Chapter 3

PARTICIPATORY PROCESSES IN DISASTER RECOVERY

At no time is the opportunity for public involvement in decisiomaking greater than than when a community is faced with the practical problems of recovering from a disaster.

INTRODUCTION

Engaging the public, in one way or another, is crucial to achieving a holistic or sustainable recovery from a disaster. This chapter focuses on how people who do not have professional or political responsibility for holistic recovery might be engaged in the decisionmaking process.

Why and how a local recovery team is trying to accomplish holistic disaster recovery will determine the forms of participatory processes that it considers using. This chapter is not a collection of how-to-build-it kits for the myriad of forms that could be constructed—there are many sources of information and expert assistance on how to do that. Its focus is on understanding the reasons for and against seeking participation in different circumstances, selecting approaches and techniques, and overcoming the obstacles that may present themselves.

UNDERTAKING A PARTICIPATORY APPROACH

Participation can be thought of as one of three forms of communication in public involvement.

- **Notification** is when the responsible authority tells people something.
- **Education** is when that authority explains the options to people.
- **Participation** is when that authority asks people what they think (City of Denton, 1999).

It is essential to match the goal of the communication with the form.

Taking on a participatory approach requires conviction and commitment on many fronts—financial, public, and political. There must also be a commitment on the part of the recovery team and local decisionmakers to actually incorporate the public input into the decisionmaking process. Processes that fail to satisfy participants have long-term consequences for working relationships within a community and can set the community back from its goal of

achieving sustainability. Public buy-in is essential to avoid making decisions in the immediate aftermath of a disaster that may compromise what the community might achieve in the long term (Schwab et al., 1998).

Rationale for a Participatory Process in Holistic Recovery

The recovery phase of the disaster cycle may well be a time when people are more open to messages about change (Birkland, 1997; Schwab et al., 1998). For example, in the aftermath of Hurricane Fran in 1996, the county of New Hanover, North Carolina, set up a partnership with the business community for education and awareness programs and to promote the development of business continuity and employee preparedness plans (North Carolina Department of Crime Control and Public Safety, 1999). In the aftermath of the 1991 Oakland fire, the fire hazard was reduced by using non-combustible roof materials, placing utilities underground, and limiting flammable vegetation (Platt, 1999). Actively shaping the message about disaster recovery may actually strengthen people's commitment to make the necessary changes.

The Recovery Phase and a Participatory Process

A community-wide participatory process is unlikely to be feasible in the immediate aftermath of a disaster because people are occupied with immediate, basic needs. Also, it takes time for leaders to set up a constructive process. In the case of the Vermillion Basin, South Dakota (discussed in some detail below), the participatory process took place a year after the catalytic 1993 flood.

The immediate aftermath of a disaster does, however, provide an opportunity to build support for both recovery leading to sustainability and for participating in a process to make it happen. Discussion may be promoted through existing media channels, such as radio, television, and newspaper. It may also be encouraged in flyers that people receive from agencies providing disaster assistance.

Forms of Participation

Community leaders can choose different forms of participation. Steelman and Ascher (1997) categorize public participation in policymaking into four broad types:

- **Standardized representative policymaking:** elected and appointed officials make policy on behalf of their constituents, reflecting some combination of their views, preferences, and interests. For example, the City of Oakland approved the Oakland Hills Fire Prevention and Suppression Benefit Assessment District two years after the devastating 1991 Oakland Hills fire. The district included about 20,000 lots in all of Oakland's hill areas. The intent was to work within the existing social, economic, and environmental context to reduce future devastation from wildland fires. Three of the group's explicit objectives were
  - To provide public information materials and training to District residents regarding proper fire prevention practices;
  - To encourage the creation of an active partnership between the City and affected property owners to meet the goals and objectives of the fire suppression programs; and
  - To involve affected residents in the planning and administration of the District via a Citizen Advisory Commission (Topping, 1992).

- **Referenda:** direct binding policymaking by citizens, established through constitutional provisions such as initiative, referendum, and recall. One form of participation through the ballot box is for citizens to approve a general obligation bond. In the summer after the 1991 Oakland Hills fire, the citizens of Oakland passed Measure I. For 30 years bond proceeds are to fund capital improvements and equipment for water supply, seismic reinforcement for fire stations, emergency vehicles access, construction of an Emergency Operations Center, and communication upgrades (Topping, 1992).

- **Non-binding direct involvement:** citizens contribute input to the deliberative process, the outcome of which is mediated by an administrative or legislative body; these include public comment periods, hearings, open meetings, and some citizen advisory commissions (Steelman and Ascher, 1997). Community leaders may choose to share the problem separately with segments of the public or to meet with the public as a single entity (Thomas, 1995). For example, the mayors of Oakland and Berkeley created a Task Force on Emergency Preparedness and Community Restoration one week after the 1991 Oakland Hills fire. The task force included citizens, including those whose homes had burned, local government officials, university faculty, utility employees, and local business people. The task force made proposals to the cities. According to Platt (1999) some proposals were adopted, such as increasing the training and use of local volunteers to identify fire hazards and fight small fires. Others, such as limiting the density of homes in fire-prone areas, were not approved.

- **Binding direct policymaking by non-governmental representatives:** citizen or group representatives formulate policy, but operate within structures overseen by elected or appointed officials (Steelman and Ascher, 1997). Community leaders share the problem with the assembled public, and together they attempt to reach agreement on a solution (Thomas, 1995). The Vermillion River Basin multi-objective flood mitigation planning process discussed in detail later in this chapter reflects this form of participation.

Most participatory processes for sustainable local recovery fall into the latter two categories. Binding direct policymaking by non-governmental representatives gives community participants the greatest latitude in shaping the options with which they will be living.

Deciding among Participatory Approaches

Negotiation is at the heart of all participatory processes. People are invited to participate based on the understanding that they are embarking on a search for the reconciliation of competing interests (Daniels and Walker, 1996). The extent of acceptable disagreement during the search and the outcome of the search are what distinguish one participatory approach from another. Consequently, in deciding which approach to use, it is important to be clear on the following:

1. **How much agreement among participants will likely be reached through the process?**
   If there is a strong likelihood that consensus will be reached, a planning exercise will be feasible. If not, an activity that more easily accommodates disagreement, such as collaborative learning, may be more useful.

2. **Is the outcome to be implemented?** If so, by whom? Do the implementers have the wherewithal to do so? Do the implementers have the right to review, accept, modify, or reject any or part of the outcome?
   If it is likely that the outcome will be implemented reasonably intact, a planning exercise is warranted. If not, shared learning may be a better way to generate an array of options.

3. **How inclusive is the approach being considered?** Can the approach be structured to facilitate the contribution of marginalized groups?
   Historically marginalized and excluded groups may believe they are not able to effect change. They may need opportunities to develop their collective strengths to be able to buy into the recovery process. Making an effort to reach out and include them as active participants enhances the likelihood of a long-term, sustainable outcome.

Three Approaches to Direct Involvement in Policymaking

There are three main approaches to a direct participatory process. Each has a distinct primary objective even though they overlap and complement each other.

1. Participatory Action Research

This approach focuses on generating knowledge the community can use to address its concerns. It enables local people to find their own solutions based on their priorities, to secure funding, or to engage locals into the agendas of others (Cornwall and Jewkes, 1995). If there are gaps in local knowledge and those gaps are getting in the way of community betterment, participatory action research works well.

Participatory action research adapts conventional research methods to new contexts and new uses, by and with local people (Cornwall and Jewkes, 1995). Non-researchers learn how to get and use information. The intent is to empower grassroots organizations and individuals, but researchers can play supporting roles. They can be scribes, documenting for the participants the results of their transactions (Stoecker, 1999). They can praise and highlight participants' knowledge of their environment and the social context in which they operate (Wacker et al., 1999). Participatory action research includes, but is not limited to, focus groups, participatory mapping, modeling, and matrix ranking (Found, 1997).

2. Collaborative Learning

The focus of collaborative learning is on the constructive exchange of information within the context of public participation. Insights into how people learn are used as the basis for designing interactions. Collaborative learning is most useful when the situation is contentious and there is no immediate prospect of consensus leading to action. It is helpful where there is no clear desirable outcome and when only incremental change is likely.

Collaborative learning

- Stresses improvement rather than solutions;
- Emphasizes situations rather than problems or conflicts;
- Focuses on concerns and interests rather than positions;
- Targets progress rather than success;
- Seeks desirable and feasible change rather than a definite, desired future condition;
- Encourages systems thinking rather than linear thinking (systems thinking is about understanding the interconnections between parts and seeing the parts as elements of a whole system);
- Recognizes that considerable learning will have to happen before improvements can be made; and
- Emphasizes communication and negotiation as the means to learn and make progress happen (Daniels and Walker, 1996).

According to Daniels and Walker (1996), collaborative learning exercise involves three phases:

(1) Developing common understanding by exchanging information through such activities as imagining best and worst possible futures and visually representing the situation,
(2) Focusing on concerns and interests about specific issues and determining how they relate to other issues, then identifying possible improvements, and
(3) Considering whether these improvements are desirable and feasible.

3. Multi-objective Planning and Management

Multi-objective planning is about finding ways to carry out a number of activities that will achieve specific outcomes. It is the most ambitious form of participatory process described here. Successfully engaging the public, effectively soliciting input and enabling all key players to problem solve is the essence of multi-objective planning (Holmes, n.d.). It should be undertaken when it is likely that action-oriented consensus can be achieved.

According to Holmes, multi-objective planning and management

- Addresses more than one issue and goal at the same time;
- Is based on appropriately delineated planning areas. Depending on the objective, the unit can be a physical unit, such as a watershed or a political unit, such as a county;
- Is locally based. The process must be driven by individuals, groups, and local government based in the planning area;
- Uses existing resources as much as possible; and
- Uses a comprehensive partnership. Trained, neutral facilitators play a key role in interactively involving people in the public and private sector to solve problems.

The table on the next page shows the main characteristics of the three approaches and when they are most useful. Note that participatory action research can be used to generate input into multi-objective planning and management.

Three Approaches to Direct Involvement in Policymaking

Approach	Emphasis	Most useful
Participatory Action Research	Generating knowledge community can use	When local understanding can fill gaps that constrain community development
Collaborative Learning	Constructively exchanging information	When the situation is contentious and there is no immediate prospect of consensus leading to action
Multi-Objective Planning & Management	Finding ways to carry out activities that will achieve specific outcomes	When action-oriented consensus can be achieved

Techniques for Participatory Processes

Some of the techniques described below are common practices among community leaders who need to obtain the participation of individuals; others are used less often and are associated more with a particular participatory approach than with others. A combination of techniques is often employed. A community can choose from this list of possibilities.

Public Meetings
Used to obtain ideas from residents about goals, problems, and potential solutions. Public meetings should be used to exchange information. They should only be used if citizen information is likely to influence decisions (Thomas, 1995).

Issue Presentations
Experts make presentations on scientific, technical and legal dimensions. Each presentation includes a question and answer session (Daniels and Walker, 1986).

Panel Discussions
After the issue presentations, a discussion is held with panelists representing critical stakeholder groups. Panelists talk briefly about their viewpoints and concerns and those of the groups they represent. They then engage with one another and participants in a question-answer-comment session (Daniels and Walker, 1986).

Workshops
An interactive format in which participants views and ideas are explicitly solicited, often on pre-determined themes. To maximize participation, attendees may be invited to work in subgroups.

Field Trips
To view problems first hand and to speak to people who cannot attend gatherings in a given place (Zahn et al., 1994).

Live Call-in Radio
To get immediate feedback on potential solutions. If there is widespread Internet access, real-time chat rooms and conferences may be useful.

Meetings with Elected Officials and Others
To present preliminary plans or to present concerns and options.

Best and Worst Views
To reveal the extent to which people's interests are compatible, participants are asked to write down their best and worst imaginable futures. These futures are then displayed for the rest of the group to discuss (Daniels and Walker, 1986).

Charette
A classic planning technique, it is an intense effort to solve problems in a limited amount of time. A typical charette is characterized by a structured schedule, open process for participation and three activities—generating ideas, decisionmaking and problem solving (Sanoff, 2000).

Encouraging Participation

There are many practical things that a community can do both to obtain public participation and to improve the quality of the input and the use that is made of it in the decisionmaking process.

Publicity
Inviting people to participate is essential.

- Get the message out in as many languages as appropriate.
- Send information to people who have been affected or will be affected.
- Post notices in conspicuous places, such as public buildings, community centers or anywhere many people can see them.
- Make the messages clear, simple, and supported with photographs or illustrations.
- Use existing newsletters or establish a new one for the participatory project.
- Arrange for press coverage from the local media (City of Denton, 1999).

Logistics
Take into account how busy people are, and how they are already juggling competing demands on their time. Making participation easier for them will increase attendance.

- Select a convenient, accessible location.
- Opt for a time (week days, week evenings, weekends) that is most likely to work for most of the people. Be prepared to have duplicate sessions if needed.
- Supply refreshments.
- Provide childcare.
- Provide translation services (City of Denton, 1999).

Financing Participatory Processes

- If there is a Presidential disaster declaration, funds will be available from federal, state, and possibly private sources. Technical assistance will also be forthcoming from

federal and state agencies that may include the "loan" of personnel skilled in planning, facilitation, and leading consensus-building initiatives.

- After a disaster, local businesses, residents, and out-of-town groups often donate to local relief funds. These funds can provide for special projects, such as developing a participatory process, that cannot be funded elsewhere (Watson et al., 1998).

- Food and refreshments for public meetings may be donated by area businesses or corporations wishing to assist in the recovery.

- The local government may be able to tap its own budget for public education or other goal to supply printed materials to be disseminated.

- Meeting space could be obtained free from area businesses or nonprofit organizations.

- Some local radio or television stations will donate on-air time for public service announcements or for live broadcast of meetings.

Do's and Don't's for Encouraging Public Involvement

- Anticipate issues rather than having them be imposed.
- Define issues in terms amenable to resolution.
- Avoid either/or terms.
- Avoid seeing public involvement as good or bad.
- Know what you are trying to get from involving the public.
- Recognize that public involvement requires sharing decisionmaking authority.
- Define ahead of time what can and cannot be negotiated.
- Define ahead of time which "publics" to involve.
- Consider citizen attitudes toward institutional goals.
- Select an appropriate decisionmaking form.
- Use more than one approach.
- Work to build relationships.
- Keep an eye on the public interest.
- Accept and learn from failure.

(Thomas, 1995, pp. 169-175)

Monitoring the Participatory Process

The sophistication and extent of monitoring will vary with the type of participatory process chosen. At a minimum, it is important to ask participants during the process if mid-course corrections need to be made. At the same time, planners and decisionmakers must be willing and able to make modifications.

Evaluating the Participatory Process

Deciding what to evaluate is critical to designing the participatory process. It is a way of ensuring that the exercise is focused and that the goals for the activity are clear. Ideally, participants and those managing and financing the endeavor should undertake evaluation. It is useful to obtain feedback immediately after the activity and again after enough time has lapsed to see what became of the output of the activity. Documenting the experience of participation is essential for both monitoring and evaluation (City of Denton, 1999).

LOCALITIES THAT HAVE USED A PARTICIPATORY PROCESS

The following vignettes sketch out how Pawtucket, Rhode Island, and the Vermillion River Basin, South Dakota, used participatory processes in planning for sustainability. The South Dakota example is described in detail to highlight how to implement multi-objective planning featuring a participatory process.

Pawtucket, Rhode Island

The City of Pawtucket, Rhode Island, is a floodprone community at the southern falls of the Blackstone River and the upper tidewaters of Narragansett Bay. It has a land area of about 9 square miles and a population density of about 7,582 per square mile. The city's industrial base was established over two centuries ago. The city has worked to preserve its distinctive residential architectural inheritance.

City officials are implementing a flood hazard mitigation plan that they developed through non-binding public involvement. City officials developed a risk assessment matrix as a result of a regional public workshop held in the Blackstone Valley in 1997. They then used this information in a mitigation matrix that summarizes the areas at risk, specifies actions to take, who is responsible for the listed actions, and possible options for financing (Watson et al., 1998).

Vermillion River Basin, South Dakota

Draining 2,185 square miles on the southeast corner of South Dakota, the Vermillion River Basin is a semi-arid region with annual average precipitation of 22-25 inches. Draining into the Missouri River near Burbank, South Dakota, the basin has a 20-mile wide drainage corridor of low topographic relief and slow meandering streams that flow into the Missouri River. Ninety-five per cent of the basin's land is agricultural. A population density of 25-35 people per square mile has been maintained since the 1930s.

The catalyst for undertaking a multi-objective flood mitigation plan was the 1993 flooding of the Vermillion River system, when damage to the Basin approached $250 million. The South Dakota Division of Emergency Management, the TLC (Turner, Lincoln and Clay counties) Water Project District, the National Park Service, and the Federal Emergency Management Agency, through a series of exploratory phone calls, decided to have a public brainstorming session. They decided to employ a binding direct policymaking form of public involvement to undertake multi-objective planning. The intent was to have as many people and agencies from within and outside the basin come together to consider how to improve the quality of life in the Vermillion Basin. The outcome was to be a plan that residents could realistically use, without waiting for massive federal

assistance, to reduce their vulnerability to floods and at the same time improve whatever residents thought was most important (Zahn et al., 1994).

In January 1994, local agencies and interested individuals drew up a preliminary list of 17 issues they thought a planning workshop could address. The issues were grouped into five categories:

- Flood hazard management, drainage, and transportation systems;
- Economic development and sustainability, cultural and historic resources and housing;
- Fish and wildlife;
- Outdoor recreation and open space; and
- Water quality and erosion.

People were recruited from different agencies and groups with the expertise necessary to understand local concerns, make recommendations, and suggest sources and methods of implementation assistance and funding.

The Planning Workshop

About 150 people participated in the planning workshop June 20-24, 1994 in Parker, South Dakota. Two-thirds were residents of the basin, while one-third were from local, state, and national organizations. They used a four-step process (note how this resembles Steps 4, 5, 6, and 7 of the 10-step process for holistic recovery described in Chapter 2) .

1. Defining the basin's flood-related problems and goals.
2. Listing some sensible ideas for solving each problem.
3. Identifying ways to reach other basin goals that coincided with or complemented the potential solutions to the flood problems.
4. Specifying sources of technical assistance and funding for each idea, and how and where to obtain it.

Step 1 was accomplished Monday, the first day, in a large public meeting. The last three steps were done during the rest of the week. On Tuesday participants broke out into five planning teams, one for each category. A draft plan was produced Thursday night for presentation to public officials in the basin on Friday, the last day of the workshop.

The process resulted in a planning document (published with technical and financial assistance from the National Park Service and the Federal Emergency Management Agency) that described the background and physical characteristics of the basin, outlined the concerns as expressed by the participants, listed possible solutions to each of those concerns, and identified ways in which those solutions could be tackled. The document, *Multi-Objective Flood Mitigation Plan—Vermillion River Basin South Dakota* (listed in the References section at the end of this chapter) was not intended to be adopted as a formal plan, but it has served as a foundation for subsequent efforts by the basin residents and business people to address multiple objectives. Recently the basin was successful in getting enabling legislation passed at the state level that will make it possible for a river basin district to be formally established to plan for and implement solutions to basin-wide problems.

WORDS TO THE WISE ABOUT PUBLIC INVOLVEMENT

Participatory processes are not panaceas. There is no guarantee that a participatory process will lead to a successful outcome. Broader public interests may be neglected in favor of the special interests of specific publics who accept the invitation to become involved (Thomas, 1995). In addition, the participating public may express inconsistent preferences that lead to conflict, leaving decisionmakers with mixed signals about what to do (Steelman and Ascher, 1997). Uncertainty is an inevitable byproduct of situations that depend on more than one individual's actions (Kiser and Ostrom, 1982).

Engaging appropriate individuals and representatives of agencies and organizations is critical to the success of any form of participatory process. Organized and unorganized groups of citizens need to be included if they can provide useful information for resolving the issue or if they could affect implementation by accepting or facilitating it. Leaders of organized groups cannot speak for the unorganized (Thomas, 1995).

Participation is not without costs. Not everyone is able or willing to participate. People can be too busy securing the basics of life to participate. It has been suggested that the silence of potential participants stems from three factors, each of which has different roots and requires a different response.

- People already feel adequately represented by an active group, such as a neighborhood association or environmental public interest group. The assumption is that an individual has made an informed decision not to participate. Therefore, the organizers do not need to take any further action. Because an informed decision not to participate can be respected, there is no reason to cajole these nonparticipants.

- People are unaware of having a stake in the decision or view the decision as being of minor importance to them. A comprehensive public information campaign may provide these people with enough information to determine whether the decision does or does not have personal importance.

- People do not believe they can influence the outcome of the process. This may be remedied by a public information campaign that presents technical issues and lays out the proposed process of public involvement in such a way as to encourage wider participation (Creighton, 1983).

People need to be informed to decide whether to participate in the policymaking process. They need to know how to participate if they choose to do so and what are the consequences will be if they do not.

Even when people do participate, involvement may not be continuous or predictable. Commitment and interest wanes as people tire of the task (Thomas, 1995; Cornwall and Jewkes, 1995). People may have preconceived ideas about desirable outcomes, and their enthusiasm can fade when it turns out that other people don't agree (Cornwall and Jewkes, 1995).

People participate because they perceive some interest in the outcome and remain involved as long as that persists. Different people will choose to focus on different aspects of recovery. For example, after the 1991 Oakland fire, the Task Force on Emergency Preparedness and Community Relations organized into five groups—emergency preparedness; communications; forestry and vegetation; infrastructure and development; and planning, zoning, and design (Platt, 1999). Differences in technical expertise, roles in the community, and willingness and ability to commit time and energy inevitably lead to different levels of involvement. People may participate in some stages of the process more than others.

CONCLUSION

Although it is not without pitfalls, a well-chosen and appropriately employed participatory process can contribute to a community's disaster recovery. Only by actively engaging the residents and other stakeholders can recovery from disaster lead to integrating a community's social, economic, and environmental goals and ideals.

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WHERE TO FIND MORE INFORMATION

Training Courses and Workshops

Federal Emergency Management Agency, Emergency Management Institute, National Emergency Training Center. Emmitsburg, Maryland. www.fema.gov/emi [accessed June 15, 2001] (301) 447-1035.

- "Project Impact: Building Consensus in Disaster-Resistant Communities." Federal Emergency Management Agency Course E380.
  This course is designed for the person(s) in an organization with responsibility for coordinating and implementing the Project Impact initiative in their jurisdiction. Participants will learn and practice the facilitation skills necessary to work with officials and stakeholders in a community to promote the development of a disaster-resilient community.

Organizations

Many private consulting firms offer expertise in facilitation and consensus-building in a post-disaster or planning situation. A community's federal agency contacts—at the Corps of Engineers, the Bureau of Reclamation, the Environmental Protection Agency, the National Park Service, or the Federal Emergency Management Agency—would be the best source for specific referrals to an area company.

City of Denton.
The public involvement section of the Denton Comprehensive Plan lays out fundamentals of public participation.
See www.cityofdenton.com/planning/tdp_intro.html [accessed July 20, 2001]

Creighton and Creighton.
The Creighton and Creighton website provides an annotated list of links about public involvement.
See www.creightonandcreighton.com/ [accessed July 20, 2001]

Community Development Society.
See the publication, "What is Participatory Research?" for a discussion of public participation and some guiding principles.
See www.comm-dev.org/par-is.htm [accessed July 20, 2001]

Disaster Resistant Neighborhoods. "Building Disaster Resistant Neighborhoods Handbook."
This handbook outlines a step-by-step action plan, with examples, to assist planners in working with neighborhood associations to help them become better prepared for the next disaster. Posted on the link along with the handbook are a variety of marketing tools to assist in promoting the program.
See www.tallytown.com/redcross [accessed September 21, 2001]

Highlander Education and Research Center.
This group specializes in participatory education and action research and involving stakeholders.
See www.hrec.org [accessed July 20, 2001]

National Park Service.
The National Park Service through its Rivers, Trails and Conservation Assistance Program helps local coalitions develop strategic plans, identify potential sources of funding and builds partnerships to achieve goals determined by the community. The National Park Service becomes involved in a project only at the request of citizen groups or governmental agencies. The lead project partner(s) must write a letter of request to the Rivers and Trails Program. Send applications to the Manager of Rivers, Trails and Conservation Assistance Program of your National Park Service Regional Office.
See www.nps.gov/legacy/regions.html [accessed September 21, 2001]

Partnerships Online. "Participation Guide."
This online guide, "The Guide to Effective Participation," was designed for community activists and professionals in the U.K. but has many useful resources for those in the United States interested in fostering community participation as well.
See www.partnerships.org.uk/guide/index.htm [accessed June 15, 2001]

Videos, CD-ROMs, and DVDs

Taking the Initiative. Federal Emergency Management Agency, Emergency Management Institute. 2000. Emmitsburg, MD.
This 20-minute video shows how a neighborhood, two small towns, and a business owner took responsibility for and got organized to adopt sustainability principles and techniques in coping with hazards. The three separate instances, all in California, illustrate participatory processes, taking initiative, looking at the economic benefits of hazard mitigation (in one case, elevating a restaurant), incorporating livability components into a flood protection measure, and protecting the local environment and habitat. This video is available from the Emergency Management Institute at 1-800-238-3358. Ask for the "Disaster-Resistant Jobs" video.

Multi-objective Mitigation Planning. National Park Service and FEMA. 1995. Denver, CO.
The National Park Service and FEMA produced this18-minute video of the Vermillion Basin, South Dakota, participatory planning process that discusses the experience from the perspective of both agency and community participants. The video is available from FEMA Region VIII, P.O. Box 25267, Bldg. 710, Denver Federal Center, Denver CO 80225-0267.

Books, Articles, and Papers

Association of State Floodplain Managers (ASFPM). 1996. *Using Multi-Objective Management to Reduce Flood Losses in Your Watershed*. Madison, WI: Association of State Floodplain Managers. 72 pp. Abstract available at www.floods.org/PDF%20files/PUBSLIST.pdf.
This publication explores planning and implementation techniques for multi-objective watershed management. It provides a general introduction to multi-objective management and the planning process that helps a community select the flood-loss reduction measures most suitable to its situation. It explains how to define problems and goals, build partnerships, combine needs and solutions creatively, and begin formal implementation procedures. Both riverine and coastal flood watersheds are examined, involving subjects such as fish and wildlife issues, water supply, housing improvement, transportation, and lifelines.

North Carolina Emergency Management Division and Federal Emergency Management Agency. 2000. *Hazard Mitigation in North Carolina: Measuring Success*. Raleigh, NC.
To accelerate the institutionalization of hazard mitigation in North Carolina, the North Carolina Emergency Management Division established the Hazard Mitigation Planning Initiative, a long-term program to build local capacity to implement mitigation policies and programs in

communities across the state. Through a series of case studies, this study documents losses avoided as a result of the implementation of a wide range of mitigation measures, including elevations and the acquisition and relocation or demolition of floodprone properties.

Picou, J. Steven. 2000. "The 'Talking Circle' as Sociological Practice: Cultural Transformation of Chronic Disaster Impacts." *Sociological Practice: A Journal of Clinical and Applied Sociology* 2(2):66-76.

This article presents a description of a culturally sensitive mitigation strategy, the "Talking Circle," and its application to Alaska Natives negatively impacted by the 1989 Exxon Valdez oil spill. Talking Circles are a traditional social activity for Alaska Natives and this activity was organized and implemented by members of the Village of Eyak in Prince William Sound, Alaska. The two-day event resulted in many testimonies about personal experiences with the oil spill. Post-Talking Circle activities by Eyak Village members indicate increased cultural awareness and political mobilization. These findings suggest that this mitigation strategy promoted cultural consciousness among victims experiencing chronic disaster impacts and resulting in a "transforming activity" for the Native Village of Eyak.

Schwab, Jim, Kenneth C. Topping, Charles C. Eadie, Robert E. Deyle, and Richard A. Smith. 1998. *Planning for Post-Disaster Recovery and Reconstruction*. PAS Report No. 483/484. Chicago, IL: American Planning Association. 346 pp.

This document helps community leaders and planners educate their constituents on how informed decisions and choices can affect the rebuilding process and yield a safer, more sustainable community. This report introduces planners to their roles in post-disaster reconstruction and recovery, and provides guidance on how to plan for post-disaster reconstruction side by side with all other players involved. A key theme throughout this report is to rebuild to create a more disaster-resilient community. The report contains many references to technical resources.

Federal Emergency Management Agency. 1994. *Multi-Objective Flood Mitigation Plan Vermillion River Basin South Dakota*. Denver: Federal Emergency Management Agency, State of South Dakota, U.S. National Park Service.

The 1993 Midwest floods renewed interest on the part of government agencies, private groups, and individuals in finding ways to avoid or reduce the impacts of future disasters through permanent, low-cost solutions. This approach requires an examination of the relationships between natural systems (precipitation, drainage, sedimentation, vegetation, etc.) and human systems (water control structures, public policies and funding, agriculture, transportation, etc.) in order to make them more compatible. This document describes a multi-objective planning workshop held in Parker, South Dakota, in June 1994 to address flood mitigation. It describes the Vermillion River Basin and its flood history; the workshop; flood hazard management, drainage, and transportation in the area; economic development and sustainability, cultural and historic resources, and housing; fish and wildlife populations and habitat; outdoor recreation and open space; water quality and erosion; and implementation of the plan.

Additional Reading

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Cornwall, A. and R. Jewkes. 1995. "What Is Participatory Research?" *Soc. Sci. Med*. 41:1667-1676.

Cox, Bob, Sherryl Zahn, and Duane Holmes. 1995. "A Multiobjective Flood Hazard Mitigation Planning Process for the Vermillion River Basin, South Dakota." Pp. 132-135 in *From the Mountains to the Sea--Developing Local Capability.* Proceedings of the 19th annual conference of the Association of State Floodplain Managers. Special Publication 31. Boulder, CO: Natural Hazards Research and Applications Information Center.

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Krajeski, Richard L. and Kristina J. Peterson. 1999. "'But She Is a Woman and This Is a Man's Job': Lessons for Participatory Research and Participatory Recovery." *International Journal of Mass Emergencies and Disasters* 17(1): 123-130.

McShane, John H. 1992. "Integrating Provisions of the National Flood Insurance Program with Multi-objective River Corridor Management." Pp. 200-203 in *Multi-Objective Approaches to Floodplain Management.* Special Publication No. 26. Boulder, CO: Natural Hazards Research and Applications Information Center.

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