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Evaluating public participation in environmental decision-making: EPA's superfund community involvement program

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Abstract

This article discusses an 8-year, ongoing project that evaluates the Environmental Protection Agency's Superfund community involvement program. The project originated as a response to the Government Performance and Results Act, which requires federal agencies to articulate program goals, and evaluate and report their progress in meeting those goals. The evaluation project assesses how effective the Superfund community involvement program is in promoting public participation in decisions about how to clean up hazardous wastes at Superfund sites. We do three things in the article: (1) share our experience with evaluating an Agency public participation program, including lessons learned about methods of evaluation; (2) report evaluation results; and (3) address a number of issues pertaining to the evaluation of public participation in environmental decision-making. Our goal is to encourage more environmental managers to incorporate evaluation into their public participation programs as a tool for improving them. We found that written mail surveys were an effective and economical tool for obtaining feedback on EPA's community involvement program at Superfund sites. The evaluation focused on four criteria: citizen satisfaction with EPA information about the Superfund site, citizen understanding of environmental and human health risks associated with the site, citizen satisfaction with opportunities provided by EPA for community input, and citizen satisfaction with EPA's response to community input. While the evaluation results were mixed, in general, community members who were most informed about and involved in the cleanup process at Superfund sites generally were also the most satisfied with the community involvement process, and the job that EPA was doing cleaning up the site. We conclude that systematic evaluation provides meaningful and useful information that agencies can use to improve their public participation programs. However, there need to be institutionalized processes that ensure evaluation results are used to develop and implement strategies for improvement.

Keywords: Superfund; Public participation; Program evaluation; Environmental decision-making

1. Introduction

Recent decades have seen a dramatic increase in public participation in environmental decision-making conducted by government agencies. This increase has been driven both by citizens who demand a greater role in shaping the decisions that affect their well-being, and by agencies that recognize the benefits of involving citizens in their decision-making processes. It is now widely believed that members of the public should participate in environmental-decision-making (Webler et al., 2001), and there are many laws, regulations, and policies that call for public participation in environmental decision-making (ELI, 1999). Evidence suggests that involving stakeholders results in better quality decisions (Beierle and Cayford, 2002).

How can environmental managers best involve citizens in decision-making? The forms and processes of public participation in environmental decision-making by government agencies are highly variable. There is a rich literature of case studies that describe these many forms and processes, assess their relative merits, and provide insights about what works and what doesn't (see for example Beierle, 2000; Conley and Moote, 2003; Chess and Purcell, 1999; Renn et al., 1995; Zarger, 2003 for reviews). Agencies now have much to guide them in developing environmental

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public participation programs that can meet their needs and circumstances.

Once established, how can agencies evaluate the success of their public participation programs and improve upon them? This article presents the results of an effort to evaluate the Environmental Protection Agency's (EPA's) community involvement program at Superfund sites. The evaluation project is now in its eighth year. Other federal agencies have ongoing public participation programs relating to the cleanup of hazardous waste sites (e.g. the Department of Energy's Consortium for Risk Evaluation with Stakeholder Participation program (CRESP), and the Department of Defense's Restoration Advisory Boards). However, as far as we know, EPA's Superfund evaluation project is the only ongoing, systematic project of its kind at a federal agency in the U.S. for assessing public participation in environmental decision-making. The observation that Sewell and Phillips made in 1979 still appears to hold true: 'Although government agencies have spent hundreds of thousands of dollars on participation programmes, they have generally been unwilling to allocate any funds to the evaluation of the effectiveness of such ventures.' (Sewell and Phillips, 1979:337).

We do not aim to provide a set of recommendations about what works and what doesn't in the arena of public participation. Nor do we provide an evaluation of what the best methods for involving citizens in environmental decision-making are (see Blahna and Yonts-Shepard, 1989; Carr and Halvorsen, 2001; McComas, 2001; Rowe and Frewer, 2000 for this discussion). Rather, we aim to do three things: (1) to share our experience with evaluating an Agency citizen involvement program, and lessons learned about methods for doing evaluation work; (2) to report some of the evaluation results; and (3) to use the Superfund Community Involvement evaluation project to address some of the critical issues raised in the literature on evaluating public participation in environmental decision-making (see Chess, 2000 for a review of many of these issues). Our goal is to encourage more government agencies to develop methods and tools for evaluating their own public participation programs. Such evaluation is important because managers need to know how well they are achieving their public participation goals, what they are getting from investing in public participation efforts, and how to improve their programs and more effectively involve citizens in environmental decision-making.

1.1. Reasons for evaluation

Community dissatisfaction with agency characterizations of risk and with agency cleanup decisions in relation to hazardous waste sites, has created public demand for more community involvement in decision-making about these sites (Ashford and Rest, 1999). Many people argue for the importance of involving the public in the process of gathering scientific data for risk assessment, and in making decisions about managing environmental and health risks associated with the cleanup of hazardous waste sites. These advocates see public participation as a basic human right. They also believe that participation can help increase trust in government, and in the legitimacy, credibility, and acceptability of risk management decisions (G. Charnley, 2000; Folk, 1991; Rowe and Frewer, 2000). Public participation also contributes valuable local knowledge and experience that supplements that of 'technical experts', aiding in the ecological risk assessment process, and in more effective risk management decisions (e.g. Goldstein et al., 2000).

However, other people criticize the public participation process, asserting that it increases rather than decreases conflict between agencies and the public, increases rather than decreases the costs of making and implementing policy decisions, and is unduly time consuming (English, 1996). In addition, some people believe that involvement processes are counter-democratic, claiming that they increase the influence of special interest groups. Moreover, some people believe that decisions involving complex technical and scientific issues should be made by experts, viewing members of the general public as being unqualified to address them, and too emotionally involved in the problems to be solved (Folk, 1991).

In light of these kinds of concerns, Agency managers may only support public participation programs if it can be demonstrated through evaluation that they are useful for improving decisions or reducing conflicts, and worth the commitment of resources. Evaluation is also the best way to learn how public participation programs can become more effective. Furthermore, evaluation makes it possible to see how well government policies regarding public participation correspond to government practices for involving citizens in environmental decision-making.

EPA recently revised and reissued its national public involvement policy. Unlike the previous version, the new policy explicitly states that one of the seven key components of an effective public involvement program is a good evaluation plan (USEPA, 2003). To date, however, Superfund community involvement is the only EPA public participation program that has an institutionalized effort to evaluate its involvement activities.

There is yet another reason to evaluate public participation programs at federal agencies: government agencies are moving towards performance-based management (Chess, 2000). Congress enacted the Government Performance and Results Act (GPRA) in 1993. Under GPRA, federal agencies are required to articulate their program goals, to assess their program performance in relation to those goals, and to report publicly on their progress towards meeting program objectives. The Act provides a mechanism by which agencies can obtain information about how effective their programs are. This information can be used to modify the programs in order to bring about improvement. GPRA also serves as a mechanism for giving

Congress information about how well Agencies are meeting their statutory objectives, and provides input to Congress for budgetary decision-making. More recently, the 2001 President's Management Agenda renewed the call for performance and accountability within government agencies, calling for assessments to evaluate program performance and results in relation to program mission.[2]

EPA initiated its evaluation of the Superfund community involvement program to comply with the Government Performance and Results Act, viewing GPRA requirements as an impetus to begin an evaluation effort. Its objectives were to assess the effectiveness of community outreach and involvement activities at the local level, and, by identifying potential constraints to program effectiveness, find ways the community involvement program could improve. The ongoing evaluation goes far beyond GPRA requirements. Despite the fact that there are currently no Superfund GPRA measures for public involvement, the evaluation project serves as a useful case study of one response to GPRA.

1.2. Evaluation approach

Beierle and Cayford (2002) note that there are three general types of evaluation of public participation programs: those that evaluate how successful public participation is in democratizing agency decision-making; those that evaluate how successful public participation is in achieving a set of broad social goals; and those that evaluate how successful the program is in achieving the specific goals of one or more of the participants. We agree with Beierle and Cayford that all three types of evaluation are valid and worthwhile. The approach used here is primarily of the third type, although it provides some insights related to the first two purposes. We examine how successful an EPA public participation program is in meeting the Agency's goals for the program. This approach is also referred to as 'effectiveness evaluation' (Bellamy et al., 1999). We did not investigate how much overlap there was between Agency goals relating to community involvement in Superfund site cleanups and those of citizen participants. The evaluation is primarily a 'formative evaluation' project - one undertaken to improve a program in process (see Chess, 2000).

The Superfund evaluation project was developed and implemented by staff working in EPA's Community Involvement and Outreach Branch (CIOB) in collaboration with hired contractors (who do not actually implement community involvement activities at Superfund sites). The project is internally driven; members of the public and other stakeholder groups were not involved in designing it, though they did provide input regarding what evaluation criteria to use. The project evaluates aspects of both the process and the outcome of community involvement activities at Superfund sites.

2. Background: the superfund community involvement program[3]

Superfund is the Federal government program for locating, investigating, and cleaning up hazardous waste sites. It is administered by the United States Environmental Protection Agency. An important component of Superfund is community involvement in decisions about how to clean up contaminated sites, which are often located in close proximity to places where people live and work. The Superfund community involvement program is coordinated by CIOB. The program is committed to 'advocating and strengthening early and meaningful community participation during Superfund cleanups' (USEPA, 1998). The fundamental principle is that people who live and work near a site should know what EPA is doing to clean it up, and should have input into the cleanup decision-making process. EPA believes that cleanup efforts will be most successful if people are well informed about them, have early and meaningful opportunities to provide input about what is being done, and are able to help shape the decisions being made. To achieve this goal, the community involvement program focuses on three things: (1) informing the public about environmental problems at Superfund sites and their associated risks, the remedial responses under consideration, and ongoing progress towards cleanup; (2) involving members of the public in appropriate ways in the process of making cleanup decisions; and (3) identifying and resolving conflict.

Doing effective community involvement work is rarely easy, especially at Superfund sites. Hazardous waste cleanups are usually complex and controversial. They are enormously costly and routinely involve major technical and engineering challenges. And, they often generate substantial disagreement about how 'clean' a site needs to be in order to protect the environment and public health. Superfund cleanups on average take eight to twelve years. During this time, people in surrounding communities may be subject to emotional stress from concerns about past and future exposure to toxic substances; to physical disruption (e.g., noise, road closures, temporary relocation of residents); and to a host of economic concerns, such as falling property values.

In each of the ten EPA regions, there are community involvement staff (called 'community involvement coordinators' or CICs) hired for the specific purpose of working

[2] For a detailed discussion of GPRA and its implications for the practice of evaluation, see Wholey, 1997.

[3] We use the term 'community involvement' in place of 'public participation' in our discussion of the Superfund evaluation project because this is the term used by the Superfund Community Involvement and Outreach Branch, which administers the program. For a discussion of EPA's definition of public participation, see Zarger, 2003:9–10.

with communities in which Superfund sites are located. The CICs are responsible for planning and implementing effective community outreach and involvement programs at Superfund sites that comply with statutory requirements, and often go well beyond them.

Efforts to inform and educate the public about the sites in their communities include producing and distributing fact sheets or newsletters regarding the site to community residents, publishing press releases, holding public meetings and availability sessions to discuss the site with community members, sponsoring site tours and other on-site activities, maintaining telephone hotlines, and informal interaction with community residents. CICs also promote citizen involvement in the decision-making process at sites by providing technical assistance to communities through Technical Assistance Grants or the Technical Outreach Services to Communities program, interviewing community residents, providing opportunities for public comments, and providing neutral facilitation resources at sites where conflicts are prevalent. In addition, approximately ten percent of the active sites on the Superfund National Priorities List have Community Advisory Groups. These groups comprise diverse stakeholders from the Superfund community, and serve as a forum in which community members can present and discuss their values, concerns, and recommendations relating to the cleanup (USEPA, 1996). At some of the larger Superfund sites, community involvement is a full-time responsibility. Even at an average site, the CIC will often spend several days a week talking with community members and organizing ways for people to give input.

EPA's Superfund community involvement program is an active and well-established public participation program within the Agency. Thus, lessons learned from evaluating it may prove helpful to other parts of the Agency that engage in public participation activities, as well as other federal programs.

3. The evaluation project: methods[4]

EPA began its Superfund community involvement evaluation project in 1996, and it is an ongoing effort. The project has occurred in four phases. Phase 1 included developing a set of evaluation criteria (or performance measures) and associated indicators, developing data collection instruments, and collecting data at seven Superfund sites using written mail surveys, telephone surveys, and focus groups. The evaluation criteria were based on Superfund community involvement program goals and GPRA reporting measures. Phase 2, initiated in 1998, entailed revising the evaluation criteria, indicators, and data collection instruments on the basis of lessons learned during Phase 1, and collecting data at six additional Superfund sites. Phase 2 led to further simplification of the data collection instruments and a revised approach for collecting data, implemented during Phase 3. Phase 3 lasted from 2000 to 2003, and consisted of data collection at four more sites. Phase 4, begun in 2004, uses the same written survey as Phase 3, but includes a somewhat more rigorous mail out protocol in order to try to improve response rates. The goal in Phase 4 is to evaluate five sites each year. We describe the evaluation methods used during each phase in detail below.

3.1. Phase one

The primary goal of Phase 1 was to develop and test different evaluation tools and procedures. One subsidiary goal was to obtain citizen input about what criteria should be evaluated in order to gauge the effectiveness of EPA community involvement activities. A second subsidiary goal was to begin gathering community feedback that could be used to help the community involvement coordinators improve their programs, and to gain insight into how to improve the overall Superfund community involvement program nationwide. The initial evaluation criteria CIOB assessed were:

- citizen perceptions of human health and environmental risk associated with the Superfund site;
- citizen understanding of site information provided by EPA;
- citizen acceptance of site information provided by EPA;
- citizen perceptions of community involvement in the site cleanup process;
- citizen trust in EPA;
- intensity of emotion surrounding site-specific issues;
- number and type of disagreements between EPA and the community; and
- likelihood that EPA and the community will reach agreement about a cleanup approach.

To accomplish the evaluation CIOB tried a combination of methods that included written mail questionnaires, telephone interviews, and focus groups. These methods were used in different combinations at seven Superfund sites. The sites selected were a convenience sample based on the recommendations of CICs. Because the primary purpose of Phase 1 was to develop and test evaluation tools and processes rather than to administer a scientifically rigorous evaluation project, there was no concern for selecting a random sample of sites to evaluate.

CIOB developed both a long and a short version of the written questionnaire. The long version (taking roughly 20 min to complete) was designed to obtain in-depth information. The short version (taking roughly 5 min to

[4] The evaluation project has been through four phases over the span of eight years, each having a slightly different methodological approach. It is not possible to discuss the full details of each approach here. We encourage readers who would like to know more about our evaluation methods to contact the authors directly.

complete) was used to gauge whether a higher response rate could be achieved by asking fewer questions. The questionnaires, along with postage-paid reply envelopes, were sent to the homes of a random sample of people whose names were on the Superfund site mailing list (the mailing list consists of people who have asked to receive periodic information about the site).

CIOB used telephone interviews to get feedback on community members' satisfaction with fact sheets and public meetings. Again, CIOB tried both a long interview and a short interview. The telephone survey population was randomly selected from the site mailing list.

Focus groups, with 6 to 12 participants each, were held at three sites using a non-EPA facilitator. EPA community involvement staff at each site identified and invited a cross-section of stakeholders from the entire local community, not just from the site mailing list. The focus group facilitator asked participants to respond to many of the same questions posed on the written mail surveys using an anonymous voting technology known as Sharpe Decisions TM. Once participants responded to a set of questions on a given topic, the facilitator posed discussion questions designed to elicit qualitative information regarding that topic.

3.2. Phase 2

The primary goal of Phase 2 was to produce meaningful evaluation data that could be generalized to the national level to meet GPRA requirements, and used for improving the national program. The subsidiary goals were to continue refining and improving data collection methods and tools, to provide useful feedback to CICs about the community involvement programs at their sites, and to gather information from EPA community involvement staff about their views and experiences of doing community involvement work, including opportunities and constraints. For this phase, CIOB narrowed the scope of the questions, and focused on four evaluation criteria that were consistent with the GPRA performance measures for the Superfund community involvement program that existed at that time (see S. Charnley, 1999):

- Citizen satisfaction with the information that EPA provides about the site;
- Citizen understanding of environmental and human health risks associated with the site;
- Citizen satisfaction with the opportunities provided by EPA for community input;
- Citizen satisfaction with EPA's response to community input.

CIOB used a revised written mail survey to gather data at six additional sites, held citizen focus groups at three sites, and discontinued the use of telephone interviews as an evaluation method. CIOB also held ten focus groups with 66 EPA Superfund community involvement staff in six EPA regions.

CIOB initially intended to randomly select sites for evaluation from the National Priorities List that were in the initial stages of the cleanup process, and that were geographically distributed within the six EPA regions not sampled during Phase 1. CIOB considered random selection of sites for evaluation necessary in order to facilitate the generalization of results to the national level for GPRA reporting purposes. However, it proved difficult to use a purely random sampling approach for site selection. Regional community involvement personnel and/or Superfund site managers were not supportive of conducting evaluation work at some of the randomly selected sites. In these instances, CIOB discarded the initial site chosen and continued with the random site selection process until a site was found that everyone could agree on. At the request of two CICs, CIOB also included two sites not on the National Priorities List.

In Phase 2 CIOB was interested in assessing what kinds of differences, if any, there might be in the views of community members who were on site mailing lists (who we refer to here as the 'interested population'), and community members who were not on these lists, but were still potentially adversely affected by a site (who we refer to as the 'affected population'). Of course, there could be some overlap between the two groups. One might expect people on the mailing list to be more interested in what is going on at a site (they asked to be put on the mailing list) and to be better informed (because they get periodic information from EPA that does not go to the population at large). EPA wants site information and opportunities for involvement to be conveyed effectively to everyone who may be affected by a site in order to create a participation process that is as inclusive as possible. In Phase 2, CIOB defined the affected population as being anyone who lived within a radius of four miles of a site (this is the area of concern for ground water and air-borne effects in the Superfund Hazard Ranking System (USEPA, 1992)).[5]

In this phase, CIOB also took new steps to increase survey response rates by adopting a survey methodology recommended and used by the Gallup Organization. The method was similar to the survey approach recommended by Dillman (2000), though it called for different sample sizes. At each site, CIOB mailed surveys to a random sample (affected population) of 800 households. The goal was to achieve at least a 50 percent response rate to minimize bias, or 400 completed surveys from the sample population, to provide 95 percent confidence intervals. CIOB also mailed the same survey to all of the individuals on each site's mailing list (the 'interested

[5] The Superfund Hazard Ranking System defines affected citizens as being those people who live within a four-mile radius of sites having groundwater contamination or air-borne contamination; people living within a one-mile radius of sites having soil contamination only; and people living within 15 miles downstream of where contaminants enter surface water, or within 15 miles radially of where contaminants enter lakes or coastal waters.

population'). Site mailing lists ranged in size from 97 to 479 people. All survey recipients were sent a pre-notification letter informing them about the objectives and importance of the upcoming survey. After the survey was mailed, CIOB sent recipients a reminder postcard that encouraged them to complete the survey and mail it back. The responses were tracked, and a second survey mailed to those who did not respond within a few weeks. CIOB included EPA pens in the initial mailings to provide an incentive for recipients to respond. This practice created insurmountable problems for the EPA mail room, and was therefore discontinued. No other efforts have been made to use incentives as a way of increasing response rates.

3.3. Phase 3

Phase 3 began in 2000 and lasted through 2003. The major goal of Phase 3 was to provide timely and useful information to the community involvement staff responsible for the sites so that they could improve their community involvement efforts. Therefore, site surveys were conducted only at the request of a site team. Four Superfund site teams volunteered, and CIOB completed evaluations of community involvement programs at these four sites. Resources were available to conduct additional evaluations during Phase 3, but no other sites requested them. CIOB was still interested in looking at cross-site patterns and trends and in assessing the community involvement program at the national level. Because the site selection process was not random and because of low response rates, however, CIOB made no attempt to draw any statistically significant or generalizable conclusions.

Before starting Phase 3, CIOB revised the survey instrument once more (see Appendix A). The four evaluation criteria that formed the basis of the Phase 2 evaluations were retained (see Section 3.2). However, a number of questions that had received very high 'don't know' responses, or that were not answered by many respondents, were dropped. The Likert Scale, which the survey used for most of the questions addressing citizen satisfaction, was revised to conform to EPA's customer service survey guidelines. Previously, response choices using the Likert scale ranged from one to five. The customer service guidelines recommend using a response scale that has an even number of choices. This eliminates the middle choice (such as 'Neither Agree Nor Disagree'), and forces respondents to indicate whether they are more or less satisfied with an aspect of the program. Changing the rating scale made it more difficult to compare the results of Phases 2 and 3. However, since CIOB had decided that the future focus of the evaluation program was to provide community involvement practitioners with site-specific feedback, this was not an over-riding concern.

As in Phase 2, Phase 3 surveys were mailed to both the Superfund site mailing list and a random sample of 800 people. However, the 'affected population' for the random sample was defined differently in Phase 3. At all six of the Phase 2 sites, CICs questioned whether the Hazard Ranking System guidelines for defining the affected citizens were useful for getting good community feedback on involvement activities. Consequently, in Phase 3 CIOB asked CICs to define an appropriate geographic area to be randomly sampled around the study sites. CICs identified sampling areas that ranged from a radius of one to three miles around each site.

CIOB followed the same letter mailing sequence used in Phase 2. CIOB did not conduct any focus groups during Phase 3, although focus groups were still considered an option if circumstances suggested they would add substantial value.

3.4. Phase 4

The primary goals in Phase 4, which is currently underway, are to continue to provide timely and useful feedback to CIC's about their involvement efforts, and to institutionalize the evaluation effort with a commitment to do at least five new sites each year. EPA regions are now required to participate in the evaluation program. Over time CIOB will be able to look at national trends in results, and to identify emerging issues suggested by the data collected at each site. CIOB did not change the survey instrument in Phase 4. However, survey methods more closely follow the Dillman (2000) approach in order to try to increase the survey return rates. Specifically, CIOB is now tracking the returns for better follow-up. The survey coordinator is signing all of the communications. Regular postage stamps are used on the return envelopes instead of a mailing permit. And, a fourth communication containing an additional survey has been added.

4. Results: evaluation methods

CIOB tested three evaluation methods over the course of eight years: telephone interviews, written mail surveys, and focus groups. Written mail surveys proved to be the best and most practical tool for evaluating community involvement at Superfund sites. We discuss the advantages and drawbacks of each method here.

4.1. Telephone interviews

CIOB tested two telephone interview guides: a long version and a short version. Nearly all of the people reached by phone for the long interview declined to participate when the interviewer said it would take 20 min. Even when the short version was used, the response rate was much lower than for the written surveys. CIOB concluded that telephone surveys were too intrusive, and were not an effective way to collect data. They were discontinued after Phase 1.

4.2. Written mail surveys

While written mail surveys proved to be the most effective evaluation method tested, they went through several iterations before CIOB arrived at the current version. In Phase 1, response rates for both the long and short versions of the questionnaire were on average 25%. However, it was readily apparent that the long version was too detailed and complicated to serve as a good tool for data gathering. Moreover, the long survey instruments, designed to gather greater detail, did not provide more useful information than the shorter survey instruments. CIOB determined that the scope of data collection should focus on a few key evaluation criteria, rather than being broad.

Phase 2 entailed using a shorter, more focused survey, and additional work to increase response rates. By sending reminder letters and second copies of the survey to non-respondents, response rates increased to an average of 34 percent (compared with 25 percent in Phase 1). Response rates for the surveys mailed to the random samples of 800 households within the affected areas ranged from 22 to 47%. Response rates for the surveys sent to the site mailing lists ranged from 22 to 61%. We do not know what caused such wide variation in response rates, but suspect it has to do with the level of publicity about, and community interest in, the site. The surveys were done at different times of the year, so there could also be some seasonal influence on response rates.

Despite better response rates, tracking returns meant that respondents could not be guaranteed absolute anonymity, which was a concern for some Agency staff. CIOB decided that concerns over anonymity, combined with better, yet still overall low response rates (averaging 34%), did not justify the increased cost of the effort. CIOB stopped tracking responses and sending out follow-up copies of the survey to non-responders in Phase 3. The low survey response rates at several sites despite efforts to increase them suggested that the evaluation project could not be carried out in a manner that provided generalizable data for assessing the community involvement program at the national level in a scientifically rigorous manner.

The original intention in Phase 2 was to survey communities around 25 randomly selected Superfund sites. CIOB thought that this sample size would provide a good representation of community feedback across sites where the Superfund program was active. However, CIOB decided to discontinue Phase 2 after data had been gathered from six sites. There were two main reasons for this. First, at many of the selected sites, site managers had legitimate objections to the implementation of the survey, which compromised the randomness of the national sample. For example, some site managers felt that the timing was not right for obtaining fair or useful results, and that the conduct of the evaluation could complicate the cleanup decision-making process at a particularly sensitive stage. Second, the budget for the project would not support the full effort because the cost of the evaluations was about double what was originally planned. The average cost of conducting a survey at one site during Phase 2 was $12,000. This included materials, survey preparation, mailing, data collection and analysis, and writing the final reports. It became clear from these findings that the evaluation program could not meet GPRA requirements for a nation-wide assessment of program performance and results.

CIOB decided to once more revise and shorten the survey in Phase 3 because a substantial number of questions on the Phase 2 survey were not answered, or were answered ‘don’t know’. This was especially true for the surveys returned by the random sample respondents representing the affected community. Response rates for the four Phase 3 sites ranged from 19 to 33%. The average cost of one site evaluation was about $9,000, which under the current budget permits evaluating five sites each year (out of several hundred Superfund sites where cleanup work is underway).

CIOB also decided that future community involvement program evaluations would only take place at those Superfund sites where community involvement coordinators request them. There are two advantages of voluntary participation: it is easier to conduct evaluations at sites where there is institutional support for them, and community involvement coordinators who request an evaluation are more likely to be interested in and use the results.

The CIOB perspective heading into Phase 4 is that concise surveys focusing on key evaluation criteria are an effective tool for obtaining feedback on community involvement and outreach activities. In addition, written surveys enable community involvement coordinators to get prompt feedback, which can help them adapt their approaches to better meet the needs of the community during different phases of the cleanup. However, to increase the validity of the data CIOB believes it is necessary to increase response rates, and has renewed its efforts in this area. CIOB is now following the Dillman approach (Dillman, 2000) of tracking responses and sending out reminders to those who do not return surveys. In the survey mailing, recipients are told that, although the survey is not completely anonymous, individual responses will be kept confidential, and released only in summary form together with other responses so that no individual’s answers can be identified. The first Phase 4 survey had an overall response rate of 44%, with almost one-fifth of the responses returned after the reminder was sent.

4.3. Focus groups

Because the focus groups used a structured dialogue approach, CIOB was able to get more in-depth, qualitative feedback about the community involvement program than it did from the questionnaires. These sessions provided participants with an opportunity to speak freely about the site cleanup process, and to raise issues that were important to them. Although written surveys were a more cost-effective

way to gather information than focus groups, focus groups provided qualitative data that could not be gleaned from written surveys. Therefore, CIOB decided that focus groups would only be used when specific, important or contentious issues emerge that need to be assessed in greater depth. Focus groups were also an effective way of obtaining citizen input regarding the evaluation criteria that form the foundation of the evaluation project. This input helped CIOB ascertain what aspects of community involvement are important to citizens.

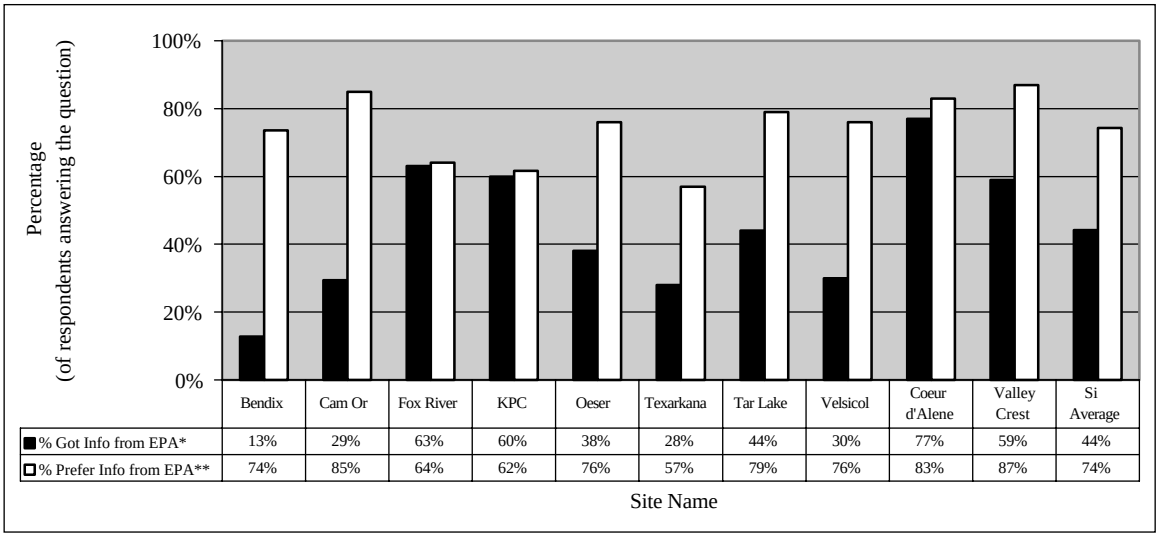
Internal focus groups with EPA community involvement staff were a valuable tool for obtaining practitioners' views of the role of community involvement, what activities are most important, the appropriate role of community members in the Superfund decision-making process, what constitutes successful community involvement, and what the barriers to success they face are.

5. Results: evaluation findings

Because Phase 1 of the evaluation project focused on developing methods and tools for evaluating EPA's Superfund community involvement program, rather than on gathering significant feedback about the program, we do not report evaluation findings from Phase 1 here. Nor do we have any findings yet from Phase 4 to present. Many of the survey responses from Phases 2 and 3 are not directly comparable due to changes to the surveys made during each phase of the evaluation. This limits the amount of comparable data available for analysis. We are also mindful that the sites surveyed were not random, and that response rates were somewhat low, which compromises our ability to discuss the evaluation results, and to compare responses between the two sample populations. Nevertheless, we think it is worthwhile to present and discuss some of the findings that are most salient for the program.

5.1. Citizen satisfaction with EPA information

At each of the ten Superfund sites surveyed during Phases 2 and 3, more than 50% of the respondents indicated that their preferred source of information about the site cleanup was EPA (Fig. 1). A site average of 74% (mean 0.742, sd 0.102) said they prefer to receive site information from EPA. However, survey results show that a site average of only 44% (mean 0.442, sd 0.199) of respondents had received information about the site from EPA. More people said they got site information from the media, especially newspapers (a site average of 78% of respondents (mean 0.781, sd 0.136)). Based on data collected during Phase 3, more than half of those who responded at each site said that they were satisfied with the information they received from EPA. Both the random survey respondents and mailing list respondents in Phases 2 and 3 said that a direct mailing from EPA would be the best way to communicate information about the site. Both groups also agreed that newspapers, radio and TV are not good channels of communication. Web sites were a preferred source of information for less than 10% of the people at most sites.

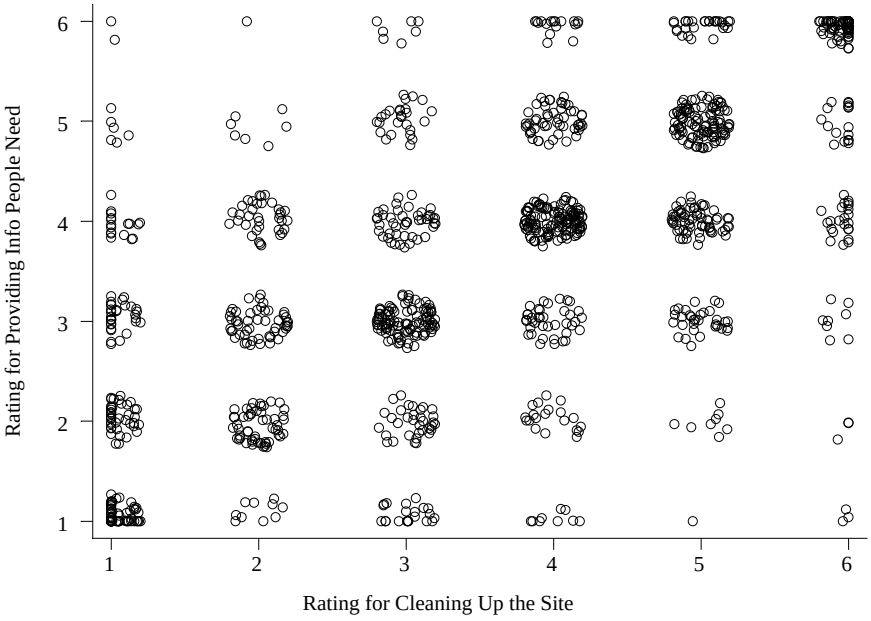


	Bendix	Cam Or	Fox River	KPC	Oeser	Texarkana	Tar Lake	Velsicol	Coeur d'Alene	Valley Crest	Si Average
■ % Got Info from EPA*	13%	29%	63%	60%	38%	28%	44%	30%	77%	59%	44%
□ % Prefer Info from EPA**	74%	85%	64%	62%	76%	57%	79%	76%	83%	87%	74%

* % Got Info from EPA = percentage of respondents who indicated that they received site information through one or more of the EPA sources listed.

** % Prefer Info from EPA = percentage of respondents who indicated they prefer to receive site information from one or more of the EPA sources listed.

Fig. 1. EPA as a source of site information.



[a] The Pearson Chi-squared test for the independence of the rows and columns (ratings for providing the information people need and ratings for cleaning up the site) indicates that there is a strong, significant positive relationship between the ratings. In other words, respondents who rated EPA low on one aspect are likely to rate EPA low on the other aspect, and vice versa.

Pearson chi2(25) = 677.4861, $p = 0.000$

Fig. 2. Cross tabulation of respondent ratings on EPA providing information and how EPA is doing at cleaning up the site[a].

An important pattern that appears when looking at the responses from all ten sites is that respondents who felt informed about the cleanup effort also appeared to have a positive view of EPA's effectiveness in cleaning up a site. Fig. 2 compares the results of the question, 'How satisfied are you with the job EPA is doing at providing the information you need?' with the results of the question, 'How satisfied are you with how EPA is doing at cleaning up the site?' The scattergram shows a strong, significant positive relationship (chi2 = 677.486, $p = 0.000$) between the responses to the two questions. In other words, respondents who rated EPA good at providing information were more likely to give a high rating for cleaning up the site. Those who rated EPA poorly at providing information generally also gave a low rating for cleaning up the site. While this pattern is only a correlation, it suggests the possibility that providing good information may have a positive influence on acceptance of the cleanup. This is an area where further research is both desirable and necessary before any real conclusions can be drawn.

Information that comes from non-EPA sources may be subject to the interpretations and agendas held by those sources. If EPA wants to both make sure its own message is heard, and meet the expressed preference of community members, it must do a better job of providing information about Superfund sites and their cleanup to the public (Peterson and Bornyasz, 2002). The surveys administered through this project help to identify specific communication processes and tools that are the best way for EPA to reach people. The survey results also suggest that greater investment in informing people about Superfund site cleanup activities may lead to better public perceptions of EPA's cleanup efforts. Again, more research is needed on this potential.

5.2. Citizen understanding of environmental and human health risks associated with superfund sites

With respect to understanding the types and sources of risk associated with Superfund sites, data collected during Phase 2 show that mailing list respondents were better informed than respondents from the random sample of people residing in the affected area.[6] A site average of 73% (mean 0.731, sd 0.205) of mailing list respondents knew the specific toxic problem at their site, whereas a site average of 56% (mean 0.555, sd 0.216) of the random sample respondents had the same knowledge. A greater percentage of the mailing list respondents (a site average of 83%, mean 0.827, sd 0.155) also knew what activities EPA

[6] CIOB dropped the questions relating to understanding the types and sources of risk from a site from the Phase 3 survey instrument. The only data available on this topic come from Phase 2.

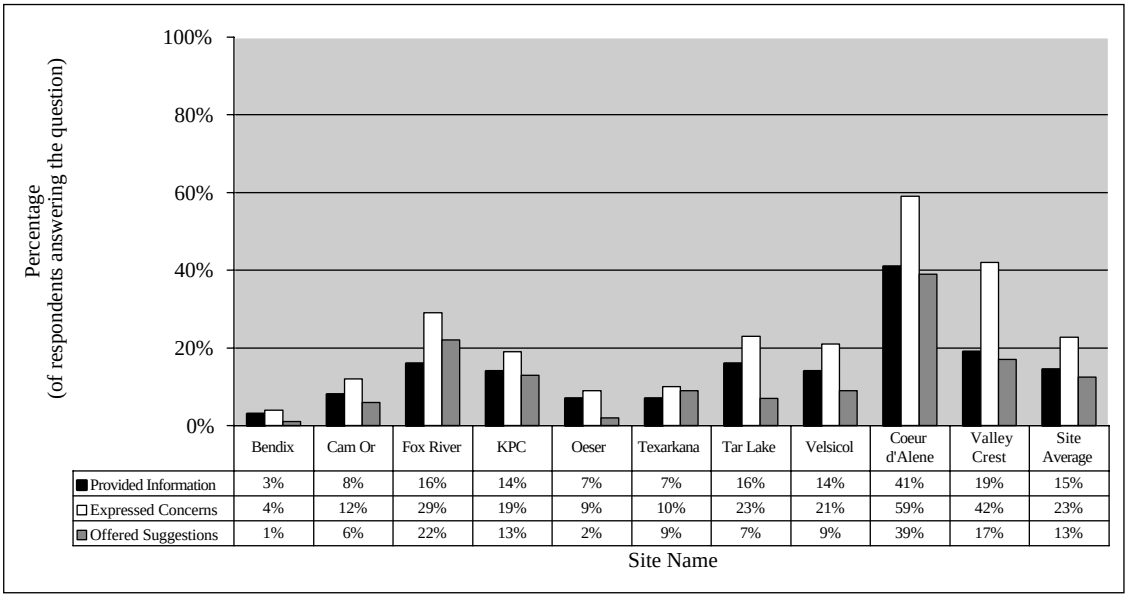
believed were most likely to cause exposure to site contaminants, compared to the random respondents (a site average of 72%, mean 0.717, sd 0.239). These differences in the two populations may be because mailing list respondents are more interested in finding out about site risks (evidenced by the fact that they asked to be put on the site mailing list). It is also possible that the information EPA mails to interested citizens makes a difference in educating people about potential health risks associated with Superfund sites.

5.3. Citizen satisfaction with opportunities for community input

At all ten sites surveyed during Phases 2 and 3, respondents were asked whether they had ever provided site information to EPA, had expressed their concerns about the site to the Agency, or had offered suggestions regarding the cleanup. Fig. 3 summarizes the responses to these three questions. A site average of 15% (mean 0.145, sd 0.106) of the respondents had provided information to EPA about the site. A site average of 23% (mean 0.228, sd 0.169) of the respondents had expressed concerns about the site to EPA. And, a site average of 13% (mean 0.125, sd 0.113) had offered suggestions about the cleanup. One site had substantially higher participation rates than any of the others on all three questions. That site, Coeur d'Alene, is unusually controversial, which probably explains why there appears to be more community participation there. Both mailing list and random sample respondents said that their preferred form of public participation was the public meeting. This is somewhat surprising, as EPA community involvement staff generally report that public meetings are one of the less effective ways of getting useful citizen input on Superfund cleanups.

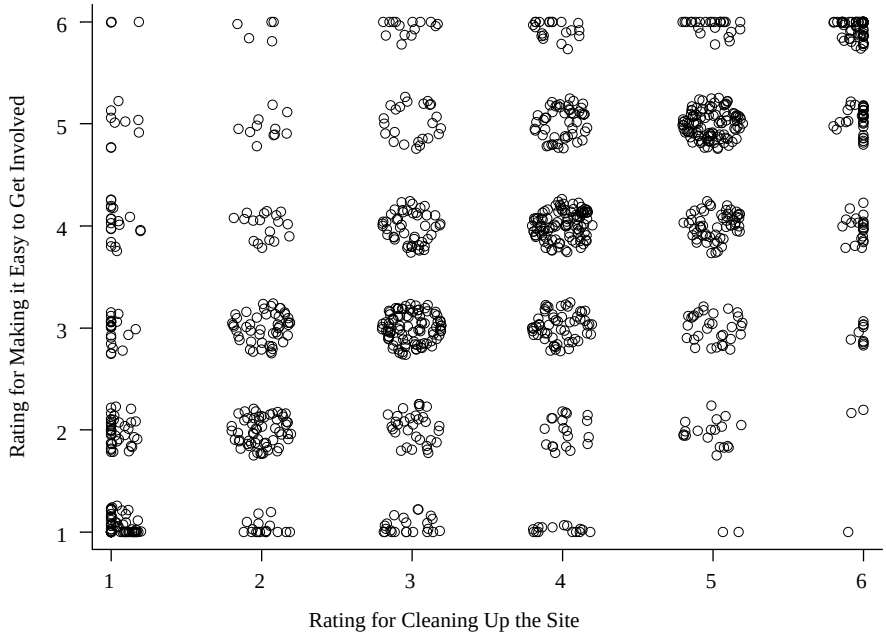
Do relatively low levels of community input reflect inadequate opportunities to provide the Agency with input? At the four Phase 3 sites, one survey question asked 'How do you rate EPA at making it easy to get involved?' on a scale of 1 (very bad) to 6 (very good). The site average rating from random sample respondents was 3.12 (sd 1.40). The site average rating from mailing list respondents was 3.75 (sd. 1.54). There was a statistically significant difference in the rating results from the random survey and mailing list respondents ($t=6.6267$, $p>|t|=0.0000$). These middle-of-the-range ratings suggest that, while respondents would like EPA to do a better job at providing opportunities for - involvement, inadequate participation opportunities may - not be the main reason for the low rate of public input.

In order to gain more insight into non-participation, respondents were asked to comment on why they had not gotten involved. Although many different reasons were given, five stand out as being most common across the ten sites: lack of awareness of the site and site issues, lack of interest because of geographic distance from the site, satisfaction with the job EPA is doing, feeling incapable of providing knowledgeable input, and the belief that EPA will do what it wants regardless of community input. People lead busy lives and cannot participate in everything that is going on around them, even if they might want to. EPA cannot and does not want to force people to get involved in environmental decision-making. Nevertheless, these findings suggest that more outreach and education about Superfund site issues to people living in close proximity to the site could lead to greater public participation in the cleanup process, as could better publicizing community involvement opportunities.



	Bendix	Cam Or	Fox River	KPC	Oeser	Texarkana	Tar Lake	Velsicol	Coeur d'Alene	Valley Crest	Site Average
Provided Information	3%	8%	16%	14%	7%	7%	16%	14%	41%	19%	15%
Expressed Concerns	4%	12%	29%	19%	9%	10%	23%	21%	59%	42%	23%
Offered Suggestions	1%	6%	22%	13%	2%	9%	7%	9%	39%	17%	13%

Fig. 3. Levels of community involvement.



[a] The Pearson Chi-squared test for the independence of the rows and columns (ratings for making it easy to get involved and ratings for cleaning up the site) indicates that there is a strong, significant positive relationship between the ratings. In other words, respondents who rated EPA low on one aspect are likely to rate EPA low on the other aspect, and vice versa.

Pearson chi2(25) = 543.5700, $p = 0.000$

Fig. 4. Cross tabulation of respondent ratings on ease of involvement and how EPA is doing at cleaning up the site[a].

Providing good opportunities for community involvement in Superfund site cleanups appears to be related to how the cleanup is perceived. Fig. 4 compares respondents' answers to the questions, 'How satisfied are you with how EPA is doing at making it easy for you to get involved?' and 'How satisfied are you with how EPA is doing at cleaning up the site?'. As the scattergram shows, respondents who were more satisfied with involvement opportunities were generally more satisfied with the cleanup, while those who were less satisfied with involvement opportunities were less satisfied with EPA's cleanup efforts (chi2 = 543.5700, $p = 0.000$).

5.4. Citizen satisfaction with EPA's response to community input

The level of citizen satisfaction with EPA's response to community input can be assessed, in part, on the basis of how well community members perceive EPA to have done at (1) understanding community concerns, (2) using community input, (3) explaining its decisions, and (4) earning the community's trust. Fig. 5 summarizes respondents' answers to these questions at the four sites evaluated in Phase 3. (Similar questions were asked during Phase 2 but, as mentioned earlier, changes to wording and the rating scale do not allow them to be combined). The results show that, on a site average basis, respondents have a neutral to slightly negative opinion about the job EPA is doing at responding to community input. For example, on a scale of 1 (very bad) to 6 (very good), respondents gave a site average rating of 3.24 (sd 0.365) when asked to rate EPA on using community input, a little below the 3.5 scale midpoint. There was a somewhat higher site average rating (3.51, sd 0.247) on the question of how well EPA explains its decisions.

Fig. 5 also shows that, for all four of the questions asked, mailing list respondents were more satisfied with EPA's response to community input than random sample respondents ($p < .012$ and lower). As mentioned in Section 3.2, CIOB is assessing both the interested population (mailing list) and the overall affected population (random sample) in order to develop the most inclusive participation process possible. If there is a clear difference in responses by the two groups (which there appears to be in this case), CIC's should reconsider how they are approaching them.

	Average Rating on 6 point Scale (1=Very Bad, 6=Very Good)		
	Total[a]	Random List[a]	Mailing List[a]
How would you rate EPA at …			
understanding your concerns?	3.35 (sd 0.356)	3.12 (sd 0.450)	3.52 (sd 0.423)
using your input?	3.24 (sd 0.365)	3.02 (sd 0.431)	3.44 (sd 0.418)
explaining decisions?	3.51 (sd 0.247)	3.22 (sd 0.295)	3.79 (sd 0.323)
earning your trust?	3.21 (sd 0.366)	2.88 (sd 0.447)	3.47 (sd 0.525)

[a] Average site response from Phase 3 sites (Tar Lake, Velsicol, CDA & Valleycrest)

Tests for Significant Differences Between the Random & Mailing List Samples : Mailing List Respondents Rated EPA Signi ficantly Higher on All Four Questions[b]

Rating	t	P >|t|
Understanding your concerns	2.4767	0.0067
Using your input	2.2558	0.0122
Explaining decisions	4.3043	0.0000
Earning your trust	3.6539	0.0001

[b] The student's two-tailed t analysis had to be calculated on the combined responses across all four sites, not on a site average basis.

Fig. 5. EPA's response to community input.

6. Discussion: evaluating public participation in environmental decision-making

EPA's Superfund community involvement evaluation project is remarkable in the simple fact that it exists as an institutionalized and integral part of the Superfund public participation program. As Santos and Chess (2003) note, systematic evaluation of environmental public participation programs by federal agencies is rare. In a review of natural resource policy evaluation programs, Wallace et al. (1995) found that few federal agencies undertake routine evaluations of their policies (much less the programs designed to implement those policies). The evaluations agencies do conduct typically occur before policy implementation rather than afterwards, as the latter require more time and personnel. Such evaluations are usually done in response to a crisis or a 'felt need'. And, they rarely employ scientific methodologies. Though the review conducted by Wallace et al. is a decade old and focuses on natural resource policy evaluation, the findings still hold true today, and are relevant to the discussion of evaluating public participation in environmental decision-making.

In contrast, EPA's evaluation of Superfund community involvement has become an ongoing component of its public participation program. It occurs during the Superfund process rather than before or afterwards so that results can be used immediately to improve community involvement activities at the evaluation site. CIOB adopted the project because of its commitment to providing a meaningful and quality community involvement program. Every effort has been made to conduct the evaluations in a scientifically rigorous way, with methods continually being tested and revised to improve upon them.

However, '…evaluation methods must also consider the real institutional constraints of time and budget.' (Wallace et al., 1995:44). While multi-method evaluations are argued

to be the best approach to evaluation (Datta, 1997), Agency budget constraints, together with small added returns from investments in multiple data collection techniques, led CIOB to adopt a single evaluation method: the written mail survey, though focus groups are optional. Additional EPA constraints on the evaluation methods included an inability to provide respondents with incentives for completing and returning surveys, and staff discomfort with tracking survey returns. We believe these limitations contributed to low response rates.

Another institutional constraint affecting our evaluation approach was the acceptability of the evaluation methods by EPA community involvement staff. We were at times forced to make tradeoffs between a rigorous 'scientific' approach to sampling, and one that was feasible to implement, given our desire to obtain the support and cooperation of community involvement and Superfund site staff in the evaluation process. For example, in Phase 4 of the evaluation project, regions are choosing which sites to evaluate; CIOB is not randomly selecting them. This approach introduces bias into the sampling methodology, as there are no objective criteria that guide the site selection process. It also makes it difficult to draw broad conclusions about the overall effectiveness of the Superfund community involvement program nationwide. The benefit is that regions are likely to be more supportive of the evaluation program since they can decide where to conduct it to best meet their needs, and are perhaps more likely to use the results.

While Congress and the Office of Management and Budget want federal agencies to report on outputs and outcomes associated with their investments, to do so in a meaningful way can be challenging, and the resources needed typically do not accompany such mandates. Yet despite the constraints described here, site-level evaluations can provide insights for improving ongoing community involvement efforts at those Superfund sites where evaluation has occurred. They also suggest things to consider at other sites where cleanups are in progress, or will begin in the future. CIOB believes the evaluation results are valuable for helping community involvement practitioners improve their programs. As such, the evaluation project does meet the intent of GPRA.

Yet herein lies another significant challenge to the evaluation process. A central purpose of evaluation is to encourage the people implementing the program being evaluated to do things they might not otherwise do by using the evaluation results to change their behavior or their programs. Evaluation to improve agency performance only achieves its purpose if the results are used (Chelimsky, 1997). Yet people may not be open to the evaluation process in the first place, and/or they may be unwilling or unable to use the results to bring about change. In Phase 3 of the Superfund community involvement evaluation project, CIOB decided that it would only conduct an evaluation at a site where a request for it came from the site team. Once the evaluation process became voluntary, only four sites stepped forward to request it. This points out the drawbacks of voluntary participation. CICs may feel threatened by the possibility of receiving negative results, and forego the opportunity to obtain useful feedback that could improve their community involvement activities. They may fear that conducting an evaluation in the midst of the cleanup process will interfere with their community involvement activities. Or, they may simply be too busy to add something new to their existing workloads. The small number of volunteers caused the Superfund Program national manager to inform EPA regions that the evaluation project is mandatory. Regions are now required to participate. The problem of voluntary participation in program evaluation suggests a need to institutionalize evaluations in order to make them work effectively.

Are Superfund community involvement staff using the evaluation results to improve their programs? To date, we only have anecdotal evidence that community involvement coordinators are finding the evaluations useful. We do not have data that describe specific changes in community involvement programs that have occurred as a result of the evaluations. Improving public involvement requires significant investments of time and effort that CICs may not have. The resources available for Superfund community involvement may not be sufficient to fully meet the standards the program has set for itself. And, as Chess (2000) notes, many variables limit the use of evaluation results, even when resources are available to implement change. For example, the results may be seen as a threat; program decisions are often made on the basis of other considerations; and evaluation results may be inconsistent with the perceptions and habitual practices of managers. One recommendation for making the evaluation results more useful is for CIOB to invest more time and resources in working with local community involvement staff to develop strategies for improving their programs on the basis of the evaluations. This step should be an integral part of the evaluation program.

Another important question concerns who should conduct the evaluations (Chess, 2000). Some authors argue that evaluations are most successful when they are developed and implemented in partnership between the program evaluator, the program implementers, and members of the public who are stakeholders in the program. Others caution that evaluations should be conducted independent of these program participants to prevent subjectivity and bias in the process. We found that focus groups with community stakeholders and EPA community involvement staff were extremely useful for helping the evaluation team develop evaluation criteria, and understand what constituted 'success' in relation to those criteria. The evaluation team also invited EPA's community involvement staff to be involved in the evaluation process. Our experience was that staff were already over-extended with their existing set of responsibilities, and that even if interested, they were unable to get involved in the

evaluation process any more than was necessary. For the EPA community involvement evaluation project to be successful, specific individuals must dedicate themselves full-time to the process.

Another challenge to the Superfund community involvement evaluation project lies in understanding the cause and effect relationships reflected in the evaluation results. In other words, to what extent are the evaluation results reflective of the actions of community involvement personnel, versus other social, political, economic, or historical variables that affect the community and influence evaluation responses (Bellamy et al., 2001; Syme and Sadler, 1994)? The controversial nature of Superfund cleanups, and frequent disagreement over appropriate

OMB Control No: 2050-0096
Expiration Date 10/31/07

What Do You Think About EPA's Community Involvement Efforts at the _____ Site?

The U.S. Environmental Protection Agency (EPA) is cleaning up the toxic wastes at the _____ Superfund site in your community. EPA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is being conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1463.05. You will need about 15 minutes to answer the questions.

Directions:
- Do NOT put your name, address, or phone number on this form.
- Please use the postage paid envelope provided to return this form to our contractors.
- Do NOT put your return address on the envelope.

1. How do you rate EPA at each of the following?

	Very Bad					Very Good
a. Providing the information you need	1	2	3	4	5	6
b. Giving you accurate information	1	2	3	4	5	6
c. Making the information easy to understand	1	2	3	4	5	6
d. Earning your trust	1	2	3	4	5	6
e. Making it easy to get involved	1	2	3	4	5	6
f. Understanding your concerns	1	2	3	4	5	6
g. Responding to your concerns	1	2	3	4	5	6
h. Treating you courteously	1	2	3	4	5	6
i. Having a fair decision making process	1	2	3	4	5	6
j. Using your input	1	2	3	4	5	6
k. Explaining decisions	1	2	3	4	5	6
l. Cleaning up the site	1	2	3	4	5	6

2. Before cleanup of the site began, how concerned were you about the site being harmful to each of the following? (Circle one number for each question)

	Not Concerned					Very Concerned
a. My family's health	1	2	3	4	5	6
b. The environment	1	2	3	4	5	6
c. Property values	1	2	3	4	5	6
d. Jobs in the community	1	2	3	4	5	6
e. Business in the community	1	2	3	4	5	6

Appendix A. Survey instrument used in Phases 3 and 4.

3. How concerned are you about the site being harmful to each of the following once the cleanup work is finished? (Circle one number for each question)

	Not Concerned					Very Concerned
a. My family's health	1	2	3	4	5	6
b. The environment	1	2	3	4	5	6
c. Property values	1	2	3	4	5	6
d. Jobs in the community	1	2	3	4	5	6
e. Business in the community	1	2	3	4	5	6

4. How have you have learned about EPA' s work at the site? (Check all that apply)

___ EPA mailings (other than this survey)
___ Newspaper articles
___ Radio or TV news
___ Community member
___ Family or friends
___ EPA's web page
___ Public meeting or information session held by EPA
___ Direct conversation with someone from EPA
___ Information about the site is "common knowledge"
___ Know someone who worked at the site
___ Participation on one or more citizen groups

5. How would you prefer to receive site information? (Check the ONE you most prefer)

___ Monthly "News Brief": project updates, contacts, calender of events, and new documents
___ Short (1-2 pages), very focused (issue-specific) mailings, sent frequently
___ Longer, general informational mailings, sent periodically
___ Newspaper articles
___ Radio or TV news
___ A knowledgeable person in your community
___ The EPA web site
___ Short, very focused meetings, held frequently
___ Longer, general informational meetings, held periodically
___ A direct conversation with an EPA representative
___ Presentations at local clubs and organizations
___ Other _____

6. How interested are you in obtaining information about the following topics? (Circle one answer for each question)

	Not Interested					Very Interested
a. EPA's Superfund program	1	2	3	4	5	6
b. Toxic wastes at the site	1	2	3	4	5	6
c. How the site might affect human health	1	2	3	4	5	6
d. How the site might affect the environment	1	2	3	4	5	6
e. Site cleanup decisions	1	2	3	4	5	6
f. Other _____						

Appendix A (*continued*)

cleanup levels and approaches, may contribute to an expression of dissatisfaction about the cleanup process, even when that process is open and accessible. Community members may be using the opportunity to provide feedback on the community involvement process to express unhappiness about cleanup results. And, as Bellamy et al. (1999) note, the effects of a program can vary, depending on the socioeconomic context in which it is carried out. Effective community involvement techniques in one community may not work in another community. While it may be impossible to sort out what accounts for peoples' evaluation responses, understanding the social context in which specific evaluations occur will help make it easier to interpret the results.

7. What is the best way to get your participation? (Check the ONE you most prefer)

___ Through opportunities for you to give written comments.
___ Through public meetings where you can voice your comments.
___ Through opportunities for you to meet and talk informally with EPA staff.
___ Through a toll free telephone number you can call with your comments.
___ Through a community group which discusses issues and concerns with EPA.
___ Through opportunities for you to talk with independent experts.
___ Through a web site for you to communicate with us.
___ Other _____

8. Please tell us whether you have ever: (Circle your answer for each question)

a. Provided information to EPA about the project and its history. Yes No
b. Expressed your concerns about the project to EPA. Yes No
c. Offered cleanup suggestions or advice to EPA. Yes No
d. Given EPA comments on material s available for public review. Yes No
e. Requested information from EPA about the site. Yes No

If "no" to all of the above, why not?

9. Can you accept the decisions EPA has made so far about the site cleanup? (Check one)

___ Yes
___ No
___ I am not aware of any decision EPA has made

10. Is there anything else you would like to tell us about EPA's community involvement efforts or about this cleanup project?

Thank you for taking the time to share your views with us! To get on the EPA's existing mailing list, please contact _____.

Appendix A (*continued*)

According to Bellamy et al. (2001), the fundamental basis for evaluation is to establish a set of evaluation criteria against which change can be monitored over time to assess how well the initiative being evaluated is achieving its expressed objectives. Ideally, an evaluation protocol would be adopted that would provide for consistency in evaluation over time. This vision is not realistic for EPA, nor may it be realistic for evaluation projects at federal agencies more broadly. In the Superfund context, public participation ends once a site has been cleaned up. CIOB's evaluation process will occur only once per site. There will be no continuous monitoring and evaluation of community involvement activities at individual sites, though lessons learned at one site can be applied to other sites in an area, with subsequent evaluation at different sites. More importantly, we found that our evaluation approach evolved over time in response to changing needs and circumstances. The project has undergone four phases in the space of eight years. This indicates that evaluation processes must be flexible, as they will inevitably change in response to such variables as changing agency capabilities, changing evaluation team personnel, changes in the program being evaluated, and changes in the agency's political climate that determine whether evaluation projects will be supported. It is important to allow evaluation programs to evolve, and to reconcile this reality with the associated problem of how to compare results over time to see whether things are improving.

A final consideration in evaluating public participation in environmental decision-making is, what is the appropriate standard for measuring the success of the public involvement program? At first glance, the evaluation findings presented in this paper suggest that Superfund's community involvement program has quite a lot of room for improvement. Superfund community involvement coordinators and their managers would be the first to agree that community involvement can and should be strengthened. However, considerable progress in community involvement has been made over the last decade (see Folk, 1991 for an evaluation of EPA's Region 9 Superfund community involvement program conducted in 1989). This raises the question of benchmarks. If, for example, less than 50% of

community members are expressing satisfaction with their opportunities for public participation, does this mean that the program is unsuccessful? GPRA calls for establishing specific numeric standards for measuring performance. We view such benchmark-setting as arbitrary, over-simplistic, and not always meaningful in terms of program success. Instead, EPA's CIOB uses evaluation results as indicators that point to ways the community involvement process can improve and better achieve its goals. Success is not about achieving benchmarks; it is about better environmental and human health outcomes, which CIOB believes go hand in hand with good community involvement in environmental decision-making.

7. Conclusion

Do the results of the evaluation project reflect anything about whether the investment the Superfund program is making in community involvement is worthwhile? One pattern that appears across the data is that generally, those community members who are most informed about and involved in the cleanups also express the most satisfaction with the involvement process, and with the job EPA is doing in cleaning up Superfund sites. At most sites, community members want to be informed about hazardous waste issues and cleanup activities, and want this information to come from EPA. Survey respondents who were on EPA's Superfund site mailing list exhibited a high level of awareness about the toxic wastes present at the site, and potential exposure pathways. Finally, at least some people are interested in being actively involved in the Superfund cleanup process. We interpret these findings as indicators that EPA investments in public participation are worthwhile.

Not only should agencies continue to invest in public participation processes for environmental decision-making; evaluation of those processes should occur on a routine basis so that they can be continually improved upon. By conveying the lessons learned in developing the Superfund community involvement evaluation project, we hope to help other agencies develop and implement feasible and meaningful evaluations of their public participation programs. Doing so should lead both to better public participation in environmental decision-making, and greater success in achieving environmental management objectives.

Acknowledgements

We would like to acknowledge Suzanne Wells and the Environmental Protection Agency's Superfund Community Involvement and Outreach Branch for providing the impetus to establish the community involvement evaluation project, and the financial resources to make it possible. We are grateful to the community involvement specialists and the Superfund site managers that permitted us to undertake program evaluations at the sites that they are responsible for. Peter Redmond, Al Peterson, and Linda Bornyasz were instrumental in designing and carrying out the evaluation project. Many thanks to Tom Beierle, Gail Charnley, Caron Chess, Peter Redmond, Tom Webler, Suzanne Wells, and two anonymous reviewers for their insightful comments on earlier drafts of this article.

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