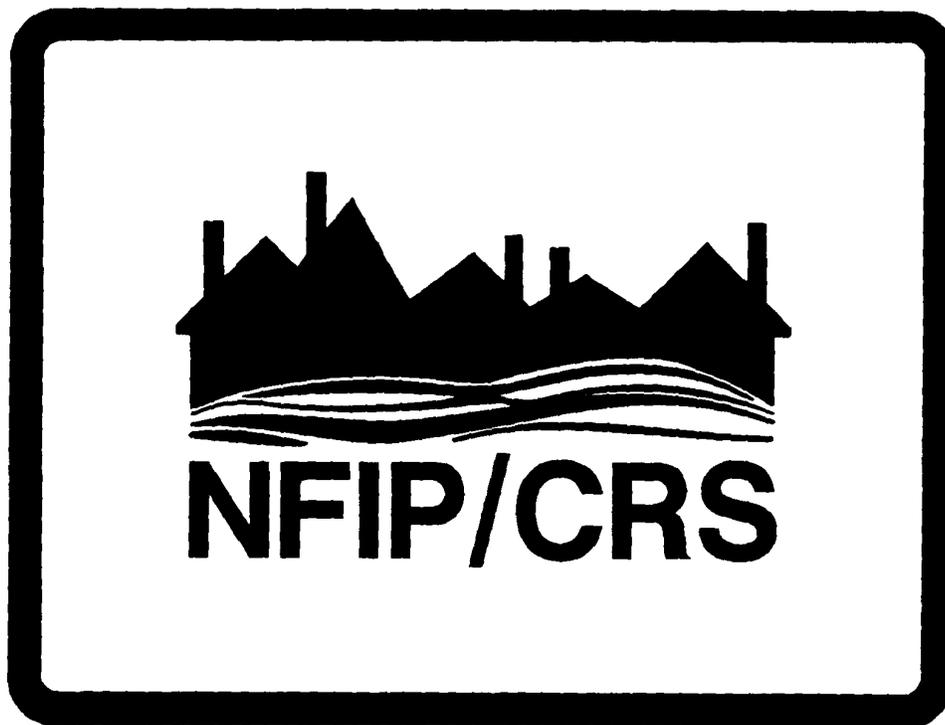


**National Flood Insurance Program  
Community Rating System**



**EXAMPLE PLANS**

**January 1999**

**Note on this January 1999 Edition:** The first section of this document has been updated to incorporate the few changes to CRS Activity 510 (Floodplain Management Planning) that were made and issued in the 1999 *CRS Coordinator's Manual*. The most important change has been the addition of credit for preparing and adopting a Habitat Conservation Plan.

Only two changes were made to the three example communities' plans: four years were added to their dates and the maps were improved. Otherwise, the texts are the same as in previous editions of *Example Plans*.

This document was prepared for the Community Rating Task Force by the Insurance Services Office, Inc., with support from French & Associates, Ltd., and the Association of State Floodplain Managers, Inc.

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

They can also be viewed and downloaded from FEMA's web site, [www.fema.gov.nfip](http://www.fema.gov.nfip)

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# INTRODUCTION

The National Flood Insurance Program (NFIP) provides federally supported flood insurance in communities that regulate development in their floodplains. The Community Rating System (CRS) reduces flood insurance premiums in those communities that do more than implement the minimum regulatory requirements.

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.

Comprehensive planning addresses all of a community's problems more effectively. Accordingly, the CRS encourages this 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, but rather credits plans that have been prepared according to the standard planning process. This credit and the process are discussed in more detail in Activity 510 (Floodplain Management Planning) in the *CRS Coordinator's Manual*.

Many communities have asked for more information on floodplain management plans and for examples of plans that would be credited by the CRS. This document expands on Activity 510, gives more information on the planning process, and provides examples from three fictitious communities.

## Why Plan?

Every community faces a different flood problem. Some communities face life-threatening flash floods or highly destructive hurricanes while others may be subject to slow-moving flood waters from overflowing rivers or shallow flooding from local drainage problems. Similarly, every community has different resources and interests to bring to bear on its flood problems. Because there are many ways to deal with flooding and many state and federal agencies that can help, there is no one solution—no cookbook—for fixing a flood problem.

Many communities deal with flooding with only one or two activities. Every community in the NFIP regulates new development to make sure things do not get worse. Many communities tackle their local drainage problems with storm sewer or drainage construction projects. Communities in high hazard areas usually have flood warning and evacuation programs. However, many communities do not implement as many flood protection activities as they could.

Often communities implement activities that are not coordinated or may even conflict with each other. Here are some examples:

- The street department extends or improves streets into the floodplain while the planning and zoning office is discouraging development there.

- The public works department straightens ditches and lines them with concrete to make them more efficient, while the parks department or neighborhood groups are promoting greenways and natural vegetative approaches to bank stabilization.
- An engineering office collects valuable data on rainfall and stream levels but does not give the emergency manager information to predict the timing or crest of a flood.
- 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.
- Floodplain residents and property owners are not aware of all of the things that are being done to protect them from flooding nor are they aware of the things that they can do to protect themselves or how they can contribute to community and neighborhood efforts.

## **Benefits of Planning**

Planning is one of the best ways to correct these shortcomings. The objective of planning is to produce a program of activities that will best tackle the community's flood problem and meet other community needs. A well-prepared plan will do the following:

- Ensure that all possible activities are reviewed and implemented so that the local flood problem is addressed by the most appropriate and efficient solutions;
- Link floodplain management policies to specific activities;
- 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;
- Educate residents on the flood hazard, flood loss reduction measures, and the natural and beneficial functions of their floodplains;
- Build public and political support for projects that prevent new flood problems, reduce flood losses, and protect the natural and beneficial functions of floodplains;
- Fulfill planning requirements for state or federal assistance programs; and
- Facilitate implementation of floodplain management activities through an action plan that has specific tasks, staff assignments, and deadlines.

A well-prepared plan will guide a community's flood, stormwater, and related activities so that they are implemented more economically and in ways more attuned to the needs and objectives of the community and its residents. A well-prepared plan will result in lower flood losses and improved protection of the floodplain's natural and beneficial functions. This will benefit both the community and the NFIP.

## THE PLANNING PROCESS

This paper provides examples of three local floodplain management plans. They include background discussions, a description of the local flood problem, and recommendations to prevent or reduce flood damage. The three examples show that floodplain management plans can come in a variety of formats and organizational styles. However, the format and organization of a plan is not what is important.

Dwight D. Eisenhower once said, “Plans are worthless. Planning is essential.” This simple phrase says it all. It is not the resulting paper document, but rather the PROCESS of planning that is important. Because each community is different, each floodplain management plan will be different. However, the process they follow should be similar.

The planning process provides a framework within which planners, local officials, residents, engineers, technical experts, and others can work out the details and reach consensus on what should be done. It involves review, research, analysis, discussion, debate, and agreement. It includes getting input from everyone who has relevant information, everyone who is affected by flooding, and everyone who will participate in the implementation of the plan. The process works for all types of plans, such as land use plans, capital improvement plans, neighborhood redevelopment plans, and floodplain management plans.

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 the communities that have followed the planning process to select the best measures for the community and its flood hazard.

CRS credit is based on the 10-step planning process described in subsections a—j in Section 511 in the *CRS Coordinator’s Manual*. Points are assigned for each step based on their relative importance to developing an effective plan. However, no credit is provided unless the planning process includes every step.

<u>Subsection</u>	<u>Step</u>	<u>Max points</u>
a.	Organize to prepare the plan	10
b.	Involve the public	48
c.	Coordinate with other agencies	18
d.	Assess the hazard	10
e.	Assess the problem	35
f.	Set goals	2
g.	Review possible activities	30
h.	Draft an action plan	65
i.	Adopt the plan	2
j.	Implement, evaluate, and revise	<u>10</u>
	Total	230

The plan does not need to be organized according to these 10 steps. However, the community must submit the plan with its submittal for credit and identify where each of the steps was covered. Steps d, e, f, g, and h must appear in the plan document. The other five steps can be

in the plan document or they may be explained in a separate memo and/or supported by other documentation, such as minutes from meetings. The location of each step that is covered in the plan document must be clearly marked.

A plan by another name, such as a post-flood hazard mitigation plan, could receive this credit if it was prepared in accordance with this 10-step process. However, the community must not confuse a plan with an ordinance. An ordinance sets standards for land development and other activities. A plan may include a review of land development standards and procedures, but it should also cover a much broader range of activities.

## a. Organize to prepare the plan

**Staff resources:** The person in charge of the planning process is called “the planner.” Selecting that person is the crucial first step in the planning process. The appointed planner must be officially designated as having the authority to develop the plan. He or she would be responsible for completing the plan in a reasonable amount of time, ensuring its adoption, and monitoring its implementation.

In many communities, this role could be 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 in charge 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 flood preparedness activities. Similarly, land use planners may orient a mitigation plan toward regulatory or land use measures.

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Staff to be Included in Mitigation Planning</b></p> <ul style="list-style-type: none"><li>• Planning/community development (planning direction, coordination with other plans, programs to help residents and businesses)</li><li>• Engineer (flood data, structural measures)</li><li>• Emergency manager (emergency services measures)</li><li>• Public safety/police/fire (emergency services measures)</li><li>• Public works/streets/highways (structural measures, channel maintenance)</li><li>• Building/zoning/code enforcement (regulations, building and property protection)</li><li>• Public information/community relations (property protection measures, public involvement)</li><li>• Parks/forest preserve (acquisition, protection of natural areas)</li><li>• Governing board/manager’s office (political acceptance and adoption)</li></ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The staff members who likely will be responsible for helping implement the plan should be involved in the planning process, because they need to understand what is expected of them and be willing to work toward implementation. Also, the planner will need technical support from engineers and other professional staff who are more familiar with some of the flood mitigation measures.

Therefore, key staff from all affected departments should participate in the planning process. Which members to involve depends on the community's organization and the mitigation measures that will likely be reviewed and/or selected during the planning process.

**The planning committee:** It is strongly recommended that the mitigation planning process be conducted by a planning committee of 10 to 15 people representing the community staff and the public. This structure has proven to be very helpful in providing information on the needs and concerns of the groups, and in keeping the community up to date on how the plan is progressing.

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.

**Meetings:** The head of the planning committee should be chosen for his or her ability to get people to work together and get things done. The planner or other staff member provides administrative support, such as taking minutes and sending out meeting notices.

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.

Scheduling meetings should be done so as to include as many people as often as possible. It can be hard for some members to attend very frequent meetings, and you should not prepare the draft without their input.

**Typical Planning Committee Meeting Schedule**

- 1<sup>st</sup> meeting: organize, orientation to the process, review of flood data
- 2<sup>nd</sup> meeting: hazard area inventory
- 3<sup>rd</sup> meeting: needs and goals
- 4<sup>th</sup> meeting: prevention measures
- 5<sup>th</sup> meeting: property protection measures
- 6<sup>th</sup> meeting: natural resource protection
- 7<sup>th</sup> meeting: emergency services measures
- 8<sup>th</sup> meeting: structural projects
- 9<sup>th</sup> meeting: public information activities
- 10<sup>th</sup> meeting: review of draft plan
- 11<sup>th</sup> meeting: public meeting on draft plan, formal recommendation to the governing board

The committee will likely need subcommittees so participants can spend more time on details that do not need to be discussed during the meetings of the main committee. Usually the chair is given the power to name subcommittees and appoint their members. Determining who has a vote will probably not be necessary, because issues are usually decided by consensus.

One key 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.

### Consensus

One of your goals is to have the various groups reach consensus on procedures, goals, and issues. *Consensus* does not mean majority vote. It means a general agreement or something everyone can live with.

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.

**Later duties:** The planning committee's work is not done 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, and monitoring the community's progress in implementing the action 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.

**CRS credit for step a:** (Maximum credit: 10 points). The credit for this step is the total of the following points, which are based on how the community organizes to prepare its floodplain management plan:

1. 2, if the planning process is under the supervision or direction of a professional planner.
2. 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.
3. 2, if the planning process and/or the committee are formally created or recognized by action of the community's governing board.

The plan itself or a separate explanation needs to document how the community organized to prepare the plan. The planning process will succeed only if the right people and agencies are involved, at the right time. This section discusses organizing technical staff. If the planning committee includes representatives from the public, more credit is provided in the next step.

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 someone with land use planning, community planning, or urban renewal experience may be a professional planner. However, the CRS will not recognize a building official, engineer, or other non-planner acting alone as a professional planner.

Two points are provided if the community’s governing board (e.g., the city council) formally recognizes the planning process. 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.

## **b. Involve the public**

You may see the need for another park, but the site’s neighbors may object to having children playing so close to their homes. An acquisition project may threaten to dismantle a neighborhood. A plan to convert grassy back yards into effective but ugly concrete ditches may bring protests by the score. Getting public acceptance is vital to reduce conflicts and build support for the plan’s recommendations.

### **Advantages of Public Involvement**

- A better fit to local needs
- Strengthened local support
- A more realistic plan
- Fewer misunderstandings
- A shared workload

The planning process will succeed only if the right people are involved. Two groups of people are important: (1) the technical staff of agencies and organizations involved in the solutions, and (2) the public. The technical staff was discussed in the previous step. The public includes:

- owners and renters of floodprone homes,
- representatives of homeowner or neighborhood organizations,
- managers of floodprone facilities, such as businesses, power stations, and schools,
- farmers and others who affect watershed runoff conditions,
- “river watchers,” “Friends of the \_\_\_\_ River,” and members of similar organizations,
- land developers, real estate agents, lenders and others who affect the future of the floodplain and the watershed,
- local watershed councils or associations.

These people have their own concerns and flooding may not be one of their main ones. They should not be viewed as a burden but as people who can help you design an effective program and provide support for it. You can involve them 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 or host a workshop to gather their input and give guidance to the planning committee.
- You can conduct a “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 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 committee proposals will be acceptable to their constituencies.

**CRS credit for step b:** (Maximum credit: 48 points). The term “public” includes residents, businesses, property owners, and tenants in the floodplain and other known flood hazard areas. The credit for this step is the total of the following points based on how the community involves the public during the planning process. **TO RECEIVE CREDIT FOR THIS STEP, THE PROCESS MUST INCLUDE ITEM 1.**

1. 2, for at least one meeting to obtain public input on the draft plan held at the end of the planning process at least two weeks before submittal of the recommended plan to the community’s governing body. 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.

The CRS does not require public hearings. 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. The community’s legal counsel should determine if a public hearing is required.

2. 8, if one or more public meetings are held in the affected area(s) at the beginning of

If the community holds the meetings credited under items b.1 or b.2, it 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.

If very few residents are affected (as may be the case for a plan that addresses only a repetitive loss area), a written record that the residents were called would be sufficient documentation.

the planning process to obtain public input on flood problems and possible solutions.

3. 4, if public information activities are implemented to explain the planning process and encourage input to the planner or planning committee.
4. 4, if questionnaires are distributed asking the public for information on their flood 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 Activity 330 (Outreach Projects). If the plan covers only the repetitive loss areas, they could go to at least 90% of the residents of those areas.
5. 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).
6. 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 511.a.2 and 3, at least one-half of the members must be representatives of the public, preferably from the floodprone areas. 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 the following key steps of the planning process (e.g., at least one meeting on each step):
  - d. Assess the hazard
  - e. Assess the problem
  - f. Set goals
  - g. Review possible activities
  - h. Draft an action plan.

### **c. Coordinate with other agencies**

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 or some of the other 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.

State, regional, and federal agencies may be undertaking flood control or watershed planning. Although such planning initiatives may not address all local issues, they probably will conduct a thorough evaluation of flood control alternatives, which can save you a lot of work.

The second reason to involve outside agencies and organizations is to see if they can help. Help may be in the form of flood 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.

**Who to involve:** At a minimum, your planning effort should contact 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 for flood-related matters and talk to that person. Find out their level of interest in flooding issues and what they are already doing.

Other flood-related agencies and organizations include:

- the soil and water conservation district,
- the U.S. Department of Agriculture agencies that work with watershed property owners (e.g., the Natural Resources Conservation and the Cooperative Extension services),
- regional or metropolitan water, sewer, or sanitary districts,
- the county emergency management or civil defense agency,
- the state natural resources or water resources agency,
- local watershed councils or associations, and
- the district office of the U.S. Army Corps of Engineers.

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.

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.

#### **Identifying Agencies and Programs**

Guidance on references and contacts on floodplain management agencies and programs is available through your State National Flood Insurance Program Coordinator, the Association of State Floodplain Managers at (608) 274-0123, and the Floodplain Management Resource Center at (303) 492-6818.

An excellent source of information is the M.O.M. Resource Directory prepared jointly by the Federal Emergency Management Agency 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. The software is designed to run in Windows and is available free from:

Rivers, Trails and Conservation  
Assistance Program  
National Park Service  
P.O. Box 25287 IMFA-RM-S  
Denver, CO 80225-0287  
(303) 969-2781 fax: (303) 987-6676

Assistance on wetlands issues can be obtained by calling the U.S. Environmental Protection Agency Wetlands Information Hotline at 1-800-832-7828.

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

**CRS credit for step c:** (Maximum credit: 18 points) Other agencies must be contacted to see if they are doing anything that may affect the community's program and to see if they could support the community's efforts. The credit for this step is the total of the following points. TO RECEIVE CREDIT FOR THIS STEP, THE COORDINATION MUST INCLUDE ITEM 4.

1. 3, if the other agencies are contacted at the beginning of the planning process and asked for their input.
2. 10, if meetings are held with representatives of agencies 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.
3. 3, if the planning includes a review of the community's needs, goals, and plans for the area. These should already be identified as part of previous comprehensive planning activities. If not, they should be identified to ensure that the plan's recommendations will be coordinated with other community 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 and local officials are solidly behind economic development, the plan should probably recommend measures other than removing the community's economic base.

4. 2, for sending the draft action plan to the other agencies and asking them to comment by a certain date.

#### **d. Assess the hazard**

The hazard to be addressed by your plan may not be just the floodplain mapped by the Federal Emergency Management Agency (FEMA) or the area covered by the last flood. You will need to identify your planning area of concern. Is it your repetitive loss areas, the whole city, or every flood problem in the watershed? There should be a written description of the location and types of flooding that occur in the area.

**The base flood:** Most planning programs deal with the base flood. This is a statistical concept that considers both the severity of a flood and the likelihood of it occurring. Most of the nation's base floodplains have been mapped by FEMA on Flood Insurance Rate Maps or "FIRMs."

If you want to know what area is at risk of flooding, your community's FIRM will show the base floodplain for larger watersheds. Generally, a FIRM does not include the floodplains from smaller watersheds, such as those that drain less than one square mile.

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*.)

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.

**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,
- areas repetitively flooded (FEMA can provide insurance claims data on this),
- amount of warning time,
- how long the area will stay underwater (*duration*),
- velocities, sediment, debris, and other perils that accompany a flood, and
- whether there are any flood protection projects underway.

Other agencies that may have information on your flood problem are:

- 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, which is 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.

How much time and effort is spent on collecting data depends on the time and resources available. However, the planning process should not be delayed while waiting for more data in order to develop a highly detailed problem description.

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.

**Other hazards:** A good plan should integrate consideration of other hazards besides flooding. These can include natural hazards, such as hurricanes, earthquakes, tornadoes, ice storms,

drought, and wildfire, and “technological” hazards, such as releases from chemical plants and hazardous materials spills.

Most of these hazards are not site specific. However, some technological hazard sites may be in the floodplain. When they are flooded, the danger and damage caused by a flood is greatly increased. The local and county emergency management office has more information on these hazards and what is currently being done to protect people from them.

**CRS credit for step d:** (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. TO RECEIVE CREDIT FOR THIS STEP, THE ASSESSMENT MUST INCLUDE ITEM 1.

1. 5, for including the following in the plan:
  - a. 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.
  - b. a description of the known flood hazards, including source of water, depth of flooding, velocities, and warning time, where such data are available.
  - c. a discussion of past floods, where such data are available.
2. 5, if the plan includes a map and description of other natural hazards, such as erosion, tsunamis, earthquakes, and hurricanes.

The hazard assessment needs to describe the local flood hazard and not be a broad or generic discussion of flooding in general. Because the most important readers are elected officials and floodplain residents, the descriptions of the hazards should be in lay terms.

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 items d.1.a, b, and c are included in the hazard assessment for that area. The impact adjustment will adjust the credit points to reflect that not all of the community’s flood problems are covered in the plan.

## **e. Assess the problem**

The previous step assessed the flood hazard. A flood hazard area may or may not have flood problems. Flooding is a natural occurrence. A floodplain is only a problem if human development gets in the way of the natural flooding. In this step, the community planners or planning committee members collect and summarize data on what is at risk from flooding. An inventory is needed to ensure that all problem areas are addressed by the plan.

Getting everyone to agree on a problem statement is the first step in getting them to agree on goals and solutions. The problem description should include a map or series of maps of the area of concern that can be updated as more information is made available. It should also have a discussion of the impact of flooding.

**Flooded buildings:** A count of the number of buildings affected by each type of flooding is necessary to inform 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 or local landmark 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 dictate 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 insurance claims records will have data on insured buildings that were flooded.
- Disaster assistance agencies will have data on damage to buildings that applied for financial assistance.
- 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.



Use of flood insurance claim and disaster assistance information is subject to the Privacy Act, which prohibits public release of the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance. However, maps showing *areas* where claims have been paid can be made public. The data can be used for internal planning and can be very helpful in identifying problem areas that may not be apparent on a floodplain or drainage map.

Large-scale, community-wide maps and general information are usually sufficient for a community mitigation plan (see the McLake example). 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. This information is particularly valuable if a large acquisition or structural flood control project has been judged not feasible.

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

- roads, bridges, and transportation facilities closed during a flood,
- critical facilities affected (e.g., hospitals damaged or isolated),
- areas of repetitive flooding (Category C repetitive loss communities must base their plans on where repetitive insurance claims have been paid),
- flood protection measures in effect or

under construction,

- what happened in past floods,
- undeveloped areas and wetlands that have natural and beneficial functions.

### **Example Problem Statement for McLake**

1. The base flood on Crows Branch affects 150 homes and 12 businesses. This is the area mapped as "Zone A." There are about two hours of warning time on Crows Branch at the upstream city limits.
2. The Crows Branch floodway downstream of the railroad is subject to average flood velocities greater than five feet per second and is considered a high hazard area. There are seven houses in this area that are deteriorating. Some are vacant.
3. Repetitive flooding of Tributary A of Crows Branch affects 12 homes in the Thomas Subdivision. This area faces the greatest and most frequent damage from flooding and is designated priority area #1.
4. The Montrose shopping center was built in a depression and floods on the average once every other year during heavy rains, resulting in damage to inventories and parked cars, lost business, and a threat to public health. It is designated as priority area #2.
5. The Rescue Squad office, the wastewater treatment plant, and the Baltimore and Second Street bridges are floodprone critical facilities.
6. Although only flooded once in the last 40 years, the impact of flooding on the wastewater treatment plant is so great that it is designated as priority area #3.
7. Sewer backup and poor local drainage are problems for buildings with basements and split-level homes throughout town.
8. Gorman Woods is a unique asset with recreational and educational benefits that should be preserved and protected.
9. Flooding and stormwater problems can be expected to worsen if current watershed development practices continue.

A plan needs to discuss the other objectives besides protection from natural hazards. During this phase of the planning process, you should be involving people with other interests, such as recreation, water quality, economic development, and historic preservation. Some of them may have already prepared plans or written problem statements that they can give you.

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.

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.

**CRS credit for step e:** (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 impact of flooding on the community. TO RECEIVE CREDIT FOR THIS STEP, THE ASSESSMENT MUST INCLUDE ITEM 1.

1. 2, for including the number and types of buildings subject to the hazards identified in the hazard assessment. The inventory must include how many and what types of buildings are affected (e.g., residential, commercial, industrial, with or without basements, etc.). In smaller communities, exact counts can be made using aerial photos or windshield surveys. In larger communities, these numbers will likely be approximate.
2. 5, if the assessment includes a review of ALL properties that have received flood insurance claims (in addition to the repetitive loss properties),
3. 6, if the plan includes a description of the impact that past or predicted flooding has on buildings, infrastructure, and public health and safety. The information usually can be obtained from post-flood damage assessment reports, flood insurance claims, disaster assistance data, and flood control studies. Emergency management offices and FEMA may be able to help locate such data.
4. 3, if the plan describes the need and procedures for warning and evacuating residents and visitors.
5. 4, if the plan identifies critical facilities, such as hospitals, fire stations, and chemical storage companies.
6. 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.
7. 5, if the plan includes a description of development, redevelopment, and population trends and a discussion of what the future brings for development and redevelopment in the floodplain, the watershed, and natural resource areas.

8. 6, if the plan includes a summary of the impact of flooding on the community and its economy and tax base.

## f. Set goals

Up to now, the planning work has been relatively noncontroversial. You have been talking to agencies and organizations and collecting and recording facts. Now comes the tough part—getting people to agree on what should be done.

Goals are general statements of direction, such as “reduce flood damage to existing buildings” or “improve recreational opportunities.” Action items are more specific targets. They are addressed in Step h. Examples of action items that support these two goals could be “acquire and relocate 10 homes on Small Creek between 1<sup>st</sup> and 3<sup>rd</sup> Streets” and “double the number of boat slips so more people can use the lake.”

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

**Reaching agreement:** It may take a long time to reach consensus on specific goals as they relate to particular areas or individual properties. However, the time spent is well worth it, because this is vital to gaining agreement and cooperation from everyone who is affected.

It helps if goals are positive statements, something people can work for, rather than 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, “agreement” means consensus or 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.

### Example Goal Statements for McLake

- Protect the buildings in priority areas #1 and #2.
- Ensure that the wastewater treatment plant and the Rescue Squad can continue to operate during the 500-year flood.
- Preserve Gorman Woods from development or uses that will disturb habitats.
- Help property owners protect themselves from local drainage and sewer backup problems.
- Prevent new development in the watershed from increasing runoff and resulting increases in flood flows into the city.
- Ensure that residents are given adequate warning of floods.

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 this simple approach:

- Have everyone write their goals down.
- Post them for all to see, combining those that are the same or similar.
- Restate them in summary form, using positive statements.
- Identify those that everyone can agree on.
- Discuss what problems people have with the ones that are left.
- See if agreement can be reached if some words are changed.

If this approach doesn't work, you have two options: either drop the more detailed statements and get consensus on the general goals or invite an experienced facilitator to help you move through a formal process of consensus building. You may want to line up a facilitator in advance so you don't lose your momentum or spend a lot of time arguing over details.

A 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 numerous exercises and other ways to identify common concerns and minimize differences. They are skilled in separating issues and interests from discussions of people and positions. They can build an atmosphere in which give and take is easier and productive.

**CRS credit for step f:** (Maximum credit: 2 points). The two credit points for this step are provided if the plan includes a statement of the goals of the community's floodplain management program.

## **g. Review possible activities**

Many different measures can be brought to bear on the flood problem and help meet other objectives. The objective of this step is to ensure that all possible ones are explored, not just the traditional approaches of flood control, acquisition, and regulation of land use.

**How to review:** The section headings in Figure 510-1 on the next page should be used as a checklist to ensure that everything is considered. No measure should be discarded until you are sure you understand what is involved. Questions about technical aspects or agency programs can be handled during coordination with other agencies and organizations.

While some of the measures may be quickly eliminated as inappropriate, most deserve careful consideration, especially to ensure full understanding of how they work and their costs and benefits. You and your fellow planners should systematically review each possible measure, discarding it only after these questions are answered in the negative:

- Is the measure technically appropriate for the flood hazard?
- Does it support any of your goals?
- Do its benefits equal or exceed its cost?

- Is it affordable?
- Do you know where the money will come from?
- Will it comply with all local, state, and federal regulations?
- Does it have a beneficial or neutral impact on the environment?

In some cases, answers will not be readily available—especially when a large structural project is being considered. Questions about technical aspects or agency programs should be directed to experts from the agencies or organizations.

**Funding:** Money is often the most important issue in reviewing alternatives. Two questions arise: “Is the project worth the expense?” and “Where can we get the money?”

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.

Two references on comparing benefits and costs are the Corps’ *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 FEMA uses it to determine if a project should be funded under several of its programs. **NOTE:** AN ECONOMIC REVIEW OF BENEFITS AND COSTS OR A SYSTEM USED BY ONE AGENCY SHOULD NOT BE THE SOLE DETERMINANT OF WHETHER A PROJECT IS RIGHT FOR YOUR SITUATION.

Where can you get the money? This is where agencies and organizations can be of great assistance. There are literally hundreds of public and private programs that can help fund worthy projects. They usually have several prerequisites, such as a written plan, a budget and an explanation of the benefits.

1. **Preventive** activities keep flood problems from getting worse. The use and development of floodprone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices.
  - Planning and zoning
  - Open space preservation
  - Floodplain regulations
  - Stormwater management
  - Drainage system maintenance
  - Dune and beach maintenance
  
2. **Property protection** activities are usually undertaken by property owners on a building-by-building or parcel basis. They include:
  - Relocation
  - Acquisition
  - Building elevation
  - Floodproofing
  - Sewer backup protection
  - Insurance
  
3. **Natural resource protection** activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are usually implemented by parks, recreation, or conservation agencies or organizations.
  - Wetlands protection
  - Erosion and sediment control
  - Best management practices
  - Coastal barrier protection
  
4. **Emergency services** measures are taken during a flood to minimize its impact. These measures are the responsibility of city or county emergency management staff and the owners or operators of major or critical facilities.
  - Flood warning
  - Flood response
  - Critical facilities protection
  - Health and safety maintenance
  
5. **Structural projects** keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.
  - Reservoirs
  - Levees/floodwalls/seawalls
  - Diversions
  - Channel modifications
  - Beach nourishment
  - Storm sewers
  
6. **Public information** activities advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.
  - Map information
  - Outreach projects
  - Real estate disclosure
  - Library
  - Technical assistance
  - Environmental education

**Figure 510-1. Floodplain Management Activities.**

Start by talking to the agencies listed in the *M.O.M. Resource Directory* (see page I-10). One project can be funded by several different parties, each of which is serving one or more objectives. Often, they can fund only a part of the project and they favor those projects that have other sources of funding. In other words, they want their money to go as far as possible, so they will support multi-objective projects.

Don't forget local sources. Businesses and organizations will frequently support projects that benefit their customers, employees, or members, or those that make for good advertising. Lots of projects can be direct financial benefits. For example, why should a business build a lunch room for its staff if it can have a picnic area across the street?

And, don't forget "in-kind services." You may not need cash to get some things done. 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 an outside source of funds.

**Go for a balanced program:** The 10-step planning approach ensures balance in tackling flood 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 the area will be flooded before the project is completed.

Although most attention is usually focused on reducing flood 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 to protect existing development, manage new development, and protect natural and beneficial floodplain functions.

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

For example, after a flood there is a strong tendency 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.

**CRS credit for step g:** (Maximum credit: 30 points) The plan must describe those activities that were considered and note why they were or were not recommended. 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 activities are reviewed in the plan.

1. 5, if the plan reviews preventive activities, such as floodplain and stormwater management regulations and preservation of open space and the effectiveness of current regulatory and preventive standards and programs.

2. 5, if the plan reviews property protection activities, such as acquisition, floodproofing, and flood insurance.
3. 5, if the plan reviews activities to protect the natural and beneficial functions of the floodplain, such as wetlands protection.
4. 5, if the plan reviews emergency services activities, such as flood warning and sandbagging.
5. 5, if the plan reviews structural projects, such as reservoirs and channel modifications.
6. 5, if the plan reviews public information activities, such as outreach projects and environmental education programs.

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

## **h. Draft an action plan**

Only after assessing the problem, setting goals, and reviewing all the possible solutions, can you begin to select the most appropriate actions to be recommended. This effort culminates in the written plan—a series of recommendations detailing what will be done, by whom, and when.

The plan can be in most any format. However, at a minimum, it should include three things:

1. **A description of how the plan was prepared.** This helps readers (and potential funding agencies) understand the background and rationale for the plan and how public input was obtained.
2. **Recommendations for action.** The plan should clearly identify what will be done, by whom, by when, and how it will be financed. It can be a list of projects and project assignments—the more specific, the better.
3. **A budget.** The plan should explain how its recommendations will be financed. It should note those recommendations, such as policies and public information activities, that can be implemented as part of a community's or organization's normal operations without special funding.

**CRS credit for step h:** (Maximum credit: 65 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.

1. 10, if the action plan includes recommendations for activities from two of the six categories listed in Figure 510-1.
2. 20, if the action plan includes recommendations for activities from three of the six categories listed in Figure 510-1.
3. 30, if the action plan includes recommendations for activities from four of the six categories listed in Figure 510-1.
4. 40, if the action plan includes recommendations for activities from five of the six categories listed in Figure 510-1.
5. 10 additional points are provided if the action plan establishes post-disaster mitigation policies and procedures. These should account for the expected damage from a base flood or other disaster. For example, the action plan should identify the areas likely to be worst hit and the policies should determine whether they will be rebuilt if substantially damaged.
6. 10 additional points are provided if the action plan's recommended natural resource protection activities include the recommendations from its community-wide Habitat Conservation Plan. This credit is subject to acceptance of the plan by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

**Example Plan Organization**

1. Introduction
  - a. Why there is a plan
  - b. How it was prepared
  - c. Who was involved
2. Problem Description
  - a. Flooding
  - b. Recreation needs
  - c. Fish and wildlife
  - d. ...etc...
3. Goals and Objectives
4. Alternative Measures
5. Recommended Measures
  - a. Measure #1
    - i) Description
    - ii) Objectives supported
    - iii) Who is responsible
    - iv) When it must be done
    - v) Who can help
    - vi) Budget
  - b. Measure #2
    - i) Description
    - ii) ...etc...
6. Implementation and Evaluation
  - a. Adoption
  - b. Implementation schedule
  - c. Monitoring
  - d. Evaluation and revision

There is no requirement that a floodplain management plan identify expensive or massive structural flood control projects. The plan should recommend only those activities that the community can be assured will be implemented, either through its own resources or confirmed outside support. Many of the activities could receive CRS credit once they are implemented.

Credit is provided for a recommendation on floodplain regulations, provided it recommends a regulatory standard that exceeds the minimum requirements of the NFIP. Habitat Conservation Plans are discussed on page I-26.

## i. Adopt the plan

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

Step b., Involve the public, requires that a public meeting be held on the draft plan at least two weeks before submittal of the recommended plan to the community's governing body. After the meeting, the planning committee should make appropriate changes to the plan.

It always helps to get support from other entities. For example, a plan with recommendations on watershed management could go to the soil and water conservation district for a vote of adoption or support. If planning committee members were selected to represent a particular interest or organization, those organizations should pass a resolution or otherwise officially support the plan.

The city council will probably act more favorably on a plan that has the written support from the chamber of commerce and neighborhood organizations. 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 FEMA funding should have a letter of support from the state emergency management agency and/or the State NFIP Coordinator.

**CRS credit for step i:** (Maximum credit: 2 points) The 2 credit points for this step are provided if the plan and later amendments are officially adopted by the community's governing body. The plan must be an official plan of the community, not an internal staff proposal. State and regional plans are not adequate unless they specifically address the community's flood hazards and the community's governing body adopted the plan. Adoption must be in the form of a resolution, ordinance, or other official act of the governing body.

## j. Implement, evaluate, and revise

Adoption by the various governments is not the last step in the planning process. You will probably have to do some monitoring and follow up to ensure that it will be implemented.

**Implementation:** The key to successful implementation is that all the people responsible for the various 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. It would help greatly if the plan (or the governing board's resolution of adoption) clearly identified a person responsible for each recommendation.

### Be Prepared

A good example of flexible implementation is Plainfield, Illinois. In 1990, a tornado destroyed 20 buildings in the village's floodway. Federal disaster assistance and state flood protection funds were made available to buy the properties and convert the damaged floodway lands into open space.

It is also helpful to associate the recommendations with the plans and activities of the implementing agency or organization. For example, people responsible for specific recommendations could have the duties included in their job descriptions or performance plans.

It is recommended that the plan identify some very visible but inexpensive projects that can be quickly implemented. This helps reassure the public and the planning committee participants that something is being done. Examples are locally funded projects (because they typically get done the quickest), such as a stream cleanup or distribution of public information materials.

**Monitoring:** No plan is perfect. As implementation proceeds, flaws will be discovered and changes will be needed. Your plan should have a formal process to measure progress, assess how things are proceeding, and recommend needed 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 in working 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, such as the governing board or an oversight committee.

**Evaluation:** Even with full implementation, the plan should be evaluated in light of progress and changed conditions. Your planning committee could meet periodically to review progress and submit its recommendations to the agencies and organizations responsible for implementation.

While a plan will usually produce the best and most efficient program, a community should be ready to act fast to take advantage of opportunities provided by disasters, extra end-of-the-year money, changes in one of the non-flood concerns, or heightened public interest due to flooding elsewhere. There may be a chance to effect major changes quickly.

**CRS credit for step j:** (Maximum credit: 10 points) The credit for this step is the total of the following points based on how the community monitors and evaluates its plan.

1. 2, if the community has procedures for monitoring implementation, reviewing progress, and recommending revisions to the plan in an annual evaluation report. The report must be submitted to the governing body, released to the media, and made available to the public.
2. 8, if the evaluation report is prepared by the same committee that prepared the plan.

To maintain this credit, the community must submit a copy of its annual evaluation report with its recertification each year. FAILURE TO SUBMIT THE EVALUATION REPORT WITH THE ANNUAL RECERTIFICATION WILL RESULT IN LOSS OF THE CRS PLANNING CREDIT. Loss of credit for this activity will cause a repetitive loss Category C community to revert to a Class 10.

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.

## **k. Habitat conservation plan**

Community-wide Habitat Conservation Plans are “broad-based, landscape level planning tools” that identify steps that reduce conflicts between land development activities and the need to protect threatened or endangered species. They can prove very useful in providing ways for development to comply with the Endangered Species Act and to reduce the costs of conservation activities on individual property owners.

The U.S. Fish and Wildlife Service or the National Marine Fisheries Service have developed guidance for Habitat Conservation Plans. As with floodplain management plans, the process is more important than the document. FEMA and CRS encourage communities to go through the process of developing a program to minimize the impact of new development on the habitat of endangered and threatened species.

More information on habitat conservation plans can be found in *Habitat Conservation Planning Handbook*, U.S. Fish and Wildlife Service and National Marine Fisheries Service, November 1996. See Appendix F in the *CRS Coordinator’s Manual* for the appropriate office of the Fish and Wildlife Service.

**CRS credit for a Habitat Conservation Plan:** (Maximum credit: 10 points) The CRS provides 10 points for adopting a community-wide Habitat Conservation Plan. This credit is subject to acceptance of the plan by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. The credit is separate from the rest of the credit in Activity 510 for preparing a floodplain management plan.

## CRS CREDIT FOR FLOODPLAIN MANAGEMENT PLANNING

Activity 510 (Floodplain Management Planning) of the *CRS Coordinator's Manual* explains how to credit and score a community's floodplain management planning effort. The points for each step are noted in the previous section. Some points are needed for each of the 10 steps a - j in order to get any credit for a floodplain management plan. The credit for a habitat conservation plan under step k is separate.

### Worksheets

A community's first application for a CRS classification is submitted using worksheet pages from the *CRS Application*. The credit criteria for Floodplain Management Planning are briefly covered on pages 35–37 in the *Application*. The application is submitted using page 36 of the *CRS Application* along with the documentation described below. A blank copy of this page is found at the end of the *CRS Application*. An example is on page H-11.

Because the credit criteria are not explained in detail in the *CRS Application*, the total score provided is only 25 points. If a community's application has at least 500 points for all of its activities, a verification visit is scheduled. At that time the community's verified or final score is calculated.

Subsequent requests for credit are called modifications. Modifications use two activity worksheets, AW-510 and AW-511 along with the documentation described below. A community may also opt to use the *CRS Calculation Software* which calculates the points and prints the worksheets. The *CRS Application*, the software and the paper activity worksheets can be ordered using the form in Appendix E of the *Coordinator's Manual* (or by contacting the office listed on the inside of the front cover of this publication).

The worksheets are also used by the ISO/CRS Specialist to calculate the community's verified credit. Because the *Coordinator's Manual* and the activity worksheets provide the detailed credit criteria, the verified score for Activity 510 can be up to 230 points. The three example plans provided in this paper use the two activity worksheets to show the CRS credit calculations (see pages P-21 through P-22, S-27 through S-28, and H-12 through H-13).

### Credit Calculation

There are four steps to calculating a community's CRS credit for Activity 510.

1. **Add up the community's points for each of the 10 steps a—j in the planning process.** This is explained in Section 511 of the *CRS Coordinator's Manual* and is shown in Section 511 of AW-510 and 511. The total is represented by the variable "FMP" for "Floodplain Management Planning." REMEMBER, YOU MUST HAVE SOME POINTS FOR EACH OF THE 10 STEPS IN ORDER TO GET ANY CREDIT FOR ACTIVITY 510.

2. **Calculate the impact adjustment.** This step adjusts the credit to reflect how much of the community's flood problem is addressed by the plan. This is explained in Section 512 of the *CRS Coordinator's Manual* and is shown in Section 512 of AW-510 and 511. Option 1 is used if the plan covers all of the known flood problems, in which case the impact adjustment ratio is 1.0. This is represented by the variable "rFMP" where the "r" stands for "ratio."

If the plan does not cover the entire flood problem then Option 2 is used and  $rFMP = 0.25$ . This means that the community will get 25% of the credit. If the plan covers significantly more than 25% of the flood problem, the ISO/CRS Specialist can calculate a larger value for rFMP during the verification visit.

3. **Calculate the score for the habitat conservation plan (HCP).** This will be either 0 or 10 depending on whether the community has a plan that has been accepted by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. There is no impact adjustment for this credit.
4. **Calculate the total score.** In the fourth step, the credit points for FMP are multiplied by the impact adjustment ratio, rFMP. This is explained in Section 512 of the *CRS Coordinator's Manual* and is shown in Section 512 of AW-510 and 511.  $c510 = FMP \times rFMP$  where the "c" stands for the credit points for Activity 510 (Floodplain Management Planning). These points are added to the score for the habitat conservation plan (HCP) to obtain the total points for Activity 510.

## Credit Documentation

Section 514 on the *CRS Application* worksheet page 36 and on AW-511 is a checklist for the documentation listed below. These items are needed to confirm that the community's program meets the CRS credit criteria. The first three go with the community's submittal, either with the initial application or with a subsequent modification. The fourth item is submitted each year with the community's annual CRS recertification.

**a. The plan:** The plan must meet the requirements of the planning process spelled out on pages I-3 through I-25. If the community already has a floodplain management or similar plan that meets these criteria, it need not prepare a new one just for CRS credit. However, the community must show that the planning process was followed. While some of the steps can be explained in a separate memo (see example, pages P-18 through P-19), the following must appear in the plan document:

- Step d. The hazard assessment
- Step e. The problem assessment
- Step f. Goals of the floodplain management program
- Step g. The review of possible activities
- Step h. The action plan

**b. Notice of public meeting:** The submittal must include a copy of the notice(s) advising floodplain residents about the meeting(s) held pursuant to Step b. The notice(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 appearing 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 small repetitive loss area, a written record that the residents were called would be sufficient documentation.

**c. Plan acceptance:** Documentation showing that the plan has been adopted by the community's governing body is needed. Normally a plan is adopted by a formal resolution of the city council, county board, or other governing body. A copy of the resolution or a copy of the minutes for the meeting are appropriate documentation to show that the plan was officially adopted. The documentation could also be a certification from the community's clerk that the plan was adopted.

If the community is requesting credit for its habitat conservation plan, the documentation must also show that it has been accepted by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

**d. Progress report:** Each year, a CRS community must submit its annual CRS recertification to FEMA. This submittal must include an annual report on evaluating 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 the credit for its floodplain management planning.

If the community fails to submit an annual progress report with its recertification, there is no planning credit (c510 = 0). Failure of a Category C repetitive loss community to submit its progress report each year will mean the community will become a Class 10 and lose its CRS insurance premium credits.

If the community uses Option 1 for the impact adjustment ratio rFMP, 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. Where possible, the action items and progress toward them should be measurable (e.g., "five of the six lots slated for acquisition were purchased" or "we improved one mile of stream channel").
- A discussion of why any action items were not reached or why implementation is behind schedule.
- Recommendations for new projects or revised action items. For example, if fewer people requested technical advice than expected, the next year's plan might have a smaller target number. If the original plan's projects or objectives are changed, the evaluation report or a plan amendment must be adopted by the governing body.

If the community uses Option 2 for the impact adjustment ratio rFMP, it may provide the same written report or it may use the activity worksheet AW-512 as the basis for its annual progress report. An example of this is on pages H-16 through H-17.

The submittal must include other documentation as needed to demonstrate that the evaluation report was prepared in accordance with the credit granted under step j. For example, documentation is needed to show that the report was released to the media, made available to the public, and/or prepared by the same planning committee that prepared the plan.

## **Repetitive Loss Plans**

A repetitive loss property is one for which two or more flood insurance claims of at least \$1,000 each have been paid within any 10-year period since 1978. A Category C repetitive loss community has 10 or more repetitive loss properties. Determining a community's repetitive loss category is explained in sections 501—503 in the *CRS Coordinator's Manual*.

Because repetitive flooding accounts for approximately 35% of all flood insurance losses, Category C repetitive loss communities must prepare floodplain management plans for their repetitive loss areas. The CRS no longer provides separate credit for “repetitive loss plans.” A Category C community can either prepare a floodplain management plan for all of its known flood problem areas, in which case the impact adjustment (rFMP) is 1.0, or it can prepare one that covers just its repetitive loss areas. If it chooses the latter approach, the impact adjustment is 0.25.

While a comprehensive approach to all known flood problems is encouraged, some communities may be able to only address the mandated repetitive loss areas. The Hill County plan is an example of this.

## EXAMPLE COMMUNITIES

The rest of this publication offers example plans from three communities. After each plan are the activity worksheets and documentation needed for CRS credit.

The objective of these examples is to convey the process followed and an idea of the variety of activities that should be considered. They are not meant to include everything that could possibly be included in a plan, to specify the style or organization of a plan, or to dictate what activities a community should implement.

Although they are fictitious, all three communities' histories, growth patterns, and flood hazards are typical of thousands of communities participating in the NFIP. The plans' recommended activities are realistic and would be effective in preventing and reducing flood losses.

These three communities and their flood problems may appear too simple. For example, the two small cities' floodplain maps can fit on one page. Their land use maps have only four or five land use categories. This simplification was done intentionally to help the reader focus on the planning process.

**Planton.** Planton has a riverine flood problem that was addressed by a planning committee during a 12-month planning process. Its Flood Protection Plan was adopted before the town heard of the CRS. It had been implementing its plan for a year before it applied for a CRS classification. It had to prepare a separate memo to explain how its process followed the 10 planning steps.

**Sand Island.** Sand Island is a Florida coastal community that was hit by a hurricane. When its Hazard Mitigation Plan was prepared, a concerted effort was made to maximize post-disaster funding possibilities and CRS credit points. However, this did not deter the staff from preparing a plan that meets the city's needs, including activities that are not credited by the CRS.

**Hill County.** The third community is a western county. Hill County wanted to receive a CRS classification. Because it has more than 10 repetitive loss properties, it must prepare a plan that covers its repetitive loss area.

For the most part, these three communities' activities are new. This is because local officials either had not addressed their flood problems or they had only considered flood control projects. The planning process worked: people reviewed the variety of activities that can affect flooding and decided to support more than one way to prevent and reduce flood losses.

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