

Meeting Summary

Societal, Cultural and Economic Impacts and the Superfund Process Workshop November 6 & 7, 2002

FINAL

12/05/03

The conference was sponsored by the U.S. Environmental Protection Agency
Office of Solid Waste and Emergency Response
Office of Superfund Remediation and Technology Innovation

Lake Michigan Conference Room
12th Floor, Metcalfe Federal Building
USEPA Region 5
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Chicago, Illinois

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Introduction

The United States Environmental Protection Agency's (EPA) Office of Superfund Remediation and Technology Innovation (OSRTI) hosted a *Societal, Cultural and Economic Impacts and the Superfund Process Workshop* in November 2002.

Welcoming participants, Elaine Davies, Deputy Director, OSRTI described the genesis and purpose of the Workshop. A debate on the potential impacts to human health and the environment regarding polychlorinated biphenyl (PCB)-contaminated sediment sites has raged among industry, regulators, communities and other affected parties. The main focus of this debate centers on immediate risks of PCBs and, if they must be removed from the site, what is the appropriate remedial action. The potentially responsible parties (PRPs) do not believe that PCBs are harmful or pose a long-term health risk and are also questioning the effectiveness of dredging as a removal option. In 1998, the U.S. Environmental Protection Agency (EPA) entered into an agreement with the National Academy of Sciences to conduct a study that evaluates the risks, availability, effectiveness, costs, and impacts of technologies for the remediation of contaminated sediment. This study, *A Risk-Management Strategy for PCB-Contaminated Sediments*, prepared and released by the National Research Council (NRC) in March 2001, not only addresses the scientific issues but brings to light community issues that are important at sites.

Specifically, the third major conclusion and recommendation of the *Strategy* states:

Risk management of PCB contaminated sediment sites should comprehensively evaluate the broad range of risks posed by PCB contaminated sediments and associated remedial actions. These risks should include societal, cultural, and economic impacts as well as human health and ecological risks.

In response to the NRC report, Marianne Horinko, Assistant Administrator of the Office of Solid Waste and Emergency Response (OSWER) issued an OSWER direction *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites* (OSWER Directive 9285.6-08, February 12, 2002). It specifically states:

EPA site managers are also encouraged to consider the societal and cultural impacts of existing sediment contamination and of potential remedies through meaningful involvement of affected stakeholders. . . . In addition to considering the impacts of each alternative on human health and ecological risks, the short-term and long-term impacts of each alternative on societal and cultural practices should be identified and considered, as appropriate. . . . At some sites, a comparative analysis of impacts such as these may be useful in order to fully assess and balance the tradeoffs associated with each alternative."

In response to the attention these impacts are receiving, EPA's OSRTI convened an EPA-only *Societal, Cultural, and Economic Impacts and the Superfund Process Workshop*, to discuss its'

experiences with these issues. Specifically, how do you identify these impacts? How do you learn about these impacts and understand them? How do these impacts affect your decision making? And, how do they affect communities? (The full set of questions can be found in Appendix A.) A planning committee, composed of headquarters and regional staff, designed the *Workshop*. In the planning process, it was decided that the impacts were pertinent to all types of sites, including mining sites, federal facility sites, emergency response sites, redevelopment sites, megasites, rural and urban sites, and all sites that deal with environmental justice issues.

Following Ms. Davies, William Muno, Director, Superfund Division/Region 5 described a few specific sites in his region and pointed out that participants should keep in mind that these societal impacts generally affect minority populations. And, our efforts will play a role in how environmental justice is implemented to ensure that everyone, regardless of race, culture, or income, has the same degree of protection from environmental and health hazards and equal access to the decision-making process.

Guest speaker John Vetter, Chairman of the Department of Anthropology at Adelphi University and EPA's national expert in archaeology and the National Historic Preservation Act, discussed examples of how the National Historic Preservation Act has been used as a mechanism to meet needs of the public regarding preservation of cultural elements of their communities.

And the final guest speaker, Jessica Glicken Turnley, PhD anthropologist and Principal of Galisteo Consulting Group, Inc. presented on Social Impact Assessment (SIA) as a methodology for identifying, collecting data on and analyzing social, cultural and economic impacts. Social Impact Assessments are "an effort to assess or estimate, in advance, the social consequences that are likely to follow from specific policy actions and specific government actions."¹ Her presentation discussed the need for SIA as identified in the National Environmental Protection Act (NEPA), Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA), Executive Order 12898 (Environmental Justice) and the Historic Preservation Act, and that other federal agencies, such as the General Services Administration, the Department of Agriculture/Forest Service, the National Oceanic and Atmospheric Administration/National Marine Fisheries Service and the Department of Transportation/Federal Highway Administration have all been using SIAs for years. Dr. Glicken Turnley's presentation defined social, cultural and economic impacts and included SIA methodological details, including data collection, indicators and units of measurement. Talking points from her presentation can be found in Appendix B.

The Workshop

¹ NOAA Technical Memorandum NMFS-F/SPO-16 Guidelines and Principles for Social Impact Assessment, May 1994.

At the two-day workshop, EPA managers, regional project managers, community involvement coordinators, on-scene coordinators and other EPA staff discussed their different experiences with social, cultural and economic impacts.² Plenary and small group discussions as well as completed questionnaires³ about their site(s) provided rich detail as to the reality of working at Superfund sites and addressing social, cultural and economic impacts.

Identifying Impacts

Well developed EPA processes exist for addressing sites with toxic and hazardous waste materials. However, the unique circumstances of each Superfund site results in EPA dealing with societal, cultural and economic impacts differently at every site. The following two diagrams illustrate the Superfund Remedial Response Process. One describes the remedial response process in detail and one includes the community involvement process in detail.

Insert graphics (need to be scanned)

- Superfund Remedial Response Process
- Community Involvement Activities at NPL Sites

According to Workshop feedback, information on these impacts is collected at all points in the process. The Community Involvement Plan (CIP), is, in most cases, the primary place where this information is documented. In some cases, information is collected well before the proposed NPL listing, at other sites during the RI/FS process, at other sites well after the ROD and at some sites, during the 5-Year Review. The Record of Decision (ROD) may include extensive discussion about particular impacts in its Responsiveness Summary to comments or concerns raised during the public comment on the Proposed Plan. Many participants discussed being aware of the impacts constantly. In one example, during the site assessment, the EPA staff became aware of the residential and fishing impacts, and later, during the remedial investigation, became aware of the community's interest to redevelop an industrial park.

Information on such impacts is gathered both formally and informally. EPA staff collect information through community interviews, site visits/tours with the community, public meetings and records of public meetings, listening sessions, group discussions, meetings with local officials, businesses and non-profits, town hall council meetings, working with the media, phone calls, establishing a storefront office, advisory committee meetings, one-on-one interaction, census data, the internet, Centers for Disease Control (CDC) and local health departments, zip code data to identify sensitive areas, real estate data, talking to experts, lenders, and appraisers,

²Forty-three people (18 RPMs, 13 CICs, 2 OSCs, and 10 others such as team leaders, a lawyer, a toxicologist, a risk assessor and headquarters staff) from 8 regions and headquarters participated. (Regions 1, 2 and 10 were not represented due to inadequate travel funds.) As a result of an invitation from the Director of OSRTI, the participants either self-selected to attend or were asked by their management to attend.

³ Twenty-four questionnaires were completed.

observation of living and use patterns, and EPA and local health department questionnaires.

In addition, community members actively contribute information through direct one-on-one contact with EPA staff, Technical Advisory Grant (TAG) group, Community Advisory Groups (CAGs), Redevelopment Groups, Restoration Advisory Boards (for federal facility sites), public advisory committees, radio, TV, newspaper reporting, feedback after briefings, town hall meetings, and regional organizations such as the League of Women Voters.

Impacts at Federal Facility sites are usually discussed at public meetings, such as Department of Defense (DOD) Restoration Advisory Boards (RABs), Department of Energy Site Specific Advisory Boards (SSABs), and through Technical Assistant Grants (TAGs); these are created and managed by the lead Federal agency, not EPA. In the case of Formerly Used Defense Sites (FUDs), community members are rarely involved in the process, and DOD and Congress make determinations about Base Realignment and Closure (BRAC) sites.

Many impacts related to Tribes are ascertained through a Tribal cultural resource assessment, which is funded by a general assistance program (GAP) grant. Their concerns are specific to their cultural practices.

The Impacts Identified

The NRC *Strategy* covers a broad range of issues, gleaned from research and one-on-one interviews at selected sites, and includes a list of example social, cultural and economic impacts from these sites. (See Appendix B for the specific list of social, cultural and economic impacts identified in the NRC *Strategy*.) The impacts the NRC strategy identifies include such things as

direct and indirect human use effects that are curtailed or terminated because of PCB contamination and that may result in economic damages ranging from lost benefits from commercial and recreational fishing to reduction in property values to increased health effects due to changes in diet from a fish-based diet to a less healthy diet.

They also identified

non-use or passive values that are intangible and arise from the satisfaction that individuals experience from a particular environment, ecosystem, or river “culture,” in the absence of any physical use such as protected species and their habitats, ecosystem services and human culture. The NRC writes that many of the latter impacts are hard to quantify but ultimately are related to one’s willingness to sacrifice other benefits for the preservation of the environment for present and future generations.

The following list are impacts identified by EPA staff as a result of the *Workshop*. Notably, they are similar to the NRC list of impacts. EPA staff also identified environmental impacts that were

of concern to citizens. Some of these impacts may be viewed as positive and/or negative impacts. The definitions used during the *Workshop* to delineate the impacts from one another are also included.

Social Impacts: changes in the way a community is organized

- relocation of residents
- loss of recreational use of body water, e.g., boating, swimming
- loss of fishery for fishing
- disruption in the community due to dredging and transport
- change in land use planning and ultimate uses (could be considered economic impact)
- potential increased development leading to loss of current way of life (could be considered economic impact)
- uncertainty about efficacy of clean-up option (e.g., dredging)
- stigma
- environmental justice concerns, e.g., high unemployment, crime
- loss of cohesiveness and integrity of the neighborhood
- stigma associated with media coverage
- stress of dealing with contamination in their yard
- fear of the unknown
- noise, traffic and dust impacts
- community distrust
- potential for vandalism
- illegal dumping
- feelings of helplessness and inability to have concerns addressed

Cultural Impacts: changes in valued behavior

- exposure to contamination due to cultural practices, e.g., raising free range chickens, subsistence fishing
- loss of historical site
- impacts on the Tribe's culture and related behavior patterns, e.g., fishing, ability to live and use their reservation land, historical trauma, ability to economically develop
- impact on traditions, protocol and decorum for communicating with tribal leaders
- religious and spiritual significance of land, air and water
- non-tribal members on tribal land
- protection of ceremonial, religious and medicinal resources
- destruction of cultural resources

Economic Impacts: changes in market value, basic economic indicators, major industrial sectors

- limited future land use
- lower property values
- difficulty selling property
- lenders refuse to finance residential developments

- loss of tax base for local school
- loss of tourism
- concerns about negative business image (on the polluter)
- business operating hours
- reed gatherers livelihood impacted

Environmental Impacts:

- loss of fishery
- loss of wetlands
- loss of wildlife habitat
- possible impact to aquifer
- cutting down trees to allow capping a landfill
- elimination of natural buffers
- impact on sole source aquifer

The EPA's Perception of these Impacts

EPA staff are fully aware of the importance and significance of these impacts with regard to the management of their site, and the impact they have on communities. Workshop results show that knowing about these impacts helps EPA to better understand citizen's perspectives and behaviors. For instance, they realize that even though attendance at meetings may be low, it doesn't mean that residents aren't interested or do not care. It has enlightened EPA staff as to why community members are distrustful of EPA and their reluctance to sign Access Agreements for sampling. This knowledge also allowed EPA to be more sensitive to the community and its concerns, and to seek ways to ameliorate the impacts to the extent possible. It has also helped EPA to be more accessible and approachable to local residents and officials. It has enhanced citizen input to decision-making, resulting in better decisions, and improves EPA's ability to implement these decisions with minimal impacts.

Considering these impacts increases EPA credibility and respectability; not addressing them can produce a hostile public environment. Not addressing them can result in negative working relationships, reduce community cooperation, complicate negotiations on such things as cost of land transfers, potentially result in the selection of a remedy perceived as not consistent with community needs, result in non-acceptance by Tribes, community distrust and resistance to proposed actions, and ultimately, a cleaned up site that nobody want to reuse. Not considering these impacts produces bad press, increases political pressure, increases project costs, lawsuits, and class actions and ultimately, potentially the need to amend a ROD at a later date.

EPA is aware that citizens who are involved in the process feel more ownership of the process and a vision of a healthier environment. Greater cooperation, openness and trust among stakeholders and improved communication/understanding of site issues between EPA and the community result in a better understanding of what EPA can and cannot do. However,

sometimes community involvement creates a more politicized and controversial process where there is increased letter writing to EPA regional and headquarter's leadership, and a delayed process.

Overall, Workshop participants feel that community responses to EPA's handling of Superfund sites are both positive and negative. The positive responses seem to be dependent on the amount of communication from EPA and the level of community involvement in the process. Negative responses are generally explained by EPA staff as "not being able to satisfy everyone all of the time." For instance, a community was not provided permanent relocation, as was their wish, so the community felt that the impacts were not considered by EPA. In other cases, citizen perception is that cleanup means a pristine result, which is not always the case. Other dissatisfaction resulted from frequent turnover of EPA staff (RPMs, CICs), influence of or perception that EPA was bought out by PRPs, mistrust, the perception that EPA has a lot of money but is very slow to do anything, and that EPA skews information in its favor. Tribes and some citizens are wary of providing sensitive information to EPA for FOIA and privacy concerns. It was recommended that EPA staff work with risk assessors to see how they deal with sensitive information.

Impacts and Decision Making

In some cases, knowledge about these impacts affected clean-up goals, but in others it didn't affect the goal so much as it affected the way the clean-up was conducted. Some schedules were adjusted due to knowledge of impacts, such as the schedule for the RI/FS, and/or scientific sampling. In some instances, the RI/FS was more comprehensive as a result of knowing about these kinds of impacts. Cleanup levels, the degree of cleanup, and the pace of cleanup have been influenced by anticipated future land use considerations. Impacts can affect remedy selection and improvement/modification of remedial design and remedial actions to accommodate community concerns. In one case it affected clean-up design in terms of removal of dredged material either by pipeline or truck. Impacts affect decisions about well abandonment and plume boundaries as well as the use of fish advisories. EPA is aware that such things as potential surface soil removal and sediment cleanup may impact cultural uses of resources. And occasionally changes may be made to a ROD. In the case of Federal Facilities, EPA regions and the lead Federal agencies often differ in their views of the impacts and the actions needed, making it difficult to address them.

Where the information did not or could not affect the remediation decisions and design, workshop participants identified numerous actions taken to address community concerns about impacts. In cases where EPA could not accommodate an impact, they at least knew that they needed to address the impact by explaining what they were doing and why. Many reported listening, affirming, explaining, dispelling false information and working more closely with residents and Tribes about their concerns. Others reported asking residents for alternative strategies. Others brought in experts to explain issues related to impacts, e.g., local tax

commissioners about loss of tax base for schools and possible fixes, and taxes in general, and in another case, having a local official explain the Superfund process and schedule, and educating people on benefits of a municipal water hook-up. EPA staff have concerns that the remedy could be worse than the existing problems. At one site yards were videotaped before and after remediation so residents could see the degree of impact. For example, in one case, the decision was not based on the impact to property values, which was a community concern; this was a legal determination. However, EPA did issue completion letters and information packets for buyers as documentation about EPA actions so as to hopefully minimize skepticism in potential buyers. Other sites turned a smelter into a state park, a railway into a trail, and a powerhouse is planned as a museum. In some cases, EPA changed or adjusted remediation practices, such as working with the community to identify appropriate truck routes and scheduling work to accommodate holidays, and in another case, pursuing preservation of an historical site. Others reported pursuing assistance, in conjunction with non-profits and local officials, to secure a Reuse Grant or to be selected as a Superfund Redevelopment Pilot. In addition to these specific efforts, basic outreach methods are continually used, e.g., newsletters, fact sheets, periodic and regular public meetings or listening sessions, and community interviews.

EPA staff struggle with the how to balance these impacts with their responsibility to protect human health and the environment. The Superfund process is governed by the nine criteria outlined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). These criteria include *threshold criteria*: a) overall protection of human health and the environment, b) compliance with ARARs; *primary balancing criteria*: c) long-term effectiveness and permanence, d) reduction of toxicity, mobility, or volume through treatment, e) short-term effectiveness, f) implementability, g) cost; and *modifying criteria*: h) state acceptance, and i) community acceptance. Of these, the threshold criteria are of primary concern to EPA.

There was a concern amongst workshop attendees that attention brought to these issues can create high expectations within the communities that EPA cannot meet. Often communities are very diverse and one group EPA is dealing with may not represent the entire community, so it can be hard to even know what everyone's needs/expectations are, much less meet them. Many of these impacts are subjective and not objective; the human emotional factor is generally not viewed as a priority compared to quantitative scientific data. And in some cases, the impacts are from factors unrelated to the Superfund site but to other local industries, and/or the result of a common environmental justice issue of "living in the shadow" of industry and adjacent to or on Superfund sites. Another factor cited was "group psychology" in terms of what everyone else is doing or getting done; support for a cleanup may shift with a shift in group psychology.

EPA stressed that all impacts are considered, but not all influence the decision-making process equally or in the same way. Legally, EPA is only required to address impacts that affect protection of human health and the environment. For instance, the impact on property value does not impact actual clean-up decisions, nor do social issues, such as drugs in the neighborhood, money for schools. Where social, cultural and economic impacts exist that EPA cannot address, it does its best to contact and facilitate coordination with other federal, state and local agencies

and organizations to help communities address concerns that are outside of EPA's legal mandate. In all cases, the remedy is selected based on protection of human health and the environment. If there is a conflict between community impacts and the selected remedy, EPA works to find a solution that meets its legal mandates while addressing community impacts to the extent possible.

What is Needed to Support EPA Staff?

General discussion emerged on the key topics of management support and resources, the need for a guidance or directive on the topic, SIA as a tool, and EPA staff roles and communication about these issues. Nearly every participant identified management support as the primary need. In addition, staff need clarification as to whether these impacts fall under one of the nine criteria, and if so, what do EPA staff do when one of these subjective factors runs counter to an objective one, such as protectiveness? Staff need a clear policy on criterion for cleanup, definitions of "social, cultural and economic impacts" and the meaning of "consider these impacts", guidance as to how to respond regarding any legal constraints, and certainty that consideration of these impacts will not produce a less protective cleanup standard. In addition, a clear statement of the goals and objectives for considering these impacts is necessary; this in particular would enable clear communication of EPA's mission and minimize the creation of expectations that cannot be met. They also would like consideration of these impacts in the Remedy Review Board. In addition, they specified the need for the full involvement of Tribes. And, it was suggested that the Superfund Office partner with the Office of Environmental Justice more closely.

Other needs were resource oriented, such as more time to give attention to community concerns, more time and money to increase site visits, money to contract with social, cultural and economic expertise (perhaps from partnering with local universities), translation services, culturally knowledgeable sources as well as training in this area. They would like to see better coordinated efforts among federal, state and local governments with regard to identifying and addressing impacts.

More specifically, there was extensive discussion about the need for either a directive, a guidance, or a reorganization of existing tools in support of assessing these impacts.

- Directives tend to give the expectation of what must be done on all occasions and "politicizes" the process. However, if a directive is not issued, there is the belief that there will be no buy-in on implementing the assessment of these impacts.
- Guidance must have flexibility for selection of options that work best within the community. It could include a checklist of what should be considered and systematic tools for assessment. The checklist, or some variation, could be used as a screening tool to determine the need for further study. Guidance on how to analyze and use the information as well as case studies of how people have handled the impacts would be helpful. It was also suggested that the Hazard Ranking System, the ECO-Screening Tools and Environmental Indicators tools be used as models for assessing impacts.

- The reorganization of existing tools could include a road map that points to existing tools and guidance. New guidance could be created if there is a gap.

Response to SIA as a tool for EPA was mixed. The SIA could be used early in the RI/FS to gauge when EPA may be faced with social impact issues. Looking ahead would also help ensure implementation of proposed remedial designs. This however, assumes that the impacts will be visible at the time of the RI/FS. There was some feedback that perceptions of impacts shift over time. There were questions about where an SIA would fit within the Superfund process and where time and resources would come from to implement it. The life span of sites is already an issue, and as one participant said “Superfund is collapsing under its own weight.” In addition, the data are attitudinal in nature and change over time. It was also noted that the data collection can be a “double-edged sword” in that it can be manipulated by PRPs and local activists. A number of participants expressed interest in more detailed training on SIA methodology.

Issues about EPA roles and communication were also raised. It is challenging for CICs and RPMs to coordinate and communicate about their efforts. There was frustration expressed on both sides regarding priorities, time, resources and collaboration. Often, CICs are located in the Public Affairs Office and RPMs are in the Superfund Office, causing further separation. When, how and who should address these issues is debatable. Views range from it being the CICs job, to it being a shared CIC/RPM job, to the need for technical expertise to accomplish it. There is frustration that CIPs are not used once they are completed and that EPA only addresses community concerns at the Proposed Plan stage (community acceptance criterion) and that they should be addressed sooner. There is also concern that there are not enough CICs in the EPA, and that some RPMs do not pay attention to these impacts. And, there is concern that impacts information is sometimes not included in the final Record of Decision.

In terms of communication, it was felt that a communication plan would be helpful. It should have a clear statement of EPA’s mission and limitations related to Superfund. Communication materials need to speak to various educational levels and cultural groups. Consideration should be given to the timing and methods of communication, communicating EPA’s decision making process and the role of various government entities, and communicating EPAs legal responsibilities. Most importantly, there is a need to communicate that EPA cannot address all community concerns. Specific to Tribes, it was noted that it would be helpful to Tribes if Superfund activities could be incorporated into cultural/religious practices, for example, before a site helicopter flyover, have a ceremony to pray over and bless the helicopter. Another example is to give the Tribe materials to hold their own cleansing ceremonies.

Next Steps Recommendations

The final stages of the workshop included a listing of next steps by participants. The full list of

next steps may be found in Appendix C. The top 11 priority items identified are listed here.⁴

1. Consider providing training or presentations at the Community Involvement, NARPM, and Risk Assessment conferences and OSC Readiness Training.
2. Clarify and define how EPA “considers” impacts.
3. Take a step back and get the big picture of what we are trying to accomplish.
4. Promote awareness of impacts at all stages of the Superfund process.
5. Present recommendations to the Division Director’s and Focus Forums.
6. Talk to management and get support for implementing these assessments of social impacts.
7. Develop guidance with tools for assessing social impacts.
8. Define “impacts.” Is it measurable, does it go beyond just a concern, or is it subjective or objective?
9. Begin the assessment of social impacts during the site assessment phase.
10. Conduct a workshop on case studies.
11. Update community involvement training for RPMs.

Conclusions

By all accounts, these issues provoke dynamic discussion and debate amongst EPA staff. The *Workshop* evaluation responses indicated that having a diverse, cross-Agency, cross-regional forum in which to discuss these issues was very helpful to EPA staff.⁵ The majority of participants reported in their evaluations that the *Workshop* increased their awareness and knowledge of the issues. Twenty-seven of the 32 respondents indicated they would recommend this workshop or a variation of this workshop (training in new and/or existing tools, focus on case studies, and guidance on this topic) to their co-workers. And all but one respondent thought it would be a good idea to hold a workshop/training in their region. On the issue of developing a guidance, 19 respondents supported the idea of a flexible, non-prescriptive guidance with case studies, 8 supported the reorganization and reemphasis of existing materials with a checklist, and 4 responded that nothing was needed.

⁴Prioritization was done using an n/3 methodology.

⁵Thirty-two evaluations were received. On a scale of 1 - 10, the Workshop was given an average rating of 7, with the majority of respondents rating it an 8.

Appendix A

Small group break-outs with questions:

- A. How have you become aware of social, cultural and economic impacts at your site?
 - At what point in your process do you become aware of these impacts?
 - What impacts have you become aware of?
- B. Once you are aware of the impacts, what do you do?
 - Do you collect information about them?
 - How do you collect the information?
- C. What difference does knowing about these impacts make to your decision making?
 - Which decisions does the information about the impacts affect, and how?
 - Identify the phase in the Superfund process where this information has an impact?
 - How specifically do the site decisions address these impacts? Please give examples.
 - What is, or would have been, the result of not considering these impacts?
 - Which impacts do you not include in your decision making processes? Why?
 - What is being/was done about the impacts EPA could not address or those that were beyond our authority?
- D. How are citizens involved in the process?
 - How are citizens involved in the identification and sharing of information about the impacts?
 - What is the result of citizen involvement?
 - What are community perceptions of your handling of the information and the impacts?
 - Other?
- E. What do you or your partners need to consider these impacts?
 - What type of things would help you address these impacts (e.g., technical assistance, time, money, community informants, different partners)?
 - What do you think would help you meet your remedial goals, while still accommodating these impacts?
 - Other?

Appendix B

The National Research Council Report *A Risk-Management Strategy for PCB-Contaminated Sediments* (2001) descriptions of social, cultural and economic impacts.

Social Impacts

- prevent use of water body for recreational activities, e.g., boating or swimming
- perceptions that drinking water is contaminated and unsafe
- divisiveness among neighbors related to degree of contamination and subsequent risk remediation/management options
- increased noise pollution
- increased air pollution
- fear of additional contamination (e.g., leaks from landfills, spills from trucks transporting sediment).

Cultural Impacts

- impacts on populations whose identities are linked to fishing (e.g., American Indians)
 - impacts related to health of families
 - impacts on the health of aquatic and terrestrial wildlife
 - disruption of way of life
 - impacts related to livelihood and way of life that revolve around commercial fishing and consumption of seafood
- impacts on traditional decision-making practices (e.g., American Indian's exclusion from decisions regarding PCB management)
- impact on breast-feeding in populations exposed to PCB-contaminated fish

Economic Impacts

- individuals and businesses whose income is dependent on commercial, recreational and subsistence fisheries (e.g., marinas)
- impact on individuals and families who depend on subsistence fishing to provide a portion of their diet
- costs associated with navigational dredging
- restricted access to recreational resource (e.g., loss of recreational beach access due to contamination, restricted access due to risk-management/remediation strategy)
- health impacts/economic costs resulting from change in diet from fish-based protein source to a less healthful diet
- reduction in property values
- reduced demand for agricultural products perceived to be contaminated
- financial impact on responsible parties, state, local or federal governments and communities for risk-management strategies

Appendix C

Full list of Next Steps needed as identified by Workshop participants.

- RPMs, CICs, Risk Assessors, Redevelopment, Brownfields, Office of Environmental Justice, and OSRTI Headquarters need to meet to review the recommendations discussed during this workshop.
- Revise RI/FS, Record of Decision, Proposed Plan, and FYR guidance.
- Get buy in of management for implementation of SIAs.
- Develop specific training on how to measure impacts and gather data.
- Conduct SIA early on in the Superfund process.
- Issues a directive that states these impacts will be addressed early and after the site assessment stage. References should be provided on where RPMs can get information.
- Bring in other groups, tribes and other cultures, that are not familiar with internal group or panel to discuss these recommendations.
- Removal group should be questioned to investigate if federal facilities and removal areas have different considerations of social impacts.
- Recommendation that a directive not be issued. Directives tend to give the expectation of what must be done on all occasions and “politicizes” the process. Guidance with systematic tools is preferred.
- Clarification of the term “consider” is recommended. Does it mean to think about, measure, or give weight to the impacts?
- Training is recommended for all site team members.
- Check with the Remedy Review Board, Division Directors, and Focus Forums regarding their interest, commitment, and potential resources available for implementing this process.
- Success stories should be researched and present the findings at the National Association of Regional Project Managers (NARPM) conference.
- Promote greater awareness that these impacts can occur at all stages in the Superfund process.
- Descriptive recommendations for guidance are needed.
- Training for federal, state, and tribal partners with CERCLA responsibilities should also be recommended.
- Workshop on case studies alone should be conducted. The workshop could elaborate on why do assess impacts, what was done right, and what was done wrong.
- Community involvement training update for RPMs.
- Received a copy of the meeting summary and Dr. Turnley’s white paper.
- Keep information posted on the Intranet.
- Develop a fact sheet on what is being considered.
- Information on assessment of impacts should be presented at the Community Involvement and NARPM conferences and OSC Readiness Training.
- Continued involvement - form a workgroup to check on status of recommendations and provide additional input.

- Step back and view the larger picture of long-term documentation and impacts. There will be a record and someone will have to be compensated. An attorney should review what is proposed.
- PRPs are already collecting data. Provide guidance on how EPA can use PRP's data effectively and look for positive impacts.
- Coordinate with the Office of Research and Development (ORD).
- Be flexible with what RPM thinks of as data.
- The term "impact" needs to be defined. Is it measurable, does it go beyond just a concern, is it subjective or objective?
- Guidance vs Directive vs Tool Kit:
 - S** A directive can be used against EPA.
 - S** Concerned about adding another assessment to the Superfund pipeline. If it becomes a requirement to do a SIA this will add more accountability.
 - S** Content of the document is important not the label.
 - S** It is recommended that descriptive recommendations not prescriptive requirements be used.
 - S** Perhaps a memorandum can be issued with a statement of emphasis and recommendations on addressing social impacts at hazardous waste sites.
- Brief NACEPT Superfund Subcommittee on recommendations of the group.
- EPA needs to hire or contract with more social scientists.
- More CICs are needed in the regions.