are discussing what your community should do about the natural hazards it faces, why not consider its environmental, economic, and social health and its long term prospects?

For more information on sustainability, see FEMA's *Planning for a Sustainable Future* and the Natural Hazards Center's *Holistic Disaster Recovery—Ideas for Building Local Sustainability after a Natural Disaster.*

Reaching Consensus

It is often easy to reach agreement on overall goals, but it is not unusual to take a long time to reach consensus on specific objectives related to particular areas or individual properties. However, doing so is time well spent and vital to gaining cooperation from all affected parties.

> **ⓘ Planning Hint**
>
> Goals don't have to be too detailed. It's not so important at this stage to decide if a specific ordinance should be revised. It's more important to get a sense of direction—is the community (i.e., the committee) concerned about development? If so, an appropriate goal might be "ensure that new buildings will be protected from flooding, earthquakes, hail, and windstorms."

Make goals positive statements, something people can work for, not negative statements about the community. Where possible, settle on goals that support more than one interest, e.g., "Implement erosion reduction measures to sustain farmland, improve water quality, and reduce sedimentation in stream channels."

Generally, consensus means something everyone can live with. You should strive for unanimous support or at least agreement that no one will oppose a goal statement. Short of that, you have to judge if you must settle for a decision by majority vote.

> **ⓘ Planning Hint**
>
> An experienced facilitator can be very helpful. As a neutral outsider, he or she can be trusted by everyone to give all interests a chance to be heard.
>
> Facilitators also know many exercises and other ways to identify common concerns and work out differences. They are skilled at separating issues and interests from discussions of people and positions. They can build an atmosphere in which give and take is easier and more productive.

After working with the committee, you probably will have a good feel about whether agreeing on goal statements will be difficult. If it does not appear to be too divisive, try a simple exercise, like the one described on the next page.

If this approach doesn't work, you have two options: either don't go for detailed statements and instead just get consensus on the general goals, or invite a facilitator to help you move through a formal process of consensus building.

CRS Credit for Step 6

(Maximum credit: 2 points). The points for this step are provided if the plan has a statement of the goals of the community's floodplain management or hazard mitigation program. [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(3)(i))]

Step 6. Set goals. **Planning Checklist**

__ Discuss possible goals and directions with the committee chair.
__ Decide whether to limit goals to hazard mitigation or "think big" and relate the activity to other community concerns and/or sustainability.
__ Determine if exercises and/or a facilitator should be used.
__ Set goals in a committee meeting.
__ Revise them at later meetings as members reflect on them.

Goal Setting in Gurnee

Gurnee's Flood Mitigation Planning Committee used a series of simple exercises to set goals. It took a little over 1½ hours (with 11 committee members). It started with two exercises to put people into the "right frame of mind."

1. Committee members were asked to be thinking of the target area (the floodplain). They were given three cards. They were told "On each card, write what you think are the top three problems in this area. What needs to be improved to make this area a better place?"

2. When everyone was done, each person went to the wall, explained his or her cards and stuck them on the wall with a push pin.

3. The facilitator then organized the cards by common subjects and ranked the topics. This is the most crucial step, because people begin to talk and debate, finally coming up with what can be truly called a joint decision. Ranking in itself is not important but the attempt might make people think more. It should be dropped if time is a constraint.

4. The same procedure was done for strengths. Members were instructed, "You have three new cards. On each card, write what you think are the top three strengths in this area. What makes this part of Gurnee strong? What's appealing about the area?"

5. After these two exercises, the goal-setting exercise was conducted. Members could be asked "What should be our goals for this area?" In Gurnee, members were given a list of goals to orient the discussion around goal statements. Their instructions were "Here are possible goals for the flood mitigation program. They are listed in alphabetical order. Pick the three that you think are most important. You may reword them or add new ones if you want. You have three cards. Use one card for each of your top three choices."

Get more businesses	Protect existing buildings
Get more housing	Protect future development
Get more open space	Protect people's lives
Get more recreation facilities	Protect public health
Give special attention to lower income areas	Protect public services (fire, police, etc.)
Improve water quality	Protect streets and utilities
Inform residents/businesses	Protect wetlands/natural areas
Keep flooding from getting worse	Stop/reduce local drainage problems
Keep the channel clear/clean	Stop/reduce sewer backups
Protect a particular property: _____	Other: _____

6. The same procedure for putting up the cards and then organizing them was followed to arrive at a Committee decision. After several meetings and revised drafts, Gurnee's committee agreed on four overall goals.

    1. Protect existing properties
    2. Protect health and safety
    3. Improve the quality of life in Gurnee
    4. Ensure that public funds are used in the most efficient manner

7. You can see that none of the suggested goal statements was used verbatim. A good discussion clarified what the Committee really wanted. All of the suggestions of the members were incorporated, into either goal or objective statements. The objectives ranged from "Do something about the mosquitoes" to "Use the most effective approaches to protect buildings from flooding, including acquisition or relocation where warranted."

Step 7. Review possible activities.

Many different measures can be used to mitigate the impacts of hazards as well as to meet other objectives. Many are inexpensive and easy to do, and some are probably already being done. The entire planning process is meaningless unless ALL possible alternatives are examined. It is important to think beyond the traditional approaches of flood control, acquisition, and regulation of land use.

What to Review

The CRS encourages a review of six general mitigation strategies:

- Preventive activities that keep problems from getting worse;
- Property protection activities that address individual buildings;
- Natural resource protection activities;
- Emergency services measures taken before, during, and after an occurrence;
- Structural projects that control the hazard; and
- Public information activities that advise property owners and others.

These six strategies and measures to implement them are reviewed in the following pages. No measure should be discarded until you are sure you understand what is involved. Questions about technical aspects or agency programs should be handled as part of your coordination with other agencies and organizations.

How to Review

Don't eliminate anything until each item has been considered carefully. Determine whether and how a measure is now being implemented and then identify needed changes. A summary and suggested changes should then be reviewed with the planning committee.

Conduct a systematic review of each measure. Discard a measure only after you answer "no" to the following questions.

- Is the measure technically appropriate for the hazard(s)?
- Does it support any of your goals and objectives?
- Do its benefits equal or exceed its cost?
- Is it affordable?
- Do you know where the money will come from?
- How long will it take to implement?
- Will it comply with all local, state, and federal regulations?
- Does it have a beneficial or neutral impact on the environment?

You may want to formalize the selection process and document how you decided to recommend or exclude some activities, especially if they're controversial.

Funding

Money is often the most important issue in reviewing alternatives. Many of the measures will require additional expenditures. This is another instance in which other agencies and organizations can be of great assistance. There are literally hundreds of public and private programs that can help fund worthy projects (see the box on page 21 for a start). Be sure to check out all the prerequisites and rules for outside funding.

ⓘ Planning Hint

In some cases, recommendations cannot be made—such as when a large and expensive structural project is being considered. Your may conclude that a major project needs more study, so that would be your plan's recommendation.

For example, Huntsville's planning committee was ready to recommend implementation of a stormwater utility fee. When public reaction against a "new tax" arose, the committee opted to recommend that the City "prepare a description of the benefits, costs, and operational aspects of a stormwater utility." This prevented one issue from keeping the whole plan from being adopted.

Some projects can be funded by several different parties, each of which is interested in one or more objectives. Often, agencies and organizations can fund only part of a project, but they favor those projects that have other sources of funding. In other words, they prefer to support multi-objective projects, and this is where coordination with other community goals and objectives can pay off.

Don't forget local sources of funding. Businesses and organizations will frequently support projects that benefit their customers, employees, or members, or that provide a public relations benefit. Many projects provide direct benefits to local groups, such as an acquisition project that creates more parking space for businesses.

Where did their money come from?

Most of the recommendations in the seven communities' plans were to be implemented with "staff time" or operating budgets. Here's where they sought funding for big ticket items.

- ✓ Arnold—Pursued state and federal funding to acquire land for a riverfront greenway. Was ready for disaster assistance funds after the 1993 flood (see box, page 50).
- ✓ Conway—Applied for and got $1.1 million in Hazard Mitigation Grant Program and Flood Mitigation Assistance Program funds to buy 19 substantially damaged properties.
- ✓ Gurnee—Recommended a line item in each year's operating budget for responding to acquisition and retrofitting opportunities. Some acquisition has proceeded with County Stormwater Management Commission funds.
- ✓ Huntsville—$2 million per year for floodplain mapping and watershed plans to come from stormwater utility fees.
- ✓ Lewes—Ordinances were to be amended to qualify damaged properties for Increased Cost of Compliance funds. Further studies are to be funded by Project Impact funds. State and Corps funding is underway for a beach protection project.
- ✓ Oregon City—Projects to be implemented and managed by staff. FEMA funding to be pursued for the large mitigation projects.
- ✓ Oyster Bay—The plan recommends $10 million in local funds for tidal check valves, street raisings, and drainage system upgrades. The town applied for $6.7 million in state grants for waterfront revitalization.

Finally, don't forget in-kind services, which can be an excellent alternative to cash. Instead of paying for park maintenance, why not have a service organization maintain the area with volunteers? Often, in-kind services can be counted toward the local share needed to match other sources of funding.

Benefits and Costs

Questions about the value of benefits gain significance as the cost goes up. In these cases, you may need an additional, more detailed analysis before you can recommend something. Your plan could recommend conducting a benefit-cost analysis before deciding on a project or you could condition your recommendation on the availability of funding.

If you want FEMA funding for an acquisition or retrofitting project, you will have to document that the benefits exceed the costs. The Disaster Mitigation Act of 2000 regulations require a "cost-benefit review" of major projects, such as acquisition, retrofitting, and flood control projects (44 *CFR* 201.6(c)(3)(iii)) when deciding priorities.

Two references on comparing benefits and costs are the Corps's *Flood Proofing—How to Evaluate Your Options* and FEMA's computer software *Benefit/Cost Analysis of Hazard Mitigation Projects*. The latter is not only helpful, but also is used by FEMA to determine if a project should be funded under several of its programs.

Balanced Program

One of the greatest advantages of the 10-step planning approach is that it promotes balance in tackling flooding and other community problems. It should not be considered an excuse to justify someone's favorite project. Nor should you put all your eggs in one basket, such as a major structural project, and then wait years for it to be built. The odds are good that a flood will occur before such a big project is finished.

ⓘ Planning Hint

Your first priority should be to develop a plan that meets your community's needs, not one designed just to obtain funds or meet the requirements of a state or federal agency. This can be difficult, because some grant programs encourage certain measures.

For example, after a flood there is a push to develop a mitigation plan because one is required to receive acquisition funding. With only one goal in mind, such plans tend to focus on acquiring the worst-hit areas to the detriment of addressing other opportunities and other hazards.

Although most attention is usually focused on reducing losses to existing development, dealing with future development and preserving natural areas pays off in the long run and prevents small problems from becoming bigger ones.

A balanced program with measures from each of the six mitigation strategies will help protect existing development, manage new development, and protect natural and beneficial floodplain functions. Also, the CRS provides more points if more than one or two of the six mitigation strategies are recommended.

Preventive Measures

These are activities that are designed to keep problems from getting worse. Talk to the building, zoning, planning, and/or code enforcement offices. Ask the following questions.

Planning

- Does the community have a comprehensive plan? If so, is it current?
- Does the plan discuss flooding or other hazards?
- Is there any relation between the proposed land uses and the floodplain, steep slopes, drainage problems, or other hazardous areas?

Zoning CRS–430LD

- Does the community have a zoning ordinance? If so, is it current?
- Are there any special zoning provisions for the floodplain and other hazardous areas, such as low densities or special development requirements?

Open space preservation CRS–420

- Are there areas of open space in the floodplain and other hazardous areas?
- Who owns them? Are they likely to remain as open space?

Subdivision regulations CRS–430LD

- Are there any special provisions for hazards in the subdivision regulations?

Building codes

- Does the community have a building code? If not, does it plan to adopt one?
- Does the code have provisions for wind, earthquake, flood, or other hazards?
- Should the community's Building Code Effectiveness Grading Schedule classification be improved? (Check with your ISO/CRS Specialist for the BCEGS points. See Gurnee's plan, page 4-10, for an example.) CRS–430

Floodplain development regulations

- Do the community's regulations meet the current state and FEMA requirements? (Check with your State NFIP Coordinator or FEMA Regional Office.)
- Do the regulations have standards more restrictive than the state and FEMA minimum requirements? CRS–430, 430LD

Stormwater management CRS–450

- Is there a likelihood of development in the upstream watershed(s)?
- Are there regulations that require developments to retain excess runoff on site?
- Do other communities in the upstream watershed(s) have similar regulations?

In all cases

- When were the regulations last updated?
- Do the staff recommend any changes to the regulatory standards or administrative or enforcement procedures?

CRS–### = Community Rating System credit is provided for this activity. See the appropriate section in the *CRS Coordinator's Manual* for more information.

Property Protection

These activities are usually undertaken by property owners on a building-by-building or parcel basis. There are five common approaches to protect existing buildings.

- **Relocating** the building out of harm's way; CRS–520
- **Acquiring** and clearing the property; CRS–520
- **Elevating** the building above flood levels; CRS–530
- **Barriers** between the property and the hazard (e.g., low floodwalls, firebreaks, and sewer backup valves); and CRS–530
- **Retrofitting** a building to strengthen it (e.g., tying walls to the foundation to protect from wind and earthquake forces and the effects of buoyancy during a flood, adding insulation to protect against extreme heat and cold, and installing roofing that is hail resistant and fireproof). CRS–530

How did they do it?

Depending on the size of the planning area, the step 5 problem assessment can include a building-by-building survey to collect sufficient data to determine the feasibility of property protection measures for individual buildings.

- ✓ Conway—The plan's goals included "All substantially damaged buildings will be acquired and cleared from the floodplain or elevated to a level two feet above the 1999 flood." Building reoccupancy inspections found 19 buildings that were substantially damaged. Mitigation funding was sought and received to implement this goal.
- ✓ Gurnee—A survey of all 111 buildings in the floodplain identified the most appropriate retrofitting approaches, and 44 were identified for acquisition. A windshield survey of public buildings was used to identify those most susceptible to damage by an earthquake.
- ✓ Lewes's and Oregon City's plans had action items for more detailed analyses.

When reviewing these measures, find out if properties in the community have been protected by any of these methods. This is a good item for the questionnaire discussed in step 2. Showing that there are local examples can help convince committee members that retrofitting is a viable option, especially if the projects have been tested by a flood or other disaster after they were installed.

Insurance: Insurance doesn't prevent damage, but does protect the property owner's finances and greatly facilitates reconstruction. The CRS is particularly interested in flood insurance. Data on the number of policies, by FIRM zone, are available from your FEMA Regional Office. Find out:

- How many flood insurance policies are held by residents?
- Should there be greater participation?
- What other kinds of insurance should be recommended (e.g., earthquake endorsements and sewer backup riders to homeowners policies)?

CRS–### = Community Rating System credit is provided for this activity. See the appropriate section in the *CRS Coordinator's Manual* for more information.

Natural Resource Protection Activities

These work to preserve or restore natural areas or the natural functions of floodplain and watershed areas. Talk to parks, recreation, or conservation agencies or organizations. Here are some questions to ask:

Wetland protection

- Are any wetlands located in the floodplain or other hazardous areas? If so, what is their classification? What is their functional value?
- Are there wetlands or depressional areas that provide stormwater retention?
- Are there any state or local regulations that will protect those wetlands from development? CRS–430

Habitat protection CRS–510

- Do any threatened or endangered species exist in the area?
- Did the step 5 inventory identify habitat or natural areas deserving protection?

Erosion and sedimentation control CRS–450

- Are there any areas in the community that contribute to erosion?
- What practices are being used to prevent erosion and control sediment?
- Are they effective? Are they well enforced?

Best management practices (BMPs) CRS–450

- Are there state or regional requirements or guidelines for best management practices to protect water quality or natural areas?
- Are any being implemented in the community? Are they effective?

Stream dumping CRS–540

- Are there regulations prohibiting dumping debris in watercourses?
- Are they effective? Are they well enforced?

Coastal barrier protection

- Are there state requirements or guidelines for protecting coastal barriers?
- Does the community have any designated undeveloped coastal barriers or other protected areas? (Such areas are shown on the FIRM.)
- Are owners in those areas aware of the restrictions on flood insurance and federal assistance? (These restrictions are explained in Activity 320 of the *Coordinator's Manual*.) CRS–330

Forestry practices

- Is there a program to keep brush and growth away from buildings?
- Is there a program to remove unhealthy trees and to keep them trimmed and away from utility lines?

CRS–### = Community Rating System credit is provided for this activity. See the appropriate section in the *CRS Coordinator's Manual* for more information.

Emergency Services Measures

These measures are implemented just before, during, or soon after an emergency or disaster to minimize the impact on people and property. Ask your community emergency manager the following questions.

Hazard warning CRS–610

- Is there a system to provide early warning of impending floods, storms, and other hazards?
- Are there any warning arrangements with upstream dams? CRS–630
- How is the warning disseminated to the public?
- Are there any provisions for notifying schools, critical facilities, etc.?
- Has the system worked during past emergencies?

Emergency response CRS–610

- Does the community or county have a written and adopted emergency response or operations plan?
- Does it address floods by identifying specific actions to take at different predicted flood levels?
- Has the plan worked during past emergencies?
- Is there a process to critique the plan after an emergency? Have the recommendations been implemented?

Critical facilities protection CRS–610

- Are affected critical facilities identified in step 5?
- Does the emergency manager have a current list of contacts and phone numbers?
- Do the critical facilities have their own emergency response plans for the hazards they are exposed to?
- Have those plans been used during past emergencies? Did they work?

Health and safety maintenance

- Does the emergency response/operations plan have provisions for the security of affected areas?
- Does the plan have provisions for cleanup and special precautions for each type of hazard (e.g., draining standing water after a flood, cautioning about aftershocks after an earthquake or about successive tsunami waves)?

Post-disaster mitigation CRS–510

- Does the community have procedures for inspecting damaged properties before they are reoccupied?
- Are there procedures for identifying mitigation opportunities and funding sources before damage is repaired?

CRS–### = Community Rating System credit is provided for this activity. See the appropriate section in the *CRS Coordinator's Manual* for more information.

Structural Projects

The objective of this strategy is to modify or control the hazard itself. The most common structural measures are flood control projects that keep flood waters away from an area through one of the following methods:

- **Reservoirs** and retention or detention basins that store excess waters; CRS–530
- **Levees and floodwalls** that place barriers between the source of flooding and the damage-prone properties; CRS–620
- **Channel modifications** that widen, straighten, or remove bridge and culvert restrictions so the channel can convey more water or carry it faster; and CRS–530
- **Diversions** that redirect high flows to another location. CRS–530

Talk to the local engineers and public works staff and ask

- Are any in place in the area?
- Have they worked well?
- Are there any locations that would be appropriate for a structural project?

ⓘ Planning Hint

While many committee members will want a project to "stop" flooding, they should be aware of the shortcomings.

- ✓ They are expensive, sometimes requiring capital bond issues and/or cost sharing with state or federal agencies.
- ✓ They disturb the land and disrupt natural water flows, often destroying habitat.
- ✓ They are built to a certain flood protection level that can be exceeded by a larger flood, causing extensive damage.
- ✓ They can send flood waters to others.
- ✓ They can create a false sense of security when people protected by a structure believe that no flood can ever reach them.
- ✓ They require regular maintenance to ensure that they continue to provide their design protection level.

Dune and beach maintenance CRS–540

- Does the community have a dune or beach maintenance program?
- Does it meet state coastal management requirements?

Channel maintenance CRS–540

- Would keeping streams, ditches, and storage basins clear reduce flooding from smaller storms?
- Does the community have a program to inspect and clean the drainage system?

How did they do it?

Planning flood control projects can be expensive as well as controversial. These communities deferred debate on them to more appropriate venues.

- ✓ Conway—Due to strong local desire for a diversion of the Waccamaw River, the plan recommended a Corps of Engineers' feasibility study of the idea.
- ✓ Gurnee—Research found a recent Corps study that estimated the cost of a levee and concluded that it was not cost-effective. Without funding support, the committee focused attention elsewhere.
- ✓ Huntsville—Structural projects would be considered as each watershed master plan is prepared.
- ✓ Lewes—Relied on a recent Corps feasibility study that recommended a groin and dune restoration.
- ✓ Oregon City—Referred the issue to the Corps and the Natural Resources Conservation Service.

CRS–### = Community Rating System credit is provided for this activity. See the *CRS Coordinator's Manual* for more information.

Public Information Activities

Programs to advise property owners, potential property owners, and visitors can help save lives and protect property. Talk to staff and the public information office.

Map information CRS–320

- What is available on local maps, including the FIRM and the GIS?
- Can anyone get access to the maps?
- Is the staff willing to respond to inquiries about hazard information that is available from these maps?
- Is there a willingness to publicize this as a public service?

Outreach projects CRS–330

- Does the community send hazard and hazard protection information to residents (e.g., via newsletter or in utility bills)? If not, is it willing to do so?
- Does the community have a website that could include such information?
- Are there opportunities to set up displays or booths at community activities?
- What other organizations conduct outreach programs?

Library CRS–350

- Is the local public library willing to stock publications on hazard protection?
- Is there an interest in preparing a locally-pertinent handbook on protecting a property from flooding or other hazards? CRS–330

Technical assistance CRS–360

- Do staff members make site visits to help residents understand drainage, land movement, erosion, flooding, or other problems on their properties?
- Is the staff willing to meet with people and advise them about retrofitting and other property protection measures?
- Is there a willingness to publicize this as a public service?

Real estate disclosure CRS–340

- What are the local practices for disclosing a hazard at the time of sale of a property?
- Are there any state or local laws requiring notices of a hazard on a property?

Environmental education

- Are there any school, park, or civic organization programs to educate people about wetlands, habitats, and other areas that deserve protection?

CRS–### = Community Rating System credit is provided for this activity. See the appropriate section in the *CRS Coordinator's Manual* for more information. See also Activity 330 (Outreach Projects)—your plan's discussion of public information activities may qualify for CRS credit as a public information program strategy.

CRS Credit for Step 7

(Maximum credit: 30 points) The plan must describe those activities that were considered and note why they were or were not recommended (e.g., they were not cost-effective or they did not support the community's goals). [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(3)(ii))]

If an activity is currently being implemented, the plan must note whether it should be modified. The discussion of each activity needs to be detailed enough to be useful to the lay reader.

The credit for this step is the total of the following points based on which floodplain management or hazard mitigation activities are reviewed in the plan.

5, if the plan reviews preventive activities;

5, if the plan reviews property protection activities;

5, if the plan reviews activities to protect the natural and beneficial functions of the floodplain;

5, if the plan reviews emergency services activities;

5, if the plan reviews structural projects;

5, if the plan reviews public information activities.

The CRS credit points encourage communities to strive for a balanced program, selecting measures from more than one mitigation strategy. In every case, communities should implement preventive activities to keep their problems from getting worse.

How did they do it?

While each community looked at the full range of activities, some spent more time on certain local concerns.

- ✓ Arnold—Clearing the remaining floodway properties and developing a greenway.
- ✓ Conway—The immediate concern was property protection measures for flooded homes and businesses.
- ✓ Gurnee—Developing an acquisition and property protection program that would be fair to all and support continued improvements to the Village.
- ✓ Huntsville—Appropriate regulatory standards for new construction, especially stormwater management requirements.
- ✓ Lewes—Regulatory standards, beach nourishment, channel and ditch work.
- ✓ Oregon City—Measures that would address recent landslides and flooding.
- ✓ Oyster Bay—Problem sites due to drainage and high tides and waterfront improvement.

Step 7. Review possible activities. **Planning Checklist**

__ Use the questions on the preceding six pages as checklists for your review of the mitigation strategies and measures that are appropriate for your community.
__ Discuss them with the planning committee.
__ Draw preliminary conclusions and recommendations.
__ Draft appropriate sections of the plan for committee review.

Step 8. Draft an action plan.

Only after assessing the problem, setting goals, and reviewing all the possible mitigation strategies and measures can you begin to select the most appropriate actions to be recommended.

The action plan is typically the last section of the floodplain management or mitigation plan. It should be a list of projects and project assignments—the more specific, the better. It should include

- What will be done,
- Who is responsible,
- When it will be done, and
- How it will be financed.

The plan document can be in most any format. Most of the seven example plans have an introductory chapter that describes how the plan was prepared. After the introduction, there is a section on the hazard and problem description, followed by the review of the alternative measures that were considered, and ending with the action plan.

Once the committee agrees to the action plan and the entire plan document, prepare an executive summary. This will help committee members, elected officials, and the public see the big picture.

ⓘ Planning Hint

At the end of the discussion on each of the six strategies in step 7, the planner and the committee should make some general conclusions and recommendations. An example would be "New buildings should be protected to a level higher than the base flood elevation shown on the FIRM."

In step 8, that general recommendation is converted to an action item, coordinated with other sections' recommendations. An example would be "The Building Official will submit a draft ordinance revision to require two feet of freeboard for new buildings by May 1, 2002."

ⓘ **Another hint:** It can be very helpful to include some visible but inexpensive projects that can be implemented quickly. This reassures the public and the planning committee that something is being done. Examples are a stream cleanup project, distribution of public information materials, or a CRS application or modification.

Circulate

The draft plan should be made available for review by the residents, businesses and other departments and agencies that will be affected, interested organizations, state and federal agencies, and neighboring communities.

- Arrange for one or more public meetings and tell residents how they can respond if they cannot make one of the public meetings.
- Provide copies to the press, library, city hall, courthouse, and other public locations where people can either pick up their own copy or read one there (this is where a short executive summary can come in handy).
- Publicize the public meeting(s) and the fact that the draft is available for review.
- Send the draft plan to the other agencies identified in step 3, with a request for comments by the time of the public meeting.

Elected officials will act more favorably on a plan that has support from interested or affected organizations. If planning committee members were selected to represent particular organizations, those organizations could pass a resolution or otherwise officially support the plan. In big cities and counties, you may need to circulate the plan for approval from various department heads before it goes to the governing board.

A plan that needs to meet the Disaster Mitigation Act of 2000 criteria or receive CRS credit should be sent to the appropriate approving office with a request for a review to ensure that it will meet the credit criteria. Check with your ISO/CRS Specialist to get a "CRS courtesy review" of your draft.

Disaster Mitigation Act of 2000 Considerations

Here are some additional things to consider when preparing your action items and the final plan document in order to ensure that you will qualify for FEMA mitigation funding subject to the Disaster Mitigation Act of 2000 rules:

- In addition to who does what, when it will be done, and how it will be financed, your action plan should identify which action items are the most important. You should explain how you determined priorities and include a discussion of how you weighed the benefits of the proposed projects with their associated costs. If there are no data available, a formal benefit/cost analysis is not mandatory.

- Some of your recommendations, especially preventive measures, will affect existing plans and programs. These action items should be in the form of amendments, augmentations, or integration into those plans and programs, and not be stand-alone or separate activities (44 *CFR* 201.6(c)(4)(ii)).

- The action items should describe the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle (44 *CFR* 201.6(c)(4)(i)). This should also include a discussion of how the community will continue public participation in the plan maintenance process (44 *CFR* 201.6(c)(4)(iii)). See also step 10 on page 53.

- When a multi-jurisdictional plan is prepared, the action items need to reference which jurisdictions are affected (44 *CFR* 201.6(c)(3)(iv)).

- A multi-jurisdictional plan must have action items from at least two of the six categories that directly benefit each community seeking CRS credit. For the Disaster Mitigation Act of 2000 approval, there must be at least one action item per community.

- A copy of the resolution to adopt the plan is useful to show exactly what the governing board will vote on. Often, the resolution will create a mitigation committee, identify priority action items, establish progress reporting requirements, etc., in addition to adopting the plan. See the planning hint on page 53. The resolution must be submitted with the plan.

CRS Credit for Step 8

(Maximum credit: 70 points). The credit for this step is based on what is included in the action plan. For each recommendation, the action plan must identify who does what, when it will be done, and how it will be financed. [REQUIRED] For the Disaster Mitigation Act of 2000 recognition, the plan must describe how the actions will be prioritized, implemented, and administered (44 *CFR* 201.6(c)(3)(iii)).

Up to 40 points are provided if the action plan includes recommendations for activities from the mitigation strategies reviewed in step 7, Review possible activities:

10 points if the action plan includes recommendations from 2 of the 6 strategies,

20 points if the action plan includes recommendations from 3 of the 6 strategies,

30 points if the action plan includes recommendations from 4 of the 6 strategies, OR

40 points if the action plan includes recommendations from 5 of the 6 strategies.

Credit is provided for a recommendation on floodplain regulations, provided it recommends a regulatory standard that exceeds the minimum requirements of the NFIP. If the plan calls for acquiring properties, there must be a discussion of how the project(s) will be managed and how the land will be reused.

10 additional points are provided if the action plan establishes post-disaster mitigation policies and procedures (see next page).

10 additional points are provided if the action plan's recommended natural resource protection activities include recommendations from a regional habitat conservation plan (see next page).

10 additional points are provided if the plan includes action items (other than public information activities) to mitigate the effects of the other natural hazards identified in the step 4 hazard assessment.

There is no requirement that the plan identify expensive projects, acquisition of large areas, or massive structural flood control facilities. The plan should recommend only those activities that the community knows will be implemented, either through its own resources or assured outside support. As noted on pages 41–46, many of the floodplain management or mitigation activities could receive their own CRS credit once they are implemented.

Step 8. Draft an action plan. **Planning Checklist**

__ Draft the action plan, showing who does what, when each action item will be done, and how it will be financed. [REQUIRED]
__ Assemble the complete plan document.
__ Review them with the planning committee.
__ Revise as needed and circulate for public and agency review. [REQUIRED]
__ Schedule the public meeting.

Post-disaster Mitigation

The period immediately after a disaster can be very trying, but it offers a unique opportunity for hazard mitigation. There will be a great deal of public interest in mitigating the impact of a reoccurrence, areas will be ripe for redevelopment, and there may well be disaster assistance funds to finance mitigation projects. The more prepared a community is beforehand, the better.

The best time to get ready for this window of opportunity is before a disaster, when you prepare your floodplain management or mitigation plan. It pays to walk through the "what if" of a disaster and sort out priorities, policy issues, and procedures in your planning process. Things to consider include

- Damage assessment,
- Permit and inspection procedures,
- Enforcement of NFIP substantial damage requirements,
- Retrofitting structures during repair and reconstruction,
- Identification of properties that should be acquired and cleared,
- Needed staff support, and
- Financial assistance.

Arnold's Post-disaster Mitigation

Arnold prepared its floodplain management plan in 1991. It identified a need to purchase some damage-prone properties in the Meramec River floodway and develop a greenway along the riverfront. There were no funds available for this action item, but the plan instructed staff to stop reconstruction of these buildings after a flood (or other disaster) until funding sources were checked and an acquisition project was reviewed with the owners.

In fact, such activities were implemented less than two years later, after the 1993 Midwest Floods. Arnold received the needed funding and now has a greenway. The city was recognized by FEMA as one of the best-prepared communities for mitigation funding.

Habitat Conservation Plan

Ten points of CRS credit are provided if the action plan's recommended natural resource protection activities include recommendations from a regional habitat conservation plan. Up to 15 additional points for adopting a regional habitat conservation plan are also provided under Section 511.b of the *Coordinator's Manual*.

A regional habitat conservation plan explains and recommends actions to protect rare, threatened, or endangered aquatic or riparian species. The plan must identify:

- The species in need of protection,
- The impact of new development on their habitat,
- Alternative actions that could be taken to protect that habitat,
- What actions are recommended to protect that habitat and why they were selected from the alternatives, and
- How the recommendations will be funded.

The plan must have been adopted by the community's governing board and the community must show that it is being implemented.

Step 9. Adopt the plan.

It always helps to get support from the public and other entities. Step 8 discusses circulating the draft for review by the public and other agencies and organizations.

The culmination of the review process is usually a public meeting. Review comments should be submitted at or before that meeting. It is typically chaired by the planning committee chair. A record of favorable comments and public support is important when submitting the plan to the governing board. After the meeting, the planning committee should make appropriate changes to the plan and recommend it for adoption.

CRS Credit for Step 9

(Maximum credit: 2 points) The 2 credit points for this step are provided if the plan is officially adopted by the community's governing body.

As noted in step 2, a public meeting must be held at the end of the planning process, at least two weeks before submittal of the recommended plan to the governing body. [REQUIRED] See the box on page 19 for more on the public meeting requirement.

The plan must be an official plan of the community, not an internal staff proposal. Adoption must be in the form of a resolution, ordinance, or other official act of the governing body.

When a multi-jurisdictional plan is prepared, it must be adopted by the governing board of each community seeking CRS credit. [REQUIRED under the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(5))]

How did they do it?

During the planning process, Gurnee and Huntsville posted meeting minutes on their city websites. When the plan was completed, it was placed there, too.

News releases and other publicity announced the public meeting and the website information. Other agencies and organizations were sent the 10-page executive summary and were advised that they could check the website or ask for a copy of the full 100-page plan.

The public meetings started with a review of the plan and its recommendations. (This was especially important in Huntsville where news about the stormwater utility fee had ensured a full house and TV coverage.) Comments submitted by reviewing agencies were summarized and questions were taken from the floor.

The planning committee members attended the public meeting, answered questions from the public, and met after it adjourned. They gave the planner directions to prepare the plan for submittal to the City Council without needing an additional committee meeting.

ⓘ Planning Hint

After passage by the governing board, prepare a final copy of the plan. The word "draft" should not appear on it. The cover or title page should show that it was officially adopted and include the date of adoption. FEMA wants to review an official plan, not a draft.

Step 10. Implement, evaluate, and revise.

Adoption by the governing board is not the last step in the planning process. Monitoring and follow up are needed to ensure that the action plan is implemented.

Implementation

The key to successful implementation is that the people responsible for the recommendations understand what is expected of them and are willing to work toward their implementation. Thus, it is helpful to have people likely to be involved in implementation—like representatives of local departments and other agencies—participate in the planning process. The plan should clearly identify a person (or position) responsible for each recommendation.

It is also helpful to associate the recommendations with the plans and activities of the implementing agency or organization. For example, people responsible for recommendations could have the duties included in their job descriptions or performance plans. A timeline for implementation and monitoring can be helpful, especially for multi-year projects.

Monitoring

No plan is perfect. As implementation proceeds, flaws will be discovered and changes needed. Your plan should have a formal process to measure progress, assess how things are proceeding, and recommend changes.

Those responsible for implementing the various recommendations probably have many other jobs to do. A monitoring system helps ensure that they don't forget their assignments or fall behind on them. This can be in the form of a checklist maintained by the person designated as responsible for the plan, or a more formal reporting system to a higher authority.

ⓘ Planning Hint

The resolution that adopts the plan should clearly state who is responsible for implementation and require monitoring and progress reporting. The action plans for Conway, Gurnee, Huntsville, and Oregon City all created a standing committee to do this. The standing committee members were drawn from the planning committee.

See the following plans for the draft resolutions to do this:

- ✓ Conway, page 10-9
- ✓ Gurnee, page 10-10
- ✓ Huntsville, page 10-18.

Evaluation

Even with full implementation, the plan should be evaluated in light of progress and changed conditions. Your planning committee should meet periodically to review progress and submit its recommendations to the agencies and organizations responsible for implementation. It can also take advantage of opportunities provided by disasters, extra end-of-the-year money, or heightened public interest due to a disaster elsewhere. Such events may present the opportunity to implement a stalled recommendation, revise the plan, or effect other major changes.

Revisions

The plan should include procedures for making changes.

CRS Credit for Step 10

(Maximum credit: 350 points) The credit for this step is the total of the following points based on how the community monitors and evaluates its plan.

2, if the community has procedures for monitoring implementation, reviewing progress, and recommending revisions to the plan in an annual evaluation report. [REQUIRED by the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(4))] The report must be submitted to the governing body, released to the media and made available to the public. [REQUIRED by the CRS] The Disaster Mitigation Act of 2000 also requires a discussion of how the community will continue public participation in the plan maintenance process (44 *CFR* 201.6(c) (4)(iii)).

8, if the evaluation report is prepared by the same committee that prepared the plan.

25, if the evaluation report is prepared by the same planning committee that prepared the plan AND the committee includes members of the public and other stakeholders in the community (see the last two step 2 credit items on page 20).

To maintain this credit, the community must

- Submit a copy of its annual evaluation report with its annual recertification, and
- Update the plan at least every five years.

Changes should be made in the action plan when opportunities arise to add new activities or complete some items ahead of schedule. The plan should also be revised if it is found that some activities cannot be completed according to the action plan. The revisions must be adopted by the governing body.

Five-year Update

CRS credit is for floodplain management PLANNING, not for producing a document. Therefore, an update to the plan must be prepared at least every five years. [REQUIRED by the CRS and the Disaster Mitigation Act of 2000 (44 *CFR* 201.6(c)(4)(i))] This must include the following:

- Steps 4 and 5: The hazard and problem assessments must be reviewed and brought up to date.
- Step 8: The action plan must be revised to account for projects that have been completed, dropped, or changed, and for changes in the hazard and problem assessments, as appropriate.
- Step 3: The draft update must be sent to other agencies and organizations for comment.
- Step 2: A public meeting must be held before adoption.
- Step 9: The update must be adopted by the community's governing board.

Documentation

To receive CRS credit, the plan and related documentation must be provided to the ISO/CRS Specialist. The items described below will be needed.

a. A copy of the floodplain management or hazard mitigation plan. The documentation must show where the 10 credited steps appear (see the example in Appendix B). While some of the steps can be explained in a separate memo, the following must appear in the plan document:

   - Step 1: a description of the plan preparation process,
   - Step 4: the hazard assessment,
   - Step 5: the problem assessment,
   - Step 6: goals of the floodplain management or hazard mitigation program,
   - Step 7: the review of possible activities,
   - Step 8: the action plan, and
   - Step 10: how the plan will be periodically evaluated and revised.

b. Documentation showing how the public was involved in preparing or reviewing the plan, including a copy of the notice(s) advising residents about the meeting(s) held pursuant to steps 2 and 9, and a record of those meetings.

   The notice of the public input meeting(s) should be in the form of letters to floodplain residents, a notice sent to all residents, or a newspaper article or advertisement. An inconspicuous legal notice in the classified section of the newspaper will not be sufficient for CRS credit. If very few residents are affected, as may be the case for planning that addresses only a repetitive loss area, a written record that the residents were called would be sufficient documentation.

   A record of the meeting is also needed. This could be minutes, a memo for the record, or a list of the issues raised by those who attended.

c. A copy of the resolution adopting the plan. When a multi-jurisdictional plan is prepared, it must be adopted by the governing board of each community seeking CRS credit. Each community seeking CRS or the Disaster Mitigation Act of 2000 recognition of the plan must submit a copy of its adopting resolution.

Annual Recertification

Each year, a CRS community must submit its annual CRS recertification to FEMA. This submittal must include an annual report that evaluates progress toward implementing the action plan. The objective of the annual evaluation report is to ensure that there is a continuing and responsive planning process. It is required for the community to continue to receive CRS credit for its floodplain management planning.

The report must include the following:

- How the reader can obtain a copy of the original plan;
- A review of each recommendation in the action plan, including a statement on how much was accomplished during the previous year;
- A discussion of why any objectives were not reached or why implementation is behind schedule; and
- Recommendations for new projects or revised objectives.

The submittal must include other documentation to demonstrate that the evaluation report was submitted to the governing body, released to the media, made available to the public, and/or prepared by the same planning committee that prepared the plan.

Appendix A

References

Many states have prepared their own mitigation planning guidance. Contact your state's emergency management or NFIP coordinating office for this information. Note that they may not include the new criteria from the 2002 *Coordinator's Manual* and the Disaster Mitigation Act of 2000.

Unless otherwise noted, these references are available free by calling FEMA publications at 1-800-480-2520 or faxing to (301) 362-5335.

FEMA has a new series of detailed "how-to" guides for mitigation planning, which can be found at http://www.fema.gov/fima/planresource.shtm. They include

- *Getting Started: Building Support for Mitigation Planning* (FEMA 386-1)
- *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA 386-2)
- *Developing a Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies* (FEMA 386-3)
- *Bringing the Plan to Life: Implementing the Hazard Mitigation Plan* (FEMA 386-4)
- *Using Benefit-Cost Analysis in Mitigation Planning* (FEMA 386-5)
- *Incorporating Historic Resources into Mitigation Planning* (FEMA 386-6)
- *Integrating Human-Caused Hazards into Mitigation Planning* (FEMA 386-7)
- *Multi-jurisdictional Approaches to Mitigation Planning* (FEMA 386-8)
- *Securing Resources for Mitigation Planning* (FEMA 386-9)

Multi-Hazard Identification and Risk Assessment, FEMA. 1997. This is a good introduction to identifying and assessing the full range of natural hazards affecting a given area. It is appropriate if your plan will include non-flood hazards (as all plans should).

National Flood Insurance Program/Community Rating System Coordinator's Manual, FEMA, 2002. The manual contains detailed information about CRS requirements and credits for a variety of floodplain management activities. To order, see the inside front cover of this document or download it from http://www.fema.gov/nfip/crs.htm.

Planning for a Sustainable Future: the Link Between Hazard Mitigation and Livability, FEMA 364. A short illustrated overview of the principles involved. This booklet includes a list of federal technical assistance and funding sources. It can be downloaded from http://www.fema.gov/fima/planresource.shtm.

Flood Mitigation Planning—The First Steps, Association of State Floodplain Managers, 2001. This is a floodplain management planning kit. It consists of reference materials, masters for handouts, and a two-part video that explains the 10-step process to the general public. It is designed to be shown at the first meeting of a planning committee. Order through the ASFPM website, http://www.floods.org or call (608) 274-0123.

Addressing Your Community's Flood Problems: A Guide for Elected Officials, Association of State Floodplain Managers, 1996. This booklet provides a good explanation of why planning is needed, along with recommendations and first-person testimonials. It is excellent background reading for elected officials. To order, call the ASFPM at (608) 274-0123.

Benefit/Cost Analysis of Hazard Mitigation Projects, FEMA, 1995. This document includes computer software and instructions. It provides a handy tool to determine the economic benefits of alternative projects and is primarily useful when looking at how to best protect a building.

Conceptual Framework and Basic Strategies and Tools for Implementing A Unified National Program for Floodplain Management, FEMA-168, 1989.

Flood Proofing—How to Evaluate Your Options, U.S. Army Corps of Engineers, 1993. Order by calling (918) 669-7197 or check the website of the Corps's National Flood Proofing Committee at http://www.usace.army.mil/inet/functions/cw/cecwp/NFPC/fphow/ace8toc.htm.

Habitat Protection Planning—Where the Wild Things Are, American Planning Association, PAS Report No. 470/471. To order, call the American Planning Association at (312) 786-6344 or check http://www.planning.org/store/.

Holistic Disaster Recovery—Ideas for Building Local Sustainability after a Natural Disaster, Natural Hazards Research and Applications Information Center, University of Colorado, 2001. Download from http://www.colorado.edu/hazards/holistic_recovery/.

A Multi-Objective Planning Process for Mitigating Natural Hazards, FEMA and National Park Service, 1995. This guide is an easy-to-read description of an alternative approach to public involvement in mitigation planning. It includes many examples and materials for conducting an intensive workshop.

Planning for Post-Disaster Recovery and Reconstruction, American Planning Association and Federal Emergency Management Agency, PAS Report No. 483/484, 1998. This report describes steps in the process of community planning for post disaster recovery and reconstruction for all hazards. It contains planning and administrative tools that can be used to facilitate recovery that integrates mitigation and other planning goals, and includes a model ordinance. To order, call APA at (312) 786-6344 or check http://www.planning.org/store/.

Reducing Losses in High Risk Flood Hazard Areas—A Guidebook for Local Officials, FEMA-116, 1987.

Using Multi-Objective Management to Reduce Flood Losses in Your Watershed, Association of State Floodplain Managers and the U.S. Environmental Protection Agency, 1996. This publication reviews the 10-step planning process and coordination of a hazard mitigation plan with other community goals and objectives. It includes examples, references, and lists of sources of assistance. To order, call the ASFPM at (608) 274-0123.

Appendix B

Example Activity Worksheets

Activity worksheets are used to calculate the CRS credit for an activity. They are usually completed by the ISO/CRS Specialist. The examples on the following two pages shows how Gurnee's plan was scored and where each of the 10 steps and credited items appear in that plan.

Although you may not have to complete the activity worksheet, you do need to be able to tell the ISO/CRS Specialist where the credited items appear in your plan or related documents.

Blank worksheets are found in *CRS Activity Worksheets*, which can be ordered from ISO (see inside front cover) or downloaded from FEMA's website, http://www.fema.gov/nfip/crs.htm.

Some communities provide a written explanation of where each item is covered in their plans. An example of this can be found in Appendix A of Lewes's plan.

CRS Activity Worksheet AW-510-1 for Gurnee

OMB No. 3067-0195
Expires February 28, 2005

510 FLOODPLAIN MANAGEMENT PLANNING

Community: Gurnee

511 Credit Points

	Item Score	Step Total
1. Organize to prepare the plan		
a. Supervision or direction of a professional planner: (2)	1-2	
b. Planning committee of department staff: (6)	1-2	
c. Process formally created by the community's governing board: (2)	1-2	
2. Involve the public		
a. Public meeting held at end of planning process (REQUIRED): (2)	11/12/01	
b. Public meetings held at the beginning of the planning process: (8)	N/A	
c. Public information activities encourage input: (4)	1-3	
d. Questionnaires ask the public for information: (4)	1-3	
e. Recommendations are solicited from advisory groups, etc.: (4)	1-2-1-4	
f. Planning committee includes the public: (26)	1-2	
g. Planning committee includes other stakeholders: (24)	N/A	
3. Coordinate with other agencies		
a. Other agencies contacted at beginning of planning (REQUIRED): (3)	1-2-1-4	
b. Meetings are held with representatives of agencies: (10)	N/A	
c. Review of the community's needs, goals, and plans for the area: (3)	4-1-4-4	
d. Draft action plan is sent to agencies for comment (REQUIRED): (2)	mailed	10/29/01
4. Assess the hazard		
a. Plan includes a map and flood hazard description (REQUIRED): (5)	1-5, 2-3, ch 2	
b. The plan describes other natural hazards: (15)	2-23 - 2-28	
5. Assess the problem		
a. Summary of each hazard identified in the hazard assessment and their community impact (REQUIRED): (2)	ch 2, exec summary	
b. Description of the impact of the hazards life, safety and health: (5)	2-10-2-12	
c. Impact the hazards will have on critical facilities: (5)	2-18	
d. Number and types of buildings subject to hazards: (5)	2-14, 5-17	
e. Review of all flood insurance claims: (4)	2-7	
f. Natural and beneficial functions: (4)	2-21-2-20, ch 8	
g. Development, redevelopment and population trends: (5)	2-28-2-30	
h. Summary of the impacts on the community: (5)	ch 2, exec Summary	
6. Set goals (REQUIRED): (2)	chapter 3	
7. Review possible activities		
a. Preventive activities: (5)	ch 4	
b. Property protection activities: (5)	ch 5	
c. Natural resource protection activities: (5)	ch 8	
d. Emergency services activities: (5)	ch 6	
e. Structural projects: (5)	ch 7	
f. Public information activities: (5)	ch 9	

Activity Worksheet AW-510-1 Edition: 2002

CRS Activity Worksheet AW-510-2 for Gurnee

OMB No. 3067-0195
Expires February 28, 2005

Community: Gurnee

	Item Score	Step Total
8. Draft an action plan (Maximum of 70 points)		
a. Recommendations for activities from two of the six categories: (10)	_____	
b. Recommendations for activities from three of the six categories: (20)	_____	
c. Recommendations for activities from four of the six categories: (30)	_____	
d. Recommendations for activities from five of the six categories: (40)	Ch 10	
e. Post-disaster mitigation policies and procedures: (10)	_____	
f. Recommendations from Habitat Conservation Plan: (10)	_____	
g. Action items for mitigation of other hazards: (10)	_____	_____
9. Adopt the plan (REQUIRED): (2)	Adopted 12/3/01	
10. Implement, evaluate and revise		
a. Procedures for monitoring and recommending revisions to plan: (2)	10-8-10-10	
b. Same planning committee does evaluation: (8)	10-8-10-10	
c. Planning committee qualifies under 511.a.2(f) and (g): (25)	_____	_____

Add the step totals for lines 1 through 10 above FMP = _____

Note: If any step total = 0, then FMP = 0.

b. Habitat conservation plan (10) HCP = _____

512 Impact Adjustment:

a. Option 1: rFMP = 1.0

b. Option 2: rFMP = 0.25

513 Credit Calculation:

a. FMP = _____. If any of the step totals in Subsections 511.a.1—10 is 0, then FMP = 0.

b. FMP _____ x rFMP _____ cFMP = _____

HCP cHCP = _____

Add the lines above _____

c510 = value above rounded to the nearest whole number: c510 = _____

Enter this value on AW-720-1.

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514 Credit Documentation:

___ A copy of the adopted floodplain management plan.

___ Documentation showing coordination with other agencies at the beginning of the planning process.

___ A copy of the notice(s) of the public meeting(s).

___ A copy of the minutes or notes from the public meetings.

___ A copy of the cover letter sent to review agencies pursuant to step 3d.

___ Documentation showing the Habitat Conservation Plan was adopted by the governing body.

Activity Worksheet AW-510-2 Edition: 2002

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