EXECUTIVE SUMMARY

The Importance of Public Participation in Contaminated Communities

Involvement of the public in governmental decisions concerning the environment has its origins in the National Environmental Policy Act of the 1970's. However, dissatisfaction with government decisions concerning the characterization of risks and plans for cleanup/remediation at contaminated sites has increased demands for public participation in decision-making processes. Public participation in contaminated communities include both community and stakeholder involvement processes. Stakeholders include parties with a legitimate interest (or stake) in the issues or impending decisions about contamination and redevelopment/revitalization, e.g, site owners and users, government regulators, affected members of the community, industry and business, government at different levels, and others. The community is comprised of some, but not all, distinguishable subsets of stakeholders. It includes both directly and indirectly affected residents and small business owners whose health may be at risk and/or whose property, property values, or economic welfare is adversely affected by the contamination.

The goals of community and stakeholder involvement may be viewed very differently, depending on the perspectives taken by both government and by citizens on their respective roles in the deliberation process. Government may act either as (1) a *mediator, arbitrator, or facilitator of conflict resolution* or alternatively as (2) a *trustee* for the furtherance of (environmental) justice and fairness (especially in situations where there are disparate distributions of power among the disputants or where wrongs have been committed in the past). On the other hand, members of the community and other stakeholders may play representational roles, or alternatively may seek to improve the collective welfare of the community or stakeholders when they engage in public participation processes. The combination of how the government views its role and how the participants of stakeholder and community involvement processes view theirs is especially important, because it can influence the success and acceptability of the outcomes of public involvement activities.

Purposes and Scope of the Study

The present study examines seven *current, ongoing* cases of public participation across a broader spectrum of communities. In contrast to earlier notorious historical failures, such as those at Love Canal, Woburn, and Times Beach, the cases in this study explore experiences considered *relatively successful* by both the agencies and the communities. The study sought to better understand the determinants of successful public involvement in contaminated communities where: (1) site characterization, cleanup options, and economic redevelopment were issues of concern and conflict; (2) more than one federal agency was involved; (3) state and local agencies were also involved; and (4) environmental justice was often an issue.

The purposes of the study were to: (1) identify those factors most important to, and essential for, successful community involvement, (2) evaluate or suggest initiatives to further enhance successful public participation, and (3) identify options for more successful interaction and coordination of federal, state, and local agencies in their efforts to promote environmental and public health goals in contaminated communities. The study focused on initiatives which:

- enhance communication, outreach, and learning in the community,
- build skills and capability in the community, and
- provide for increased community participation in, and access to, government decisions.

Special attention was paid to public participation problems in economically-disadvantaged and minority communities with disproportionate environmental burdens (i.e., Aenvironmental justice@ communities), and to mechanisms for improving interagency coordination at all levels of government.

Conceptual Framework and Methodological Approach

The study was designed to investigate seven ongoing, relatively successful examples of community participation in a broad spectrum of communities, with different geographical, racial, ethnic, socioeconomic, and degree-of-urbanization characteristics. The sites included were either (1) listed on the National Priorities List (NPL) under Superfund, (2) listed as both NPL and RCRA sites, or (3) not listed, but involved in state-administered voluntary clean-up efforts. Communities selected for the study had either a history of environmental contamination or of adverse health effects (whose origins were thought to be associated with environmental exposure to toxic chemicals) -- or both. Candidate cases were restricted to those which (1) involved at least two of the three sponsoring agencies (EPA, DOE, and ATSDR) and (2) were regarded as relative successes by both the federal agencies (at the regional office level) and by some members of the involved community groups.

We began our study by evaluating specific participatory mechanisms in terms of elements we considered important and/or essential to successful public participation. These included access to information, financial and intellectual resources, openness, trust and trustworthiness, accountability, respect, and acceptable balance of power (sufficient autonomy). *Within* each case history, these factors could help explain some of the differences observed across specific mechanisms. Some mechanisms provided more access to information, were more open, engendered more trust, and facilitated more accountability than others. Although some participatory mechanisms were more successful than others in any one community, it was the collective and cumulative effects of the different mechanisms that contributed to the overall success of the participatory processes in our study communities. When taken together, the public participation activities in any one community contained all of the important elements. In

contrast, we previously had found these elements lacking or notably absent in our past work on acknowledged historical failures.

For the cross-case comparison, we constructed a more composite set of criteria for evaluating the success of the public participation activities in the study communities in terms of both process and outcome. These criteria include procedural fairness, procedural competence, and a variety of outcome variables. The outcome variables addressed the questions:

- How well did the mechanism achieve its initial aim?
- Did it foster development of mutual understanding among participants and between participants and agency?
- Did it enhance equity and control for those affected?
- To what extent did it safeguard the disadvantaged and protect and promote minority interests -- or address power imbalances?
- Was there shared decision making?

In addition, we were impressed that the following considerations were also useful: establishing mechanisms for continued community empowerment and civic involvement; government=s role as trustee vs. arbitrator/mediator; environmental justice/protection of minority interests; and whether the community members or stakeholders sought to promote their self-interest or seek a wider collective good.

Interagency Coordination

One of the criteria used to select cases for this study was that at least two federal agencies (ATSDR, DOE, or EPA) were involved in a cooperative way at the site and were active in community participation efforts. We sought to identify and evaluate mechanisms that facilitate conflict anticipation and avoidance among the federal, state, and local agencies of government, and those that foster the resolution of problems among agencies at all levels. The complex pattern of multi-agency and multi-level involvement is both a source of confusion for the community, as well as an opportunity for interagency coordination, cooperation, and synergy.

In earlier work at MIT, we had identified several generic mechanisms that we thought might enhance interagency coordination: (1) designated person(s) for interagency coordination at all levels of government, (2) federal interagency working groups, (3) state or local interagency working groups, (4) multi-level interagency working groups, and (5) establishment of formal administrative protocols for coordination.

Experience from the cases in our study reinforces the importance and potential value of these generic mechanisms. Particularized lessons which emerge from the site investigations include:

- By working together, agencies accomplish some tasks more efficiently.

- An agency can use its credibility with the affected community to build credibility of other historically mistrusted agencies.

- Public participation activities can be the impetus for interagency cooperation on a host of issues related to the site.

- Interagency coordination and cooperation, while good in itself, is not an adequate substitute for public participation.

It is not a surprise that a more deliberate commitment to agency coordination can facilitate time and cost savings. What may not have been fully appreciated is that increases in interagency coordination can result *in*, or result *from,* an agency commitment to public involvement.

The cases suggest that higher-level agency personnel should be involved in both interagency coordination *and* in public involvement activities. In this way, a *coordinated* public participation initiative can develop. Training agency personnel in interagency coordination skills and strategies at the same time they receive training in pubic participation might also be well-advised and beneficial. After all, interagency coordination and public participation are conceptually linked through the principle of *maximum involvement of the major actors*.

What Accounts for Success of Public Involvement Processes?

We have a strong interest in furthering fairness and justice for the most affected members of contaminated communities. In many, but not all cases, the most affected are also the least powerful and most socially- and economically-disadvantaged members of the community. For this reason, we view the current popularity of stakeholder involvement processes with some concern. As noted earlier, we recognize the value of these processes and are not opposed to them *per se*. Indeed, many of the stakeholder processes operating in our study communities had performed quite well. We do, however, urge caution. An over-reliance on stakeholder processes may limit efforts to initiate or utilize other more *community*-focused processes. This, in turn, could further disempower the most affected segments of the community and contribute to the entrenchment of the existing power structure in the community.

In this regard, we suggest that public meetings continue to provide important opportunities for the community to voice its concerns, suggest options, and express its

views and preferences for addressing health risks, remediating contaminated areas, and planning for revitalization and redevelopment. Although they have their own set of problems, public meetings have important advantages not duplicated by other community and stakeholder involvement mechanisms. Indeed, many of the stakeholder processes found in our cases utilized public meetings to reach the larger community.

This report includes specific findings from the case histories concerning initiatives that (1) enhance communication, outreach, and learning in the community; (2) build skills and capacity; and (3) foster better participation in, and access to, government decisions. Although necessary elements, information and skills alone may be insufficient for effective and meaningful public participation. Historically disenfranchised and economically disadvantaged communities may already have, or be able to acquire, information and skills -- perhaps with the help of government TAG and TOSC programs. What they may lack are the resources and power to influence government decisions for any number of reasons.

The factors that seemed especially important to the relative successes of the participatory processes in our study communities include.

- *Agency clarity, commitment, and accountability* are linked and integral to the success of public participation processes. Participants deserve to know if and how the agencies plan to incorporate their input into decisions. The agencies themselves need to be clear about the purposes and objectives of their public participation efforts and transmit these goals early and clearly to would-be participants. Participants must understand and share in this sense of purpose or work with the agencies to redefine it. In addition, participants need an opportunity to: 1) hear why the agencies disagree with or reject their position, preferences, or recommendations; 2) clarify or re-argue their positions; and 3) debate and challenge the agency=s decision.

- *Interaction.* From the above, it follows that public participation is an interactive exercise. It must involve communication, dialogue, and interaction -- between the agency and the community and among the various participants/stakeholders.

- *Deployment of responsibility.* Agencies= commitment and accountability to public participation processes can be revealed and demonstrated by the level of personnel involved in the process. Community members want access to agency decision-makers; they want to interact with agency personnel who have the authority and power to make or significantly influence agency decisions. It is a mistake for the agencies to devolve responsibility to their community involvement or public relations staff. Top-level commitment has to be reiterated, especially when there is a turnover of agency staff or spokespersons who interface with the community and stakeholders.

! *Diversity of mechanisms.* Our cases clearly demonstrate the importance of viewing public participation as a process which involves the complementary use of different mechanisms that address the differential interests within the community.

! *Broad representation and diversity of views.* Both agencies and communities generally emphasized the importance of creating mechanisms that were both inclusive and diverse. Resource constraints, ease of implementation, and efficiency concerns often limit participation in any one mechanism. However, it is important that the full range of community views, interests, and values find their way into the process as a whole. Without careful attention to inclusiveness and diversity, community involvement and stakeholder processes can easily reproduce and reinforce the existing power imbalances in the community.

! *Trust-building and Mutual Respect.* Constructive dialogue is difficult when parties mistrust each other. In these cases, the agencies will need to make special and focused efforts to rebuild trust and to demonstrate to the community that they intend to operate in a trustworthy manner. Agency responsiveness to community concerns and accountability to its participatory mechanisms can help. *Respect* for different viewpoints and values is also crucial -- especially for participants representing groups who perceive they have been treated unjustly or unfairly in the past. Respect for anecdotal information and non-scientific contributions is also important.

! *A Broad View.* Economically-disadvantaged communities and communities that have suffered disproportionate environmental impact often define their contamination-related interests and needs broadly to include jobs, beautification, revitalization, and redevelopment. In these cases, agency public participation efforts will be more successful if the agency also is willing to take a broad view and step outside its traditional bureaucratic structure to help the community address its needs.

Agency public participation efforts occur within, and can be affected by, a host of historical, social, economic, cultural, and political factors that are context-specific. The pre-existing infrastructure (e.g., existing grassroots groups) and dynamics of the community can be particularly important for public participation processes. The situation in a one-company town, for example, may be quite different from what occurs in a community with a broader industrial base. Sociocultural characteristics and economic exigencies can influence residents= willingness and/or ability to participate in community/stakeholder involvement activities. Clearly, the level of community outrage, anger, and conflict can have an effect, as can the community=s level of civic involvement and prior experience with government and public participation activities. By being aware of these factors, agencies may be able to design activities that address

community-specific issues, as well as tap into the community=s existing infrastructure to facilitate and enhance opportunities for successful public participation.

Final Reflections and Commentary

Our purpose in undertaking this research was not to foster less-acerbic conflict resolution *per se*, but rather to promote distributive justice through identifying ways to improve mechanisms for community involvement and for better performance of government as a trustee for the environment, public health, and basic rights. In this context, we gave particular attention to furthering: (1) government=s role as trustee vs. arbitrator/mediator, (2) communitarian rather than utilitarian outcomes within the community, (3) mechanisms for continuing empowerment, learning, and change through community participation, and (4) environmental justice and protection of minority interests. We grappled with constructing measures of success that reflected these concerns.

Both our earlier work and the work of others have suggested the importance of early public/stakeholder involvement in contaminated communities, as well as continued involvement throughout. Despite the general success of the public participation processes in our study communities, most became involved fairly late in the overall process. They did not usually participate in the early characterization of the site when decisions were made about what to monitor, what study design to use, and who should carry out the studies. They also had little influence on the choice of cleanup/remediation contractor. Nonetheless, the agencies were often able to reverse a Arocky start@ and sometimes turn the process around. In many cases, the communities were able to exert some influence on the decision-making process.

It deserves emphasizing that some avenues for empowerment were not utilized to the extent they might have been. For example, communities did not attempt to influence the choice of the site cleanup/remediation contractor, or who occupied crucial leadership positions in their communities, such as the site manager, other on-site agency personnel, or independent experts/designated coordinators. This is additional evidence that public participation is a learning process for the communities and the agencies, both of which have essentially been feeling their way along without recognizing all the options open to them and the opportunities available for better cooperation. This research was undertaken to assist the government, the community and other stakeholders in the improvement of participatory processes.

I. INTRODUCTION

A. Government Investigation and Cleanup of Contaminated Communities, and Community Responses

Much has been written about government's role in investigating health problems and cleaning up environmental pollution in contaminated communities [see, for example, the discussion of Love Canal and Woburn in Ashford et al.,1991; English, 1991]. Federal agencies most frequently involved include the Environmental Protection Agency (EPA), the Agency for Toxic Substances and Disease Registry (ATSDR) -- a sister agency of the Centers for Disease Control and Prevention in Atlanta -- the Department of Energy (DOE), and the Department of Defense (DOD). State departments of health and environmental protection, as well as local health departments and city/county governments, are also involved. In many contaminated communities, Superfund legislation gives ATSDR the role of conducting "health assessments," while the EPA conducts "risk assessments" and formulates remediation plans.

Contamination in a community may have its origin in industrial operations or in governmental activities, such as DOE/DOD weapons production or operation of nuclear facilities (OTA, 1991). Abandoned or uncontrolled sites may be placed on the National Priorities List (NPL) under Superfund; facilities that handle hazardous wastes may be regulated as a RCRA site.[1] In some cases, the site may not be designated under either program. The EPA Brownfields Initiative, which involves many federal agencies, was designed to reverse the deteriorating economic state of non-NPL contaminated sites by encouraging redevelopment/revitalization (see Section VII-D of this report.) The responsibility for cleanup varies. Sometimes, industry is considered the Potentially Responsible Party (PRP) for the contamination and the cleanup. In other cases, the government may be legally responsible for cleaning up the pollution it caused. At NPL sites, the government facilitates the cleanup, no matter who is held responsible for creating it -- often through the hiring of an independent contractor.

[1] The Resource Conservation and Recovery Act (RCRA) regulates hazardous wastes from generation to permanent disposal through its "cradle-to-grave"management system.

Many communities affected by contamination have experienced significant economic, social, and health risk impacts. Some of these communities were socially disadvantaged prior to the discovery of contamination, and have suffered disproportionate environmental burdens. They have voiced considerable objection to the "environmental injustice" and disparate impacts they have suffered in connection with the contamination in their communities. This injustice is seen to result from the (1) prejudicial location of hazardous and polluting facilities in low-income or minority communities and/or (2) the absence of or inadequate attention to remediation or cleanup in these communities. In the latter case, communities decry government attention as "too little, too late" (Foreman, 1998; Bryant, 1995; GAO 1983,1995; Hofrichter, 1993; United Church of Christ, 1987).[2]

Further, where government has responded, it has been accused of operating more or less in a vacuum, and the communities have reacted negatively, expressing dissatisfaction with both the outcomes and the process of cleanup activities. It is fair to say that the different governmental agencies operating at the federal, state, and local level have not always had a clear vision of their respective roles; nor have they always spoken consistently or "with one voice" to the community. When independent contractors also are active at the site -- especially when they change over time -- there is often community dissatisfaction with "the whole lot." Government involvement in contaminated communities continues to be a challenge and an ongoing learning experience for both the agencies and the community.

B. The Importance of Public Participation in Contaminated Communities

Involvement of the public in governmental decisions concerning the environment has its origins in the National Environmental Policy Act (NEPA) process of the 1970's. However, dissatisfaction with government decisions concerning the characterization of risks and plans for cleanup/remediation at contaminated sites has increased demands for public participation in decision-making processes. Lack of public and stakeholder involvement at contaminated sites often resulted in what are now acknowledged as failures on the part of government, for example at Love Canal, Woburn, and the PBB contamination in Michigan (Ashford et al.,1991).

Vocal and critical community activists concerned with health and environmental issues have demanded more involvement than simply listening to agency officials at large public meetings, which have been perceived as venues for agencies to "present, explain and defend" their decisions already made, rather than as opportunities to enter into meaningful dialogue and shared decision making with the community. Other

[2] The commentary on these assertions goes both ways and has now surfaced as contentious debate. In order to fully appreciate the social and political dynamics of contaminated communities, it is important to realize that impacted communities of color or low-economic status believe both to be true.

stakeholders, notably business owners, PRPs, developers and real estate interests, and citizens worried about their property values also demanded involvement. Government responded to these pressures by reaching out more broadly to the affected publics. Stakeholder involvement in a contaminated community seeks to include those parties with a legitimate interest (or stake) in the issues or impending decisions about contamination and redevelopment/revitalization. These parties may include site owners and users, government regulators, affected persons (i.e., those living near the site whose health and/or economic well-being may be affected by the site), industry and business, government at different levels, and others (English, et al.,1993).

In the literature, public participation is increasingly distinguished from stakeholder involvement [see for example English et al., 1993; NRC, 1996; P/C Commission, 1997; and Yosie and Herbst, 1998].[3] Public participation traditionally has not differentiated among different members of the public. Stakeholder involvement processes are argued to be both more inclusive and targeted (English et al., 1993). However, the goals of inclusiveness and representativeness may not always be met in practice. Stakeholder processes can sometimes serve to eliminate the "fringe elements" or to dilute the influence of the most severely impacted members of the community, who are often the least powerful as well. Perhaps it is for this reason that it is argued that stakeholder involvement "should augment public participation, with the latter remaining to ... keep stakeholder involvement processes 'honest'" (English et al., 1993, p.11).

Public participation and stakeholder involvement continues to attract the attention of researchers, policy makers and analysts, and a variety of stakeholder groups (see the review of selected literature in Section III). Reasons include (1) increased emphasis on alternative dispute resolution (ADR) or conflict reduction as a way of solving social problems in general, (2) a desire on the part of government to bring about cost-effective solutions, (3) the furtherance of democratic processes through citizen empowerment and environmental justice, (4) a desire for communitarian outcomes (see later discussion), and (5) a desire to achieve a proper balance between science-driven (rational choice) processes and values driven or self-interest driven processes, hopefully premised on rationally-informed agreement among the stakeholders.

The goals of public participation and stakeholder involvement may be viewed very differently, depending on the perspectives taken by both government and by citizens on their respective roles in the deliberation process. Government may act either as (1) a *mediator, arbitrator, or facilitator of conflict resolution* or alternatively as (2) a *trustee* for the furtherance of (environmental) justice and fairness (especially in situations where there are disparate distributions of power among the disputants or where wrongs have been committed in the past).[4] Participants may play representational or communitarian

[3] The reader is referred to Section IIIB of this report which addresses the question "what is public participation?"

[4] It could be argued that, in its role as mediator/resolver of disputes, government acts a

roles.[5] The public participation and environmental justice literature is sometimes confused or silent on these distinctions.

trustee for all the people. However, in this report, we use the term trustee to mean government acting in the second sense, i.e., trustee for the interests of the least advantaged.

[5] A communitarian approach to conflict resolution is a process wherein the various stakeholders strive to achieve "the greater social good" rather than maximize their own benefit, thereby transcending individual interests (English, 1993, pp 19-21).

Public participation and stakeholder involvement are generally seen as means to further democratic decision making. However, there are differing conceptualizations of what the goals of democracy are.[6] While technically democratic, participatory decision making based on majority rule may result in a "tyranny of the majority" over minority interests. To the extent that government encourages consensus by the majority, we would describe the government as a mediator or resolver of disputes, seeking a utilitarian outcome -- or at least "the greatest good for the greatest number." John Rawls, is his concern for distributive justice, rejects majoritarian consensus as a fulfillment of the social contract between government and the governed. He argues that justice requires the government to make the most disadvantaged, relatively better off (Rawls, 1971). We would describe government acting in this way as serving as the *trustee for the most disadvantaged*.

Different world views/philosophies about democratic processes necessarily affect how one evaluates various public participation mechanisms. Laird (1993) speaks of pluralistic "participatory analysis" that emphasizes the importance of learning among those involved in public participation for achieving more democratic outcomes. He argues that through dialogue and deliberation involving *representatives* of different interest groups, learning occurs and more understanding for the views of others emerges. Fiorino (1990) comments on the importance of *direct participation* in which *individuals* can deliberate free of institutional constraints. Direct participation processes are distinguished from pluralistic [representative] participatory mechanisms. However, both commentators implicitly favor communitarian outcomes to "horse trading." In describing and evaluating the participation mechanisms in our case histories, it is instructive to see to what extent the government or communitarian-minded participants ensure justice and fairness for the disadvantaged minority.

Public participation and stakeholder involvement processes often arise to avoid or resolve conflicts. In our earlier work (Ashford et al., 1991), we identified three kinds of conflicts present in contaminated communities: (1) conflicts arising out of different self interests of the stakeholders, (2) conflicts in duties or obligations felt by individual stakeholders, and (3) conflicts in what different persons consider just or fair, right or wrong. Both stakeholder involvement and public participation processes involve the resolution (or the transcending) of these conflicts, but "[normative] consensus-building and alternative dispute resolution are somewhat different. The former seeks agreement; the latter reasoned compromise" (English et al., 1993, p.25). Compromise mirrors a market-like bargaining solution and thus can be said to foster utilitarian outcomes in which the net welfare of those involved is maximized. Decision analysis to

[6] See especially Michael Sandel, Democracy's Discontent: America in Search of a Public Philosophy, Harvard University Press 1996.

foster utilitarian outcomes often uses cost-benefit analysis to identify the "best" solutions.

In both public participation and stakeholder involvement processes, the role of government may vary from one of *facilitating others* to reach a consensus[7] (for example about what to monitor, the extent of cleanup, the methods used for cleanup, how to redevelop the site, etc.), to *acting as one of the several parties* attempting to reach a consensus. Alternatively, government may retain decision-making authority, which may or may not mean acting in a trusteeship or stewardship role for public health and environment. As a trustee or steward, government either may seek to foster distributive justice and fairness for the disadvantaged, or instead may see itself as a fiduciary agent for the society as a whole, searching for "reasonable" or cost-efficient or cost-effective solutions. This may occur in both health and environmental agencies.

Unfortunately, neither the government nor the participating public is often clear about the purposes of the public or stakeholder participation activities in which they are, or are about to become, involved. While sometimes required in law, agency guidelines for public participation are often vague [8] [but see CDC/ATSDR, 1997; NACCHO, undated; NEJAC, 1996; and DOE, 1993]. Ironically, the idea that people ought to control their destiny directly may get government off the hook as trustee, or even as the enforcer of environmental laws. An important question is whether increased demands for public participation reflect the failure (and mistrust) of government (and its politicized experts) and of representative democracy to implement/enforce environmental regulation, or just a mature reflection of the inherent limitations of these institutions. A final policy question is whether guidelines for public participation in law should become more particularized, regarding the roles, responsibilities, and expectations of the different players. We return these issues in Section VII, where we discuss conclusions and policy implications.

C. Multi-level Interagency Interactions and Problems of Coordination

[7] The consensus can be reached by majoritarian processes (where the political majority gets what it wants, thereby approximating maximum collective utility) or by normative processes. The latter is distinguished by situations in which "citizens are willing to sacrifice self-interest on behalf of a longer-term [and more far-reaching] societal goal" under strict conditions: (1) other players must agree to do so as well, (2) the decision to do so must be free and uncoerced, and (3) the decision must benefit the long-term interests of all citizens (English et al., 1993, p 20). Also see Fiorino, 1989 and 1990.

[8] See Fiorino (1989, 1990) for a taxonomy of reasons to encourage public participation defined as substantive, normative, and instrumental.

While much attention has been focused on government-community interactions, problems of interagency coordination overlay an additional complexity that has been largely ignored in other studies. In criticizing the deficiencies of government efforts to participate optimally with the community, in all fairness, it should also be pointed out that government participants sometimes devote considerable effort and time attempting to develop common agendas or coordinate activities amongst themselves, both at the federal, state, and local levels. These multi-agency activities may have visible and beneficial effects in the community, or may inadvertently short-change community participation activities.

D. Origins, Purposes, and Scope of the Study

Many prior studies have examined public participation and stakeholder involvement in contaminated communities. They have focused on a variety of problems, including monitoring the environmental contamination and health of the community (Ashford et al.,1991; Cole, 1996), clean-up activities (CCEM, 1993; DOE, 1993; FFER, 1993), future land and facility use (English et al.,1993), and economic redevelopment in Brownfields (see Section VII-D) Some have focused on specific mechanisms of participation between industry and the public (Lynn, 1995a, 1995b); others have explored the dynamics of participation with local or state government (Lynn, 1995a, 1995b; NACCHO, undated).[9]

A prior MIT study of community monitoring funded by NIOSH and ATSDR investigated *historical* examples of failed processes in public involvement in contaminated communities (Ashford et al.,1991). The cases investigated in this earlier study focused on mostly white, middle-class communities. Based on these and other historical failures, policy initiatives were identified to improve the outcomes of public participation in the future. These initiatives addressed seven areas:

1. Developing new legislation
2. Building skills and capability in the community
3. Building skills and capability in the agencies
4. Increasing specific authority for (and obligations of) government
5. Providing for increased community participation in, and access to, government decisions
6. Providing adequate incentives and motivation to agency personnel
7. Providing for more, or more predictable, and better communication

The present study examines seven *current, ongoing* cases of public participation across a broader spectrum of communities. In contrast to earlier notorious failures, such as those at Love Canal, Woburn, and Times Beach, the cases in this study explore experiences considered *relatively successful* by both the agencies and the

[9] The reader is referred to Section III for a selective review of the literature.

communities. The study sought to better understand the determinants of successful public involvement in contaminated communities where: (1) site characterization, cleanup options, and economic redevelopment were issues of concern and, in some cases, of conflict; (2) more than one federal agency was involved; (3) state and local agencies were also involved; and (4) environmental justice was often an issue.

The purposes of the current study were to: (1) identify those factors most important to, and essential for, successful community involvement, (2) evaluate or suggest initiatives to further enhance successful public participation, and (3) identify options for more successful interaction and coordination of federal, state, and local agencies in their efforts to promote environmental and public health goals in contaminated communities. The study extends the previous MIT work by focusing on three of the seven initiatives noted above:

- Building skills and capability in the community
- Providing for increased community participation in, and access to, government decisions, and
- Providing for more, or more predictable, and better communication

In addition to problems of communication, participation, and capacity building in low-income and minority communities with disproportionate environmental burdens (i.e., "environmental justice" communities), special attention was paid to mechanisms for improving interagency coordination (relevant in part to categories 3, 4, and 6 above) at all levels of government. The audience for the report includes: (1) the stakeholders (e.g., government, community residents, industry and business) involved with site investigation, cleanup, restoration, future use, and redevelopment/revitalization in contaminated communities, and (2) academic or independent researchers from whom we have learned so much.

The report is organized in four parts.

Part One describes the background of the study and includes an Introduction (Section I), the Conceptual Framework and Methodology of the Study (Section II), and a Review of Scholarly Work/Literature on Public Participation (Section III).

Part Two is a brief digest of the case histories, with analyses of the communication, public participation, capacity building, and interagency coordination initiatives found in each case (Section IV).

Part Three, Lessons Learned, includes an Evaluation of the Different Mechanisms or Vehicles (Section V), as well as a commentary on the Interagency Coordination activities in the communities (Section VI).

Part Four (Section VII) contains Conclusions and Implications for Policy.

The case histories are provided in their entirety in a separate volume.

II. DESCRIPTION AND METHODOLOGY OF THE STUDY

A. Conceptual Framework of the Study

1. Iterative Stages of Activities In a Contaminated Community

Drawing upon earlier work at MIT (Ashford et al.,1991), we found it useful in this study to describe the evolution of activities at a particular contaminated site as a series of iterative stages: from discovery of contamination or health problems to more in-depth investigation and characterization of the site to cleanup and remediation of the contamination to ultimate re-development or revitalization of the site/area/community. It is argued that optimal community involvement may take different forms, and may utilize different vehicles or mechanisms, at the various stages. It is generally thought that earlier participation is "better." The stages thought appropriate for the cases investigated in this study are presented in Table 2-1.

TABLE 2-1: POSSIBLE STAGES IN THE CASE HISTORIES

1. Initial recognition of problems at the site and early history
2. The decision to study/investigate the site
3*. The choice of investigators
4*. The design of the study/investigation (who, what, how)
    - health endpoints of concern
    - contamination/exposures of concern
5. The conduct of the study (sampling, measurements)
6. Evaluation/presentation of results
7. Communication of the results to the community
8. The decision to Act
    - no further action
    - further study (reiterating stages 3-7)
    - remediation (see stage 10 which reiterates stages 3-7 in the context of remediation)

9+. Choice of the remediation contractor

10+. Identification, evaluation, and choice of options for remediating the contaminated site
    - identification of options (similar to stage 2)
    - evaluation of options in terms of residual contamination/health risk (reiterating stages 3-7)
    - choice of option(s)

11°. Remediation of the site

12°. Concurrent and post-remediation monitoring of the site (reiterating stages 3-7)

13°. Concurrent and post-remediation monitoring of health indicators in the community (reiterating stages 3-7)

Legend:* At some sites, stages 3 and 4 were reversed.
+ At some stages, stages 9 and 10 were reversed
° Most cases had not completed stages 11, 12, or 13 at the end of our site interviews. Most sites involved interviews when the process was at stage 10.

2. Vehicles for Public Participation

We investigated a variety of vehicles or mechanisms for public participation that fell into one or more of the categories of initiatives mentioned earlier. These include mechanisms used to:

a. Focus attention on broad-based outreach to, communication with, and education of the community (i.e., more, or more predictable, and better communication)

b. Build skills and capability in the community

c. Provide for increased community participation in, and access to, government decisions

Obviously, a vehicle such as participation in a citizens' advisory committee (category c) can also build longer-lasting capacity for future participation (category b), as well as empower citizen participants in a current dispute. The usefulness of categorizing vehicles or mechanisms in this way is to invite focused thinking or critiques about policies for their enhancement, according the functional goal desired.

3. Important Elements for Characterizing or Evaluating Public Participation Mechanisms

An aim in this research was to identify the factors and criteria most important to and essential for successful public participation processes and outcomes. Based on our prior work (Ashford et al., 1991), we began this study with a set of criteria, which was expanded in the course of doing the site investigations. This expanded list guided our *initial* analysis *within the case studies themselves* (see IIB). The factors include:

- access to information
- financial and intellectual/technical resources
- openness
- trust [between citizens and government (overseeing the PRPs), or between citizens and contractors (where government is the polluter)
- trustworthiness [of individual actors acting in an honest, truthful manner faithful to their announced or perceived roles]
- respect
- accountability [of both government to stakeholders and individual participants to their constituencies]
- appropriate balance of power [sufficient autonomy of participants from government, and balance of power among participating interests]

Ultimately, however, consideration of additional factors enriched the *cross-case comparison*, which is the focus of this report. Subsequent analysis relevant to the

lessons learned about specific vehicles, or combinations thereof, in the different communities revealed the importance of:

- communitarian vs. utilitarian outcomes
- fairness of outcome and process
- public involvement as a means to facilitate continuous change
- community awareness, education, and empowerment (mobilizing the entire community)
- stronger interpersonal relationships and social fabric
- legitimacy of views and interests (possible related to, but not identical with respect)
- encouragement of discourse to facilitate both shared understanding and shared values.

4. Focus of Our Analysis: Important Definitions and Distinctions

In our view, the success of public participation processes needs to evaluated both in terms of the "democratic"nature of those processes and in terms of distributive justice concerns raised by, among others, John Rawls in his Theory of Justice (1971). Distributive justice focuses on ensuring that the least advantaged members of society (here the contaminated community) are made relatively better off as a result of government action.

For the purposes of this work, we distinguish the terms:

Community:	the individuals, groups, or small business owners affected by the contamination, either directly or indirectly, as defined below.
Stakeholders:	the full range of individuals and groups with health, welfare, economic, and other interests related to the contaminated site. These include those involved in regulating, overseeing, and remediating and revitalizing the site; developers; and those concerned with the environment and the welfare of future generations.
Public:	a broader collection of individuals and groups, including those not necessarily directly or indirectly affected by the contamination.

The *community* is composed of some, but not all, distinguishable subsets of stakeholders. It is also a subset of the greater public. In this report, we often use the term *public participation* in a general way as an umbrella term encompassing both stakeholder processes and community involvement activities.

The *directly affected* community includes residents whose health is at risk and/or whose property or property values are adversely affected by the contamination. These are individuals who live in the contaminated areas, individuals whose properties abut the contaminated area and whose property values decrease as a result, and individuals who live outside the contaminated area, but who may be personally affected, e.g., through contamination of their water supplies. *Indirectly affected* members of the community include those citizens and community-based small business owners who may experience an economic/social burden by virtue of living or owning a business in a community whose image/reputation is tainted by the contamination. They also include individual citizens/taxpayers whose health is not at risk, but who may shoulder some of the economic burden associated with cleanup. All are affected more or less personally and thus are members of the community as we define the term. They also comprise part, but not all, of the larger public.

Stakeholders, on the other hand, encompass more than the affected community members as defined above. They include government and agency officials, PRPs, cleanup contractors, developers, investors, and the corporate business community. While corporate officials, persons with commercial/professional interests, politicians, and government officials may live in the community, their interests in the contamination are usually (but not always) related to their functional, organizational, or official capacity rather than their membership in the community *as individuals*. When we use the term "community," we mean individuals and groups whose "stakes" are *personal* (e.g., *their* heath and the health of their family, *their* places of residence, *their* [personal] economic losses; *their* businesses, etc).

The reasons for these distinctions will become clearer, but they are motivated by our concern that the least advantaged, most affected individuals are treated justly and fairly, especially if they have had a prior history of environmental injustice. A concern with justice and fairness requires that public participation and stakeholder involvement processes be evaluated in terms of the distributional effects on these special groups. When these groups are also environmental justice (EJ) communities, i.e., poor or minority communities that have borne a disproportionate share of environmental risk, we argue that justice requires special attention to their future burdens and benefits.

Some of the participatory mechanisms observed in the course of our research are structured stakeholder involvement processes. Others are unstructured public and community participation mechanisms. Some are deliberate attempts to involve and empower the community most directly affected. We have argued that the *combination* of how the government views its role and how the participants of stakeholder and community involvement processes view theirs is especially important. Where the government retains decision-making authority, it could act as a trustee for the affected community, ensuring in the Rawlsian sense, that the least advantaged are made relatively better off -- and the next most adversely situated are made next better off, etc. -- as a result of the decisions government makes. Alternatively, government could vest

decision-making authority in the participatory process, but provide procedural guarantees of sufficiently heavy influence of the least advantaged and most adversely affected members of the community.

Theoretically, stakeholder involvement processes can operate at any point along a continuum, that at one end is driven by the sum of the self-interests of the participants resulting in utilitarian/majoritarian outcomes, and at the other end seeks to promote fairness for the least advantaged and operates to achieve the greater public good.

Even in the absence of government commitment to Rawlsian-type outcomes, it has been argued that the participants themselves could evolve from utilizing a process which is utilitarian and in the nature of a consensus -- based on a compromise of demands/needs -- to a process which reaches a "normative consensus" (English, et al., 1993; Fiorino, 1989 and 1990) where the participants themselves promote decisions for "the common good", based on their commitment to "civic virtue" (Sandel, 1996). Normative consensus has been described as an example of "communitarian" participation (English et al., 1993). It could be viewed as a kind of embodiment of the participants' concern for distributive justice and a *tilt* towards Rawlsian outcomes, but without any clear rights-based formalism (Rawls, 1971) or intentional procedure imposed on the decision-making process in the stakeholder involvement process. Normative consensus, in which the participants take "moral action" and act on "higher" motives than their own self-interest, is the hallmark of a civic society, characterized by self-governance (Sandel, 1996).

The extent to which stakeholder [or even community involvement] processes can naturally or easily be encouraged to evolve into reaching normative consensus, or whether, in contrast, strong government influence is required, is certainly situation- and context-specific. While we would not argue against the importance of stakeholder involvement to the resolution of environmental problems and disputes, we argue that it may not be an adequate substitute for other forms of public and community participation, or for a strong government role in protecting the rights and interests of the most adversely affected members of the community. We are concerned that exclusive reliance on stakeholder involvement processes or on non-inclusive community involvement mechanisms may dilute the influence and voice of the most adversely affected members of the community. In our view, achieving a normative consensus is often too difficult and imprecise a process to be an adequate substitute for a rights-based approach embodied in, and enforceable under, law by government acting as a trustee for those rights (see Sandel, 1996).

For these reasons, the mechanisms for community and stakeholder involvement uncovered in our research are analyzed according to the different modes of operation of the stakeholder participants (either achieving compromise or a normative consensus) *and* government (acting either as a facilitator of dispute resolution or a trustee for the disadvantaged).

B. Case History Investigation

1. Criteria for Selection of the Cases

The study was designed to investigate seven ongoing, relatively successful examples of community participation in a broad spectrum of communities, with different geographical, racial, ethnic, socioeconomic, and degree-of-urbanization characteristics. The sites included were either (1) listed on the National Priorities List (NPL) under Superfund, (2) listed as both NPL and RCRA sites, or (3) not listed, but involved in state-administered voluntary clean-up efforts. Communities selected for the study had either a history of environmental contamination or of adverse health effects (whose origins were thought to be associated with environmental exposure to toxic chemicals) -- or both. Candidate cases were restricted to those which (1) involved at least two of the three sponsoring agencies (EPA, DOE, and ATSDR) and (2) were regarded as relative successes by both the federal agencies (at the regional office level) and by some members of the involved community groups. The "site worksheet" used to investigate candidate cases is found at Appendix A.

In the first phase of the project, three sites at three locations were investigated. In order of investigation, they were Rocky Flats, St. Louis (the FUSRAP site), and Bartlesville, OK. During the second phase, four sites at three locations were investigated. These were Albuquerque (both the South Valley and Sandia sites), Chattanooga Creek, TN, and Saltville, VA. While attempts were made to include as large a range of different sites as possible, communities of predominantly Native American or Asian makeup were absent. This was the result of the application of screening criteria *other than* racial or ethnic character. Of course, the small number of communities investigated in this study precludes drawing any definitive conclusions about the importance of many of the different characteristics of the various communities represented in our sample. What were trying to avoid was a distinctly white, middle-class bias in our investigation, which we believe was achieved.

2. Activities Undertaken and Interviews Conducted at the Sites

Considerable field work was done during the first two phases of the project. The purpose of the field work was to develop an in-depth understanding of the purposes, goals, and activities of the existing public participation and interagency coordination activities at each site and to examine the roles of trust, trustworthiness, openness, information, resources, and respect from the perspectives of different players involved. Using an unstructured interview format (see Appendix B), we interviewed as many as 30 people at each site. Using a "snowball" method, we first identified and spoke to key

informants prior to visiting the site and once there, expanded our list of interviewees on their recommendations and also upon learning of others whose views were likely to be important. Persons interviewed were promised confidentiality, but a list of the organizational affiliations/types of persons interviewed at each site accompanies the brief case history descriptions found in Part Two of this report.

We also attended meetings and other public involvement activities at some sites. Our presence at each site spanned a continuous period of 3-7 days. We collected substantial background materials on the different community involvement mechanisms at the sites, including contemporaneous accounts in the local press.

3. The Case Histories

Each of the case histories (found in their entirety in a separate volume) consists of: (1) a brief "Site Summary," (2) a set of diagrams and visuals depicting the time line of important events, community involvement mechanisms, actors involved, and other information, (3) a "Site Profile" consisting of two parts: a narrative describing the evolution of events at the site and a section analyzing the most important community involvement mechanisms, and (4) a bibliography. The reader is cautioned that detailed analysis leading to policy conclusions will not be found in the case histories, *per se*. Rather, a comparative analysis and discussion of lessons learned about successful community participation in contaminated communities is found in the main body of this report, especially in Part Three. Brief descriptions of the case histories and case-specific lessons learned are found in Part Two.

4. Feedback on the Initial Drafts of the Case Histories From Government and Community Members

Initial drafts of each case history were circulated to many of the individuals who graciously had shared their knowledge, experience, and perceptions with our research team during the site investigations. These include members of the community, as well as local and regional governmental officials. Their feedback was incorporated into the final versions of the full case histories that appear in separate volume.

C. Analytic Methodology Used in the Case Histories

As discussed in Section III below, there is a substantial literature on what constitutes successful community involvement and stakeholder involvement. There are different ways to formulate success from the community's perspective.

1. *Satisfaction of the Community with the Outcomes*

Of most immediate concern to the community is the outcome of government intervention to address its perceived needs: (1) assurance that no adverse health consequences will result from past or continued exposures -- or alternatively that their health will be monitored and appropriate care rendered, (2) cleanup or remediation of the site to the extent necessary for good health, as well as for aesthetic reasons, and (3) development of opportunities for employment, economic advancement, and enhancement of the economic and social status of the community. Much to the frustration of the scientific and engineering "experts" who render opinions on the extent of existing or future risk (before and after remediation), the communities often do not accept the proffered expert opinions for a variety of reasons. Community members frequently experience the contamination as an "assault." Their communities have been contaminated without their permission and/or knowledge and often without any discernable benefit accruing to those who live there. These factors influence the extent to which the community views the risks as "acceptable." Acceptability of risk is indeed socially constructed [Krimsky and Plough, 1988; Fischhoff, 1985]. The public may be more willing to accept the risk when some of its other needs are met, e.g., those related to economic development, job creation, and beautification.

2. *Satisfaction of the Community with the Process and Conflict Resolution*

In an effort to get the community to articulate its needs or to persuade the community that it will be heard and/or have a major voice in deciding the outcomes, a great deal of attention is paid to ensuring the fairness of participatory processes. However, not all of the approaches that put such processes into place are motivated by the same purpose. Some are designed to facilitate community access and input, some to facilitate mutual understanding. Some engage the community in shared decision making, and some go so far as to allow the community a veto (by requiring unanimity in reaching consensus or by requiring community concurrence). Ironically, processes that go out of their way to encourage community input and dialogue -- but where, in the end, governmental officials retain the final authority to make decisions -- can raise the expectation that the community will eventually get what it wants, even if it is put on notice that this will not necessarily occur. When this happens, the community may express dissatisfaction with the process as well as the outcome.

In terms of both process and outcome, achieving satisfaction of the community may be quite different than providing satisfaction for the larger group of stakeholders. Although advocates of alternative dispute resolution (ADR) often may be implicitly motivated by a desire to have public participation achieve utilitarian outcomes, the adversely affected community will generally not be satisfied with this kind of process (and outcome). They may be as dissatisfied by stakeholder processes that reach a compromise by "horse trading", as they are with a decision that is dictated primarily by scientific and engineering judgements.

Chess (1999) has found that many analysts/researchers consider both process and outcome to be important when assessing the success of public participation processes.

3. *Our Criteria for Evaluating Public Participation Mechanisms*

We began our study with the benefit of prior research and, in the course of our field studies, we expanded the list of elements we considered important and/or essential to successful public participation. In each of the full case studies, we initially evaluated strengths and limitations of specific participatory mechanisms in terms of such elements as: access to information, financial and intellectual resources, openness, trust and trustworthiness, accountability, respect, and acceptable balance of power (sufficient autonomy). *Within* each case history, these factors could help explain some of the differences observed across specific mechanisms. Some mechanisms provided more access to information, were more open, engendered more trust, and facilitated more accountability than others. Although some participatory mechanisms were more "successful" than others in any one community, it was the collective and cumulative effects of the different mechanisms that contributed to the overall success of the participatory processes in our study communities. When taken together, the public participation activities in any one community contained all of the important elements. In contrast, we previously had found these elements lacking or notably absent in our past work on acknowledged historical failures, such as in Love Canal (Ashford et al., 1991).

In preparing this final report, we had the benefit of the scholarship of others working in the field, as well as the completed case histories. This allowed us to construct a more composite set of criteria for evaluating the success of the public participation activities in the study communities in terms of both process and outcome.[1] These criteria include procedural fairness, procedural competence, and the variety of outcome variables noted below. There is some overlap in the criteria. For example, although "adequate time" is listed under procedural competence, it has an element of fairness in that some

[1] We were especially informed by the collected work of colleagues in Renn, et al., eds., 1995.

participants may have more time than others to participate. We evaluated the success of each public participation mechanism on a three point scale (+,+/- and -), indicating positive, mixed, and negative results. These criteria, applied to each case in Part Two, include:

Procedural Fairness. This criterion is composed of the following elements:

P Accessible to all members of the community

P Diversity of community views represented

P Respect for different viewpoints and different forms of expression/expertise

P Participants can participate in agenda setting; deciding how to run the mechanism; discussion and debate; development of decision making rules.

P Attention to balance of power

P Agencies are committed to reciprocity (community gives input; agencies respond;). responsiveness; follow-up

P Open and transparent process

P Independence and autonomy of mechanism

Procedural Competence. This criterion is composed of the following elements

P Purpose of participation mechanism explicit and understood/agreed to by participants

P Access to knowledge, e.g., information, expertise

P Adequate time to learn about and discuss issues; reflect on variety of viewpoints

P Resources available for participants to obtain the information/expertise they need

P Participants willing and capable of participating

Outcome:

P How well did the mechanism achieve its initial aim?

P Did it foster development of mutual understanding among participants and between participants and agency? (competent discourse; face to face discussion over time)

P Did it enhance equity and control for those affected?

P To what extent did it safeguard the disadvantaged and protect and promote minority interests? Address power imbalances? (Here we will have to look at how community members viewed the process and outcome of the PP mechanism)

P Was there shared decision making?

The case histories are presented in an abbreviated form in Part Two. These criteria are used to guide the discussion, and are applied directly in a table found at the end of each case.

In addition, we were impressed that the following considerations were also useful:

- P establishing mechanisms for continued community empowerment and civic involvement,
- P governments role as trustee vs. arbitrator/mediator,
- P environmental justice/protection of minority interests, and
- P communitarian rather than utilitarian outcomes within the community.

III. PRIOR SCHOLARLY WORK ON PUBLIC PARTICIPATION[1]

Problems of environmental risk have been identified as some of the most difficult challenges facing governments today. They both incorporate and transcend matters of science, technology, and politics, confronting, as they must, issues of scientific uncertainty, unproven technologies, conflicting interests, values, and preferences, and large time and spatial scales (Renn, Webler, and Wiedemann, 1995). The distribution of environmental risks and disagreements about their acceptability have been major sources of social conflict in the latter half of the 20th century.

In the U.S., demands and requirements for public participation in environmental policy and decision-making emerged in the midst of the social activism of the 1960s (Shepherd and Bowler, 1997). The National Environmental Policy Act (NEPA) of 1969 required federal agencies to conduct environmental impact assessments for proposed major activities and began to institutionalize public involvement in environmental decision-making through its requirements for public participation, limited and ill-defined as they were. Citizens' rights to information and participation expanded over the next two decades with the Freedom of Information Act and worker and community right-to-know requirements established in workplace regulations and environmental legislation. By the late 1980s, public involvement was an accepted dimension of environmental policy and decision-making at all levels.

A. Rationale

The theoretical basis of and justification for public participation is well described (Fiorino, 1989; Folk, 1991; Taylor, 1991; Laird, 1993; National Research Council, 1996). In democratic societies, governmental authority derives "from the consent of the governed," and public participation is seen as both morally and functionally integral to such fundamental democratic values as political equality, legitimacy and accountability of government, and social responsibility among citizens (Renn et al., 1995). In this context, public participation performs at least three core functions: (1) it helps ensure that governmental institutions are responsive and accountable to its citizens; (2) it creates venues for individuals and groups to influence decisions that affect them, while enhancing their competence and capacity to do so; and (3) through all this, it provides stability to the democratic system. It is suggested that public participation also helps strengthen the social fabric of communities by creating opportunities for learning and developing interpersonal relationships and mutual understanding; and for mobilizing,

[1]This review is meant to convey a sense of the origins, use, and status of public participation in environmental risk issues. It is not intended to be a comprehensive survey of research and scholarship in this area.

engaging, and empowering citizens to act in their own interests and in the broader interests of their communities.

Beyond these normative rationales, it is argued that public participation also performs both substantive and instrumental functions. Public participation facilitates the contribution of essential community-based knowledge, information, and insight that is often lacking in expert-driven risk processes. It can also enhance the efficiency of administrative decision-making; contribute to conflict resolution; create support for and acceptability of agency actions; facilitate implementation of decisions; and generally, lead to more rational and legitimate decisions about risk (Fiorino, 1990; National Research Council, 1996). It has been suggested that one form of participation -- stakeholder involvement processes -- performs a sort of "social peer review" function, which the convener hopes will legitimate decisions and make them more socially acceptable (Yosie and Herbst, 1998).

While these rationales provide strong conceptual bases for public participation, public demand for participation in government decision-making has increased as trust and confidence in government, other major institutions, and the professions has eroded (Hadden, 1990; Kasperson, 1994; Berman, 1997). This "decline of deference" is clearly visible in matters relating to environmental risk (Laird, 1989). The public is loathe to trust a government that failed to prevent (and, indeed, was sometime responsible for creating) environmental contamination (Edelstein, 1988). It is also distrustful of scientific and technical experts from a variety of public and private institutions who have been slow to acknowledge hazards and quick to minimize risk, often preferring to wait for more scientific evidence before taking action deemed to protect the public interest. While in the past, these experts have proffered their evidence and opinions under the banner of neutrality, it is now generally acknowledged that science is not value-neutral or objective --especially in terms of how it makes assumptions, frames problems, or, at times, reports findings (NRC, 1996). The public is well aware that science and technical expertise can be politicized (Nelkin, 1975; Fiorino, 1989; Eden, 1996). They know that interpretation of scientific evidence does not occur in a vacuum -- that it cannot be isolated from the personal, social, and political context of the individual providing the interpretation (Ashford, 1988). The underlying goals and assumptions of science and technocratic processes value cost minimization, efficiency, and scientific rationality (Nelkin, 1984; Folk, 1991), and these factors may be at odds with concerned and angry citizens who may view environmental contamination as an assault on the health, welfare, and way of life of themselves, their families, and communities.

At the same time, increased transparency of government decision making, along with the diffusion of information technology, decentralization of decision making in large institutions, and the general popularity of stakeholder involvement processes have provided additional impetus for more interactive and participatory forms of institutional decision making (Yosie and Herbst, 1998). Government's tilt towards "reinvention"

and industry's towards "re-engineering" also favor use of "stakeholder involvement" processes (Yosie and Herbst, 1998).

B. What is public participation?

Despite the general acceptance of public participation in decision-making around environmental risk, it is not entirely clear what the concept entails and how might be distinguished from related constructs, e.g., public involvement, community participation, community involvement, and stakeholder involvement. There is little legislative guidance on this issue. Congress has delegated the task of implementing its vaguely stated requirements for public involvement/participation to the administrative agencies. Scholars and public participation practitioners have provided additional insights.

What's in a word? The terms *participation, involvement,* and *engagement* are used more or less synonymously to denote a process by which individuals and groups come together in some way to communicate, interact, exchange information, provide input around a particular set of issues, problems, or decisions, and share in decision-making to one degree or another. The extent to which the interaction can be translated into influence on decision-making [and the extent of shared decision-making] has been discussed by Arnstein (1969), in terms of citizen power, Hance et al., (1988), in terms of a continuum from complete citizen to complete agency power, and by English et al. (1993) in terms of "stakeholder" influence. Government-sponsored public participation efforts have spanned these conceptual ladders of participation -- from instances in which agencies have already made their decisions and use public participation for window dressing to forums in which the public, the community, or involved stakeholders have been able to exert considerable influence on the decision outcome -- perhaps even reversing a government decision. The historical deficiencies of public participation processes have been well criticized (see, for example, Kasperson, 1986; Fiorino, 1989; Peelle, 1991).

Definitions of and distinctions among *community, public*, and *stakeholder* can be found in the literature on public participation -- but these terms are not used consistently and may confuse rather than clarify understanding. It is generally agreed that *the public* is not any one body, but rather a collection of individuals and groups (different *publics*) that can be characterized as organized or unorganized, professional or amateur, grassroots or institutional and attentive or inattentive to the issues at hand (Peelle, 1995). Historically, public participation has not differentiated among members of the public. In this sense, the public in public participation is a broad construct. In contaminated communities, however, the public participants did not generally include regulators or PRPs.

Communities, on the other hand, have been defined as groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people. (CDC/ATSDR, 1997). From a sociological perspective,

the notion of community refers to a group of people united by at least one common characteristic. In this sense, a community is part of a larger public. In the environmental literature, the term *community* often refers to groups of people living near or affected by the environmental contamination. In this sense, there may be a variety of sub-communities whose interests and views about the contamination vary. They include (1) those whose health and/or property have been affected directly or are at risk, (2) the business community whose financial risk may be affected by their location in or proximity to a contaminated area, and (3) the local government and citizen taxpayers who are not affected by the contamination directly but may be responsible for shouldering the economic burden of cleaning it up. The characterization of community will likely vary by site (English, 1991).

In a practical sense, *stakeholders* are often (but not always) representative members of one of the organized, attentive publics. They also are part of one or more communities in that they have a special interest/stake in the issue at hand. For English et al. (1993), stakeholder involvement is more inclusive and targeted than public participation. These processes tend to represent the full range of interests in the contaminated site. In addition to 1) those living or working near the site whose health and welfare may be affected by the contamination, stakeholder processes also encompass 2) those with economic interests in the site and its cleanup, including local government, the local business community, and the tax-paying public; and 3) those with a more indirect interest in the site, such as agency officials, cleanup contractors, national environmental groups, and the media. Stakeholder processes generally involve representatives of organized constituencies or institutions -- industry, labor, environmental groups, governmental regulators, local governments.

Clearly, publics, communities, and stakeholders overlap -- and they are often defined functionally for the purposes of participatory processes. Although in some cases, their definitions may be distinctions without a difference, in other cases, the terms may blur or confuse very important distinctions. Despite its current cache, stakeholder involvement is *not* the same as public participation (English et al., 1993). Not all of "the public" are stakeholders in a particular situation, nor are stakeholders limited to "the public" (English et al., 1993). Indeed, with its focus on institutional and organizational constituencies, stakeholder involvement runs the risk of ignoring the affected, but unorganized and inactivate, public. Moreover, these processes may be dominated by the most powerful vested interests/stakeholders, effectively diluting the voices of the least powerful members of the community.

C. What is successful public participation?

With governmental agencies and private industry embracing public participation generally and stakeholder involvement more specifically, there is considerable interest

in examining whether or not these efforts have been or can be successful. The issue of "success" has been addressed conceptually by many scholars, who have proposed a host of evaluative criteria. Definitions of success are complicated, because there is a diversity of goals and expectations for public participation processes and mechanisms. In this sense, success is relative and site-specific; it varies with the views of the participants and sponsors and may be context-dependent (English, 1991). However, researchers, scholars, and practitioners have offered definitions of and prescriptions for public participation, as well as criteria for evaluating success.

Many have suggested the application of a normative yardstick when measuring the success of public participation processes, often buttressed by theories of democracy and justice. Webler (1993) has proposed fairness and competence as the metaethical basis and criteria for evaluating public participation. Building on the work of Jürgen Habermas and his theory of communicative action (Habermas, 1984, 1987), Webler suggests that "right"participation encourages multi-way communication; is consensual and non-hierarchical; requires respect for individual autonomy; relies on citizens' reasonableness; and promotes critical self-reflection. Laird (1993) agrees that the learning process is central to participation in scientific and technological policy issues and proposes a integrative form for effective participation called participatory analysis. Fiorino (1990) also endorses the basic value of discussion in public participation, which he sees as reinforcing citizen autonomy and sense of improvability through the promotion of individual reason, judgement, and choice. In addition, he notes that participation theory suggests other criteria for evaluating mechanisms as democratic processes: the direct involvement of "amateurs" in decision making, shared collective decision making, and equality of participation. Eden (1996) also defines truly "public" participation as lay involvement. Among their suggested criteria, Syme and Sadler (1994) include the normative criterion of interactive justice, which might include the extent to which participants believe they have gained an adequate degree of knowledge about and control over the issue at hand. In her discussion of risk perception, Hadden (1990) also notes the importance of mechanisms that enhance control and equity. Shepherd and Bowler (1997) include the democratic ideal of citizen representation in their analytical framework for examining the effectiveness of public participation programs. English et al. (1993) suggest that the ideal outcome of stakeholder involvement is a normative consensus. They also propose a set of ethical criteria to be used when designing and later evaluating stakeholder involvement processes, including representativeness, impartiality, accountability, confidentiality, transparency, and recognition of promises. Vaughan (1995) emphasizes the role of both distributive and procedural justice in governmental decision making, parameters of particular importance to the environmental justice movement.

Many researchers propose evaluative criteria based more on participants' goals and expectations for the particular process than on the more universal theory-based concepts described above. Their goals and criteria generally fall into two broad categories -- process and outcome (Chess, 1999), although they may reflect elements

of normative theories. Laird (1993), for example, derives a set of criteria from the democratic theories of pluralism and direct participation. These criteria include the number of groups/individuals brought into the process, opportunity for learning and improved understanding, access to relevant officials, equality of resources, and degree of coercive influence. Webler's metaethical criteria of fairness and competence include many procedural dimensions, such as providing all participants with an equal chance to influence the agenda and rules for participation.

Process goals focus primarily on means rather than ends, and the criteria used to evaluate success examine a variety of procedural aspects of the participatory programs. Lach et al. (1996) propose such process indicators as accessability to the decision making process, diversity of views represented, opportunities for participation, information exchange, and identification and integration of concerns. They go on to suggest very concrete metrics, such as early involvement of stakeholders, number of options identified, number/types of participants, decision maker presence at meetings, availability and clarity of materials, etc. Syme and Sadler (1994) discuss issues of procedural justice, and suggest such criteria as independence of the facilitator. English et al. (1993) suggest operational criteria for stakeholder involvement mechanisms that include inclusiveness, adaptability, amendability, resiliency, durability, and generalizability. Yosie and Herbst (1998) suggest that process indicators are those factors that add value to a decision making process.

For some researchers, scholars, and practitioners, the success of a public participation effort can and should be judged in terms of results or outcomes. This is trickier, because there may be many preferred outcomes. For the agency, outcome success may mean public support for its plans/decisions, conflict resolution, or ease of implementing decisions. The community, on the other hand, may measure success in terms of the extent to which it is able to achieve its cleanup goals or alter and even block agency proposals. The National Research Council (1997) and the Presidential/Congressional Commission on Risk Assessment and Risk Management (1997) suggest that public participation will lead to better decisions. Lach and Hixson (1996) propose such outcome indicator as project/decision acceptability, project efficiency, cost avoidance, and mutual learning and respect. Other important outcomes also include improved understanding (Laird, 1993); conflict resolution (Shepherd and Bowler, 1997; Yosie and Herbst, 1998); consensus (Elder, 1982; Fiorino, 1990; English et al., 1993); influence on and participation in decision making (Lynn, 1987; Fiorino, 1990; Kathlene and Martin, 1991), and participant satisfaction with the outcome (Mazmanian and Nienaber, 1979).

In their examination of 14 empirical studies of one of the more popular forms of public participation -- the citizen advisory committee -- Lynn and Busenberg (1995) lay out the definitions and measures of success used by different investigators. They found a mix of both process and outcome criteria. Chess and Purcell (1999) also explore process and outcome goals used in 22 empirical studies of three public participation mechanisms -- public meetings, workshops, and citizen advisory committees. Of these,

16 used both process and outcome criteria and five used only process criteria. Only one study, which examined two situations, used an outcome criteria (influence on decision) as the sole measure of success. These findings suggest a clear preference for evaluating both process and outcome goals when assessing the success or effectiveness of different public participation mechanisms. Indeed, the authors advocate methodologic pluralism as a way to overcome the limitations of any one approach (Chess and Purcell, 1999). Yosie and Herbst (1998) interviewed 37 individuals with extensive experience in stakeholder involvement processes and also found agreement on the need for both process and outcome evaluative measures. There was, however, little consensus on the nature or weighting of the measures.

Schweitzer et al. (1996) developed 17 different definitions for success in public participation programs based on their interviews with key internal and external stakeholders at five DOE facilities, along with their review of the literature. They grouped these definitions into five categories dealing with: (1) the decision making process; (2) the effects of public participation on stakeholder understanding and attitudes; (3) the effects of public participation on environmental management decision; (4) the effects of environmental management decision on site conditions; and (5) the effects of environmental management decisions on stakeholders' objectives. They suggest that the extent of success for most definitions can be measured reasonably well by both objective and subjective performance indicators. They also note that complexity of DOE environmental management activities, the tremendous diversity of stakeholder groups, and the variety of interests within these groups argue against the oversimplified use of any one definition.

Theoretically and empirically, it seems that public participation has both procedural and outcome goals and that its "success" should and can be assessed in terms of both.

D. What Accounts for Success?

Even if success can be defined and measured, there is both a practical need and academic interest in identifying factors associated with success and failure. Peelle et al. (1996) have summarized the long list of factors commonly identified in the literature and case studies as associated with successful public participation. These include such factors as: early involvement, inclusiveness, two-way communication, adequate information and resources, particular types of mechanisms, degree of citizen control, incentives and/or compensation, prior community experience; agreement on goals; etc.

Peelle et al. (1996) group these factors into five categories: (1) process factors; (2) organizational context; (3) strategic considerations; (4) contextual factors [the social, economic, historical, and political context of the situation]; and (5) unique factors. Applying these factors to case studies reported in the literature and to their own considerable field data, they go on to develop a comprehensive framework for

evaluating factors leading to successful public participation by categorizing them as: (1) essential in most cases; (2) essential in some cases; (3) helpful but not always required; and (4) important in specific/unique circumstances. This analysis leads the authors to conclude that the following factors are essential in most cases:

- Agency clarity on goals and stakeholder roles in public participation
- Top management commitment to the public participation process
- Manager/leader goes beyond legal minimum
- Agency responsiveness to stakeholders
- Two-way communication and education
- Interactive and iterative public participation
- Adequate resources
- Development of provisional trust between agency and public
- Giving priority to trust building actions
- Openness of the agency

E. Mechanisms for Public Participation

The diversity of mechanisms and vehicles for public participation and stakeholder involvement is considerable, and there is substantial commentary on their advantages and limitations, successes and failures. This report does not provide an exhaustive review of these various mechanisms. Rather, we describe some of the more salient features and/or issues surrounding use of the more frequently used vehicles and refer the reader elsewhere for more detailed analysis and discussion.

Public hearings/meetings are perhaps the most traditional and familiar form of public participation. Hearings are often required by law and agencies have used them historically to announce and defend their proposals and plans. Advantages are that these forums are relatively easy to convene, are open to everyone, provide an opportunity for citizens to learn about agency intentions, and provide a form for concerned or affected citizens to present their views and possibly affect decisions. Potential disadvantages include their pro forma nature and tendency to occur late in the decision making process; the possibility that they may be dominated by organized interests, the most outspoken critics in the community, and/or individuals most at ease with public speaking in the community. Public hearings and meetings often invite posturing and rarely have the time needed for meaningful discussion. For more information, see Mazmanian and Nienaber (1970), Rosener (1982), Fiorino (1990), Webler and Renn (1995), National Research Council (1996).

Citizen Advisory Committees, Task Forces may be convened to examine one or more particular issues, provide ongoing advice to an agency or organization, and/or make recommendations on specific issues. Participants in these types of mechanisms have the advantage of meeting over time, allowing for more in-depth examination of issues. This facilitates the accumulation of a common base of information, the creation of

relationships, and the development of mutual understanding, respect for differing views, and common ground. These types of mechanisms frequently operate via consensus. Concerns relate to their limited inclusiveness, representativeness, degree of autonomy and independence from the sponsoring agency, high level of commitment required of members, a need for technical expertise, and agency use of the group's recommendations. See, for example, Lynn (1987), English et al. (1993), Lynn and Busenberg (1995), Lynn and Karetz (1996), Vari (1996), National Research Council (1996).

Citizen Surveys have been used to complement and supplement other public involvement mechanisms. They generally are used to solicit citizens' views, opinions, knowledge, and perceptions of particular issues. They may be targeted or rely on random sampling procedures. The method has the advantages of obtaining views and opinions across a broad range of "publics" -- including the silent majority. Citizens do not need strong communication skills or specialized knowledge in order to participate. Random sampling can help ensure representativeness. However, surveys do not provide an opportunity for dialogue and learning. They may oversimplify complex issues and isolate them from their important social and community contexts. They may be biased in their construction and interpretation. Officials can easily ignore the results. See, for example, Fiorino (1990), English et al. (1993).

Citizen Juries and Review Panels have been used to weigh or perhaps develop policy options/choices, usually around a single, clearly defined issue. Participants are selected randomly, perhaps from a stratified sample of the community. The jurors/panelists hear testimony from technical experts and stakeholders and have an opportunity to question and challenge them. Deliberating together, they discuss and evaluate the evidence and vote on a final decision or set of recommendations. The selection process helps enhance representativeness and impartiality, although a majority rule approach to voting may overwhelm minority interests in the issue. The involvement of lay citizens as jurists helps balance the weight generally afforded scientific and technical experts, thus facilitating greater infusion of community values into the decision making process. The formality of this mechanism raises expectations that the initiating agency will seriously consider implementing the decisions/recommendations that emerge from the process. For more information, see Fiorino (1990); Renn et al. (1993); Kathlene and Martin (1991); Crosby (1995); Armour (1995); and NRC (1996).

Alternative Dispute Resolution/Mediation/Negotiation processes are increasingly popular methods of reaching consensus or resolving conflicts over risk-related issues. They are generally facilitated processes, involving parties with a wide range of views and interests in the issue at hand. Participants meet over time and attempt to resolve differences through dialogue, deliberation, and compromise. Federal agencies frequently use negotiated rulemaking in the regulatory process. These mechanisms operate over time, give participants access to information, and provide opportunity for

learning and shared decision making. However, the success and fairness of these processes may be hampered by a lack of representativeness and the exclusion of unorganized interests); a bias in favor of the existing societal power distribution; and uncertain agency commitment to the outcome. See Fiorino (1995); Hadden (1995); Baughman (1995); Nothdurft (1995); Susskind and Ozawa (1985); Susskind and McMahon (1985); and NRC (1996).

There are, of course, other important mechanisms of public participation. These include the direct democracy approaches of ballot initiatives and referenda, town meetings, petitions and protests, as well as the emerging technology-based approaches that include, for example, computer-based and media-based polling, videoconferencing, and computer-assisted meetings. See English et al. (1993) for a discussion and analysis of these mechanisms.

F. Issues and Challenges

Theorists, researchers, and policy analysts raise a host of issues that pose practical challenges to agencies and institutions required, willing, and/or eager to engage in public participation activities. Some of these have been mentioned above, such as the purpose of public participation, the goals of any particular participatory activity, conceptualizing and identifying the public, the community, and the stakeholders, defining "success" and developing evaluative criteria, and selecting the type(s) of participatory mechanism. The literature, as well as actual efforts to implement public participation processes, continue to raise other difficult issues, some of which are noted below.

Who speaks for the community? Although the literature offers definitions and distinctions among terms (e.g. public, community, stakeholder), the issue continues to challenge analysts and practitioners alike. Clearly, the identification of the "right" participants is situation- and context-specific, but issues of representativeness are not easily resolved. Many, indeed most, public participation processes involve organized interests and/or activated members of the community. It is not at all clear that those who participate in these activities are adequate surrogates for or can represent the views and values of the larger, unorganized, inactive, and non-participating public. The issue may be particularly relevant in marginalized and socially disadvantaged communities where affected citizens have many other, and perhaps more pressing, concerns. In any community, participation takes time and there are many potential barriers (Fiorino, 1989; Yosie, 1998).

On a practical level, decisions about how participants are selected and appointed can significantly affect both the perception and the reality of the fairness, independence, and representativeness of the participatory process. A desire for representativeness will often confront demands for efficiency. While there have been calls for more inclusive and proactive methods for broadening the base of public participation (Peelle, 1991;

Chess et al. 1995), "best practice" has yet to be described.

What can/should different groups contribute to agency decision making through public participation? The literature is rich with debate and discussion of different forms of rationality (see, for example, Perrow, 1984; Shrader-Frechette, 1985, 1991; Wynne, 1991); the role of science and scientific/technical expertise in decision making (e.g., Nelkin, 1975; Krimsky and Plough, 1988; Edelstein, 1988; Fiorino, 1989, 1990; Eden, 1996); and methods for eliciting community values (e.g., Renn et al., 1993). The importance, relevance, and necessity of citizen- and community-based knowledge and expertise in environmental decision making is well acknowledged. Reliable technical and scientific knowledge, skills, experience, and judgement are also integral to decision making around environmental risk. The National Research Council (1996) has emphasized the importance of getting the science right and getting the right science, along with getting the right participation and getting the participation right. The challenge lies in the implementation, and there is no recipe.

When should the public become involved in environmental decision making? Despite a history of late involvement, it is generally agreed that public involvement should begin early in the decision making process, as problems are being defined and formulated, and be sustained throughout (Kasperson, 1986; National Research Council, 1996; Presidential/Congressional Commission, 1997; Chess and Purcell, 1999). Early involvement helps take citizens out of a reactive position and offers them meaningful engagement in discussions of options, tradeoffs, and consequences. It is also agreed public participation activities should not be initiated if decisions have already been made or if there is no possibility that the public can influence them. Because they found some instances of successful public participation in which it did not occur, Peelle et al. (1996) suggest that early involvement is helpful, but may not always be necessary.

What mechanisms should be used? The literature is replete with discussions and comparisons of many parameters of the different public involvement mechanism (see, for example, English et al., 1991; Renn et al., 1995). Again, there is no one best practice, as the mechanisms vary in important structural dimensions, such as duration and resource availability. Moreover, they can be used for different purposes, e.g., gathering information, identifying options; solving problems, giving advice, building consensus, resolving conflicts, and making decisions. As noted earlier, many scholars favor mechanisms that provide opportunities for public discourse and deliberation, social learning, and the development of mutual understanding and shared values (e.g., Fiorino, 1989, 1990; Laird, 1993). Participatory methods are simply tools. It has been suggested that results will depend more on the tool's use and its context than on the form it takes (NRC, 1996; Chess and Purcell 1999). Successful public participation may require the use of a variety and combination of tools.[2]

[2] This was the case in the communities involved in this study.

What factors are likely to result in successful public participation? The literature and case studies have tentatively identified a host of factors seemingly associated with success (by virtue of their presence) or failure (by their absence). Many have intuitive appeal. However, there is still a lot to learn about the requisite nature of these factors; their independence and interdependence, their importance in different situations/contexts and at different stages of the decision making process; and their relative contributions to successful participatory efforts (see Peelle et al., 1996).

What is the role of government in contaminated communities? There is a significant and historical literature on the meaning and reach of the social contract between government and the governed. Philosophers and political theorists from Jacques Rousseau, John Stuart Mill, Immanuel Kant, and Thomas Jefferson have explored this issue, as have more contemporary scholars (e.g., Patemen, 1970; Rawls, 1971; Reiss, 1970). More recently, Sandal (1996) has put into sharp focus the question of whether government ought to act as the trustee of minority interests or facilitate majoritarian decision making in general. There is little, if any, scholarship on the alternative roles of government in the context of environmental contamination. This report hopes to stimulate consideration and discussion of this issue.

IV. BRIEF DESCRIPTIONS/DIGESTS OF THE CASE HISTORIES

NATIONAL ZINC SITE, BARTLESVILLE, OKLAHOMA

1) Brief History of the Site, Key Issues, and Conflicts

This case involves heavy metal contamination of the West Side of Bartlesville, a community with a large proportion of low income and minority (African-American) residents. The West Side had long endured a disproportionate burden of environmental hazards within the larger community of Bartlesville, coupled with a profound institutional failure to address environmental problems and concerns. There was a long history of distrust among West Side citizens for local government, which had failed to act on known contamination, research findings of elevated lead levels in West Side children, and citizens' concerns about possible health problems on the West Side. This failure of state and local government to address (or even acknowledge) contamination and health issues was blamed on institutional racism, classism, and a lack of government resources. There was a clear and historic imbalance of power in the city of Bartlesville. Never cohesive to begin with, a proposal to list the contaminated site on the EPA National Priority List (NPL) further divided and polarized the community. Prior to the proposal for NPL listing, the only grassroots group dealing with the contamination was an active group on the West Side (Citizens Against Toxics/CAT). After NPL listing, other groups emerged to represent other interests. Agency-initiated public participation came to Bartlesville very late in the history of community contamination. [The first independent studies were done in 1975; ATSDR's health consultation, and attendant "public availability" sessions began in 1991.] This and subsequent public participation initiatives focused on issues relating to cleanup. The community was sharply divided on: the level of contamination; the health risks posed by the contamination; and federal- vs. state-controlled cleanup. An interest in using the cleanup process to confer economic advantages on the affected community was also an important element in the case.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

Recognizing that formal community involvement/public participation mechanisms are necessarily limited in their reach, the federal and state agencies -- and the public participation mechanisms spawned by their community involvement activities -- instituted a variety of activities designed to reach the larger community. These included:

- X public availability sessions and separate meetings with different interest groups to provide information about and discuss the meaning of ATSDR's health consultation;
- X public meetings and open round table discussions linked to meetings of the more formal mechanisms, e.g., the Lead Steering Committee and the Lead Oversight Committee, described below;
- X a survey of property use in the affected area to inform the Lead Oversight Committee on priorities for soil removal and on possibilities for future development activities on the West Side.
- X Public meetings to introduce the cleanup contractor and to discuss the workplan and time schedule

X The establishment of an information center by the cleanup contractor

Importantly, most of these outreach and communication activities were held on the West Side. These activities were essential to address the legacy of lack of openness and institutional mistrust in the affected community.

3) Attention to Building Capacity in the Community Outside the Public Participation Mechanisms

The state environmental agency provided a technical assistance grant (TAG) to a coalition of interest groups within the community (the Bartlesville Coalition, see below). The Coalition used the TAG funding to hire technical advisors to help them understand the proposed cleanup plan and related technical issues and to help them educate the broader public about this plan. Of interest, the state agency also used the promise of TAG funding to encourage dialogue and reduce conflict among the warring factions within the community. By encouraging the major grassroots environmental group within the affected community [CAT] to join with other interest groups (Bartlesville Environmental Information committee [BEIC] and West Side Alliance for Revitalization [WAR]) in their proposal for TAG funding, the state agency was able to address two important community issues -- the need to build capacity and the need to foster intra-community communication. Later, the Coalition was key in broadening the cleanup process to pursue the wider goals of the affected community.

4) Formal Mechanisms for Public Participation

Three agency-initiated mechanisms for public participation operated in Bartlesville, each established by or formed for the purpose of interacting with different levels of government.

The Lead Steering Committee. This mechanism was established by the state environmental agency, primarily as a vehicle for two-way communication between the involved public agencies and the public. By disseminating information about agency initiatives on the West Side and soliciting community input, the agencies hoped to demonstrate their interest in an open decision-making process. Members were appointed by the state agency, after trying to identify the "major players" in the community at a public meeting. Because the primary purpose was getting information out to the community, members of the local media were appointed. Some members of the affected West Side community felt under-represented on the committee. Committee members from the West Side reported a continued sense of a power imbalance, noting their views were not respected or taken as seriously as those of other members.

According to some members and state agency staff, the Committee enhanced intra-community communication among its members; communication with the wider public through public hearings held in conjunction with its meetings; and two-way communication between the agencies and the community. The Committee focused on issues relating to cleanup (identifying priority areas) and on health issues (blood lead testing of children). The agency made considerable effort to make information more accessible to members of the Steering Committee and the public, and to engage them in a discussion of the meaning of the information. This helped address the legacy of lack of openness. Despite this, a perceived lack of independence

from the agencies motivated some sectors of the community to establish their own structures for communication and interaction.[1]

Essentially, the role of this mechanism was limited to information dissemination and two-way communication. There was no shared decision-making. Indeed, the state agency made it clear to participants that their role was advisory only. However, the agencies did take actions that were consistent with community views and priorities. The initiating agency retained its role as decision maker.

The Select Oversight Committee. This mechanism was established locally by the Bartlesville City Council, principally as a way to build support in the West Side for a locally-controlled cleanup in lieu of federal cleanup under Superfund. This was done, in part, because of federal and state agency insistence that the proposed locally-controlled cleanup option have full community support.[2] The City Council determined the composition of the Committee and appointed "open minded" citizens unaffiliated with the two warring community groups (BEIC and CAT). The Committee sought to create the opportunity for dialogue among the different community interests about the contamination and to develop a community consensus on how to manage it. This mechanism was the city's attempt to build trust and community cohesion in place of historic distrust for local government and profound community polarization.

The Committee saw itself as an unaligned board -- an alternative, open forum for a public round table discussion on any issue. To help build trust and credibility with the West Side, it resolved to address issues broader than the cleanup of lead contamination. The Committee placed a high priority on economic development for the West Side. It advised City Council to apply for enterprise zone status and to address land use and zoning issues on the West Side. It worked closely with WAR, a group of African-American business persons and community leaders seeking to improve the quality of life for West Side residents. To help establish its legitimacy and independence from the City Council, the Committee held its meetings on the West Side. The responsiveness of the City Council to the recommendations of the Oversight Committee helped establish its credibility in the community. At times, Committee members perceived that

---

[1] Notably, in the wake of EPA's decision to include the site on the NPL, a group of corporate representatives, city officials, and members of the Chamber of Commerce created the Bartlesville Environmental Information Center (BEIC), primarily to oppose the listing. It is beyond the purview of this report to analyze the evolution and accomplishments of grassroots groups dealing with issues related to the contamination. Bartlesville had three such groups: BEIC, the Coalition Against Toxics (CAT), and West Side Alliance for Revitalization (WAR).

[2] This essentially gave the West Side veto power on state-controlled cleanup.

the state agency did not support the Committee's efforts to involve and educate the community -- perhaps because the state considered public participation and community relations the responsibility of its own mechanism -- the Lead Steering Committee discussed above. The Select Oversight Committee functioned as a convener and facilitator of disparate views and interests.

The Bartlesville Coalition was not established by any government agency. Rather, upon the urging of the state environmental agency which had indicated its preference to provide TAG funding to a coalition, three community groups (CAT, BEIC, and WAR)-- each with different agendas[3] -- came together to apply collectively for a Technical Assistance Grant (TAG). The three groups selected their own representatives for membership on the Coalition. Because of the historical animosity and distrust of the West Side groups for BEIC, the Coalition devised a weighted voting strategy to address the power imbalance and ensure protection of the West Side's interests. The Coalition operated independently and members were accountable to the organizations they represented. The Coalition enhanced public discourse and was able to achieve consensus on state cleanup. They also were able to insert a beautification clause into the final Consent Agreement, which was empowering and precedent to/a prerequisite for economic development on the West Side. Despite this, some members of CAT believed the final Consent Agreement more fully conformed to the interests of the BEIC (state cleanup) and WAR (economic development) than it did to the full range of concerns of its members, who wanted the health concerns of West Side residents addressed in the final Consent Agreement.

5) How Successful Were The Public Participation Mechanisms?

Table 4-1 rates these three mechanisms on the various criteria described earlier in Section IIC. Although each met some of the criteria for procedural fairness, only the grassroots Bartlesville Coalition was perceived as fully independent, autonomous, and structured to address the power imbalances in the community. Each of the mechanisms met the criteria for procedural competence and all were on their way to meeting their articulated objectives . Each mechanism functioned long enough for the participants to begin to develop a sense of mutual understanding, and each achieved a degree of influence over the cleanup process and other related issues. The agencies were often responsive to the concerns and recommendations of the different mechanisms, although shared decision-making probably would not be the appropriate descriptor for any of these mechanisms. Taken together, the public participation mechanisms in Bartlesville helped facilitate dialogue and consensus around state cleanup in the community, as well as begin to address the historical power imbalances between the West Side

[3] BEIC was motivated to join because it favored state cleanup and understood this required community consensus. CAT participated because of its long-standing desire for full and certain cleanup. The locus of control of the cleanup was less important. The group also saw in the TAG an opportunity to further develop its skills and infrastructure. WAR was motivated by its strong commitment to economic development for the West Side.

and the rest of the community. Although some members of the affected community (i.e., some members of CAT) were not fully satisfied with the outcome of the process, cleanup -- originally opposed by some members of the larger community -- was in process and a degree of community trust in local and state agencies was restored.

6) Mechanisms of Interagency Cooperation

Two state agencies (ODEQ, OSDH) and two federal agencies (EPA, ATSDR) formed an Interagency Task Force to: 1) address recommendations stemming from the ATSDR health consultation; 2) coordinate related activities; and 3) divide responsibilities for specific projects, e.g., soil testing, blood lead screening of West Side children, and coordination of agency public involvement activities. During its health consultation, ATSDR had prioritized communication with the affected community, which helped establish community trust in the agency. Through the Interagency Task Force, ATSDR was able to use its credibility with the affected community to help rehabilitate the trustworthiness of the involved state agencies. By careful attention to the delegation and assumption of different responsibilities across the federal-state divide, the Task Force was able to more quickly accomplish activities important to the community, e.g., ATSDR funded the state to conduct the blood lead studies, which facilitated more timely release of results than would have been possible if ATSDR performed the studies itself. Moreover, a cross-agency focus on community involvement activities provided a bridge to interagency cooperation on a host of issues related to the site.

Funding provided through the EPA Superfund Accelerated Cleanup Model (SACM)[4] further facilitated interagency cooperation and decision-making around specific remediation activities in high access areas of particular concern to the community.

Staff members from all four agencies were enthusiastic about the level of interagency cooperation that emerged from the Task Force, which provided a structured process for interagency communication and conflict avoidance. Most importantly, the cooperation engendered by the Task Force fostered an ability for the agencies to support each other and stand together in the face of strong opposition to cleanup by some of the more powerful sectors on the community. EPA's state deferral program provided additional leverage for the agencies to prioritize the concerns of the affected community in its cleanup decisions.[5]

7) Some Findings from the Case History

X One agency -- in this case, ATSDR -- can use its credibility with the affected community to build credibility of other historically mistrusted agencies (e.g., the Oklahoma State Department of Health)

---

[4] SACM was an innovative pilot project within EPA designed to streamline the implementation of the Superfund program and to facilitate more speedy cleanups.

[5] The state deferral program required full community support for state versus federal cleanup. This essentially gave the citizens of West Bartlesville a veto on proposals for state cleanup that did not address their full range of concerns.

- X A focus on community involvement activities can provide a focus for interagency cooperation on a host of issues related to the site.

- X By prioritizing communication with the affected community, an agency can help build trust and help address the existing power imbalances in a community.

- X By working together, agencies may be able to accomplish things more efficiently. In this case, for example, ATSDR funded the state to do the blood lead studies, eliminating the necessity of having to go through its own peer review process before results could be released.

- X As with the Lead Steering Committee, inequalities in a community are easily reproduced in community-initiated public participation mechanisms. Membership may simply reflect the original power dynamics within the community.

- X Members of the affected community easily recognize and may be critical of public participation mechanisms that leave out or mute the voices of vocal community members (e.g., the Lead Steering Committee and the Select Oversight Committee).

- X The agencies can help reduce intra-community conflict by catalyzing a coming together of opposing interests, e.g., through the promise of a TAG.

- X An element of success was that public participation with ATSDR began early -- as soon as the agency was called in to do a health consultation.

- X In addition to action around cleanup, beautification and economic development were important to affected community.

8) Organizational Affiliations and/or Types of Individuals Interviewed for this Case

Government Officials
EPA, regional
ATSDR, regional
Oklahoma State Department of Health (OSDH)
Oklahoma Department of Environmental Quality (ODEQ)
Mayor of Bartlesville
Bartlesville City Council

Industry
Phillips Petroleum Company

Community
Members, League of Women Voters
Members of Community Organizations, CAT, BEIC, and WAR
Members and Former Members, Lead Steering Committee, Select Oversight Committee, and Members, Bartlesville Coalition
Residents of West Side Community

Other
Member, Oklahoma Toxics Campaign

Table 4-1. Analysis of Success of PP Mechanisms in Bartlesville, OK

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
Lead Steering Committee	+/-	+	+	+	-	-	-	+/-
Select Oversight Committee	+/-	+	+	+	-	+	+	+
Bartlesville Coalition	+	+	+	+	+	+	+	+
Overall Public Participation Efforts in the Community	+/-	+	+	+	+/-	+	+	

SALTVILLE WASTE DISPOSAL SUPERFUND SITE

1) Brief History of the Site, Key Issues, and Conflicts

Saltville is a small Appalachian town located in far western Virginia. Its salt reserves were an early attraction for resource-based industry, which provided a stable base of employment for local citizens from the early 1800's. During most of the 20th century, Saltville was the quintessential company town, dominated by Mathieson Alkali Works and later Olin Corporation. Olin's shutdown in 1972 caused major trauma in the community. Indeed, the company's departure and consequent loss of employment generated considerable bitterness -- perhaps even more than the legacy of environmental contamination it left behind. At the same time, however, many residents harbored a residual loyalty to the company. This paradoxical combination of resentment, loyalty, hope [of the company's return], denial [of an environmental problem], and substantial economic hardship provide the context in which agency action and public participation must be considered.

Early environmental studies in the area focused on assessments of water quality and mercury contamination of a local river. In 1983, the state health department assessed residents' mercury exposure through biological monitoring. That same year, EPA made a unilateral decision to include a former chlorine plant, two waste ponds, and a section of the river on the NPL. Decades later, elevated levels of heavy metals were found in the town dump, and, in 1994, the state environmental agency asked ATSDR to perform the first of several health consultations. In 1995, the inter-agency Saltville Team (see below) worked with the state health agency on a cancer study. The draft report was withdrawn because of design flaws, and an independent contractor was hired to complete the work. In 1996, EPA attempted to list the town dump on the NPL site. This was opposed by Olin, the town government, and the state environmental agency. Using a little known law, the governor vetoed the site's inclusion on the NPL. Thus, Saltville had both Superfund and non-Superfund sites.

Although the community was economically depressed and disadvantaged, neither the public nor the agencies appeared to address broader social and economic issues in the context of the cleanup. The focus of agency activity was environmental remediation and public health.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

ATSDR engaged in several activities to communicate its activities to Saltville residents. The agency held poster sessions to present information about the contamination to the community. These visual presentations also facilitated one-on-one dialogue between the agency and community residents. This venue gave residents an opportunity to suggest sites they believed should be sampled by the EPA. ATSDR findings that several sites posed a threat to the community's health were communicated via regular mailing to Saltville residents; public availability sessions provided opportunities for two-way communication. EPA also held public meetings, primarily to communicate its remediation plans to local citizens. Citizens, activists, and Olin representatives expressed strong opposition to the agencies preferred option, which the agency later dropped. The Saltville Team (see below) held public availability sessions and specially designed education workshops. Because turnout at these events was generally

limited to a small number of environmental activists, the Team also mailed out information and status reports to reach a broader segment of the public.[6] Working with local residents, the Team developed and delivered two workshops to teach local children about the hazards of eating fish caught in the local river.

3) Attention to Building Capacity in the Community Outside the Public Participation Mechanisms

The agencies did little to build capacity in the community. Although the agencies gave the public a role in identifying sites for soil sampling, the public did not trust the sampling results. This may suggest that the community was not adequately prepared or equipped to fully participate in the sampling process. Agency-funded and community-selected technical assistance may have diminished this problem.

4) Formal Mechanisms for Public Participation

There were not formal public participation mechanisms set into place by the federal or local agencies involved in cleanup of hazardous waste sites in Saltville. Most agency efforts focused on outreach and communication, although interested members of the public were able to exert some influence on the selection of sampling sites and cleanup options through the public meetings held by the agencies. This failure to establish sustained and on-going mechanisms for dialogue and public involvement may have contributed to a lack of trust in the agencies findings by some members of the activist community, as well as distrust of the agencies ' communication activities by the Olin Corporation. Indeed, Olin established its own citizen involvement mechanism -- the Community Liaison Panel (CLP) -- as a response to its perception that the media distorts information gleaned through agency communication and outreach activities. Olin formed the CLP to provide another avenue of information flow to the community. Because the CLP is essentially a mechanism designed to facilitate communication between the community and the industry, it is not considered a public participation mechanism for purposes of this report. For more information about the CLP, see the Saltville Case History in the companion document..

5) How Successful Were The Public Participation Mechanisms?

Community opinion of the agencies'activities varied widely. At one end, environmental activists -- members of the only local environmental group [Mountain Empire Environmental Team/MEET] -- criticized both the design and findings of the cancer study and the soil sampling studies conducted by the agencies. Although they had input into the locus of the sampling activities, they simply did not believe the results. They wanted more than mere input; they wanted real participation, which to them meant control of the contractual terms under which the study would be conducted and a hand in the composition of reports, fact sheets, and other educational materials generated by the study. They credited the agencies with excellent communication, but did not trust the results of their studies. At the other end, town government

[6] The Team consistently invited the pro-business community to attend its public meetings, but these invitations were declined.

and "pro-business" forces in the community believed the agencies' sampling and community outreach activities were simply unnecessary. They also believed that the agencies and the Saltville Team were not sensitive enough to the negative publicity that would attend some of their actions. Both sides of the spectrum claimed to have the large "silent majority" on their side. In the end, the limited nature of the agencies' "public participation" activities in Saltville did not tap into the concerns, needs, and priorities of the wider community (Table 4-2) and they cannot be judged a success.

6) Mechanisms of Interagency Cooperation

The Saltville Team. Although not an example of successful public participation, this case provides a fine example of interagency cooperation. A severe flood in 1978 was the impetus for early interagency (federal, state, and local) cooperation in Saltville. However, when EPA unilaterally decided to list several sites on the NPL without consulting other agencies or the public, the early task force disbanded.

ATSDR suggested the formation of a second interagency mechanisms in 1995. The Saltville Team consisted of representatives from two federal agencies -- ATSDR and EPA -- and the state environmental agency, VDEQ. It was designed to facilitate interagency cooperation; create a joint decision making process for the agencies; and coordinate communication and citizen participation in the cleanup of both NPL and non-NPL sites in the town through public meetings. The team met monthly and made all decisions by consensus. The Team had decision-making authority; their decisions were not second-guessed or reversed by their agencies. This helped enhance accountability and credibility with the local community.

The Team developed and disseminated an amalgamated Saltville Plan which outlined the agencies' intended actions in the town. The Plan laid out a plan and a timeline for agency activities relating to investigation of the contamination and to community involvement. As described above, the Team also held public meetings and disseminated written information to local residents via post. The Team was also responsible for conducting one of the more highly praised activities in the community -- health education workshops for town children on the eating ban on fish caught in the local river. Both team members and community residents are generally positive about the impact of the Saltville Team. Most observers agree that the pace of activity in the public awareness of environmental remediation efforts increased noticeably after the creation of the Team. Team members note that the personalities of those involved were instrumental in making the mechanism work.

7) Some Findings from This Case History

X Community members (in this case, environmental activists from MEET) can commend the agency's communication efforts, but mistrust the message being communicated. This is testament to what can happen when community is not given a role/voice in study design, investigator selection, etc. .

X There was little public involvement in Saltville -- making it impossible to determine the needs and preferences of the silent majority. In a company town, or in any community where public involvement is low, agencies should employ a variety of mechanisms to

encourage/obtain community involvement. How else will agency know if its plans will benefit the community or address real community problems?

X Interagency coordination and cooperation, while good in itself, is not an adequate substitute for public participation.

8) Organizational Affiliations and/or Types of Individuals Interviewed for this Case

Government Officials
ATSDR, regional
EPA, regional
Mayor of Saltville
Member, Saltville Town Council
Virginia Department of Environmental Quality (VDEQ)

Community
Members, Mountain Empire Environmental Team (MEET)
Staff writer, county newspaper
Residents, Perryville neighborhood
Retired nurse, Olin Hospital
Members, Olin Community Liaison Panel

Industry
Facilitator, Olin Community Liaison Panel
Director for Community Outreach, Olin Corporation
Site supervisor, Olin Corporation

Table 4-2. Analysis of Success of PP Mechanisms in Saltville, TN

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall "Success" of Mechanism
Public Meetings	+/-	-	+/-	-	-	-	+/-	-

CHATTANOOGA CREEK SUPERFUND SITE

1) Brief History of the Site, Key Issues, and Conflicts

A stretch of the Chattanooga Creek -- long known as one of the most polluted creeks in the country -- runs through two low income and minority communities in South Chattanooga. From the early 1900s, South Chattanooga has been home to many large industries. Along with the City of Chattanooga and local residents, these industries used the creek as a dumping ground for municipal and industrial waste. For years, residents had complained about the contamination of the creek, along with odors, fumes, and air pollution associated with the local industrial facilities. All of this made for a very distressed living environmental for the residents of South Chattanooga.

The Tennessee Valley Authority (TVA) had studied contamination of the Creek several times from the mid 1930s. Its first in-depth analysis in 1980 identified 53 toxic substances in the creek, with some above EPA guideline levels. Despite clear evidence of serious environmental contamination, state and local agencies were slow to respond.[7] Residents interpreted this inaction as an absence of agency concern for the public welfare. This history made it difficult for community residents to trust and respect government agencies.

After learning about the creek contamination from the media and studying several aspects of the problem in class, a group of college students from a local university organized an activist environmental group (Stop Toxic Pollution/STOP) to help get action on the problem. The group failed to attract the interest and support of local residents for several reasons: 1) environmental contamination was not high on the priority list of residents who had to face serious economic and social problems on a daily basis; 2) residents did not expect anything to change, as they had endured environmental and other problems for a long time without any agency action; 3) the students were seen as outsiders, and the racial gap between the residents and the college students was problematic; and 4) the group's lack of resources slowed efforts to communicate with and organize the community. Despite the lack of community support for its activities, STOP became a formidable player in efforts to clean up the creek.

Responding to a request from an individual resident, ATSDR entered the community to do a health study in 1992. In 1994, the agency released its findings that the chemical contamination in the sediment, surface water, and fish in the creek -- along with its biological contamination -- posed a threat to public health. The agency also reported a statistically significant increase in some cancer rates in some areas, but could not attribute the excesses to environmental contamination. Many community members refused to believe this conclusion, ascribing it to a government effort to withhold the truth and avoid the cost of remediation. Concern about health impacts intensified, as did pressure to place the site on the NPL. This finally occurred in 1994 -- for a portion of the creek.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

[7] The TN Department of Health and Environment (TDHE) did not declare the creek unsafe for drinking, swimming, and fishing until 1983.

One of the earliest outreach and communication initiatives stemmed from a joint effort of state and local government. *The Chattanooga Creek Task Force (CCTF)* -- comprised largely of representatives from state and local agencies, along with a few non-governmental members -- convened in 1980 to direct greater attention to the contamination problems in South Chattanooga, with special emphasis on the creek. Supported by funds from EPA and the University of Tennessee/Chattanooga, the CCTF was the first group to provide local residents with access to and information about the contamination. Some of its first activities were to communicate the findings of the 1980 TVA study to local residents; survey local school children about their fishing and fish eating habits; and instigate a study to contamination levels in fish.

ATSDR undertook several public outreach, communication, and education efforts in Chattanooga. It reached out to local health care providers; it conducted several programs with elementary schools to educate youth about the hazards of the creek and the importance of avoiding them. However, its primary focus of communication was with STOP. STOP members interacted with the agency and also organized a community-wide meeting which ATSDR attended and distributed fact sheets. Given the group's perceived "outsider" status, this reliance on STOP as a focus for and convener of agency outreach activities was problematic.[8] Later, ATSDR recognized that it was not reaching a substantial segment of the community and began to form a more representative and trusted community liaison group to help communicate information about the dissemination. An additional community concern was that the agency people participating in the communication activities were primarily public relations people, not the "scientists" who would be in a position to influence agency decisions.

3) Attention to Building Capacity in the Community Outside the Public Participation Mechanisms

The Chattanooga Creek Community Involvement Project (CIP): Like STOP, this group was formed by people outside the affected community, but in this case by people who had a history of working with residents in South Chattanooga and who recognized the community's difficulties in organizing itself. Its efforts to build local capacity within South Chattanooga was funded by a private foundation. The group's purpose was to help provide equity, tools, and opportunities to minority, low-income people of the community impacted by the Chattanooga Creek Superfund remediation action, so that they might effectively participate in public processes and decision- making about this action. The group sought to foster relationships between and among the community, the agencies, and local businesses, and it created opportunities for small group discussions among these sectors. The group did not do community-wide organizing, but focused its activities on five community organizations. To help establish collaboration between professional and community groups, the CIP created a Community Safety Panel, which sponsored workshops, discussions, and a site tour to provide panel members with opportunities to interact, develop personal relationships, and come to mutual understanding. These activities helped develop a trusting relationship between

[8] Although leadership of STOP was later assumed by residents of South Chattanooga, the community continued to view the group as one formed by outsiders.

residents and outside organizations. One outcome of the CIP was the development of a list of safety concerns regarding the NPL cleanup.

The *Community-University Partnership (CUP) Grant*, funded by EPA's Office of Environmental Justice, was an important vehicle for building capacity in South Chattanooga. This grant enabled the Tennessee Technical University to work with the South Chattanooga community to build capacity of local residents to understand the scientific and technical aspects of the cleanup and to participate in the related decision making processes. Initially, a large number of community residents opposed the grant because they were unaware of and had not participated in its development (despite efforts of the University to partner with local institutions) and because local organizations would not be the primary beneficiaries of the grant. Although the grant proposal had included job training and soil sampling components, community members were displeased with grant's emphasis on environmental education. They felt residents were already aware of the dangers and that the community's primary needs extended well beyond education about the contamination. The community helped restructure the grant to channel more funds to them directly. The grant was used to: 1) create job training programs so residents would be qualified for the cleanup jobs; 2) provide community organizations with supplies and equipment to help them with their work ; and 3) create a community-based and controlled community newsletter.

Three community-based organizations were major partners in this effort. One organized and was responsible for public outreach activities and for providing residents with access to information about the contamination. This group served as liaison between local, business, and agency interests. The second group was responsible for the community newsletter. The third group organized innovative youth training programs, with free tuition and a stipend to encourage participation.

The CUP grant and subsequent youth training programs provide strong evidence that agency funds can address and achieve both environmental and larger community objectives. The grant also built local capacity, awareness, and networks for collaboration in the community around the contamination. As described below, EPA began to use one of the CUP affiliates for interacting with the community about its remediation plans, and the community was able to organize a response. The CUP helped the community develop a capacity for and interest in participating in decision-making, as well as a sense of community cohesion. The CUP provided a sense of empowerment, self-confidence, and self-sufficiency in the community, which began to develop an ability to design and implement projects without outside assistance. The discussion by some residents about the need to establish a representative community board to work with EPA and other groups on an ongoing basis is further testament to the success of this capacity building initiative.

4) Formal Mechanisms for Public Participation

Direct Interaction with a CUP-funded Community Organization. Although EPA regional officials working in the South Chattanooga community only learned about the CUP grant (see above) through their attendance at a public meeting, the agency then began to work with one of CUP's community-based organizations to interact with the community about its remediation plan. The CUP affiliate helped residents hold meetings, discussions, and planning sessions to formalize a response to EPA's short-term removal plan. Through this mechanism, the residents developed and presented a list of questions, concerns, and issues about the plan to the EPA, including a

request for more job training for local residents to enable them to work in the cleanup effort; a concern about the level of protective clothing to be worn by cleanup workers; the transportation routes of trucks carrying waste; and a request that the preprocessing occur off-site or assurance that adequate monitoring mechanisms if done on-site. The EPA responded to each a every issue at a public meeting.

5) How Successful Was This Public Participation Mechanism?

Although the EPA was not able to give the community everything it wanted,[9] this vehicle for participation was successful in several ways (see Table 4-3). Based in the affected community, the CUP affiliate was able to set up a participation opportunities seen as fair, open, and representative of community views. Formal and informal meetings allowed residents to come together, develop a shared sense of purpose, build networks to address community issues, and create the cohesion and cooperation needed to influence agency decisions. The CUP had helped build both the capacity and interest of local citizens to participate effectively in decisions about the contamination and cleanup in their community. Several groups pursued additional grants to support their activities.[10] Community leaders have requested the creation of a more formal committee to influence agency decision-making, such as a community-wide advisory board.

6) Mechanisms of Interagency Cooperation

The Chattanooga Creek Task Force (CCTF) described above was the only formal mechanism for interagency communication and cooperation in South Chattanooga. This group, comprised primarily of representatives from state and local government agencies, was formed principally to provide local residents with information about a TVA study of contamination in the creek. By all accounts, it achieved this limited objective.

ATSDR and EPA report that the agencies did work together closely to keep each other informed of agency activities in the community, but no formal mechanisms were established for this purpose. The informal communication and cooperation activities were considered successful by the agencies, in this case, and community residents did not voice confusion about the activities of the different agencies.

---

[9] For example, the community questioned whether some of the profits from the remediation or the subsequent processing and reuse of tar deposits could be channeled back into the community for its own use. They also pressed the EPA to hire local people or contract with local businesses for participation in cleanup activities.

[10] At least one has been successful. In March 1997, STOP received an EPA Technical Assistance Grant to continue its work.

7) Some Findings from This Case History

X The community's original opposition to the University's CUP grant demonstrates that a group's (in this case the University) prior work with and sincere interest in the community will not necessarily generate community support for the group's activities -- especially if there is a historic distrust of outsiders.

X Economically disadvantaged communities (such as South Chattanooga) may prefer that environmentally-related grants address larger community issues and concerns. They may feel they know quite enough about the environmental contamination and prefer to use agency funding and resources for job training and economic development instead of for environmental awareness and education programs.

X Participation and capacity-building mechanisms (like CUP and its community-based partnering organizations) can be designed to address simultaneously the environmental, economic, and social issues in an affected community.

X In developing partnerships with a community, the initiating organization should involve the community early (see, for example, what happened with the Community/University Partnership (CUP) program in Chattanooga).

X An organizations best efforts to identify community leaders may not be successful if they involve only a segment of the community, (e.g., initial experience with CUP in Chattanooga). There is a danger that these efforts will be colored by its previous relationship, experience, or comfort level with certain people/groups in the community. (Concern expressed by environmental activist in Chattanooga about ATSDR outreach efforts)

X Although it may be tempting, agencies should not limit their communication and outreach activities to the most interested, receptive, and cooperative groups in a community (e.g., ATSDR's reliance on the STOP group in Chattanooga). This may anger community residents who do not identify with that group, and impede communication efforts.

X It is important that agency people who are in the position to make or influence decisions attend and participate in community involvement activities and events. Community members may resent or be skeptical when agencies relegate these activities to public relations or community involvement staff (Chattanooga).

X As seen in Chattanooga (and also in St. Louis), communities with known contamination and evidence of health problems [anecdotal or otherwise] may distrust government studies that fail to find a relationship between the contamination and perceived or actual health effects. Expectations are otherwise. Negative findings often generate mistrust and a perception of agency incompetence or coverup.

X Mechanisms that function over time (e.g., CUP, CIP in Chattanooga) can provide opportunities for discussion that can lead to personal relationships and a newfound understanding (of different points of view).

X A sustained capacity building initiative (the CUP) coupled with even loosely organized public participation initiatives can help a community once described as "fragmented" and without identifiable leaders develop the cohesion, spirit, and ability to translate its concerns and ideas into action.

8) Organizational Affiliations and/or types of Individuals Interviewed for this Case

Government Officials
EPA, regional
ATSDR, regional
TN Department Water Pollution Control Division
TN Superfund Division
State representative

Community
President, Emma Wheeler Homes Resident Association
President, United Community Action Alliance
Members, Alton Park/Piney Woods Improvement Corp.
Mary Walker & Associates
Community leaders and organizers
- St. Elmo Precinct Chair
- Piney Woods Precinct Chair
- Alton Park, Precinct Co-chair

Principal and teacher, Calvin Donaldson Elementary School
High school students
Reporter, TN Times
Local Reverend
Representative, Senior Citizens Group
Members, Stop Toxic Pollution (STOP)

Local Business
President, Chattanooga Chamber of Commerce
Owner, local club
Owner, local trucking business

Other
Asst. Dean, Chattanooga State Technical and Community College (CSTCC)
Professor and CUP grant recipient, Tennessee Technical University (TTU)
Other faculty and staff from TTU

Table 4-3 Analysis of Success of PP Mechanisms in Chattanooga, TN

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
Direct Interaction with Community Organization/CUP Affiliate	+	+	+	+	+	+	+	+

ALBUQUERQUE: SOUTH VALLEY SUPERFUND SITE (SAN JOSE)

1) Brief History of the Site, Key Issues, and Conflicts

Once an agricultural community, San Jose is populated predominantly by Hispanic and low-income persons. The development of industry in the community transformed its economic base as well as the quality of its environment. Seriously contaminated wells in the community, which served the larger municipality of Albuquerque, were decommissioned in the early 1980s and the area surrounding them designated an NPL site. There were years of significant interagency conflict around sources of, and plans to cleanup, the contamination. The wells were a major source of conflict, with EPA and ATSDR recommending that the wells remained closed until treated or until a new well could be installed at a new location, and the local Department of Public Works pressing for the wells to be brought back into production. The identification of petroleum contaminants in the deep ground water beneath the community caused an additional problem. Because CERCLA has a petroleum exclusion, the EPA initially was not prepared to address the groundwater contamination through the Superfund program.

Community residents had not benefited from development in the area and felt betrayed by local industry and the U.S. government, which had created jobs and profits for others and left a legacy of contamination. They believed the governmental response to the contamination in their community had been inadequate and half-hearted, mainly because community residents were low-income people of color. They were unhappy with EPA's early community involvement activities, which were basically seen as insincere and pro-forma. NPL listing had affected their property values, their ability to access loans to improve their homes, and further eroded their economic prospects, as clean businesses are reluctant to located in a contaminated area. As in other low-income communities, the quality of education in San Jose is poor and opportunities for advancement are rare. The consequent social problems have created additional barriers for the community. Community residents are distrustful of all levels of government and resentful of outside organizations and academic institutions that benefit from their misfortune in terms of contracts, grants, and the like. Residents are firmly committed to participating in any effort to develop solutions for their tightly linked environmental, economic, and social problems. They have pressed for meaningful participation in agency decision making because they believe: 1) residents have special and unique knowledge of their problems as well as the community networks and resources needed to solve them, and 2) such participation provides an effective way for the community to define and protect its own interests while building the capacity to address its own problems.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

Early agency efforts to provide information to the community were inadequate and unsatisfactory. They clearly did not provide an opportunity for true communication and dialogue, and the community was highly critical of these so-called community involvement activities. The nature of these activities began to change with the formation of the Design Review Committee, described below. This Committee, along with the Summit (also described below) engaged in activities to reach the broader community of San Jose in order to share information and elicit community views. However, they did much more than serve as communication vehicles. They became mechanisms for meaningful participation, and are thus described under that section below. The San Jose Community Awareness Council had long

been an important vehicle for community advocacy, organization, and communication. The group took up the issue of environmental contamination and became the primary organization to represent and safeguard the interests of the community in this context as well.

3) Attention to Building Capacity in the Community Outside the Public Participation Mechanisms

In early 1990, the EPA awarded a technical assistance grant (TAG) to the San Jose Community Awareness Council. The TAG improved the ability of this important community group to participate in the Design Review Committee (see below) and other participation processes in a meaningful way. The group used some of the grant funds to hire its own technical advisor, who routinely attended meetings of the Design Review Committee along with members of the Awareness Council. The TAG helped the community group participate in the process as an equal partner. This may be one factor that accounts for the relative success of the mechanisms described below.

4) Formal Mechanisms for Public Participation

The EPA and the San Jose community have committed to working as partners in efforts to address the contamination of the South Valley. Several mechanisms were created to develop and enhance partnership opportunities.

The Design Review Committee was established by the EPA to involve relevant parties in the discussion of cleanup strategies. Members included representatives from four state and local regulatory agencies, numerous PRPs, and a well-respected and active community organization, the San Jose Community Awareness Council. EPA invited the participation of these groups, which were free to send their own members to meetings, often accompanied by consultants. The meetings were open, but members agreed to a ban on lawyers. The sheer number of participants posed logistic and substantive problems, including a variety of competing agendas. The committee considered complex technical issues, as well as the community concerns and issues identified by the Awareness Council. To relieve the burden of participation on the community, the EPA and the Design Review Committee began to attend meetings of the Awareness Council rather than ask the community group to come to them. Features of this mechanisms that enhanced its effectiveness were: 1) a ban on lawyers (agreed to by participants); 2) the sharing of technical information by the technical experts from the participating agencies and PRPs; and 3) the participation of community, which improved decision making and helped build trust. The EPA was open and shared information with the Committee, and this helped build trust. The Committee was a partnership vehicle for the EPA, the community, the agencies, and the PRPs.

Albuquerque Environmental Justice and Superfund Summit was a ground breaking effort to build partnerships and create dialogue among a broader range of stakeholders in order to develop solutions to the issues faced by the South Valley. It was planned, designed, sponsored, and implemented through a breakthrough collaborative process that included community organizations, government, and industry. Each group had reasons to participate and collaborate. Businesses were interested in redevelopment; government agencies were becoming more dependent on public support; a presidential executive order on environmental justice has just been issued; and the community wanted both cleanup and justice. Involving such a large number of disparate groups in a single planning process was difficult and time

consuming, but the sponsors were committed to shared decision-making and community-building, even at the expense of efficiency.
Although the goal was to build partnerships to facilitate fast and complete cleanup of environmental contamination, in response to community concerns, the Summit addressed issues of economic development as well. The community believed the issues were linked; environmental restoration would play a key role in the economic revitalization of the area.[11] EPA Region VI agreed that economic empowerment is an integral component of environmental justice.

The Summit also served as a vehicle for inter-agency communication and community outreach; regional administrators of different federal agencies, such as the DOD, DOE, SBA, were invited and did participate in the Summit.

5) How Successful Were The Public Participation Mechanisms

At seen in Table 4-4, both the Design Review Committee and the Summit were successful vehicles for public participation in San Jose. They were open, accessible, and took care to ensure that a variety of viewpoints and forms of expression were included. Members of the Design Review Committee and Summit Planning Committee participated as respected equals. Indeed, a well-placed TAG provided the affected community with the technical expertise needed for meaningful participation. The purposes of both mechanisms were well understood and agreed upon by participants, who were free to define their own agendas and issues for consideration. Both allowed participants ample time to learn about and discuss the issues and to reflect upon the viewpoints of others. Based on a desire for real partnership, both mechanisms helped improve the previously poor relationship between the community and the agencies and provided opportunities for meaningful involvement in agency decision-making. To date, the community has supported agency decisions that it has participated in making, and there is general agreement that the participation/partnership processes are working.

The ongoing nature of the Design Review Committee and the open, collaborative nature of the Summit's planning process have resulted in productive dialogue among stakeholders with competing interests and helped build and cement relationships between and among the agencies and various grassroots and industrial groups in the community. Participants have reported that these mechanisms have engendered a spirit of mutual respect, a commitment to continue to improve communication among often contentious groups, a recognition of the value and validity of the different forms of knowledge, and enhanced trust between and among the different community groups and government agencies. At the same time, participants agree that the benefits accrued to date would last only if the collaborative processes continue. If they fail to do so, previous efforts will likely be viewed as just more window dressing.

6) Mechanisms of Interagency Cooperation

[11] Environmental cleanup and restoration would remove the liability concerns of businesses that might then be willing to locate in the community, and it could also provide jobs and income to members of the impacted community.

Federal interagency cooperation efforts operated only informally in the San Jose community at the time of the study. Federal agencies -- DOE, DOD, SBA, ATSDR, and EPA -- participated in the Summit, contributing to its success. One public participation mechanisms -- the Design Review Committee -- involved representatives from four state and local regulatory agencies, numerous PRPs, and the San Jose Community Awareness Council.

7) Some Findings from This Case History

X As explained by a community activist in South Valley/Albuquerque, there are historical [e.g., we tried before and nothing happened]; cultural [accept things as god's will]; and social [outsiders may have low expectations of low-income, minority residents; residents have other, more immediate social and economic concerns] reasons why community residents may not get involved in public participation efforts even when provided the opportunity.

X One way to maintain community involvement and prevent citizen burn-out is for the agency to link its public participation activities to regularly scheduled meetings of community organizations, as with the Design Review Committee in South Valley/Albuquerque. It is often unrealistic to expect citizens to attend additional agency-sponsored public meetings.

X Communities (like South Valley/Albuquerque) may consider lack of economic opportunity and community development as important environmental issues, because they may have been the result of environmental problems or prior environmental injustice.

X Superfund is a logical springboard for addressing economic development issues. Linking the two is important for communities and for the agency -- the latter because as a community's disposable income goes up, they are in a better position to demand more services, including enforcement of environmental regulations.

X Meaningful community participation can help develop solutions to these problems because: 1) residents have special and unique knowledge of their problems as well as the community networks and resources needed to solve them, and 2) such participation builds their capacity to address their own problems.

X Statutory or regulatory limitations may adversely impact an agency's relationship with a community. In San Jose, petroleum was one of the contaminants in the wells, and petroleum does not fall within the EPA Superfund mandate. Community trust in and respect for the agency was initially damaged because the agency resisted cleanup of the petroleum- contaminated sites.

X It is not just working together, but working together on an equal footing that helps build trust and mutual respect. The Design Review Committee and EJ/Superfund Summit in South Valley/Albuquerque were successful in this respect. To maintain effective relationships, all parties must continue to work at it and to revisit commitments previously made.

X One way to address the issue of economic development is through technical assistance, such as TAGs to communities and TA to minority-owned companies trying to get federal work. Organizers of the EJ/Superfund Summit in South Valley/Albuquerque recognized that TA can be helpful in terms of training these businesses about bonding requirements, bid packages, getting SBA loans, etc., and they provided access to this kind of information through the Summit.

X Including disparate groups in a single planning process (the Summit) was facilitated by the existence of ongoing networks among community groups in Albuquerque.

8) Organizational Affiliations and/or types of Individuals Interviewed for this Case and the Following Case on the Sandia Site

Government
ATSDR, regional
DOE, Sandia
EPA, regional
State Groundwater Quality Division
City of Albuquerque Health Department
City of Albuquerque Department of Public Works
Office of Mayor

Community
Environmental activists
Executive Director and members, San Jose Community Awareness Council
Members, Mountain View Neighborhood Association
Members, Sandia Citizens Advisory Board (CAB)
Representative, Albuquerque Public Schools
Superfund Summit facilitators

Industry
Eveready Oil
Community Involvement Office, Environmental Restoration Office, Sandia National Laboratory
General Electric
Community Involvement Office, Lockheed Martin
AT&SF Railroad
Project Manager for Remediation

Other
Southwest Center for Environmental Excellence and Opportunity, Albuquerque Technical Vocational Institute (TVI)
Faculty and staff members, University of New Mexico

Table 4-4. Analysis of Success of PP Mechanisms in Albuquerque/South Valley, NM

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
Design Review Committee	+	+	+	+	+	+	+	+
EJ/Superfund Summit	+	+	+	+	+	+	+	+
Overall PP Efforts in the Community	+	+	+	+	+	+	+	+

ALBUQUERQUE: SANDIA NATIONAL LABORATORY SITE

1) Brief History of the Site, Key Issues, and Conflicts

Founded in 1945 as part of Los Alamos National Laboratory, the mission of Sandia National Laboratory was to provide engineering support to Los Alamos and Lawrence Livermore National Laboratories in the design of nuclear weapons. Since the end of the Cold War, Sandia has sought to broaden its operations beyond defense and the nation's nuclear arsenal to conduct energy and environmental research, as well as to address emerging research needs of industry and government. Located just outside Albuquerque, Sandia has identified numerous on-site areas for cleanup of radioactive, chemical, and petroleum contamination. It has developed several mechanisms for public involvement in cleanup decisions and has funded organizations to help build capacity in the local community.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

Sandia has established several mechanisms to facilitate outreach and communication with the local community. Its Community Involvement and Issues Management Office coordinates the agency's public involvement efforts and serves as a clearinghouse for local and national public involvement activities . The DOE-funded capacity-building mechanisms described below have elements of outreach, communication, and education. The Citizens Advisory Board (also described below) has developed a variety of ways to communicate with the broader public. It advertises and then holds its own meetings in community centers throughout Albuquerque; it mails out 1900 newsletters on a quarterly basis. Many CAB members want to pursue additional outreach and communication activities, such as radio and TV publicity, mall displays, a web site, presentations to community groups and to children through the schools, and a system that allows residents to write to the CAB with their issues and complaints. Because they are volunteers, CAB members have little time to pursue these ideas and suggest they need paid staff dedicated to community outreach. Members of the CAB are interested in educating the broader public about the value and importance of Sandia and its work, as well as about the potential environmental risk posed by the institution.

3) Attention to Building Capacity in the Community Outside the Public Participation Mechanisms

Sandia and DOE have devoted significant resources to building the capacity of local institutions and to foster partnerships between the DOE/Sandia and the local community.

The Southwest Center for Environmental Excellence and Opportunity was established with DOE funds by the Albuquerque Technical Vocational Institute (TVI) to increase the number of Hispanics in environmentally-related careers; to strengthen the infrastructure and capacity of Hispanic businesses to participate in clean-up activities; and to increase the understanding and participation of the local Hispanic public in DOE environmental management programs. As a well-established and well-respected community college with a focus on community development and service learning programs, TVI was an excellent vehicle for this capacity-building program. Much more than universities which are seen by the community as interested only in research

and "studying them to death,"[12] the Center has prioritized community involvement in the design and implementation of its programs. It works closely and shares its resources with community organizations to develop an understanding of the gaps in the network of services and organizations in the community. That way the Center can help address the needs without duplicating the work of existing community organizations. The Center also networks with other institutions and organizations working on environmental issues related to DOE and Sandia.

The Bernallilo County Health Department Technology Transfer Program is another capacity building program in the area. Initiated by the Bernallilo County Health Department, funded by the DOE Office of Science and Technology and the county, and administered by Sandia, the goal of this partnership program is to build the capacity of local institutions to maintain the quality of their groundwater by transferring technology -- in this case innovative technologies known to the DOE and other federal agencies for identification and cleanup of subsurface groundwater contamination. Despite the magnitude and significance of groundwater protection, the task often falls to small local agencies with limited resources and expertise to deal with it. This program allows the County Health Department to identify cost-effective technologies and then work with local companies that might purchase the necessary equipment and be hired as contractors by the local authorities. A second focus of the partnership is to disseminate information to other local health agencies facing similar issues. Members of the Health Department believe that building the capacity of local institutions is critical for successful community involvement. If communities are to participate, they must share in the development of ideas and receipt of resources. Indeed, they suggest that, without attention to capacity-building, the large amounts of money spent by federal agencies on public participation may result in duplication, reams of paper, and no ability to prevent new problems in the future.

4) Formal Mechanisms for Public Participation

Citizens' Advisory Board (CAB): Following a DOE directive, Sandia established a site-specific Citizens Advisory Board (CAB). The purpose is to provide input and recommendations for the environmental management of Sandia. A Steering Committee of local residents was responsible for publicizing the openings on the CAB and choosing members from those who responded. The Steering Committee wanted a diverse and balanced Board. They sought to balance the board demographically and politically; they submitted a slate of 30 members to DOE, which reviewed, approved, and appointed them. Initially, the CAB suffered from a lack of structure and organization. This resulted in a serious decline in membership, eroding the CAB's viability, diversity, and representativeness. Important advocacy groups are not represented. Some members suggest that these groups may not be comfortable the CAB's corporate model, i.e., seeking consensus and keeping discussion/disagreement "within the family." The technical nature of the CAB's discussions have led to a professionalization of its the membership. The open discussion format essentially requires that members have a high degree of personal empowerment and significant public speaking experience. This has discouraged the participation of low income people with less formal education. Cultural barriers

[12] For a community commentary on this and related issues, see page 55 of the case history included in the companion document..

may also play a role in limiting the diversity of the CAB. CAB members are cognizant of these issues, and have suggested a variety of solutions, e.g., DOE could fund community organizations to help local residents acquire the skills and capacity to participate effectively or DOE could fund individuals to study the issues.

CAB members developed their own organizational framework, including bylaws and a mission statement. At the same time, some members report a lack of clarity and direction in the CAB, in part because DOE did not provide a good sense of what the Board was all about. The CAB hired its own administrator and took the office off-site, greatly enhancing its own sense of autonomy and independence from Sandia. The administrator structures the meetings and organizes materials for the volunteer Board. This has improved members' ability to participate in meetings. Previously, members had difficulty organizing and prioritizing the mountains of information given to them by Sandia. Still, participation requires an excessive amount of time. Some members have suggested that the CAB turn its attention to policy vs. technical issues. This would likely reduce demands on members' time and perhaps result in more substantive changes in the agency activity. There is also some concern that members who have the most time or are the most vocal will come to dominate the process. This has led to an interest in using participatory techniques, such as the Delphi and nominal group process techniques, that would enhance fairness in the participation process. CAB members currently make decisions by consensus, which some believe enhances the cohesiveness of the group.

Although the CAB has taken many steps to distance itself from Sandia and DOE, the agency still sets its agendas and controls its budget. Some members have suggested that the agency uses these methods to limit the independence of the Board. They have suggested that the formation of an "Issues Committee" within the CAB would allow the group to be proactive; it would help them define for themselves the issues to be addressed and the information needed.

CAB members are linked to the larger public because they are parts of existing community networks or organizations. Although they report that the DOE expects them to represent the community, members suggest they do not feel comfortable speaking for the community. They do not see themselves as accountable to the larger public, which had no real role in appointing them. Rather, they see themselves as vehicles of communication between the community and the DOE. CAB members have a strong interest in providing information to and obtaining information, views, and concerns from the larger public and have instituted several mechanisms to do so -- such as newsletters and holding open monthly meetings at community centers.

Members disagree on the extent to which Sandia and DOE have been accountable to the CAB. Some believe that DOE is willing to take advice from the CAB. Others believe that the information and recommendations provided by the CAB have not been well utilized by the agency. Some members perceive a low level of commitment within Sandia to community involvement and the CAB. There is concern that high level agency personnel with decision-making authority do not attend the CAB meetings. All this has caused some members to lose trust in the process.

5) How Successful Were The Public Participation Mechanisms?

Table 4-5 suggests that, at the time of this study, the only formal public participation mechanism put into place by Sandia could not be characterized as successful. Although attempts were made to ensure diversity and representativeness among CAB members, a variety of barriers

and organizational problems have eroded membership diversity. Public interest and advocacy groups are not represented on the CAB, suggesting an absence of important viewpoints, especially those most likely to promote and protect the interests of the least advantaged in the community. Although it has taken steps to acquire autonomy, the CAB does not define its own agenda or control its own budget. There is a lack of clarity about purpose, and members are divided on whether or not it has had any meaningful influence on Sandia's and DOE's decision-making processes. As a standing committee, the CAB has the potential to facilitate mutual understanding and competent decision-making among its members and the agency. But the time commitment required of its voluntary board may hamper achievement of these outcomes or result in the disproportionate influence of those members who have the time to devote to the issues or the ability to dominate the process.

6) Mechanisms of Interagency Cooperation

Aside from the Design Review Committee discussed above in the South Valley site -- which involved the participation of four different regulatory agencies, along with PRPs and a local community group, the technology transfer program created between DOE and the Bernallilo County Health Department was important for local capacity building and should be regarded as a successful multilevel interagency cooperative effort.

7) Some Findings from This Case History

X CABs can easily become professionalized. Agencies can structure agendas such that they demand technical knowledge from participating members. As with the Sandia CAB, this professionalization and technical orientation may effectively preclude participation of community members with little education or level of personal empowerment.

X CABs need resources to be independent and to provide support for its citizen members. The Sandia CAB had funds to hire an administrator and operate an office outside the facility. Many CAB members suggested that citizen boards have more need for administrative support that a board of experts.

X Although appointed to represent"the community" , CAB members may not feel comfortable with this role. Many members of the Sandia CAB said they could not speak for the community, even though the facility/agency assumed they did. In the words of one member: "DOE would say we need the public to tell about these things and you, the board, represent the public. But we dont represent the public because we were appointed by DOE." Another notes: "They [Sandia] go around and say the CAB endorsed it and therefore the community supports it. This is not necessarily true".

X CAB community members question agencies interest in and commitment to the public participation process and to shared decision-making when only low ranking personnel attend the public meetings. The appointment of public participation coordinator or community liaison does not signal a real agency-community partnership.

X Partnerships with respected community organizations can be key to capacity building efforts. In Albuquerque, DOE's decision to partner with the Technical Vocational

Institute (TTI) instead of the state university was well received by the community, which perceived TVI more closely tied to and interested in helping the community.

X Agencies need to train their own bureaucrats in the value and use of public participation. Sandia CAB members suggested such training, noting that the necessary accountability will only occur if agency staff understand and respect the public participation process .

8) Organizational Affiliations and/or types of Individuals Interviewed for this Case and the Preceding Case on the San Jose/South Valley Site

Government
ATSDR, regional
DOE, Sandia
EPA, regional
City of Albuquerque Health Department
City of Albuquerque Department of Public Works
Office of Mayor
State Groundwater Quality Division

Community
Environmental activists
Director and members, San Jose Executive Community Awareness Council
Members, Mountain View Neighborhood Association
Members, Sandia Citizens Advisory Board (CAB)
Representative, Albuquerque Public Schools
Superfund Summit facilitators

Industry
Eveready Oil Co
Community Involvement Office, Environmental Restoration Office, Sandia National Laboratory
General Electric
Community Involvement Office, Lockheed Martin
AT&SF Railroad
Project Manager for Remediation

Other
Southwest Center for Environmental Excellence and Opportunity, Albuquerque Technical Vocational Institute (TVI)
Faculty and staff members, University of New Mexico

Table 4-5. Analysis of Success of PP Mechanisms in Albuquerque/Sandia Site, NM

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
Citizens Advisory Board (CAB)	-	+	-	+/-	-	-	-	-

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

1) Brief History of Site, Key Issues, and Conflicts

Rocky Flats opened in 1952 as an Atomic Energy Commission (AEC) facility whose unique mission was to process, purify, and machine plutonium for the manufacture of triggers for nuclear weapons. Located just 17 miles northwest of Denver, the facility sits on nine square miles of land, including thousands of acres of largely undeveloped "buffer zone" adjacent to nearly communities. As an industrial complex, it has over 100 buildings. For most of its history, the facility was operated by private contractors exempt from external governmental oversight, including environmental regulation, on the basis of national security. A legacy of secrecy and lack of accountability fostered significant community mistrust, despite the fact that many local residents worked there. In the 1970's, residents in surrounding communities voiced health and safety concerns. In the late 70s and early 80s, peace activists lobbied for more openness and for a halt to nuclear weapon production.

Numerous studies had been done over the years to assess both contamination and health effects, many funded by AEC and later DOE. Except in a few studies conducted by independent researchers, the public was not involved in the design of the studies and often was not included in the dissemination of results. DOE was not supportive of independent research and often did not cooperate with investigators. Independent studies frequently concluded that both contamination and health problems were more significant than reported in DOE-sponsored studies. All this exacerbated mistrust.

In the late 1970s and early 1980s, the state made several attempts to institute oversight and regulatory activities at the site, but DOE resisted state efforts to enforce more openness about waste generation at the facility. During this period, scores of environmental and peace organizations emerged at the grassroots level, many of which formed coalitions to coordinate activities and consolidate power. A 1986 Compliance Agreement between the state health department, DOE, and EPA began to bring the facility into compliance with hazardous waste laws, and set the stage for interagency cooperation at Rocky Flats.

Public involvement activities at the DOE commenced in the late 1980s with the formation of several advisory committees at the national level. The federal committees and commissions were composed of experts appointed to represent the public interest. The state also established an expert-based citizen advisory committee for Rocky Flats to serve as a communication link between the public, the DOE, the plant contractor, and involved regulatory agencies. But public trust in DOE and Rocky Flats continued to erode as reports of unsafe handling of plutonium and falsified safety records surfaced in the community. In 1989, the FBI and EPA executed a search warrant of the Rocky Flats facilities, and a grand jury was empaneled to investigate alleged environmental crimes at the site. Rocky Flats was added to the NPL that same year.

In the early 1990s, Rocky Flats was converted from a nuclear weapons production facility to an environmental restoration unit. This conversion resulted in significant job losses for the local community and a change in the composition of the workforce. In addition to having to cope with the economic impact, local communities were also concerned that the loss of workers with knowledge of the site's history and with experience in handling hazardous materials would adversely impact the quality of the cleanup. There was also increasing concern about the

possible impact of contamination on local water supplies. At the same time, there was considerable community and private interest in developing the site for commercial and public use.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

Different levels of government established a variety of formal public involvement mechanisms in Rocky Flats. These are described in a later section below. These mechanisms, in turn, created their own outreach and education activities in order to inform and engage the broader public. For example, the state-initiated Health Advisory Panel (HAP) opened its technical work sessions and subcommittee activities to the public and released drafts of study documents to the public for review and comment. It sent out postcard notices of meetings on important aspects of the study or to announce the availability of draft documents for public review and comment. The Rocky Flats Local Impacts Initiative (RFLII) convened focus groups and task forces on such issues as risk assessment, DOE's strategic plan for the site, public involvement, and possibilities for private, interim use of the site prior to ultimate cleanup.[13] It also was a major force behind the two public summits, also described below. The Rocky Flats Citizen's Advisory Board (CAB) meets in public and allows non-CAB members to participate on its committees.[14] In an attempt to incorporate community input into the development of its recommendations, the CAB hosts workshops, panel discussion, and public meetings to discuss key issues. It prepares and distributes fact sheets, brochures, community calendar announcements, weekly faxes on its activities, press releases on its decisions and recommendations, and a quarterly newsletter, with enclosed survey cards to elicit public opinion. It also maintains a reading room, a web page, and a listing in the Yellow Pages.

The state itself played an active and important role on broad-based public outreach. The Colorado Department of Public Health and Environment (CDPHE) developed a comprehensive public involvement program, which included a quarterly newsletter, periodic fact sheets, and special reports, as well as quarterly public meetings. It also designed a variety of activities to address the different levels of interest, concern, education, and scientific/technical knowledge in the community. For those citizens most comfortable with written information, the agency developed ten technical topic papers to answer frequently asked questions and to explain complex scientific and technical issues in a simple, clear, and concise way. For citizens who wanted a more active role and/or who had particular interest in the public exposure studies, the agency worked with its HAP to establish a citizen's environmental sampling committee, discussed further below. To reach people who are likely to attend meetings of community

[13] Their proposed criteria for interim use included re-employment of Rocky Flats workers, no new construction, and no pre-determination or preclusion of future long-term uses for the site.

[14] This was done to enlarge the scope of public participation in the CAB work and in recognition that some citizens may want to contribute and participate, but can not spare the time required to be a full CAB member.

organizations, the agency worked with the HAP's Public Involvement Subcommittee to establish a Speakers Bureau.

3) Attention to Building Capacity in the Community Outside the PP Mechanism

When EPA announced the availability of technical assistance grants to help affected communities get involved in the cleanup process, a variety of community groups in Rocky Flats expressed interest, as did the state-appointed citizen's advisory group. A TAG for the affected community was awarded to the Rocky Flats Cleanup Commission (RFCC), a broad coalition of grassroots environmental and peace groups that had been active in monitoring the activities at the plant and highly critical of DOE and other regulatory agencies. The RFCC was the only organized group involved in the Rocky Flats cleanup that focused solely on the public interest, i.e., it did not address business or municipal interests. The TAG helped the group become an active conduit of the communities' views to the agencies until it failed to receive additional TAG support in 1993.

Local and municipal governments contributed to capacity building through some of the programs implemented by the Rocky Flats Impact Initiative (RFLII), a public involvement mechanism established through a formal intergovernmental agreement. Described further below, the RFLII conducted numerous activities to address one of the major issues in the local community, jobs for displaced nuclear production workers. In this context, its Commercialization Task Force implemented several programs to help create the infrastructure to encourage fast-growing industries to locate in the area.[15] These programs helped build local capacity through technology transfer, training, support of research and development, and assistance to workers and companies.

4) Formal Mechanisms for Public Participation

Government agencies at all levels established many vehicles for public participation in Rocky Flats. The focus of these participatory mechanisms sometimes differed and sometimes converged, but always reflected the range of concerns in the affected communities -- health impacts, extent of environmental contamination, remediation and cleanup, redevelopment, and future use of contaminated sites.

Health Advisory Panel (HAP): The HAP was established by the CO Department of Public Health and Environment (CDPHE) to oversee studies analyzing the potential public health impacts of past releases from the Rocky Flats plant. Comprised primarily of independent scientific experts appointed by the agency, the purpose of the HAP is to oversee the research studies and inform and involve the public in the research. The latter is seen as essential to ensuring the credibility of the research. The HAP's technical meetings are open to the public, and the public has an opportunity to review and comment on draft documents released by the study contractors.

---

[15] The Rocky Mountain Entrepreneur Resource Program provides small business research and management assistance vouchers to Rocky Flats workers and companies. The Regional Atmospheric Response Center transfers Rocky Flats technology to track hazardous emissions to benefit Colorado public safety agencies and businesses. The Rocky Mountain Environmental Remediation and Technology Center supports research and development of environmental technologies. The Rocky Mountain Manufacturing Academy transfers excess manufacturing equipment from Rocky Flats to the Colorado community college system for training.

CDPHE worked with the HAP to develop an extensive public involvement program, which includes newsletters, public meetings, and activities designed to accommodate different levels of public interest. As noted above, these included a technical symposium, written papers, and a speakers' bureau. The CHPHE also established a Citizens' Environmental Sampling Committee (more below), which offered citizens an opportunity to collect and participate in the analysis of their own soil samples.

Some have criticized the HAP, suggesting that its the mission, design, and selection process were not open. This resulted in excluding some people from membership, especially those who have been outspoken critics of the CDPHE.[16] Involvement of the broader public in HAP activities has been low. This may be because the community trusts HAP members to reflect their views and protect their interests [so suggests some HAP members], or because the public does not feel respected [according to some members of the public who say the HAP and the study contractors failed to address their criticisms of the study methodology]. These individuals have demanded that the draft and final reports contain public comments and unedited critiques. They have also insisted that the HAP add to its panel three citizens deemed knowledgeable about the environment and the science (outcome unknown). Other members of the public suggest a lack of trust in the HAP process because of its failure to conduct an epidemiologic study, which these community members view as essential to creating public trust and respect for the agency and as a symbol of the agency's respect for the community. There is also concern that the CDPHE has not addressed the subjective experience, well-being, and mental health of residents impacted by Rocky Flats.

Citizens' Environmental Sampling Committee. Recognizing the inadequacies of the existing soil sampling records and the lack of public trust in governmental agencies and their contractors, CDPHE worked with the HAP to establish this committee to conduct a soil sampling study. Concerned citizens and community organizations were invited to select sampling sites, a sampling methodology, and the analytical laboratory, and then to analyze the data and write a report of the results. CDPHE arranged for Colorado State University to present soil sampling demonstrations so participants could learn sampling techniques. The agency also arranged a tour of a radiological sciences laboratory at the University so members could see how soil samples are analyzed. Committee members had full decision-making authority. They selected topics and experts for educational presentations and selected the sites for sampling. It was an innovative and empowering approach to both public participation and capacity building. It was not, however, without problems. Participation on the Committee declined precipitously. Some HAP members suggest that outspoken and abrasive participants drove many away. HAP members take some responsibility because effective facilitation was lacking. Some members of the public have criticized the study on technical and scientific grounds. HAP members acknowledge the limitations of the study, but many believe that giving the public a meaningful role was more important.

Rocky Flats Local Impacts Initiative (RFLII): This broad-based group representing both public and private sector interests was created through an intergovernmental agreement among local and municipal governments to identify impacts of the conversion at Rocky Flats and to formulate strategies to take advantage of the transformation. RFLII is composed of permanent and

[16] HAP members and CDPHE staff acknowledge that, although some of the more outspoken people in the community are difficult to work with, they have made important contributions to the exposure study.

rotating members from specific entities (cities, counties, interest groups, Chamber of Commerce, Rocky Flats employees, Steelworkers union, affected landowners), with non-voting representation of the DOE and the plant contractor. Members are appointed by the organizations they represent, and thus are accountable to and have a relationship with these larger constituencies. To help address the problem of providing a voice for constituents who cannot be defined geographically or economically, RFLII created three "at large" positions. All meetings are open, and many municipalities and businesses participate regularly. Many members are elected public officials.

RFLII worked to develop a region-wide response to a set of interconnected issues, including jobs,[17] future site use,[18] and environmental remediation. It also became an active participant in DOE and other agency efforts around cleanup of the site. RFLII itself has participated as an actor in the agencies' public involvement processes, but has also developed its own mechanisms to facilitate broader public involvement in the cleanup, as described above. RFLII is funded by the DOE, has its own staff, and conducts its studies by hiring consultants or using its own staff members.

Although RFLII has been very active and influential in a variety of different areas, it has been criticized for being too business-minded. Some community members believe that RFLII carries more weight with and gets more respect from the agencies than other groups in the community because of the nature of its Board. Some insist that the group does not represent all of the communities' interests. RFLII's structure, however, has the potential to ensure that final decisions regarding future use and economic impacts will be made by those who already control or have major influence over land use decisions.

Future Site Use Working Group (FSUWG): Because of strong community interest in the potential reuse of the Rocky Flats site, RFLII worked with local governments, the state, DOE, EPA, and other interest groups to create a mechanism to enable different parts of the community to work together and provide input into the decisions about future site use. The goal of the initiative was to study options available for future site use and to make informed recommendations to DOE and other agencies on this issue. Indeed, many participants believed

[17] For example, its Commercialization Task Force worked with state and local elected officials, area universities, and other stakeholders to produce a Rocky Flats Economic Conversion plan to expand industry and business within the metropolitan area to absorb displaced Rocky Flats workers.

[18] For example, RFLII developed a list of "criteria for interim reuse" to reflect com munity concerns and to serve as a constant reminder of the area's priorities. These criteria included re-employment of Rocky Flats workers, ability to expand into the community, non-interference with cleanup activities, no new construction, and no pre-determination or preclusion of future long-terms uses for the site.

the group had been given a special role in generating recommendations that would be used in final decisions made by government officials. To select members, RFLII conducted over 70 interviews with stakeholders and assembled a list of categories and/or organizations to be represented on FSUWG. These groups were asked to choose delegates to participate in FSUWG. Participants represent local governments, environmental, peace, health, and economic interest groups, and neighboring landowners associations, along with representation from DOE, EPA, and CDPHE. Members of the CAB also participate as co-delegates. FSUWG members were entrusted by their constituencies to make recommendations that would balance environmental and health concerns with business and development interests.

FSUWG was charged with identifying opportunities and constraints for the future use of the site. Although funded by DOE, it operates independently, without interference from DOE or RFLII. Unlike RFLII which hires consultants and has its own staff, members of FSUWG did its own studies -- reviewing relevant information, soliciting relevant input. Members worked hard to achieve broad-based consensus on many difficult issues; they report that FSUWG was a process in which participants learned to talk, listen, and respect each others differences and opinions. When DOE made no formal response to the group's recommendations, members perceived it as a lack of respect for the groups efforts and an indication that the agency was not trustworthy. When DOE later circulated documents which were seen as having significant divergence from the groups recommendation, there was considerable anger and public outrage. It was seen as a violation of public trust.

Rocky Flats Citizens Advisory Board (CAB): In response to a federal initiative to establish site-specific advisory boards at federal facilities, a public working group convened by the Governor and a Congressman recommended the formation of a CAB for Rocky Flats. They drafted the membership application and selection criteria and advertised widely for applications. A joint EPA/CHPHE selection committee reviewed the applications and used the criteria to appoint six initial Board members. These members refined the criteria and selected an additional 23 members. Current CAB members come from academia, government, public interest and environmental groups, workers, the business community, and the health sector. The purpose of the CAB is to provide informed recommendations and advice to government agencies and others on decision related to the cleanup, waste management, and any other decontamination concerns at Rocky Flats. The CAB seeks to include the broader public in the cleanup decision-making process, create credibility and trust, ensure that the available funding is allocated to issues considered most important to the community, and make the cleanup process more publicly accountable and reasonable. Members say their goal is to provide consensus recommendations that reflect a diversity of viewpoints.

Members adopted a mission statement and bylaws; developed a budget; hired staff; produced a workplan; prioritized site-specific issues; and established numerous working committees -- open to non-CAB members who want to focus on the particular concerns of the working committee. The CAB has utilized and endorsed recommendations of the FSUWG. Unlike RFLII, CAB does its own research and analysis. Decisions are made by consensus, which requires a high level of shared understanding. CAB meetings are open and include an official time on the agenda for public comment. Members see the CAB as having to be accessible and responsive to the public, and they have created opportunities for obtaining and incorporating broad community input into the development of its recommendation (see above). Yet few CAB members represent stakeholder groups in such a way that they are accountable to them. Some CAB

members and local residents are frustrated with DOE's perception that the CAB represents and speaks for the community.

Despite its efforts to reach out to the community, the CAB is subject to a fair amount of criticism. Some members of the community say that the CAB is not inclusive; that they have been excluded from participating in CAB's design and implementation, and that the CAB is watered down with moderates.[19] Some community members also believe that the government used the CAB to replace the only community involvement mechanism (the Rocky Flats Cleanup Commission/RFCC) that was independent, community-driven, focused on the public interest, and more inclusive and representative of the diversity of community interests. Others argue that the RFCC members were self-selected and therefore did not represent the broader community the way some government-driven processes do. Moreover, DOE's creation of the CAB and RFLII was seen by some as a deliberately divisive strategy and an attempt of DOE to get more control over the membership and the participation processes. On the other hand, the agencies did attempt to bridge the two mechanisms by including three members of the RFCC on the CAB when it was first formed.

Many members commented on the time and work it took to be a CAB member. When issues are technical, a lot of education is required and committee members need time in the beginning to get up to speed. At the same time, many members question the value of their contribution on technical issues, and some local residents questioned the ability of CAB members to review remediation plans because they lack adequate scientific, technical, and engineering training. CAB member gave an example of DOE inviting their input on the design of a cap for the solar pond that would be used to bury waste. They gave their advice; but the cap was rejected by the community. The DOE had not asked the earlier question -- should we cap it or truck it out?

Summits I and II: Despite the agencies' cooperative strategic planning process, the public remained concerned that too many disjointed projects were occurring at Rocky Flats. The desire for an opportunity to discuss the "big picture" produced the idea for a Summit in which community members and agency decision-makers could converse and work together to determine overriding priorities to guide the cleanup process and promote better integration of activities. Funded by DOE, Summit I got off to a rocky start. Community members were angered that they had not been involved in planning the Summit and developing its agenda.[20]

---

[19] Some members of the CAB suggest that this criticism comes from "social vandals" who are dedicated to conflict and are unable to work with others.

[20] Community involvement professionals from DOE, CAB, RFLII, CDPHE, and EPA formed a Summit Organizing Committee, which selected a contractor to design and organize the event. The contractor did conduct some 50 interviews with stakeholders in the community to help ensure that the community's perspectives were reflected in the planning process. Despite this, community members did not believe they had a meaningful role in

Participants revised the agenda and identified a set of issues to be addressed in small group discussions during the Summit. Participants reached consensus on eight priorities for cleanup. The Summit was followed by a "Summit Report Back" in which the site manager reported DOE and regulators' actions taken in response to the identified priorities. This enhanced accountability. Many said that Summit I introduced a spirit of cooperation to the dialogue among the agencies and the different parts of the community. Some say that a personal statement made by the facility manager took "moral courage" and added to trust.

Summit II was held in the context of the release of the draft versions of a multi-agency Vision for the site and the contractor's accelerated site cleanup plan (see below). A facilitator [selected by the organizing committee made up of DOE, CDPHE, League of Women Voters, RFLII, the plant contractor and to a lesser extent than Summit I, the CAB} interviewed potential participants to help define the purpose of the Summit and then circulated a draft purpose of the Summit to potential participants for feedback. Participants were also invited to submit position papers to be distributed at the event. At the Summit itself, participants further fleshed out the agenda and voted on the top 12 issues to be addressed at the Summit. Upon the community's insistence, only community members were allowed to vote; regulatory officials were not. Participation at the Summit was broad-based. Participants had agreed that the purpose was to be a "ground floor" discussion of a vision for the future of the site [not just a commentary of the agencies'prepared Vision documents], which could provide specific and usable community guidance for the authors of the proposed Vision document. The 12 issues were discussed by small groups, which developed their own "vision statements" on each topic. The participants as a whole reviewed and reached consensus on many but not all of the vision statements. Follow-up to the Summit included a meeting and a written comparison of Summit outcomes on different issues with the multi-agency Vision, and DOE's response on each issue.

5) How Successful Were The Public Participation Mechanisms

Despite some modest differences, Table 4-6 suggests that most of the formal public participation mechanisms operating in Rocky Flats can be considered successful. The processes were both fair and competent, and most were on the way to achieving their objectives. Together, they provided numerous forums for public dialogue, which resulted in a remarkable degree of community understanding of and consensus on the priority issues relating to cleanup, reuse, and employment, as well as consensus on desired cleanup outcomes. To date, the agencies have addressed some, but not all, of the community's goals and priorities in its interagency cleanup agreement and some of the most controversial issues have yet to be resolved (e.g., whether or not to clean up the soil to background levels). The number, variety, and intensity of the public involvement mechanisms in Rocky Flats have created sizeable community expectations and bases for assessing agency accountability to the public. The extent to which the agencies can and will meet these expectations is yet to be determined, but will have significant implications for public trust in and support for government's role in contaminated communities.

6) Mechanisms of Interagency Cooperation

---

the planning process.

Public Participation Focus Group (P2). In response to public frustration with the number of meetings and perceived lack of coordination among agencies'public involvement activities, this group was convened by the RFLII and the agencies to coordinate public involvement activities and to design a strategy that integrates public concerns and priorities into all the activities at Rocky Flats. P2 is composed of community relations professionals from the EPA, CDPHE, and DOE and its primary contractor, as well as members of the CAB and RFLII. It is an interesting approach to interagency cooperation, in that it includes representatives from two of the more active community involvement mechanisms. P2 meets every three weeks to coordinate schedules and topics and to develop and implement strategies for more effective public participation at Rocky Flats. Based on public recommendations at Summit I, P2 authored a Public Participation Guidance Document to assist DOE and other government agencies in revising their approaches to and processes for community involvement. A P2 member reports that the group's efforts to coordinate public involvement activities in Rocky Flats have been recognized and appreciated by the stakeholders.

Quality Action Team and Rocky Flats Cleanup Agreement (RFCA). DOE, EPA, and CDPHE implemented this interagency team to help them work cooperatively to regulate and cleanup Rocky Flats. The agencies collectively developed 22 principles to guide their negotiation process, including setting priorities based on risk, public involvement, economic development, waste storage, and improved/streamlined cleanup. The principles were shared with the public for comment and some changes were made to the principles. With the CAB providing stakeholder input, the agencies sought to negotiate a comprehensive regulatory agreement. In the process, a "workout session"was held to resolve issues holding up the process. In addition to the agencies, the Workout Session was attended by officials from the offices of the Governor and Lt. Governors, the site contractor, and the Defense Facilities Safety Board. Collectively, this group developed a written consensus proposal of a conceptual vision for the future of Rocky Flats. This "Vision" document set goals for cleanup and closure activities. The group also determined that enhanced interagency cooperation could help achieve more results with the available resources. To this end, they established a multi-agency group to evaluate alternative cleanup standards and provide a single regulator and/or single set of consistent requirements over particular activities at the site. A series of public involvement activities were instigated to solicit public discussion of and comment on the "Vision." The cleanup contractor had just completed its draft plan [the Accelerated Site Action Plan/ASAP], and a decision was made to circulate it for comment at the same time. Despite this proactive involvement strategy, the community, for the most part, did not support either the Vision or the ASAP. They criticized both the process used to develop the documents and the outcomes proposed in the documents. Criticisms of process included: 1) that the public was not involved early enough in the preparation of documents; and 2) that circulating the two documents together generated confusion and broke down the distinction between the regulating agencies and the DOE contractor. Regarding outcomes, the community believed that the documents did not reflect the broad-based community consensus on preferences and priorities developed through earlier participation efforts, e.g., FSUWG. Summit II (above) produced community consensus on different issues in the Vision. The final RFCA incorporated many but not all of the goals expressed by the community.

7) Some Findings from this Case History

- X The structure of DOE contracts for cleanup -- with the new emphasis on performance-based payment, may impact the contractor's willingness to involve the public in its operations. Public participation is an intensive and time-consuming process for which the contractor will have to be rewarded to ensure its undertaking. In the words of a community resident from Rocky Flats: "Kaiser-Hill has bonuses built into the contract; if you do these things, you get bonuses. The fallout has been that public involvement is not a priority, so they don't work on it."

- X Extensive and sustained public participation can result in broad-based community consensus on priorities for and outcomes of cleanup activities. Despite the difficulties with particular mechanisms in Rocky Flats, the intensity and duration of public participation activities have led to a remarkable degree of consensus in the community on priorities and cleanup activities.

- X Involving citizens in actual technical work, such as soil sampling, can both empower and give them a special understanding of the complexities of the scientific issues involved in cleanup and related issues. This was done with the Citizens' Sampling Committee in Rocky Flats.

- X The credibility of any citizen participation process is undermined when agencies do not explain why the public's input, suggestions, or recommendations have not been accepted or incorporated into the agency's plans and decisions. A start example of what can happen can be found in the strong community response to the "Vision" document prepared for Rocky Flats by DOE and state government officials. Community members insisted that hose who spend time in a public participation process deserve an opportunity to: 1) hear why their position or recommendation has been rejected; 2);clarify or reargue their positions; and 3) debate and challenge the agency's decision. Effective feedback processes will help alleviate complaints that the "agency didn't listen." At the same time, community members acknowledge that those who participate owe the agencies a clear and frank explanation of their criticisms.

- X Some community members may be turned off by conflict, which can occur even when the process involves only community residents (e.g., the Citizens Sampling Committee). Members of several public participation processes in Rocky Flats emphasized that all participants (not just the loudest or most disruptive) must have the opportunity to be heard. The mechanisms must also find ways to prevent harassment and intimidation of participants. It was suggested that good facilitation may help.

- X The role of community participation should be discussed by the agency and the involved participants up front. This will reveal differences in expectations. Community expectations have serious implications for public trust in the agency. In Rocky Flats, many stakeholders believed that, because they initiated community involvement activities, agencies would follow the recommendations that result. The agencies, on the other hand, believed that the community involvement activities would enable them to hear and consider community views, but that the ultimate decision was their responsibility. In the words of an agency official: "Just because we don't agree with [the community] doesn't mean we haven't listened."

X The relative merits of self-selection vs government-driven selection of membership in public participation mechanisms must be examined. The former may not result in representativeness [volunteers], but neither may the latter. (Compare, for example, the HAP, the RFLII , the Rocky Flats Cleanup Commission, and the Citizens Sampling Committee in Rocky Flats.)

X The issue of elitism in public participation mechanisms (like the Rocky Flats CAB and the Sandia CAB discussed earlier) deserves attention. This may be the result of structural considerations in how the mechanisms are set up (e.g. having interested persons submit written applications and go through an interview process as in Rocky Flats) or in the types of issues considered by the mechanism (e.g., technical instead of policy issues, as in both the Rocky Flats and Sandia CABs).

X Limited participation in formal mechanisms (like public hearings, HAP activities, CAB meetings, etc) does not necessarily mean that the public is not interested or have concerns. These mechanisms must find ways to go to the community rather than have the community come to them. For example, the CAB did a needs assessment by putting survey cards in its newsletters and asking residents to list the three most important issues facing the community.

X Public participation mechanisms that create opportunities for local government officials and community members to work together can help facilitate mutual understanding and help develop community consensus. The Future Site Use Working Group (FSUWG) in Rocky provides an example.

X Process is especially important when the public participation mechanism involves a lot of different groups, has a lot of conflict, or includes people who disrupt or want to take over the process. According to individuals involved in the Citizens Sampling Committee, effective facilitation can be important to the success of (especially these kinds) of mechanisms.

8) Organizational Affiliations and/or types of Individuals Interviewed for this Case

Government
DOE, Rocky Flats
EPA, regional
ATSDR, regional
Colorado Department of Public Health and the Environment (CDPHE)
Denver Dept of Public Health
Council member, City of Broomfield
City of Westminster

Community
Members, HAP
Members, Citizens Sampling Committee
Members, CAB
Members, RFLII
Members, FSUWG

Members, P2
Member, Steelworkers Union
Local peace activists
Local environmental activists
Local residents
Citizen participants, Summits I and II
Facilitator, Summit II

Industry
Regional Manager, US West
President, Kaiser Hill
Employees, Kaiser Hill
Consultant engineer

Table 4-6. Analysis of Success of PP Mechanisms in Rocky Flats, CO

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
HAP	+/-	+	+	+	+/-	?	+	+
Citizens Sampling Committee	+/-	+	+	+/-	+	+	+	+
RFLII	+	+	+	+	+/-	-	+	+
FSUWG	+	+	+	+	+	?	+/-	+
CAB	+	+	?	+	?	?	+	?
Summits	+	+	+	+	+	+	+	+
Overall Success of Public participation Activities in the Community	+	+	+	+	+/-	?	+	

ST. LOUIS FUSRAP SITE

1) Brief History of the Site, Key Issues, and Conflicts

This case involves five sites contaminated with radioactive waste: 1) the St Louis Downtown Site (SLDS), contaminated by Mallinckrodt Chemical, which processed and produced several forms of uranium as feedstock materials used in the development of nuclear weapons; 2) the St. Louis Airport Site (SLAPS), a site near a landing stip used to dispose of waste that had accumulated at the Mallinckrodt plant;[21] 3) the Latty Avenue/Hazelwood Interim Storage Site (HISS), a site for storing the radioactive dirt that came from a site on Latty Avenue, where a private company had earlier trucked the waste from SLAPS to recover valuable minerals, and later another company kiln-dried the waste from that recovery operation as well as all the remaining material at SLAPS material;[22] 4) the SLAPS Vicinity Properties, 78 residential sites contaminated by spillage that occurred when waste was hauled from SLAPS to Latty Avenue; and 5) West Lake Landfill, where waste from SLAPS mixed with topsoil is landfilled. Some of these sites were located in or near black communities, some in or near white communities, and some in or near mixed communities.

For security reasons, the federal government did not disclose the content of the waste material from SLDS. It told the community that it was not radioactive, but rather was the type of refuse from any ordinary commercial firm of this type and was not dangerous. The local community did not question this assertion. Few members of the public were even aware that Mallinckrodt had processed uranium for almost 15 years at the plant in North St. Louis. Initial efforts to characterize the waste at these sites was initiated at the federal level following the development of the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974.[23] Oak Ridge

---

[21] The landing stip is now part of the SL International Airport -- 15 mi NW of downtown St. Louis in the city of Berkeley. SLAPS is bordered by a recreational ball field, a creek, and McDonald Douglas, the largest employer in the City. Between 1947-1958, workers hauled more than 175,000 tons of residues from the SLDS to the SLAPS.

[22] HISS is surrounded by commercial, light industrial, and transportation facilities, as well as a small residential development within one mile of the site.

[23] The Atomic Energy Commission established the FUSRAP to identify, investigate, and clean up or control sites where contamination above today's guidelines remains from the early years of the nation's atomic energy program. The program incorporates 46 sites within 14 states.

National Laboratory studied many of the sites and found radioactive contamination, but federal officials did not communicate with the public about any aspects of the studies, including the results. Without public input, in 1979 the DOE developed a plan to consolidate and store the waste from the FUSRAP sites at the SLAPS. This decision marks the beginning of public awareness and political action concerning the waste in and around St Louis. At this stage and throughout the years of decision-making that followed, the public's preferred avenue of influence was political. They attended public meetings held by local officials and delivered petitions to U.S. representatives citing their opposition to DOE's consolidation plan. They were often successful.

In 1984, despite well-organized protest from some parts of the St. Louis community, Congress directed the DOE to re-acquire the SLAPS site from the City to use as a permanent disposal site for consolidated wastes. To acquire ownership of the land, DOE worked aggressively with local municipal officials, but the agency did not involve these officials or the larger community in decisions about rememdiation. Initially, municipal officials trusted the DOE's conclusion that the SLAPS consolidation plan was the best solution to the city's waste problem; their support for the land transfer was based on their own lack of financial and technical resources to address the problem themselves. But environmental groups opposed the transfer of the property to DOE without seeing a formal cleanup plan. They did not want to cede decision-making about cleanup to the DOE because they did not trust the DOE's commitment to act in the community's interest. They argued further that the DOE did not have to own the site to take action to clean up the waste. Through outreach to and education of the local community, the environmentalists helped rally public concern about health issues. Working with other groups, such as local unions, they lobbied local officials to oppose the land transfer.

Although initially supportive, local officials reversed their support for the land transfer when information was leaked that a DOE-sponsored study had found that the site was insufficient to contain all the waste. DOE had not officially released this information to the public or to local officials. This caused many public officials to question the agency's trustworthiness and commitment to openness. Municipal officials began to oppose the transfer without a guarantee of a role in decision-making about remediation. After DOE contracted additional studies to develop a more accurate account of the volume of waste material that would need to be stored, the agency proposed using the Berkeley ball fields in the construction of a radioactive waste dump. This dramatically increased the level of resident interest in this issue. Local official and citizens did not want "hot dirt" from surrounding municipalities in their community. Municipal official themselves sought to influence the decision-making process through political means -- putting pressure on their congressional delegation to seek funds for removing the waste from St. Louis.

In 1988, DOE gave the city an ultimatum -- transfer the SLAPS site to the agency or face the risk of being held partially responsible for the financial costs of the cleanup. This action was perceived as a threat, further damaging the trust between the community and the DOE. When the agency found small amounts of radioactive contamination in the ball fields, the public perceived that the agency had not disseminated this information promptly. This eroded public trust for the agency even further. They did not trust the agency's assertion that the contamination was not harmful to human health. The city discontinued use of the ball fields. When 200 drums of radioactive waste were found buried near the SLAPS site, the agency

stated that they did not pose a health threat. The Community questioned how the agency could make such an assertion at the same time they were saying that further testing was needed.

At this point, a prominent citizen activist asked the Missouri Department of Health (MDOH) to investigate cancer rates in areas surrounding the sites. The investigation did not reveal an excess of cancer. Shortly thereafter, members of a local community reported a cancer cluster in their community -- 4 cases of leukemia along one block of a street in a small residential development near one of the sites. The MDOH conducted a preliminary investigation and uncovered additional cancer cases in the neighborhood. Media coverage heightened community awareness and concern about cancer. Anecdotal evidence of health effects grew. MDOH requested assistance from ATSDR, which was unable to draw conclusions about excess cancer or whether these cancers could be attributed to radiation exposure. DOE continued to present information that the risk to local residents was low. The public tended to believe that the DOE could not be trusted to judge (or be forthright about) what was or was not dangerous in their communities. Local citizens were not able to reconcile agency assertions with their personal knowledge of people and families near contaminated sites who were dealing with cancer. To many, it seemed like a government coverup.

In 1989, the FUSRAP sites were placed on the NPL. This increased agency-initiated public participation activities in the communities because of CERCLA mandates. NPL listing put the city at risk as a PRP. This led local officials to drop their opposition to the transfer of the SLAPS land. They passed a bill giving DOE full autonomy in determining the manner of disposal at the site, freeing the city of all financial and legal liability. Ironically, the DOE then refused to accept the land transfer, primarily because of their discomfort with the clause that would "hold harmless forever" the city of St. Louis. DOE's refusal was seen as a betrayal and another indication that "you can't trust the government."

At the same time, the public continued to use political tactics to make its case. Citizens in many of the affected municipalities generated petitions calling for the removal of wastes and a ban on permanent storage. Community members held marches and rallies; they expressed their opposition to a waste storage bunker in non-binding referenda. One local politician used waste removal as part of his successful campaign for the office of County Executive.

With the initiation of its Remedial Investigation/Feasibility Study (RI/FS) process, the DOE again convened public meetings to determine what the public wanted the agency to do with the waste -- despite the fact that, over the years, the communities had vocalized -- very strongly and clearly -- their preference that the waste be moved to a non-urban, geologically sound location. The public and its elected officials had been adamantly opposed to the permanent storage of the waste in their community. When DOE released its recommendations in 1994, it called for just that -- waste consolidation and a permanent bunker at SLAPS. The public was outraged by DOE's recommendation. Public trust and respect in both DOE and its public involvement activities declined substantially. The public had no involvement in selecting the criteria for evaluating options and believed the DOE's overriding criteria were financial. The value most salient to the public was fairness -- the government created the waste, and they should clean it up [the way the community wanted] regardless of cost.

To begin to address the public's concerns, the DOE held a 3-hour Summit to bring parties together to discuss a practical, viable, cost-efficient, and long-term solution that would be supported by the community. At the meeting, an Assistant Secretary for DOE promised that the

agency would not force a storage bunker on the community and announced a $15 million package to begin remedial actions in the area, including the removal of contaminated soil from six residential properties to a disposal facility in another state. The Summit and the agency's promise began to establish trust and redefine the DOE's relationship with the public. It also created a new set of community expectations that the DOE will not establish a permanent dump for the waste within St. Louis.

2) Attention to Broad-based Outreach, Communication, and Education in the Community

For many years, the public meeting was the only formal mechanism for public participation in the cleanup of the St. Louis sites. Meetings were held by a variety of regulatory agencies and municipal organizations. DOE's early community involvement efforts in St. Louis also used public meetings to provide information to the community about the status of contamination and remediation at the site and about health risk. The meetings were also used to facilitate two-way communication between the agency and the public. In St. Louis, many local citizens were comfortable with this mechanism. It was seen as more accessible and inclusive than more formalized mechanisms, although still time-consuming and intimidating to some. Many citizens also used the public meetings as a forum to communicate among themselves. The meetings provided an opportunity for citizens to learn from each other -- about the site, about cleanup option, but especially about health risks and health problems in the community.

But the mechanism was also problematic. The involved public often felt the agency was presenting inconsistent and conflicting messages at these meetings. This was interpreted as agency incompetence and a lack of trustworthiness. Staff turnover contributed to the sense of inconsistency, and comments perceived as unrealistic -- e.g., the dirt won't hurt you unless you eat it -- eroded trust even further. These comments did not reassure the public, but were interpreted as an effort to downplay the serious hazards of radiation. Members of the public tended to trust their own perceptions over agency assertions. There was also frustration that public meetings did not provide the desired measure of agency accountability to the community.

Later, the agency began to broaden its outreach activities. It conducted community interviews to identify public issues and concerns about the FUSRAP sites. It distributed literature about radioactive waste and its risks. Once the FUSRAP sites were listed on the NPL, the DOE extended its community involvement efforts even further. It established information repositories and an administrative record at local libraries and a public information office near one of the sites. Its contractor developed a community relations plan to ensure public input into decisions and to keep the communities informed about the progress of remedial actions. It also established a formal mechanism for public participation, the St. Louis Site Remediation Task Force, described below.

3) Attention to Building Capacity in the Community Outside the PP Mechanism

Targeted technical assistance. The DOE sought to enhance the technical capacity of its sole formal public involvement mechanism, the St. Louis Site Remediation Task Force (described below). It provided funds for the Task Force to establish and obtain technical assistance from an independent and balanced panel of geological and hydrogeological experts. The Task Force convened this panel to examine whether the radioactive wastes buried at the SLAPS site posed

a significant threat to the surface water of Coldwater Creek and the deep groundwater aquifer. The Task Force had a high level of trust in its Coldwater Creek Panel, but the contribution of the Panel's technical assistance to the Task Force's decision-making process was complicated by a lack of agreement on the role of the Panel. The DOE expected that the Task Force would accept and adopt the Panel's recommendations, but members of the Task Force considered the Panel advisory. They would use the Panel to obtain a better understanding of the technical issues to make more effective decisions.

The Panel met twice in public and made several presentations to the Task Force on its progress. Its final working session was closed to the public. The Panel found that surface water, sediments, and shallow ground water quality had been impacted by runoff from the SLAPS site, but that contamination levels posed no imminent threat and would not have a significant impact on surface water or the lower aquifer for at least 100 years. The panel also concluded that the hydrogeological features of the SLAPS site did not meet criteria for siting a radioactive waste storage or disposal facility there. The Task Force did not accept and approve the technical recommendations of the expert panel. Ultimately, they did not have enough trust in the Panel to accept conclusion that differed from their own preconceptions [and perhaps the preferences of their constituencies] about what should be done at the site. The insights and technical information provided by the Panel did not change their own opinions about the waste at the site.

4) Formal Mechanisms for Public Participation

St. Louis Site Remediation Task Force. After the Summit, the DOE established its first formal mechanism to involve the community in decision-making about the cleanup of the St. Louis FUSRAP sites. Initial members of the Task Force were municipal officials, many with prior involvement in the issue. The facilitators were a director of the dispute resolution program at the University of Missouri - St. Louis and a local environmental consultant. The group later broadened its membership to include residential and commercial property owners, at least one local activist, a representative of Mallinckrodt Chemical Company, and local, state, and federal regulators. The Task Force defined its role as identifying and evaluating feasible remedial action for the cleanup of radioactive waste at the St. Louis site and to petition DOE to pursue a cleanup strategy that is environmentally acceptable and responsive to public health and safety concerns. The Task Force did not define its goal as finding the least costly solution to the problem. They did not rule out any option, but investigated the costs for different options, and then pursued political means to secure federal funding for complete removal of the waste.

Task Force members worked together, through smaller Working Groups, over a period of nearly two years and developed a series of recommendations regarding alternative permanent storage sites, cleanup priorities, cleanup technologies, and plans and objectives for cleanup of specific sites. The Alternative Sites Working Group assessed and ranked ten possible disposal sites around the country and included community concerns in their evaluation criteria.[24] The

[24] All of the sites ranked as "preferred" were located in other states. Those ranked as "relatively acceptable" were located in state but outside the St. Louis area. Three St. Louis sites were ranked as "unacceptable," primarily due to their location in the midst of a major population center, their inhibiting effect on community and economic development, unfavorable climatic, seismic, and hydrogeological conditions, and capacity limitation.

Priorities Working Group developed recommendations and priorities for interim remedial action activities, and the DOE has acted consistently on the groups'recommendations. This has helped demonstrate the agency's accountability and build trust. By involving the Task Force in apportioning funds for remedial action and consistently acting on Task Force recommendations, the DOE reached an unprecedented level of cooperation with the community. The Remediation Options Working Group used a software program to express their preferences for remediation strategies, which they recommended to DOE.[25] The Technologies Working Group screened know treatment technologies and recommended a particular technology which it thought showed potential for achieving cleanup standards.

The Task Force achieved consensus on the future use of the site, the desired level of cleanup, and a remediation approach. It submitted its recommendations to the DOE in 1996. To address the cost issue, the Task Force argued that the total relative cost of removal would be comparable to the non-removal options proposed by the DOE. It also instigated political efforts to secure the resources that DOE would need to clean up the community. They expect that the agency will follow its recommendations.

Despite this list of accomplishments, the Task Force has been subject to criticism. Because it is composed largely of politically- and professionally affiliated individuals, some community members consider it an elite group, which the Agency has tried to coopt. Although Task Force meetings were open, these community members complain that there is little opportunity for the public to interact with the Task Force. The timing of meetings -- 7:30 am -- also posed a barrier to broader public participation. Although the Task Force opened up its working groups to members of the public and even provided them with a vote, the Task Force did little to publicize this opportunity. This may explain why some community members believe that the Task Force has accomplished nothing. Some local residents believed that the Task Force had replaced other public participation mechanisms (i.e., agency-sponsored public hearings) which were more inclusive of the broader public, and that the agencies were now directing their communications to and through the Task Force. Some felt that the decisions were being made behind closed doors, and others complained that the public was really not aware of the Task Force. Had members of the media been included in the Task Force, the public would probably been better informed.

[25] The Working Group recommended that most of the FUSRAP sites be cleaned up for unrestricted use, with removal of all contaminated soils to a licensed commercial facility. The recommended that some of the sites be cleaned up for limited use as industrial/commercial/recreational sites.

Although the Task Force was established to act autonomously, some members of the public felt it was allied too closely with the DOE. Indeed, the Task Force facilitators reported to the DOE. The high level of DOE involvement in the Task Force threatened its credibility with some members of the community.[26] A clear structure of accountability between the Task Force and the public was lacking, although some members were locally elected officials and therefore representative of and accountable to their constituencies. Some community members believe that Task Force members are trying to advance their own agendas rather that the interests of the residents as a whole. At the same time, others believe that the Task Force did not have the flexibility to make independent decisions and recommendation because they were bound to advocate for the well-formed opinion of their constituents -- i.e., removal of the contaminated soil from St. Louis. Many members of the public believed that the Task Force should represent the public mandate as expressed by the earlier referendum. Some members of the community suggested that the DOE mistakenly believes that the public will accept the Task Force's recommendations. But it may well be that the legitimacy of the Task Force with the community will depend on whether or not its recommendations are consistent with the communities'clearly expressed preferences -- that is, removal of the contaminated soil and permanent storage and/or disposal elsewhere.

[26] A case in point was one citizen's complaint that one of the facilitators inappropriately screened information that the citizen wanted to bring before the Task Force, creating a perception that the facilitator (and DOE) controlled the organization.

Concerns were voiced within the Task Force as well. Several members were uncomfortable with the role assumed by one of the facilitators.[27] Some members noted problems with the group's implementation and their own participation in the process. They were concerned with being put in a position of making decisions that compromised their values and perhaps jeopardized the integrity of the process as a whole, e.g., participation in such short-term decisions as how to allocate resources for interim remedial measures. Some members worried that the DOE was using the Task Force to avoid taking responsibility for making difficult decisions. When commenting on agency accountability to the Task Force, some members were optimistic that the DOE would heed its advice. Others suggested a strong likelihood that the agency would not follow their recommendations, but would base final decisions on dollars. Even more cynically, some believe that the Task Force is being used by the agency to justify what it has wanted to do from the beginning.

Several members expressed the need to enhance the group's relationship with the broader public in order to help members better reflect the community's values and to facilitate broader awareness of and participation in the group's activities. To this end, the Task Force developed a Communications Working Group, but its community outreach was complicated by disagreement within the Task Force about when to communicate information to the public -- during its deliberations or after it had developed recommendations. In the end, reasoning that the public could participate in the development of recommendations by attending Work Group meetings, the Task Force decided to communicate with the public *after* it completes the process of developing recommendations. It did so through public hearings, at which time the public could comment on the recommendations. These comments were not integrated into the Task Force report, but included as an appendix to the recommendations.

5) How Successful Were The Public Participation Mechanisms

Table 4-7 suggests that the public participation mechanism employed in St. Louis has had relative success. The Task Force was clearly successful in developing a community consensus on feasible and preferable remediation alternatives and in actively participating in DOE decision making about interim remediation priorities and activities. It has enjoyed a degree of control over the interim cleanup process -- even to the extent of developing recommendations counter to the technical findings of its independent panel of experts. The composition of the group along with the duration and intensity of the process have helped ensure a competent process and an opportunity to develop mutual understanding between members and with the agency. At the same time, issues of autonomy, independence, accessibility, accountability, and diversity have called the overall fairness of the process into question. The extent to which the Task Force sought to protect minority interests is not clear.

6) Mechanisms of Interagency Cooperation

Local officials developed the St. Louis County Municipal League Select Committee on Radioactive Waste to enable a more effective translation of their collective municipal interests

[27] This facilitator decided that he, rather than Task Force members, would construct the draft final report to the DOE. The report would then be discussed and amended by the full Task Force.

into political pressure. The group included two dozen elected state, municipal, and county officials, as well as an environmental activist and a representative from the DOE. They engaged in a variety of political and lobbying activities to express, with a united voice, the municipalities' strong opposition to the DOE consolidation proposal. Through letters, resolutions, referenda, and visits, they made their point and urged their congressional delegation to introduce legislation directing the DOE to find a non-urban site for disposal of the St. Louis area wastes. They had some limited success. One of their representatives proposed a series of bills to remediate some of the sites, to investigate alternative disposal sites, and finally to remove the waste from St. Louis. The Select Committee itself adopted a resolution to ban storage of the waste in St. Louis. Whether or not this local effort at interagency cooperation around pursuit of a desired outcome will be successful in the end remains to be seen.

7) Some Findings from this Case History

X Opposition may be the only way for citizens to begin to acquire some influence over the decision making process. In St. Louis, a coalition of environmental groups opposed the consolidation and transfer of waste to SLAPS because they did not trust DOE to act in the best interest of the affected community and wanted to see a formal cleanup plan first.

X In the face of anecdotal evidence of health effects, citizens may mistrust government reassurance that the risk is low. As in Chattanooga, St. Louis residents were not reassured by government studies that reported low risk. The social dimensions of risk is evident in the comments of one community resident: "We would go to these meetings and hear from these people .....here was one women whose two children had leukemia. And these are not articulate, educated people because that's not who lives around there. For the government to come and say that [it] has nothing to do with radioactivity because aren't cancers most associated with exposure to radioactivity! How can someone say that and expect me to listen to anything else and accept it?"

X An agency may be perceived as "listening" only to the extent its decisions and actions reflect the community's preferences. In St. Louis, it was only when a top EPA official promised not to force permanent storage "down people's throats" that the community felt the agency had listened. "Grumbly was a breath of fresh air. It was the first time anyone listened to us."

X Public meetings can be an important vehicle for intra-community communication and learning. In St. Louis, public meetings provided local residents an opportunity to learn from each other about the site, health risks, and options for cleanup.

X Tight agency control of public meetings can anger community members who see meetings as venues for intra-community communication. In the words of one St. Louis resident: "By the time your opportunity to talk comes around, your energy is dissipated...the bulk of the people leave before the public gets to talk. So by the time you get to the part where you could learn from your neighbors, people aren't there."

X Reporting relationship and actions of community involvement facilitators can adversely affect the autonomy and reputation of the mechanism. In St. Louis, for example, the

facilitators of Site Remediation Task Force reported directly to DOE. Moreover, one facilitator was seen as exerting too much control when he screened information from citizens to Task Force members and decided to draft the group's final report. The reporting relationship and actions taken by the facilitator compromised members' sense of autonomy and control and adversely affected the group's credibility with the larger community.

X Staff turnover in public participation mechanisms can contribute to a perception that the agency is inconsistent and incompetent. What the public perceives as inconsistent or conflicting information can also contribute to a sense of agency incompetence and untrustworthiness. Staff turnover and conflicting information caused many citizens in St. Louis to lose confidence in DOE. In the words of one: "It seems like DOE is very confused...and it seems like you are always dealing with new people."

X Members of structured participation mechanisms may believe that the agency is using them to take the heat for making difficult decisions. Several members of the St. Louis Remediation Task Force were worried that public participation via the Task Force was a way for DOE to "take cover." One commented: "[the contamination] is not my problem to handle. We are just advisory."

8) Organizational Affiliations and/or types of Individuals Interviewed for this Case

Government
DOE, FUSRAP site
ATSDR
MO Department of Health (DOH)
MO Department of Natural Resources
County Health Department
County Water Department
County commissioners
Board of Aldermen
Members, St. Louis City Council
Members, Hazelwood City Council
Mayors, local municipalities
City clerk
Director, City Department of Public Works

Community
Members, St. Louis Site Remediation Task Force
Members, League of Women Voters
Community organizer/local resident
Members, neighborhood association
Members and activists, Coalition for the Environment
Local landowners
Local newspaper reporters

Industry

Director of Community Relations, Mallinckrodt Chemical
Director of environmental Affairs, Mallinckrodt Chemical
Officials, St. Louis Airport

Table 4-7. Analysis of Success of PP Mechanisms in FUSRAP Sites/St. Louis, MO

Mechanism	Process		Outcome					
	Fair	Competent	Achieve Objectives	Foster Mutual Understanding	Enhance Equity/Control	Protect Minority Interests	Influence Decision	Overall Success of Mechanism
St. Louis Remediation Task Force	+/-	+	+	+	+	?	+	+
Public Meetings and Summit	+	-	+/-	+	+	?	+	+
Overall Success of Public Participation Activities in the Community	+	+/-	+/-	+	+	?	+	

V. EVALUATION OF MECHANISMS AND VEHICLES: Lessons from the Case Histories Concerning Mechanisms and Vehicles for Public Involvement

Numerous initiatives and activities can enhance public involvement in government decision-making. Following on our previous work (Ashford et al., 1991), the present study focused on three types of initiatives, i.e., those that:

a) Provide for broad-based outreach to, communication with, and education of the community
b) Build skills and capability in the community
c) Provide for increased public participation in, and access to, government decisions.

The first two are always instrumental to something else -- in this case, to increasing public involvement in government decisions about environmental contamination. Communication, i.e., the two-way provision of information, and capacity building are seen as fundamental to meaningful public participation in decision-making. Citizens and communities need information about the contamination -- such as information about extent and level of contamination, routes of exposure, possible health effects, etc -- and about alternatives for cleanup in order to participate effectively and meaningfully in government decisions about remediation and cleanup. Governmental authorities need information from the community -- such as information about populations at risk, location and use of contaminated areas, health problems, community networks and resources, preferences for future use of contaminated sites, and other community concerns and values -- in order to characterize the contamination and risk, as well as to develop and implement effective and acceptable cleanup strategies.

In addition to information, citizens and communities need the knowledge, skills and resources to process and use the information gleaned or provided in order to level the playing field in any public participation exercise. The knowledge and expertise may already exist in the community, in which case it may need to be mobilized or enhanced, or it may be absent, in which case it will need to be created. Government can play an important role in both. But capacity building goes both ways. Government officials and bureaucrats may also need skill-building programs to enhance their appreciation of and capacity for effective and meaningful public participation.

Although necessary elements, information and skill may be insufficient for effective public participation. Historically disenfranchised and economically disadvantaged communities may have or be able to acquire information and skill, but lack the resources and power to influence government decisions for any number of reasons.

This section examines the extent to which the variety of public involvement mechanisms found in each of the case histories addressed the three categories of initiatives listed above. Clearly, there is some overlap between and among these categories.

Participation in decision-making can be an empowering and skill-building process in and of itself. Capacity building and participation programs may involve dialogue, i.e., communication. It is useful, however, to examine community involvement mechanisms in terms of these different categories of activities, because it may help illuminate different factors that impact the success or failure of public participation initiatives. The section goes on to generalize and discuss some of the findings identified in each of the case histories.

A. Providing for Broad-Based Outreach to, Communication with, and Education of the Community

In most of the communities studied, communication was an integral part of the community involvement process. Indeed, in no community did we encounter significant complaint about a lack of information at the time of our study.[1] Government agencies used a variety of mechanisms and methods to provide information to members of the public about health studies and about workplans, priorities, timelines, and strategies for cleanup and remediation. Some methods focused solely on the one-way provision of information from the government to the community or, in the case of community surveys and interviews, information was solicited from the community by the government. But in all cases, concurrent mechanisms and methods were put into place to foster two-way communication, i.e., to give the public an opportunity to ask questions, raise issues, discuss preferences, and generally interact with each other and with the involved governmental agencies. Table 5-1 provides examples of the types of methods/activities employed by the agencies and/or by their formally established public participation mechanisms for broad-based outreach, communication, and education in the communities studied.

Table 5-1 and the case histories themselves illustrate the continued popularity of public meetings as an important method for communicating with the larger public. Both the agencies and the more formally structured public participation mechanisms they created or encouraged used public and/or open meetings as a way to provide information to the general public about their activities and to solicit feedback, comments, views, and perspectives from local residents. For example, the Lead Steering Committee Bartlesville linked its meetings to broader public meetings in order to inform the community about the agencies' health and environmental studies. The Bartlesville Select Oversight Committee took an additional step; it moved its meetings from City Hall to the West Side, the site of the contamination. In South Valley, the Design Review Committee linked its public participation activities to regularly scheduled meetings of community organizations. The public Summits in Rocky Flats and South

[1] This was clearly not the case in the past. Many of our study communities had a long history of a lack of information about the contamination in their midst. See especially, Rocky Flats and St. Louis.

Valley/Albuquerque were ground breaking efforts to involve and create partnerships with the broader public.

This is not to suggest that all public meetings were problem-free mechanisms for promoting agency/ community dialogue. Indeed, in some cases, community members complained that the agencies just talked at them (St. Louis); that the agency presentations were too technical (Bartlesville Lead Steering Committee); or that the time allocated for public comment or dialogue was insufficient (St. Louis). Indeed, members of the public voiced the common litany of well-known problems associated with this mechanism. These include problems of: logistical accessibility (time of day, location and frequency of meetings); substantive accessibility (e.g., excessively technical presentations/information); and cultural/interpersonal accessibility (e.g., lack of confidence in public speaking; dominance by the more outspoken members of the community; dislike of conflict), as well as socioeconomic barriers (more immediate or pressing concerns, obligations, etc.). However, the agencies used public meetings in all seven of our study sites, as did many of the formally-structured stakeholder involvement mechanisms in these communities. It appears that public meetings still play an important role in public participation processes.

The production and dissemination of printed information is also routinely used by agencies and the public participation mechanisms they create to provide information to the broader public. This information was mailed by mailed to residents directly or made available to them at public meetings, through existing community organization, or through information repositories, like local libraries. Educational and technical workshops -- in some cases for local school children (Saltville) -- are popular with both the agencies and the communities. In some communities, workshops were designed primarily to "educate," -- that is, to provide information (hazards of eating fish from the local river in Saltville). In other cases, workshops were designed primarily for capacity-building (see below).

The cases provided some specific lessons about agency communication, outreach, and education efforts targeted at the general public in contaminated communities. For example,

- By prioritizing communication with the affected community, an agency can help build trust or rebuild the credibility of other involved agencies. ATSDR did this quite successfully in Bartlesville.

- Community members (e.g., the environmental activists in Saltville) can commend an agency's communication efforts, but mistrust the message being communicated. This is testament to what can happen when the community is not given what it considers a meaningful role/voice in agency activities or decisions. In Saltville, members of the Mountain Empire Environmental Team (MEET) wanted real input into decisions about study design and the contractual

terms under which the health studies would be conducted. Absent this, they were not inclined to trust the study results, which they agreed were communicated to them quite admirably.

- Limiting communication and outreach to those groups or organizations that seem the most interested, receptive, and cooperative can create problems in the community and for the agency. In Chattanooga, for example, ATSDR focused its activities and worked most closely with a grassroots group, Stop Toxic Pollution (STOP). Community residents did not identify this group and suspected that the agency choose to work with STOP because it was predictable and safe. This hampered communication and participation efforts.

- Public meetings are not simply avenues of communication between the public and the agency. They are also important forums for the equally necessary and important process of intra-community communication. The citizens of St. Louis used these meeting extensively as opportunities to learn from each other about the site, health risks, and options for cleanup.

- Tight agency control of public meetings can anger community members who see and use meetings as venues for intra-community communication. See the St. Louis case history.

- To maintain community involvement and prevent citizen burn-out over time, it is important to develop methods that ease the burden of public participation. A variety of means were implemented in our study communities, e.g., holding meetings in the affected community (e.g., the Bartlesville Select Oversight Committee); linking public meetings to regularly scheduled meetings of community organizations (e.g., the Design Review Committee in South Valley). In addition to timing and location, attention to agenda topics and format are also important.

Table 5-1. Examples of Methods Used by Agencies and by Formal Public Participation Mechanisms for Broad-based Community Outreach [2]

Methods/Activities Λ = primarily 1-way communication M = 2-way communication	Community	Used by	
		Govt agency	PP Mechanism
M Public meetings, round table discussions, "availability" sessions	Bartlesville	T	T
	Saltville	T	
	Chattanooga	T	T
	Albuquerque	T	
	Sandia		T
	Rocky Flats	T	T
	St. Louis	T	T
Λ Community surveys/ interviews	Bartlesville		T
	Chattanooga	T	
	Albuquerque	T	
	Rocky Flats		T
	St. Louis	T	
Λ Information center	Bartlesville	*	
	St. Louis	T	
M Poster sessions	Saltville	T	
Λ Mailings; printed information, e.g., fact sheets, reports, newsletters	Bartlesville	T	
	Saltville	T	
	Chattanooga	T	T
	Albuquerque	T	T
	Sandia		T
	Rocky Flats	T	T
	St. Louis	T	T
Λ Educational Workshops	Saltville	T	
	Chattanooga	T	
	Albuquerque	T	T
	Rocky Flats	T	
Λ Planned use of the media	Bartlesville	T	
	Sandia		**
	Rocky Flats	T	
Λ Speakers Bureau	Sandia		**
	Rocky Flats		T
Λ Web Site	Sandia		**
	Rocky Flats		T

* Established by the cleanup contractor
** Planned or under discussion

[2] This table is not a compendium of mechanisms/methods found in each of community sites. Rather, it provides examples of the types of communication mechanisms/methods commonly used and a sense of their relative frequency.

B. Building Skills and Capability in the Community

As discussed above, initiatives designed to promote communication and education, as well as those designed specifically to increase participation (as discussed below) also build capacity. Table 5-2 presents those mechanisms found in our cases that focus first and foremost on capacity building.

In Bartlesville, the state environmental agency provided a technical assistance grant (TAG) to a coalition of the previously warring factions within the community (the Bartlesville Coalition). The Coalition used the TAG funding to hire technical advisors to help them understand the proposed cleanup plan and related technical issues and to help them educate the broader public about this plan. The state agency was thereby able to address two important community problems -- the need to build capacity and the need to foster intra-community communication and conflict resolution. Later, the Coalition was instrumental to broadening the cleanup process to pursue the wider goals of the affected community.

In Chattanooga, the first capacity building initiative was funded by private foundations. Only later was the community a recipient of an environmental justice (EJ) grant. Formed by trusted people outside the affected community, the Chattanooga Creek Community Involvement Project (CIP) helped provide equity, tools, and opportunities to minority, low-income people of the impacted community so that they might effectively participate in public processes and decision- making. More than a year after the formation of CIP, a Community-University Partnership (CUP) Grant, funded by EPA's Office of Environmental Justice was an important vehicle for building capacity in South Chattanooga. This grant enabled the Tennessee Technical University to work with the South Chattanooga community to help local residents understand the scientific and technical aspects of the cleanup and to participate in the related decision-making processes. Eventually, the grant was restructured to channel more funds to the community directly through (1) the creation of job training programs, (2) the provision of supplies and equipment, and (3) the creation of a community-based and controlled community newsletter. This grant also built local capacity, awareness, and networks for collaboration in the community around the contamination. The CUP helped the community develop a capacity for and interest in participating in decision-making, as well as a sense of community cohesion. It also provided a sense of empowerment, self-confidence, and self-sufficiency in the community, which began to develop an ability to design and implement projects without outside assistance. The discussion by some residents about the need to establish a representative community board to work with EPA and other groups on an ongoing basis is further testament to the success of this capacity building initiative.

Table 5-2. Skill and Capacity Building Mechanisms at the Sites

Community	Government Grants to the Community to Build Intellectual Capacity	Government Grants to Local Institutions to Build Intellectual Capacity	Government Grants to Build Infrastructure (supplies & equipment, newsletters; conditions to encourage new industries)	Technology and/or Information Transfer to Local Agencies, Contractors, or Minority Businesses Directly Related to Cleanup	Community-Created Self-help Groups or Privately-funded Efforts
Bartlesville	State TAG to the Bartlesville Coalition				
Chattanooga	EPA/EJ Community-University Partnership Grant		EPA/EJ Community-University Partnership Grant		Chattanooga Creek Community Involvement Project
South Valley, Albuquerque	EPA TAG to San Jose Community Awareness Council			EPA Technical Assistance to Minority Businesses	
Sandia, Albuquerque		DOE-funded SW Center for Environmental Excellence and Opportunity		DOE & county-funded SW Center and Bernallilo Health Department Technology Transfer Program	
Rocky Flats	EPA TAG to Rocky Flats Cleanup Commission; State funding of Citizens' Environmental Sampling Committee		Local funding of Rocky Flats Local Impacts Initiative (RFLII)		
St. Louis	DOE-funded Panel of Experts to assist the Task Force				

In the South Valley, Albuquerque, the EPA awarded a TAG to the San Jose Community Awareness Council in early 1990. The TAG improved the ability of this important community group to participate in the Design Review Committee and other participation processes in a meaningful way. The Design Review Committee was a mechanism set up by EPA to involve the relevant parties in cleanup strategies at the site. As with other TAGs, the group used some of the grant funds to hire its own technical advisor, who routinely attended meetings of the Design Review Committee along with members of the Awareness Council. The TAG helped the community group participate in the process as an equal partner. This may be one factor that accounts for the relative success of the participation mechanisms described in the next section below. In addition, technical assistance was given to minority-owned businesses to facilitate their becoming involved in cleanup work.

At the Sandia site in Albuquerque, Sandia and DOE devoted significant resources to building the capacity of local institutions and to foster capacity- building partnerships between DOE/Sandia and the local community. With DOE funds, the Albuquerque Technical Vocational Institute (TVI) established the Southwest Center for Environmental Excellence and Opportunity to increase the number of Hispanics in environmentally-related careers; to strengthen the infrastructure and capacity of Hispanic businesses to participate in clean-up activities; and to increase the understanding and participation of the local Hispanic public in DOE environmental management programs. In addition, the Bernallilo County Health Department Technology Transfer Program, funded DOE and the county and administered by Sandia, was established to build the capacity of local institutions to maintain the quality of their groundwater by transferring innovative technologies known to the DOE and other federal agencies for the identification and cleanup of subsurface groundwater contamination. The program allowed the County Health Department to identify cost-effective technologies and then work with local companies that might purchase the necessary equipment and be hired as contractors by the local authorities. A second focus of the partnership was to disseminate information to other local health agencies facing similar issues, thus building the capacity of local institutions as well.

At Rocky Flats, a TAG was awarded to the Rocky Flats Cleanup Commission (RFCC), a broad coalition of grassroots environmental and peace groups that had been active in monitoring the activities at the plant and highly critical of DOE and other regulatory agencies. Local and municipal governments contributed to capacity building through some of the programs implemented by the Rocky Flats Impact Initiative (RFLII), a public involvement mechanism established through a formal intergovernmental agreement. The RFLII focused on jobs for displaced nuclear production workers and helped create the infrastructure to encourage fast-growing industries to locate in the area. These programs helped build local capacity through technology transfer, training, support of research and development, and assistance to workers and companies. A unique effort to increase citizens' familiarity with scientific and technical aspects of site investigation

was accomplished by the State Department of Public Health through the establishment of the Citizens' Environmental Sampling Committee.
In St. Louis, the DOE sought to enhance the technical capacity of its only formally structured public involvement mechanism, the St. Louis Site Remediation Task Force, by providing funds for the Task Force to establish and obtain technical assistance from an independent and balanced panel of geological and hydrogeological experts. The Task Force used the Panel to obtain a better understanding of the technical issues to make more effective decisions.

Lessons collectively learned from the cases were:

- Capacity-building and participation mechanisms can be designed to address simultaneously the environmental (scientific and technical), economic, and social issues in an affected community (see, for example, what occurred in Chattanooga and South Valley).

- Involving citizens in actual technical work, as did the Citizens' Sampling Committee in Rocky Flats, can both empower and give them a special understanding of the complexities of the scientific issues involved in cleanup and related issues.

- As in Bartlesville and Chattanooga, residents of economically disadvantaged communities may prefer that environmentally-related grants address larger community issues and concerns. Instead of funding environmental awareness and education programs, they may prefer to use agency funding and resources for capacity building, job training, and economic development.

- The issue of economic development in impacted communities can be addressed through technical assistance, both in the form of TAGs to communities (as in Bartlesville and South Valley), and though publicizing opportunities for technical assistance (TA). The Superfund Summit in South Valley included a Community Economic Partnership Seminar that provided information specifically for minority-owned businesses on such topics as bonding requirements, bid packages, and obtaining loans from the Small Business Administration (SBA).

- A sustained capacity-building initiative coupled with public participation initiatives can help a community once described as "fragmented" and without identifiable leaders develop the cohesion, spirit, and ability to translate its concerns and ideas into action. See, for example, the Bartlesville Coalition.

- The agencies can help reduce intra-community conflict by catalyzing a coming together of opposing interests. In Bartlesville, the promise of a TAG caused opposing factions (CAT, BEIC, and WAR) to work together and develop a shared vision for cleanup.

- Mechanisms that function over a long-enough time can provide opportunities for discussion that can lead to personal relationships and a new-found understanding of different points of view. See, for example, the Bartlesville Coalition, the CUP in Chattanooga, and the FSUWG in Rocky Flats.

- Partnerships with respected community organizations can be the key to successful capacity-building efforts. In Chattanooga, for example, the CUP worked with existing community, neighborhood, and residents'organizations. In South Valley, the Design Review Committee worked closely with the San Jose Community Awareness Council. In Albuquerque, Sandia and DOE funded a successful partnership with the Albuquerque Technical Vocational Institute, an organization well-known to and highly respected by the communities in Albuquerque.

C. Provide for Increased Public Participation in, and Access to, Government Decisions

The cases in this study were chosen because the public participation activities in these contaminated sites were considered relatively successful by both the involved agencies and the communities. As noted in earlier sections, agencies (and communities) establish or facilitate the creation of more structured approaches to public participation in contaminated communities to accomplish several goals. In broad terms, public participation mechanisms can be used to:

- To exchange information;
- To influence agency decision-making by providing advice or recommendations
- To provide a forum for community dialogue, decision-making, consensus-building;
- To build support for community support for decisions;
- To empower disenfranchised populations affected by the contamination

Clearly, there is overlap among these goals of public participation, and the mechanisms used to achieve them can vary widely. As noted above, in our study communities, public meetings were the preferred vehicle for reaching and involving the broader public. Additional mechanisms are generally put into place to deal with specific issues or to operate over time.

At the study sites, many, and in some cases most, individuals interviewed were pleased with the more structured opportunities for community and stakeholder involvement in their communities. In some cases, the agencies established these opportunities up front; in other cases, the communities created or re-fashioned the opportunities themselves. At the same time, the cases reveal a variety of problems with the participation efforts. They were not fully satisfactory to the communities. Different

stakeholders -- affected citizens, activists, other members of the community, local and state officials, local business, and parties potentially responsible for the contamination (PRPs) -- had a variety of complaints and criticisms about agency performance. Many offered valuable suggestions for improving the participatory process. Few, however, considered the public participation processes in their communities to be abject failures. They were often at least somewhat satisfied with the process and with the influence they had or were having on agency activities and decisions in their communities.

Using criteria constructed for this report, our analysis suggests that, taken together, the public participation mechanisms used in these communities can indeed be considered relatively successful. Before examining what may account for this success [see Section VII], it is useful to identify the types of structured mechanisms found in these communities, as well as the some of the generic lessons gleaned from their experience.

Although called by different names, the range of structured public participation mechanisms found in the study communities was rather limited. These mechanisms can be grouped into two broad categories: 1) those that provided for sustained and ongoing participation, such as committees and task forces -- most often structured as stakeholder involvement; and 2) those that were intensive, one-time or short duration events, such as those called "summits" in three of our study communities (South Valley, Rocky Flats, and St. Louis). Some mechanisms established to build capacity or to enhance interagency cooperation also may provide opportunities for participation, and these mechanisms are discussed separately in the previous subsection and the section that which follows. The use of public hearings to communicate with and involve the larger public in agency activities and decisions has also been discussed previously in subsection A. Here we examine the more formally structured public participation mechanisms found in the study communities.

1. Mechanisms for Sustained and Ongoing Public Participation

Each community in this study had mechanisms in place to provide for sustained public participation over time (Table 5-3). These committees and task forces were established by different levels of government or by the communities themselves. In some cases, the membership of the group was determined by the initiating agency; in other cases, the agency vested this responsibility in the community. In most cases, members came from various stakeholder groups, often including the governmental agencies themselves. In only one case -- the Citizens' Sampling Committee in Rocky Flats -- were members of the committee drawn exclusively from the affected, exposed community (for the limited purpose of sampling), although the CUP program in Chattanooga involved organizations based in the affected community and a local university.

Most of these mechanisms focused on more than one issue. While all of them dealt with issues relating to contamination and/or cleanup, many were active in the closely

related issues of future site use, economic development, and jobs. Only one (the Health Advisory Panel in Rocky Flats) focused primarily on health effects. These mechanisms dealt with both technical and non-technical issues. For example, the technical experts on the Design Review Committee in Albuquerque's South Valley helped develop comprehensive site maps of the contamination; the Site Remediation Task Force in St. Louis evaluated alternative treatment technologies and developed consensus on the preferred technical approach to remediation; and the CABs in Rocky Flats and Sandia routinely addressed a variety of technical issues. Non-technical issues included general concern about the community's safety, health, and economic condition, as well as its priorities and preferences for cleanup and future site use. In some cases, these mechanisms created smaller working groups to deal with specific issues. At times, these small groups were open to non-members -- creating additional avenues for involving the larger public. These included, for example, subcommittees of the Health Advisory Panel in Rocky Flats; working committees of the Rocky Flats CAB, and working groups of the St. Louis Site Remediation Task Force.

Most of these committees and task forces were established for the purpose of influencing agency decisions by making specific recommendations, providing advice, and/or commenting on agency plans and activities. In some cases, a primary purpose of the group was to develop consensus on specific issues. For example, the Bartlesville Coalition had to reach consensus on deferring cleanup responsibility to the state; the Future Site Use Working Group (FSUWG) in Rocky Flats achieved consensus on phases for agency cleanup activities, cleanup levels, and future site use; the Site Remediation Task Force in St. Louis developed consensus on remediation options, priorities, and preferred disposal sites. In some cases, the mechanisms not only influenced, but actually became the entity responsible for making the decision. For example: the Citizens' Sampling Committee did not trust previously done agency sampling and decided to sample additional sites. They also decided how to analyze their own data. The Rocky Flats Local Impact Initiative (RFLII) decided on a community-based strategy to facilitate re-employment of its displaced nuclear production workers. Through the Community-University Partnership (CUP) in Chattanooga and the Sandia-supported Southwest Center for Environmental Excellence and Opportunity in Albuquerque, community organizations were able to create or help design job training and skill-building programs for members of their communities.

The mechanisms enjoyed different degrees of autonomy. In some cases, both participating members and non-participating community residents believed the mechanism was either controlled by or too closely identified with the initiating agency or with a particular stakeholder group (e.g., Sandia CAB, Rocky Flats CAB). In other cases, participating stakeholders were satisfied with their degree of autonomy, but members of the community questioned their independence (e.g., the Rocky Flats Local Impacts Initiative and the Bartlesville Lead Steering Committee). This affected community perceptions of and trust in the mechanism.

Each mechanism also varied in its assessment of how accountable the agencies were or would be to its recommendations and the extent to which it would be able to influence agency decision-making. In many cases, the impressions of agency accountability and the mechanisms' degree of influence were mixed, (e.g., Sandia and Rocky Flats CABS and the St. Louis Site Remediation Task Force). As discussed both earlier and later in this report, the extent to which the community finds the agencies accountable and responsive depends upon the explicit or perceived purposes of the public participation mechanism. Communities that expect to engage in shared decision-making will expect a high degree of agency response to their recommendations (see, for example, FSUWG in Rocky Flats and the St. Louis Site Remediation Task Force). If, however, the agencies consider the primary purpose of the public participation mechanism to be providing information and an opportunity for dialogue, they may feel that they have been as accountable and responsive as they ever intended to be. These differing purposes of and expectations for public participation within and between the community and the agency may explain the common finding of mixed accounts of agency accountability and responsiveness and of community influence on agency decision-making.

The case histories also provide examples of the extremes of accountability and influence. The EPA was unwilling to defer cleanup responsibilities to the state of Oklahoma without the concurrence of the affected community in Bartlesville. In St. Louis, the DOE initially released recommendations to consolidate and store radioactive waste in the community, despite well-known and broad-based community preferences for a different option. Later, a high ranking official promised that his agency would not force any decision about permanent waste storage on the community, essentially implying that the community would have veto power over agency decision-making in this area. In Rocky Flats, the Future Site Use Working Group (FSUWG) worked intensely and independently to develop consensus on recommendations that would balance environmental and health concerns with business and development interests. Initially, the agencies did not respond to these recommendations, but jointly developed a cleanup agreement perceived as Aflying in the face A of the group's work.

2. Mechanisms Designed for Intense, One-time or Short-Duration Participation

Unlike those mechanisms with defined (even if changing) memberships that function over time, some public participation mechanisms are designed to provide intense, short-term opportunities for a more undifferentiated target audience. If seldom held, public meetings fall into this category. In two of our study communities, however, we found a different and additional type of short-term, broadly-based public participation mechanism -- the summit (Table 5-4). In Albuquerque, a collaborative partnership of community organizations, government, and industry to address contamination in the South Valley resulted in a three-day Environmental Justice and Superfund Summit, considered highly successful by all involved. Numerous groups, often with a history of contention, worked together to plan and implement the Summit. These disparate groups had compelling reasons to cooperate, and the collaborative planning process

was considered a breakthrough in the community. The Summit linked and addressed the issues of environmental restoration and economic development in an atmosphere characterized by mutual respect, a commitment to improved communication, an acknowledgment of the usefulness and validity of different kinds of knowledge (scientific, technical, experiential, political, etc.), and a sincere desire to improve networks and collaborative strategies among the involved groups. This Summit provides a fine example of how stakeholders with different interests and concerns can work together for the greater public good.

Two Summits were held in Rocky Flats. The idea for Summit I emerged when a number of stakeholders suggested the need for a "big picture" conversation between the community and agency decision makers. The first day of Summit I, a two-day event, was far less harmonious than the Summit in Albuquerque, primarily because community members were not adequately involved in the planning process. However, participants were able refashion the agenda and define the set of issues to be addressed during the Summit. Agency responsiveness to the outputs of the Summit (i.e., a community consensus on eight priorities for cleanup) was demonstrated in a "Summit Report Back" event held two months later. At this event, the manager of Rocky Flats reported that the DOE and the regulators had agreed to shift funds to deal with one of the top priorities identified by Summit participants. Summit I participants tentatively scheduled a second Summit to be held in the following year.

Summit II was held in the context of considerable community dissatisfaction with the agencies' draft "Vision" for the site and the contractor's cleanup plan. Learning from the mistakes of Summit I, the agencies gave the community considerable control over the purpose, focus, and design of Summit II. Like the first Summit, it provided an exceptionally effective forum for developing broad-based community consensus on issues relating to the cleanup of Rocky Flats. Participants and groups with different backgrounds and interests were able to identify common values and goals in a climate of mutual respect, and develop a high degree of consensus on a community vision for Rocky Flats. Vocal community members omitted from the ongoing participation mechanisms were present and participated in a major way at the summit. Again, the agencies held a follow-up meeting to respond to the outputs of the Summit and produced a written document that detailed the agencies'responses to the community's recommendations.

In both Albuquerque and Rocky Flats, there was a high level of community satisfaction with both the process and outcomes of the summit activity. Critical to their success were:

- Significant community control over the planning and implementation of the event;
- A climate of mutual respect for different views; and
- Rapid agency follow-up and response to the outcomes of the events.

In St. Louis, the summit was convened by DOE in the wake of public outrage over the agency's decision to locate a bunker at the SLAPS site for permanent storage of the waste. To enhance its credibility, a high ranking DOE official attended the summit which was designed to bring all parties together to discuss practical, long-term solutions that would be cost-efficient, expedient, and supported by the public. This official's acknowledgment of the public's opposition to the DOE plan and his promise that the agency would not force its proposal on an unwilling public helped redefine the DOE's relationship with the public. This official promised that the agency would work with the public to develop a solution and he revealed a $15 mil package to undertake interim remedial actions. His willingness to "listen" (defined by the community as heeding as well as hearing its preferences) restablished the trustworthiness of the agency, which will be dashed again if the DOE does not follow through on abiding by the community's preferences. The promises made or perceived as being made at the Summit has created community expectations that the DOE will remove the waste from the area.

Collectively, the cases suggest some specific lessons for enhancing public participation in, and access to, government decisions. These include the following:

- Agency accountability to its public participation processes is essential. The credibility of the process is undermined when agencies do not respond to the public's input, suggestions, or recommendations. Participants deserve to know if and how the agencies plan to incorporate their input into decisions. Participants need an opportunity to: (1) hear why their position or recommendation has been rejected; (2) clarify or re-argue their positions; and (3) debate and challenge the agency's decision.

- Agencies can demonstrate their commitment to public participation by involving personnel who can make or significantly influence agency decision-making. It is a mistake to limit attendance and participation to agency community involvement or public relations staff. Community members (as in Saltville and St. Louis) and participants in stakeholder processes (e.g., the Sandia CAB) want access to agency decision-makers.

- Staff turnover in public participation mechanisms can contribute to a perception that the agency is inconsistent and incompetent. What the public perceives as inconsistent or conflicting information can also contribute to a sense of agency incompetence and untrustworthiness. In St. Louis, citizens who participated in public meetings often voiced this complaint.

- As with the Lead Steering Committee and Select Oversight Committees in Bartlesville, inequalities in a community can be easily reproduced in structured community/stakeholder involvement mechanisms. Care must be taken to ensure

that membership in such groups does not simply reflect the existing power dynamics in the community.

- The CABs in our cases suggest that a focus on technical issues can lead to professionalization of the participatory mechanism. The representativeness of the process in undermined if effective participation requires a high level of technical literacy.

- Closely related to this is the issue of elitism in stakeholder processes. This may be the result of structural considerations in how the mechanism is set up, e.g., in Rocky Flats, interested persons had to go through a formal application process. Or, as above, it could be a consequence of the types of issues brought to the group.

- The relative merits of self-selection versus government-driven selection of membership in public participation mechanisms must be examined. Neither may produce the desired representativeness. This can occur when only the more vocal and activist community members choose to attend/participate in community involvement activities, e.g., as with many public hearings. But it also can happen when government intentionally or unintentionally excludes certain groups from the selection process. For example, in forming its Select Oversight Committee, the Bartlesville City Council intentionally did not appoint members from two established (and warring) community groups -- BEIC and CAT.

- It is difficult to ascertain who represents the interests of the silent majority in public participation processes. Community members may not identify with involved activist groups (e.g., STOP in Chattanooga and MEET in Saltville). Participants in stakeholder processes selected to represent "the community" may feel unable or unwilling to do so (e.g., Sandia and Rocky Flats CABs). Although government representatives ostensibly represent "the people," citizens, especially those from the more disenfranchised pockets of the community) may not trust them to act in their interest (see, for example, Bartlesville). For additional discussion, see section VII.

- There is tension between using too large or too small a participative mechanism. If too small, the participants may not represent the broader interest of the community. If too large, consensus-building and/or conflict resolution may be difficult to achieve (see, for example, the Design Review Committee in South Valley).

- Limited participation in formal mechanisms (like public meetings, advisory committees, etc) does not necessarily mean that the public is not interested or have concerns. The mechanisms must find ways to go to the community rather

than expect the community to come to them, e.g., by holding their meetings in conjunction with regularly-scheduled community activities.

- Mechanisms that function over time help build the personal relationships and mutual understanding needed to develop community consensus on difficult and contentious issues. The FSUWG in Rocky Flats and the Bartlesville Coalition are fine examples of how this can work. If well-designed, intensive, short-term community involvement mechanisms can do the same. This is amply illustrated by the Superfund Summit in Albuquerque and Summit II in Rocky Flats.

- It is not just working together, but working together on an equal basis that helps build trust and mutual respect. In South Valley, the participation of the community-based San Jose Awareness Council in the Design Review Committee was valued and respected by members from government and industry. Members of the Bartlesville Coalition helped ensure equality and trust by a establishing a voting structure that gave the two groups from the affected community (CAT and WAR) two votes to BEIC's one. (BEIC largely represented the business interests of the wider community.) These groups also suggest that maintaining effective relationships requires an ongoing effort and a need to revisit previously made commitments.

Before addressing the broader issue of what accounts for successful public involvement in contaminated communities, the next section examines issues of interagency coordination raised in the study sites.

Table 5-3. Structured, Ongoing Public Participation Mechanisms in the Study Communities

Community	Initiated By	Members Selected By	Composition	Purpose	Key Issues
Bartlesville					
Lead Steering Committee	State agency	State agency	Individuals and media	Information, advice	Cleanup, health
Select Oversight Comm	Local gov't	Local gov't	Individuals	Advice	Cleanup, econ devel
Bartlesville Coalition	Community	Community	Representatives from 3 community groups	Advice, decision	Cleanup, economic development
Saltville					
Saltville Team	Federal agency	Agencies	Fed/state agencies	Information, decision	Cleanup, health
Chattanooga					
Chatt. Creek Task Force	Local gov't	Agencies	State/local agencies	Information	Contamination
Comm/Univ Partnership	University	Community	University/community organizations	Advice, decision	Cleanup, jobs
Albuquerque- So.Valley					
Design Review Com	Federal agency	Community	Multi-stakeholder	Information, advice	Cleanup
Albuquerque - Sandia					
Citizens Advisory Board	Federal agency	Community Steering Committee	Multi-stakeholder	Advice, information	Cleanup, Other Sandia activities
Rocky Flats					
Health Advisory Panel	State agency	State agency	Independent scientists	Advice, oversight	Health, exposure
Citizens' Sampling Com	State agency	Community	Community residents	Advice, decision	Cleanup
RFLII	Local gov't	Community	Multi-stakeholder	Advice, decision	Cleanup, future use
FSUWG	Community	Community	Multi-stakeholder	Advice, decision	Future site use
Citizens Advisory Board	Fed/state agency	Agencies/comm.	Multi-stakeholder	Advice, information	Cleanup, Other
St. Louis					
Site Remediation Task Force	Federal agency	Federal agency	Multi-stakeholder	Advice, decision	Cleanup, future use

Table 5-4. Other Public Participation Mechanisms in the Study Communities

Community	Initiated/Sponsored By	Funded By	Purpose	Issues Addressed
Albuquerque - So.Valley Summit	Community, government, industry	EPA	Build partnerships	Cleanup, economic development
Rocky Flats Summit I	Federal/state agencies, PP mechanisms, community groups	DOE	Dialogue, priority setting, consensus building, advice	Cleanup
Summit II	Federal/state agencies, PP mechanisms, community groups	DOE	Dialogue, consensus building, advice	Cleanup, economic issues
St. Louis Summit	DOE	DOE	Dialogue, conflict resolution	Long-term solutions for cleanup

VI. INTERAGENCY COORDINATION

In this section, we discuss mechanisms that facilitate conflict anticipation and avoidance among the federal, state, and local agencies of government, and those that foster the resolution of problems among agencies at all levels.

One of the criteria used to select cases for this study was that at least two federal agencies were involved in a cooperative way at the site, and that, in addition, they were active in community participation efforts. In all but one of the communities included in our study, ATSDR was involved with either EPA, DOE, or both. Two cases involved ATSDR, DOE and EPA, and one involved only EPA and DOE. Table 6-1 lists the federal, state, and local government participants in the seven sites studied.

Table 6-1: Agency Involvement at the Sites

	Federal	State	Local
Bartlesville	ATSDR + EPA	ODEQ + OSDH	City of Bartlesville
Saltville	ATSDR+ EPA	VDEQ	Town of Saltville
Chattanooga	ATSDR + EPA + TVA	TN DHE	
South Valley, Albuquerque	ATSDR + EPA	Groundwater Bureau Superfund Section UST Program	City of Albuquerque Departments of Public Works and Environmental Health
Sandia, Albuquerque	DOE + EPA	NMED	Bernallilo County Health Department
Rocky Flats	ATSDR + DOE + EPA	CDPHE	City and County Governments
St. Louis	ATSDR + DOE + EPA	MO DNR + MO DOH	City and County Governments

Inevitably, there are always several governmental agencies involved in contaminated communities, even if the federal involvement is limited to one agency. State and local governments are frequently important actors. ATSDR, one of the sponsors of the present study, has made a particular effort to formalize its relationships with state and county health departments through grants for health assessments and studies at contaminated sites. ATSDR has also worked closely with the National Association of

County and City Health Officials (NACCHO) through a series of workshops and meetings to develop a common vision concerning public involvement [ATSDR/NACCHO 1996; Cole, 1996]. In contrast, EPA operates at contaminated sites through its regional offices and does not usually delegate responsibility for studies or assessments to state departments of environmental protection, although many of these are state agencies are active at the sites, often precedent to federal involvement. The DOE similarly utilizes its regional offices but also engages independent contractors at the sites. DOE was involved at three of our cases and necessarily interacted with state and local government more than EPA because of its direct role in cleanup activities.

The complex pattern of multi-agency and multi-level involvement is both a source of confusion for the community, as well as an opportunity for interagency coordination, cooperation, and synergy. All agencies have developed similar protocols for community participation, but coordination efforts with other agencies reflect ad hoc and unsystematic approaches, depending on the particular history and dynamics of the site. This is not to say that coordination did not occur in the absence of well-thought out plans, but rather that more thought and planning about this aspect vis-a-vis public participation efforts might have led to even greater success. EPA and ATSDR have complementary roles as defined by Superfund legislation, but no guidance is given on their interactions for public participation or environmental justice activities.

In earlier work at MIT [Ashford et al., 1991], we identified several generic mechanisms that we thought might enhance interagency coordination:

1) Designated person(s) for interagency coordination at all levels of government

2) Federal Interagency working groups

3) State or local interagency working groups

4) Multi-level interagency working groups

5) Establishment of formal administrative protocols for coordination

Experience from the cases in the current study reinforces the importance and potential value of these generic mechanisms.

The fourth type of generic mechanism (multi-level interagency working groups) was used in Bartlesville, where two state agencies (ODEQ and OSDH) and two federal agencies (EPA and ATSDR) formed an Interagency Task Force to: (1) address recommendations stemming from the ATSDR health consultation; (2) coordinate related activities; and (3) divide responsibilities for specific projects, e.g., soil testing, blood-lead screening of West Side children, and coordination of agency public involvement activities. By careful attention to the delegation and assumption of different responsibilities across the federal-state divide, the Task Force was able to more quickly

accomplish activities important to the community. Moreover, a cross-agency focus on community involvement activities provided a bridge to interagency cooperation on a host of issues related to the site. Staff members from all four agencies were enthusiastic about the level of interagency cooperation that emerged from the Task Force, which provided a structured process for interagency communication and conflict avoidance. Most importantly, the cooperation engendered by the Task Force fostered an ability for the agencies to support each other and stand together in the face of strong opposition to cleanup by some of the more powerful sectors on the community.

The same type of mechanism was used successfully in Saltville, where the Saltville Team, consisting of representatives from ATSDR, EPA, and the state environmental agency (VDEQ) created a joint decision-making process for the agencies and coordinated communication and citizen participation in the cleanup of both NPL and non-NPL sites in the town through public meetings. The Team met monthly and made all decisions by consensus. The Team had decision-making authority and their decisions were not second-guessed or reversed by their agencies. This helped enhance accountability and credibility with the local community.

In Chattanooga, while state and local government cooperated successfully through the Chattanooga Creek Task Force (the third type of generic mechanism listed above) for the limited purpose of providing local residents with information about a TVA study of contamination in the creek, the federal agencies (ATSDR and EPA) interacted with each other and with the state and local authorities on a more informal basis. The informal communication and cooperation activities were considered successful by the agencies, and community residents did not voice confusion about the activities of the different agencies.

At the South Valley site in Albuquerque, a variety of initiatives contributed to the success of public participation efforts, including a TAG grant, a structured committee (the Design Review Committee) established by EPA to discuss cleanup strategies, and an intensive public forum (the Summit). It was not due to *federal* interagency cooperation efforts, which operated only informally in the San Jose community at the time of the study. For example, at least five federal agencies (DOE, EPA, ATSDR, DOD, and SBA) participated in the Summit. There were, however, more formal state and local interagency efforts. The Design Review Committee involved representatives from four state and local regulatory agencies, numerous PRPs, and a well-respected and active community organization, the San Jose Community Awareness Council.

At the Sandia site in Albuquerque, the technology transfer program created between DOE and Bernallilo County Health Department (a single federal agency-single local agency example of interagency cooperation) was important for local capacity building and should be regarded as a successful multilevel interagency cooperative effort.

At Rocky Flats, arguably the most complex of the sites in the study, two activities relevant to interagency coordination are worthy of note. The Public Participation Focus

Group (P2) was convened by a local public participation mechanisms (the Rocky Flats Local Impacts Initiative/RFLII) and several federal and state agencies to coordinate public involvement activities and to design a strategy to integrate public concerns and priorities into all the activities at Rocky Flats. P2 was composed of community relations professionals from the EPA, CDPHE, and DOE and its primary contractor (an example of a type four generic mechanism), as well as members of the CAB and RFLII. It is an interesting approach to interagency cooperation, in that it includes representatives from two of the more active community-based public involvement mechanisms. It is reported that the group's efforts to coordinate public involvement activities in Rocky Flats have been recognized and appreciated by the stakeholders.

The DOE, EPA, and CDPHE implemented the interagency Quality Action Team (a type four generic mechanism) to help them work cooperatively to regulate and cleanup Rocky Flats. The agencies collectively developed 22 principles to guide their negotiation process, including setting priorities based on risk, public involvement, economic development, waste storage, and improved/streamlined cleanup. This group south to develop a comprehensive regulatory agreement, the final details of which were put into place at a meeting also attended by officials from the office of the Governor and the Lt. Governor, the site contractor, and the Defense Facilities Safety Board. The group developed a written consensus proposal of a conceptual vision for the future of Rocky Flats, which set goals for cleanup and closure activities.[1] The group also determined that enhanced interagency cooperation could help achieve more results with the available resources. To this end, they established a multi-agency group to evaluate alternative cleanup standards and provide a single regulator and/or single set of consistent requirements over particular activities at the site.

In St. Louis, local officials established the St. Louis County Municipal League Select Committee on Radioactive Waste to enable a more effective translation of their collective municipal interests into political pressure. The group included two dozen elected state, municipal, and county officials, as well as an environmental activist and a representative from the DOE (this should probably be considered a type three generic mechanism because DOE did not have a major voice on the committee) . They engaged in a variety of political and lobbying activities to express, with a united voice, the municipalities' strong opposition to the DOE consolidation proposal.

In addition to reinforcing the value of interagency coordination through a variety of generic mechanisms, more particularized lessons emerge from the site investigations.

---

[1] As described elsewhere, this interagency vision statement generated considerable displeasure in the community. Despite these problems, the effort to develop a comprehensive interagency agreement on how to handle a complex site is commendable.

! By working together, agencies accomplish some tasks more efficiently. In Bartlesville, for example, ATSDR funded the state to do the blood lead studies, eliminating the necessity of having to go through its own peer review process before results could be released.

! An agency can use its credibility with the affected community to build credibility of other historically mistrusted agencies.

! Public participation activities can be the impetus for interagency cooperation on a host of issues related to the site.

It is not a surprise that a more deliberate commitment to agency coordination can facilitate time and cost savings. What may not have been fully appreciated is that increases in interagency coordination can result *in*, or result *from,* an agency commitment to increased public involvement. Regarding the last point, some of the issues and lessons discussed in Section V on enhancing public participation also have direct bearing on agency coordination issues.

For example, from St. Louis, we learn that public meetings perceived as too tightly controlled by agency representatives result in the public feeling insulted and disrespected. More coordination between agencies -- especially federal and local agencies -- may foster a more sharing (and less controlling) attitude on the part of federal agency participants towards local agencies and community residents who participate in these meetings.

From Rocky Flats, we see the value of participatory mechanisms that create opportunities for local government officials and community members to work together. Such opportunities may be enhanced by coordinated efforts of federal and local agencies in the context of federally-lead, but not dominated, public involvement activities. Rocky Flats also suggests that the credibility of any citizen participation process is undermined when agencies do not explain why the public's input, suggestions, or recommendations have not been accepted or incorporated into the agency's decisions. Increased interagency coordination may help diminish the chance that a particular agency -- especially the lead agency -- at a site appears to or has actually disregarded the public's concerns. Other agency partners involved in coordination efforts may serve as a check on this undesirable result.

On the issue of *which* agency personnel should participate in community-government activities, lessons from Sandia, Chattanooga, and Saltville are instructive and have implications for interagency coordination. From these communities, we learn:

! The appointment an agency person as public participation coordinator or community liaison does not signal a real agency-community partnership.

- When agencies send only lower level personnel to public meetings, agency interest in and commitment to the public participation process and to shared decision-making is seen as highly questionable.

- It is important that agency people who are in the position to make or influence decisions participate in public participation activities and events. It is not sufficient to relegate these activities to public relations or community involvement staff.

- Interagency coordination and cooperation, while good in itself, is not an adequate substitute for public participation.

All these observations from the cases suggest that higher-level agency personnel should be involved in both interagency coordination *and* in public involvement activities. In this way, a *coordinated* public participation initiative can develop. This reinforces a valuable lesson from the Sandia site, i.e., that agencies need to train their own bureaucrats in the value and use of public participation. Further, these lessons suggest that training agency personnel in interagency coordination skills and strategies at the same time might also be well-advised and beneficial. After all, interagency coordination and public participation are conceptually linked through the principle of *maximum involvement of the major actors*.

VII. CONCLUSIONS AND IMPLICATIONS FOR POLICY

A. A Word of Caution About Stakeholder Processes

As in other studies (e.g., English et al., 1993), this report has distinguished "community" from "stakeholder" involvement processes (see Sections IIA-4 and IIIB). We have defined *community* to include individuals, groups, or small business owners affected more or less *personally* by the contamination, either directly or indirectly. Defined in this way, the community may constitute one or more groups of stakeholders in any stakeholder process. However, stakeholder involvement processes are not limited to members of the affected community. They may include other stakeholders, such as government regulators, agency officials, cleanup contractors, developers, investors, PRPs, corporate officials, others involved in remediating and revitalizing a contaminated area, and members of the public with a more generalized concern in protecting the natural environment, other species, and the interests of future generations.

Some may disagree with the community/stakeholder distinction or wonder why we have given it such importance in this report. Although we are not wedded to particular terms, we find such a distinction both relevant and critical to public participation processes. As currently defined and operationalized by government agencies, stakeholder involvement processes seek to assemble representatives of different interests or "stakes" in the contamination problem, which may vary significantly. One of our concerns is that the level of power and influence such stakeholders bring to the table also varies significantly. Clearly, government and agency officials, developers and investors, many PRPs, and the corporate business community have many more resources at their disposal -- including that vital resource of >access to other powerful interests'. While national environmental groups may also have some resources and a degree of influence, the grassroots groups in the contaminated community generally do not. Nor do members of these community groups usually have the time or experience to participate as equal partners in a stakeholder process. Small business owners in the community may have similar constraints. Although these individuals and groups are the ones most likely to be directly (adversely) affected by the contamination, the imbalance of power among the stakeholders may severely limit their ability to protect their interests through influence on the decision-making process.

We have a strong interest in furthering fairness and justice for the most affected members of contaminated communities. In many, but not all cases, the most affected are also the least powerful and most socially disadvantaged members of the community. For this reason, we view the current popularity of stakeholder involvement processes with some concern. As noted earlier, we recognize the value of these processes and are not opposed to them *per se*. Indeed, many of the stakeholder processes operating in our study communities had performed quite well. We do, however, urge caution. An over-reliance on stakeholder processes may limit efforts to

initiate or utilize other more *community*-focused processes. This, in turn, could further disempower the most affected segments of the community and contribute to the entrenchment of the existing power structure in the community.

In this regards, we suggest that public meetings continue to provide important opportunities for the community to voice its concerns, suggest options, and express its views and preferences for addressing health risks, remediating the contaminated area, and planning for revitalization and redevelopment. Although they have their own set of problems, public meetings have important advantages not duplicated by other community and stakeholder involvement mechanisms. Indeed, many of the stakeholder processes found in our cases utilized public meetings to reach the larger community.

B. Who Speaks for the Community?

This issue is closely related to the discussion above. Identifying the affected community is not necessarily an easy task. Pollution plumes may not have distinct boundaries, and persons living clearly outside the contaminated areas may also be affected indirectly. Therefore, site contamination boundaries may not be dispositive of the definition of the affected community. Local government is, of course, a major player in most of the sites -- and properly represents broader community interests. The broadness of this interest encompasses not only *who* is affected, but also the wide *variety of effects* on the larger community. This is because local government has a concern, even if not a responsibility, for health, environment, and economic welfare in its communities. At the same time, the residents within the contaminated areas are especially important. Not only is their health the most likely to be at risk, but they are the most likely to experience the disruption and the economic impacts often associated with contamination and cleanup. In our study communities, we find the interplay between local government and community residents as representing the "voice of the community."

Moreover, it is not clear who really represents the silent, uninvolved, but affected members of the community -- sometimes constituting the majority of residents in contaminated communities. Local government may claim that it speaks for everyone, but low participation of residents in elections, or the presence of a heterogeneous community, brings this assertion into question. Whether the most vocal and activist members of the community speak for the others has been called into question. Clearly, it depends on both the extent to which their interests are consonant with the interests of the silent majority, and the extent to which community activists think about the broader community when they argue for a particular point of view and specific solutions.

Thus, the answer to this question is not clear. Creative and proactive approaches for reaching and involving the unrepresented, inactive, and silent members of contaminated communities are sorely needed. Even when developed, there is unlikely to be one best method. Until that time, agencies involved in public participation must look beyond the

standard set of stakeholders and be informed by the context of each specific circumstance.

Closely related to the question of who speaks for the community is the operational question of who chooses the participants for public participation activities. English et al. (1993) discuss four different types of representation: (1) by election (formal political representation); (2) by appointment (ascriptive representation); (3) by choosing participants with shared characteristics (descriptive representation); or (4) by choosing participants based on particular perspectives and views (substantive representation). The first method is used predominantly by local governments, but it may also be used by separate constituencies to select spokespersons for participation in activities intended to represent a variety of views (substantive representation).

In our study communities, we find other combinations of choice options as well, e.g., the appointment of initial participants and election or appointment by them of others. Already mentioned is the dilemma of having too small or large a group, the former possibly leaving out important voices and latter possibly overwhelming minority voices by the sheer numbers of others. Even if participants are chosen according to a substantive representational model, there is no guarantee that they will continue to be accountable to their constituencies. They may begin to function in the broader shared interests of the community. No prescriptive formula emerges here; what is "best" is context (site) specific. Agencies and communities need to be conscious of the issues surrounding the questions of who speaks and who chooses.

C. Reflections on Community Satisfaction and the Role of Government at Contaminated Sites

Government must be cognizant of the deep frustration and anger in some of these contaminated communities -- and of their desire to be treated in an equitable and just manner, and to have their social and economic disadvantages addressed. At the same time, agencies may have legal, political, and economic constraints that impede their ability to give the community what it wants -- even if the agencies would like to do so. To the extent that the community gets very little of what it wants, it is unlikely to be satisfied with the outcome of a public participation process. In some, or perhaps many, cases, community satisfaction with the outcome can never really be achieved. This is not to say that governmental agencies should not strive to give the communities what they can. If they have faithfully acted in a trusteeship role for the community, the agencies can feel satisfied -- even in the face of articulated dissatisfaction and apparent lack of appreciation -- knowing they have done more than resolve a dispute or follow an easy pathway most in line with their narrow mission.

Discontent in contaminated communities often spreads beyond concern for health and environmental contamination when government -- especially the federal government -- has a new and visible presence in the community. This is evidenced by the quick

addition or shifting of demands within the community to include economic and social development. The federal agency may be confronted with a list of demands, priorities, and requests that tax its mandated function, training, capability, and understanding. In its public participation activities, the agency can choose to operate in one of four different modes:

> (1) It can simply focus on its own narrow mission (e.g., health, environmental cleanup) and try to give the community what it can in these areas, without much discussion of other issues. This will necessarily be inadequate from the community's perspective.
>
> (2) It can acknowledge and/or discuss the broader issues with the community, but try to persuade the community that it should focus on addressing the health and/or contamination issues in the best possible way.
>
> (3) It can serve as a forum for community dialogue on broader social and economic concerns, perhaps providing suggestions on where or how the community might get help with these issues.
>
> (4) It can operate more in a trustee capacity and actually facilitate or broker the broader concerns of the community as much as possible.[1]

In some of our study cases, the community stepped outside the agency participatory process and used the political structures of local, state, and federal government to bring more widely defined governmental attention and authority into the picture. If the use of participatory processes by public health/environmental agencies in the community facilitates a greater use of political institutions, in one sense, the process could be viewed as a success.

The agency cannot be committed to promoting shared decision making if it is not prepared to depart (at least in discussion) from its narrowly focused mission and entrenched bureaucratic structures and processes. Shared decision making means that the community is free to set or change the agenda and to prioritize its needs and interventions to address those needs. While trying to be responsive to shifting or broadening community needs and priorities may be frustrating and not in line with the agencies' specific objectives, narrowing the scope of activity to issues articulated in legal or bureaucratic mandates will not generally give the community a sense of meaningful participation or shared decision making. Thus, putting into place a process to democratize community concerns may not completely satisfy either the agency or the

[1] See Section VII-D below on the Brownfields Initiative whose purpose is to meld health, safety, and redevelopment/revitalization concerns.

community. Nonetheless, it could be deemed a success if its sets into motion other initiatives that begin to address the communities' priorities. For example, cleanup and remediation efforts may never create enough jobs to spur the development needed by the community. However, new community or local government efforts to achieve these goals may advance the democratization of the political process. This, in turn, may create the pathway to addressing justice, fairness, and equal educational and economic opportunity more in line with how the communities define environmental justice. (See the discussion below on the Brownfields Initiative, which was inspired by a need to do more for distressed communities than cleanup the pollution and waste.)

Discourse is one component of public participation. The other is power sharing. Ideally, both empowerment of the community and increased responsiveness of government could be facilitated by a realization of the complexities of government-community interactions, especially in contaminated communities with an overlay of environmental justice concerns.

D. What Contributes to Success?

1. Effective Public Participation Processes

As discussed earlier, public participation mechanisms can be used to:

- exchange information between and among the agency and the community and stakeholder participants

- influence agency decision-making by providing community and other stakeholder input, advice or recommendations

- provide a forum for community and stakeholder dialogue leading to shared decision-making and consensus-building

- build community and other stakeholder support for decisions

- empower communities (especially disenfranchised communities) affected by the contamination

In Section V, we discussed specific findings from the case histories concerning initiatives that (1) enhance communication, outreach, and learning in the community; (2) build skills and capacity; and (3) foster better participation in, and access to, government decisions. Here we build upon those specific findings. Although necessary elements, information and skills alone may be insufficient for effective meaningful public participation. Historically disenfranchised and economically disadvantaged communities may already have, or be able to acquire, information and skills -- perhaps with the help

of government TAG and TOSC programs. What they may lack are the resources and power to influence government decisions for any number of reasons.

We began our study with the benefit of prior research and, in the course of our field work, we expanded the list of elements we considered important and/or essential to successful public participation. In each of the case studies, we evaluated the strengths and limitations of specific public participation mechanisms in terms of such elements as: access to information, financial and intellectual resources, openness, trust and trustworthiness, accountability, respect, and acceptable balance of power (sufficient autonomy). Our cases support the importance of these factors. Some of them can be controlled or influenced by the agencies directly. Others are embedded in the social, economic, and historical fabric of the contaminated community. Prior government action or inaction, attention or inattention to the socioeconomic needs of the community may be one of many contextual factors that impact public participation efforts. The roles that federal, state, and local governments have taken in the past to protect and/or enhance the community's well-being be may especially important. At the same time, the unique social, cultural, political, and organizational mores of each community also affect public participation processes.

Here we highlight some of the factors that seemed especially important to the relative successes of the participatory processes in our study communities.

Factors That Can be Controlled or Influenced by the Agencies

- *Agency clarity, commitment, and accountability* are linked and integral to the success of public participation processes. Participants deserve to know if and how the agencies plan to incorporate their input into decisions. The credibility of the process is undermined when agencies do not respond to the public's input, suggestions, or recommendations.[2] For this to happen, agencies themselves need to be clear about the purposes and objectives of their public participation efforts and transmit these goals early and clearly to would-be participants. Participants must understand and share in this sense of purpose or work with the agencies to redefine it. In addition, participants need an opportunity to: 1) hear why the agencies disagree with or reject their position, preferences, or recommendations; 2) clarify or re-argue their positions; and 3) debate and challenge the agency's decision.

- *Interaction.* From the above, it follows that public participation is an interactive exercise. It must involve communication, dialogue, and interaction -- between

[2] Even in cases where government has made it clear that it will make the final decision, the more it creates and utilizes channels of communication, the more likely it is to create *expectations* that the community will get what it wants in the end. This irony can not be avoided easily.

the agency and the community and among the various participants/stakeholders.

! *Deployment of responsibility.* Agencies'commitment and accountability to public participation processes can be revealed and demonstrated by the level of personnel involved in the process. Community members want access to agency decision-makers; they want to interact with agency personnel who have the authority and power to make or significantly influence agency decisions. It is a mistake for the agencies to devolve responsibility to their community involvement or public relations staff. Top-level commitment has to be reiterated, especially when there is a turnover of agency staff or spokespersons who interface with the community and stakeholders.

! *Diversity of mechanisms.* Our cases clearly demonstrate the importance of viewing public participation as a process. In our study communities, public participation involved the complementary use of different mechanisms -- some that enhanced communication, dialogue, and education; some that built skills and capacity; some that provided opportunity for continuous learning and the development of shared values; and some that involved the communities and/or stakeholders in decision making. A diversity of mechanisms can also help address the differential interests within the community -- creating opportunities for those with an interest in technical and scientific issues, as well those whose interests are more policy-focused or general in nature. In our communities, the overall process was often iterative and intensive. Designing a process of mechanisms that complement and build upon each other is probably more of an art form than a science. Understanding the complexity of interactions among the public, the community, and the stakeholders is a first step.

! *Broad representation and diversity of views.* Both agencies and communities generally emphasized the importance of creating mechanisms that were both inclusive and diverse. Community members and participant stakeholders were often critical of mechanisms that left out or effectively muted the voices of certain segments of the affected community. Resource constraints, ease of implementation, and efficiency concerns often limit participation in any one mechanism. However, it is important that the full range of community views, interests, and values find their way into the process as a whole. Without careful attention to inclusiveness and diversity, community involvement and stakeholder processes can easily reproduce and reinforce the existing power imbalances in a community.

! *Trust-building and Mutual Respect.* When communities have lost trust in public institutions because of past failures to address or even acknowledge their problems, the agencies involved in environmental contamination and related public participation activities face formidable hurdles in the community. Constructive dialogue is difficult when parties mistrust each other. In these

cases, the agencies will need to make special and focused efforts to rebuild trust and to demonstrate to the community that they intend to operate in a trustworthy manner. Agency responsiveness to community concerns and accountability to its participatory mechanisms can help. *Respect* for different viewpoints and values is also crucial -- especially for participants representing groups who perceive they have been treated unjustly or unfairly in the past. Respect for anecdotal information and non-scientific contributions is also important.

! *A Broad View.* Economically disadvantaged communities and communities that have suffered disproportionate environmental impacts often define their contamination-related interests and needs broadly to include jobs, beautification, revitalization, and redevelopment. In these cases, agency public participation efforts will be more successful if the agency also is willing to take a broad view and step outside its traditional bureaucratic structure to help the community address its needs.

Community-based Factors that May Influence Success

As discussed above, agency public participation efforts occur within, and can be affected by, a host of historical, social, economic, cultural, and political factors that are context specific. The pre-existing infrastructure (e.g., existing grassroots groups) and dynamics of the community can be particularly important for public participation processes. The situation in a one-company town, for example, may be quite different from what occurs in a community with a broader industrial base.[3] Sociocultural characteristics and economic exigencies can influence residents' willingness and/or ability to participate in community/stakeholder involvement activities.[4] Clearly, the level of community outrage, anger, and conflict can have an effect, as can the community's level of civic involvement and prior experience with government and public participation activities. By being aware of these factors, agencies may be able to design activities that address community-specific issues, as well as tap into the community's existing infrastructure to facilitate and enhance opportunities for successful public participation. Some illustrative examples from our cases follow.

! Respected community organizations and unique individuals can play important roles in public participation activities.[5] They can help engender trust, create relationships, establish or extend networks, bridge differences, and find creative solutions to problems. Natural leaders may already exist in the community or may emerge from public involvement activities.

---

[3] See, for example, the Saltville, TN case history.

[4] See, for example, the South Valley case history.

[5] See for example, the CUP program in Chattanooga and the San Jose Community Awareness Council in South Valley, Albuquerque, NM.

! Community cohesiveness or historical divisions (e.g, Bartlesville and Chattanooga) within a community can affect efforts to develop a shared vision for or consensus around cleanup decisions.

! Participatory styles matter, and participants have a differential tolerance for confrontation and conflict. This may affect the degree and diversity of public participation.[6]

! Communities differ in their experience with, interest in, and ability to use broader political structures to promote their interest in dealing with contaminated sites. The communities in St. Louis, for example, were quite comfortable with using political tactics to press their case.

2. Government and Community/Stakeholder Role

[6] See, for example, the discussion of the Health Advisory Panel and the Citizens' Sampling Committee in Rocky Flats case.

As a result of our field work and review of the literature on public participation, we came to a considered judgement that the actual and perceived role of government in public participation is crucial. Specifically, what is important is whether the government sees itself and is seen as (1) a trustee of community/stakeholder interests, or alternatively (2) as a mediator or arbitrator of conflicting interests in the community or stakeholder group. The roles adopted by the participants of community and stakeholder involvement processes are likewise important, specifically the participant dynamics that foster majoritarian or utilitarian outcomes, versus communitarian outcomes.[7] Both sets of roles can affect the process and outcomes of public participation efforts. In other words, the role of government and the tenor of community or stakeholder participation are co-determinative of success -- which we define, in large measure, as enhancing fairness, justice, and empowerment for the most affected.

In order for the government to act in a trusteeship capacity, it must be committed to justice and fairness in the Rawlsian sense -- i.e., it must first and foremost encourage or allow those activities that provide relatively greater advantage to those individual members or groups who are relatively worse off to begin with (Rawls, 1971). Environmental justice activities in the federal agencies do operate under this rubric, but their overlap with agencies'public involvement efforts are sometimes not well integrated (but see NEJAC, 1996). In a political climate where stakeholder involvement is encouraged to legitimize conflict resolution or the parceling out of scarce agency resources, government can easily abdicate its trusteeship role in favor of a more utilitarian approach to problem solving. The result is often a continued polarization of various community groups and members.

In the past, communities that have suffered environmental injustice have not perceived government as operating their best interest. Because of this history, contaminated communities may have few expectations that the government -- federal, state, or local -- will serve as a trustee of their interests in future clean-up or economic development. Communities will try to get better treatment, perhaps their "fair share", but their cynicism will be high and their expectations low. Being newly invited to the table, the community voices representing different neighborhoods or ethnic groups are likely to look after their own interests. To the extent that certain community voices are left out, these interests may be ignored completely . Especially for so-called "environmental justice @ communities, one must not be overly critical of the community participants who

[7] The reader is reminded of the discussion in Section II-B where we noted that a communitarian approach to conflict resolution is a process wherein the various community members or stakeholders strive to achieve the greater social good rather than maximize their own benefit, thereby transcending individual interests. We emphasized the distinction between a consensus reached by majoritarian processes (where the political majority gets what it wants, thereby approximating maximum collective utility), and a communitarian approach using normative processes, in which citizens and others stakeholders are willing to sacrifice self-interest on behalf of longer-term and more far-reaching societal goals.

focus on their own interests or the interests of their group. While the processes of community or stakeholder involvement may eventually transform community players from stakeholders striking a bargain or playing a utilitarian game, to being concerned with broader interests in the community, this takes time to evolve (Laird, 1993) and is not likely to begin until significant injustices are addressed or acknowledged.

To the extent that government sees and presents itself as a convener or mediator of opposing interests, government itself may foster utilitarian, rather than communitarian values and outcomes. Conversely, where government presents itself as a guardian of the disadvantaged, community participation mechanisms that protect minority views and interests by addressing imbalances of power are encouraged. The community members themselves may step out of their roles as representatives of narrow community interests, and address issues of fairness on a broader scale. Thus, vehicles for public participation and stakeholder involvement must be seen within this broader perspective in order to gauge their accomplishments.

Federal agencies do not have a long history of working together on specific issues. When it comes to problems at a particular site, pre-existing relations among them are largely absent. Each agency has to worry about how it is perceived by the community, how to participate in the allocation of responsibilities across agencies, and how to interact with local and state entities. With these major preoccupations, engaging in Rawlsian democracy is probably not high on their list. With the officials of the involved agencies differing from site to site, consistency or a uniform approach can hardly be expected.

As discussed above, the outcomes of interactions of governmental agencies and the public depend on the roles adopted by each. These interactions are represented by the numbered cells in Tables 7-1 and 7-2. For the government, we distinguish two roles: (1) the government acting as a *trustee* who makes the decisions after substantial and meaningful community or stakeholder input, and (2) the government acting as a *facilitator* of consensus/dispute resolution within the community or among the stakeholders. For the community, we distinguish the *participating community*, i.e., those actively involved in public participation efforts, from the *larger affected community*, which includes the non-participants, as well. A similar distinction is made for participating stakeholders and the larger body politic.

Table 7-1 (cells $\neg$ to $\Leftrightarrow$) deals with *community involvement*, while Table 7-2 (cells $\Leftarrow$ to $\Downarrow$) describes *stakeholder involvement*. Mechanisms for both operated in our study sites.

Community Involvement Processes (Table 7-1)

The first row of Table 7-1 shows the government adopting the role of a trustee/decision maker for the affected community. Two situations can arise: (1) where the affected

community (the intended beneficiaries of government action) is taken to mean the interests represented by the participating members of the community only (cell $\neg$) and (2) where the affected community is taken to mean the community at large, even if they are not present and participating (cell $\wedge$). The former promotes utilitarian solutions among those community members who participate, the latter communitarian ones.

In the second row, the government acts as a facilitator of compromise or consensus. It operates by either implementing the compromise/consensus reached by the participating community members voting their self-interests (cell $\vee$) or it can implement a normative consensus reached by the community participants on behalf of the larger affected community (cell $\Leftrightarrow$). Again, the former promotes utilitarian solutions, the latter communitarian ones.

The above discussion suggests the following. If what is desired are decisions that benefit the larger community (both participating and non-participating), this can be achieved either by government assuming the role of the trustee/decision-maker for the larger affected community (cell $\wedge$) or by government facilitating an idealized community participation process (cell $\Leftrightarrow$). This is especially appropriate in environmental justice communities.

In contrast, if the participating community members are not able or in a position to think beyond their narrow self-interests, community participation mechanisms will leave them most satisfied if either the government facilitates giving them what they want through meaningful participation (cell $\vee$) or if the government uses its authority to bring this about (cell $\neg$). If the community members that actively participate do not adequately represent the interests of the most adversely affected and/or least advantaged residents, these latter two outcomes should not be considered an unqualified success, even if the process is non-contentious and the participating community is satisfied -- because the interests of the unrepresented members of the community may not be served.

Of course, community involvement mechanisms remain essential even where government acts as a trustee/decision maker. These processes provide the government with the *information* it needs about community problems, preferences, priorities, and values so that it can make informed decisions and begin to empower and build capacity in the community at the same time.

While we have constructed a somewhat clear delineation between (1) government acting as a facilitator and (2) government acting as an decision-maker [with adequate and meaningful public participation], the line is not always so well-defined or clear to either the government or to the participating community -- especially when the actors have not given thought to their respective purposes or roles for engaging in community participation. Even in cases where government has made it clear that it will make the final decision, the more it opens up lines of communication and listens attentively to the

community, the more likely it is that government will create the *expectation* on the part of the participating community members that they will get what they want in the end. When the government makes decisions that fail to live up to community expectations, the government may judge community participation to have been a success, while the community considers it to be less so -- or perhaps even a failure.

Table 7-1. Types and Outcomes of Interactions Between the Government and the Community Participants

	COMMUNITY POSTURE	
GOVERNMENT'S ROLE	**UTILITARIAN** (Competing interests)	**COMMUNITARIAN** (Promoting the 'greater good')
AS A TRUSTEE FOR THE AFFECTED COMMUNITY	⌈ Decision made by government in a trusteeship role on behalf of the *participating* community only (mirroring *compromise* of different visible community interests)	∧ Decision made by government in a trusteeship role on behalf of the community (mirroring a *normative* consensus, possibly expanded to benefit the larger non-participating community as well)
AS A FACILITATOR OF CONSENSUS WITHIN THE AFFECTED COMMUNITY	∨ Community participation processes reaching a *consensus or compromise among* the participating community members	⇔ Idealized community participation processes reaching *normative* consensus, possibly expanded to benefit the larger non-participating community as well

Stakeholder Involvement Processes (Table 7-2)

The first row of Table 7-2 shows the government adopting the role of an trustee/decision maker for the *stakeholders*. Two situations can arise: (1) where the intended beneficiaries of government action are the participating stakeholders only (cell $\Leftarrow$) and (2) where the stakeholders of interest are taken to mean the stakeholders at large, even if they are not present and participating (cell $\Uparrow$). The former promotes utilitarian solutions, the latter communitarian ones.

In the second row, the government acts as a facilitator of compromise or consensus. It operates by either implementing the compromise/consensus reached by the participating stakeholders voting their self-interests (cell $\Rightarrow$) or it can implement a normative consensus reached by the stakeholder participants on behalf of the larger stakeholder community (cell $\Downarrow$). Again, the former promotes utilitarian solutions, the latter communitarian ones.

The above discussion implies the following. If what is desired is reaching decisions that benefit the larger group of stakeholders (both participating and non-participating), this can be achieved either by government adopting a role as an trustee/decision-maker for the larger group of stakeholders (cell $\Uparrow$) or through an idealized stakeholder involvement process facilitated by government (cell $\Downarrow$). This is especially appropriate in environmental justice communities.

On the other hand, if the participating stakeholders are able or not in a position to think beyond their narrow self-interests, stakeholder involvement processes will leave them most satisfied if either the government facilitates giving them what they want through meaningful participation in reaching compromises or resolving disputes (cell $\Rightarrow$) or if the government serves as a trustee for their interests (cell $\Leftarrow$).

If the stakeholders that actively participate do not adequately address the interests and needs of the most adversely affected and/or least advantaged members of the *community*, none of the processes in Table 7-2 should be considered an unqualified success, even they are non-contentious and the participating stakeholders are satisfied.

A variant on the government acting in a trusteeship role has been operating at some DOE sites (Pickett ,1997). Here the government (often through academic researchers without close community ties) surveys the stakeholders about their feelings (i.e., values) concerning contamination and cleanup, and then by itself designs the solutions, supposedly faithful to the revelation of stakeholder values. This follows a rational-science basis for decision making about a site, but not surprisingly often leaves the most affected citizens, and the contractor as well, dissatisfied with the result. In our view, this variant can not be called, or be a substitute for, meaningful participation and shared decision making.

Table 7-2. Types And Outcomes of Interactions Between The Government and Stakeholders

	STAKEHOLDER POSTURE	
GOVERNMENT'S ROLE	**UTILITARIAN** (Competing interests)	**COMMUNITARIAN** (Promoting the 'greater good')
AS A TRUSTEE FOR THE AFFECTED STAKEHOLDERS	⇐ Decision made by government in a trusteeship role on behalf of all the *participating stakeholders*	⇑ Decision made by government in a Trusteeship role on behalf of the stakeholders (mirroring a *normative* consensus, possibly expanded to benefit the larger non-participating public as well)
AS A FACILITATOR OF UTILITARIAN or MAJORITARIAN CONSENSUS, OR ALTERNATIVE DISPUTE RESOLUTION AMONG THE STAKEHOLDERS	⇒ Stakeholder involvement processes reaching a *consensus or compromise* among the *participating* stakeholders	⇓ Idealized stakeholder involvement processes reaching *normative* consensus, possibly expanded to benefit the larger non-participating public as well

In Tables 7-3 and 7-4, we provide illustrative examples of mechanisms operating in our study communities and categorize them according to their nature as government-community or government-stakeholder involvement processes, respectively. As can been seen from those tables, and from Table 5-3 in Section V, most *structured* public participation mechanisms in our study cases are stakeholder involvement processes. However, both community involvement and stakeholder processes were present, if only in the form of unstructured meetings (including the "Summits"). These meetings turned out to be important mechanisms for community participation in many of the communities.

As already discussed, community involvement mechanisms and stakeholder involvement mechanisms serve different purposes and are appropriate in different instances. One is not a clear substitute for the other. Theoretically, both can be used to empower and educate, but with different effectiveness depending on the community and the context. What is important is the public participation mechanisms be utilized with deliberation and forethought, paying special attention to the best way to achieve procedural fairness, procedural competence, and optimal outcome as discussed earlier.

This will necessarily involve a variety of complementary mechanisms, utilizing both community and stakeholder involvement processes.

TABLE 7-3: Examples of Community Involvement Mechanisms

Nature of government-community involvement	Examples from the cases
⌠ Decision made by government in a trusteeship role on behalf of the *participating* community only (mirroring *compromise* of different visible community interests)	
∨ Community participation processes reaching a *consensus or compromise among* the participating community	Select Oversight Com (Bartlesville) Citizens' Sampling Com (Rocky Flats) Summit II (Rocky Flats)
∧ Decision made by government in a trusteeship role on behalf of the community (mirroring a *normative* consensus, possibly expanded to benefit the larger non-participating community as well)	A variety of public meetings
⇔ Idealized community participation processes reaching *normative* consensus, possibly expanded to benefit the larger non-participating community as well	

TABLE 7-4: Examples of Stakeholder Involvement Mechanisms

Nature of Government-Stakeholder Involvement	Examples from the Cases
⇐ Decision made by government in a trusteeship role on behalf of all the *participating stakeholders*	CAB (Sandia, Albuquerque) CAB (Rocky Flats)
⇒ Idealized stakeholder involvement processes reaching *a consensus or compromise* among the *participating* stakeholders	Design Review Com (So. Valley, Albuquerque) Summit (So. Valley, Albuquerque) Task Force (St. Louis)
⇑ Decision made by government in a trusteeship role on behalf of the stakeholders (mirroring a *normative* consensus, possibly expanded to benefit the larger non-participating public as well)	FSWUG (Rocky Flats) Saltville Team
⇓ Idealized stakeholder involvement processes reaching a *normative* consensus, possibly expanded to benefit the larger non-participating public as well	RFLII (Rocky Flats) Bartlesville Coalition

E. Possible Relevance of the Research to the Brownfields Initiatives

In several of our cases, some forces in the community felt very strongly about not having their site listed as an NPL site. The stigma of a community being labeled a Superfund site and the prospect of liability for future cleanup are commonly regarded as major factors discouraging businesses from locating in the community. As we have seen, many of these communities find themselves in a distressed economic state to begin with. Because of the sometimes desperate nature of these impoverished communities, the case histories often illustrate that there is a shift from concern about health and environment *per se*, to interest in and demand for economic (re)development and revitalization, including opportunities for employment. Indeed the term environmental justice is construed broadly to include the need for the enhancement of welfare in its most expansive sense. It must also be noted that the community often seems to have made a strategic choice between demanding cleanup and demanding

economic development. Interestingly, dangling the carrot of providing the community with jobs involving the handling and removal of hazardous chemicals or waste as a result of cleanup activities, is not the kind of placating gesture the community is likely to be ultimately satisfied with. In communities that perceive themselves victims of environmental injustice, it will not be sufficient to offer only cleanup jobs, which may be seen as "adding insult to injury."

The EPA Brownfields Initiative began in FY 1993 as the Brownfield Economic Redevelopment Initiative. It is intended "to empower States, communities, and other stakeholders in economic redevelopment to work together in a timely fashion to prevent, assess, safely clean up and sustainably reuse Brownfields" (EPA, 1997a). Brownfields "are an abandoned, idled, or under-used industrial and commercial properties where real or perceived [chemical] contamination complicates expansion or redevelopment" and a site which has *not* been listed on the NPL list (EPA 1997b).[8] Businesses formerly at or near the site may have chosen to locate in uncontaminated areas, often outside of urban areas, known as greenfields. The Brownfields Initiatives have been established to reverse that trend. The Preamble to the Brownfields National Partnership Action Agenda states:

> Environmental cleanup should be a building block to economic development, not a stumbling block. Restoring contaminated property must go hand-in-hand with bringing vitality back to a community (EPA, 1997b).

The four key activities for returning Brownfields to productive reuse in EPA's 1995 Action Agenda were:

- awarding Brownfields Assessment Demonstration Pilots
- clarifying liability and cleanup issues
- building partnerships with all Brownfields stakeholders
- fostering local workforce development and job training initiatives

By 1997, EPA saw four broad phases in the Brownfields process: community planning, assessment and cleanup, redevelopment support, and sustainable reuse. EPA will partner with the Departments of Defense, Agriculture, Commerce, Transportation, Housing and Urban Development, Education, and Health and Human Services, as well as with ATSDR and NACCHO. Under the Administration-proposed, but unapproved, budgets for FY 97 and FY 98, twenty Brownfield pilots in urban and rural Empowerment Zones (EZs) and eighty Enterprise Communities (ECs) were to be funded at levels of up

[8] For a good discussion of the future uses of contaminated sites written before the establishment of the Brownfields Initiative, see English et al.1993.

to $75 million and $3 million each, respectively, for each of three years from all partnering agencies.

In March 1998, the GAO issued a report on progress from FY 1993 onwards, focusing specifically on two categories of activity funded by EPA: (1) outreach, technical assistance, and research and (2) job retraining. EPA is spending most of the $126 million it allotted for Brownfield activities ($37.5 in FY 1997 and $88.5 in FY 1998) to help state, local, and tribal governments build their capacities to revitalize Brownfields (GAO, 1998). Most of the money goes to site assessment, state voluntary cleanup, and related activities. In FY 97 and 98, 1% and 7% of the money was allocated to job training. It seems, then, that setting the stage for businesses to re-enter Brownfield communities characterizes most of the EPA-funded initiative. Whether economic re-development and job creation in Brownfield communities will really occur remains to be seen.

However, if and when sufficient resources are put into contaminated communities, the dynamics within these communities may depart from those investigated in our study. When community residents no longer have to make a Hobson's choice between reducing environmental/health risks and furthering community development, things may be different.

F. Final Reflections and Commentary

Our purpose in undertaking this research was not to foster less-acerbic conflict resolution *per se*, but rather to promote distributive justice through identifying ways to improve mechanisms for community involvement and for better performance of government as a trustee of the environment, public health, and basic rights. In this context, we gave particular attention to furthering: (1) government's role as trustee vs. arbitrator/mediator, (2) communitarian rather than utilitarian outcomes within the community, (3) mechanisms for continuing empowerment, learning, and change through community participation, and (4) environmental justice/protection of minority interests. We grappled with constructing measures of success that reflected these concerns.

Both our earlier work (Ashford et al., 1991) and the work of others (e.g., National Research Council, 1996) have suggested the importance of early public/stakeholder involvement in contaminated communities, as well as continued involvement throughout. Despite the general success of the public participation processes in our study communities, most became involved fairly late in the overall process. They did not usually participate in the early characterization of the site when decisions were made about what to monitor, what study design to use, and who should carry out the studies. They also had little influence on the choice of cleanup/remediation contractor. Nonetheless, the agencies were often able to reverse a "rocky start"and sometimes turn the process around. In many cases, the communities were able to exert some influence on the decision-making process.

It deserves emphasizing that some avenues for empowerment were not utilized to the extent they might have been. For example, communities did not attempt to influence the choice of the site cleanup/remediation contractor, or who occupied crucial leadership positions in their communities, such as the site manager, other on-site agency personnel, or independent experts/designated coordinators. This is additional evidence that public participation is a learning process for the communities and the agencies, both of which have essentially been feeling their way along without recognizing the all options open to them and the opportunities available for better cooperation. This research was undertaken to assist the government, the community, and other stakeholders in the improvement of participatory processes.

REFERENCES

Armour A (1995). "The citizens' jury model of public participation: a critical evaluation." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 175-188.

Arnstein SR (1969). "A ladder of citizen participation." *Journal of the American Institute of Planners* 35:215-224.

Ashford N (1988). "Science and values in the regulatory process." *Statistical Science* 3:377-383.

Ashford NA, Bregman C, Hattis D, Karmali A, Schabacker C, Schierow L, and Whitbeck C. (1991). Monitoring the Community for Exposure and Disease: Scientific, Legal and Ethical Considerations, Center for Technology, Policy, and Industrial Development, Massachusetts Institute of Technology, published by the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, November 1991.

Baughman M (1995). "Mediation." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 253-266.

Berman E (1997). "Dealing with cynical citizens." *Public Administration Review* 57(2):105-112.

Bryant B (ed.) (1995). Environmental Justice: Issues, Policies, and Solutions. Washington, DC: Island Press.

CCEM. Colorado Center for Environmental Management (1993) Advisory Groups in the U.S. Department of Energy Cleanup Process: A Review and Analysis, Denver, CO, April 1993.

CDC/ATSDR (Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry) Committee on Community Engagement (1997). Principles of Community Engagement. Atlanta, GA, Centers for Disease Control and Prevention.

Chess C and Purcell K (1999). "Public participation and the environment: do we know what works?" *Environmental Science and Technology*. In press.

Chess C, Salomone K, et al. (1995). "Results of a national symposium on risk communication: next steps for government agencies." *Risk Analysis* 15(2):115-125.

Cole, Henry and Associates (1996). Learning from Success: Health Agency Effort to Improve Community Involvement in Communities Affected by Hazardous Waste Sites, published by the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, July 1996.

Crosby N. (1995). "Citizen juries: one solution for difficult environmental questions." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers: 157-174.

DOE. U.S. Department of Energy (1993). Draft Report to Congress on Department of Energy Advisory Groups for Environmental Restoration and Waste Management.

Edelstein MR (1988). Contaminated Communities: The Social and Psychological Impacts of Residential Toxic Exposure. Boulder, CO, Westview Press.

Eden S (1996). "Public participation in environmental policy: considering scientific, counter-scientific and non-scientific contributions." *Public Understand Sci* 5:183-204.

Elder P (1982). "Project approval, environmental assessment and public participation." *The Environmentalist* 2(1):55-71.

English MR, Counce-Brown D, et al. (1991). The Superfund Process: Site Level Experience. Knoxville, TN, University of Tennessee, Waste Management Research and Education Institute, December 1991.

English M (1991). "Stakeholder views of Superfund sites: Executive Summary." In: The Superfund Process: Site-Level Experience. Knoxville, TN, University of Tennessee, Waste Management Research and Education Institute.

English M, Gibson AK, Feldman DL, and Tonn BE (1993). Stakeholder Involvement: Open Processes for Reaching Decisions About the Future Uses of Contaminated Sites. Knoxville, TN, University of Tennessee, Waste Management Research and Education Institute, December 1993.

EPA. Environmental Protection Agency (1997a). Brownfields and Empowerment Zones/Enterprise Communities (EPA 500-F-97-091) April 1997.
EPA. Environmental Protection Agency (1997b). The Preamble to the Brownfields National Partnership Action Agenda, May 1997.

FFER. Federal Facilities Environmental Restoration Dialogue Committee (1993). Recommendations for Improving the Federal Facilities Environmental Restoration Decision-Making and Priority-Setting Process, Interim Report to the U.S. Environmental Protection Agency, February 1993.

Fiorino DJ (1989). "Environmental risk and democratic process: a critical review." *Columbia Journal of Environmental Law* 14:501-547.

Fiorino DJ (1990). "Citizen participation and environmental risk: a survey of institutional mechanisms." *Science, Technology, & Human Values* 15(2):226-243.

Fiorino D (1995). "Regulatory negotiation as a form of public participation." In: Fairness and Competence in Citizen Participation. O Renn, T Webler and P Wiedemann. Dordrecht, Kluwer Academic Publishers: 223-237.

Fischhoff B (1985). "Managing Risk Perceptions." *Issues in Science and Technology*. Fall:83-96.

Folk E (1991). "Public participation in the Superfund cleanup process." *Ecology Law Quarterly* 18:173-221.

Foreman C (1998). The Promise and Peril of Environmental Justice. Washington, DC: The Brookings Institution.

GAO. Government Accounting Office (1983). Siting of Hazardous Waste Landfills and their Correlation with Racial and Economic Status of Surrounding Communities (GAO/RCED-83-168, June 1, 1983) Washington, DC: Government Printing Office.

GAO. Government Accounting Office (1995). Demographics of People Living Near Waste Facilities (GAO/RCED-95-84, June 1995) Washington, DC: Government Printing Office.

GAO. Government Accounting Office (1998). EPA's Use of Funds for Brownfield Revitalization (GAO/RCED-98-87, March 1998) Washington, DC: Government Printing Office.

Habermas J (1984). Theory of Communicative Action - Vol.1: Reason and the Rationalization of Society. Boston, Beacon Press.

Habermas J (1987). Theory of Communicative Action - Vol.2: System and Lifeworld. Boston, Beacon Press.

Hadden SG (1990). Public Perception of Hazardous Waste, LBJ School of Public Affairs.

Hadden SG (1995). "Regulatory negotiation as citizen participation: a critique." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental

Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 239-252.

Hance B, Chess C, et al. (1988). Improving Dialogue with Communities: A Risk Communication Manual for Government. Trenton, NJ Department of Environmental Protection.

Hofrichter R (ed.) (1993). Toxic Struggles: the Theory and Practice of Environmental Justice Philadelphia, PA: New Society Publishers.

Kasperson RE (1994). "Six propositions on public participation and their relevance for risk communication." *Risk Analysis* 6(3):275-281.

Kathlene L and Martin JA (1991). "Enhancing citizen participation: panel designs, perspectives, and policy formulation." *Journal of Policy Analysis and Management* 10(1):46-63.

Krimsky S and Plough A (1988). Environmental Hazards: Communicating Risks as a Social Process. Dover, MA, Auburn House.

Lach D and Hixson P (1996). "Developing indicators to measure values and costs of public involvement activities." *Interact* (Spring).

Laird F (1989). "The decline of deference: the political context of risk communication." *Risk Analysis* 9(4):543-550.

Laird FL (1993)."Participatory analysis, democracy, and technological decision making." *Science, Technology, & Human Values* 18(3):341-361.

Lynn F (1987). "Citizen involvement in hazardous waste sites: two North Caroline success stories." *Environ Impact Assessment Review* 7:347-361.

Lynn FM and Busenberg GJ (1995). "Citizen advisory committees and environmental policy: What we know, what's left to discover." *Risk Analysis* 15(2):147-162.

Lynn FM and Kartez JD (1995). "The Redemption of Citizen Advisory Committees: A Perspective from Critical Theory." In: Fairness and Competece in Citizen Participation - Evaluating Models for Environmental Discourse. O. Renn, T. Webler, and P. Wiedermann, eds. Dordrecht: Kluwer Academic Publishers: 87-102.

Mazmanian DA and Nienaber J (1979). Can Organizations Change? Washington, D.C., The Brookings Institution.

MSU - Michigan State University (1996). Evaluation of the Technical Outreach Services for Communties Piot Program, East Lansing, MI: Michigan State University (82 pages).

NACCHO. National Association of County and City Health Officials (undated). Don't Hazard a Guess: Addressing Community Health Concerns at Hazardous Waste Sites. Washington, DC: NACCHO.

NACCHO. National Association of County and City Health Officials (1996). Summary Report: Improving the Practice of Community Involvement in Public Health: A Workshop, March 20-21, 1996, Tampa FL. Washington, DC: NACCHO (37 pages).

NRC (National Research Counci)l, Committee on Risk Characterization. (1996). Understanding Risk: Informing Decisions in a Democratic Society. Washington, DC, National Academy Press.

Nelkin D (1975). "The political impact of technical expertise." *Soc. Stud. Sci.* 5(35).

NEJAC. National Environmental Justice Advisory Council, Subcommittee on Public Participation and Accountability (1996). The Model Plan for Public Participation, NEJAC of the Environmental Protection Agency, Washington, DC, November 1996.

Nothdurft W (1995). "Environmental mediation: insights into the microcosm and outlook for political implications." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Scientific Publishing**:** 267-282.

OTA. U.S. Office of Technology Assessment, U.S. Congress (1991). Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production. Washington, DC.

Pateman C (1970). Participation and democratic theory. Cambridge, Cambridge University Press.

Peelle E (1995). From Public Participation to Stakeholder Involvement: The Rocky Road to More Inclusiveness. NEAP 20th Annual Conference Proceedings, National Association of Environmental Professionals: 186-201.

Peelle E, Schweitzer M, et al. (1996). Factors Favorable to Public Participation Success (Report for US Department of Energy). Oak Ridge, Oak Ridge National Laboratory.

Perrow (1984). Normal Accidents: Living with High Risk Technologies. New York, Basic Books.

Pickett S (1997). Deliberation: Integrating Stakeholder Values and Risk Assesments in Environmental Decison Making, Masters thesis in Technology and Policy, Massachusetts Institute of Technology, September 1997

Presidential/Congressional Commission on Risk Assessment and Risk Management (1997). Framework for Environmental Risk Management. Final Report, Volume 1. Washington, DC.

Rawls JA (1971). A Theory of Justice. Cambridge, MA: Harvard University Press

Reiss HE (ed). (1970). Kant's Political Writings. Cambridge, UK, Cambridge University Press.

Renn, O, Webler T, and Wiedemann P (eds) (1995). Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. Dordrecht, Kluwer Academic Publishers.

Rosener J (1982). "Making bureaucracy responsive: a study of the impacts of citizen participation and staff recommendations on regulatory decision making." *Public Admin Rev* 42: 339-345.

Sandel M (1996). Democracy's Discontent: America in Search of a Public Philosophy, Cambridge, MA: Harvard University Press (417 pages).

Schweitzer M, Canes SA, Peelle, BE, et al. (1996). Measuring the Success of Public Participation Efforts Associated with the U.S. Department of Energy's Environmental Management Activities. Paper presented at the National Association of Environmental Professionals 21st Annual Conference, June 2-6, 1996, Houston, TX.

Shepherd A and Bowler C (1997). "Beyond the requirements: improving public participation in EIA."*Journal of Environmental Planning and Management* 40(6):725-738.

Shrader-Frechette KS. (1985). Risk Analysis and Scientific Method. Boston, MA, D. Reidel Publishing Company.

Shrader-Frechette KS. (1991). Risk and Rationality. Berkeley, University of California Press.

Susskind L and Ozawa C (1985). "Mediating public disputes: obstacles and possibilities." *J Social Issues* 41(2):145-159.

Susskind L and McMahon G (1985). "The theory and practice of negotiated rulemaking.@ *Yale J on Regulation* 3:133-165.

Syme GJ and Sadler BS (1994). "Evaluation of public involvement in water resources planning: a researcher-practitioner dialogue." *Evaluation Review* 18(5):523-542.

Taylor LL (1991). Opening Up: Public Involvement in Environmental, Safety, and Health Issues at the DOE Weapons Complex. St. Louis, Washington University, Center for Technological Assessment & Policy.

United Church of Christ Commission for Racial Justice (1987). Toxic Waste and Race in the United States: A National Report on the Racial and Socioeconomic Characteristics of Communities Surrounding Hazardous Waste Sites. New York.

Vaughan E (1995). "The significance of socioeconomic and ethnic diversity for the risk communication process." *Risk Analysis* 15(2):169-180.

Vari A. 1996). "Citizens' advisory committee as a model for public participation: a multiple-criteria evaluation." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 103-116.

Webler T. (1995). "Right" discourse in citizen participation: an evaluative yardstick." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 35-86.

Webler T and Renn O. (1995). "A brief primer on participation: philosophy and practice." In: Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse. O Renn, T Webler and P Wiedemann (eds). Dordrecht, Kluwer Academic Publishers**:** 17-33.

Wynne B. (1991). "Knowledge in context." *Science, Technology and Human Values* 16:111-121.

Yosie TF and Herbst TD (1998). Using Stakeholders Processes in Environmental Decision making: An Evaluation of Lessons Learned, Key Issues, and Future Challenges, Washington: Ruder Finn.